Curriculum Companions

Year 10

Term Two

Name:

Tutor Group:

Stmarks ACADEMY

Knowledge Organiser: Romeo & Juliet
Year 10 Spring 1 & 2

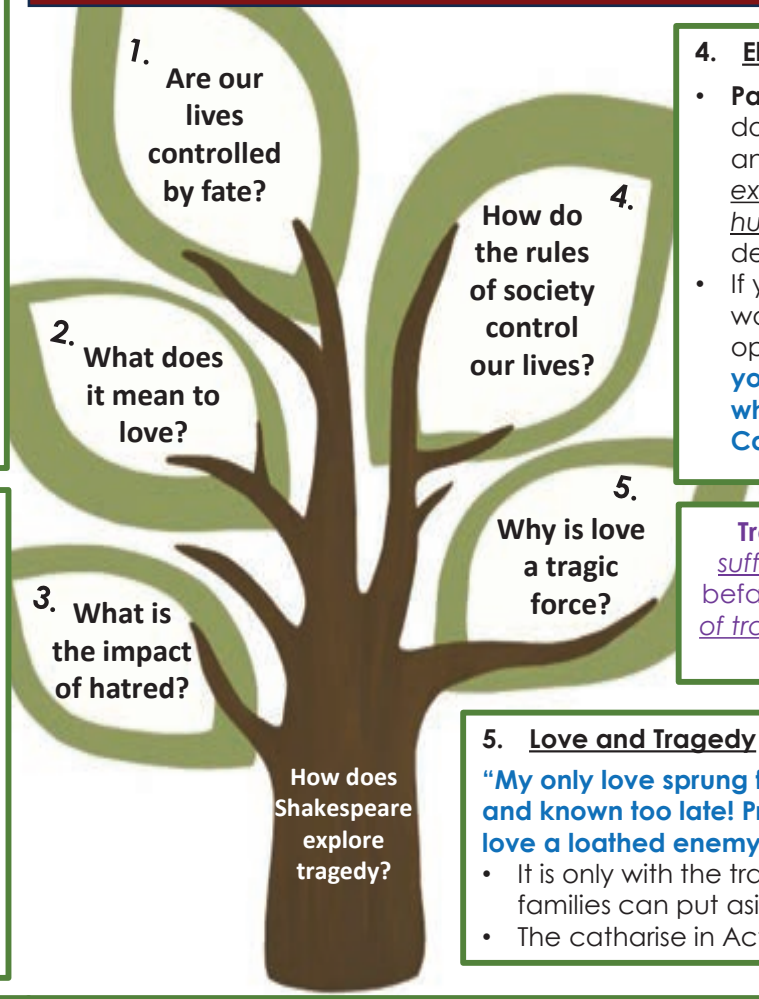
1. Fate and Destiny

"A pair of star-crossed lovers take their life"
"death marked love" (Prologue)

- Many Elizabethans believed that there was a greater force that controlled their lives. This may be God, or *many believed in fate and astrology*
- Rich Elizabethans would often consult an astrologer before making important decisions (e.g. marriage) *to see if the stars favoured it*
- The idea that their fate was written in the stars, therefore, **the stars ruled their lives**.
- Many people believed their destiny was predetermined and that they had no free will – **fate had already determined their path**!

2. Love in Romeo & Juliet

- The play explores a number of different types of love and their consequences:
  - **Unrequited courtly Love** between Romeo and Rosaline: **"Out of her favour, where I am in love."0 (Romeo)**
  - **Brotherly Love** between Mercutio (who is cynical about romantic love) and Romeo (who is consumed with the idea of love)
  - **Passionate Love** between Romeo and Juliet **"Did my heart love till now? Forswear it, sight, for I ne'er saw true beauty till this night." (Romeo)**



4. Elizabethan Social Expectations

- **Patriarchy:** Society was patriarchal. Men were dominant and made important decisions about and for the women in their family. *Women were expected to be subservient to their fathers and husbands* and were unable to challenge decisions by the men in their lives.
- If your father or husband cast a woman out, she would be left in poverty and with very few options other than prostitution. **"Hang thee, young baggage! disobedient wretch! I tell thee what: get thee to church o' Thursday" (Lord Capulet)**

Tragedy: a dramatic genre based on *human suffering* and the terrible or sorrowful events that befall a main character. Traditionally, *the intention of tragedy is to invoke an accompanying* ***catharsis*** (a feeling of cleansing) for the audience.

5. Love and Tragedy

"My only love sprung from my only hate, Too early seen unknown, and known too late! Prodigious birth of love is it to me. That I must love a loathed enemy" (Juliet)

- It is only with the tragic death of Romeo and Juliet, that the families can put aside their feud and reconcile.
- The catharise in Act 5 comes from the futile loss of their children.

3. Family Honour

"Two households, both alike in dignity,
In fair Verona, where we lay our scene,
From ancient grudge break to new mutiny,
Where civil blood makes civil hands unclean"
(Prologue)

- The play centres around the rivalry between two prestigious families in the city of Verona, Italy: the **Montages (Romeo's family)** and the **Capulets (Juliet's family)**
- For Elizabethan men, loyalty to your family and family honour was incredibly important and therefore worth defending, even servants would be bound to defend their masters honour.
- In Act 1 Scene 1 we see how the men act with **bravado** and **antagonise** their rivals to defend their **family honour**. **"The quarrel is between our masters and us, their men." (Gregory)**

Romeo & Juliet: Tragic Plot Structure

Prologue

The Prologue does not merely set the scence, **it tells the audience exactly what is going to happen in the play**. The Prologue itself creates this sense of fate by providing the audience with the knowledge that Romeo and Juliet will die even before the play has begun.

The audience therefore watches the play with the expectation that it must fulfill the terms set in the Prologue. The structure of the play itself is the fate from which Romeo and Juliet cannot escape.

A1 S1: Prince's Warning
Prince Escalus decrees that the penalty for more fighting is death

A1 S2: Paris courts Juliet
Lord Capulet agrees to explore a marriage between his daughter Juliet (13 years old) and Paris

A1 S1: The Brawl
The servants of the Montagues and Capulets feud in the streets of Verona.

A1 S1: Romeo's Melancholy
Romeo is lovesick for Rosaline

A1 S5: The Capulet Ball
Romeo and Juliet meet at the Capulet Ball and fall in love before realising they are from rival families.

A2 S2: The Balcony Scene
Romeo sneaks into Juliet's house to meet her. They exchange vows of love and agree to marry.

A2 S6: The Marriage
Friar Laurence marries the couple

A2 S3: Friar Laurence
Romeo goes to Friar Laurence who agrees to marry the couple in the hope that this will bring peace to Verona.

A3 S1: Mercutio's Death
Tybalt tries to duel with Romeo for attending the ball. Romeo refuses to fight (Tybalt is now family) and Mercutio is killed trying to defend his friend's honour.

A3 S1 Romeo Banished
Prince banishes Romeo for Verona for killing Tybalt

A3 S1: Tybalt's Death
Romeo chases Tybalt down and kills him in revenge for the death of Mercutio.

A3 S5: Romeo and Juliet consummate their marriage
Romeo sneaks into Juliet's room and they consummate their marriage before he leaves.

A3 S5: Lord Capulet forces Juliet to marry Paris
Capulet threatens to disown Juliet if she does not marry Paris

A4 S1 The Friar's Plan
Juliet goes to the Friar for help as she doesn't want to wed Paris. The Friar agrees to give Juliet a sleeping potion so she can escape to Mantua to be with Romeo.

A4 S3 The Potion
Juliet tells her father she will marry Paris and then drinks the sleeping potion.

A4 S5 Juliet's Death
Juliet is found dead and taken to the Capulet tomb.

A5 S1: The Poison
Romeo learns of Juliet's death and returns to Verona. On the way he buys poison from an apothecary.

A5 S3: Romeo's Death
Romeo goes to Juliet's Tomb. He kills Paris who is there. When he sees Juliet dead, he drinks the poison and dies..

A5 S3: Juliet's Death
Juliet wakes up and sees Romeo dead. She tries to kiss the poison from his lips but there is none left. She stabs herself with his dagger.

A5 S3: The Reconciliation
The Montagues and Capulets learn of Romeo & Juliet's death and as a result end their feud.

Act 1

Act 2

Act 3

Act 4

Act 5

Romeo & Juliet: Key Characters

Mercutio
Romeo's witty and loyal friend who is slain by Tybalt when defending Romeo

Tybalt
Juliet's hot-headed cousin; kills Mercutio, then is killed by Romeo

Prince
Banishes Romeo from Verona

Paris
Juliet's suitor and cousin of the Prince. Killed by Romeo at the Capulet tomb.

Romeo

In love

Juliet

Benvolio
Romeo's peaceable good-natured friend

Friar Laurence
Marries Romeo and Juliet and concocts the plan to fake Juliet's death

The Nurse
Capulet servant and confidant to Juliet. Acts as a messenger between Romeo and Juliet

Apothecary
Illegally sells Romeo poison

Friar John
Sent to Mantua to tell Romeo of the Friar's plan. He is quarantined and never arrives

Lady Montague
Romeo's mother who dies of grief when Romeo is banished

Lady Capulet
Juliet's mother who is cold and calculating in her desire that Juliet marry Paris

Lord Montague
Romeo's father who, along with Capulet, originated the feud between the families

Feuding

Lord Capulet
Juliet's irritable and irrational father who demands she marry Paris

Key Mercutio Quotes:

- '"If love be rough with you, be rough with love"
- "A plague o' both your houses"
- "Ask for me tomorrow, and you shall find me a grave man"

Key Tybalt Quotes:

- "I hate the word, as I hate hell, all Montagues, and thee"
- "Romeo, the love I bear thee can afford no better term than this: Thou art a villain"

Key Romeo Quotes:

- "O brawling love, O loving hate…This love feel I, that feel no love in this, "
- " Did my heart love till now? forswear it, sight! For I ne'er saw true beauty till this night. "
- " But, soft, what light through yonder window breaks? It is the east, and Juliet is the sun. "
- " O, I am fortune's fool! "
- " Then I defy you, stars "

Key Juliet Quotes:

- " O Romeo, Romeo, wherefore art thou Romeo?
- " That which we call a rose, By any other word would smell as sweet."
- " Come, gentle night, come, loving black-browed night, Give me my Romeo, and when I shall die, Take him and cut him out in little stars."
- "O happy dagger, This is thy sheath: there rust and let me die."

Key Benvolio Quotes:

- "Part, fools! Put up your swords. You know not what you do!"
- "I do but keep the peace. Put up thy sword"

Key Nurse Quotes:

- " Thou wast the prettiest babe that e'er I nursed."
- "An I might live to see thee married once; I have my wish."
- "Go, girl, seek happy nights to happy days."
- " I think you are happy in this second match, for it excels your first."
- " Oh, woe oh woeful woeful day most lamentable … oh hateful day. "

Key Friar Laurence Quotes:

- "Wisely and slow; they stumble that run fast."
- For this alliance may so happy prove, To turn your households' rancour to pure love."
- "These violent delights have violent ends."
- 'Till holy church incorporate two in one"

Key Lord Capulet Quotes:

- " My child is yet a stranger in the world."
- " He shall be endured... Am I the master here, or you? Go to.
- "Hang thee, young baggage, disobedient wretch! … get thee to church o'Thursday, Or never after look me in the face."

Romeo & Juliet - Topic Dictionary: Tier 2

Image	Word	Definition	In a sentence
	**antagonise**	if you antagonise someone, you deliberately make them feel angry or hostile. If someone is being antagonistic to you, they are showing hatred or dislike to you.	The two households in Verona behave **antagonistically** towards each other.
	**banished**	if you are banished, you are told you are no longer allowed to live in the place you are from.	In Act 3.3, Romeo finds out that the Prince has **banished** him from Verona as he killed Tybalt in retaliation for Mercutio's death.
	**bravado**	a bold manner or a show of boldness intended to impress or intimidate.	Tybalt acts with **bravado** in the opening of Act 1 Scene 1 when he refuses to part swords and instead provokes Benvolio.
	**courtly love**	a tradition that used to take place in medieval times Typically, a knight is in love with a noble woman who he cannot be with. He performs heroic deeds to win her favour.	Romeo's love for Rosaline is an example of **courtly love** as she is unobtainable and his feelings are unrequited.
	**cynical**	if someone is cynical, they are doubtful as to whether something is worthwhile or genuine. They often mock it.	Mercutio often demonstrates a **cynical** view on the depth of the love Romeo proclaims to have for Rosaline and Juliet.
	**fate**	events outside a person's control that are destined to happen.	One view of the play is that Romeo and Juliet's love was **fated** from the beginning to end in disaster.
	**honour**	if someone is honourable, they are respected because they act in a way that is right	In the Elizabethan Era, family **honour** was important to people. If your family was respectable, you had a higher status.
	**melancholy**	a feeling of intense and unescapable sadness	Romeo felt **melancholic** because Rosaline did not return his feelings.
	**passion**	a strong, often sexual feeling about someone. A passionate person has very strong feelings about something or a strong belief in something.	Romeo's love towards Juliet is very passionate and causes him to act impulsively.
	**patriarchy**	a system of society or government in which men hold the power and women are largely excluded from it.	Elizabethan England was a **patriarchal** society. Fathers in Elizabethan England were **patriarchs**. They had complete control over the family and would make choices for their wives and daughters
	**pragmatic**	If someone is pragmatic, they deal with things in a practical and logical way.	Juliet is **pragmatic** in her appraoch to love in the opening of the play.
	**provoke**	stimulate or incite (someone) to do or feel something, especially by arousing anger in them.	Tybalt tries to **provoke** Romeo into fighting in revenge for him attending the Capulet ball.
	**reciprocal**	If something is reciprocal it is given, felt or done in return.	Juliet **reciprocates** Romeo's love when they begin to craft a sonnet through their speech in their first meeting.
	**subvert**	to destroy, damage or undermine established rules.	Juliet **subverts** gender stereotypes by acting independently and confidently.

Romeo & Juliet - Topic Dictionary: Tier 3: Language devices

Word	Definition	In a sentence
dramatic irony	**Dramatic irony** occurs when the audience knows something before the characters on stage.	At the start of the play, the Prologue creates **dramatic irony.** The audience therefore watches the play with the expectation that the lovers will die. They therefore focus on why it happens rather than what happens.
foresahdow	**Foreshadowing** is an advance sign or warning of what is to come in the future.	Romeo and Juliet uses **foreshadowing** to emphasize the lovers' tragic fate and to make their love seem more precious. For example Friar Laurence **foreshadows** their death when he states; *'these violent delights have violent ends.'*
iambic pentameter	In poetry, **iambic pentameter**, is a line of verse composed of ten syllables arranged in five metrical feet (iambs), each of which consists of an unstressed syllable followed by a stressed syllable.	The majority of Shakespeare's 'Romeo and Juliet' is written in blank verse, or unrhymed **iambic pentameter**. This meter closely replicates the natural rhythm of spoken English. However, at key moments Shakespeare uses rhyme to add dramatic effect.
innuendo	Innuendo is a comment or phrase that alludes to something else,or has a double meaning. They are typically suggestive and sexual, and are often said to be humorous.	Mercutio uses **innuendos** throughout Romeo and Juliet, and these innuendos suggest something about his attitude to love.
motif	1. a decorative image or design, especially a repeated one forming a pattern. 2. a dominant or recurring idea in a piece of art of literature.	In 'Romeo and Juliet', Shakespeare plays with the traditional images of light versus dark and day versus night. This is repeated through the play and is called a **'motif'**.
prologue	A **prologue** or prolog (from Greek pró, "before" and lógos, "word") is an opening to a story that establishes the context and gives background details, often some earlier story that ties into the main one	The **prologue** of Romeo and Juliet serves as a guide through the entire play. Shakespeare outlines all major events by describing the ill-fated, star-crossed lovers in the hours leading up to their first meeting through their deaths.
soliloquy	A **soliloquy** is a speech in a play that the character speaks to himself or herself or to the people watching rather than to the other characters	Throughout the play, Romeo and Juliet use **soliloquies** to show the depth of their love for one another to the audience. They use **soliloquies** to discuss their hopes and dreams for the future together and to express how much they love one another
sonnet	A **sonnet**, from the Italian word sonetto meaning 'little song,' is a lyric poem usually with 14 lines of iambic pentameter and a set rhyme scheme. While **sonnets** can explore all sorts of themes, love is the most common, and the original topic of the **sonnet**.	In Shakespeare's time, most **sonnets** were about idealized romantic love. By allowing Juliet to craft a sonnet with Romeo when they first meet, rhyming her words to his, Shakespeare updates the form, giving each member of the relationship equal value.
tragedy	**Tragedy** is a genre of drama that begin in Greek Theatre. In a Shakespearean tragedy the focus in on the suffering and calamity of the tragic hero and chance and fate plays important role.	Romeo and Juliet ends in a **tragedy** by death but their death reconciles both of the feuding families

Skills Guide: For the exam question, you will be given an extract but will need to write about both the extract and the novella as a whole

☐ **Step 1: Annotate the question**:
- Focus on key words – Underline or Circle them.
- Look for the **key theme** that is the focus of the question.

☐ **Step 2: Draw the planning table:**

Key Theme:	
In the **extract**	In the **whole novel**

Add the theme to your planning table.

☐ **Step 3: Read the extract.**
- Bullet point your ideas about the **key theme** in the **extract.**
- Then bullet point links to the **key theme** in the **wider novel**.

☐ **Step 4: Thesis Statement**

Summarise your ideas from the table to detail your opinion of how the question focus is outlined in both the extract and the novel.

☐ **Step 5: Paragraph Planning**
- Number the points that you have made in the table.
- Focus on the order of your points linking between the extract and the novel.

Skills Guide: Creating an effective paragraph

Structuring a paragraph:

A01 WHAT?

***Clear topic sentence: What* is the writer presenting or character saying?**

- How could I reuse the words in the question to give myself a topic sentence?
- Have I placed it? Locate which chapter/scene/section the quotation is from.

A02 HOW?

***How does the writer* convey/ present/ develop this?**:

- What **tone** is the quotation spoken in or narrated in? And why?
- **Powerful words**: Which words and phrases convey the most meaning?
- What different **connotations** do these words/ phrases have? What do they make you imagine, think about or feel? Explore layers of meaning and nuanced interpretations.
- **Language:** Are there any other **techniques** the writer is using? What are their impact?
- **Challenge:** How do the meanings of words and techniques work together to create meaning? Explore **layers** of impact.
- **Challenge:** Is it part of a **wider method** used by the writer? Is the writer crafting a build-up or sequence of things e.g. verbs, motifs?

A03 WHY?

***Why* does the writer write it?**

- Consider context and impact: what attitudes are revealed?
- Is the writer trying to create shock or sympathy/ to expose or criticise/, to warn or to promote an attitude or feeling?
- ***Remember to link back to the key words of the question here*.**

Skills Guide: Model paragraphs

How does Shakespeare present conflict?

A01 WHAT?

A02 HOW?

A03 WHY?

Grade 6 paragraph: Clear and developed analysis

In Act 1 Scene 1 of Romeo and Juliet, Shakespeare presents conflict as the fault of aggressive male attitudes. During the brawl, the conflict and tension heightens when Tybalt appears and refuses to help Benvolio "keep the peace" and stop the fighting. Tybalt shouts "What drawn and talk of peace? I hate the word as I hate hell, all Montagues and thee!" Tybalt is speaking in an angry and aggressive tone when he questions the idea of "peace?". The list of three that builds from "hell" to "Montagues" and "thee" shows that he targets his aggression at Benvolio directly and the way he reacts to Benvolio makes him a catalyst to the conflict as more men join the fight when they see Tybalt, a leader in the Capulet family join. Through Tybalt's character and desire for more conflict, Shakespeare could be challenging male attitudes at the time that valued fighting for honour over peace-keeping. Shakespeare is showing that it is the male attitudes that are the problem and reason for the conflict that then impacts the rest of the events of the play.

A01 WHAT?

A02 HOW?

A03 WHY?

Grade 9 paragraph: Perceptive analysis

In Act 1 Scene 1 of Romeo and Juliet, Shakespeare purposely opens the play with a brawl between the two families to expose aggressive male attitudes. In an Elizabethan society that valued familial honour over peace-keeping, we see physical conflict becoming a means to promote status. The tension and conflict gradually builds in the opening scene from being between serving-men to a heightened point when Tybalt appears. Tybalt refuses Benvolio's plea to "keep the peace" and stop the fighting when he shouts defiantly "What drawn and talk of peace?" Tybalt is speaking in an aggressive tone when he questions the idea of "peace?", partly because Benvolio's sword is already drawn, but also because he shows antagonistic character traits and wants to fight. Tybalt even shows repulsion to the idea of peace when he says "I hate the word as I hate hell, all Montagues and thee!" The list of three that builds from "hell" to "Montagues" and "thee" shows that he targets his aggression at Benvolio directly. The comparison to "hell" is a biblical reference and whilst Tybalt is speaking figuratively, it does show that he views the Montagues as abhorrent and as deserving of eternal condemnation and pain. As the nephew of Lord Capulet and therefore of high status in the family, Tybalt's actions influence others in the family and when he challenges Benvolio, Tybalt becomes a catalyst that intensifies the conflict. This pattern is repeated in Act 3 when Tybalt again antagonistically seeks out conflict and his actions catalyse further tragedy. Through Tybalt's character and desire for more conflict, Shakespeare challenges male attitudes at the time that valued honour and status above all. From the opening scene, the conflict becomes the backdrop to the play and fuels the tragic outcome of many characters; both male antagonists like Tybalt as well as the two lovers. Shakespeare is therefore highlighting conflict and male-Elizabethan attitudes that desired status, honour and masculine reputation as greater social issues – perhaps he is warning his audience to assess their values.

Stewardship: How do we Make Change?

Year 10 Spring 1

Big Idea: Community
How do we all live together?

What is Stewardship?	What are Pressure Groups?	Who Fights for Change?	What are the Obstacles to Change?	What Needs to Change?	How do we Make Change?
Key learning points - Stewardship is the responsibility to look after something - Good stewards are kind, calm, thoughtful and good leaders - Christians have a duty of stewardship - We are all stewards to look after the planet	**Key learning points** - Pressure groups put pressure on the government or on businesses to make change - They can be insiders, respected and valued by the government, or outsiders, who use protest or even confrontation to achieve their goals	**Key learning points** - Young people can be activists and fight for change in the world - Examples include Tokata Iron Eyes and Marcus Rashford, who have used their platforms to make demands of world leaders and politicians	**Key learning points** - The establishment, the people in charge of running things, are naturally suspicious of change because they are uncertain of its outcome - People fighting for change face obstacles including violent, prejudice and social resistance	**Key learning points** - Inequality is one key issue facing the UK at the moment - Making change involves identifying issues, assessing ways of changing them and evaluating what obstacles you will face in your plan	**Key learning points** - Making change is not always easy, because the establishment oppose it, but there are many ways to try - These include joining pressure groups, using any kind of following we have, and careful planning to help achieve social justice
stewardship 	pressure groups 	activist 	establishment 	inequality 	social justice 

Lifeology | Stewardship: How do we Make Change? | Topic Dictionary

Image	Word*	Definition	In a sentence . . .
	**stewardship**	The responsibility of looking after something.	Now we're in Year 10, we have a duty of **stewardship** to the lower years who look to us for guidance and help sometimes.
	pressure groups	An organisation that puts pressure on the government or businesses to change their decisions.	Joining a **pressure group** is one way for young people to make change in society, even if they can't vote.
	activist	Someone who tries to make a change in the world.	Anyone can be an **activist** if they stand up for what they believe in and try to make a difference to the world.
	establishment	The people who have power in running something.	In this country, the **establishment** is generally made up of older, richer people.
	inequality	The gap in wealth between the richest people and the average person.	Having very high levels of **inequality** is very bad for society as it means the richest are hoarding wealth.
	social justice	Fairness in how people are treated in society.	Achieving true **social justice** takes a lot of activism.

Key Lifeology words are in **bold*

Skills Guide: Lifeology Assessments

This is your chance to show off **as much of your knowledge as possible** from the **last five lessons**.

1. When the teacher instructs you, use **10 minutes** to **fill in the planning worksheet**. This is your chance to **look back through your book** and gather all the right answers. The sheet is for you to refer to during your assessment, so you don't need to use full sentences. The work only has to make sense to you! Look back at your **last assessment** and check the feedback here!

1. Complete the **assessment**. You will have **15 minutes** to produce a **piece of writing** to answer the question you've been studying for the last five weeks. Write like you're in an English lesson - **full sentences, proper spelling and grammar**, and **paragraphs**. Make sure to mention **as much as you can** from your **planning sheet**. The order you mention it in doesn't matter, **so long as it's all there**.

1. Use a **green pen** to **self-assess** your work. Compare the **assessment** you just did with the **success criteria** on the **feedback sheet**. Remember to **tick your work** wherever you're awarding a mark!

As a Year 10 Lifeology Student, I know...

By the end of Spring 1

1. Stewardship is the responsibility to look after something, for example the planet, and requires kindness and thoughtfulness. ☐

2. Pressure groups put pressure on the government and businesses to make changes that they'd like to see. ☐

3. Young people can be activists and make demands of politicians and leaders to make the changes they want to see in the world. ☐

4. The establishment are suspicious of change, and those trying to make change will face obstacles in their fight. ☐

5. If we want to fight against inequality, we have to identify what the key issues are and what obstacles to change there will be. ☐

6. Making change isn't always easy, but through joining groups and careful planning we can have a greater chance at success. ☐

Respectful Relationships: What is Safe Sex?

Year 10 Spring 2

Big Idea: Care
How do I keep myself safe?

What does Consent Look Like?	When are you Ready?	What are the Emotional Impacts of Sex?	What are STIs?	Does Contraception Work?	What is Safe Sex?
Key learning points - Consent is to give permission for something to happen - Consent can be given in different ways, everyone needs to give it, it's only given to specific things, and it can be taken away at any time	**Key learning points** - Being ready for sex means you have a mature attitude, where you can make sensible and reasonable decisions about your own behaviour - You may feel pressure from peers or your partner in engaging with sex	**Key learning points** - Sex can make you feel different emotions, good or bad - Self worth is what you think of yourself and having sex can impact how you see yourself - If you feel negatively after sex it is important to self reflect	**Key learning points** - STIs are infections passed between people through bodily fluids, generally during sex - The key STIs are chlamydia, gonorrhoea, genital warts, herpes, lice, syphilis and HIV - Many have no signs, so get tested regularly	**Key learning points** - The key methods of contraception are the reproductive pill, condoms, IUDs, the withdrawal method (which doesn't work) and abstinence - Finding the right method of contraception is key, but you should always use it to stay safe	**Key learning points** - Safe sex is sex with the lowest possible risks of STIs, and of unwanted pregnancy - But safe sex is also about protecting our emotions by carefully deciding if we are ready to have sex and being prepared to handle the emotional impact it has on us
consent 	mature 	self-reflection 	STIs 	contraception 	informed 

Lifeology | Respectful Relationships: What is Safe Sex? | Topic Dictionary

Image	Word*	Definition	In a sentence . . .
	**consent**	To give permission for something to happen.	A person must get **consent** every time they engage in sexual activity.
	mature	Able to make sensible and reasonable decisions about your own behaviour.	Everyone becomes **mature** naturally, often because of experiences they have in life.
	self-reflection	Thinking about your feelings, and the reasons for them.	Many people struggle with **self-reflection**, but you can't get better if you don't do it.
	STIs	Sexually transmitted infections you can catch through sexual contact.	With modern medicine, most **STIs** can actually be treated quickly if they're discover quickly.
	contraception	Methods of avoiding an STI and/or getting pregnant.	You can access **contraception** from visiting a local Sexual Health Clinic.
	informed	When you know everything you need to know about something.	Being **informed** is crucial to making sensible decisions and keeping yourself safe.

Key Lifeology words are in **bold*

Skills Guide: Lifeology Assessments

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As a Year 10 Lifeology Student, I know...

By the end of Spring 2

1. Consent is extremely important in relationships. It can be given - and taken away - in many different ways. ☐

2. It's difficult but important to know if you're ready to have sex. It can make you feel lots of emotions, both good and bad. ☐

3. Sex and self-worth have a complicated relationship. The only way to understand it fully is to reflect on your feelings. ☐

4. STIs are infections transmitted through sex. Most are easily cured if identified quickly, which means regular testing is important. ☐

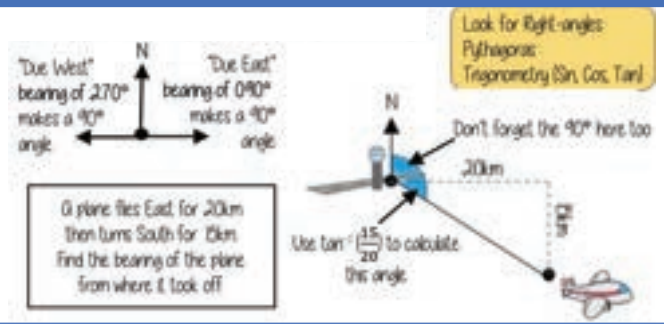
5. We should always use contraception to avoid unwanted pregnancy and catching STIs from sex. ☐

6. Safe sex is about being physically safe, but it's also about protecting your emotions and feelings from being hurt. ☐

Y10 Spring Term 1: Block 1 – Angles and bearings

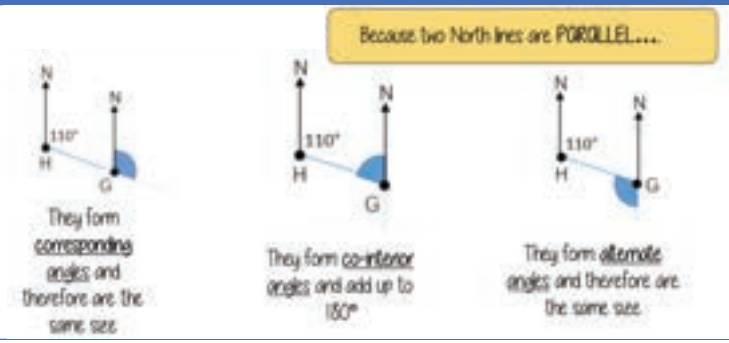
Previous Block: Simultaneous Equations

I can draw scale diagrams using bearings

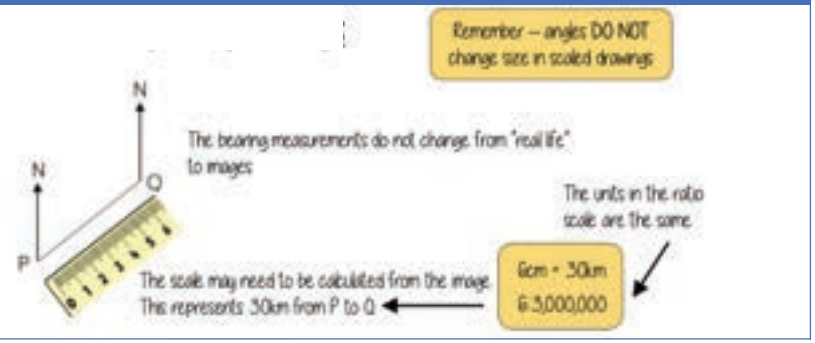


Next Block: Working with circles

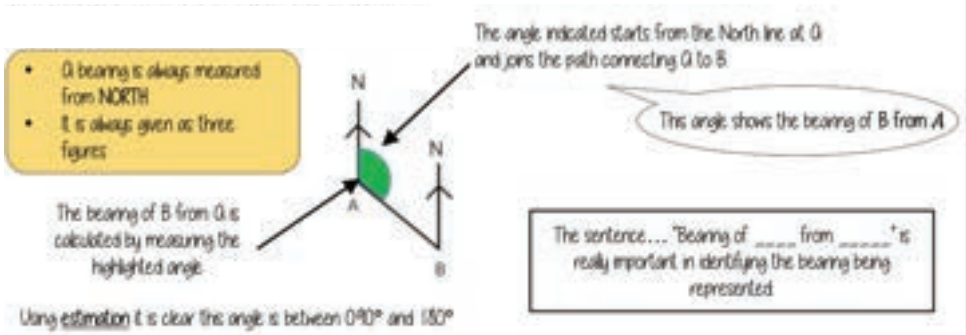
I can calculate bearings using angle rules



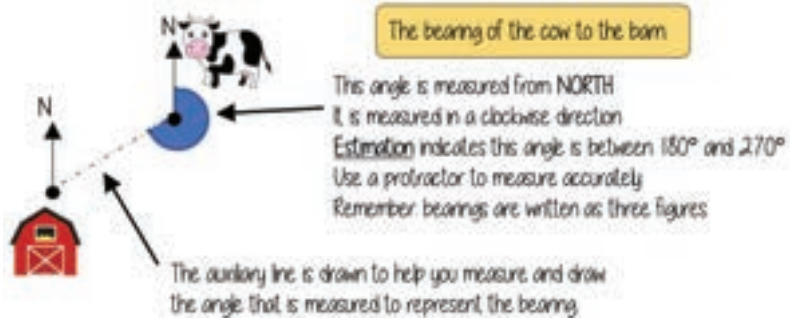
I can draw scale diagrams using bearings



I can understand and represent bearings



I can measure and read bearings

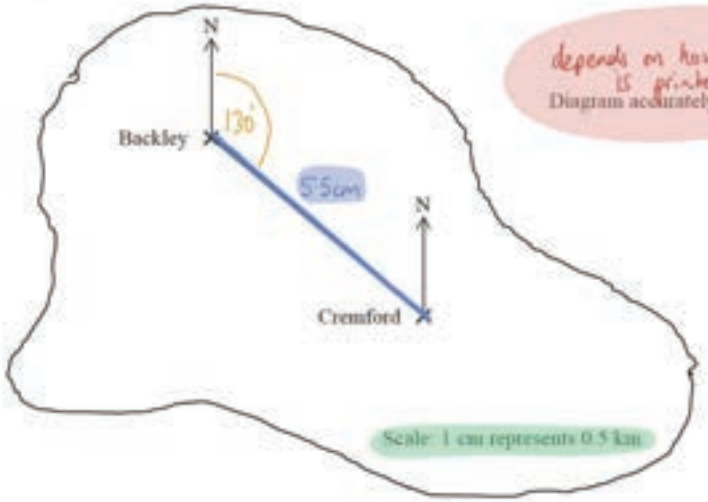


Maths | Angles and bearings | Topic Dictionary

Key Word	Definition	In a sentence
alternate angles	Angles on opposite sides of a transversal crossing two parallel lines. They are equal when the lines are parallel.	When two parallel lines are cut by a transversal, the **alternate** angles are equal in measure.
angle	The amount of rotation between two intersecting lines, measured in degrees.	The **angle** between the two intersecting lines is 86 degrees.
bearing	A direction measured clockwise from north, written as a three-digit angle.	The **bearing** of point B from point A is measured as 045°, indicating the direction from A to B.
clockwise	A rotation or movement in the same direction as a clock's hands.	Rotate the triangle **clockwise** by 90 degrees around the centre of rotation.
co-interior angles	Angles on the same side of a transversal crossing two parallel lines. Their sum is 180° when the lines are parallel.	The **co-interior** angles on the same side of the transversal add up to 180° when the lines are parallel.
corresponding angles	Angles in the same position at intersections of a transversal with two lines. They are equal when the lines are parallel.	The **corresponding** angles on the two parallel lines are equal.
parallel	Lines that never meet and are always the same distance apart.	The two lines are **parallel**, as shown by the arrow's notation on the lines.
perpendicular	Lines that intersect at right angles (90°).	The two line segments are **perpendicular**, forming a right angle where they intersect.
scale factor	A multiplier used to change the size of a shape in an enlargement.	In this transformation, the **scale factor** is 2, meaning each side of the figure will be doubled in length.
similar	Shapes that have the same shape but different sizes, with equal angles and proportional sides.	Two triangles are **similar** if they have the same shape, with corresponding angles equal and corresponding sides proportional.

Maths | Angles and bearings | Skills Guide

Here is a map of an island.



depends on how this is printed
Diagram accurately drawn

A straight road joins the two villages, Backley and Cremford.

(a) Work out the real distance between the two villages.

5·5 x 0·5 = 2·75 km

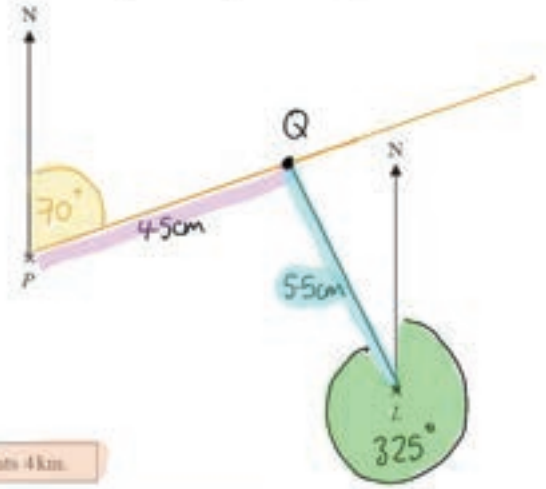
(2)

(b) Find the bearing of Cremford from Backley.

130°

(1)

The accurate scale drawing shows the positions of port P and a lighthouse L.



Scale: 1 cm represents 4 km.

Aleena sails her boat from port P on a bearing of 070°

She sails for $1\frac{1}{2}$ hours at an average speed of 12 km/h to a port Q.

1·5 x 12 = 18

Find

(i) the distance, in km, of port Q from lighthouse L.

18 ÷ 4 = 4·5cm

(ii) the bearing of port Q from lighthouse L.

5·5 x 4 = 22

Your answers may be slightly different depending on how accurately you measure. This question may print to a different size than it originally did which may also affect your answer.

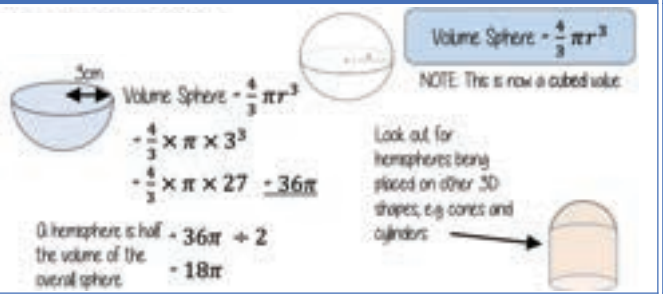
distance QL = 22 km

bearing of Q from L = 325°

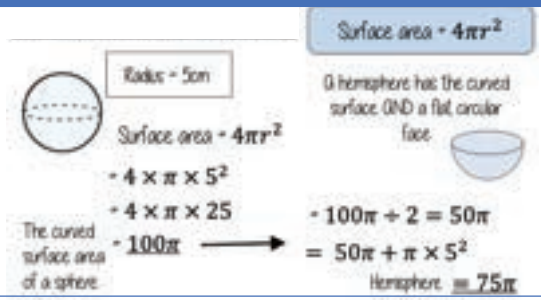
Y10 Spring Term 1: Block 2 – Working with circles

Previous Block: Angles and bearings

I can calculate the volume of spheres

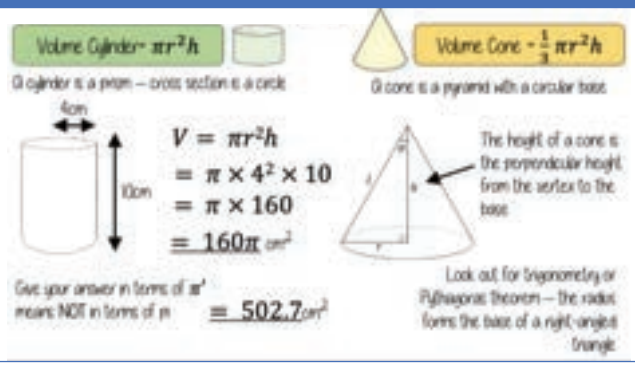


I can calculate the volume of spheres

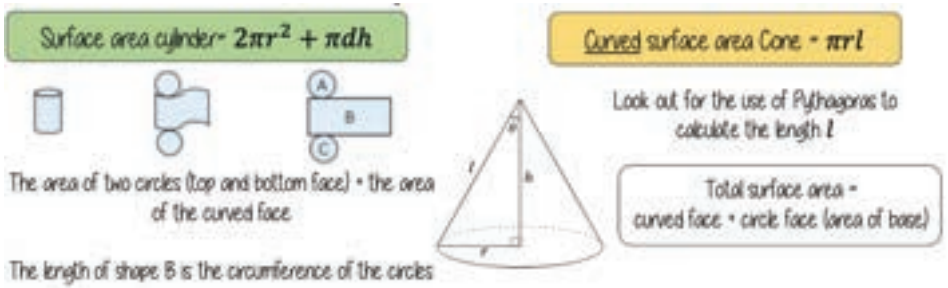


Next Block: Vectors

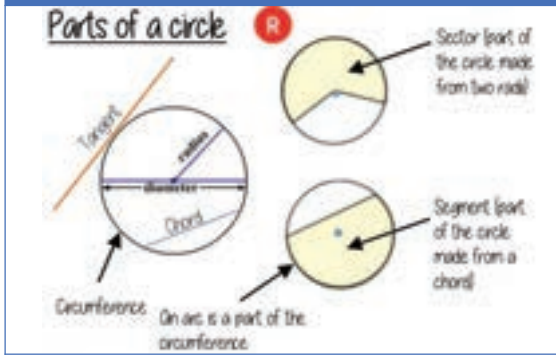
I can calculate the volume of cylinders and cones



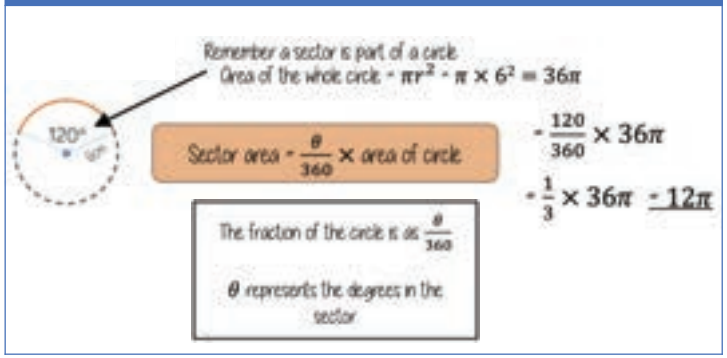
I can calculate the surface area cylinders and cones



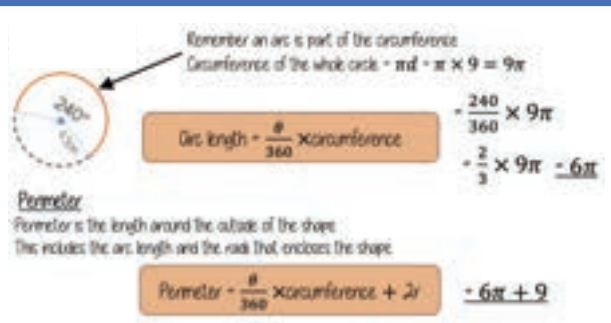
I can recognise and label parts of a circle



I can calculate the area of a sector



I can calculate the length of an arc

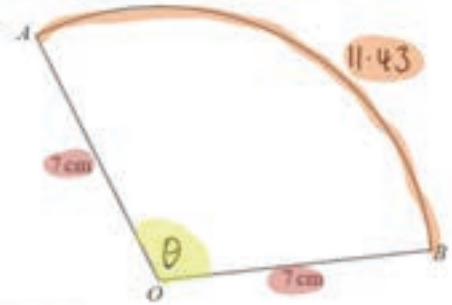


Maths | Working with circles | Topic Dictionary

Key Word	Definition	In a sentence
area	The amount of space inside a two-dimensional shape, measured in square units.	You find the **area** of a circle by using the formula $A = \pi r^2$
arc	A part of the circumference of a circle.	You find the length of **arc** by using the formula $L = \frac{\theta}{360} \times \pi r^2$
chord	A straight-line segment joining two points on a circle's circumference.	A **chord** is a straight line connecting two points on the circumference of a circle.
circumference	The total distance around the edge of a circle.	You find the **circumference** of a circle by using the formula $C = \pi d$ or $C = 2\pi r$
diameter	A straight line passing through the centre of a circle, connecting two points on the circumference; it is twice the length of the radius.	If the radius of a circle is 4, then the **diameter** of the circle is 8.
frustum	A solid formed by cutting a cone or pyramid with a plane parallel to its base, resulting in two circular or polygonal faces.	A **frustum** is formed by slicing a cone with a plane parallel to its base.
radius	A straight line from the centre of a circle to any point on its circumference.	The **radius** is the distance from the centre to any point on the circumference of a circle.
segment	A region of a circle bounded by a chord and the arc that lies between the two endpoints of the chord.	A **segment** is the region between a chord and the corresponding arc.
sector	A region of a circle bounded by two radii and the arc between them.	You find the area of a **sector** by using the formula $A = \frac{\theta}{360} \times \pi r^2$
surface area	The total area of the surface of a three-dimensional object.	You find the **surface area** of a sphere by using the formula Surface Area $= 4\pi r^2$
tangent	A straight line that touches a curve at exactly one point without crossing it.	A **tangent** is a line that touches the circle at exactly one point and is perpendicular to the radius at that point.

Maths | Working with circles | Skills Guide

OAB is a sector of a circle with centre O and radius 7 cm.



The area of the sector is 40 cm²

Calculate the perimeter of the sector.
Give your answer correct to 3 significant figures.

Area of sector = $\frac{\theta}{360} \times 7^2 \times \pi = 40$

$\frac{\theta}{360} \times 49\pi = 40$

$\frac{\theta}{360} = \frac{40}{49\pi}$

$\theta = 360 \times \frac{40}{49\pi}$

$\theta = 93.544°$

Circumference of circle = $2 \times 7 \times \pi = 14\pi$

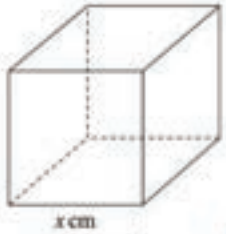
Arc length of sector = $14\pi \times \frac{93.544}{360}$

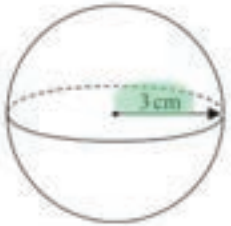
$= 11.43\text{cm}$

Perimeter = $11.43 + 7 + 7$

$= 25.4289$

The diagram shows a cube with edges of length x cm and a sphere of radius 3 cm.





Area of face = x^2

The surface area of the cube is equal to the surface area of the sphere.

Show that $x = \sqrt{k\pi}$ where k is an integer.

Surface Area of sphere = $4 \times \pi \times 3^2 = 4 \times 9 \times \pi = 36\pi$

Surface Area of Cube = 36π

Area of one square face of cube = $36\pi \div 6 = 6\pi$

$x^2 = 6\pi$

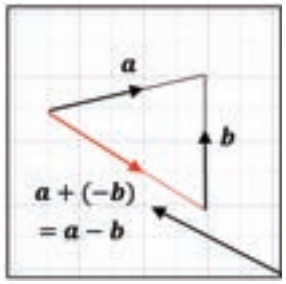
$x = \sqrt{6\pi}$

Y10 Spring Term 1: Block 3 – Vectors

Previous Block: Working with circles

Next Block: Ratio and fractions

I can draw and understand subtraction of vectors



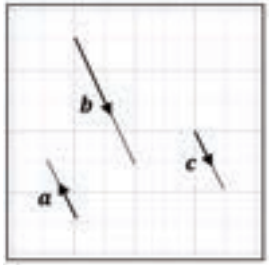
$\boldsymbol{a} = \begin{pmatrix}5\\1\end{pmatrix}$ $\boldsymbol{b} = \begin{pmatrix}0\\4\end{pmatrix}$

$\boldsymbol{a} + (-\boldsymbol{b}) = \begin{pmatrix}5 + -0\\1 + -4\end{pmatrix} = \begin{pmatrix}5\\-4\end{pmatrix}$

The resultant is $\boldsymbol{a} - \boldsymbol{b}$ because the vector is in the opposite direction to b which needs a scalar of -1

I can draw and understand vectors multiplied by a scalar

Parallel vectors are scalar multiples of each other



$\boldsymbol{a} = \begin{pmatrix}-1\\2\end{pmatrix}$ $\boldsymbol{b} = \begin{pmatrix}2\\-4\end{pmatrix}$ $\boldsymbol{c} = \begin{pmatrix}1\\-2\end{pmatrix}$

$\boldsymbol{b} = 2 \times \boldsymbol{c} = 2\boldsymbol{c}$

Multiply **c** by 2 this becomes **b**. The two lines are parallel

$\boldsymbol{a} = -1 \times \boldsymbol{c} = -\boldsymbol{c}$

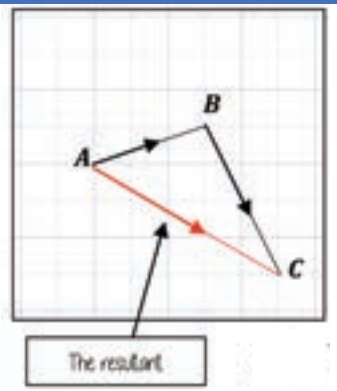
The vectors **a** and **c** are also parallel. A negative scalar causes the vector to reverse direction

$\boldsymbol{b} = -2 \times \boldsymbol{a} = -2\boldsymbol{a}$

I can draw and understand addition of vectors

$\overrightarrow{AB} = \begin{pmatrix}3\\1\end{pmatrix}$

$\overrightarrow{BC} = \begin{pmatrix}2\\-4\end{pmatrix}$



$\overrightarrow{AB} + \overrightarrow{BC}$

$= \begin{pmatrix}3\\1\end{pmatrix} + \begin{pmatrix}2\\-4\end{pmatrix}$

$= \begin{pmatrix}3+2\\1+-4\end{pmatrix}$

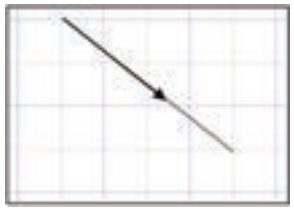
$\overrightarrow{AC} = \begin{pmatrix}5\\-3\end{pmatrix}$

$\overrightarrow{AB} + \overrightarrow{BC} = \overrightarrow{AC} = \begin{pmatrix}5\\-3\end{pmatrix}$

I can understand and represent vectors

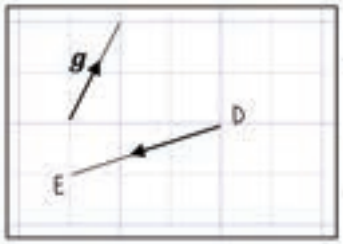
Column vectors have been seen in translations to describe the movement of one image onto another

Movement along the x-axes → $\begin{pmatrix}4\\-3\end{pmatrix}$ ← Movement along the y-axes



Vectors show both direction and magnitude

The arrow is pointing in the direction from starting point to end point of the vector	The direction is important to correctly write the vector
The magnitude is the length of the vector (This is calculated using Pythagoras' theorem and forming a right-angled triangle with auxiliary lines)	The magnitude stays the same even if the direction changes



Vectors can also be written in bold lower case, so **g** represents the vector $\boldsymbol{g} = \begin{pmatrix}1\\2\end{pmatrix}$

Vector notation $\overrightarrow{DE}$ is another way to represent the vector joining the point D to the point E

$\overrightarrow{DE} = \begin{pmatrix}-3\\-1\end{pmatrix}$

The arrow also indicates the direction from point D to point E

Maths | Vectors | Topic Dictionary

Key Word	Definition	In a sentence
vector	A **vector** is a quantity that has both magnitude (size) and direction	A **vector** $\mathbf{v} = \begin{pmatrix} 4 \\ -3 \end{pmatrix}$ represents a movement of 4 units to the right and 3 units down from the origin.
collinear	Points are collinear if they lie on the same straight line.	The points A(1, 2), B(3, 4), and C(5, 6) are **collinear** because they all lie on the same straight line.
justify	To justify means to explain why your answer is correct, showing your reasoning.	Use your calculations and diagram to **justify** your answer.
magnitude	The magnitude of a vector is its length or size.	The **magnitude** of the vector $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$ is calculated as $\sqrt{3^2 + 4^2} = 5$
prove	To prove means to show that something is true by explaining or using logical steps.	**Prove** that vectors $\mathbf{a} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}$ are parallel.
resultant	The resultant is the single vector that represents the combined effect of two or more vectors added together.	Find the **resultant** of the vectors $\mathbf{a} = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$
scalar	A scalar is a quantity that only has size (magnitude), but no direction.	Multiply $\mathbf{v} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ by a scalar of -2.
show	To show means to demonstrate how you got your answer, step by step.	**Show** that $\overrightarrow{BD}$ is parallel to $\overrightarrow{EF}$

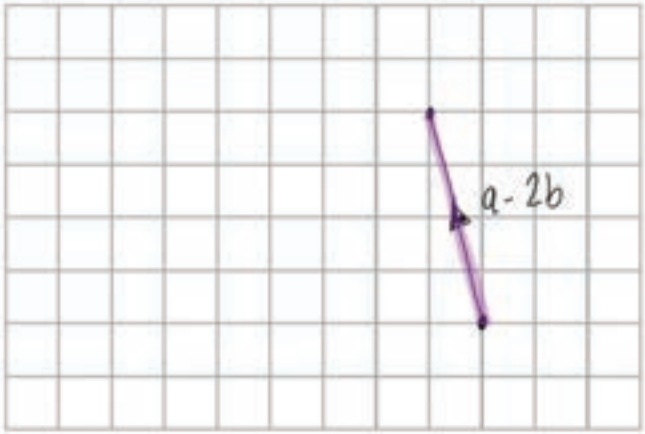
Maths | Vectors | Skills Guide

Here are two column vectors.

$\mathbf{a} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 3 \\ -1 \end{pmatrix}$

On the grid below, draw and label the vector $\mathbf{a} - 2\mathbf{b}$

$\begin{pmatrix} 5 \\ 2 \end{pmatrix} - \begin{pmatrix} 6 \\ -2 \end{pmatrix} = \begin{pmatrix} -1 \\ 4 \end{pmatrix}$



$\mathbf{a} = \begin{pmatrix} 4 \\ 5 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$

Work out $\mathbf{a} - 2\mathbf{b}$ as a column vector.

$\begin{pmatrix} 4 \\ 5 \end{pmatrix} - \begin{pmatrix} 6 \\ 4 \end{pmatrix} = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$

$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$

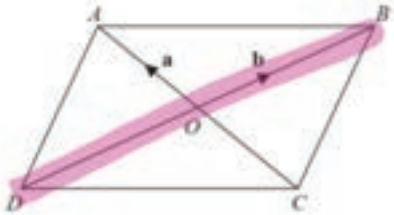
$\mathbf{a} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -1 \\ 7 \end{pmatrix}$

Work out $2\mathbf{a} + \mathbf{b}$ as a column vector.

$2\mathbf{a} + \mathbf{b}$

$\begin{pmatrix} 10 \\ 4 \end{pmatrix} + \begin{pmatrix} -1 \\ 7 \end{pmatrix} \quad \begin{pmatrix} 9 \\ 11 \end{pmatrix}$

$\begin{pmatrix} 9 \\ 11 \end{pmatrix}$



$ABCD$ is a parallelogram.
The diagonals of the parallelogram intersect at O.

$\overrightarrow{OA} = \mathbf{a}$ and $\overrightarrow{OB} = \mathbf{b}$

(a) Find, in terms of $\mathbf{b}$, the vector $\overrightarrow{DB}$.

$2\mathbf{b}$

(1)

(b) Find, in terms of $\mathbf{a}$ and $\mathbf{b}$, the vector $\overrightarrow{AB}$.

$-\mathbf{a} + \mathbf{b}$

(1)

(c) Find, in terms of $\mathbf{a}$ and $\mathbf{b}$, the vector $\overrightarrow{AD}$.

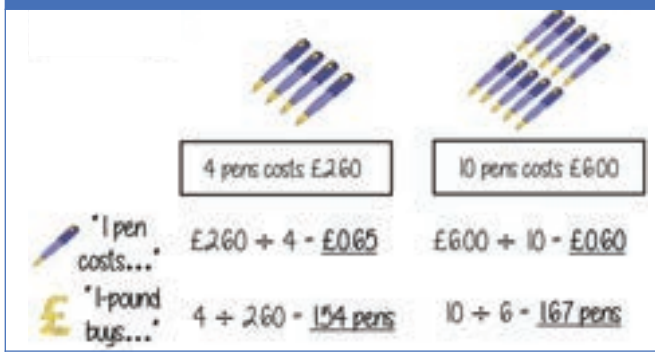
$-\mathbf{a} - \mathbf{b}$

(1)

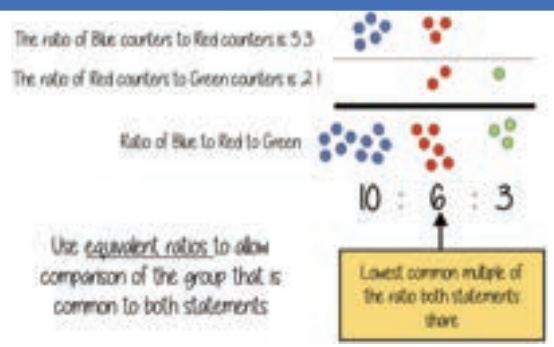
Y10 Spring Term 2: Block 4 – Ratio and fractions

Previous Block: Vectors

I can solve best buy problems

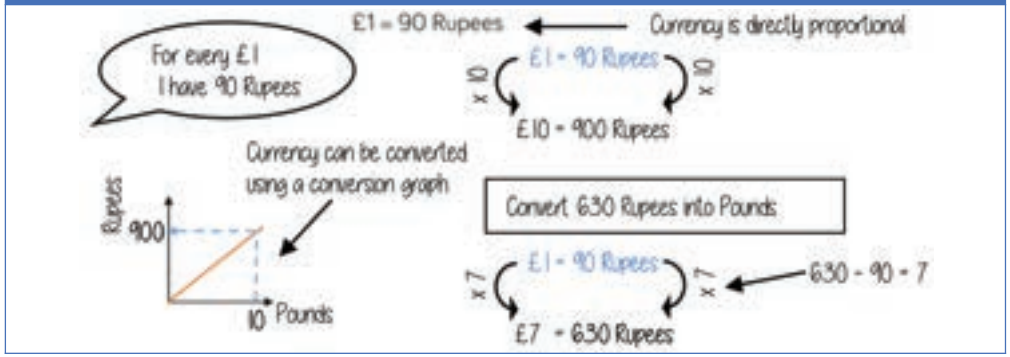


I can combine ratios to solve problems

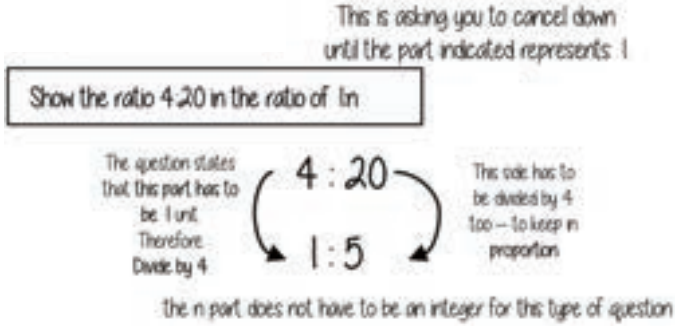


Next Block: Percentages and interest

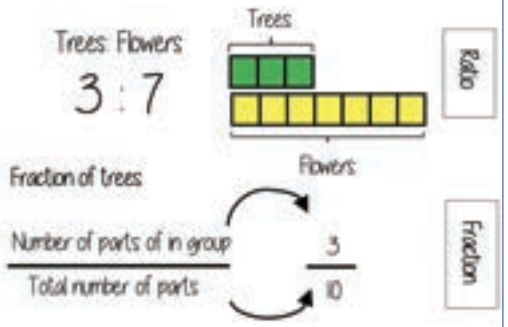
I can solve problems with currency conversions



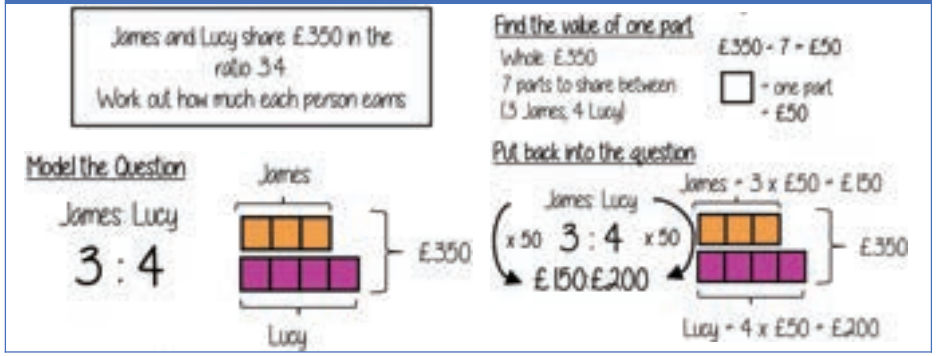
I can write a ratio in the form 1:n or n:1



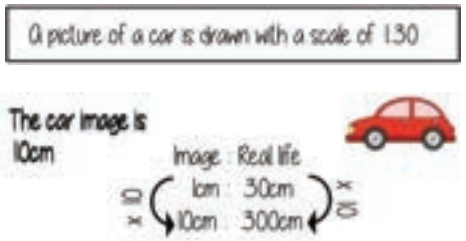
I can link ratios and fractions



I can share amounts in a given ratio



I can link ratio and scale



Maths | Ratio and fractions | Topic Dictionary

Key Word	Definition	In a sentence
equation	A mathematical statement that shows two expressions are equal, often including variables and constants	An **equation**, like $2x + 3 = 7$, shows a relationship where both sides are equal.
equivalent	Having the same value, even if expressed in different forms.	The fractions $\frac{2}{4}$ and $\frac{1}{2}$ are **equivalent** because they have the same value.
exchange rate	The ratio at which one quantity (e.g., currency) is exchanged for another.	The **exchange rate** tells us how much one euro is worth in dollars.
express	To represent a number, relationship, or formula in a specific form	We can **express** 12 as a product of its factors: $12=3 \times 4$ $2 = 3 \times 4$
gradient	The rate of change	The **gradient** of the line $y = 2x + 1$ is 2, which shows the steepness of the line.
integer	A whole number that can be positive, negative, or zero	An **integer** is a whole number, such as -5, 0, or 7.
scale	The ratio or factor used to resize quantities or to map one set of values to another	On a map, a **scale** of 1:100 means 1 centimetre represents 100 centimetres in real life.
share	To divide or distribute a quantity into parts, often equally.	If you have 12 apples and **share** them equally among 4 people, each person gets 3 apples
simplify	To reduce a mathematical expression or fraction to its simplest form	To **simplify** $\frac{8}{12}$, we divide the numerator and denominator by 4 to get $\frac{2}{3}$
variable	A symbol, usually a letter, that represents an unknown or changeable quantity in mathematics.	In the equation $2x + 3 = 7$, the **variable** x represents the unknown value.

Maths | Ratio and fractions | Skills Guide

In London, 1 litre of petrol costs 108.9p
In New York, 1 US gallon of petrol costs $2.83

1 US gallon = 3.785 litres
£1 = $1.46

In which city is petrol better value for money, London or New York?
You must show your working.

New York

1 gallon = 3.785 litres = $2.83

3.785 litres = £1.94 ÷ 1.46

London

1 litre = 108.9p

3.785 litres = £4.12 x3.785

x3785

New York is cheaper.

There are only blue pens, green pens and red pens in a box.

The ratio of the number of blue pens to the number of green pens is 2 : 5
The ratio of the number of green pens to the number of red pens is 4 : 1

There are less than 100 pens in the box.

What is the greatest possible number of red pens in the box?

B : G : R

2 : 5

4 : 1

8 : 20 : 5 (33)

B : G : G
8 : 20 : 5 (33)
16 : 40 : 10 (66)
24 : 60 : 15 (99)

The LCM of 5 and 4 is 20.

15

Given that $\frac{a}{b} = \frac{2}{5}$ and $\frac{b}{c} = \frac{3}{4}$

find $a : b : c$

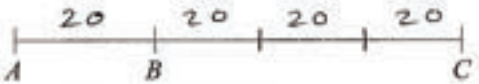
a : b = 2 : 5

b : c = 3 : 4

a : b : c
2 : 5
3 : 4
6 : 15 : 20

6 : 15 : 20

ABC is a straight line.



The length of BC is three times the length of AB.

AC = 80 metres.
Work out the length BC.

3 : 1
BC : AB

$\frac{80}{4} = 20$

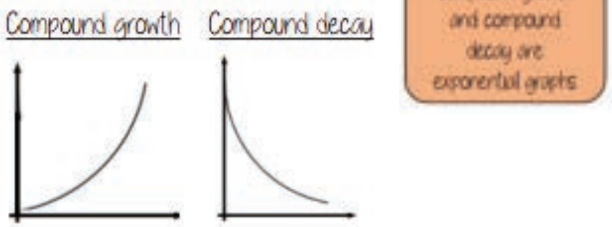
$3 \times 20 = 60$

60 metres

Y10 Spring Term 2: Block 5 – Percentage and Interest

Previous Block: Ratio & Fractions

I can solve problems with growth and decay



I can find the original value

Original amount × Multiplier = Final Value

In a test Lucy scored 60% of her questions correctly. Her score was 24. How many questions were on the test.

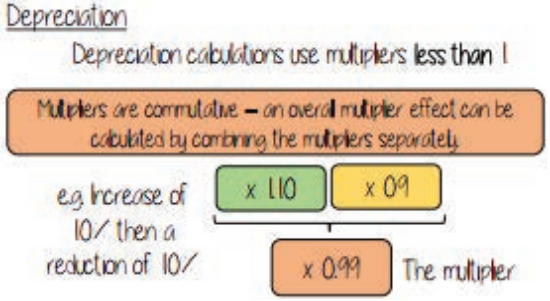
24 ÷ 0.6 = 40 marks

10% = 6

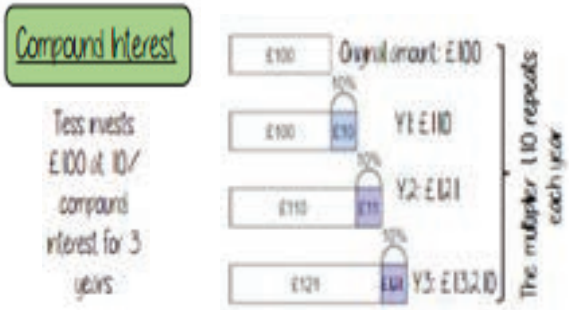
100% = 40

Next Block: Probability

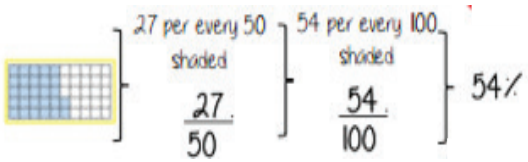
I can calculate repeated percentage change



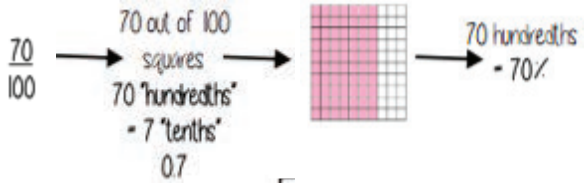
I can calculate simple and compound interest



I can express one number as a percentage.



I can Convert and compare fractions, decimals & percentages.



I can work out percentage of amounts

Find $\frac{3}{5}$ of £60

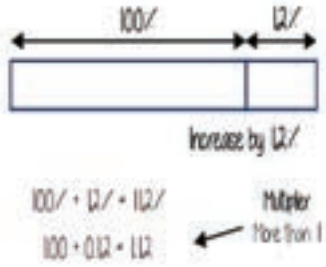
$\frac{3}{5}$ = 60% = 0.6

60% of £60

= 0.6 x 60

= £36

I can increase and decrease by a given percentage



Maths | Percentage and Interest | Topic Dictionary

Key Word	Definition	In a sentence
compound Interest	calculating interest on both the amount plus previous interest.	**Compound interest** helps your money grow faster because you earn interest on both what you started with and the interest it has already earned.
decay	the process of reducing an amount by a consistent percentage rate over time.	Money can **decay** in value when things get more expensive, and your money doesn't earn enough to keep up.
depreciation	a decrease in the value of something over time.	**Depreciation** happens when things you own, like a bike or phone, lose value and aren't worth as much as when you bought them.
equivalent	of equal value.	If you exchange dollars for another currency, the amount you get in return is the **equivalent** value in that currency
exponent	how many times we use a number in multiplication. It is written as a power.	In the expression 2^5, the **exponent** shows that 2 is multiplied by itself five times.
growth	where a value increases in proportion to its current value such as doubling.	The **growth** of your savings depends on how much money you put in and how long you leave it to earn interest.
multiplier	the number you are multiplying by.	In math, a **multiplier** helps you figure out how much bigger a number gets when you multiply it.

Maths | Percentage and Interest | Skills Guide

Find 15% of 300

100% = 300 ÷10
10% = 30 ÷2
5% = 15
15% = 45

Robin buys a watch for £80
He sells the watch for £56

Work out his percentage loss.

Loss = 80 - 56 = 24

$100 \times \frac{24}{80} = 100 \times 0.3 = 30\%$

Northern Bank has two types of account.
Both accounts pay compound interest.

Cash savings account	Shares account
Interest 2.5% per annum	Interest 3.5% per annum

Ali invests £2000 in the cash savings account.
Ben invests £1600 in the shares account.

(a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

Cash

$2000 \times 1.025^3 = £2153.78$

$- 2000 = £153.78$ interest

Shares

$1600 \times 1.035^3 = £1773.95$

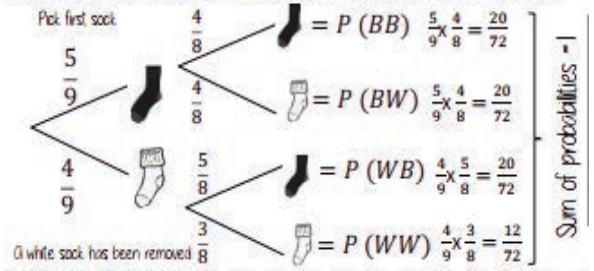
$- 1600 = £173.95$ interest

Ben (Shares)

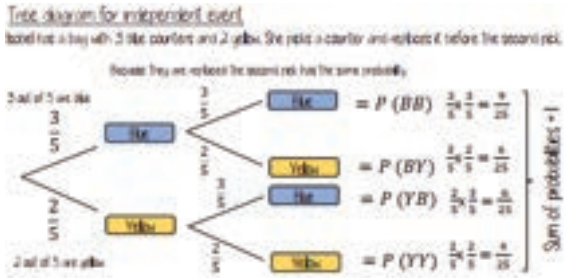
Y10 Spring Term 2: Block 6 – Probability

Previous Block: Percentages and Interest

I can use tree diagrams.

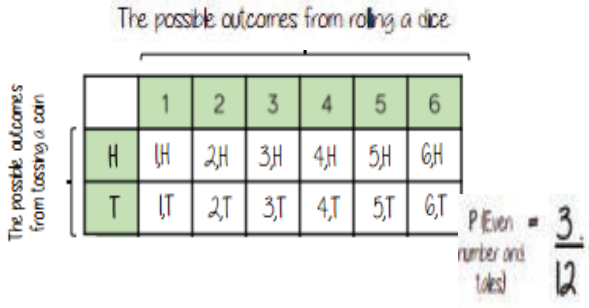


I can calculate probability for independent event

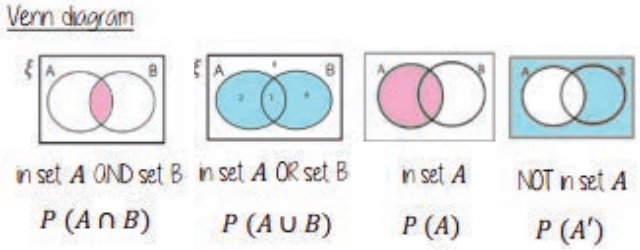


Next Block: Collecting, representing & interpreting Data

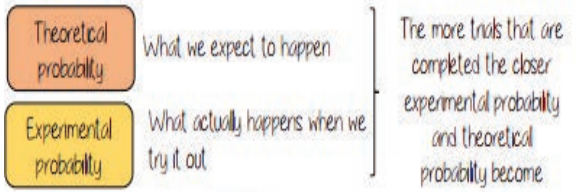
I can use sample space diagrams.



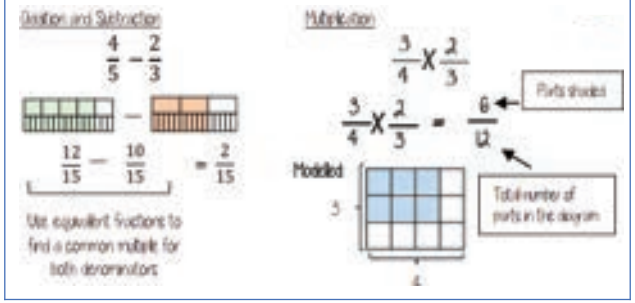
I can use Venn diagrams and frequency trees.



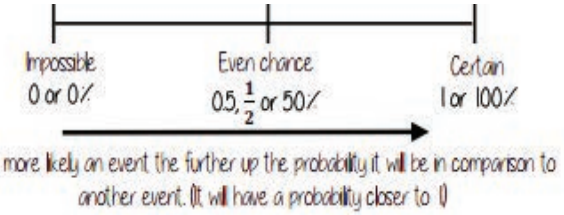
I can estimate probabilities.



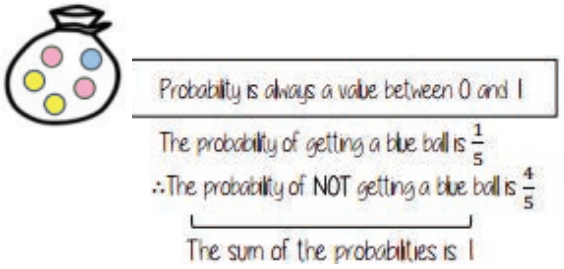
I can add, subtract and multiply fractions.



I can find probabilities using likely outcomes.



I can use probability that sums to 1.



Maths | Probability | Topic Dictionary

Key Word	Definition	In a sentence
event	One or more outcomes from an experiment.	In probability, an **event** is something that can happen, like rolling a 6 on a dice.
expected value	The value/ outcome that a prediction would suggest you will get.	The **expected value** of rolling a fair die is 3.5, because that's the average of all the possible outcomes.
intersection	Elements (parts) that are common to both sets.	The **intersection** of the two number lines shows the common values they share.
Outcome	The result of an experiment.	The **outcome** of flipping a coin could be either heads or tails.
Product	The answer when two or more values are multiplied together.	The **product** of 4 and 5 is 20.
Systematic	Ordering values or outcomes with a strategy and sequence.	She used a **systematic** method to solve all the math problems in order.
Union	The combination of elements in two sets.	The **union** of the two groups of students included everyone from both classes.
Universal Set	The set that has all the elements.	In the Venn diagram, the **universal se**t contains all the elements from both circles.

Maths | Probablity | Skills Guide

In a bag there are only red counters, blue counters, green counters and yellow counters.
A counter is taken at random from the bag.

The table shows the probabilities of getting a red counter or a yellow counter.

Colour	red	blue	green	yellow
Probability	0.4	0.15	0.2	0.25

the number of blue counters : the number of green counters = 3 : 4

Complete the table.

0.4 + 0.25 = 0.65

1 − 0.65 = 0.35

0.35 shared in a 3:4 ratio

3 + 4 = 7 parts

7 parts = 0.35

1 part = 0.05

Blue = 3 parts = 0.15

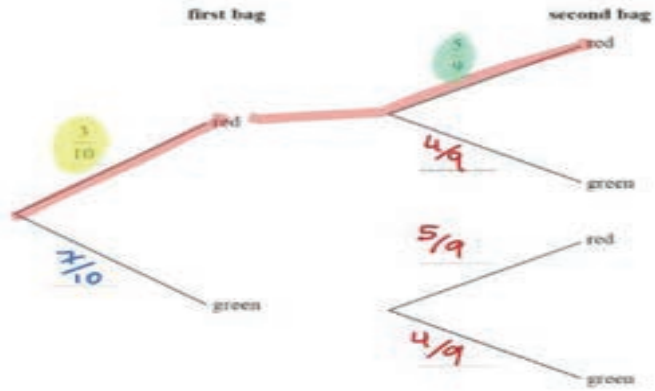
Green = 4 parts = 0.20

Amina has two bags.

In the first bag there are 3 red balls and 7 green balls.
In the second bag there are 5 red balls and 4 green balls.

Amina takes at random a ball from the first bag.
She then takes at random a ball from the second bag.

(a) Complete the probability tree diagram.



(2)

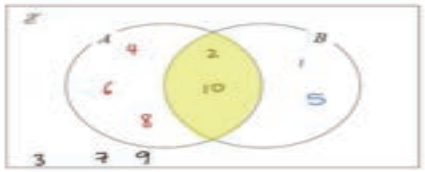
(b) Work out the probability that Amina takes two red balls.

$\frac{3}{10} \times \frac{5}{9} = \frac{15}{90} = \frac{1}{6}$

(2)

$\mathcal{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
A = {even numbers} 2 4 6 8 10
B = {factors of 10} 1 2 5 10

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set, $\mathcal{E}$

(b) Find the probability that this number is in the set $A \cap B$

$\frac{2}{10}$

RE | Islamic Beliefs | Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Allah**	The Arabic name for God	Muslims believe that **Allah** is the one and only God.
	**Akhirah**	Everlasting life after death	Muslims prepare for **Akhirah** by doing good deeds in this life.
	**Angels**	Spiritual beings believed to act as messengers of God	**Angels** are made from light and have special jobs, like watching over people.
	**Beneficent**	Benevolent, all-loving, all-good; a quality of God	When you share your toys with a friend, you're being **beneficent** like Allah.
	**Caliph**	A person considered to be a political and religious successor to the prophet Muhammad, and the leader of the Sunni Muslim community	**Caliphs** help guide the Muslim community in religious and everyday matters
	**Day of Judgement**	A time when the world will end, and every soul will be judged by God and rewarded or punished.	On the **Day of Judgement**, Muslims believe everyone will be judged for their actions.
	**Eternal**	God is timeless	Muslims believe that Allah is **eternal,** meaning He has always existed and always will.
	**Fairness**	The idea that God treats people fairly and impartially without favour or discrimination	It's important to show **fairness** when playing games with friends, so everyone feels included.
	**Gospel**	A holy book revealed by God to Jesus	The **Gospel** teaches about the life and teachings of Jesus, who is also a prophet in Islam.
	**Hajj**	The annual pilgrimage to Makkah (Mecca) that every Muslim should try to make at least once in their life	During **Hajj,** Muslims visit the Ka'aba, which is the holiest site in Islam.
	**Heaven:**	A state of eternal happiness in the presence of God; the place of eternal peace ruled over by God. Also known as paradise.	People who follow Allah's teachings hope to be rewarded with a place in **heaven.**
	**Hell**	the place of eternal suffering or the state of being without God.	The war zone was described as **hell** on earth, with unimaginable suffering and destruction.
	**Iblis (Satan)**	A spiritual being, created from fire, who was thrown out of paradise for refusing to bow to Adam	**Iblis** tempts people to do bad things, but Muslims try to resist his whispers.

RE| Islamic Beliefs|Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Id-ul-Adha**	A Muslim festival that celebrates the prophet Ibrahim's willingness to sacrifice his son for God	During **Id-ul-Adha**, Muslims sacrifice an animal and share the meat with family, friends, and the needy.
	**Imam**	A person who leads communal prayer; 2. (Imam) in Shia Islam, the title given to Ali and his successors	The **Imam** teaches others about Islam and helps them understand the Qur'an.
	**Imamate**	The divine appointment of the Imams	The **Imamate** is important because it helps guide the community with wisdom and justice.
	**Immanent**	Present and involved in the world	The philosopher argued that moral values are **immanent** in human nature, not imposed from without.
	**Islam**	The name of the religion followed by Muslims; to surrender to the will of God; peace	Muslims are people who follow the teachings of **Islam.**
	**Jibril**	The Arabic name for Gabriel, the archangel who brought God's message to the prophets, particularly to Muhammad	Muslims believe that **Jibril** is one of the most important angels in Islam.
	**Just**	God is fair	The law aims to create a **just** society where everyone is treated equally.
	**Ka'aba:**	The black, cube-shaped building in the centre of the Grand Mosque in Makkah (Mecca) the holiest place in Islam	During Hajj, millions of Muslims gather around the **Ka'aba** to worship.
	**Merciful**	The quality of God that shows compassion or forgiveness to humans, even though he has the power to punish them	When someone is **merciful,** they show kindness and forgiveness to others.
	**Mika'il**	The Arabic name for Michael, the archangel of mercy who rewards good deeds and provides nourishment to people	**Mika'il** is one of the angels who helps take care of the world by Allah's command.
	**Monotheistic**	A religion that believes there is only one God	Being **monotheistic** means worshipping one God and not believing in any others.

RE| Islamic Beliefs|Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Muslim**	One who has submitted to the will of God and has accepted Islam	A **Muslim** pray five times a day and follow the teachings of the Qur'an
	**Omnibenevolent**	All loving	Being **omnibenevolent** means showing love and kindness to everyone, just like Allah does.
	**Omnipotent**	All powerful	Muslims believe that because Allah is **omnipotent**, nothing is impossible for Him.
	**Predestination:**	The Idea that God knows or determines everything that will happen in the universe	Even though **predestination** means Allah knows what will happen, Muslims still make their own choices.
	**Prophet**	A person who proclaims the message of God	**Prophets** like Ibrahim, Musa, and Isa (Jesus) are also important in Islam.
	**Prophethood**	When God makes someone a prophet to communicate his message to people	The stories of **prophethood** in the Qur'an teach Muslims how to live a good life.
	**Psalms**	A holy book revealed by God to David	Muslims believe that the **Psalms** contain songs and prayers to Allah.
	**Qur'an**	The holy book revealed to Muhammad by angel Jibril; God's final revelation to humankind	Muslims read the **Qur'an** to learn how to live their lives according to Allah's will.
	**Resurrection**	Rising from the dead or returning to life	The idea of **resurrection** reminds Muslims to live a good life because they will be judged in the end.
	**Risalah**	The belief that prophets are an important channel of communication between God and humans	Muslims believe that **risalah** includes teachings from prophets like Muhammad, Musa, and Isa.

RE| Islamic Beliefs |Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Scrolls of Abraham**	A holy book revealed by God to Abraham	The **Scrolls of Abraham** are one of the earliest messages from Allah to guide people.
	**Shia**	Muslim who believe in the Imamate, the successorship of Ali	**Shia** Islam has unique practices and beliefs that are important to their faith.
	**Sin**	1. any action or thought that separates humans from God; 2. behaviour which is against God's laws and wishes or against principles of morality.	Avoiding **sin** is a way to live a good life and stay close to Allah.
	**Sunnah**	The teachings and deeds of Muhammad	The **Sunnah** includes how to pray, how to treat others, and many other aspects of daily life.
	**Sunni**	Muslims who believe in the successorship to Muhammad of Abu Bakr, Umar, Uthman and Ali	**Sunni** Muslims are the largest group in Islam who follow the teachings of Prophet Muhammad and the first four caliphs
	**supremacy**	Supreme power or authority; a quality of God	Recognizing Allah's **supremacy** is important because it shows that He is in control of everything.
	**Tawhid**	The Oneness and unity	Practicing **Tawhid** means worshipping only Allah and not associating Him with anything else.
	**Torah**	The five books revealed by God to Moses	The **Torah** teaches important lessons about living a good life and following Allah's commands.
	**Transcendent**	Beyond and outside of creation	Because Allah is **transcendent**, He is not limited by time, space, or anything else.

As a Year 10 GCSE student of RE I know the core beliefs and teachings of Islam

The Nature of God

Islam teaches that God has 99 names, based on His different attributes.

Muslims believe in the **omnipotence** of God, which means that me is cli knowing and all-powerful. They believe in His **beneficence** and **mercy**, which means He is all-loving, and His **omnipresence,** which means He is all-present. God is also believed to be **fair and just**: **in the Qur'an, it is stated that "Whoso bringeth a good deed will receive tenfold the like thereof, while whoso bringeth an evil deed will be awarded the like thereof: and they shall not be wronged." (Qur'an 6:160).**

Shia belief especially highlights the idea that God does not inflict injustice or cruelty on His subjects; they believe that everything that God does is for the improvement of humanity. Shia Muslims believe that because God is perfect, He must therefore be just, as injustice would be imperfect.

God is believed to be **transcendent,** which means He is separate from His creation, beyond and independent from the universe. However, because He is believed to be all-knowing, some Muslims would also argue that He is also immanent, which means existing within His creation, within people's hearts and minds

Five principles of religion (Usul ad-Din)

In Shia Islam, the five principles of religion (Usul ad-Din) are:

1. **belief in the oneness of God;**
2. **belief in the Prophets;**
3. **belief in the justice of God;**
4. **belief in the Day of Judgement:**
5. **belief that Muhammad appointed 12 successors, called Imams,** to lead the people and continue the religion. You can see that both Sunni and Shia beliefs have in common the oneness of God, belief in His prophets, the Day of

Tawhid, or the oneness of God, is the central belief about Allah in Islam. **Surah 112 of the Qur'an says: "Say, He is God, the One. God, the Absolute. None was born of Him, nor was he born. And there is nothing comparable to Him."**

Predestination

Unlike angels, humans are believed to have a degree of **free will**. This means that they have some degree of control over their actions and can make their own choices. However, because God is all-knowing, He already knows what will happen, and has written down in a preserved tablet everything that has happened and everything that will happen. Shi a views on predestination are slightly different. They believe that God has not set a fixed path for human history, and that He may change the course of humanity as He sees fit.

Muslims believe that everyone will be judged for their deeds on Judgement Day. **In the Qur'an it is stated: "On that Day, people will come forward in separate groups to be shown their deeds: whoever has done an atom's weight of good will see it, but whoever has done an atom's weight of evil will see that" (al-Qur'an 99:6-8).**

The six articles of faith in Sunni Islam

The six articles of faith in Sunni Islam are:

1)The oneness of God. This means the acceptance that God is the only God, that He has no equal, no mother, no father, son or daughter, and that He is the creator of the universe and God of everybody in the world (not just a particular group of people), that He is eternal.

2) The angels of God. This means the belief in angels as spiritual beings who serve the purpose of God, and who deliver His messages, carry out His commands, and worship Him perfectly.

3) The books of God. This means accepting the Qur'an and other books as sources of religious authority. The Qur'an is believed to be a perfect record of divine revelations from the Angel Gabriel to Muhammad. While the Qur'an is the most important book in Islam, other important sources include the Torah, the Gospel, the Scrolls of Abraham and the Psalms of David.

4) The prophets of God. This means the belief in the human messengers of God, who were shown divine revelations and tasked with teaching humankind about God and how to worship Him.

5) Life After Death - the afterlife and Day of Judgement. This is the idea that the soul continues after the body's death, and that God has appointed a day when all humanity will be judged, and people will either be sent to Heaven or Hell.

6) Predestination. This is the belief that God not only knows everything that will happen in eternity, but also that He preordered it:

"A man came up to Muhammad and said: 'Prophet of Allah tell me what is Iman (faith)?' Upon this the Holy Prophet replied, 'You must believe on Allah, his angels, his holy books, his Messengers, in the Last Day and life after death.'" (Kitab al-iman 1:4)

As a Year 10 GCSE student of RE I know the core beliefs and teachings of Islam

Life After Death

Muslims believe in Akhirah (life after death). In Islamic belief, a person will be judged by God, who will declare their **Akhirah** to be in Heaven or Hell, depending on whether they have done more good or bad deeds.

Upon their death, a person's soul resides in **Barzakh**, which is somewhere between Heaven and Hell. **The soul will experience its own Heaven or Hell until the Day of Judgement,** when all of the dead will be resurrected and all of the righteous are sent to **Jannah (Paradise)** and all of the wicked are sent to **Jahannam (Hell)**

Angels

Muslims believe that angels are heavenly creatures who can take human form. Their purpose is to serve God and carry out different tasks for Him, including communicating His messages.

Jibril is the most important angel in the Islamic faith, as he is the angel who revealed the Qur'an to Muhammad.

Mika'il is another key angel in the Islamic faith; he is known as the angel of mercy. He is also credited with bringing rain and thunder to Earth and has responsibility for rewards given out for good deeds. Mika'il and Jibril were believed to be the first two angels to obey God's command to worship Adam.

The Qur'an

The Qur'an is the main holy text of the Islamic faith and is seen as the highest authority for Muslims as it is a revelation of God's word and His final revelation to humanity.
Muslims believe that God has guaranteed that the Qur'an is a perfect record of His word, as the Qur'an states that **"Indeed, it is We who sent down the Quran and indeed, We will be its guardian." (Qur'an 15:9).**

The Qur'an is made up of 114 chapters or surahs. Each sura contains several verses or ayat. The content of the Qur'an covers basic Islamic beliefs, including the oneness of God and the resurrection of the dead on Judgement Day. The Qur'an also includes records of the lives of prophets and historical events. Guidance on how to live, ethical and legal subjects, charity and prayer are also topics that are addressed in the Qur'an.

Other important religious texts in Islam are the Torah, the Psalms, the Gospel, the Scrolls of Abraham. These texts came before the Qur'an and are respected as revelations of God's guidance for His people. However, Muslims believe that it is only the Qur'an which is guaranteed to be unaltered. They also believe that the Qur'an is the final and therefore most important word of Allah.

Prophets

Prophets are very important in Islam. A prophet is someone whom God has been chosen to pass on teachings to humankind; in Islam, all prophets preach the same message of the oneness of God, and the importance of submission to God.
Risalah is the term used to refer to the scriptures revealed to humankind through the Prophets.
Muslims believe that the first prophet was Adam, who is believed to be the first human being ever created, and who would therefore be the ancestor of every human being who has ever
Adam is considered to be the first Muslim in Islam. **Ibrahim is another key prophet in Islam.** He was made a leader by God in recognition of his unbreakable faith in God. Ibrahim and his son are also credited with building the first worship house of worship, which is visited by Muslims as part of their pilgrimage to Mecca.

The most important prophet in Islam is the Prophet Muhammad, who is seen as the final prophet by both Sunni and Shia Muslims. It was Muhammad who received the revelation of the Qur'an from the angel Jibril over the course of 23 years. Muhammad's teachings and practices are also found in the Hadith.
In Shia doctrine, Muhammad appointed twelve successors, called the imamate. These successors, called Imams or leaders, were infallible human beings who were free from sin, and who had a close relationship with God. These Imams were not given any divine revelations but were guided by God and were therefore able to guide humankind. The twelfth and final imam, Muhammad al-Mahdi, is believed by some Shia Muslims to be alive and hiding until the end of the world, when he will return with Isa (Jesus) in order to bring justice and peace on

Skills – How to answer 4/5 mark GCSE questions in RE

Task:
Explain two ways in which a belief in prophethood influences Muslims today **[4]**

Point	**A belief in prophethood** influences Muslims to respect and follow the teachings in the Qur'an
Explanation	**This is because** the Qur'an was revealed to the priphrt Muhammad. Beliveing in prophethood means believing that Muhammad passed on God's words in the Qur'an
Point	**Another belief is** that prophethood also influences Muslims by encouraging them to show complete obedience to God
Explanation	**This demonstrates that** the prophets were always obedient to God. For example, Ibrahim was willing to sacrifice his son to God after God told him to

Try these questions on your own

1. Explain two reasons why Muhammad is considered to be the most important prophet in Islam. Refer to scripture. [5]
2. Explain two ways in which God is both transcendent and immanent. [4]
3. Explain two ways in which the belief in angels influences Muslims today. [4]
4. Explain two ways in which the afterlife influences Muslims today. Refer to scripture. [5]

Task:
Explain two Muslim teachings about predestination. Refer to scripture. **[5]**

Point	**One teaching about predestination is that** God has already determined everything that will happen in the universe.
Evidence (sacred writing/scripture)	**This teaching is supported by** the quote from the Qur'an 9:51 'Only what God has decreed will happen to us. He is our Master; let the believer put their trust in God"
Explanation	**This shows that** God has already written down everything that will happen in a 'book of decrees' and people have limited freedom to change their future
Point	**Another teaching is** that God knows everything that will happen, but hasn't already decided what will happen
Evidence (sacred writing/scripture)	**This teaching is supported by** the quote from Surah 13:11 in the Qur'an 'God does not change the condition of a people.....unless they change what is in themselves"
Explanation	**This demonstrates that** God understands our human suffering and will make a Christian feel loved and supported.

RE | Islamic Practices | Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Amr-bil-Maruf**	Encouraging people to do what is good	Muslims believe in **Amr-bil-maruf** to help make the world a better place.
	**Ashura**	A Shi'a Islam festival that remembers the martyrdom of Imam Husayn.	On **Ashura,** some Muslims fast and reflect on the importance of standing up for what is right.
	**Astronomy**	The science of observing the stars and planets	Long ago, Muslim scholars made important discoveries in **astronomy.**
	**Burqa**	A religious covering of all of the body	Some Muslim women wear the burqa as a way to be modest according to their faith.
	**Eid ul-Fitr**	The feast at the end of Ramadan	On **Eid-ul-Fitr,** Muslims wear new clothes, give gifts, and enjoy special meals with family
	**Greater jihad:**	the personal inward struggle of all Muslims to live in line with the teaching of their faith.	Every time you work hard to be kind and patient, you are participating in **Greater Jihad.**
	**Hajj**	The annual pilgrimage to Makkah that every Muslim should try to make at least once in their life.	During **Hajj,** Muslims visit the Ka'aba and perform special rituals with millions of others.
	**Hijab**	A religious covering of the hair	Many girls start wearing the **hijab** when they feel ready to show their faith.
	**Holy war**	Fighting for a religious cause or God, probably controlled by a religious leader.	Muslims believe that **holy war** is the last resort when peace cannot be achieved.
	**Id-ul-Adha**	Is a Muslim festival that celebrates Ibrahim's willingness to sacrifice his son to God and marks the end of Hajj.	During **Id-ul-Adha**, Muslims sacrifice an animal and share the meat with family and the poor.
	**Iftar**	The meal eaten to break the fast-during Ramadan	Families and friends gather together to enjoy **iftar** after a long day of fasting.
	**Imam**	The religious leader of the mosque	The **Imam** helps the community understand the Qur'an and how to live according to Islamic teachings.

RE | Islamic Practices | Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Jihad**	A struggle against evil, this may be an inward, personal struggle or an outward, collective struggle.	Muslims believe that **Jihad** is an important part of living a good and faithful life.
	**Jummah**	Friday prayers in the mosque	Many Muslims believe that attending **Jummah** brings blessings and spiritual benefits.
	**Ka'aba**	**T**he black, cube-shaped building in the centre of the Grand Mosque in Makkah, the holiest place in Islam.	During Hajj, Muslims walk around the **Ka'aba** as part of their pilgrimage rituals.
	**Khums**	A 20% tax on income once all expenses are deducted. Half goes to charity and half goes to Shi'a religious leaders	Giving **Khums** is an important practice for Shia Muslims to show gratitude and share their wealth.
	**Lesser jihad**	The outward struggle to defend one's faith, family and country from threat.	**Lesser Jihad** is less important than the Greater Jihad, which is about personal improvement.
	**Mihrab:**	A niche in a wall that indicates the direction of Makkah	The **mihrab** is often beautifully decorated and is a key feature in every mosque.
	**Minaret**	A tower attached to a mosque	The muezzin climbs the **minaret** to call Muslims to prayer five times a day.
	**Minbar**	A place for the imam to deliver a sermon in a mosque	During Jummah, the Imam uses the **minbar** to speak to the congregation and share teachings from the Qur'an.
	**Mosque**	An Islamic place of worship	Muslims gather at the **mosque** for Jummah prayers on Fridays and during special occasions like Ramadan.
	**Nahi Anil Munkar**	Discouraging people from going what is wrong	When you remind someone not to cheat or lie, you are practicing **Nahi anil munkar.**
	**Pilgrimage**	A journey by a believer to a holy site for religious reasons; an act of worship and devotion.	During a **pilgrimage**, people often pray, reflect, and seek a deeper connection with their faith.
	**Qiblah wall**	The wall in a mosque that contains the mihrab	The **qiblah wall** is often beautifully decorated to honor its significance in prayer.
	**Rakah**	Rakah The physical positions of Islamic prayer	Each prayer has a different number of **rakah**s, and they help Muslims stay focused and connected to Allah.

RE | Islamic Practices | Topic Dictionary

Image	Key Word	Definition	In a sentence
	**Ramadan**	The Islamic month of fasting, the ninth month of the Islamic calendar	During **Ramadan,** Muslims focus on prayer, charity, and self-discipline.
	**Sadaqah**	Good actions or voluntary payments that are undertaken for charitable reasons.	Muslims believe that giving **Sadaqah** brings blessings and helps create a caring community.
	**Salah**	The ritual of five daily prayers	Muslims face the Ka'aba in Mecca when they perform **Salah**
	**Sawm**	The act of fasting	During **Sawm,** Muslims don't eat or drink from dawn until sunset to develop self-control and empathy for the poor.
	**Shahadah**	The Islamic declaration of faith	Saying the **Shahadah** with belief makes someone a Muslim.
	**Tabarra**	Disassociating from the enemies of God	Shia Muslims practice **Tabarra** by avoiding people or actions that go against Islamic teachings.
	**Tawallah**	To be loving towards the friends of God, including Muhammad and the Imams	**Tawallah** encourages Muslims to stay connected with those who support and guide them in their faith.
	**The Five Pillars**	The five most important duties for all Muslims;	**The Five Pillars** help Muslims live a life that pleases Allah and supports their community.
	**Wudu**	The ritual of washing the arms, face and feet before prayer	**Wudu** is an important part of preparing for Salah and shows respect for the act of prayer.
	**Zakah**	The act of giving 2.5% of wealth to charity each year	By giving **Zakah**, Muslims help the poor and support their community.

As a Year 10 GCSE student of RE I know the core practices and teachings of Islam

The Five Pillars of Islam

1. **Shahadah** (declaration of faith) – no god but Allah and Muhammed is messenger. Muslims should say this several times a day.
2. **Salah** (prayer five times a day) – second most imp duty in Islam, Pray at sunrise, around noon, late afternoon, after sunset and late evening.
3. **Zakah** (charitable giving)
4. **Sawm** (obligation to fast during Ramadan)
5. **Hajj** (pilgrimage to Makkah) – all Muslims should do hajj at least once.

The ten obligatory acts in Shia Islam.

Four of these are the same as noted above (**Salat, Zakat, Sawm** and **Hajj**).
The other six are:

1. **Khums** - a tax of 20% of income to be given to causes decided by Shi'a leaders.
2. **Ambil ma'roof** - the encouragement of good actions and being a positive role model.
3. **Nahi anil munkar** - discouraging bad or evil actions.
4. **Tawalla** - associating with good people, especially those who follow the ahl al-bayt (Muhammad's family).
5. **Tabarra** - avoiding evil people or people who oppose God.
6. **Jihad** - struggling or striving for a better and more Godly life or world.

The Shahadah

The Shahadah is the Islamic declaration of faith – it is the most basic element of Muslim belief, it states:
There is no god but Allah, and Muhammad is the messenger of Allah
Muslims say this phrase when they become a Muslim and when they have a baby.
The Arabic version appears on the flag of Saudi Arabia and has caused controversy in the past when it has appeared on beer bottles and footballs.

Zakah

Zakah is the act of giving money to those who are poor and in need of assistance. Muslims give 2.5% of their wealth every year to charity. Usually this is done in an organised way through a government or charity. Sometimes Islamic communities give the money directly to the poor.
Zakat al-Fitr is the act of giving money to the poor so they can partake in the festival of Eid al-Fitr which is the feast at the end of Ramadan.

On Fridays, Muslims hold a prayer called Jummah, instead of the Salat al-zuhr or noon prayer. **Surah 62 of the Qur'an states;**
"O ye who believe! When the call is proclaimed to prayer on Friday (the Day of Assembly, yawm al – Jumu'ah hasten earnestly to the Remembrance of Allah and leave off business [and traffic]
That is best for you if ye but knew!"
The Jummah prayer is more commonly practised in Sunni Islam than Shi'a Islam

Salah

Salah, the second pillar of Islam, is prayer. God commanded Muslims to pray at five fixed times of day:
Salat al-fajr: dawn, before the sun rises
Salat al-zuhr: noon, after the sun passes its highest
Salat al-'asr: late afternoon
Salat al-maghrib: just after sunset
Salat al-'isha: between sunset and midnight

Muslims can pray anywhere, but it is considered especially good practice to pray in the mosque, as part of a congregation with other Muslims. Before they pray, Muslims must wash themselves, in a ritual called wudhu. This involves starting in the name of God, then washing the right hand three times, then washing the left hand three times. The mouth, nose and face are then washed three times.

The right and left arms are washed three times. Water is then wiped through the hair once. The back and inside of the ears are wiped using damp hands. Finally, the right and left feet are washed three times.

Muslims are encouraged to follow Salat from the age of seven onwards. It is common to hear the call to prayer at these times of day in areas with a high Muslim population. Carrying out the 1400-year-old ritual of salat is important to Muslims because it connects them not only to each other, but to their ancestors who also took part in this spiritual practice.
O, you who have believed, seek help through patience and prayer. Indeed, Allah is with the patient" [2:153]

Most men are obliged to go on a Friday. This is led by an imam who also gives two sermons.

As a Year 10 GCSE student of RE I know the core practices and teachings of Islam

Hajj

The Hajj is the pilgrimage to Mecca The city of Mecca is only accessible to Muslims.

1.Muslims must make the pilgrimage at least once in their lifetime as long as they can afford it and are healthy enough to do it. It has to happen in the Muslim month of Dhu'l - Hijja.
2. A number of prophets including Muhammad are associated with Makkah, so it is a holy place.
3. All pilgrims wear simple white clothing **(ihram)** so they're equal before Allah.
4. The **Ka'aba is in Makkah** – it's a giant stone cube covered with black cloth. Some Muslims think Ibrahim and Isma'il built it as a place of worship (Qur'an 2:127 suggests this). Others think Adam built it. It is the holiest place in Islam.
5. Muslims do seven circuits anticlockwise of the Ka'aba, touching the stone if possible – this ritual is called the **tawaf.**
6. Next, a pilgrim must make several journeys between t**he hills of Safa and Marwa** (where Hajar, Ibrahim's wife and servant, searched for water for their son Isma'il). This part of the pilgrimage is called **the sa'y.**
7. Pilgrims then draw water from the Zamzan Well, which Allah made for Hajar.
8. Then pilgrims go to **Mount Arafat t**o stand and pray for Allah's forgiveness. This is where Muslims believe Adam was forgiven after being thrown out of Eden and also where the Day of Judgement will take place. The pilgrims spend the night at Muzdalifa, a valley between Arafat and Mina, where they collect pebbles.

9. The pebbles are then thrown at three pillars in **Mina**, to symbolise driving the devil away – Ibrahim is believed to have once thrown stones at Shaytan (the devil).
10. The title hajji is given to those who complete the hajj. Many find the hajj helps their faith and increases unity between Muslims. Some hadith say it cleanses the hajji of all sins.

"Perform Hajj if you can afford it" (Hadith)

"Complete the pilgrimage, major and minor, for the sake of God Qur'an 2:196

Jihad

Jihad means striving or struggle. It is often misunderstood by non-Muslims. It is one of the Ten Obligatory Acts for Shi'as but part of Sunni Islam too. There are two kinds:

The greater Jihad - This is every Muslim's struggle to obey Allah, follow his teachings and become a better Muslim. It's the greater struggle because it is individual and personal.

The lesser Jihad - this is the struggle to make the world a better place. Part of this means struggles against wrongs such as poverty and injustice. Part of it is to defend Islam against threats. This can be in peaceful ways such as helping others be good Muslims.

Sawm

Sawm is the act of fasting – not eating and drinking for a set period of time. This can be for a few hours, a few days or, **during for the entire month of Ramadan.**

- During Ramadan Muslims do not eat or drink between sunrise and sunset – this month is determined by the lunar calendar so falls at a different time each year.
- During the month of Ramadan Muslims try to be closer to God by reading the Qur'an, reflecting on spiritual matters and praying more frequently.
- Muslims come together, either as families or larger groups, to break their fast at The sundown meal of iftar.
- The end of Ramadan is celebrated by the feasting festival of Eid ul-Fitr

"Fast in the month of Ramadan (Hadith)

"You who believe, fasting is prescribed for you, as it was prescribed for those before you, so that you may be mindful of God" Qur'an 2:183

As a Year 10 GCSE student of RE I know the core practices and teachings of Islam

Mosque

The mosque is the Muslim place of worship. It includes many items which serve a specific purpose such as the **mihrab which shows the direction of Mecca,** the **minaret which allows for the broadcast of the call-to-prayer**, an **area to perform wudu** ablutions and **the minbar from which the imam delivers a weekly sermon.**
Mosques appear all around the world and look different from country-to-country and city-to-city.
Men and women do not worship together in the mosque. Men are normally in the main hall and the women in the overflow.

Islamic Dress

The Qur'an teaches that both **men and women should dress modestly** – interpretations of this vary widely depending on the culture and individual interpretations.
Some Muslim women choose to cover parts of their body with a religious covering such as a **hijab** which covers the hair or **a burqa** which covers the entire body.

The Golden Age

The Golden Age of Islam refers to a period around the 10th century when Islamic scholars were at the forefront of science, particularly astronomy. Astronomy was required by Muslims so they accurately knew the right times to pray and celebrate festivals.
At this point in history there was a deep connection between religion and science.

Id-ul-Fitr

Marks the end of Ramadan. It is a day of thanksgiving to Allah for giving Muslims the strength to fast for a month. It is a joyful festival.

How is it Celebrated?

Muslims pay a special zakah – usually around £5. It helps Muslims who are less well-off celebrate this festival as well.
The festival involves a service with prayers, a sermon, a meal to break the fast…Listening to the imam's sermon at the mosque - reminding them to forgive and to help the poor.
Muslims spend time with family, friends and exchange presents. Wearing best or new clothes.

Id-ul-Adha

Festival of sacrifice - Sunni and Shia Muslims
Celebrated on the tenth day of Dhul-Hijjah (12th month of the Islamic calendar) for three days.
Id-ul-Adha celebrates when Ibrahim was prepared to sacrifice his son Ishmael as God told him to in a dream.
Known as the 'Greater Id.

How is it Celebrated?

Sacrificing a lamb - to remember God giving Ibrahim a ram to sacrifice instead of Ishmael.
dl prayers at the mosque.
Exchanging cards and presents.
Visiting family and friends.
Listening to the imam's sermon at the mosque to remind them of Ibrahim's devotion to God.
Sharing food with family and friends.

What is Ashura?

- Mostly a Shi'a festival.
- It commemorates the death of Husayn.
- Used to be a compulsory day of fasting.
- Sunnis tend to think of it as a day of atonement. Many fast, but it is not compulsory.
- Ashura is important for Shi'as because it was the day that Husayn (Ali's son and Muhammad's grandson) was killed in a battle.
- The ten days leading up to and including Ashura are a period of mourning for Shi'as.

- Mosques often provide free meals for people during the ten-day period.
- On Ashura, Shi'as wear black as a sign of mourning.
- There are often public processions and 'passion plays' where this story is re-told.
- Some Shi'as hurt themselves to commemorate Husayn's suffering. This is banned in some countries - even Iran. Muslims now donate blood
- For Shi'as, Ashura is a reminder of the suffering the Shi'a community has experienced – Shi'as have been persecuted as a minority.
- The processions are sometimes used as protests against injustice.

" Husayn is from me, and I am from Husayn. Allah loves whoever loves Husayn" Hadith

Criteria	Marks
A well-argued response with reasoned consideration of different points of view. Logical chains of reasoning leading to judgement(s) supported by knowledge and understanding of relevant evidence and information	10-12
Reasoned consideration of different points of view. Logical chains of reasoning that draw on knowledge and understanding of relevant evidence	7-9
Reasoned consideration of a point of view Recognition of different points of view, each supported with relevant reasons and evidence.	4-6
Point of view stated with one reason in support	1-3

Try this questions on your own
'Id-ul-Adha is more important than Id-ul-Fitr' **Evaluate this statement.**

Islamic Practice - The Greater Jihad is more important than the Lesser Jihad 'Evaluate this statement.

For (agree with the statement)

One reason why Muslimss would agree with the statement is ….

This means that…
X2
Religious Teachings

Islamic teachings that support this view/opinion are…
X2

Against (disagree with the statement)

However, some may disagree with this statement because….

This means that…
X2
Religious Teachings

Islamic teachings that support this view/opinion are…
X2

My opinion/conclusion -

In conclusion…

I believe this because…

Skills – How to answer 12-mark GCSE question in RE

TIP
It is essential to include evaluation because this is the key skill that you are being tested on in the 12-mark question. You can evaluate after each viewpoint, and/or at the end as part of your justified conclusion

TIP
Try to use religious terms in your answer, if it is appropriate, as this helps you to demonstrate your knowledge of the subject, For example, fasting, jihad, paradise

TIP
Spelling, punctuation and grammar is assessed on each 12- mark question, so make sure you are careful to use your best written English

Try this questions on your own
'Giving to charity is the most important practice in Islam' **Evaluate this statement.**

Skills – How to answer 12-mark GCSE question in RE

Islamic Practice - The Greater Jihad is more important than the Lesser Jihad 'Evaluate this statement.

For (agree with the statement) One reason why Muslims would agree with the statement is …. This means that… X2 **Religious Teachings** **Islamic teachings that support this view/opinion are…** X2	**For (agree with the statement)**	Greater Jihad is often referred to as the "jihad al-nafs" (struggle against the self), the Greater Jihad is the internal struggle against one's own sinful inclinations, desires, and weaknesses. It involves self-purification, striving to live a virtuous life, and maintaining faith and obedience to God. Whereas the Lesser Jihad refers to the physical struggle, which can include self-defence or fighting against oppression. It is sometimes interpreted as armed conflict or warfare, though within strict ethical guidelines set by Islamic law. **One reason is that a famous hadith (saying of the Prophet Muhammad) states, "We have returned from the Lesser Jihad to the Greater Jihad,"** indicating the importance of the internal struggle. This suggests that while external struggles are significant, the internal battle is ongoing and more fundamental to the faith. Such as completing daily prayers, fasting during Ramadan and not sinning by avoiding haram deeds. **Another reason** is that the Greater Jihad is often considered more important because it is a constant, lifelong effort. Every believer is required to engage in self-improvement, fight against moral failings, and strive for a closer relationship with God. It is personal and universal, applicable to all Muslims, regardless of their circumstances. **Also,** many scholars and Muslims emphasize the Greater Jihad as being more relevant to contemporary life. Issues such as personal morality, ethical behavior, and spiritual growth are seen as central to the faith, particularly in a world where the concept of Jihad has often been misunderstood or misrepresented.
Against (disagree with the statement) However, some may disagree with this statement because…. This means that… X2 **Religious Teachings** **Islamic teachings that support this view/opinion are…** X2	**Against (disagree with the statement)**	The Qur'an emphasizes both types of Jihad. The internal struggle is viewed as essential for spiritual development, while the physical struggle is seen as a duty when it comes to defending the faith or fighting against injustice. **Some might argue** that the Lesser Jihad has a critical role, especially in contexts where Muslims face oppression. In these situations, the Lesser Jihad is seen as necessary to protect the community and uphold justice, aligning with the Qur'anic principle of standing up against injustice. **It states in the Qur'an that, "Fight in God's cause against those who fight you, but do not overstep the limits: God does not love those who overstep the limits"** **Moreover,** both forms of Jihad are seen as complementary rather than hierarchical. The Lesser Jihad without the Greater Jihad can lead to actions devoid of ethical considerations, while the Greater Jihad without the Lesser Jihad can be seen as incomplete in situations that demand active resistance.
My opinion/conclusion - In conclusion… I believe this because…	**Conclusion**	In conclusion, while both forms of Jihads are essential in Islam, the Greater Jihad is often considered more important because it is a lifelong, universal struggle that applies to all aspects of a Muslim's life. The internal battle against one's ego and desires is seen as foundational to spiritual development. However, this does not diminish the significance of the Lesser Jihad, particularly in situations where justice and self-defense are at stake. The importance of each type of Jihad depends on the context, but in most interpretations, the Greater Jihad is viewed as the more fundamental and constant aspect of Islamic practice.

B6: Preventing and treating disease

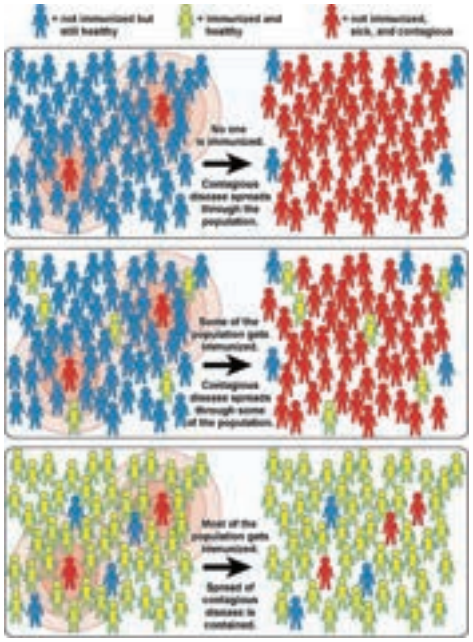
Vaccines

Used to prevent illness in an individual. The spread of disease can be reduced by immunising a large proportion of the population.

How does a vaccine work?

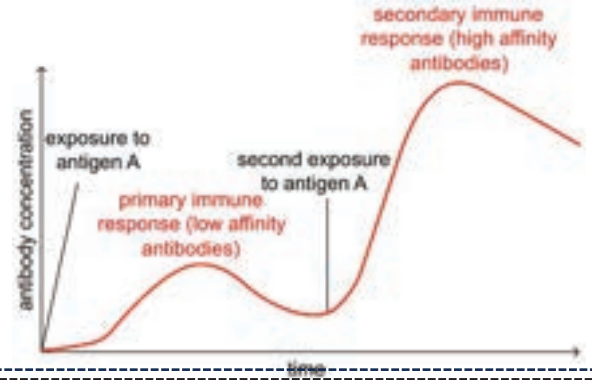
1. A person is injected with a small amount of dead/inactive pathogen
2. This stimulates the white blood cells to produce antibodies (to neutralise the antigen)
3. If the pathogen re-enters the body, white blood cells can produce antibodies quickly to prevent an infection.

Herd immunity



Antibiotics and painkillers

	Uses?	Advantages	Disadvantages
Antibiotics	Destroy Bacteria	➢ Easy to administer ➢ Few side effects	➢ Possibility of allergic reaction ➢ Drug resistant bacteria could form
Antivirals	Destroy viruses	➢ Lessen symptoms ➢ Shorten time sick by ½ days ➢ Prevent serious flu complications.	➢ Have side effects. Like nausea and vomiting
Painkillers	Relieve symptoms	➢ Help with symptoms of disease	➢ Doesn't kill pathogens ➢ Won't shorten length of illness or stop the disease being passed on



The initial response to an pathogen is **slow**, as white blood cells need to find the correct antibody to fit the antigen.
The second response to the same pathogen is **faster** as the white blood cells remember the correct antibodies to produce. This means they produce **more** antibodies in a **shorter** period of time, to prevent an **infection**.

- Use of antibiotics has greatly reduced deaths from infectious bacterial infections.
  - However, the emergence of strains resistant to antibiotics is of great concern.
- ***ANTIBIOTICS DO NOT KILL VIRAL INFECTIONS (e.g. the flu!)***
- It is difficult to develop drugs that kill viruses without also damaging body cells.

Drug Discovery and Drug development

Traditionally drugs were extracted from plants or microorganisms, for example:
- The **heart drug digitalis** originates from **foxgloves plant**
- The **painkiller aspirin** originates from **willow trees**
- **Penicillin** was discovered by Alexander Fleming from the ***Penicillium* mould**.

Most new drugs are synthesised by chemists in the pharmaceutical industry. Although, the starting point may still be extracted from plants.

New drugs need to be tested to check if they are **safe** and **effective**.
New drugs are tested for:
- **Toxicity** – How poisonous or harmful a substance can be.
- **Efficacy** – The ability of a *drug* to achieve the desired effect.
- **Dosage** – The size or frequency of a dose of a medicine or drug.

Pre-clinical phase

Pre-clinical trials are done in the laboratory using cells, tissues and live animals.

Scientists identify drug targets for a disease. *This can take a life time.*

Drug discovery. Lots of drugs are discovered. *4-5 years.*

Preclinical trials. Drugs are tested in the laboratory for efficacy, toxicity and dosage. Drugs are tested on human cells, tissues and organs. Successful drugs are then tested on live animals *1-2 years.*

Clinical phase

Clinical trials use human volunteers in double blind trials.

Phase 1: successful drugs are tested on a small group of healthy people. To check for side effects. *1-2 years.*

Phase 2: drug is tested on a small group of affected people to check if the drug works. *2-3 years.*

Phase 3: drug is tested on a large population of affected people to determine the optimum dosage. *1-2 years.*

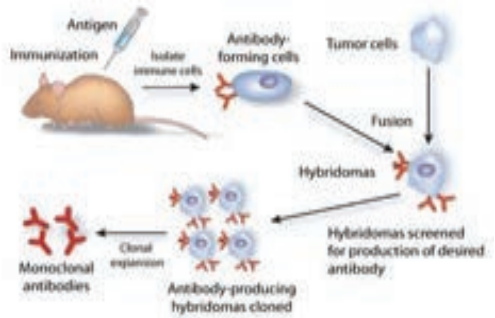
Drugs is licensed for use. *1-2 years.*

Drugs can be prescribed by doctors. *Drug safety is monitored.*

Monoclonal antibodies – Higher Triple Only

Monoclonal antibodies are produced from a single clone of cells. The antibodies are specific to one binding site on one protein antigen. So are able to target a specific chemical or specific cells in the body.
How are they produced?

1. A mouse lymphocyte is stimulated to produce a specific antibody
2. The lymphocytes are combined with a particular type of tumour cell to form a **hybridoma cell**
3. The hybridoma cell can both divide and produce the antibody
4. A single hybridoma cell is cloned to produce many identical cells that produce the same antibody
5. A large amount of antibodies can be collected and purified.



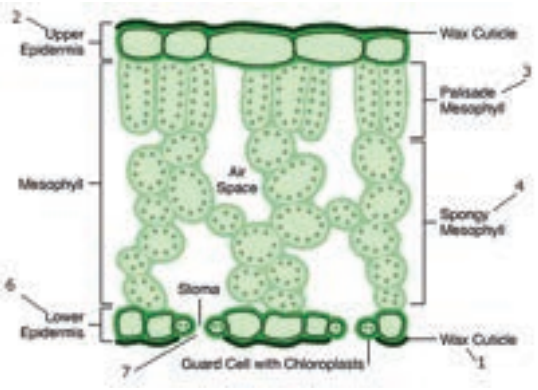
Monoclonal antibodies create more side effects than expected. They are not yet widely used as everyone hoped when they where first developed.
Advantages *of monoclonal antibodies – can target specific cells in the body*
Disadvantage *of monoclonal antibodies - expensive to produce, many side effects*

Uses of monoclonal antibodies

1. For diagnosis of pregnancy tests
   The monoclonal antibodies bind to a specific hormone produced early during pregnancy, releasing a coloured dye,
2. In laboratories to measure the levels of hormones and other chemicals in the blood, or to detect pathogens
3. In research to locate or identify specific molecules in a cell or tissue by binding to them with a florescent dye
4. To treat some diseases,
   - For cancer, the monoclonal antibody can be bound to a radioactive substance, a toxic drug or a chemical which stops the cell growing and dividing
   - It can deliver the substance to the cancer cells without harming other cells in the body.

B4 Organisation in Plants

Plant tissues



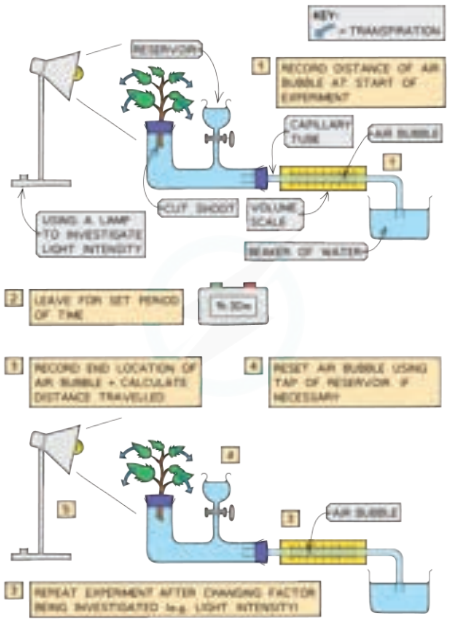
STRUCTURE	DESCRIPTION
WAX CUTICLE	PROTECTIVE LAYER ON TOP OF THE LEAF, PREVENTS WATER FROM EVAPORATING
UPPER EPIDERMIS	THIN AND TRANSPARENT TO ALLOW LIGHT TO ENTER PALISADE MESOPHYLL LAYER UNDERNEATH IT
PALISADE MESOPHYLL	COLUMN SHAPED CELLS TIGHTLY PACKED WITH CHLOROPLASTS TO ABSORB MORE LIGHT, MAXIMISING PHOTOSYNTHESIS
SPONGY MESOPHYLL	CONTAINS INTERNAL AIR SPACES THAT INCREASES THE SURFACE AREA TO VOLUME RATIO FOR THE DIFFUSION OF GASES (MAINLY CARBON DIOXIDE)
LOWER EPIDERMIS	CONTAINS GUARD CELLS AND STOMATA
GUARD CELL	ABSORBS AND LOSES WATER TO OPEN AND CLOSE THE STOMATA TO ALLOW CARBON DIOXIDE TO DIFFUSE IN, OXYGEN TO DIFFUSE OUT
STOMATA	WHERE GAS EXCHANGE TAKES PLACE: OPENS DURING THE DAY, CLOSES DURING THE NIGHT. EVAPORATION OF WATER ALSO TAKES PLACE FROM HERE. IN MOST PLANTS, FOUND IN MUCH GREATER CONCENTRATION ON THE UNDERSIDE OF THE LEAF TO REDUCE WATER LOSS
VASCULAR BUNDLE	CONTAINS XYLEM AND PHLOEM TO TRANSPORT SUBSTANCES TO AND FROM THE LEAF
XYLEM	TRANSPORTS WATER INTO THE LEAF FOR MESOPHYLL CELLS TO USE IN PHOTOSYNTHESIS AND FOR TRANSPIRATION FROM STOMATA
PHLOEM	TRANSPORTS SUCROSE AND AMINO ACIDS AROUND THE PLANT

How do plants control water loss?

- Plants have a waxy cuticle – prevents evaporation off the upper epidermis
- most stomata found on the lower epidermis
- Wilting of plant can reduce water loss. The leaves collapse which reduces surface area
- Stomata →

Measuring transpiration rates:

Potometer – used to measure water loss from a plant



Stomata and guard cells

•Stomata can be opened or closed depending on the conditions

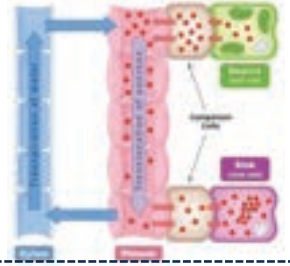
•Guard cells found on underside of leaf **control gas exchange and water loss. Guard cells make the stomata**

• When the availability of water is high, guard cells become turgid as a result of osmosis: When guard cells are turgid, the stomata are open and air can circulate in from the environment but water is lost via transpiration

•When less water is available, the guard cells lose water by osmosis and become flaccid: When guard cells are flaccid, they pull together, closing the stomata and reducing water loss via transpiration

Importance of transport in plants:

- plant cells need sugar for respiration
- Sugar and minerals needed for growth
- Water needed for photosynthesis
- Water needed to support cells



Factors affecting transpiration

Plants can dehydrate if the rate of evaporation is greater than the uptake of water.

Factors that effect the rate of photosynthesis also effect the rate of transpiration. These factors include:

- **Temperature** – as temperature increases, so does rate of transpiration. Water molecule move faster as they have more energy.
- **Humidity** – diffusion of water vapour is faster in dry air compared to damp air.
- **Air flow** – windy conditions increase transpiration. Keeps steep concentration gradient between inside and outside of leaf.
- **Light intensity** – greater light intensity increase rate of photosynthesis.

Environmental factors can be investigated in the following ways:

•**Airflow**: Set up a fan or hairdryer

•**Humidity**: Spray water in a plastic bag and wrap around the plant

•**Light intensity**: Change the distance of a light source from the plant

•**Temperature**: Temperature of room (cold room or warm room)

B8 Photosynthesis

Equation for photosynthesis:

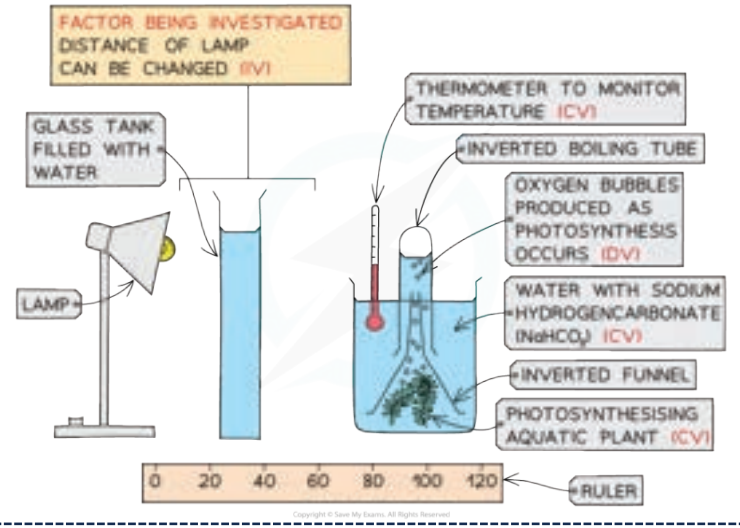
Water + carbon dioxide → **glucose** + oxygen

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

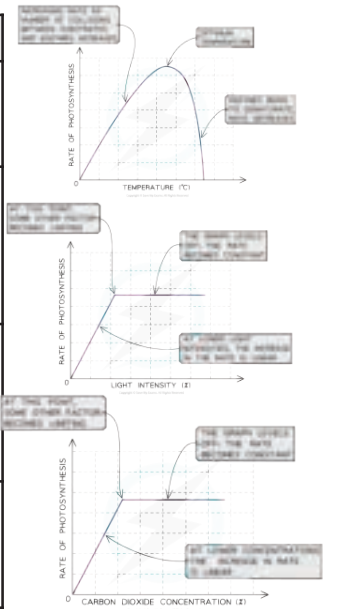
Investigating Photosynthesis

Method:

- Shine a light on pondweed (Elodea) and count the bubbles of oxygen produced in two minutes.
- You could change the distance of the lamp from the pond weed, the temperature of the water or the the colour of the light.
- To make it a fair test you should only change one of these and keep the rest the same.



Limiting Factor	How does it affect the rate?
Light	For most plants, the brighter the light, the faster the rate of photosynthesis. If there is little/no light, photosynthesis will stop
Temperature	As temperature increases, the rate of photosynthesis increases. However if the temperature is too high (40-50◦C) then the enzymes controlling photosynthesis denature, slowing the rate.
Carbon dioxide concentration	The atmosphere is only 0.04% carbon dioxide, so it often limits the rate of photosynthesis. On a sunny day, carbon dioxide is the most common limiting factor. **Increasing the CO2 concentration, increases photosynthesis.**
Chlorophyll levels	Less chlorophyll results in less photosynthesis. Minerals e.g. magnesium are used to make chlorophyll, so can affect the rate of photosynthesis.



How plants use glucose

- For Respiration
- Stored as Starch
- Stored as Fats and Oils
- Produce Cellulose
- Produce Amino Acids

Inverse Square Law:

There is an inverse relationship between distance and light intensity – as the distance increases, light intensity decreases.

$$Light\ intensity \propto \frac{1}{Distance^2}$$

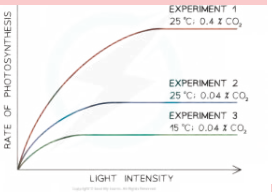
Testing a leaf for starch:

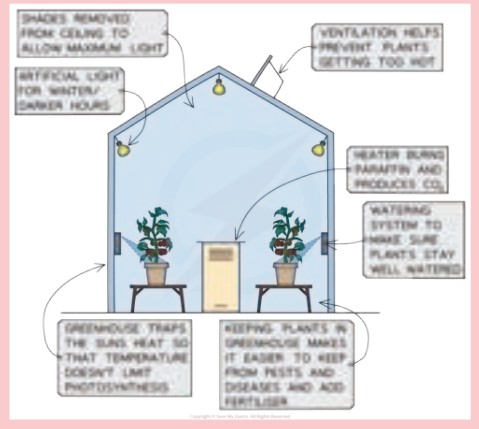
When plants photosynthesise they produce glucose which is converted into starch.

Method: boil a leaf for 5 minutes, then place in ethanol to decolourise. Spread the leaf on a white tile and cover with iodine (orange solution). If starch is present the iodine will turn black colour.

HIGHER TRIPLE

- More than one limiting factor can have an effect on the rate of photosynthesis
- Graphs may show the effect of two factors interacting:





The farmers can increase yield in a greenhouse but this does have an increased cost

B10 The Nervous System

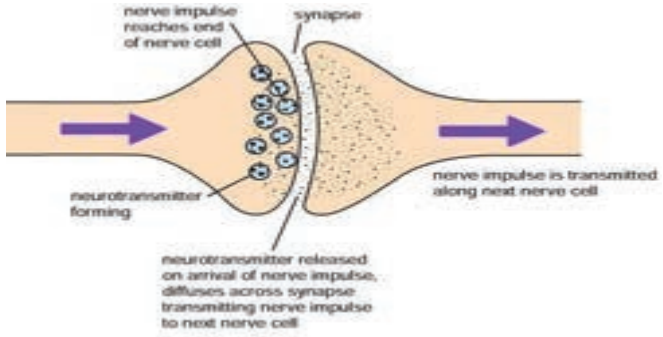
How the Nervous System Works

- A **receptor** detects a **stimulus**, and passes the information on using **electrical impulses** along a neurone.
- The information goes to the **central nervous system**(CNS), the brain and spinal cord, via a **sensory neurone**.
- The brain coordinates a response and sends the information as an electrical impulse along a **motor neurone**, to an **effector**.

Stimulus → Receptor → CNS → Effector

Synapses

These are gaps between neurones. The electrical impulse cannot cross the gap, therefore chemicals, known as neurotransmitters, diffuse across the gap, to pass the information on to the next neurone.

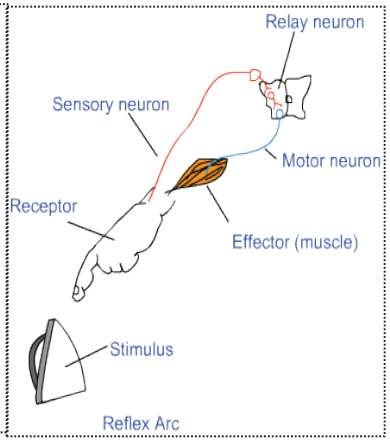


Reflexes

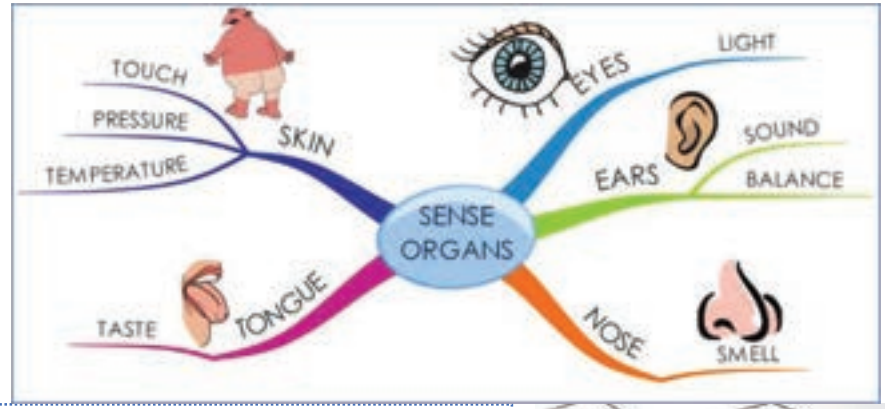
- Rapid and automatic – they do not involve the conscious part of your brain
- They prevent you from harm and injury.

They involve:

- Sensory neurones: carry messages from the receptor
- Relay neurone: a neurone usually found in the spinal cord, connecting the sensory and motor neurone
- Motor neurone: carry messages to the effector.



Reflex arc: Stimulus → Receptor →Sensory neurone → relay neurone →motor neurone → Effector → Response



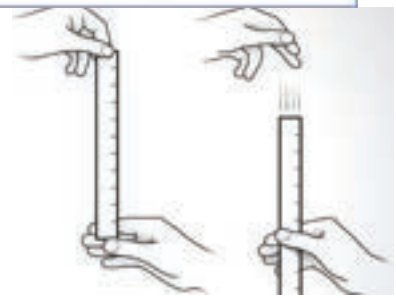
Required Practical: Reaction Time

Investigating reaction time with no distractions and distractions, e.g. music or chatting.

One person would randomly drop the ruler between their partners hand, and the partner would have to catch it. The drop distance is then recorded.

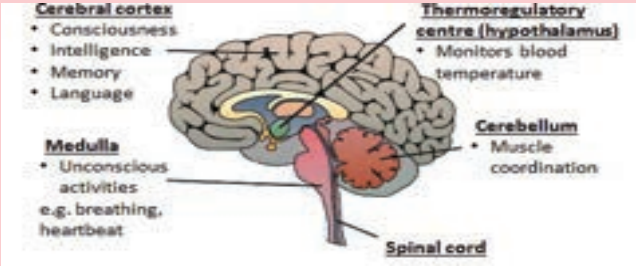
Control variables: Dropped from same height, catcher uses the same hand.

Improvements : Should be repeated several times and a mean calculated. Can be investigated more accurately using a computer programmed reaction time test.



Brain and Eye – Higher Triple Only

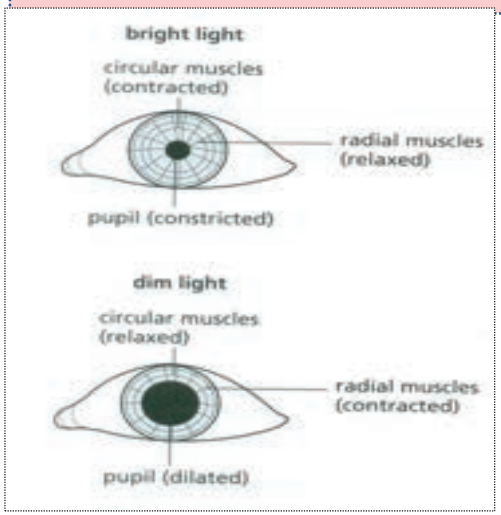
The Brain –Controls everything we do.
- Protected by the skull.
- Different parts have different functions

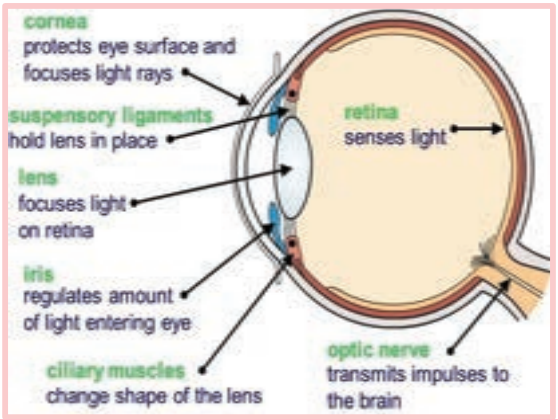


If there are problems with the brain, it can be very complex and delicate. Drugs do not always reach the brain through the membranes which surround it. Surgery is difficult as not each area is fully understood and it can be easy to cause unintended damage.

Studying the Brain
By studying different cases of brain damage, scientists can discover more and more about the brain.
Phineas Gage was involved in an explosion, where an rod went through his skull. He survived, but his personality changed.
Nowadays, we can **electrically stimulate** different areas of the brain, to see the different effects.

MRI Scans
(Magnetic Resonance Imaging)
Produces images to show any abnormalities in the brain.
Provides information on how the brain works.





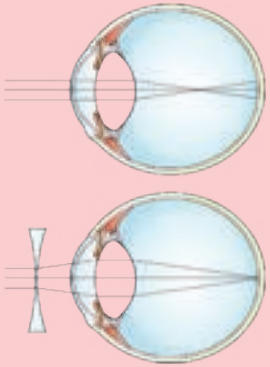
The eye is a sense organ containing receptors in the retina that are sensitive to light intensity and colour.
The tough outer sclera has a transparent region at the front called the cornea, which lets light in and refracts light towards the retina.

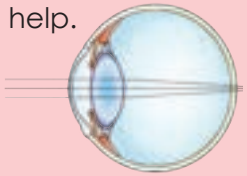
Accommodation: The process of changing the shape of the lens to focus on near or distant objects.

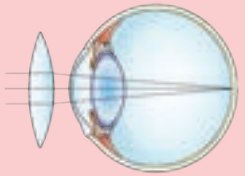
Object Distance	Ciliary Muscle	Suspensory ligaments	Lens Shape	Light refracted
Far	Relaxes	Tight	Thinner	Less
Near	Contracts	Slacken	Rounder	More

New technologies to correct vision:
- Contact lenses
- Laser eye surgery
- Replacement lenses

Myopia: the ability to see close objects in clear focus, but distant objects look blurred. This may be due to a lens that too curved or a long eyeball. Glasses with a concave lens can help.







Hyperopia: You can focus clearly on distant objects, but close objects appear blurred. Can be due to a flat lens or a short eyeball. Glasses with a convex lens can help.

Biology | Topic Dictionary

Word	Definition	In a sentence…
Herd immunity	The resistance to the spread of a contagious disease within a population that results if a sufficiently high percentage of the population are immune to the disease, especially through vaccination.	**Herd immunity** can make a huge difference in stopping the spread of diseases in a community.
Antigen	A molecule on the surface of a cell. A foreign antigen triggers white blood cells to produce antibodies.	The **antigen** on the surface of the virus is what your immune system recognizes as a threat.
Immunity	The ability of white blood cells to respond quickly to a pathogen.	After getting vaccinated, I felt more confident in my **immunity** to the flu.
Preclinical trial	Trials carried out on potential new medicines in a laboratory using cells, tissues and live animals	The scientist carefully designed the **preclinical trial** to test the new drug on rats before using it on humans.
Clinical trial	Testing of potential new drugs on healthy volunteers (first stage) and patient volunteers (second stage)	The **clinical trial** results were exciting, showing that the new drug worked much better than expected.
Placebo	A fake treatment / a medicine that does not contain the active drug.	I was given the **placebo** in the trial, but I still felt better after taking the pills.
Double blind	Neither the doctor or the patient know who is given the real drug or the placebo. Used to **avoid bias** results being collected	The experiment was a **double blind** study
Preclinical trial	Trials carried out on potential new medicines in a laboratory using cells, tissues and live animals	There was a **preclinical trial** for the new drug against HIV.
Hybridoma	**A cell created during the production of monoclonal antibodies by the fusion of an antibody specific lymphocyte and a tumour cell.**	Scientists are researching the use of **hybridoma** cells against HIV viruses
Lymphocyte	**A type of white blood cell that produce antibodies for specific antigens.**	The body's **lymphocytes** work hard to fight off infections like colds and flu.
Homeostasis:.	The regulation of the internal conditions of a cell or organism to maintain the optimum conditions. E.g. body temperature, water concentration and blood glucose concentration	**Homeostasis** is why our body temperature stays the same even when it's cold outside.
Receptors:	Cells that detect stimuli	The skin's **receptors** sense changes in temperature and send signals to the brain.
Stimuli:	changes in the external or internal environment	The loud noise from the alarm was a strong **stimuli**, causing me to jump in surprise.

Biology | Topic Dictionary

Word	Definition	In a sentence…
Coordination Centre	areas that receive and process information from receptors. E.g. brain, spinal cord, pancreas	The brain acted as the **coordination centre**, directing the muscles to move quickly away from danger.
Effectors	Muscles or glands that bring about responses in the body	The **effectors** in my body responded immediately, causing my muscles to contract and pull my hand away from the hot stove.
Neurones	basic cells of the nervous system that carry electrical impulses around the body.	The **neurones** in my leg were damaged in the accident, making it harder to walk.
Nerve	bundles of neurones	The doctor explained how **nerve** signals travel from the brain to different parts of the body.
Epidermal tissue	Covers surface, see through to let light in	The plant's **epidermal tissue** helped protect it from drying out in the harsh sun.
Palisade tissue	Has many chloroplast for photosynthesis	**Palisade tissue** is packed with chloroplasts that absorb sunlight for photosynthesis.
Spongy mesophyll	Contains air spaces, large surface area for gas exchange	The **spongy mesophyll** of the leaf has air pockets to help with gas exchange during photosynthesis.
Guard cell	Cells found on the lower epidermis. Controls the size of the stomata	The **guard cells** around the stomata regulate the amount of water lost through evaporation.
Stomata	Small holes found on the lower epidermis. Allow O2 and CO2 into and out of the leaf.	The **stomata** opened wide to allow carbon dioxide to enter the leaf for photosynthesis.
Transpiration	Loss of water by evaporation from the leaf	As the water evaporated from the plant, it created a **transpiration** effect that helped pull more water up from the roots.
Transpiration stream	Movement of water from the roots to the leaves	The **transpiration stream** moved the water from the roots to the leaves, keeping the plant hydrated.
Translocation	Movement of sugar around the plant	After the leaves absorbed sunlight, the **translocation** of sugars started, providing energy for growth.
Endothermic Reaction	A reaction which needs an input of energy from the surroundings. Photosynthesis is an example of an endothermic reaction	On cloudy days, **limiting factors** like a lack of sunlight can slow down the rate of photosynthesis.
Limiting Factor	A factor that affects the rate of photosynthesis. These are temperature, carbon dioxide, light intensity and amount of chlorophyll	On cloudy days, **limiting factors** like a lack of sunlight can slow down the rate of photosynthesis.
Fertilisers	Substances containing the minerals needed for plant growth	The farmer used **fertilisers** to help the plants grow stronger and produce more fruit.

Core focus
All learners
HT only
Triple science only

Energy Changes

Big idea: Energy change reactions can be useful

Exothermic Reactions

- An exothermic reaction is one that transfers energy to the surroundings so the temperature of the surroundings increases.
- Exothermic reactions include combustion, many oxidation reactions and neutralisation.

- **Uses:** self-heating cans and hand warmers.

Endothermic Reactions

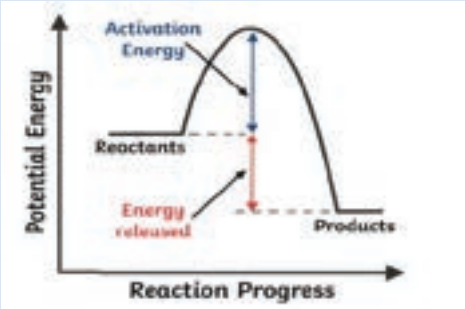
- An endothermic reaction is one that takes in energy from the surroundings so the temperature of the surroundings decreases.
- Endothermic reactions include thermal decompositions and the reaction of citric acid and sodium hydrogen-carbonate.

- **Uses:** sports injury packs

Exothermic Reaction Profile

- If a reaction transfers energy **to** the surroundings the product molecules must have less energy than the reactants, by the amount transferred.

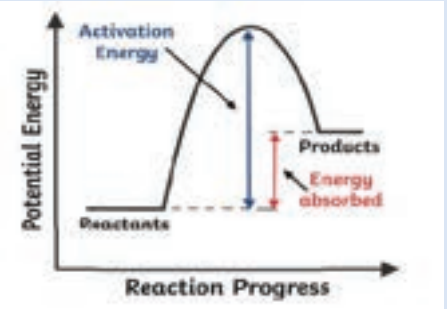
IMPORTANT NOTE: The activation energy starts in line with the reactants.



Endothermic Reaction Profile

- If a reaction transfers energy **from** the surroundings, the product molecules must have more energy than the reactants, by the amount transferred.

- Activation energy is the amount of energy required for a reaction to take place.



Bond Making and Bond Breaking

- During a chemical reaction:
  - energy must be supplied to break bonds in the reactants
  - energy is released when bonds in the products are formed.
- The energy needed to break bonds and the energy released when bonds are formed can be calculated from bond energies.
- In an exothermic reaction, the energy released from forming new bonds is greater than the energy needed to break existing bonds.
- In an endothermic reaction, the energy needed to break existing bonds is greater than the energy released from forming new bonds.

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Energy Changes

Big idea: Energy change reactions can be useful

Bond Energy Calculations

hydrogen + chlorine → hydrogen chloride

$H_{2(g)} + Cl_{2(g)} \rightarrow 2HCl_{(g)}$

H – H + Cl – Cl → H – Cl + H – Cl

Bond Breaks | Bond Breaks | New Bond Forms | New Bond Forms

Type of bond	Number of bonds broken	Number of bonds made
H-H	1	0
Cl-Cl	1	0
H-Cl	0	2

Bond	H—H	Cl—Cl	H—Cl
Dissociation energy in kJ per mole	436	242	431

Energy = Energy of Bonds Broken – Energy of Bonds Made

= (1x432 + 1x339) – (2 x 427)

= 771 – 854

= - 83

This is an exothermic reaction because the energy is negative.

Required Practical – Energy Changes

Types of reactions: acid + metals, acid + carbonates, neutralisations, displacement of metals

For a neutralisation reaction

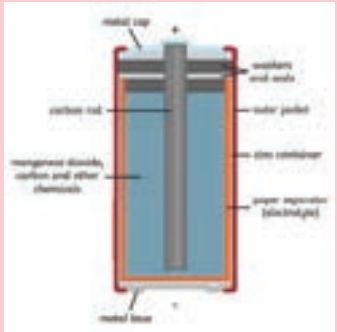
1. Measure the solutions
2. Measure the initial temperature
3. Add the solutions and **STIR**
4. Measure the final temperature

To improve the accuracy

1. **Stir** to ensure temperature is consistent.
2. Use a **lid** to reduce heat loss.
3. Use an **insulated cup (polystyrene)** to reduce heat loss.
4. If adding a metal, ensure the **same mass** and **shape.**

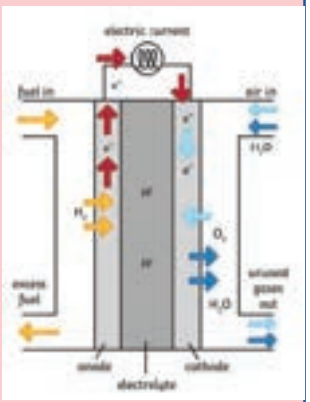
Chemical Cells

- Cells contain chemicals which react to produce electricity.
- The voltage produced by a cell is dependent upon a number of factors including the type of electrode and electrolyte.
- A simple cell can be made by connecting two different metals in contact with an electrolyte.
- Batteries consist of two or more cells connected together in series to provide a greater voltage.
- In non-rechargeable cells and batteries the chemical reactions stop when one of the reactants has been used up. Alkaline batteries are non-rechargeable.
- Rechargeable cells and batteries can be recharged because the chemical reactions are reversed when an external electrical current is supplied.



Fuel Cells

- Fuel cells are supplied by an external source of fuel (eg hydrogen) and oxygen or air. The fuel is oxidised electrochemically within the fuel cell to produce a potential difference.
- The overall reaction in a hydrogen fuel cell involves the oxidation of hydrogen to produce water.
- Hydrogen fuel cells offer a potential alternative to rechargeable cells and batteries.



Ionic Equations

Fuel Cells have the following reactions.

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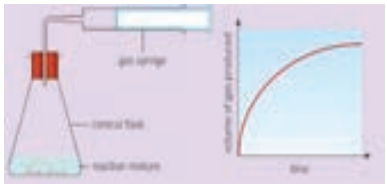
Controlling Reactions

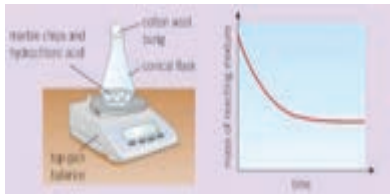
Big idea: Reactions can be made faster

Measuring Reaction Rates

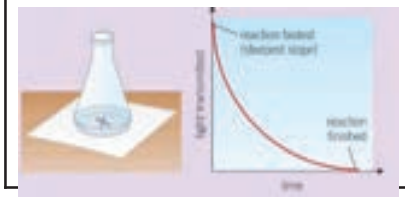
Measure the **MASS LOST** due to gas formed



Measure the **VOLUME OF GAS** made



Measure **TIME for insoluble product** to form.



Measuring Rate

There are two ways of measuring the rate of reaction

1. Measure how fast the reactants are used up
2. Measure how fast the products are made

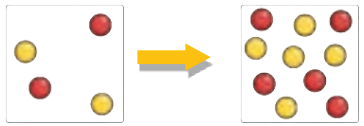
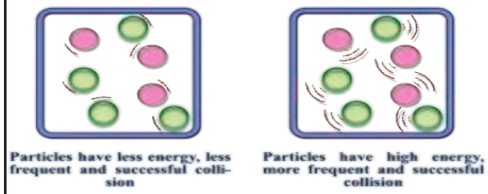
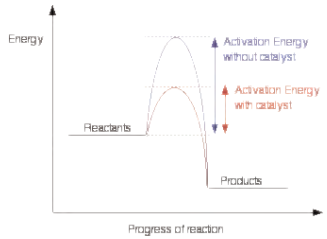
Calculating Reaction Rates

$$\text{mean rate of reaction} = \frac{\text{quantity of reactant used}}{\text{time taken}}$$

$$\text{mean rate of reaction} = \frac{\text{quantity of product formed}}{\text{time taken}}$$

Units of Rate of Reaction

- The units of rate of reaction may be given as g/s or cm /s.

Factor that affects the Rate	Explanation	Diagram
Concentration and Pressure	• **More particles** in the same space. • **More frequent collisions**	 lower concentration higher concentration
Temperature	• Particles **move faster**. • So they **collide more frequently**. • Particles collide **with more energy**. • So more of the collisions are **successful**.	
Surface Area	• **More particles available** to react. • **More frequent collisions.**	 lower surface area higher surface area
Catalyst	• **Lower the energy needed** for successful collisions. (Activation energy) • **Not used up**. • Biological catalysts are called **enzymes**	

Controlling Reactions

Reversible Reactions

In some chemical reactions, the products of the reaction can react to produce the original reactants. Such reactions are called reversible reactions and are represented:

The direction of reversible reactions can be changed by changing the conditions.
For example:

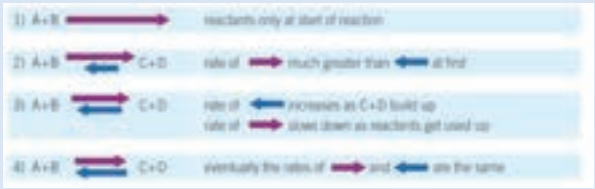
$$A + B \rightleftharpoons C + D$$

Energy Changes and Reversible Reactions

If a reversible reaction is exothermic in one direction, it is endothermic in the opposite direction. The same amount of energy is transferred in each case. For example:

Equilibrium

When a reversible reaction occurs in apparatus which prevents the
escape of reactants and products, equilibrium is reached when the
forward and reverse reactions occur at exactly the same rate.



Rate of forward reaction = rate of reverse reaction.

Amount of products and reactants don't change.

The Effect of Changing Conditions on Equilibrium (Higher Tier)

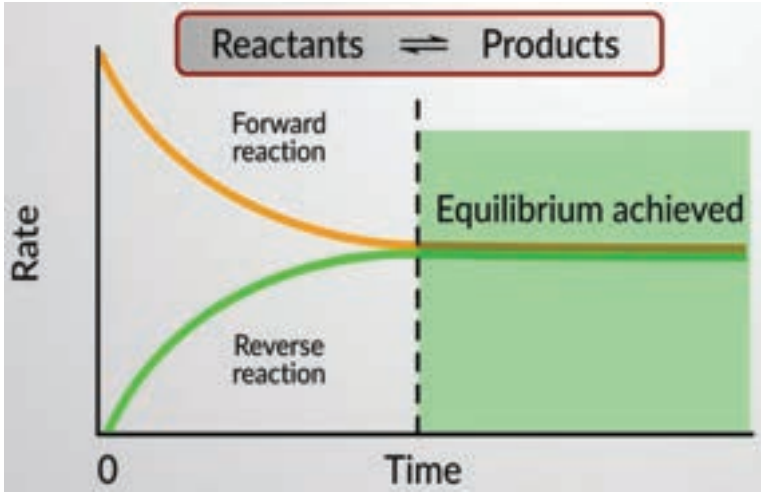
Condition Changed	Affect on Equilibrium
Concentration	If the **concentration of a reactant is increased**, more products will be formed until equilibrium is reached again.
	If **the concentration of a product is decreased**, more **reactants will react** until equilibrium is reached again.
Temperature	If the temperature of a system at equilibrium is **increased**: • the relative amount of products at equilibrium increases for an endothermic reaction • the relative amount of products at equilibrium decreases for an exothermic reaction.
	If the temperature of a system at equilibrium is **decreased**: • the relative amount of products at equilibrium decreases for an endothermic reaction • the relative amount of products at equilibrium increases for an exothermic reaction.
Pressure (FOR GASES ONLY)	An **increase in pressure** causes the equilibrium position to shift towards the side with the smaller number of molecules as shown by the symbol equation for that reaction
	A **decrease in pressure** causes the equilibrium position to shift towards the side with the larger number of molecules as shown by the symbol equation for that reaction.

Controlling Reactions

Big idea: Reactions can be made faster

If a system is at equilibrium and a change is made to any of the conditions (temperature, concentration, pressure), then the system will respond to counteract the change.
This is called Le Chatelier's principle.

Changing the concentration, temperature and pressure of a reaction system can make a big change to where the equilibrium lies, and industry uses this principle regularly to increase the amount of product they make (for the best profits!)



Changing the concentration

- If you add more reactant, the equilibrium will shift to the right to reduce the concentration of reactant (and make more product).
- If you remove some of the product, the equilibrium will shift to the right to increase the concentration of the product.

Changing the temperature

- If the temperature is increased, then the equilibrium position will shift to reduce the temperature (so will favour the endothermic reaction).
- If the temperature is decreased, then the equilibrium position will shift to increase the temperature (so will favour the exothermic reaction)

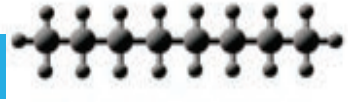
Changing the pressure

- If you increase the pressure, then the equilibrium will shift to reduce it (by favouring whichever side of the reaction has the fewest molecules of gas.

Core focus
All learners
HT only
Triple science only

Crude Oil and Fuel

Big idea: The Earth



ALKANES

Crude oil is a **non-renewable resource**, **a fossil fuel**. Crude oil is made up of a mixture of compounds, most of which are long- and short-chain hydrocarbons.

Most of the compounds in crude oil are hydrocarbons called **alkanes**. The alkanes form a **homologous series**. This is a family of hydrocarbons that all share the **same general formula** and have **chemical properties** that are **similar**.

Alkanes are held together by **single bonds**.

The general formula for an alkane is C_nH_{2n+2}.

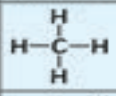
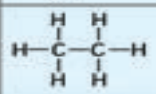
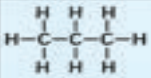
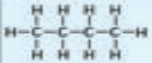
They differ from the neighbouring alkane with the addition of a CH_2.

Alkanes are **saturated hydrocarbons**. This means that all their bonds are taken up and they cannot bond to any more atoms.

Alkanes have **similar chemical properties** but have **different physical properties** due to differences in chain length. The longer the chain, the higher the boiling point of the hydrocarbon.

Mnemonic for the first (4) alkanes

Mice-Methane
Eat-Ethane
Paper-Propane
Bags-Butane

Name of Alkane	Structural Formula	Molecular Formula
methane		CH_4
ethane		C_2H_6
propane		C_3H_8
butane		C_4H_{10}

CRACKING

Cracking is an example of a **thermal decomposition reaction**. **Long-chain** hydrocarbons can be **broken** down into **shorter**, more useful hydrocarbon chains.

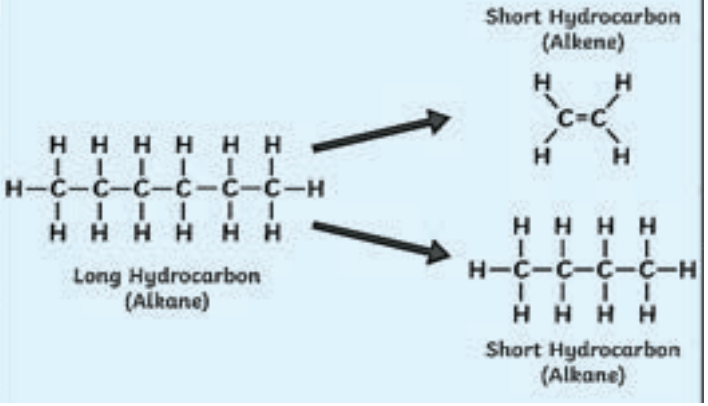
Cracking can be carried out with a catalyst in **catalytic cracking** or with steam in **steam cracking**.

Catalytic cracking involves heating a hydrocarbon to a high temperature (550°C) and passing over a hot catalyst.

Cracking of a long-chain hydrocarbon **produces** a **short-chain alkane** and an **alkene**.

Alkenes are another type of hydrocarbon that is double bonded. The general formula for an alkene is C_nH_{2n}.

Alkenes are **unsaturated hydrocarbons**. In a chemical reaction, the double bond of the alkenes can break. This allows other atoms to bond to it.



Crude Oil and Fuel

Big idea: The Earth

Core focus
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Complete and Incomplete Combustion

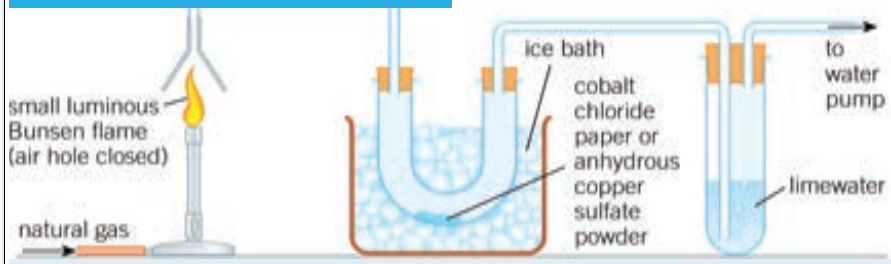
Complete combustion means that there is enough oxygen available for all of the carbon atoms in a fuel to burn and form carbon dioxide. The word equation for the complete combustion of a **hydrocarbon fuel** is:

Hydrocarbon + oxygen → carbon dioxide + water

If there is a shortage of oxygen when a hydrocarbon fuel is burned, **incomplete** combustion takes place. Incomplete combustion can produce **carbon monoxide** and water.

Hydrocarbon + oxygen → carbon monoxide +carbon + water

Testing for the products of Combustion



The limewater goes from colourless to cloudy in the presence of carbon dioxide
The cobalt chloride paper (blue) goes pink in the presence of water
The anhydrous copper sulphate powder (white) goes blue (forming hydrated copper sulphate) in the presence of water

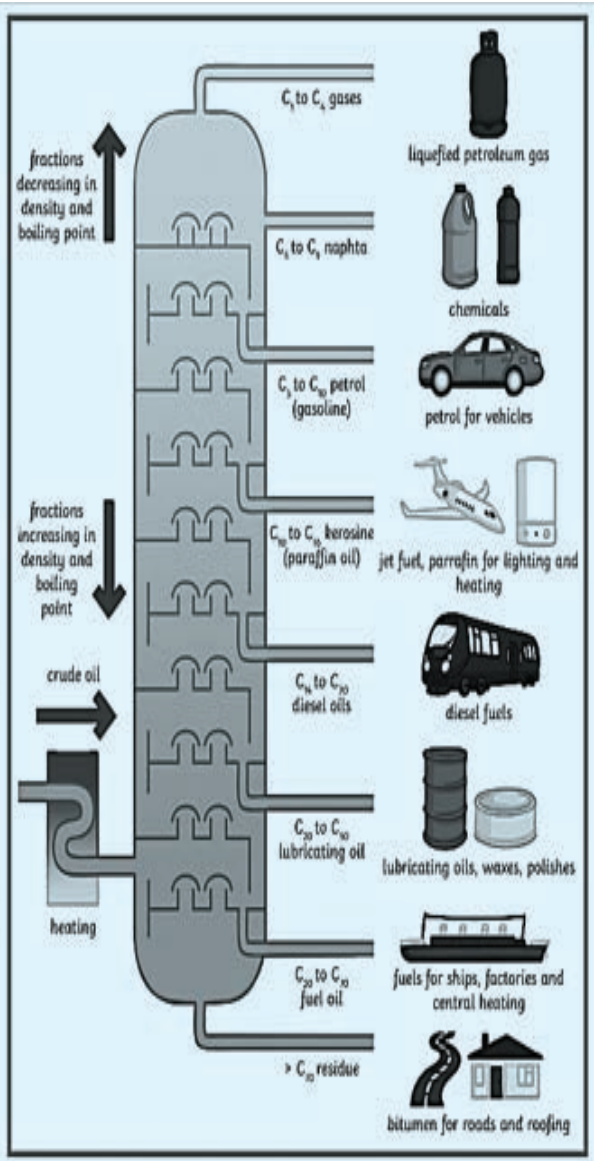
Fractional Distillation

Fractional distillation is used to **separate** a mixture of long-chain hydrocarbons in crude oil into smaller, more useful fractions.

Hydrocarbons have different boiling points depending on their chain length. **Each fraction contains hydrocarbons of a similar chain length.** These fractions will boil at different temperatures due to the difference in sizes of the molecules. The different parts of crude oil are called fractions because they are a small part of the original mixture.

Crude oil is heated and enters at all column called a **fractioning column.** The column is **hot at the bottom** and decreases in temperature toward the top. As the crude oil is heated, it begins to evaporate and its vapours begin to rise up through the column. These vapours condense at the different fractions.

Short-chain hydrocarbons are found at the **top** of the column. This is because shorter chain molecules are held together by **weak intermolecular forces** resulting in low boiling points. These shorter chain hydrocarbons leave the column as gas.



Science | Chemical Calculation | Topic Dictionary

Key term	Definition	In a sentence
Exothermic	A reaction in which the temperature increases as thermal (heat) energy is transferred to the surroundings from the chemicals.	The reaction that took place was **exothermic.**
Endothermic	A reaction in which the temperature decreases as thermal (heat) energy is transferred from surroundings into the chemicals.	The reaction that took place was **endothermic.**
Activation Energy	The amount of energy required for a reaction to take place.	The **activation energy** is the minimum amount of energy required to initiate a chemical reaction.
Reactants	Substances put into a reaction.	During a chemical reaction, **reactants** interact to form one or more products.
Products	The resulting substances from a reaction.	After the reaction is complete, the **products** have different chemical properties than the original reactants.
Cell	A device where electricity is generated in an electrolyte using two electrodes.	A single electrochemical **cell** can convert chemical energy into electrical energy.
Battery	Two or more chemical cells connected together.	A **battery** is composed of multiple electrochemical cells connected to provide a steady flow of electricity.
Electrolyte	An electricity conducting liquid.	The **electrolyte** in a battery allows ions to move between the electrodes, enabling the chemical reaction to generate electricity.
Fuel Cell	A chemical cell which has a non-stop supply of fuel which allows the cell to continue working.	A **fuel cell** generates electricity through a continuous chemical reaction.

Science | Chemical Changes | Topic Dictionary

Key Term	Definition	In a sentence
Activation Energy	The amount of energy required for a reaction to take place	Raising the temperature helped the molecules overcome the **activation energy** needed for the reaction.
Catalyst	A substance that speeds up the reaction but is not used up. It lowers the activation energy.	A **catalyst** was used in the chemical reaction.
Reversible Reaction	This is a reaction that can go in both directions	In the lab, they observed a **reversible reaction** that shifted between products and reactants.
Dynamic Equilibrium	This is when the rate of the forward reaction is the SAME as the rate of the reverse reaction.	After several minutes, the reaction mixture reached **dynamic equilibrium**, with no net change in concentration.

Science | Electrolysis | Topic Dictionary

Key Term	Definition	In a sentence
Hydrocarbon	A compound containing hydrogen and carbon atoms only.	Methane is a simple **hydrocarbon** composed only of carbon and hydrogen atoms.
Saturated	Hydrocarbons containing the maximum number of bonds possible. Single bonds.	A **saturated** hydrocarbon, like ethane, contains only single bonds between carbon atoms.
Unsaturated	Hydrocarbon compounds containing double or triple bonds.	**Unsaturated** hydrocarbons, such as alkenes, contain at least one double or triple bond between carbon atoms.
Cracking	Longer hydrocarbon chains are broken down into shorter, more useful hydrocarbons.	**Cracking** breaks down large hydrocarbon molecules into smaller, more useful ones, often producing alkenes in the process.
Crude Oil	A mixture of hydrocarbons with different carbon length.	**Crude oil** is extracted from underground and then refined into different useful products, such as gasoline and diesel.
Alkane	A saturated hydrocarbon.	Propane is an **alkane** commonly used as a fuel for heating and cooking.
Fractional Distillation	Technique used to separate components in a mixture based on similar or close boiling points.	Through **fractional distillation**, crude oil is separated into different components based on their boiling points.
Combustion	The reaction of fuel with oxygen to produce energy.	Complete **combustion** of hydrocarbons in oxygen produces carbon dioxide and water as byproducts.
Viscous	The ability of a liquid to flow easily.	Heavy oils are more **viscous** than lighter oils, making them harder to flow through pipelines.
Volatile	The ability to change from liquid to gas easily (evaporate).	Gasoline is highly **volatile**, which allows it to evaporate and mix with air for combustion in an engine.
Flammable	Ease of igniting (set a flame).	Methane is extremely **flammable** and can ignite easily with a spark.
Fuel	Substances that can be burned (combust) to release energy.	Diesel is a common **fuel** used in transportation due to its high energy content.

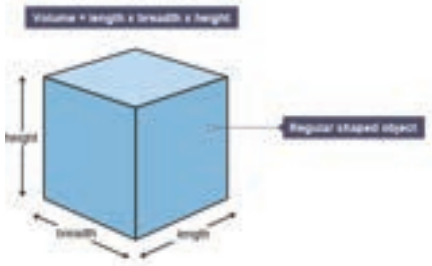
Particle model of matter

Big idea: Energy and Forces

Finding volume

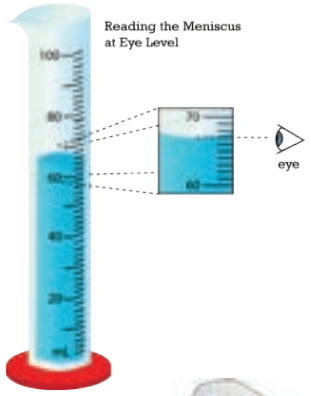
Of a regular object

Measure the length, depth and height of the object and multiply them together



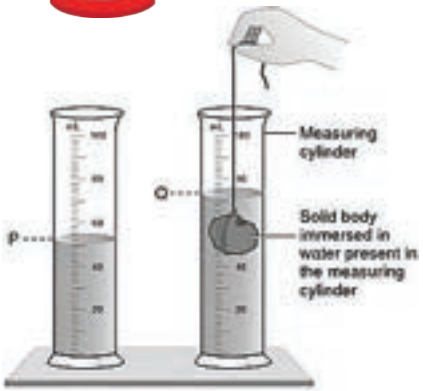
Of a liquid

Place the liquid into a suitable sized measuring cylinder.



Of an irregular object

Put an amount of water into a measuring cylinder and record the **volume**. Immerse the object into the water a record the change in volume of. This is the volume of the object.

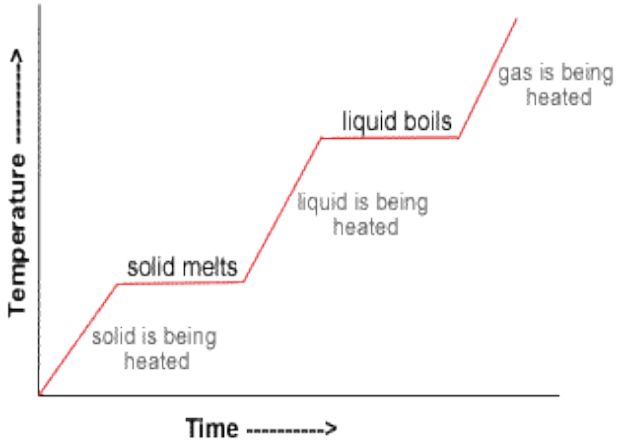


Heating curve

When the matter is being heated, it will either raise in temperature (**kinetic energy** of the particles) or change state (potential energy of the particles).

When a pure substance changes state, it will not change temperature.

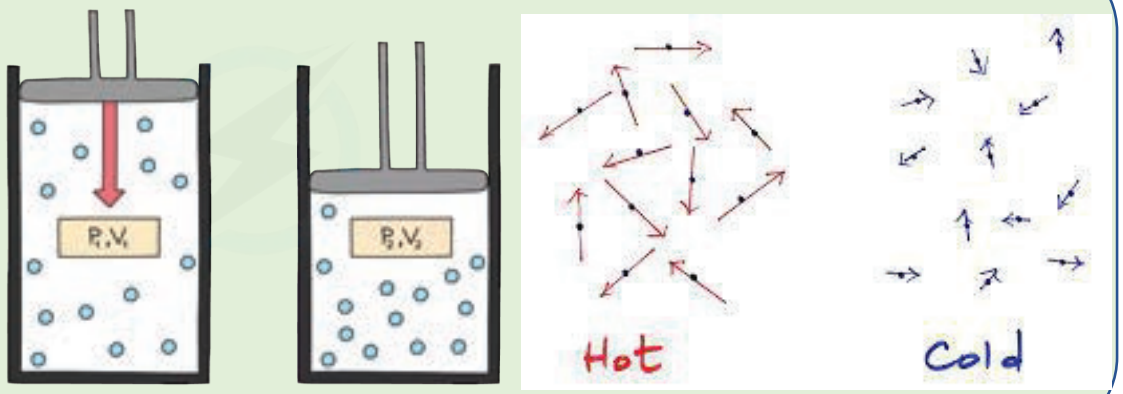
The sum of the **kinetic energy** and potential energy in a particle is called the internal energy.



Gas pressure

When a gas is heated the particles move faster, this means they collide with the surface more often and with more force meaning the pressure is higher.

When the **volume** of a gas is decreased (compressed), the pressure will increase due to the surface area decreasing.



P7 - radioactivity

Big idea: radiation transfers energy

Name	Notation	Symbol
alpha particle	^4_2He or $^4_2\alpha$	α
beta particle	$^0_{-1}e$ or $^0_{-1}\beta$	β^-
gamma radiation	$^0_0\gamma$	γ
neutron	^1_0n	n

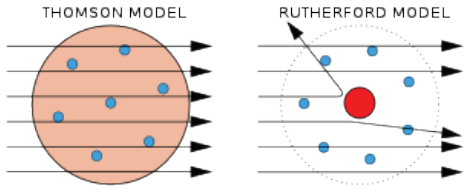
The history of the atom.

1. **Democritus (~400BC):** an atom is tiny, hard, and uncuttable. The shape of atoms explain their behaviour. E.g. water "atoms" are round, "atoms" of fire have sharp edges
2. **John Dalton (1803):** atoms are solid, indivisible spheres. All the atoms in an element are identical to each other atom of that element. Different elements are made from different atoms.
3. **J.J. Thompson (1897):** the plum pudding model. An atom is a positively charged sphere with negatively charged electrons distributed throughout. Similar to raisins in a sponge pudding.
4. **Rutherford (1909):** the discovery of the nucleus. A positively charged **nucleus** surrounded by electrons. The atom is mostly empty space.
5. **Niels Bohr (1913):** electrons orbit the **nucleus** in particular orbits or 'energy levels'.
6. **Modern quantum cloud model:** The story of atoms does not stop here and more has been discovered but this is saved for A-Levels and beyond due to complexity.

Discovery of the nucleus.

Ernst Rutherford was experimenting on the structure of the atom and designed an experiment to test Thomson's 'plum pudding' model. Rutherford fired positively charged **alpha particles** at a very thin sheet of gold and used a fluorescent film to detect where they went after passing through the gold.

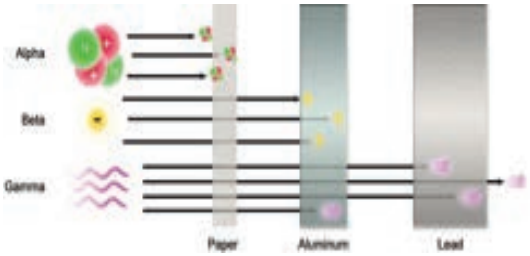
Below show what would happen if the plum pudding model is correct. All the particles would pass through without being deflected. What happened is that some of the particles WERE deflected. As most of the positively charged alpha particles went straight on through the gold and only a very small number were deflected, Rutherford deduced that there must be a concentration of positive charge surrounded by empty space containing electrons.



Penetration and ionisation

The ionising power tells you how much damage radiation can do to your cells. The higher the ionising power the higher the chance the hit cell will die or become cancerous. This means Alpha is the most dangerous if swallowed or very close to you. Beta radiation is the most dangerous 10cm-2m away and gamma is the most dangerous at longer distances.

Radiation	Ionising power	Range in air	Stopped by
Alpha (α)	Strong	A few centimetres	Paper or thin card
Beta (β)	Moderate	About 1 m	5 mm of aluminium
Gamma (γ)	Very weak	At least 1 km	About 10 cm lead



Decay equations

Alpha emission: **atomic number** decreases by 2, **mass number** decreases by 4 $^{4}_{2}\alpha$

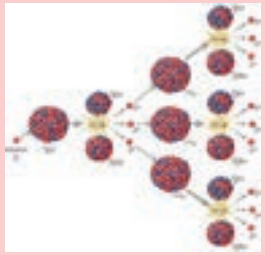
Beta emission: **atomic number** goes up by 1, **mass number** does not change $^{0}_{-1}\beta$

Gamma emission: **atomic number** and **mass number** do not change $^{0}_{0}\gamma$

Neutron emission: **atomic number** does not change; **mass number** goes down by 1 $^{1}_{0}n$

Nuclear fission

When a neutron hits a large nucleus there is a chance it will be absorbed. If the neutron is absorbed then the **nucleus** can become unstable, splitting into two smaller nuclei and releasing a small amount of energy. This **fission** can also release some neutrons which can then go on to collide with more nuclei repeating the process in a chain reaction.

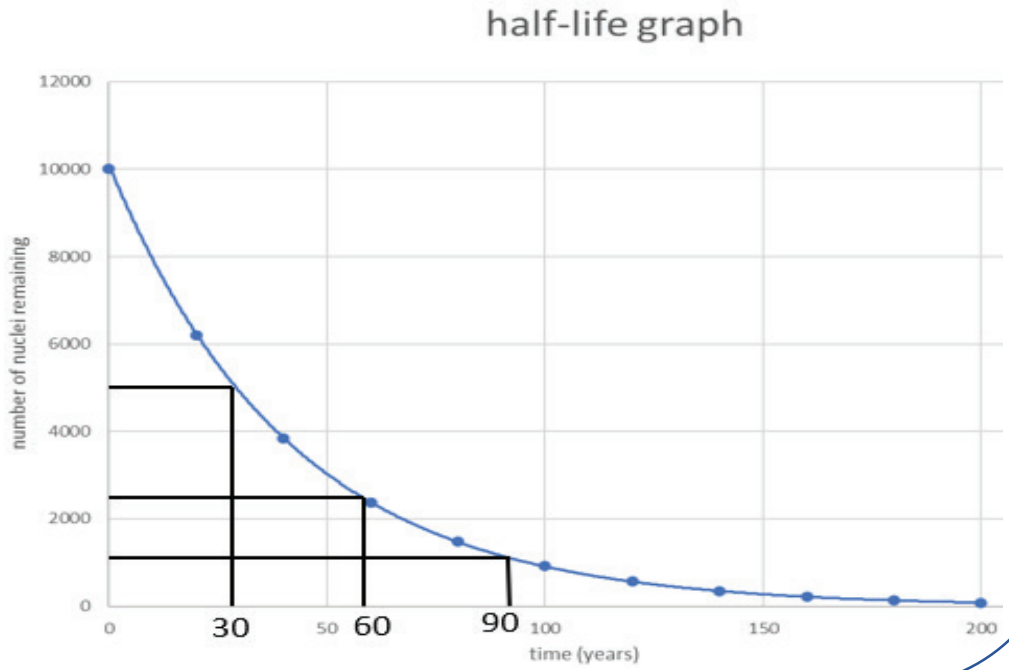


Nuclear fusion

If two small **nuclei** collide with enough energy they can fuse together into a larger nuclei. This process releases a small amount of energy. This is the process which powers stars such as the sun, they fuse hydrogen into helium. Some scientists see fusion as the key to safe, clean, and free energy on earth if they can get the technology to work.

Half life graph

Each radioactive **isotope** has a **half-life**, the time it takes for half the **nuclei** in a sample to decay. If you plot the number of nuclei remaining against the time you can find the **half-life** of a sample. In the below example we start with 10000 nuclei. It takes 30 years for the initial 10000 to reduce to 5000 nuclei. We can check our answer by repeating the process and going from 5000 to 2500 nuclei. The time for the number to half is again 30 years.



Half life calculation

If we know the initial number of unstable **nuclei**/the initial activity of a radioactive sample, we can calculate the number of unstable **nuclei**/activity after **n** half-lives using this equation.

$$count\ rate\ after\ n\ half\ lives = \frac{initial\ count\ rate}{2^n}$$

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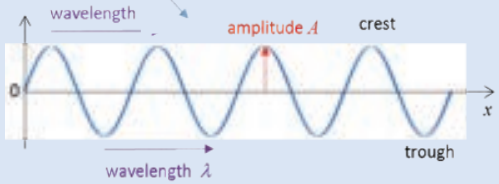
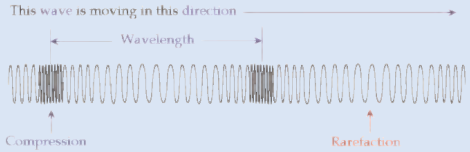
Waves
Big idea: Energy

Transverse wave:



Longitudinal wave:



Key equations and numbers

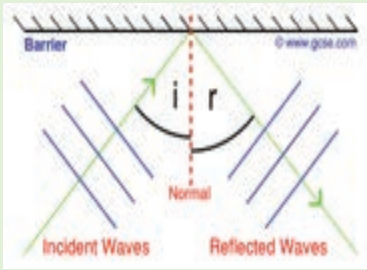
$$Time\ period\ (s) = \frac{1}{frequency\ (Hz)}$$

$$wave\ speed\ (^{m}/_{s}) = frequency(Hz) \times wavelength(m)$$

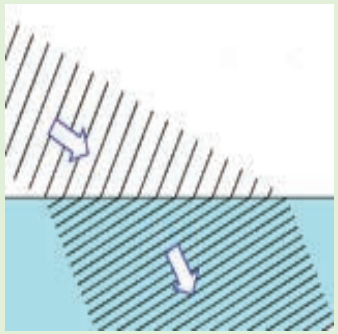
$$speed\ of\ light\ in\ a\ vacuum = 3 \times 10^{8}\ {}^{m}/_{s}$$

$$human\ hearing\ range = 20Hz\ - 20{,}000\ Hz$$

Reflection: Reflection can be modelled using a ripple tank and a flat barrier. If the wave hits the barrier at a non-zero angle then the wave will be reflected at the same angle it hit at.



Refraction: Refraction is the apparent bending of a wave resulting from the wave hitting a boundary at an angle and being slowed, for example, light entering a glass block.



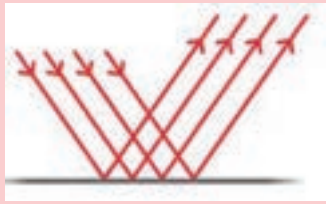
Sound: Sound is **a longitudinal wave** made up of high and low pressure waves in the air/other medium.
A higher **frequency** sound wave will have a higher **pitch** and a low **frequency** sound wave will have a low **pitch**.

Ultrasound: Ultrasound is any sound with a **frequency** above **20,000 Hz**.
It can be used to image inside the human body, e.g. to see an unborn baby, without risking exposure to **ionising radiation** such as X-rays.

Seismic waves: seismic waves are what cause earthquakes. Primary seismic waves (**p-waves**) are **longitudinal** and secondary seismic waves (**S-waves**) are **transverse**.

Specular reflection

Specular reflection occurs on flat shiny surfaces, such as a mirror. As all of the light rays hit the mirror surface at the same angle, they are all reflected at the same angle.



Diffuse reflection

Diffuse reflection occurs when light hits a rough surface. As the surface is uneven each ray of light hits the surface with a different **angle of incidence** and so is reflected in a different direction. This is why you don't see a reflection of your face when you look at a wall, the light is **scattered**.

Waves – required practical

Big idea: Energy

What are they likely to ask about?

You can be asked to explain how to find the wavelength, frequency ad speed of the wave in each experimental set up. You can be asked to describe the effect of a change to the set up, for example reducing the distance between the wooden bridge and the vibration generator.

Ripple tank

To find the wavelength:

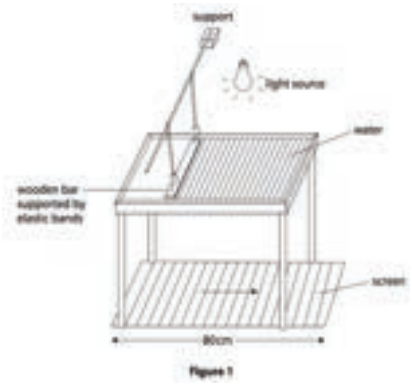
- Measure the length of a glass block using a ruler and place it into the water. Measure the length of the image produce on the screen and calculate the **magnification**.
- Place a meter ruler on the screen **perpendicular** to the wave front.
- Take a picture of the screen and measure the Length of 10 wave fronts.
- Divide this by 10 to find the mean value of the **wavelength**.

To find the frequency:

- Use a ruler and pen to mark the screen **perpendicular** to the direction of wave travel
- Use a stop watch to count how many waves go past this point in 10 seconds
- Divide this by 10 to find the mean **frequency.**

To find the speed:

- Use your value for the
- **wavelength** and **frequency**
- along with the **wave speed**
- equation to calculate the
- speed of the wave along
- the string.



- $wave\ speed(^{m}/_{s}) = frequency(Hz) \times wavelength(m)$

Wave on a string

To find the wavelength:

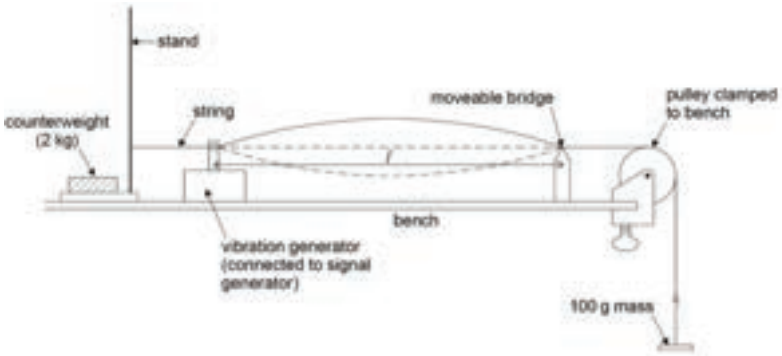
- Adjust the **frequency** on the **signal generator** until there is the standing wave pattern shown in the diagram below.
- Measure the length between the vibration generator and the wooden bridge using a metre ruler. this is half of the **wavelength.**
- To find the **wavelength**, double the length you measured between the vibration generator and the wooden bridge.

To find the frequency:

- The **frequency** can be read from the signal generator.

To find the wave speed:

- Use your value for the **wavelength** and **frequency** along with the wave speed equation to calculate the speed of the wave along the string.



If you move the wooden bridge closer to the vibration generator then you will be reducing the available wavelength, the wave speed will not change so the frequency would have to be reduce to keep the wave pattern.

Physics | Particle Model of matter, Radioactivity and waves | Topic Dictionary

Key term	Definition	In a sentence
mass	The amount of matter that makes up an object	Lifting a heavy suitcase reminds me of how much **mass** it has.
weight	The force due to a mass and gravity	Your **weight** on the moon would be less because the moon has less gravity.
volume	The amount of space something takes up	When you pour milk into a glass, you are filling it to a certain **volume**.
density	The mass per unit volume	Oil floats on water because it has a lower **density**.
specific heat capacity	The amount of energy required to raise the temperature of 1kg of a material by 1°C	The ocean stays relatively cool in summer and warm in winter due to water's high **specific heat capacity**. The ocean stays relatively cool in summer and warm in winter due to water's high specific heat capacity.
latent heat	The amount of energy required to change state without a change in temperature	When ice melts, it absorbs **latent heat** but stays at 0°C until it's all melted.

Physics | Particle Model of matter, Radioactivity and waves | Topic Dictionary

Key term		Definition	In a sentence
kinetic theory		How particles in gas move depending on their temperature and mass.	The **kinetic theory** explains why hot air balloons rise; the particles move faster and spread out.
nucleus (nuclei- plural)		The centre of an atom. Made up of protons and neutrons	The **nucleus** of an atom contains protons and neutrons and is very dense.
atomic number		The number of protons in an atom. This dictates what element it is. E.g. if there are 6 protons it is carbon, 7 protons is nitrogen etc.	The **atomic number** of hydrogen is 1, making it the first element on the periodic table.
mass number		The number of protons plus the number of neutrons in a nucleus. E.g. if a nucleus contains 3 protons and 4 neutrons, the mass number will be 7	By adding the protons and neutrons together, you can determine an atom's **mass number**.
alpha particle		Emitted from an unstable nucleus. Contains 2 protons and 2 neutrons. Also known as a helium nucleus	Scientists use **alpha particles** in smoke detectors to help detect smoke.
beta particle		Emitted from an unstable nucleus. A neutron turns into a proton and emits a high-speed electron.	The presence of **beta particles** can pose a health risk if they are inhaled or ingested.
gamma wave		A very high frequency electromagnetic wave emitted from an excited nucleus	**Gamma waves** have more energy than X-rays and can pass through most materials, making them useful in cancer treatment.
isotope		An atom with a different number of neutrons but the same number of protons.	Carbon dating relies on the **isotope** carbon-14 to estimate the age of ancient artifacts.
Separate Physics only	half-life	The time it takes for half of the nuclei in a sample to decay	The **half-life** of a radioactive substance tells us how quickly it loses half of its radioactivity.
	nuclear fission	When a large nucleus splits into smaller nuclei. This process releases energy and is used in nuclear power stations	Nuclear power plants generate electricity through **nuclear fission**, splitting heavy atomic nuclei.

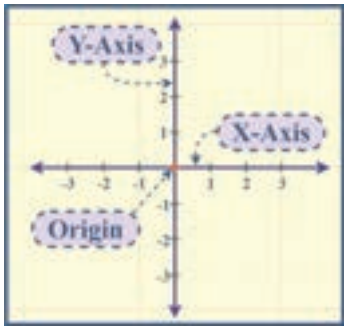
Physics | Particle Model of matter, Radioactivity and waves | Topic Dictionary

Key term	Definition	In a sentence
wave	A wave is an oscillation which transfer energy without the transfer of matter.	The sound **waves** reflected off the cave wall, causing an echo.
wavelength (λ)	The length between two identical points on a wave form. Usually measured between two adjacent peaks. Measured in metres (m)	The **wavelength** of red light is around 700 nanometres.
frequency (f)	The number of complete waves passing a point per second. Measured in Hertz (Hz)	The **frequency** of waves at the beach were measured to be 0.5 Hertz.
time period (T)	The number of seconds for a complete wave to pass a point. Measured in seconds (s)	The **time period** of the waves decreased as they began to arrive more rapidly.
wave speed	How quickly a wave is travelling. Measured in metres per second (m/s)	The **speed** of a sound **wave** is 330m/s.
amplitude	The maximum displacement of the wave from the equilibrium point.	The higher the **amplitude** of a sound wave, the louder the sound is.
transverse	A wave where the oscillations are perpendicular to the direction of wave travel/energy transfer.	Light is a **transverse** wave.
longitudinal	A wave where the oscillations are parallel to the direction of wave travel/energy transfer	Sound is a **longitudinal** wave
oscillate	Repeated back and forth motion about a central equilibrium point	The pendulum of the old clock continued to **oscillate**.
specular reflection	Reflection from a smooth surface. Parallel incident rays will still be parallel after reflecting	A clear image on a mirror is due **to specular reflection.**
diffuse reflection	Reflection from a rough surface. Parallel incident rays will be reflected in all different directions, scattering the light.	You cannot see yourself in the reflected light on a table because it is **diffuse**.

Skills guide - Graphs

Constructing graphs

Most data you meet in science is **continuous** and will require a line graph to represent.



The first step is to use a pencil And ruler to draw your **axes**.

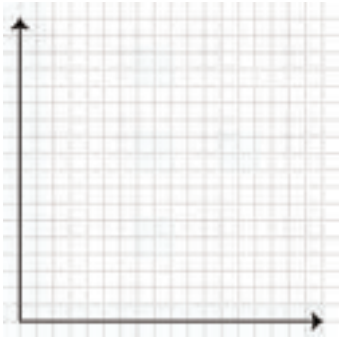
The second step is to add a **scale** to your axes. You should go up in either 1s, 2s, or 5s (or 0.1s, 0.2s, 0.5s, or 10s, 20s, 50s Etc). What you choose will depend on the size of your **axis** and the data you have to fit onto the **axis**.

my independent data goes onto my x-axis and my dependant data goes on my y-axis.

I have 18 divisions/squares on my **x-axis**. I need to plot up to 4 minutes. if I divide 4 by 18 then each square should be worth 0.222.

We should round this down to 0.2 minutes per square.

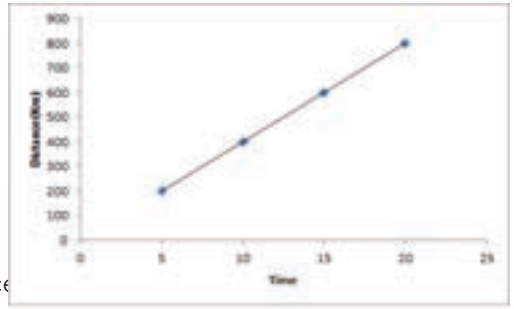
following the same process for my **Y-axis**, 55/18 is 3.05. We should reduce this to 2 degrees per square.



Time (minutes)	Temperature (°C)
0	0
1	21
2	32
3	43
4	55

Interpreting graphs

Directly proportional: if one value doubles, the other value will double, the two values have a constant **ratio**.

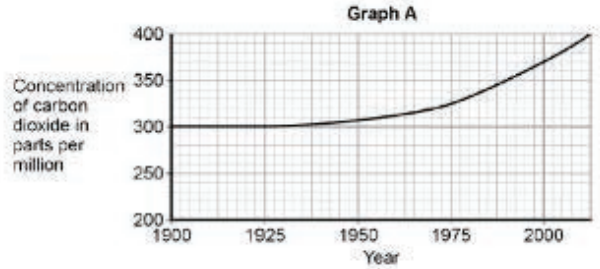


A **directly proportional** relationship will be a linear graph which passes through the **origin**.

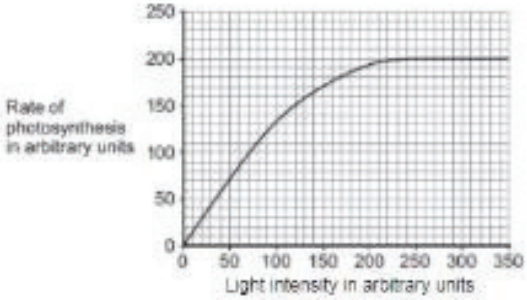
Describe the relationship between distance **proportional** to time.

Describing a trend: say what you see, in detail. Use any key data from the graph. Examples below.

The concentration of carbon dioxide remained constant at 300 ppm until 1930 when it began to increase at a faster and faster **rate**.



The rate of photosynthesis increased as light intensity increased the maximum rate of photosynthesis was 200 units which was reached at 230 units of light intensity. The rate of increase of the rate of photosynthesis was maximum at the beginning and decreased as it approached the max



Skills guide - Calculations

Single step calculation – GUESS

G: given – identify the information you are given in the question

U: unknown – what is the unknown that you have been asked to calculate?

E: Equation – given the information given and that you have been asked to find, recall an equation which links them all.

S: substitute – substitute your information into the equation

S: solve – rearrange your equation if necessary and then use your calculator to solve

Example:

A **solution** of sodium chloride has a **concentration** of 200g/dm^3.

*What is the **mass** of sodium chloride in 700cm^3 of **solution**?*

$c = 200g/dm^3$
$v = 0.7\ dm^3$
$m = ?$
$c = \frac{m}{v}$
$m = c \times v$
$= 200 \times 0.7$
$= 140\ g$

Multistep calculations-Chemical Calculations

Calculate the **mass** of magnesium oxide that can be made by completely burning 6.0 g of magnesium in oxygen in the following reaction:

$2Mg\ (s) + O_2\ (g) \longrightarrow 2\ MgO\ (s)$

$MOLES = \frac{MASS}{M_r}$

$MOLES = \frac{6}{24} = 0.25$

STEP 1: CALCULATE THE MOLES OF MAGNESIUM USED IN THE REACTION

2Mg : 2MgO

RATIO IS THUS 1:1

SO 0.25 MOLES Mg
PRODUCES 0.25 MOLES MgO

STEP 2: FIND THE RATIO OF Mg TO MgO USING THE MOLAR RATIO FROM THE BALANCED EQUATION

$MASS = MOLES \times M_r$

$MASS = 0.25 \times 40 = 10g$

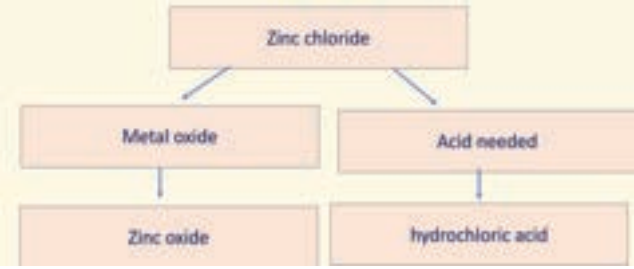
STEP 3: CALCULATE THE MASS OF MgO

Skills guide – writing a practical method exam question

Plan

Write method to produce a pure dry sample of the salt zinc chloride from a sample of zinc oxide.

1. What reactants do I need?



a beaker

3. I need to add ZnO in excess to ensure all the acid as reacted What method is used to remove the unreacted ZnO?

Filtration

4. What equipment is needed for filtration?

Filter paper, filter funnel and conical flask

4. The filtrate that is left behind, what separation technique can now be used how can we obtain crystals?

crystallisation

6. What equipment is needed or crystallisation?
Evaporating basin

Model Answer

Add a hydrochloric acid to a beaker.
Add the zinc oxide to **hydrochloric acid** until the zinc oxide is in **excess**.

Filtering

Filter, through a filter funnel and paper, to remove the **unreacted** zinc oxide.
Collect the filtrate, zinc chloride solution, in a conical flask

Crystallisation

Pour the zinc chloride solution into an evaporating basin
Heat gently to **evaporate** the water until **crystals** begin to form.
Remove from heat and dry in a drying oven.

How to improve a method

A student plans to make a pure dry sample of **copper nitrate crystals.**

The student's plans the method below:

1. Add a small amount of potassium carbonate to dilute nitric acid in a beaker.
2. Filter to remove excess carbonate
3. Heat gently, using a water bath then allow to evaporate naturally or in drying oven

This method contains one error and **will not** produce copper nitrate crystals.
Identify and **explain** the error and give the improvements that would allow the student to make crystals of copper nitrate.

Error = Used potassium carbonate

Why it's an error? = This will produce a potassium salt not copper

Improvement = Use copper carbonate or copper oxide

Notes

Notes

GCSE Art | Natural Forms and Botanical Art |Topic Dictionary

Image	Word	Definition	In a sentence...
	**botanical art**	A representation of a plant or fungi or lichen, which is scientifically and botanically correct but not necessarily 'complete' as a scientific recording.	**Botanical** artists at Kew Gardens work faithfully with the scientists to draw a true likeness of plants and flowers, connecting science and art.
	**complementary colours**	Colours that sit across from each other on the colour wheel. These are often referred to as **opposite colours** and even **contrasting colours**. The three different names all mean the same thing. When complementary colours are placed next to each other, a very strong contrast is created. The colours appear more vivid and brighter.	The **complementary colours** used in Van Gogh's botanical art are vivid and contrasting. He uses colour schemes of blues and oranges.
	**composition**	Composition is the sum of how you place all the parts within an image: the use of the edges of the frame, use of shapes within the frame, the prominence of any foreground or background details, the position of the subject within the frame, even the shape of the frame itself.	Fitch draws our eye to the central feature of a large oversized flower, framed by cropped elements of pond life, in a **composition** that is balanced with symmetry.
	**form**	In relation to art the term form has two meanings: it can refer to the overall form taken by the work – its physical nature; or within a work of art it can refer to the element of shape among the various elements that make up a work.	In my botanical tonal drawing, I have shown a range of tone from dark to light tones to create a 3D **form** in a 2D drawing.
	**mood**	The atmosphere in a painting, or the feeling expressed. Is the art tranquil, or is it dark and disturbing? Tone refers to the lightness or darkness of colours used, which can help to create a sense of depth or distance in art. Artists use light and dark colours to convey a mood or an emotion.	The tranquil setting that Fitch's white flower occupies creates a peaceful, calming **mood.**
	**scale**	the overall physical size of an artwork or objects in the artwork. We always relate scale to the size of the human body - how big or small the piece is in relation to us. An artist may decide to use a scale which is different from life-sized and this will have an impact on how it feels.	The size and **scale** of the central white flower draws your eye into the botanical illustration.
	**tint**	Where an artist adds a colour to white to create a lighter version of the colour. An example of a tint is pink. Pink is a tint created by adding white to red.	In Fitches botanical illustration he uses pink **tints** in the background flowers that have sculptural forms.
	**white**	A colour associated with purity, innocence, and simplicity in art. It can evoke feelings of cleanliness, brightness, and calmness, and is used to create space and balance or to enhance other colours' brightness.	Fitch's **white** flower reflects tone and colour back into it.

AO1: RESEARCH (ARITSTS & IMAGE)

WHAT?

- Research
- Inspiration & ideas
- Mood boards
- Mind - map
- Artist analysis
- Personal response
- Annotation

WHY?

Develop **Ideas** through **investigations**, demonstrating critical **understanding** of sources.

HOW?

- Create a **mood board**
- Find **relevant** images of artist's work.
- Comment on what you see.
- **Respond** to the work by creating a **copy & personal response**.
- Show how this has **developed** your **ideas.**
- You must write critically about the research and ideas you are developing.

AO2: EXPERIMENTS WITH MEDIA (Refine)

WHAT?

Refine work by exploring **ideas,** selecting and **experimenting** with appropriate **media, materials, techniques** and **processes.**

HOW?

- Use a range of media
- Thoughtful & meaningful
- Select appropriate resources, materials, techniques.
- Evaluating the process
- Discussing your work
- Show skill

WHY?

To demonstrate and show your **ideas, materials and technical skills**

AO3: RECORDING OBSERVATIONS (Evidence)

WHAT?

Record ideas, observations and **insights** relevant to intentions as work progresses.

HOW?

- Record & Organise information (Layout)
- Primary Observation (first-hand) i.e drawing or photography
- Presenting
- Documenting

WHY?

To **evidence ideas** drawn and explained through **written reflective annotation**.

AO4: FINAL OUTCOME

WHAT? Present a **personal** and **meaningful response** that **realises intentions** and demonstrates **understanding of visual language.**

WHY? Create a personal response that is **refined for showcasing**.

HOW?

Realise intentions.
High marks go to final pieces that make the most of all that has been learnt in the preparatory work.
This can also be explained in the Evaluation.

Make Connections (Links with Artists)
You must make a **clear connection between your work** and the work of **artist/s studied**

AO3: RECORDING OBSERVATIONS (Evidence)

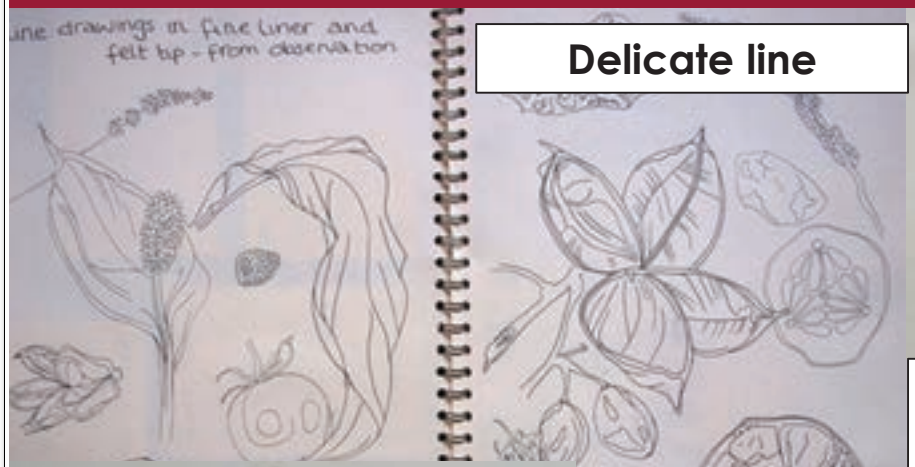
AO2: EXPERIMENTS WITH MEDIA (Refine)

Mood Board:

Investigate the theme: ***Natural Forms.***

Media experimentation and recording skills with idea development in response to the theme.

AO3: RECORDING OBSERVATIONS (Evidence) AO2: EXPERIMENTS WITH MEDIA (Refine)



Delicate line

Shape and form with controlled tonal range in charcoal

Accurate recording of mark-making.

Shape/form, proportion and tonal range in lead pencil

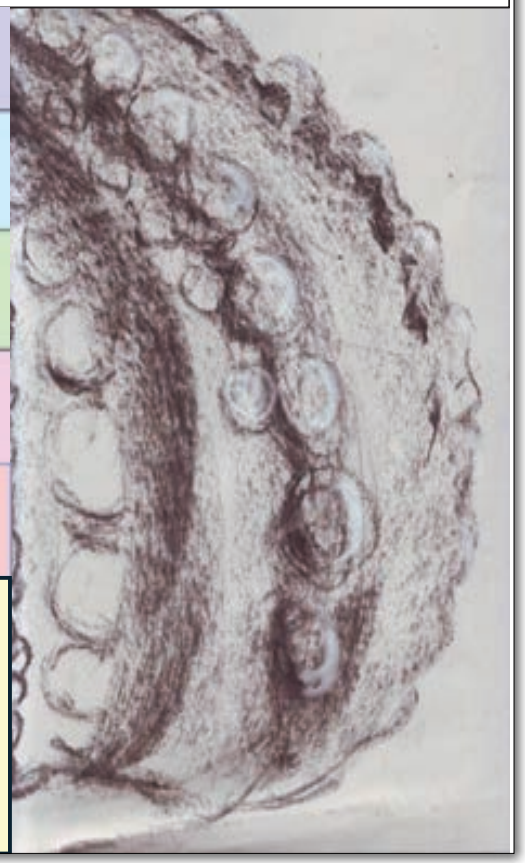
LINE

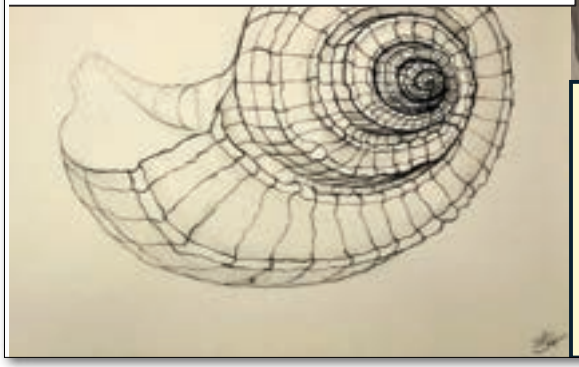
TONE

TEXTURE

SHAPE

FORM





Direct observational studies in different media from primary and secondary sources

AO2: EXPERIMENTS WITH MEDIA (Refine)

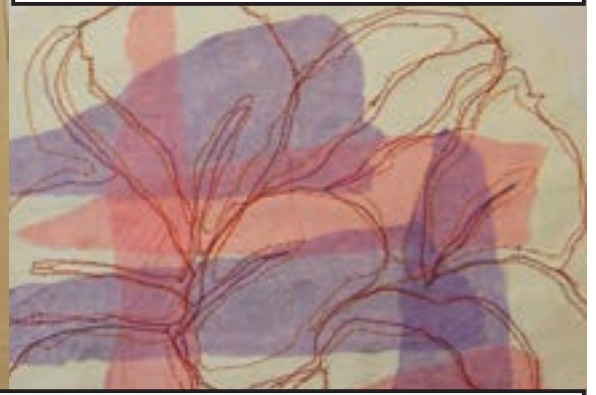
Oil pastels/chalk pastels

Wax resist

Mono-print

Felt tip pen

Colour pastel chalk



Colour pencil

Machine stitch, pen/wash

Annotating your Sketchbook

What?	**WHAT IS IT? Explain the piece of work you are annotating** Examples: • This is a first hand drawing that I made of… • This is a series of photographs I took of…
Why?	**WHY DID YOU MAKE IT? Explain how this piece helps you in your project.** Examples: • To get ideas about,,,, to show what I have learned about… • To explore the ideas of… • To analyse the style of… • To try out the technique of… • To develop my skills…
How?	**HOW DID YOU MAKE IT? Explain how you created the piece of work** Examples: • I drew it using… • I painted it with… • I constructed it form…
Quantity?	**HOW GOOD IS IT? What are you pleased with? What could you improve?** Examples: • I am pleased with the way I… • One good element of this work is… • The best feature of this work is… • I wish that I had… • One area that I could improve is…
Learning?	**WHAT DID YOU LEARN? What have you found out? What are your next steps?** Examples: • I improved my skills in… • I got better at working in the style of… • I feel more confident about…

Next Steps…..

Analysis of Artwork *writing frame*

- **Who is the artist?** *This artwork is by the artist…*
  What style/genre does the artist work in and what movement?
- **What is the title of the work?** *This is titled ' ---------- '*
  Does the title give you any clues as to what the piece is about?
- **What media was used?** *This is an oil painting/acrylic painting/watercolour/print/photograph/pencil drawing/ Sculpture*
- **How has the artist used the media?**
- **How has the artist used tone / colour in the artwork/ shape/form?**
- **What mood or effect do the tones /colour/ structure of the shape/form create?**
- **Describe the colours that have been used. (warm/cool/complementary? Contrasting/ bold/flat/ solid/opaque/bright/lurid/soft/ transparent/?**
- **Does it have a realistic or unrealistic look /quality? Why?**
- **Describe the composition and viewpoints of the work.**
  What is in the foreground and background? How is the piece made up its arrangement, what is the focus?
- **What was your first reaction / thoughts about the work?** *I chose this artists work because when I first saw it I really liked the use of….*
- **Is there a message behind the artwork? What do you think it is?**
- **How could you use this art to develop your own ideas.**
  I intend to create a…collage/ painting/drawing/print of… in the same style by…..
- **The materials? Methods? Ideas? Colours?**

Key words

foreground
background
perspective
viewpoint
atmosphere
bright
shadow
close-up
form
line
texture
soft
reflections
symmetrical
tone
pattern
shape
sculpture
assembled
vivid
unusual
absurd
mundane
quirky
fun
mark-making

Skills Guide: Personal Annotation

Think about:

line, tone, form, texture, shape, colour, pattern, composition, subject matter and your theme

Key Questions	Sentence Starters
What: have I done? Introduce your work **What: materials/medium have I used?** Paint, pencil, oil pastels, collage, mixed media… **Is it your own work or a copy of someone else's?**	In this piece I have…. This is a first-hand observation of……using……. I drew a ……. and recorded the light, medium and dark tones using a pencil. I have used the following materials…….. This piece contains the following characteristics…… The artist:…… has influenced my design in their use of…….. I was inspired by …… When creating this piece of work. Here I have shown…… In the style of……
Why: have I done it? What have I learned? • Have you learned about a new artist? • What new skills/ techniques have you used? • Are you trying to improve using a material? • How does you work connect to your theme?	I have shown varied tone in the style of…….. The Artist……. has influenced the piece because……. I have worked in the style of……. I explored different tonal values of……..by producing tones of dark to light.
How: have I done it? Try to describe how you have done your work step by step. **Include all KEY points** • How have you made it? • What materials/ medium have you used? • What steps did you create to do this? • What techniques have you used?	I drew it using… From first-hand observation of a …… I drew out……using different types of line, both thicker, bolder lines to make the…….. The materials I have used for this piece are…. The process I undertook was to…. I used …… technique Through working in this way, I have learnt how to……
Quality: How good is it? • What are you pleased with? • What could you improve?	I am pleased with the way I…… One good element of this work is…… The best feature of this work is….. I wish that I had…..one area that I could improve is……. This piece could have been improved by including…… To improve this piece, I could have…… I could have made greater use of…… In this piece I have used too much/ not enough ……..
Learning: What did you learn? • What have you found out? • What are your next steps?	I improved my skills in…. I got better at working in the style of……. I feel more confident about……..

Art Textiles| Nature |Topic Dictionary

Image	Word	Definition	In a sentence…
	**analyse**	examine (something) methodically and in detail, typically in order to explain and interpret it.	*When you do research on a designer, you need to **analyse** their work in detail*
	**applique**	ornamental needlework in which pieces of fabric are sewn or stuck on to a larger piece to form a picture or pattern	***Appliqué** is a method that has been used to decorate products for thousands of years*
	**design**	a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.	*He has just unveiled his **design** for the new museum*
	**embellishment**	a decorative detail or feature added to something to make it more attractive	*Sequins and beads are some of the **embellishments** you can use to add further detail to the blue dress.*
	**experimentation**	the action or process of trying out new ideas, methods, or activities.	*It was a period of innovation and **experimentation** with new decorative techniques*
	**exploration**	thorough examination of a subject	*William Morris' interior design collection shows a clear **exploration** of botanical subjects*
	**fabric**	cloth or other material produced by weaving or knitting fibres	***Fabric** is all around us, from the clothes we wear to the pillows we lay on.*
	**fabric manipulation**	involves intentionally changing, or modifying, how a fabric looks or feels. This may involve re-shaping the fabric or changing its texture.	*Textile artists often use **fabric manipulation** to create unique and innovative designs and effects in their work*
	**fibre**	a thread or filament from which a textile is formed	*The basket comes lined with natural coco **fibre**s*
	**insightful**	showing a clear and usually original understanding of a complicated problem or situation	*She has written an **insightful** account of the modern art world*
	**investigation**	the act of examining something carefully, especially to discover the truth about it	*An **investigation** will be carried out to determine why Van Gogh used oil paints over acrylic*
	**materials**	a physical substance that things can be made from	*Cotton and polyester are **materials***

Art Textiles | Nature | Topic Dictionary

Image	Word	Definition	In a sentence…
	**mixed media**	a way of making art that uses different substances mixed together	*John has used paint, ink and threads to create a **mixed media** piece of art*
	**mood**	the mood of a work of art is the emotional features of it, or the way it makes you feel	*This piece of art gives a distressed **mood** through the colours used*
	**process**	a series of actions that you take in order to achieve a result	*You have to be able to apply the correct **process** to effectively do a screen print sample*
	**refine**	to improve an idea, method, system, etc. by making small changes	*To **refine** this piece of work, you should work into the shadow areas to give the piece of work depth*
	**research**	a detailed study of a subject, especially in order to discover information or reach a new understanding	*I would like to see the **research** this final outcome is based from*
	**technique**	a skilful or efficient way of doing or achieving something.	*Try to use the **technique** you were shown by Ms Sampson to be able to stitch a straight line*
	**textile**	a type of cloth or woven fabric	*Cushions, clothing and upholstery are types of **textiles***
	**texture**	the feel, appearance, or consistency of a surface or substance	*Wool has a soft and fluffy **texture***
	**stitch**	a loop of thread or yarn resulting from a single pass or movement of the needle in sewing, knitting, or crocheting.	*You need to use a running **stitch** to outline a shaped design in fabric*
	**structure**	the way in which parts of an object are arranged or organised, or a system arranged in this way	*Fabric is **structure**d by weaving or knitting fibres together*
	**style**	a way of doing something, especially one that is typical of a person, group of people, place, or period	*I read the fashion pages in the newspapers to keep up with the latest **style**s*
	**surface pattern**	the act of creating art for the surfaces of fabric.	***Surface pattern** design is primarily artwork that repeats in a pattern*

Skills Guide – Nature | Knowledge Organiser

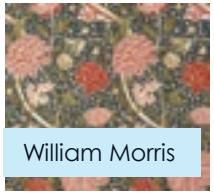
Portfolio theme is '***Nature***', where you will explore nature through textiles

Define ***nature***:
all the animals, plants, rocks, etc. in the world and all the features, forces, and processes that happen or exist independently of people, such as the weather, the sea, mountains, the production of young animals or plants, and growth:

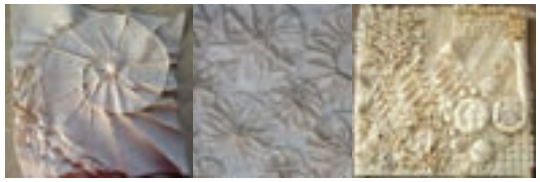


As a Year 10 Textile Designer I know…	
…how to independently operate and re-thread a sewing machine	
…what fabric manipulations are and how to do three samples that have used fabric manipulation	
…how to combine 2 or more techniques to create an experimentation piece	
…take inspiration from an artist/designer to create and design a series of experimentation pieces	
…how to research an artist/designer	
…how to analyse a piece of work	
…how to analyse, critique and evaluate your own work in detail	


Althea McNish


William Morris

Fabric manipulation

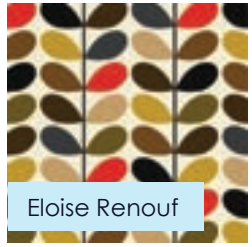


Surface pattern

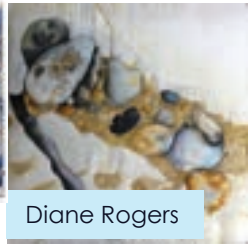
Embellishments

Some Artists / Designers:


Carolyn Saxby


Eloise Renouf


Sandra Meech


Diane Rogers

Drawing skills:

Sketching & Drawing

Illustration

Skills Guide – Techniques in Textiles

3D Shibori
Using synthetic fabric to tie and apply heat to, to manipulate the material to make a 3D form

Applique
Using a different piece of fabric to stitch on top of the base fabric to create a pattern/design

Batik
Wax is used as a barrier to the coloured dye to create a pattern

Free machine embroidery
Uses the sewing needle as a 'pen', while moving the fabric in any direction under the needle, on your design

Gathers
turns a piece of fabric into small folds that are held together by a thread close, which is pulled to create gathers in fabric

Hand embroidery
The art of decorative stitching on fabric with needle and thread

Lino printing
You carve a design into the lino, then print it onto fabric, using ink to create a repeat pattern

Quilting
Uses two layers of fabric with a layer of padding (wadding) in between, held together by lines of stitching

Fabric bleach
Using bleach to create a pattern that removes to original colour

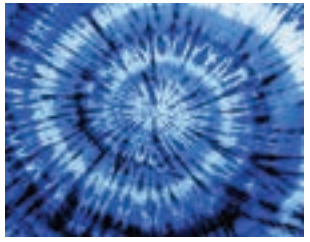
Reverse applique
The fabric is layered and the top fabric is cut away and stitched in place to reveal the design

Slashing fabric
A process that layers up fabric, stitching in parallel lines and then cutting through to the base layer

Screen printing
Creating an image/pattern by forcing ink on to a surface through a screen of fine material.

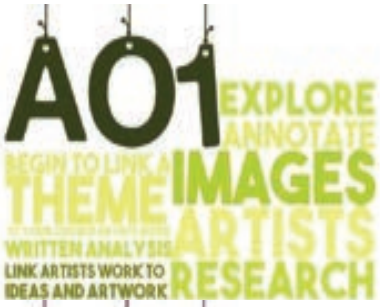
Shibori
Japanese manual resist dyeing technique, which produces patterns on fabric

Weaving
Two yarns/threads are interlaced with each other at right angles (warp and weft)



Tie dye
Consists of folding, twisting, etc fabric, before binding with string/ rubber bands, followed by the application of dye/dyes.

Skills Guide – Assessment Objectives



AO1: **Develop ideas** through investigations, demonstrating critical understanding of sources

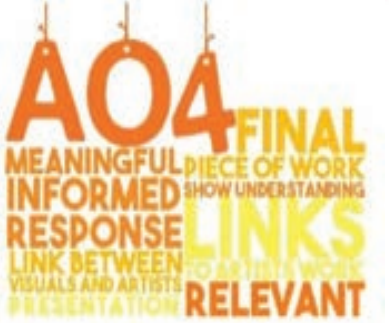
Evidence of AO1:
- Mood board
- Mind - map
- Artist Analysis
- Artist work - response
- Personal Responses
- Annotation

AO2: **Refine** work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes

Evidence of AO2:
- Annotate the medias used & your work
- Using a range of media in your work
- Review experiments
- Refine experiments
- Selecting a range of media
- Thoughtful & purposeful experimentation

AO3: **Record** ideas, observations and insights relevant to intentions as work progresses

Evidence of AO3:
- Record & Organise information (Layout)
- Primary Observations
- Presenting working
- Documenting work and progress
- Photographs, sketches, experimentation by you



AO4: **Present** a personal and meaningful response that realises intentions and demonstrates understanding of visual language

Evidence of AO4:
- Final piece ideas
- Final outcome
- Planning
- Making connections (Links with Artists/designers)
- Analysing and evaluating final outcome

Where does Political Power Reside in the UK, and how is it Controlled?

Topic 1

Module: Politics and Participation

What is Democracy?

Key learning points

- **Democracy** is a way of **running a country** where **people vote on things**: mostly **who should represent them** in **national** and **local government**, but also sometimes on **what the government should do**.

- When people **vote** on **who's in the government** it's called an **election**. When they **vote** on **what the government should do** it's called a **referendum**.

- Despite only becoming globally popular in the last two centuries or so, **democracy** is actually **very old**. It was invented in **Ancient Athens**, thousands of years ago, when anyone who was a citizen could vote.

- The UK uses a **blend** of **three styles** of democracy: **direct (referendums)**, **representative (elections)** and **liberal (human rights)**.

democracy

referendum

What are Democratic Values?

Key learning points

- In the UK, the **core values** that **underpin our society** are the **Fundamental British Values (FBVs)**: the **rule of law**, **individual liberty**, **tolerance**, **mutual respect** and **democracy**.

- However, society is **also underpinned** by **other values** that help us to have a **democracy**. These include **politeness**, **equality**, **freedom of speech**, **human rights** and **freedom of the media**.

- The **purpose** of **values** is to enable people from **different backgrounds**, with **different views**, to **peacefully coexist** even if they **don't always get along** with each other.

- The idea of a **democracy** is that we **respect differences** and **don't impose our own views** on others, and we **all play by the same rules**.

value

Who Runs the UK?

Key learning points

- There is **no single answer** to this question, and that is **by design.** Power in the UK is **shared/distributed** between **many different groups and people**.

- There are **two** purposes of this. **Firstly**, it **allows each group/person** to **keep an eye** on the **others** and to **stop them** from **abusing their power**. **Secondly**, it **prevents too much power** from being **concentrated in any single place** within the system. This is in contrast to countries such as **Russia** and **North Korea**, where **certain people/groups** have **almost all the power**.

- There are a **large number** of these **groups/people**, including the **media**, the **police**, the **courts**, the **government**, **Parliament**, **local government**, **devolved government**, **voters**, **citizens**, **religions**, **social groups**, **pressure groups**, etc.

campaigning

Royal Assent

power

Where does Political Power Reside in the UK, and how is it Controlled?

Key learning points

- All countries have a **constitution**, which refers to the **set of rules** for **how the country operates**, including **who has power** and **what powers they have**.

- The UK's is **rare** in that it is **uncodified**: it's **not all written down in one place**. In fact, some of it **isn't written down** at all. It's a combination of **laws**, **traditions** and **written documents**.

- It exists in **laws** such as the **Human Rights Act** and the **Equality Act**, **traditions** such as **Royal Assent** always being given, and **documents** such as the **British Bill of Rights**.

- The benefits of this are that the **UK Constitution** is **flexible** and **easy to update/change**, while **codified** ones like the **US** are **clearer** to **understand** but **harder** to **update** and **keep relevant**.

constitution

codified

What are the Powers of Local and Devolved Governments?

Topic 2

Module: Politics and Participation

How does Local Government Work?

Key learning points

- **Local government** refers to the **government** that controls **local areas**. It's like a **miniature version** of the **national government**, but for a small area.

- Instead of **constituencies/seats**, there are **wards**. Instead of **MPs**, there are **Councillors**. And instead of a **Prime Minister**, there is a **Mayor**. Together, the **Mayor** and the **Councillors** are known as the **Council**. They're all members of **political parties**, just like MPs are. Every area of the UK has a local **Council** to run it.

- Uniquely, **London** is **so big** that it's divided into **boroughs**. There are **32 of them**, each with its own **Council** to run it. No other city in the UK is divided up like that. They each have one Council to run them.

local

What is Devolution?

Key learning points

- **Devolution** is when a **more powerful government lends** some of its **power** to **smaller, local, less powerful governments**. This power is referred to as **devolved**. Powers the more powerful government **keeps** are referred to as **reserved**.

- For example, the **UK government reserves powers** over **nuclear weapons** and **international relations**, but **devolves powers** over **tax rates** to the **governments** of **Scotland**, **Wales** and **Northern Ireland**, and **devolves powers** over **bin collection days** to **local governments** across the **UK**.

- Since **1997**, **Scotland**, **Wales** and **Northern Ireland** have had their own **devolved governments**, which also work like **miniature versions** of the **overall UK government**.

government

How does the Government Make Money?

Key learning points

- The government's **main source** of **income** is **taxes/taxation**, which is where it **takes money from people** and **spends it on things** that **make society better/safer**.

- The things that taxes **pay for** are known as **public services**. We use these all the time: **education**, **healthcare**, **transport**, **social services**, etc. We **all use them every day**.

- The question of **how high** or **low** taxes should be is one of the **biggest questions** in **politics**, and it has been for **hundreds of years**. It's the **main difference** between **liberals**, who want **taxes** and **spending** to both **go up**, and **conservatives**, who want them both to **go down**. In the **UK**, the **Labour Party** is **liberal** and the **Conservative Party** is (obviously) **conservative**.

taxation/tax

What are the Powers of Local and Devolved Governments?

Key learning points

- The **government**, at **all levels**, have a **fundamental duty** to keep their citizens **alive**. That means providing them with **basic goods** such has **food** and **drink**, but also with **security**, **success**, **culture**, **jobs** and **income**.

- Right now, the UK government **spends more money** than it **makes** each year. It **borrows** the rest of what it needs. This means it has a **deficit**. Because it's had a deficit for a **long time**, it has a **lot of debt too**.

- But the truth is, governments **don't have as much control** over the **economy** as people often think. They can **steer it**, attempting to **speed it up** or **slow it down**, but all they can do is **guide it**. It will continue to **evolve**, **grow** and **change** even if they don't try to affect it in any way.

deficit

GDP

Where does Political Power Reside: with the Citizen, Parliament or Government?

Topic 3

Module: Politics and Participation

What is First Past the Post?

Key learning points

- **First Past the Post** is the **electoral system** used in the **UK** to decide **which MP represents** each of the **650 constituencies/seats** that the **country is divided** into.

- Each **constituency/seat** has an **election** where voters can vote for a **single candidate** of their choice. The winner is the candidate with the **plurality** - the **greatest share of the vote**. They **do not need a majority**.

- A **General Election** is when **all 650 constituencies/seats** do this **at the same time**. There has to be one **5 years after the last one**, or **earlier** if the **Prime Minister** wants one. They are **very important** because a **different party** can win **power**.

General Election

plurality

What other Electoral Systems are there?

Key learning points

- Unlike **First Past the Post**, most **other electoral systems** attempt to get close to **proportional representation**, which is the idea that the **number of seats/constituencies** a **party wins** should **mirror the amount of the votes** it wins.

- One other system is **run-off voting**, where if there's **no majority**, the **candidates** in **first** and **second** go through to **another round**.

- Another is **single transferable vote**, where voters can **rank their first and second choices**.

- Both are designed to **discourage negative campaigning**, which is where people try to win by **attacking each other**.

proportional representation

negative campaigning

What are the Branches of Government?

Key learning points

- All governments have **three branches**. The **legislative branch passes laws**, the **executive branch runs the country** and the **judicial branch runs the courts**.

- In the UK, the **legislative branch** is **Parliament**, the **executive branch** is **HM Government**, and the **judicial branch** is our **courts system**.

- The idea of this is that **each branch can check and balance out** the **powers** of the **other two**, which means they have to **share power**.

- It also means that **every single person with power** in our country is **accountable** to **someone** or **something** - they **have to answer to them**.

accountable

checks and balances

What are the different Political Parties?

Key learning points

- A **political party** is a **group of politicians** who have **similar ideas** and all **compete together** as a **team** when there are **elections**.

- The UK has **two main political parties**, the **Conservative Party** (who are more conservative) and the **Labour Party** (who are more liberal). The **Conservatives** ran the **UK** between **2010** and **2024**, and now the **Labour Party** runs the **UK**. One party or the other of these two has run the UK for the **last hundred years**.

- There are also **smaller parties** such as the **Liberal Democrats**, the **Scottish National Party**, **Plaid Cymru** (a Welsh national party), the **Green Party** and **Reform UK**.

political party

Where does Political Power Reside: with the Citizen, Parliament or Government?

Key learning points

- As always in a **democracy**, power is **deliberately shared** between **different groups** to ensure they can **hold each other to account** and that **no single person or group** has **too much for themselves**.

- However, in the **UK** it is **Parliament** that technically has the final say. It is the **sovereign power**, meaning it has the **exclusive ability** to **make and unmake any law** that it wishes.

- Even with this in mind, though, Parliament's powers are **not unlimited**. Voters get to **choose who its members (MPs) are**, and they still have to **follow the laws** that they **create**. There are also courts to **interpret** and **apply** them.

- But the **only limits** on **Parliament's power** are the ones it has **created**. **It made itself elected**, and it **created the courts** that can limit what it does. It could **undo these things** if it wanted to. So Parliament does have limits to its power, but only because it **chooses to**.

How do Others Govern Themselves?

Topic 4

Module: Rights and Responsibilities

How do Others Govern Themselves?

Key learning points

- Each country is **sovereign**, which means it can **decide how to govern itself**. This means things like **what laws it** has, **how many people are in its legislative branch**, **how its elections are conducted**, **how its courts are structured**, **what national days it celebrates**, **which other countries it signs treaties with**, **how many rights its people have**, **whether it has an official language**, **what its children learn in their schools**, **how high its taxes are**, **what benefits its citizens have**, and more. Because of this, even countries that might seem **similar** in some significant ways - like the UK and the USA - actually have **meaningful differences** in how they run.

- For example, the **USA** has a **federal structure**. This means that it's **divided into states**. Each state has its **own government**, but there's also an **overall federal government** with **sovereign power**. Each state gets **different amounts of power** in the **federal government** and in **deciding federal elections**, depending on its **population size**. This system is famous for being used in the **USA**, where it was **invented**, but it's used by **many countries** around the world, some of which are much **smaller** than the **USA** is. Examples include **Germany**, **Austria** and **Brazil**.

- Another big thing that influences how a country is run is the **style of government** the country has. For instance, **Russia** is governed **very differently** to **Europe** and **North American nations**. In **Russia**, political parties other than the **one in charge** only exist with the **government's permission**. It's also a **crime** to **criticise the government** or **resist against law enforcement**. There is a **judicial system**, but trials are **not fair** and people can be **jailed for things they have not really done**. In addition, the government runs its **own media organisations**: not independent ones with government funding like the BBC, but **newspapers** and **news websites** that are **fully funded and run** by the **government**.

- **North Korea** takes things to the **extreme** here. The **Supreme Leader** is worshipped as a **god** among the citizens, and **myths** about his **life** and **achievements** are taught in **schools**. The **government exercises complete control** over **every aspect of life possible**, from the **outfits** people are allowed to wear, to the **jobs** they do, to their **income** and even the **specific job** they're given in society. Information about the outside world is **heavily rationed**, and replaced with **government propaganda** about how the country is **constantly under threat** and how life there is **so much better** than **anywhere else on the planet**.

- This is **useful information** because it allows us to understand the **reasons** countries are **different**. It can be due to **smaller variations** like their **history**, their **culture** or their **relationship with religion and social norms**; but it can also be due to **huge differences** over very **fundamental things** like **who's in charge**, **what rights people have** and **whether the country is free and fair**.

Citizenship | Politics and Participation | Topic Dictionary

Image	Word	Definition	In a sentence . . .
	democracy	A system of government by consent where the people decide who rules them.	Nearly every country is Europe is a **democracy**.
	referendum	When the people vote on what the government should do.	In 2016 there was a **referendum** on whether the UK should stay in the EU or leave the EU.
	value	Something that is thought to be important by members of a community or country.	The St. Mark's school **values** are love, hope and trust.
	campaigning	Doing different activities in the community to persuade people to vote for you.	I've been **campaigning** for weeks now - I must have knocked on every door in the constituency!
	Royal Assent	When the monarch signs a new law, making it official.	The new law has been written, passed by the House of Commons and agreed by the House of Lords - now all it needs is **Royal Assent**.
	power	The ability to make someone do something that they would not normally do.	In the UK, police have the **power** to stop and search people if they think they might have committed a crime.

Citizenship | Politics and Participation | Topic Dictionary

Image	Word	Definition	In a sentence . . .
	constitution	A set of rules that lay out how a country should be run.	A **constitution** lays out important things about a country, like how laws are written and what rights people have there.
	codified	If a set of rules are codified, they're all written down in one place.	The rules for how the USA runs are **codified** in the US Constitution.
	local	Existing in the area where you live.	One **local** problem is people speeding down Tamworth Lane in their cars - they cause loads of noise and disruption.
	government	The group of people who run a certain area, e.g. a borough or a country.	When two countries want to agree on something, their two **governments** write the treaty together.
	taxation/tax	When the government takes money from people and uses it to pay for public services.	People who make more money pay more in **tax** than people who make less money.
	deficit	When the government spends more money than it makes.	If a country has a **deficit** for many years in a row, the amount of debt it has will keep piling up.

Citizenship | Politics and Participation | Topic Dictionary

Image	Word	Definition	In a sentence . . .
	GDP	Gross domestic product - the total amount of money a country makes in a year.	If a country's **GDP** goes down, it's more likely to run out of money - meaning it needs to borrow some.
	General Election	When all 650 constituencies/seats have an election for their MP on the same day.	The last time the UK had a **General Election** was in July 2024, and the Labour Party won 411 seats.
	plurality	The largest single group of votes in an election.	In First Past the Post (FPTP), a **plurality** of votes is needed to win.
	proportional representation	A system where the share of all the seats a party wins is exactly the same as the share of all the votes a party wins.	Of the 43 countries in Europe, 40 use some form of **proportional representation**.
	negative campaigning	Campaigning against other candidates instead of for yourself.	Sometimes, political parties will try to discredit their opponents with **negative campaigning**.
	accountable	Having to answer to someone else, or a group of people, for the things that you do.	People being **accountable** is a key thing that makes this country work fairly.

Citizenship | Politics and Participation | Topic Dictionary

Image	Word	Definition	In a sentence . . .
	checks and balances	A system where the power of each person or group is checked and balanced by the power of other people or groups.	Having **checks and balances** is really important to make sure people don't go too far.
	political party	An organisation of politicians and members with similar ideas about politics.	When voting, the ballot says the name of the candidate and the **political party** they're in - if they're in one!

Skills Guide: Citizenship Exams

1 MARK QUESTIONS

All about **definitions** and **knowledge**. Sometimes open-ended with lines for **single sentence answers**. Sometimes **multiple choice** with **one correct answer**.

Command Words: Name, Define, Identify

Name requires you to simply provide an answer without any further explanation. E.g. *Name one feature of a democracy*.

Define requires a definition written in full, without an example needed. E.g. *Define what is meant by the rule of law*.

Identify requires you to give one answer from a possible list. E.g. *Identify one purpose of justice*.

2 MARK QUESTIONS

All about **examples** and **explanation**. Sometimes open-ended with lines for **two sentence answers**. Sometimes **multiple choice** with **two correct answers**.

Command Words: Name, Identify, Explain

Name requires you to simply provide two answers without any further explanation. E.g. *Name two groups in the UK responsible for enforcing the law*.

Identify requires you to give two answers from a possible list. E.g. *Identify two positive consequences of immigration on UK society*.

Explain requires you to define the term and provide an example. E.g. *Explain the term "plurality."*

GENERAL TIPS AND TRICKS

- You don't have to do the paper in **order**. If you come across a question you find tricky, **skip it** and move onto one you know you can do.
- Spelling and grammar **don't matter**, so long as the examiner can understand the point you're making. There are **no SPaG marks**.
- Citizenship is **positively marked**. You get marks for anything correct you say. The more you write, the more you can get. **Just have a go!**
- The **amount of marks** a question is worth and the **command word** in the question are your **biggest clues** for what you need to do.

4 MARK QUESTIONS

All about **comparison** and **contrast**. Often based on a **source** that must be **referenced**. Always require **two points**, each worth **two marks**. Answer **in detail**.

Command Words: Describe, Discuss

Describe requires you to name and explain two different things/features. E.g. *Describe two ways civil law differs from criminal law in the UK*. Each one needs to be named and then further developed, ideally with an example or a case study.

Discuss requires you to make two points and explain them, ideally with examples. E.g. *Discuss how victims of conflict could be protected*. You need to make two points, and for each one explain what it means and give an example.

REMEMBER, 4-mark questions are based on **sources**, but how you **use** the source depends on the **instructions**. Sometimes you **have to reference the source**, and sometimes you're **not allowed to use it**. There are **two ways it can go**, so **read the question carefully**:

With reference to Source G . . .
- Here you need to refer to information from the source, and make it clear you're doing it.

Discuss two ways, not mentioned in Source B . . .
- Here you won't get marks for mentioning the ways that Source B mentions.

8 MARK QUESTIONS

All about **evaluation**. Often contain **suggestions for what to write about**, but you **don't have to use them**. Always write **at least two paragraphs** and **include a conclusion**.

Command Words: Examine, To what extent

Examine requires you to weigh up the statement. Using evidence from your knowledge of Citizenship, write out arguments on either side of it. E.g. *The only purpose of sentencing criminals in the UK should be to send them to prison. Examine this statement*. You need to write at least one paragraph arguing the statement is true and at least one arguing the statement is not, using the format below, then a conclusion where you say whether it's true, all things considered.

To what extent requires you to agree, disagree or come down on both sides of a statement. E.g. *"The most effective way for a UK citizen to make a difference in society is to join a trade union. Considering a range of views, to what extent do you agree or disagree with this statement?"* You need to write at least one paragraph agreeing with the statement and one disagreeing, using the format below, then a conclusion where you personally agree or disagree.

REMEMBER, your paragraphs should follow the **PEEL** format. Make a **point**, e.g. *One way democratic values support democracy is that the value of free speech allows us all to be heard*. Then **explain** it, e.g. *This means we can express ourselves by criticising the government and trying to change other people's minds about who they vote for*. Then give an **example**, e.g. *For instance, in 2003 over a million people protested against the Iraq War at a march in Central London*. And finally, **link** back to the question, e.g. *This shows how the democratic value of free speech in particular supports democracy.*

If you can't think of an **example**, then **explain** further. Ask yourself - "so what?" - and keep going with your explanation.

PEEL: Point - Explain - Example - Link

Computer Science | 1.3 Computer Networks | Topic Dictionary

Word	Definition	In a sentence
Bluetooth	Wireless technology used for transmitting data over short distances.	
Client-server	A relationship in which data or web application is hosted on a server and accessed by client computers.	The **cache** is too small to run all the apps
Cloud	A term often used to describe a location on the internet from which software applications are run and where data is stored.	The PC has a CPU with 1.3 GHz **clock speed**.
DNS	Domain name server - an internet service that translates IP addresses into website domain names. All websites have equivalent IP addresses	You'll find the **CPU** located on a computer's *motherboard*.
Encryption	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.	I can type in a **function** to find the total of my numbers.
Ethernet	A set of protocols used in a wired local area network that describes how data is transmitted within it	My new central heating system is an **embedded system**.
Host	A server that stores files for other computers to access.	I am organising my **data** so it can become **information**.
IP address	A unique address for each computer device on a network.	To complete calculations on my **spreadsheet** I will type in a **formula**.
LAN	Local area network. A network of computers that covers a small area, eg a school or college	His motherboard is not compatible with the RAM.
MAC address	Media access control - each unique piece of hardware on a network has a MAC address.	The spec's **number of cores** is only a dual core.
NIC	Network Interface Controller -A circuit board that is installed in a computer so it can be connected to a network	The PC has a 32GB **RAM**.
Peer to peer	A relationship where all computers on the network share responsibility and there is no one central server.	The MAR is an example of a **register**.
Protocol	A set of rules for how messages are turned into data packets and sent across networks.	Without the **ROM** the boot-up would be problematic.

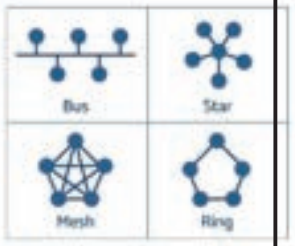
Computer Science | 1.3 Computer Networks | Topic Dictionary

Word	Definition	In a sentence
Standard	An agreed way of doing things.	Prference: von neumann or harvard architecture
Switch	A device for connecting computers and other network capable devices together to form a network.	
WAN	Wide area network. A network that spans across a building, buildings or even countries, eg the internet.	
WAP	A device that connects computers to a network using Wi-Fi.	

Computer Science | 1.3 Computer Networks | Knowledge Organiser

NETWORK TOPOLOGIES

A topology is the layout of a network.
Bus: Slow network due to data collisions on the single backbone cable.
Star: If the central switch fails, the whole network fails. If one device fails, the network is fine.
Ring: Data moves in one direction which prevents collisions. Only one device can send data at once.
Mesh: Each device is connected to every other device so they can send data the fastest route. There is no single point where network can fail. Require lots of wire.



LAYERS

Network protocols are divided into layers so that protocols with similar functions are grouped together.

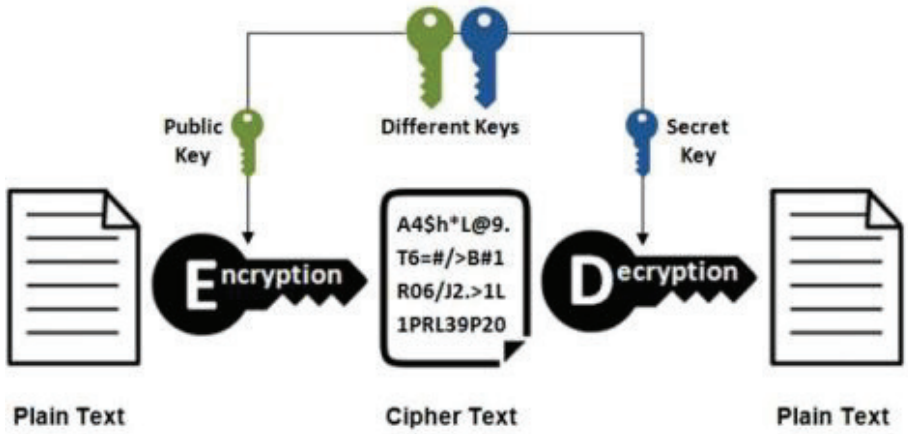
Layer 4: Application	•Turn data into applications or websites •HTTP, FTP, SMTP
Layer 3: Transport	•Control the flow of data •TCP
Layer 2: Network	•Direct data packets between networks •IP
Layer 1: Data Link	•Sending data over a physical network •Ethernet

PROTOCOLS

Protocol	Meaning	What it does
DNS	Domain Name System	Make website name such as www.snapchat.com into an IP address (104.193.184)
FTP	File Transfer Protocol	Copying website files from one host server to another. E.g. BT to Virgin
HTTP/S	Hyper Text transfer Protocol	Accessing the WWW, Sharing hypermedia files (text, music, images, video)
IMAP	Internet Message Access Protocol	One method of RECIEVING into emails
POP3	Post Office Protocol (version 3)	Another method for RECIEVING mail by **mail** servers (e.g. Hotmail, Gmail)
SMTP	Simple Mail Transfer Protocol	Sending email between mail servers

ENCRYPTION

Asymmetric Encryption



Computer Science | 1.3 Computer Networks | Skills Guide

Exemplar questions & student answers

Misconceptions:

- More devices do not decrease the bandwidth of the network
- They decrease the amount available for each device

3 A library has a LAN (Local Area Network).

(a) The LAN allows access by both wired and wireless devices.

Users have reported that the network sometimes runs very slowly.

(i) Explain why the number of devices using the network at the same time can affect th performance of the network.

The bandwidth is split between all the devices.

Each device uses some of the bandwidth

The more devices on the network means more data is being transferred.

The switch and routers have to carry out more request and this will be slower depending on the hardware compatibility

- Slower transmission of data // less data can be transmitted **at the same time** // the transmission rate decreases // time to send/receive increases
- (More devices mean) more data is being transmitted (at a time)
- **Bandwidth** will be split between all the devices (sending data) // each device uses some of the bandwidth
- …this means that there is less **bandwidth for each device**
- Devices have to wait **longer** before they can transmit // **increased** latency
- If the maximum bandwidth is used then devices cannot transmit
- Central device/switch/router has to handle more requests and may run slower
- **More** collisions (likely) // **higher** error rate …
- …more data has to be retransmitted
- Loss of **more** packets …
- …more data has to be retransmitted

Exam vocabulary focus:

Explain	Give a detailed account including reasons or causes.

Computer Science | 1.4 Networks Security | Topic Dictionary

Anti-malware	A type of computer program which detects, prevents and removes malware on a system.	The PCs **BIOS** requires updating.
Brute-force attack	Attempting every combination of a password or encryption key until it is correct.	A Word document can hold 50kilobytes.
Data interception	Where data is intercepted during transmission. This is done using software called a packet sniffer, which examines data packets as they are sent around a network.	The quoted **cost** of the hard drive is £100.
Denial of service attack	An attack designed to render online services inaccessible. One type of this attack involves many computers simultaneously flooding a target with network traffic.	The program recognises the **data** as a integer.
Encryption	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.	The storage **device** is a USB stck.
Firewall	An application that prevents unauthorised connections to and from the Internet.	For a computer, its **data representation** is in **binary**.
Malware	Software that is designed to cause harm or damage to a computer. This includes viruses that might damage files, adware that causes pop-ups, and spyware that collects and shares login details.	When buying a USB stick, how **durable** is the device?
Penetration testing	Systems are tested for vulnerabilities to reveal any weaknesses in the system which can be fixed.	The hard drive is a magnetic storage type.
Phishing	An attempt to gain personal information about someone by way of deception, eg sending an email pretending to be from their bank asking them for their bank details.	The **optical** storage device is a compact disc (CD)
Social Engineering	Tricking people into giving sensitive data such as PINs or passwords.	When buying a USB stick, how **portable** is the device?
SQL Injection	Where SQL code is entered as a data input. Many databases use SQL code to interrogate the data and maintain the structure. SQL code can be inputted as data, which can cause errors or unintended operations.	The PCs primary memory is ROM.
User-access level	These are the permissions given to a user to access facilities on a computer.	When buying a USB stick, how **reliable** is the device?

Computer Science | 1.4 Networks Security | Topic Dictionary

TYPES OF ATTACK

Attack	How it works	How to prevent it
Passive	Network traffic is monitored and then data is intercepted	Encryption so that intercepted data cannot be understood
Active	Someone deliberately attacks a network with malware (eg: a virus)	A firewall and antivirus software
Insider	Someone with network access abuses this to steal information	User access levels to control how much data people can access.
Brute Force	Trial an error until a password is attacked	Making passwords difficult to guess. Locking accounts after failed attempts.
Denial of Service	The network is flooded with useless data so it is too slow to use	This attack is hard to prevent but a firewall can help.
SQL Injection	SQL commands are typed into the input boxes on a website to access data or alter the database	Having strong validation on all input boxes so that only expected data can be entered
Phishing	Emails with links that trick people into entering their personal information	Looking for signs that an email is not from a real company.
Social Engineering	When a person manipulates someone else into handing over sensitive information	Policies and rules for staff about handing over data. Staff training.

NETWORK SECURITY KEY TERMS

Malware: malicious software intended to cause harm.
Penetration Testing: Organisations employ professionals to try and hack their network so that they can find areas of weakness.
User Access Levels: Different employees have different levels of access to programs, websites and data.
Encryption: data is scrambled so that it cannot be understood if intercepted. It can only be decrypted with a key.
Network Forensics: Data packets are captured as they enter the network and analysed to find out the cause of a network attack.

Types of Malware

Virus - attach themselves to files and copy themselves when the user copies or opens a file.

Worm - copy themselves without the user doing anything.

Trojan - malicious software pretending to be a legitimate program.

Computer Science | 1.2 Memory & Storage | Skills Guide

Exemplar questions & student answers

Misconceptions:

- **Answer must be reasonable, clearly related to RAM (e.g. not just stores software/OS) this is secondary storage)**

A smart television allows the user to search the Internet and watch videos online.

(a) The smart television has both RAM and ROM.

(i) State the difference between RAM and ROM.

RAM is volatile and the data cannot change.

1 mark for • ROM is non-volatile, RAM is volatile // by description • Content of ROM cannot (usually) be changed, content of RAM can be changed	1

(ii) Give **two** examples of data that the smart television could store in RAM.

1 An application running on a browswer

2 Downloaded or streaming data would be in the RAM

[2]

1 mark each to max 2 e.g.

- Web browser/application that is **running**
- (Parts of the) operating system currently **running**
- Current video/film/tv program being watched
- Data being downloaded/buffered

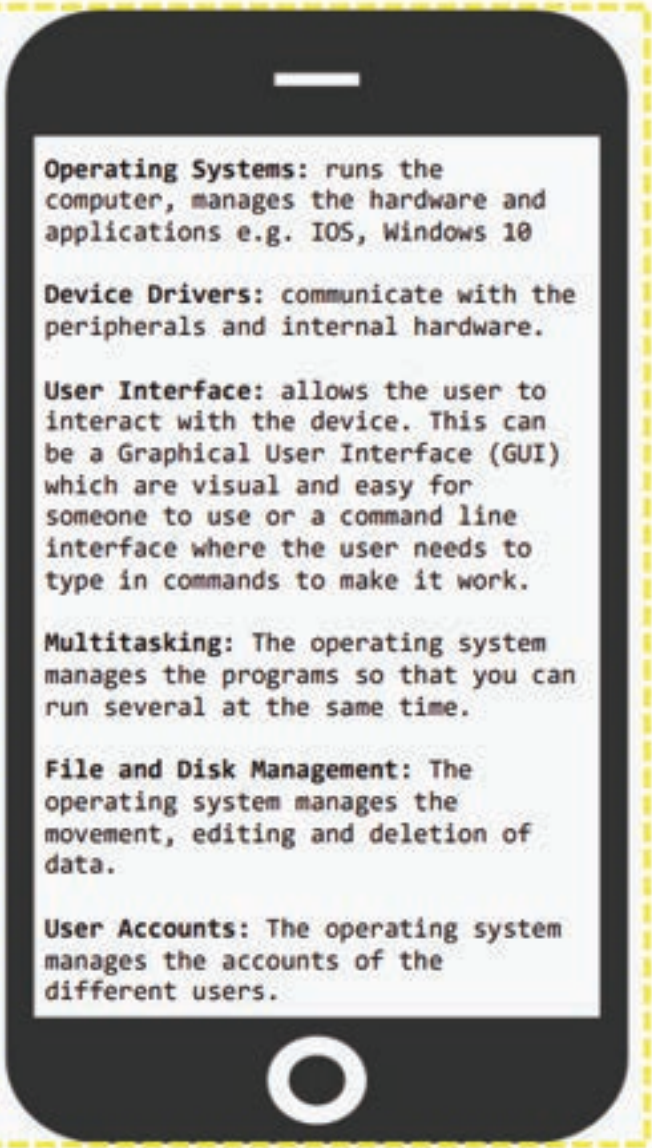
Exam vocabulary focus:

State	Give a specific name, value or other brief answer without explanation or calculation.
Give	Present information which determines the importance of an event or issue, or to show causation.

Computer Science | 1.5 System Software | Topic Dictionary

Word	Definition	In a sentence
Data Compression	A method of reducing file sizes, particularly in digital media such as photos, audio and video.	The **ASCII** code is different from Unicode.
Defragmentation	The process of reordering files stored on a hard disk so that their segments run contiguously.	The **binary** number for 40 is 00101000.
Driver	Software that controls and communicates with peripherals	The **binary** was **shifted** to places to the right.
Encryption software	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.	He realized that there are 8 **bits** in every byte.
File management	Organising how data is stored on secondary storage.	They converted the kilobytes into **bytes** by dividing by 8.
Memory Management	Managing which data is stored in which location in the main memory.	The ASCII **character set** on represents the English language.
Multitasking	In computing, running more than one program simultaneously.	The **colour depth** of my photo is limited.
Operating System	The software that manages the hardware and software resources in a computer system.	**Compressing** the project into a zip file enabled it to be emailed.
Peripheral	A piece of hardware that connects to a computer, eg a mouse, keyboard, printer or scanner.	'a' has the binary number 0110 0001 which is the **denary** number 97.
User interface	The means by which a user interacts with a computer or device.	Their computers spec revealed 2 **gigabytes** (**GB**) of storage.
User management	Organising how user interfaces and data are represented to different users.	The use of **hexadecimal** allows colours to be understandable for developers.
Utility software	A program which performs important maintenance tasks to improve the performance of a computer system.	Voyager 2 sent back **images** of the planet Neptune

Computer Science | 1.5 System Software | Knowledge Organiser



Operating Systems: runs the computer, manages the hardware and applications e.g. IOS, Windows 10

Device Drivers: communicate with the peripherals and internal hardware.

User Interface: allows the user to interact with the device. This can be a Graphical User Interface (GUI) which are visual and easy for someone to use or a command line interface where the user needs to type in commands to make it work.

Multitasking: The operating system manages the programs so that you can run several at the same time.

File and Disk Management: The operating system manages the movement, editing and deletion of data.

User Accounts: The operating system manages the accounts of the different users.

Utility Software

Utilities are the programs that help maintain and configure a program. Most utility software is installed with the Operating system.

Defragmentation: Defragging a magnetic hard drive groups all of the files for each program together and all of the free space together. This makes it read and write quicker.

Back Up Utilities: Schedules and manages backups. Full back ups = all data is backed up. Incremental = only files since the last back up are copied.

Compression: reduces the size of large files so that they take up less space. Files then need to be extracted before they are used.

Encryption: scrambles the data to protect it so that if someone else gets hold of it they cannot access it.

Open Source and Proprietary Software

Open Source	Proprietary
It's usually free and the source code is available so it can be adapted for individual needs	Usually has to be paid for Only the compiled code is released so it cannot be edited

Computer Science | 1.5 System Software | Knowledge Organiser

Exemplar questions & student answers

Florence saves the same image as three different file types (shown in the table below).

File Type	JPEG	PNG	TIFF
Size	0.2 MB	1 MB	0.9 MB

(c) One of the file types uses lossy compression. State and explain which file type is most likely to be an example of lossy compression.

JPEG is an example of lossy compression, it produces a smalled file size than the formats

[2 marks]

Misconceptions:

- Lossy compression is always worse than lossless compression

Exam vocabulary focus:

State	Give a specific name, value or other brief answer without explanation or calculation.

Computer Science | 1.6 Ethical, Legal, Culture & Environment | Topic Dictionary

Word	Definition	In a sentence
Computer Misuse act	The Computer Misuse Act protects personal data held by organisations from unauthorised access and modification)	The **ASCII** code is different from Unicode.
Copyright, Designs and Patents Act 1988	The Copyright Designs and Patents Act (1988) gives creators of digital media the rights to control how their work is used and distributed. Music, books, videos, games and software can all be covered by copyright law.	The **binary** number for 40 is 00101000.
Cultural Issues	Cultural issues' is the term used for computer matters that have an effect on the nature and culture of society. Some of these issues include: the digital divide & the changing nature of employment	The **binary** was **shifted** to places to the right.
Data Protection act	The Data Protection Act of 1998 was designed to tackle this issue. Data stored electronically is vulnerable as it is very easy to copy it to a removable drive or to email/ transfer it via the internet. Individuals who had data stored about them (Data Subjects) had several concerns:	He realized that there are 8 **bits** in every byte.
Digital Divide	The gap between people in society who have full access to digital technologies (such as the internet and computers) and those who do not.	They converted the kilobytes into **bytes** by dividing by 8.
Environmental issues	There are concerns that the manufacturing and use of computers has a negative impact on the environment. To produce, distribute and use computers, resources are required. Metals and plastics are used to manufacture components, and energy is expended in distributing equipment and in using it.	The ASCII **character set** on represents the English language.
Ethical Issues	Ethics are "a system of principals and customs that affect how people lead their lives". Although we do not have to follow these principles or ethics, it is generally in the best interests of everyone that we do.	The **colour depth** of my photo is limited.
Legal Issues	Legal issues relate to intellectual property matters, such as copyright, patents and software licensing.	**Compressing** the project into a zip file enabled it to be emailed.
Privacy Issues	The protection of personal and sensitive data from unauthorized access, manipulation and misuse.	'a' has the binary number 0110 0001 which is the **denary** number 97.

Computer Science | 1.6 Ethical, Legal, Culture & Environment | Topic Dictionary

Ethical

- Ethics is about what is considered right and wrong by society.
- If a company does not behave in an ethical way it might make their customers lose trust in them.
- Issues such as cyberbullying, trolling and the use of social media can raise ethical issues.
- **Privacy:** Users trust companies to keep their data private so companies need to take care of it
- **Censorship:** is when a country or organisation controls what people can access on the internet.
- **Surveillance:** surveillance is when someone is monitored using technology.

Legal

- **Data Protection Act:** controls how personal data is used. Eg: it has to be accurate and up to date, kept secure, should not be kept longer than needed
- **Freedom of information Act:** gives the public the right to see information about public organisations
- **Computer Misuse Act:** makes it illegal to hack a network or create a virus.
- **Copyright, Designs & Patents Act:** protects things you have created from being used without permission
- **Creative Commons:** lets people release their work to be used and shared legally and sometimes modified.

Stakeholders:

The people or groups affected by a particular situation

Environmental

- Computing devices contain raw materials
- Devices use lots of energy when turned on
- **Ewaste** is when we throw away devices because they are broken or because we want to upgrade
- Ewaste can lead to pollution
- The **Waste Electric and Electronic Equipment (WEEE)** directive has rules for how devices should be disposed so that they're recycled/disposed of safely
- Devices can also have a positive impact on the environment – eg video calls rather than travelling a long distance causing pollution.

Cultural

- One cultural issue in computing is the **Digital Divide.** Some people do have access to technology, others don't
- Not having access to technology can be a disadvantage as it limits access to information, online learning, online banking, communication etc.
- The digital divide can be due to people not having enough money to buy devices or due to living in places without internet access, or not having the skills to use the technologies available.
- Technology has also impacted how businesses run as many now use online shops and services

Computer Science | 1.6 Ethical, Legal, Culture & Environment | Topic Dictionaryn

Exemplar questions & student answers

4* Social networking websites use artificial intelligence (AI) to monitor posts from users.

Discuss the positive and negative uses of AI by social networking websites including:

- Legal issues
- Ethical issues
- Privacy issues

Using AI to monitor social media presents some automation with detecting posts that find offensive material quickly. In turn this also mean copyrighted materials can be checked and removed quickly for legal purposes.

Some people may be comfortable with AI monitoring posts as they have nothing to hide. Others may feel uncomfortable with this idea and consider that their privacy is being signed away dure to the conditions they need to agree before using platforms...

Ethical issues:

- Users may not want everything they monitoring
- May incorrectly block users/posts
- Can limit plagiarism
- Can make sure inappropriate/illegal posts are not published
- Website will need to tell users what it is doing and they must agree with it
- Record of monitoring reports may be stored and used for other means
- Users may feel safer using the website because they know inappropriate material will not be published

Legal issues:

- Copyright designs and patents act - can check for plagiarism automatically and highlight posts e.g. videos or images
- Data protection act - needs to make sure rules are followed so that the AI algorithm does not breach e.g. security
- Check that materials are all legal
- User has agreed the terms when signing up so should expect it

Privacy issues:

- Users may feel like they are being watched all the time
- Terms and conditions may sign away their rights to privacy when using the website
- People may prefer a computer analysing their posts than people reading them

Misconceptions:

- This is an open-ended possible factors and can bring in wider reading

Exam vocabulary focus:

Discuss	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.

French | My city | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	une bibliothèque	A library	Dans mon collège, il y a **une bibliothèque.**
	un centre commercial	A Shopping centre	Dans ma ville il y a **un centre commercial** modèrne.
	un cinéma	A cinema	**Le cinema** est en face de la piscine.
	un hôpital	A hospital	Dans ma ville il n'y a pas d' **hôpital.**
	Un stade	A stadium	J'aime visiter **le stade** avec mon copain.
	une librairie	A book shop	Il n'y a pas de **librairie** dans ma ville.
	une boulangerie	A bakery	Dans ma ville il y a **une** petite **boulangerie.**
	un parc	A park	Il y a **un parc** fantastique.
	un magasin	A shop	Il y a **un** petit **magasin**.
	un supermarché	A supermarket	Où-est **le supermarché, s'il vous plaît?**?
	une gare	A train station	Où-est **la gare, s'il vous plaît?**

French | My city | KO

Check for knowledge:

- ❑ I can say where I live (Step 1)
- ❑ I can describe my city (Step 1+2)
- ❑ I can give opinions on my local area (Step 2 + 3)
- ❑ I can use more complex ph rases in my writing. (Step 4)

Step 1: Saying where you live

J'habite à Londres	*I live in London*
J'habite en Angleterre	*I live in England*
On habite	*We live*
Une ville	*A town/city*
Une maison	*A house*
Un appartement	*A flat/apartment*
Avec ma famille	*With my family*

Step 2: Describing your city

Dans ma ville il y a	*In my city there is*
Dans ma ville il n'y a pas de	*In my city there isn't*
Ma ville est… / n'est pas…	*My city is/isn't*
Dans ma ville on peut…	*In my city you can*

Un parc	A park	**Faire du shopping**	To go shopping
Un supermarché	A supermarket	**Faire du sport**	To do sport
Un cinéma	A cinema	**Manger au restaurant**	To eat in a restaurant
Un hôpital	A hospital	**Regarder un film**	To watch a film
Un centre commercial	A shopping centre	**Prendre des photos**	To take photos

Step 3: Giving opinions

Je pense que	*I think that*
Je dirais que	*I would say that*
À mon avis	*In my opinion*
Ma ville est	*My city is…*

grand(e)	*big*	***intéressant(e)***	*interesting*
petit(e)	*small*	***barbant(e)***	*boring*
amusant(e)	*fun*	***passionant(e)***	*exciting*
divertissant(e)	*entertaining*	***fantastique***	*fantastic*
affreux(se)	*awful*	***terrible***	*terrible*
historique	*historic*	***propre***	*clean*
sale	*dirty*	***moderne***	*modern*

Step 4: Elevate your sentences with connectives

aussi	*Also*
en plus	*In addition*
mais	*but*
et	*and*
ou	*Or*
où	*Where*
cependant	*However*
Par contre	on the other hand

French | My city | Skills Guide

Have you used...

1. a verb?	2. a noun?	3. a connective?	4. a complex phrase?	5. a noun?
Dans ma ville il y a (In my town/city there is) **Dans mon quartier il y a** (In my neighbourhood) **Dans ma banlieue il y a** (In my suburb there is)	**un cinéma**(a cinema) centre) **une pisicine** (a pool) **un hôpital** (a hospital) **une boulangerie** (a bakery) **une église** (a church) **un hôtel de ville** (a town hall) **des magasins** (some shops) **un centre commercial** (a shopping		**il n'y a pas de** (there is not) **si c'était posible, je préférerais avoir** (if it were possible, I would prefer to have) **je voudrais avoir** (I would like to have)	**un cinéma**(a cinema) **un centre commercial** (a shopping centre) **une pisicine** (a pool) **un hôpital** (a hospital) **une boulangerie** (a bakery) **une église** (a church) **un hôtel de ville** (a town hall) **des magasins** (some shops)
Dans ma ville on peut (In my town you can) **Dans mon quartier on peut** (In my neighbourhood you can) **Dans ma banlieue on peut** (In my suburb you can)	**faire du shopping** (do shopping) **faire du sport** (do sport) **aller au cinema** (go to the cinema) **visiter le musée** (visit the musuem) **faire de la randonnée** (go hiking) **sortir avec des amis** (go out with friends) **Example:** Dans ma ville il y a un cinema mais on ne peut pas faire de la randonnée. (In my city there is a cinema but you cannot go hiking)/	**mais** (but) **et** (and) **cependant** (however) **par contre** (on the other hand)	**on ne peut pas** (you cannot) **si c'était posible, je préférerais** (if it were possible, I would prefer) **je voudrais** (I would like)	**faire du shopping** (do shopping) **faire du sport** (do sport) **aller au cinema** (go to the cinema) **visiter le musée** (visit the musuem) **faire de la randonnée** (go hiking) **sortir avec des amis** (go out with friends)

French | My city | Skills Guide

Success Criteria:

Have you **introduced yourself**?

- ❑ Can you describe **where** you live?
- ❑ **Who** do you live with?
- ❑ Can you describe your **house?** Have you used a variety of **adjectives?** Could you add an **intensifier**?
- ❑ Can you describe **your local area?** Have you included a range of **nouns?**
- ❑ Can you include where you **would like** to live? Have you used any **complex structures?**

Simple answer:

Bonjour, je m'appelle Erica et j'habite dans une petite maison avec mes parents dans une ville qui s'appelle Londres. J'aime ma ville parce que c'est très intéressant. Dans ma ville il y a un cinéma et un centre commercial. Cependant, il n'y a pas de parc.

Connectives used to link ideas

Extended answer:

Bonjour, je m'appelle Erica et j'ai dix ans. J'habite avec ma famille dans un appartment dans le centre-ville. Dans ma ville il y a beaucoup à faire. On peut visiter le parc où il y a des magasins assez intéressants. J'aime ma ville mais c'est un peu sale. Donc, je voudrais habiter à la campagne parce que c'est plus relaxant.

Variety of **adjectives**

Intensifiers used to add detail

Fancy phrase used to upgrade answer.

French | School facilities | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	une salle de classe	a classroom	Dans mon collège il y a des **salles de classe.**
	une bibliothèque	a library	Dans **la bibliothèque,** on peut lire un livre.
	une cantine	a canteen	Je n'aime pas manger à **la cantine.**
	un court de tennis	a tennis court	Pendant le recré je vais au **court de tennis**.
	un gazon artificiel	an astro-turf	On n'utilize pas le **gazon artificiel.**
	un gymnase	a sports hall	Dans mon collège il y a un **gymnase.**
	un laboratoire	a lab(oratory)	On a beaucoup de **laboratoires.**
	une cour	a playground	Je bavarde avec mes amis dans **cour**.
	une piscine	a swimming pool	Dans mon collège ideal il y aurait **une piscine.**
	U hall	an assembly hall	Les mardis je vais dans **le hall**
	une salle des profs	a staff room	Il y a **une salle de profs.**

French | School uniform | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	un manteau	a coat	Je n'ai pas de **manteau.**
	une chemise	a shirt	Je porte **une chemise** blanche.
	une veste	a jacket	Il faut porter **une veste.**
	des chaussettes	socks	Mes **chaussettes** sont blanches.
	une cravate	a tie	Je n'aime pas porte **une cravate.**
	une jupe	a skirt	Les filles peuvent porter **une jupe.**
	un pull	a jumper	S'il fait froid, je porte **un pull.**
	un pantalon	trousers	Quelquefois je porte **un pantalon.**
	une robe	a dress	On ne peut pas porter **une robe.**
	des baskets	trainers	Je préfère porter **des baskets.**
	des chaussures	shoes	Mes **chaussures** sont noires.

French | My school | Knowledge Organiser

Check for knowledge:

- ❑ I can say what subjects I like (Steps 1+4)
- ❑ I can describe my uniform and give my opinion (Steps 2+4)
- ❑ I can describe the rules in my school (Steps 3+4)
- ❑ I can give justified opinions (Step 4)

Step 1: Say what subjects you like

J'adore / Je déteste	*I love / I hate*
J'aime / Je n'aime pas	*I like / I don't like*
l'espagnol / le français / l'anglais	*Spanish / French / English*
l'histoire / la géographie	*History / Geography*
Les maths / les sciences	*Maths / Science*
Le dessin / l'informatique	*Art / IT*
Parce que c'est…	*because it is*

amusant	*fun*	**barbant**	*boring*
facile	*easy*	**difficile**	*difficult*
intéressant	*interesting*	**inutile**	*useless*
utile	*useful*	**fatigant**	*tiring*
le/la prof est sympa/stricte		*the teacher is kind/strict*	

Step 2: Describe your uniform

Je porte…	*I wear*
Il faut porter…	*You must wear…*

une chemise	*a shirt*	**une cravate**	*a tie*
une veste	*a jacket*	**une jupe**	*a skirt*
un pantalon	*trousers*	**des baskets**	*trainers*
des chaussures	*shoes*	**des chaussettes**	*socks*

Step 3: Discuss school rules

On (ne) doit (pas)…	*You must (not)…*
On (ne) peut (pas)…	*You can(not)…*
Il est interdit de/d'…	*It is forbidden…*
écouter les profs	*listen to the teachers*
mâcher du chewing-gum	*chew gum*
faire les devoirs	*do homework*
porter l'uniforme	*wear uniform*
courir dans le couloir	*run in the corridor*
bavarder en classe	*chat*
utiliser le portable	*use your phone*

Step 4: Elevate your sentences with opinions

Je pense que / Je crois que	*I think that*
Je dirais que	*I would say that*
Selon moi	*According to me*
À mon avis	*In my opinion*
C'est…	*It is…*

confortable	*comfortable*	**inconfortable**	*uncomfortable*
élégant	*stylish*	**môche**	*ugly*
juste	*fair*	**injuste**	*unfair*
joli	*pretty*	**ridicule**	*ridiculous*
important	*important*	**agaçant**	*annoying*
nécessaire	*necessary*	**frustrant**	*frustrating*

French | My School | Skills Guide

Have you used..

1. a verb?	2. a noun?	3. a connective?	4. An opinion phrase?	5. a verb?	6. an intensifier?	7. an adjective?
J'adore (I love) **J'aime** (I like) **Je n'aime pas** (I don't like) **Je déteste** (I hate)	**l'anglais** (English) **l'espagnol**(Spanish) **le français** (French) **l'histoire** (History) **la géographie** (Geography) **l'informatique** (IT) **le dessin** (Art) **l'EPS** (PE) **le théâtre** (Drama) **la musique** (Music)	**parce que** (because) **mais** (but) **et** (and) **cependant** (however)	**je pense que / je crois que** (I think that) **je dirais que** (I would say that) **selon moi** (according to me) **à mon avis** (in my opinion) **je trouve que** (I find that)	**c'est** (it is)	**très** (very) **assez** (quite) **vraiment** (really) **un peu** (a bit)	**amusant** (fun) **divertissant** (entertaining) **intéressant** (interesting) **facile** (easy) **difficile** (difficult) **utile** (useful) **inutile** (useless)
	les maths (Maths) **les sciences**(Science)					
	mon/ma prof de … (my … teacher)			**il est / elle est** (he/she is)		**stricte** (strict) **gentil(le)** (kind) **drôle** (funny)

Dans mon collège (At my school) **Dans notre collège** (at our school)	**on doit** (you/one must) **on peut** (you/one can)	**apporter le curriculum companion**(bring your curriculum companion) **bavarder en classe** (chat in class) **manger/boire en classe** (eat/drink in lessons) **courir dans le couloir** (run in the corridors) **écouter les profs** (listen to the teachers) **être à l'heure**(be on time)
À mon avis c'est (In my opinion it is) **Je trouve que c'est** (I find that it is)	**très** (very) **un peu** (a little) **assez** (quite) **trop** (too) **vraiment** (really)	**juste** (fair) / **logique** (logical) / **nécessaire** (necessary) / **raisonnable** (reasonable) **agaçant** (annoying) / **frustrant** (frustrating) / **injuste** (unfair) **ridicule** (ridiculous) / **inutile** (pointless)

Example: J'adore les sciences parce que selon moi c'est très divertissant.

(I love Science because according to me it's very entertaining)

French | My school| Skills Guide

Success Criteria:

- ❑ Have you **introduced yourself**?
- ❑ Can you give **opinions** and **reasons** about **school subjects**? Have you used the correct **word order** and **adjective endings**?
- ❑ Can you describe your **school uniform**? Can you express your opinion about it?
- ❑ Can you describe your **school rules**? Can you give your opinion using an **opinion phrase**? Could you add an **intensifier**?

Simple answer:

Bonjour, je m'appelle Hélène et mon collège s'appelle St Marks. J'aime l'anglais parce que c'est amusant. Je n'aime pas les sciences parce que c'est difficile. Je porte une chemise blanche et une veste rouge. Dans mon collège on doit faire les devoirs.

Extended answer:

Bonjour, je m'appelle Hélène et mon collège s'appelle St Marks. J'aime bien l'anglais parce que ça m'intéresse et c'est vraiment utile car je voudrais être journaliste. Cependant, je n'aime pas les sciences puisque c'est difficile et le prof peut être très stricte et desagréable. Mon uniforme scolaire se compose d'une chemise blanche et une veste rouge, mais je le trouve un peu inconfortable. Aussi, dans mon collège on doit faire les devoirs, toutefois je crois que c'est assez logique et juste.

Connectives used to link ideas

Variety of **adjectives**

Intensifiers used to add detail

Opinion phrases used to upgrade answer.

Examples/Complex reasons given to justify opinions

Geography | Urban Issues and Challenges | Topic Dictionary

Image	Key word	Definition	In a sentence
	**brownfield site**	Land that has been used, abandoned and now awaits some new use	**Brownfield sites** are commonly found across urban areas, particularly in the inner city.
	**dereliction**	Abandoned buildings and wasteland.	**Derelict** land is often contaminated which makes it more expensive to redevelop.
	**economic opportunities**	Chances for people to improve their standard of living through employment.	Rio de Janeiro has seen an increase in **economic opportunities** because of the steel factories opening.
	**greenfield site**	A plot of land, often in a rural or on the edge of an urban area that has not yet been subject to any building development.	**Greenfield sites** do not have any existing infrastructure it will need to be added by developers.
	**inequalities**	Differences between poverty and wealth, as well as in peoples' wellbeing and access to things like jobs, housing and education.	**Inequalities** may occur in housing provision, access to services, access to open land, safety and security.
	**integrated transport management**	When different transport methods connect together, making journeys smoother and therefore public transport more appealing.	Better **integration** should result in more demand for public transport and should see people switching from private car use to public modes of transport, which should be more sustainable
	**mega cities**	An urban area with a total population in excess of ten million people.	Rio de Janeiro is a **mega city** with a population of over 12 million.
	**migration**	When people move from one area to another with the intention of settling there.	**Migration** has led to higher levels of multi culturalism in London.
	**natural increase**	The birth rate minus the death rate of a population.	The rate of **natural increase** is often higher in LICs due to high birth rates.
	**pollution**	The presence of chemicals, noise, dirt or other substances which have harmful or poisonous effects on an environment.	**Pollution** levels are often higher in cities in LICs and NEEs as there is still a lot of industrial action in these areas.
	**rural urban fringe**	A zone of transition between the built-up area and the countryside, where there is often competition for land use.	The **rural urban fringe** is is a zone of mixed land uses, from out-of-town shopping centres and golf courses to farmland and motorways
	**sanitation**	Measures designed to protect public health, including the provision of clean water and the disposal of sewage and waste.	As levels of development in a country improve in a country **sanitation** levels will improve.
	**social deprivation**	The degree to which an individual or an area is not able to access services, decent housing, adequate income and local employment.	Many people live in **social deprivation** in Rio in favela homes that lack basic services.
	**social opportunities**	Chances for people to improve their quality of life, for instance access to education and health care.	One **social opportunity** in Rio is the free health care available to everyone in the city.

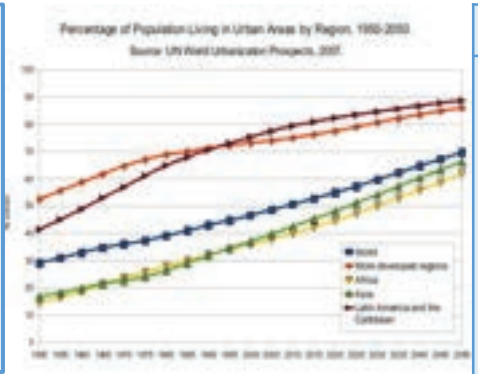
Geography | Urban Issues and Challenges | Topic Dictionary

Image	Key word	Definition	In a sentence
	**squatter settlement**	An area of poor-quality housing, at times lacking in amenities such as water supply, sewerage and electricity,	**Squatter settlements** often develop spontaneously on land not owned by the occupants.
	**sustainable urban living**	There is minimal damage to the environment, the economic base is sound with resources allocated fairly and jobs secure, and there is a strong sense of community, with local people involved in decisions made.	**Sustainable urban living** includes several aims including the use of renewable resources, energy efficiency, use of public transport, accessible resources and services.
	**traffic congestion**	Occurs when there is too great a volume of traffic for roads to cope with.	When there is **traffic congestion** traffic jams form and traffic slows to a crawl.
	**urban greening**	The process of increasing and preserving open space such as public parks and gardens in urban areas.	Battersea Power Station has had trees and plants added to the development this is an example of **urban greening.**
	**urbanisation**	The process by which an increasing percentage of a country's population comes to live in towns and cities	Rapid **urbanisation** occurs in many LICs and NEEs.
	**urban redevelopment**	Demolishing existing buildings and starting afresh.	The area around Battersea Power Station has been **redeveloped**. Old buildings were demolished, and new flats have been built.
	**urban regeneration**	Happens when an urban area is upgraded. The aim is to improve both the economic and social spaces within a city.	The Battersea Power Station site has undergone **urban regeneration** at a cost of £9.5 billion.
	**urban renewal**	The revival of old parts of the built up area by either installing modern facilities in old buildings.	The Power Station in Battersea has undergone **urban renewal** – changing the use from a power station to shops and offices.
	**urban sprawl**	The unplanned growth of urban areas into the surrounding rural areas	**Urban sprawl** can lead to the destruction of habitats in greenfield areas.
	**waste recycling**	The process of extracting and reusing useful substances found in waste.	The amount of **waste recycling** that happens is uneven across London.

Geography | Urban Challenges | Knowledge Organiser

Where is urbanisation happening?

In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.
Urbanisation rates in LICs and NEEs are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing



Rural to urban migration leads to urbanisation.

Push factors

Natural disasters
War and Conflict
Mechanisation
Drought
Lack of employment

Pull factors

More Jobs
Better education & healthcare
Increased quality of life.
Following family members.

Natural increase leads to urbanisation.

Increase in birth rate

High percentage of population are child-bearing age which leads to high fertility rate.
Lack of contraception or education about family planning.

Lower death rate

Higher life expectancy due to better living conditions and diet.
Improved medical facilities helps lower infant mortality rate.

Where are the mega cities?

In 1950, there were only two megacities - New York and Tokyo. Today, there are 33 - mostly in the LICs and NEEs in Asia, Africa and South America.

Sustainable Urban Living

Water conservation
Reducing the amount of water used.
Collecting rainwater for gardens and flushing toilets.
Installing water meters and toilets that flush less water.
Educating people on using less water.

Energy conservation
Using less fossil fuels.
Promoting renewable energy sources.
Making homes more energy efficient.
Encouraging people to use energy.

Creating green spaces
Can improve places for people who want to live there.
Provides a store for carbon.
Encourages people to exercise.
Reduces the risk of flooding from surface runoff.

Waste recycling
More recycling means fewer resources are used.
Less waste reduces the amount that eventually goes to landfill.
More local recycling facilities.
Greater awareness of the benefits in recycling

How is Battersea Power Station sustainable?

The buildings are designed to be energy efficient and there is energy efficient technology.
The project is well-connected to public transportation with an extension of the Northern Line underground and discourages car use.
The project incorporates measures to manage rainwater

Traffic management

Urban areas are busy places with many people travelling by different modes of transport. This has caused urban areas to experience different traffic congestion that can lead to various problems.

Environmental problems
Traffic increases air pollution which releases greenhouse gases that is leading to climate change.

Economic problems
Congestion can make people late for work and business deliveries take longer. This can cause companies to lose money.

Social problems
There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.

Traffic Management Solutions

London has an integrated transport system to encourage more people to use the public transport.

Solutions to congestion:
Bus lanes to make bus transport faster and more reliable.
Electric buses to reduce air pollution levels.
Cycle lanes to make cycling safer.
Bike hire schemes.
Underground/trams to reduce the need for cars.

Geography | Urban Challenges Case Studies | Knowledge Organiser

Urban Change in a Major NEE city: Rio De Janeiro

Rio's location

Rio is a coastal city situated in the South East region of Brazil within the continent of South America. It is the second most populated city in the country.

City's Importance

2nd largest GDP in Brazil.
It is headquarters to many of Brazil's main companies, particularly with oil and gas.
Christ the Redeemer is one of the 7 wonders of the world.
Hosted the 2014 World Cup and 2016 Summer Olympics.

Migration to Rio De Janeiro

The city began when Portuguese settlers with slaves arrived in 1502. Since then, Rio has become home to various ethnic groups.
Rio is now home to various ethnic groups. Millions of people have migrated from rural areas that have suffered from drought, lack of services and unemployment to Rio. People do this to search for a better quality of life. This expanding population has resulted in the rapid urbanisation of Rio de Janeiro.

City's Opportunities

Social: Primary school attendance has grown rapidly. Most of the population now have access to improved sanitation and electricity. Health care is free in the city.

Economic: Rio has one of the highest incomes per person in the country. The city has various types of employment including oil, retail and manufacturing.

Environmental: The hosting of the major sporting events encouraged more investment in sewage works and public transport systems.

City Challenges

Social: There is a severe shortage of housing, schools and healthcare centres available. Large scale social inequality, is creating tensions between the rich and poor.

Economic: The rise of informal jobs with low pay and no tax contributions. There is high informal employment in favelas.

Environmental: There are 55 polluted rivers which is then leading to pollution in Guanabara Bay. Air pollution is caused by traffic congestion

Self-help schemes – Rocinha Bairro Project

- The authorities have provided basic materials to improve people's homes with safe electricity and sewage pipes.
- Government has demolished houses and created new estates.
- Community policing has been established, along with a tougher stance on gangs with military backed police.
- Greater investment in new road and rail network to reduce pollution and increase connections between rich and poor areas.

Geography | Urban Challenges Case Studies | Knowledge Organiser

Urban Change in a UK city: London

Location and background

London is a city in the south-east of the UK. It has a population of 9.5 million people. The city was founded by the Romans and grew dramatically during the industrial revolution. Docks and ports traded around the world.

City's Importance

The city enjoys a large sporting heritage with famous athletes and football clubs.

- London is famous for its wide range of leisure and cultural attractions.
- London is the centre of UK trade and a hub of financial trade.
- London attracts graduates from all over the UK and the world to work in its many expanding businesses. UK's wealthiest city.
- Major UK transport hub – airports etc.

Migration to London

During the industrial revolution, the population dramatically increased with people migrating from nearby rural communities.
With attraction of making money and getting a job people came from all over the world. Lots of people from India, Nigeria, Jamaica. One of the most multicultural places on the planet.
Recent migration from Eastern Europe. Due to free movement from the EU.

City's Opportunities

Social: Cultural mix, lots of recreation facilities and tourist attractions. Lots of bars and restaurants and theatres.
Economic: Major world financial centre, highly skilled workforce. Likely to be employed in managerial/professional roles, which earn more money

Environmental: Urban greening –increase the % of green spaces in a city. Rooftop gardens - better quality of life, reduce flooding, wildlife habitats. Lots of parks for walking and a better environment.

City Challenges

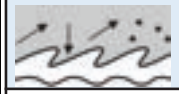
Social: Urban deprivation, inequalities in housing, education, health, employment. House prices too high, unequal incomes, children do not get equal exam grades, people in wealthy areas live longer than those in poor areas
Economic: The rise of informal jobs with low pay and no tax contributions. There is high informal employment in favelas.
Environmental: Urban sprawl has led to increased pressure and decline of greenfield sites around the city. Dereliction – lots of empty brownfield sites. Waste disposal and air pollution – lots of traffic. Waste – lots of waste, incineration and landfill, developing more recycling.

Battersea Power Station Regeneration

Reasons for regeneration – a need for more housing and green space in London. After the power station was decommissioned due to pollution levels it was left empty for many years until a Malaysian company invested £9.5 billion into the development.

Economic successes – over 250 shops, cafes and restaurants have opened. Apple has opened its new London headquarters here.
Environmental successes – New green areas have been developed – lots of trees planted. A new underground station has been built which reduces traffic and air pollution in the area.
Social failures – despite building 4,000 new flats the costs mean that low-income families will not benefit from the regeneration. The cheapest studio apartments available cost over £500,000 and rents are also very high.

Geography | Coasts | Topic Dictionary

Image	Key word	Definition	In a sentence
	**arch**	A wave-eroded passage through a small headland. This begins as a cave formed in the headland, which is gradually widened and deepened until it cuts through.	Durdle door is a famous sea **arch** in Dorset.
	**bar**	Where a spit grows across a bay, a bay bar can eventually enclose the bay to create a lagoon.	**Bars** are found in coastal areas with no rivers.
	**beach**	The zone of deposited material that extends from the low water line to the limit of storm waves.	A **beach i**s a depositional feature.
	**cave**	A large hole in the cliff caused by waves forcing their way into cracks in the cliff face.	Abrasion helps to make a **cave** deeper and wider.
	**chemical weathering**	The decomposition (or breakdown) of rock caused by a chemical change within that rock; sea water can cause chemical weathering of cliffs.	Rocks made of calcium carbonate such as limestone can be impacted by **chemical weathering**.
	**cliff**	A steep high rock face formed by weathering and erosion along the coastline.	Steep **cliffs** are made or resistant rock.
	**deposition**	Occurs when material being transported by the sea is dropped due to the sea losing energy.	**Deposition** creates landforms such as coastal bars.
	**erosion**	The wearing away and removal of material by a moving force, such as a breaking wave.	Coastal arches are formed by **erosion.**
	**hard engineering**	The use of concrete and large artificial structures by civil engineers to defend land against natural erosion processes.	Groynes and sea walls are examples of **hard engineering.**
	**headlands and bays**	A rocky coastal promontory made of rock that is resistant to erosion; headlands lie between bays of less resistant rock where the land has been eroded back by the sea.	**Headlands and bays** are created by erosion.
	**longshore drift**	The zigzag movement of sediment along a shore caused by waves going up the beach at an oblique angle (swash) and returning at right angles (backwash).	L**ongshore drift** results in the gradual movement of beach materials along the coast.
	**managed retreat**	Allowing cliff erosion to occur as nature taking its course: erosion in some areas, deposition in others.	A benefit of **managed retreat** is less money spent and the creation of natural environments.
	**mass movement**	The downhill movement of weathered material under the force of gravity.	The speed of **mass movement** can vary greatly.

Geography | Coasts | Topic Dictionary

Image	Key word	Definition	In a sentence
	**mechanical weathering**	Weathering processes that cause physical disintegration or break up of exposed rock without any change in the chemical composition of the rock.	Freeze thaw weathering is an example of **mechanical weathering.**
	**sand dune**	Coastal sand hill above the high tide mark, shaped by wind action, covered with grasses and shrubs.	**Sand dunes** help to protect the coastal areas behind them.
	**sliding**	Occurs after periods of heavy rain when loose surface material becomes saturated and the extra weight causes the material to become unstable and move rapidly downhill.	Coastal **sliding** can impact cliffs after heavy rain.
	**slumping**	Rapid mass movement which involves a whole segment of the cliff moving down-slope along a saturated shear-plane or line of weakness.	Cliffs made of bolder clay are susceptible to **slumping**.
	**soft engineering**	Managing erosion by working with natural processes to help restore beaches and coastal ecosystems.	Beach nourishment is an example of **soft engineering.**
	**spit**	A depositional landform formed when a finger of sediment extends from the shore out to sea, often at a river mouth.	A **spit** usually has a curved end because of opposing winds and currents.
	**stack**	An isolated pillar of rock left when the top of an arch has collapsed.	Over time further erosion reduces the **stack** to a smaller, lower stump.
	**transportation**	The movement of eroded material.	Traction is a type of coastal **transportation**.
	**wave cut platform**	A rocky, level shelf at or around sea level representing the base of old, retreated cliffs.	A **wave cut platform** is formed by erosion.
	**waves**	Ripples in the sea caused by the transfer of energy from the wind blowing over the surface of the sea.	The largest **waves** are formed when winds are very strong, blow for lengthy periods and cross large expanses of water.

Geography | Coasts | Knowledge Organiser

Types of Erosion

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

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

Types of Transportation

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

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

What is Deposition?

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

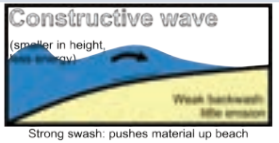
Size of waves

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

Types of Waves

Constructive Waves

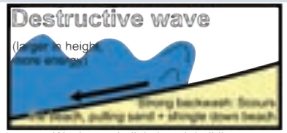
This wave has a **swash that is stronger** than the backwash. This therefore builds up the coast.



Strong swash: pushes material up beach

Destructive Waves

This wave has a **backwash that is stronger** than the swash. This therefore erodes the coast.



Weak swash: little beach building

Mechanical Weathering Example: Freeze-thaw weathering

Stage One

Water seeps into cracks and fractures in the rock.

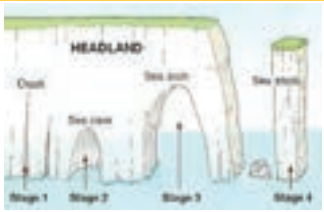
Stage Two

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

Stage Three

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

Formation of Coastal Stack



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

Formation of Bays and Headlands

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

Formation of Coastal Spits - Deposition

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

Coastal Defences

Hard Engineering Defences

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

Soft Engineering Defences

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

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Map Skills

Compass points

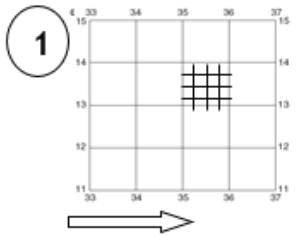
Compass directions are vital for finding your way around a map and provide the easiest way of describing the distribution of different features.

Distance on a map

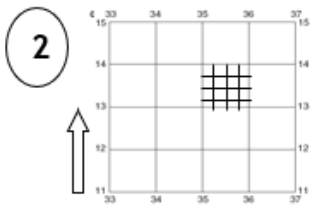
If you are required to work out the straight-line distance (as the crow flies) between 2 places, simply place your ruler over both points and measure the distance in-between, then convert into kilometres using the scale line or by multiplying your answer by 0.5, i.e. 7 cm on the map equals 3.5km in real life. .

4 and 6 figure grid references

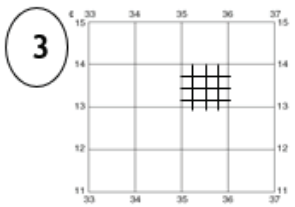
Ordnance Survey map are covered in a series of blue grid lines. These grid lines can be used to pinpoint locations through a unique number known as a grid reference.



Go along the bottom of the map until you reach the point which forms the left side of the square you're trying to locate e.g. 35



Then, go up the side of the map until you reach the point that forms the bottom side of the square you're trying to locate e.g. 13

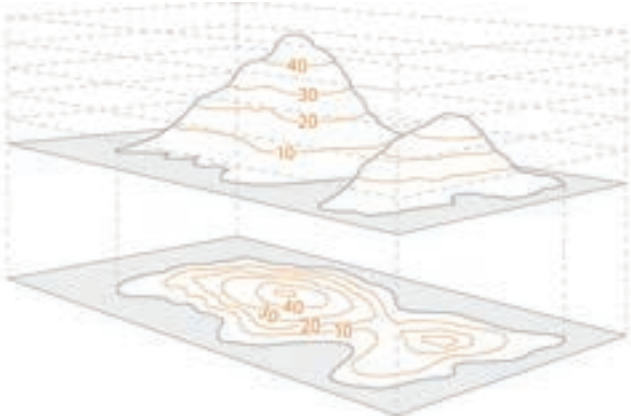


Now put your two answers together e.g. 35 13.

If you want to pinpoint an exact place on a map, such as a church or farm building, then you will need to use a **six-figure grid reference**. The first step is to find the four-figure reference, now imagine this square is divided up into 100 tiny squares, with 10 squares along each side.
Still remembering to go along the corridor and then up the stairs, estimate how far across and then up the square the feature is.

Contour lines

Hills, slopes and mountains are represented on a map using contour lines.
A contour is a line drawn on a map that joins points of equal height above sea level. We can see how heigh the land is by the number on the line.
The steeper the slope the closer together the contour lines will be



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Answering 1-mark questions

These usually require you to:

- Add something to a diagram
- Write a 1 word answer
- Shade a box
- Define a key term.

Be very careful with these questions as they like to trick you. READ THE QUESTIUON VERY CAREFULLY

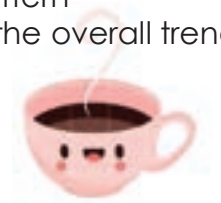
Answering 2-mark questions

These will require you to:

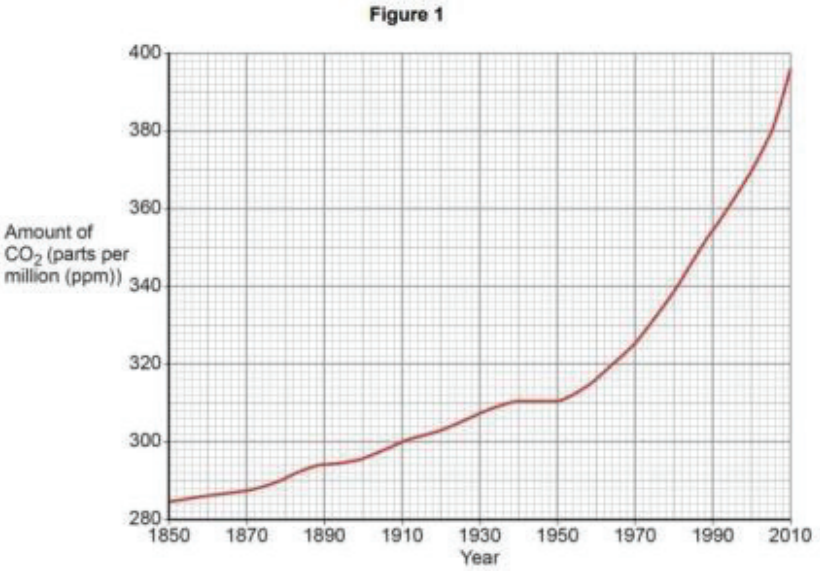
- Tick 2 boxes
- Write 2 reasons why something happens
- Fill in the gaps
- Describe a graph
- Describe distribution on a map

If you are asked to explain a pattern on a graph the following structure will help you.

Trend – what this the overall pattern of the graph.
Examples – pick out examples that support the overall pattern
Anomalies – is there any part of the data that doesn't fit the overall trend



TEA in action.



Describe the change in the amount of carbon dioxide in the atmosphere shown in figure (2 marks)

Overall, the graph shows an increase in the amount of carbon dioxide (CO2). In 1850 there was 284 ppm however the amount increases steadily until 1950 where there was 310 ppm but after that it increases rapidly 396 ppm in 2010. From 1940 to 1950 however, there was no significant increase in the amount of CO2.

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Answering 3-mark questions

These will require you to:
- Fill in the gaps in a paragraph
- Label things on a diagram
- Describe a graph (in detail)
- Describe distributions on a map with suggestions and reasoning

They require you to describe in detail but also on occasion to provide a basic explanation or a suggestion usually based on a source figure in the paper. See the worked example to help you.

It is common in all three papers to be asked to **describe the distribution** and link to a map.

Distribution – how something is spread over an area.

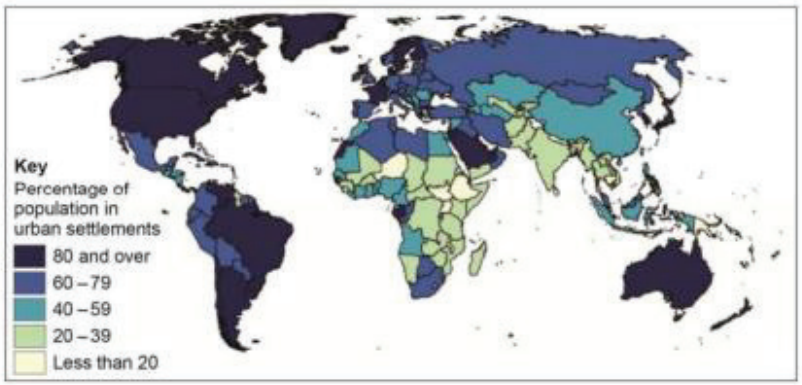
To structure your response in relation to a map you should follow the steps here.

1. **T**rends – give the overall pattern
2. **E**xamples – specific place examples to prove your point
3. **A**nomalies – any countries that do not fit the pattern you expect to see.

TEA in action.

Study **Figure 1**, a map showing the percentage of the population living in urban settlements in different parts of the world.

Figure 1



Describe the differences in percentage of population living in urban settlements in Africa and South America (3 marks)

Africa has a much larger difference of people living in urban settlements than South America. Some landlocked countries in central and eastern have less than 20% of people in urban areas whereas the majority has between 20 and 39%. South American countries are much more urbanised with nearly all the countries are 60% and over. However, some countries on the western coast of Africa are 80% and over and one country in northern part of South America is 20% - 39% urbanised.

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Answering 4-mark questions

Consequently
As a result of
Therefore
This means that

These will require you to:
- Explain 2 points in detail
- Explain a point in a lot of detail

4 Mark questions are a nice way to pick up marks. They tend to have a figure attached to them which you can use to help you with the answer.

To ensure that you are expanding your points you must use CATT statements to help you add relevant detail and your own knowledge.

Worked example with no figure:

Outline one mitigation strategy which aims to reduce the rate of climate change (4 marks)

One strategy that can be used to mitigate climate change is converting our energy production from burning fossil fuels to using renewables. **This means that** coal, oil and natural gas fired power stations would be decommissioned and our energy would come from energy sources such as tidal power, wind power and solar power. **Consequently**, this is beneficial as our energy will come from sources that don't produce CO2 meaning it doesn't let shorter wave infrared radiation out into space warming the planet. It also means that the energy is readily available to be used on site and doesn't have to be transported around by vehicles (such as coal trucks and oil tankers) **as a result** further mitigating climate change by minimising greenhouse gases emitted by vehicles

Worked example with a figure:

Study **Figure 15**, a photograph showing the effects of river flooding in Somerset in 2014.

Figure 15

Explain the likely economic effects of river flooding in this area (4 marks)

The photograph shows that that the road has been submerged under the water. **This means that** vehicles cannot travel along the road which means that residents of this area will not be able to get to work. This could have an economic impact on their personal income. If continued over a long period of time, could result in being unable to pay rent or keep up with mortgage leading to debt.

Secondly, I can see that resident's homes have been flooded. **This means that** there is a high personal economic cost to the residents as their personal belongings may have been destroyed. If they are not insured this means that they must replace it themselves at a high cost.

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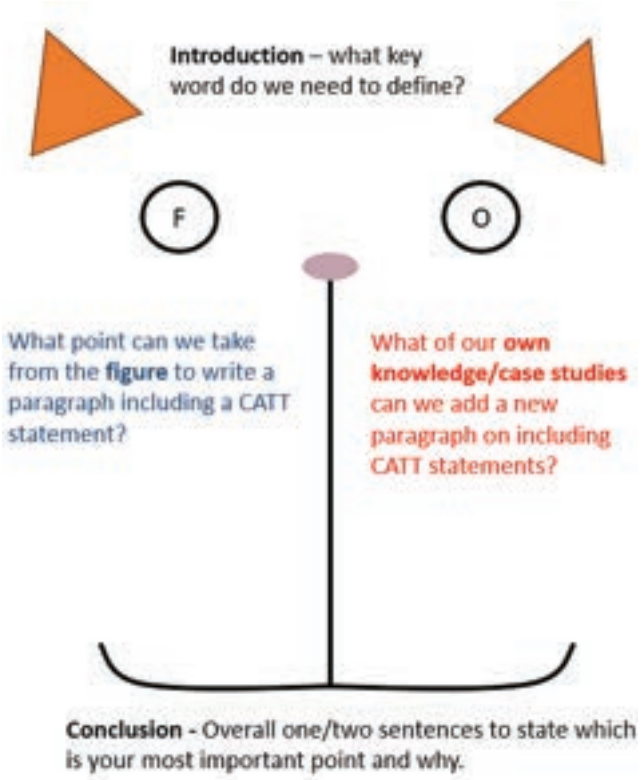
How to answer a 6-mark question.

A 6-mark question will often ask you to use a figure and your own understanding. This is the plan you need to follow in this case:



Consequently

As a result of

Therefore

This means that

Within our responses it is important that we expand our points in order to show our geographical ability to explain our points. **CATT statements** will help us do this.

Potential 6-mark command words.

Image	Command words	What you need to do
	**Discuss**	Present key points about different ideas or strengths and weaknesses of an idea.
	**Explain**	Set out purposes or reasons/ Say why something happens.
	**Suggest**	Present a possible case of why something has happened/how it can impact something.
	**To what extent**	Judge the importance or success of something (strategy, scheme, project).

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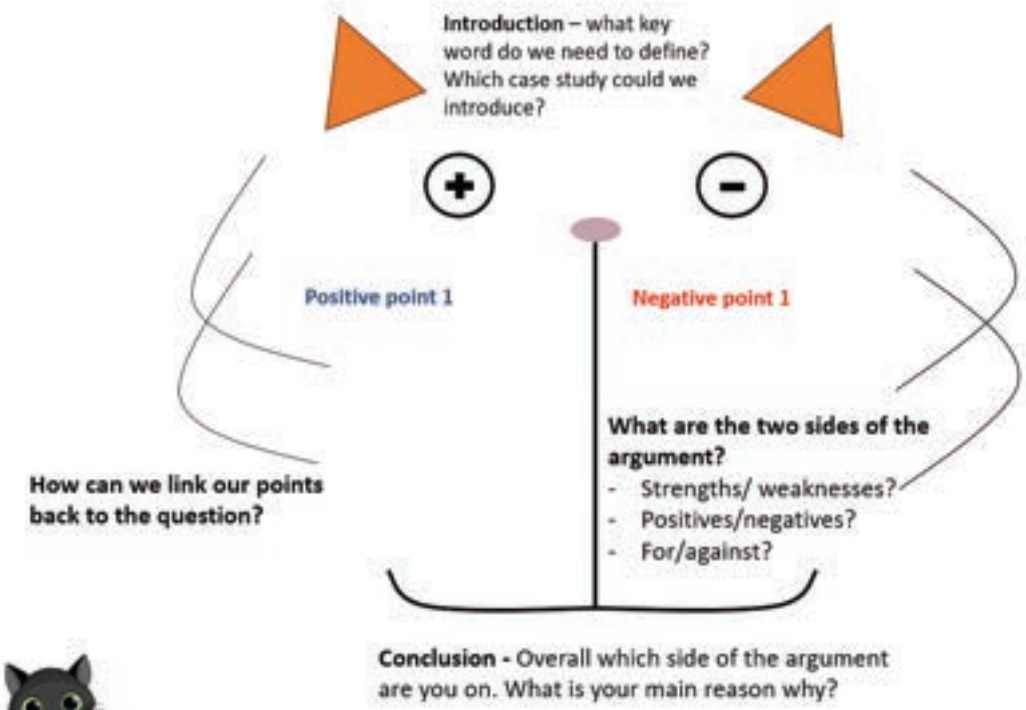
How to answer a 9-mark question.

We will use our **cat plan** to ensure that we include all the vital elements for a 9-mark question. This plan will work for all command words!



Consequently

As a result of

Therefore

This means that

Within our responses it is important that we expand our points in order to show our geographical ability to explain our points. **CATT statements** will help us do this.

Potential 9-mark command words.

Image	Command words	What you need to do
	**Assess**	Make an informed judgement. Present both sides of an argument and use evidence to make your judgement.
	**Discuss**	Present key points about different ideas or strengths and weaknesses of an idea.
	**Evaluate**	Judge from available evidence. Present both sides of an argument and use evidence to make your judgement.
	**Explain**	Set out purposes or reasons/ Say why something happens.
	**Justify**	Support a case with evidence.
	**To what extent**	Judge the importance or success of something (strategy, scheme, project).

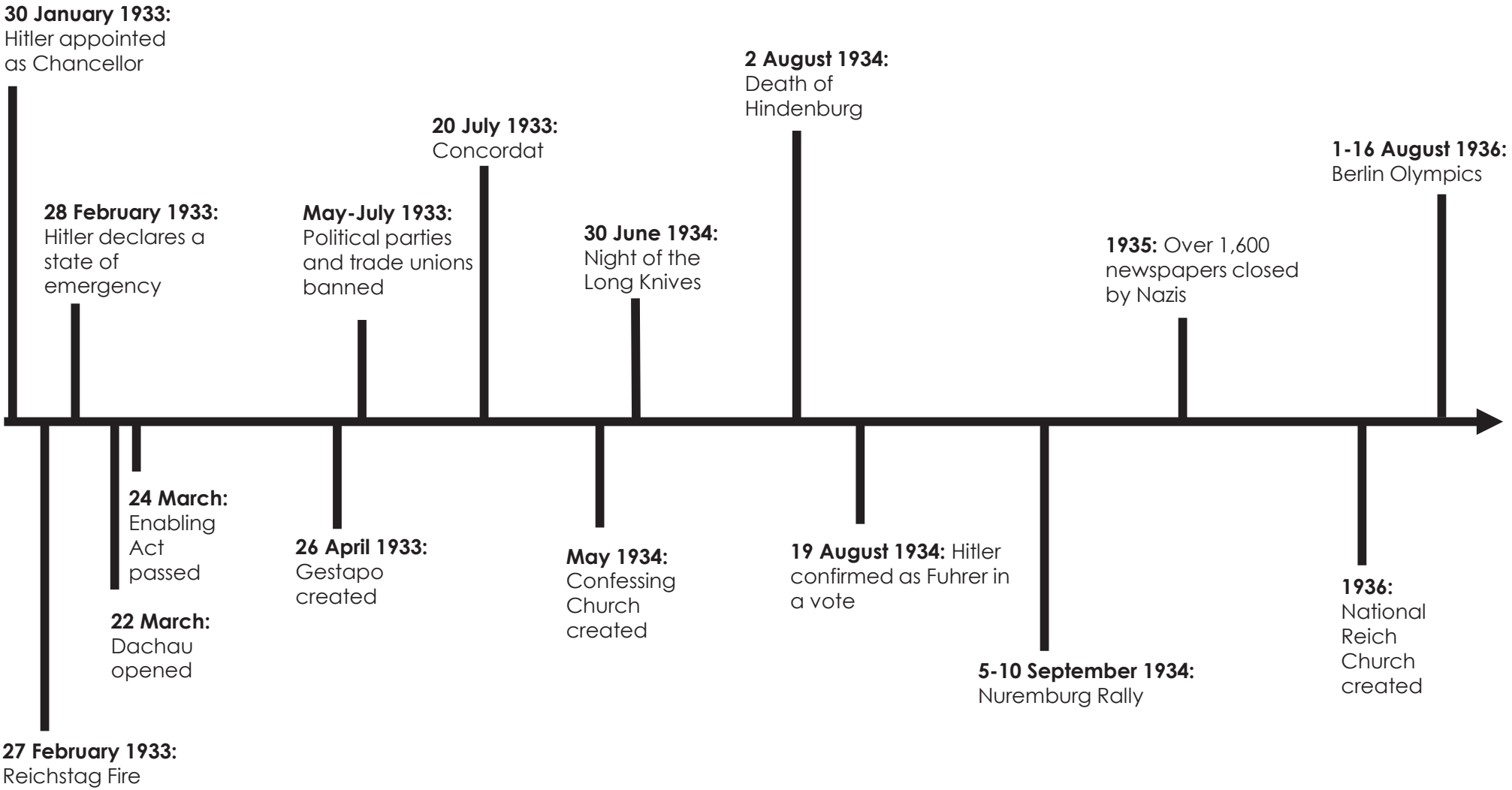
History | Nazi Control and Dictatorship, 1933-39 | Topic Dictionary

Image	Key Word	Definition	In a sentence…
	**anti-Semitism**	Noun: racism and persecution aimed towards Jews.	Being **antisemitic** is a hate crime in England.
	**Aryans**	Noun: Pure blooded Germans, often with blonde hair and blue eyes.	Hitler believed that **Aryan** people should be in control of society.
	**Catholic Church**	Noun: The international Roman Catholic Church controlled by the Pope	Under the Nazis, the **Catholic Church** protested against Nazi beliefs.
	**censorship**	Noun: A method to stop people from seeing or hearing anything different or challenging to the Nazis	Some examples of **censorship** include banning free speech or freedom of the press.
	**Concentration camps**	Noun: A camp that contained political enemies of the Nazis	The first **concentration camp** was Dachau.
	**Concordat**	Noun: An agreement between the Pope and Hitler not to interfere with each other.	Hitler and the Pope signed the **concordat** with each other.
	**Confessing Church**	Noun: A church which protested Hitler's attempts to unite the different Protestant churches into one Reich Church	The **Confessing Church** protested against the Nazis.
	**death camps**	Noun: The use of concentration camps to kill minority groups.	The most infamous **death camp** is Auschwitz-Birkenau.
	**Edelweiss Pirates**	Noun: a rebellious group that rejected Nazi values and opposed the Hitler Youth by beating up Nazi officials and graffiti	One group of youths that protested the Nazis was the **Edelweiss Pirates.**
	**Enabling Act**	Noun: An act that allowed Hitler to govern/pass laws without parliament	Hitler used the **Enabling Act** to become the dictator of Germany.
	**Gestapo**	Noun: "secret police". Police that interrogated/imprisoned people without trial	The **Gestapo** were in charge of making sure people did as they were told.
	**Heinrich Himmler**	Name: Head of the SS and senior official in the Nazi Party	Some people consider **Heinrich Himmler** to be one of the most powerful men in Germany.
	**'Hitler Myth'**	Noun: Goebbel's strategy to make Hitler seem like a god and the saviour of Germany. This was the 'cult of the Fuhrer.	Goebbel's created the '**Hitler Myth'.**

History | Nazi Control and Dictatorship, 1933-39 | Topic Dictionary

Image	Key Word	Definition	In a sentence…
	**Josef Goebbels**	Name: The Minister for Public Engagement and Propaganda for the Nazi Party from 1933. He created Nazi propaganda campaigns.	**Josef Goebbels** ensured that people supported the Nazi party.
	**Martin Niemoller**	Name: A Protestant Pastor and one-time Nazi supporter. He objected the Nazis interference in the church and was a founding member of the Confessing Church.	**Martin Niemoller** was imprisoned in concentration camps for speaking out against the Nazis.
	**Nazi doctrines**	Noun: The values and ideals of the Nazi Party	Hitler ensured that people understood the **Nazi doctrines**.
	**Nuremburg rallies**	Noun: Marches and speeches from Nazi officials, like Hitler and Goebbels	One example of propaganda was the **Nuremburg rallies**.
	**People's Court**	Noun: A nazi controlled court which held trials of political crimes	A lot of the trials at the **People's Court** were fixed.
	**propaganda**	Noun: information which is used to promote a political cause or idea	Josef Goebbels ensured that people were shown Nazi **propaganda**.
	**Protestant Church**	Noun: an alternative Christian Church which was supported by Hitler	Hitler preferred the **Protestant Church** to the Catholic Church.
	**Reich Church**	Noun: A nazified version of Christianity, which only allowed Aryans in.	Hitler created the **Reich Church** as his own form of Christianity.
	**SD**	Noun: A Nazi intelligence service run by Reinhard Heydrich	The **SD** would tap into phone lines and open people's letters.
	**SS "Black Shirts"**	Noun: Hitler's private bodyguards.	The **SS** would become the most feared group of men in Germany.
	**Swing Youth**	Noun: A group of young people who rebelled by using Western culture	One example of a youth group that protested the Nazi regime was the **Swing Youth**.

History | Nazi Control and Dictatorship, 1933-39 | Key Events Timeline



The Nazi Police State

SS (Protection Squad)

- Set up by Heinrich Himmler in 1925
- They were led by Himmler
- They wore black uniforms (nicknamed 'The Black Shirts')
- They controlled all Germany's police and security forces
- They acted outside the law
- Members had to marry 'racially pure' wives (Aryans)
- They ran the concentration camps

SD (Security Service)

- Set up by Heinrich Himmler in 1931
- They were led by Reynhard Heydrich
- They wore uniforms
- Spied on all opponents of the Nazi Party, both at home and aboard.

Gestapo (Secret State Police)

- Set up by Hermann Goering in 1933
- They were led by Reynhard Heydrich
- They wore plain clothes (disguised in public)
- The spied on people and used children as informers
- Prosecuted people for speaking out against the Nazis
- Sent people to concentration camps and used torture

The Justice System

Hitler controlled the legal system so that meant it was very difficult for anyone to oppose him.

The Judges

All judges had to belong to the National Socialist League for the Maintenance of the Law.

All judges had to favour the Nazi Part in decisions.

Law Courts

He abolished the trial by jury – only judges were able to decide guilt or innocence now.

People's Court, trials were secret & with handpicked judges

Concentration Camps

Enemies of the Reich were placed in work camps.

Sample exam questions

'Explain why Hitler created a police state in Germany' [12]

'Explain why the police state was so successful'. [12]

'Explain why propaganda indoctrinated Germans' [12]

'Explain why Hitler successfully controlled the church' [12]

'Explain why Hitler faced challenges from the Church' [12]

Give two things you can infer from source G about how the Nazis viewed opposition amongst German youth. [4]

"The youth should first be given thrashings and then put through the severest drill and set to work. It must be made clear that they will never be allowed to go back to their studies. We must investigate how much encouragement they have had from their parents. If they have encouraged them, then they should also be put into a concentration camp and (have) their property confiscated."

Letter from Heinrich Himmler, head of the SS, to Reinhard Heydrich, head of political police. [Source G]

Joseph Goebbels

- Minister for Public Enlightenment and Propaganda
- He believed Hitler was the Saviour of Germany
- Decided what the public should/should not hear through media censorship
- Used all resources to build loyalty to Hitler and the Nazi Party
- Controlled radio, newspapers, rallies etc.

Examples of Propaganda

'Triumph of Will'': Film produced by the Nazis that showed the Nuremberg Rally. One million attended the rally - it made the Nazis look powerful, displaying flags, lights, banners and leading Nazi officials.

Nazification of the Education System: School textbooks were rewritten to make Germans look successful. Children were taught to believe in the Nazi doctrines, the Hitler Myth and that the Jews were the enemy.

PROPAGANDA

Methods of Propaganda

Rallies

Goebbels organised the Nuremberg Rallies every summer for a week. Bands, marches, speeches and flying displays. It was used to demonstrate the military might of Germany. The SS and Hitler Youth did this often.

The Berlin Olympics (1936)

Goebbels was convinced it was good propaganda nationally and internationally, to show off Aryan superiority. There was pressure from other countries to boycott, so Nazis put one Jew in their team. Huge stadiums were built, which helped with unemployment. It was also the first televised Olympic games so it was ground-breaking for Germany to hold them.

Cinema

All films had to be pro-Nazi (regardless of genre). Newsreels full of the greatness of Hitler and Nazi achievements. Foreign films were censored. Over 1000 films made during Third Reich around Nazi ideas e.g. Jud Siss about an evil Jew. "Triumph of the Will" was created about Nuremberg Rally. (Leni Riefenstahl director) to show off the power of the Nazi Party.

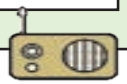
Music

Jazz was banned because it was black music and came from the West. Musicians had to be members of Reich Chamber of Culture. Goebbels could take membership away. Folk songs and classical music were allowed.

Art

Only approved paintings were allowed. Modern art was labelled as 'degenerate' and un-German. Most art portrayed heroic Nazis, military figures or ideal Aryan families. Albert Speer was employed to create monumental public buildings to show off the success of Germany under the Nazis.

Radios



Goebbels loved this new technology. He made radios cheap so Nazi messages could reach more people, and called it 'the People's Receiver'. Listening to BBC was punishable by death. 6000 loudspeakers also placed in bars and streets for those without radio. Hitler's speeches (and other speeches) repeated over and over. People started to believe what they heard – inferiority of Jews and German expansion to the east. The Reich Radio Company was established.

Newspapers

All newspapers were controlled by Goebbels and banned anti-Nazi ideas. Jewish editors and journalists were put out of work and anti-Nazi newspapers shut down. Newspapers were local not national in 1933 and by 1944 there were only 1000 papers. Propaganda ministry ordered that pictures showing members of the Reich at dinner with bottles in front of them mustn't be published because it looked like they were 'living it up'.

Books

Writers and publishers needed permission of Goebbels to publish. Any book that did not fit with Hitler's ideals were not allowed to be published and authors could face punishment. The best selling book at the time was Mein Kampf. In 1933, book burning of anything unacceptable to Nazi ideology was undertaken, especially Jewish books.

The Catholic Church

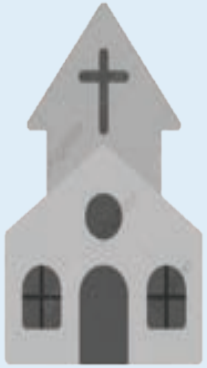
Hitler worried that the Catholic Church would oppose him because Catholics:

- Were loyal to the Pope
- Usually support the Catholic Centre Party
- Sent their children to Catholic schools and the Catholic youth organisations.

The Concordat 1933

Hitler agreed with the Pope that Catholics were free to worship and run their own schools, in return for staying out of politics.

The Protestant Church



The Reich Church

Found in 1933 and was made up of about 2000 protestants. They supported the Nazis and was led by Ludwig Muller. Some members wore Nazi uniforms and called themselves German Christians.

Vs

The Confessional Church

Found in 1934 and was made up of about 6000 Protestant churches. It opposed the Nazis and was led by Martin Niemoller. It was repressed by the Nazis and its members were punished in work camps.

Opposition to the Nazis

The Nazificiation of the church faced opposition from religious individuals such as: Martin Niemoller, Dietrich Bonhoffer, Ludwig Muller and the Pope.

Nazi Beliefs vs. Christian Beliefs

Nazi Beliefs	*Christian Beliefs*
Hitler as all-powerful leader	God as the ultimate authority
Aryan racial superiority	Everyone equal in the eyes of God
War, military discipline & violence important	Peace is what everyone should strive for
Dominance of the strong over the weak	The strong should look after the weak
Mein Kampf should be read and preached by the people	The Bible should be read and preached by the people

Youth opposition to the Nazis

Edelweiss Pirates

A rebellious youth group that rebelled at Nazi values.

- ❑ Helped army deserters, forced labourers and escaped concentration camp prisoners.
- ❑ Handed out anti-Nazi leaflets.
- ❑ Beat up Nazi Officials and Hitler Youth members
- ❑ Used graffiti to denounce the Nazi Party

Many members were arrested and several were publically hanged, like in Cologne (1942).

Swing Kids

A middle class group of young people who rebelled against Nazi culture and control.

- ❑ Acted in 'degenerate' ways by listening to American jazz music and drinking alcohol.
- ❑ Swing Dance in pairs of boys and girls.
- ❑ Girls wore lipstick, long dresses and makeup.
- ❑ Hung around in groups in bars and smoked.

They were arrested and sent to concentration camps.

Skills – How to answer the 4-mark interpretation questions

Questions 3b, c and d all require you to use interpretations. You should spend *at least* 5 minutes reading the interpretations and use a highlighter to pick out the key information in relation to the question. The interpretations will always give opposite opinions on the topic! Questions 3b and 3c are worth 4-marks each and require **no own knowledge!**
The topic of the interpretations below is the power of the Gestapo.

Interpretation 1

The Gestapo never employed enough staff to spy on everyone. It was a very small under-resourced and over-stretched organisation, with less than 15,000 active officers policing all the political crime of 66 million Germans. Gestapo officers were not the brutal ideologically committed Nazis of popular myth, but career detectives, who joined the police service many years before Hitler came to power.

The Gestapo: The Myth and Reality of Hitler's Secret Police, **Frank McDonough (2015)**

Interpretation 2

If a house search was not successful, then the Gestapo arrested the suspects anyway, precisely to show their power and to intimidate them through interrogation. Even if the matter then ended with merely a fine or just the threat of punishment, they had achieved their goal because they had influenced the future behaviour of the individuals involved. It was always assumed that the Gestapo could at any time turn to harsher measures. The Gestapo was not bound by any legal or administrative accountability or burden of proof, it was thereby possible for them to create their own laws of persecution and to make use even of chance information for their own ends. Terror could be seeded without a scrap of evidence.
The Gestapo: Power and Terror in the Third Reich, **Carsten Dams and Michael Stolle (2014)**

Model Answers

3b. Study interpretations 1 and 2. They give different views about the power of the Gestapo within Nazi Germany. What is the main difference between these views? [4]

The main difference between these views is over the degree of control that the Gestapo had over the German public. Interpretation 5 suggests that the Gestapo only had limited control due to financial and personnel constraints: "it was a very small under-resources and over-stretched organisation", suggesting that a force of 15,000 was unlikely to be able to effectively police a population of 66 million. In contrast, Interpretation 6 indicates that the Gestapo were a threat because they had no restrictions on their powers – "the Gestapo was not bound by any legal or administrative accountability" – and therefore they were still able to influence and police the behaviour of the whole population through fear. The interpretation states that "they had achieved their goal because they had influenced the future behaviour of the individuals", meaning that the two sources differ over the capability of the Gestapo to exert control.

3c. Study interpretations 1 and 2. Suggest *one* reason why interpretations 1 and 2 give different views about the power of the Gestapo. You may use sources B and C to help explain your answer. [4]

The interpretations are different because they used different sources. For examples, Interpretation 1 may have used source (X) as this also shows (….) whereas, Interpretation 2 may have used source (Y) as this source also suggests (….)

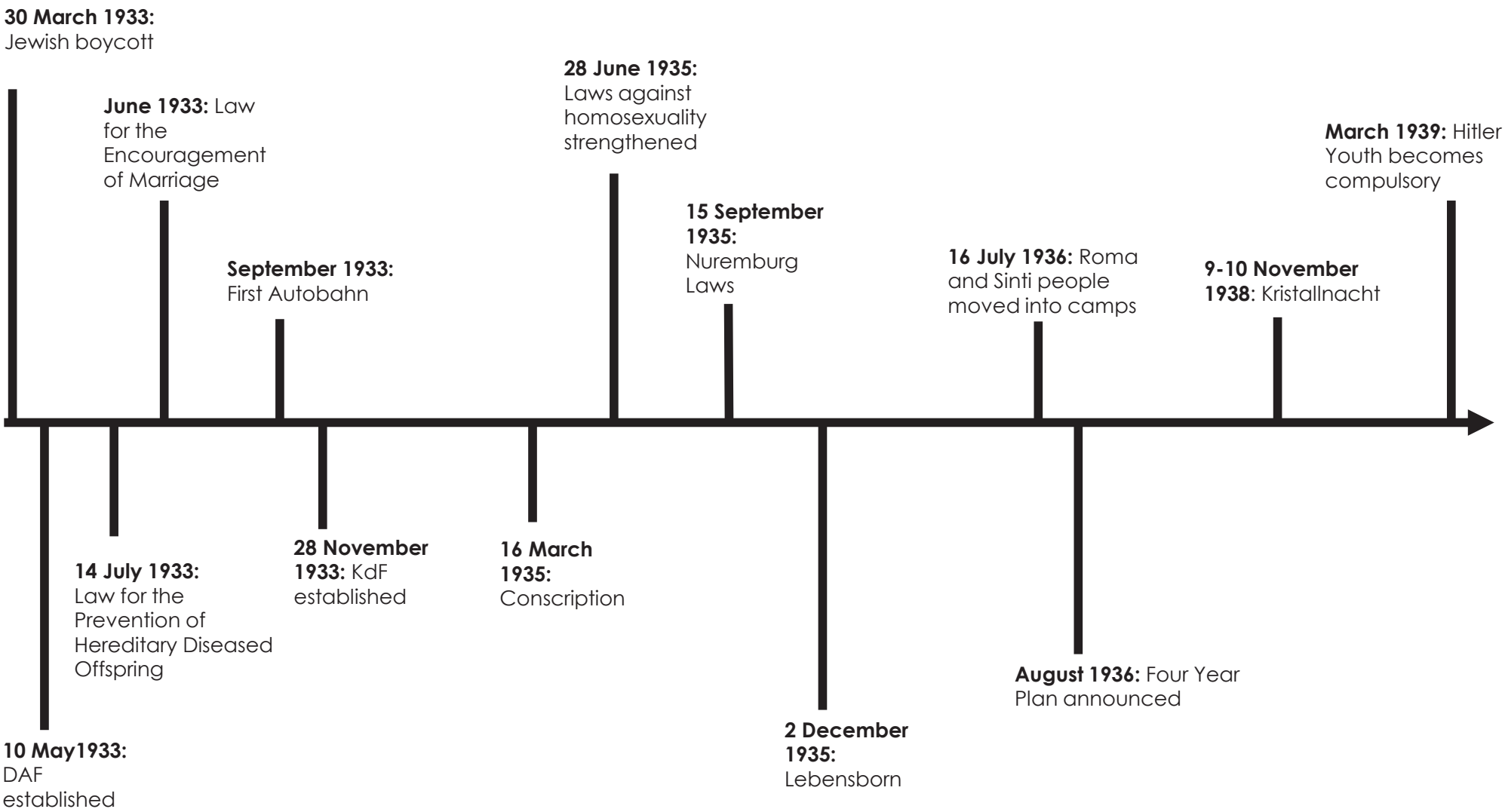
For question 3c you match up the interpretations to the sources you would have analysed in question 3a! It does not matter if you repeat yourself within your different answers. They are designed to help you build up to the longer essay at the end!

History | Life in Nazi Germany, 1933-1939 | Topic Dictionary

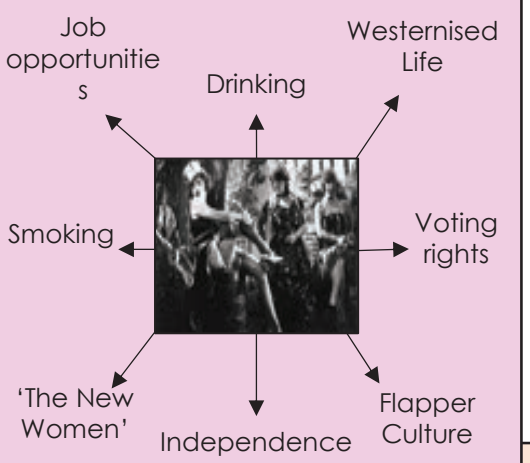
Image	Key Word	Definition	In a sentence…
	**autobahns**	Noun: Motorway project that employed 125,000 men in 1935	Hitler expanded the workforce by employing men to build **autobahns**.
	**Aryan**	Noun: Pure blooded Germans, often with blonde hair and blue eyes.	Hitler believed that **Aryan** people should rule society.
	**'Beauty of Labour' (SdA)**	Noun: a scheme to encourage factory owners to improve conditions.	Employees had to be members of the **SdA.**
	**domestic science**	Noun: A subject at school. Girls were taught cooking, sewing, religion and child-care.	Only girls were taught **domestic science** at school.
	**eugenics**	Noun: A subject at school. Race studies that focused on racial traits to 'improve' the species.	All pupils had to study **eugenics**.
	**German Women's Enterprise (DFW)**	Noun: An organisation led by Gertrud Scholtz-Klink. All enterprise businesses were forced to join the DFW or they were banned.	The **German Women's Enterprise** organised activities that were deemed appropriate for women.
	**Hitler Youth**	Noun: Boys aged 14+ engaged in military style exercises and physical exercise.	By 1936, the **Hitler Youth** had become compulsory.
	**indoctrination**	Noun: A set of beliefs constantly repeated to implant ideas in the mind of people.	Lessons in Nazi Germany were designed to **indoctrinate** pupils.
	**invisible unemployment**	Noun: The Nazis manipulated statistics to show a reduction in unemployment, by removing women/minorities from statistics.	People not included in the Nazi statistics for unemployment were known as the **invisible unemployed**.
	**'Kinder, Kirche, Kuche'**	Noun: Nazi leaders demanded women should stay at home (kitchen), raise their families (children) and be obedient citizens (church).	It was believed that women should focus on the three 'K's: **Kinder, Kirche and Kuche**.
	**Kristallnacht**	Noun: The burning/ransacking of synagogues and Jewish owned shops.	**Kristallnacht** was the first openly violent event towards the Jews in Germany.

Image	Key Word	Definition	In a sentence…
	**Law for Encouragement of Marriage**	Noun: Loans worth up to 1,000 marks were given to couples to encourage them to marry. To receive the loan, women had to stay at home. For each child 25% of the loan was written off.	The **Law for the Encouragement of Marriage** aimed to increase the number of people getting married to increase the population in Germany.
	**Lebensborn**	Noun: A plan to encourage SS members to have children with single Aryan women to increase the Aryan population.	The **Lebensborn programme** was not very successful.
	**League of German Maidens (BDM)**	Noun: Girls aged 14-18 were trained in domestic skills and joined in physical exercise.	Instead of the Hitler Youth, girls joined the **League of German Maidens.**
	**military conscription**	Noun: Hitler made membership of the army compulsory in 1935.	In order to increase the military, Hitler introduced **conscription.**
	**Motherhood Cross**	Noun: An award to mothers of 4, 6 and 8 children on Hitler's mother's birthday	It was an honour to receive the **Motherhood Cross**.
	**National Labour Front (RAD)**	All men between 18-25 could be recruited and given jobs on public works e.g. Autobahns/Olympic stadiums.	The **National Labour Front** aimed to reduce unemployment.
	**Nazi Teachers Association**	Noun: All teachers had to be trained in Nazi methods and follow a Nazi curriculum.	If a teacher refused to join the **Nazi Teachers Association** they would lose their job.
	**Nuremburg Laws**	Noun: A biased set of laws that were based on the idea that Jews and Germans were biologically different. Jews lost their legal rights.	The **Nuremburg Laws** meant that Jewish citizens lost their rights in Germany.
	**oath of loyalty**	Noun: Children had to swear an oath of loyalty to Hitler and the Nazis.	The **oath of loyalty** ensured obedience from the youth in Germany.
	**rearmament**	Noun: German industries were encouraged to produce military weapons.	Hitler started a **rearmament** policy to build up Germany's weapons.
	**Volksgemeinschaft**	Noun: 'The People's Community', working together for the Nazi's aims.	Hitler would often use the term **Volksgemainschaft** to encourage Germans to work together.
	**Volkswagen Programme**	Noun: A scheme that involved the production of 'the People's Car', as a luxury people could aspire towards. They paid regular deposits towards getting a car. However, many never got it.	By the middle of the war, the **Volkswagen Programme** was discontinued as the factories were being used to make tanks. Hardly anyone actually got the car they'd paid for.

History | Life in Nazi Germany, 1933-39 | Key Events Timeline



Women under Weimar Germany

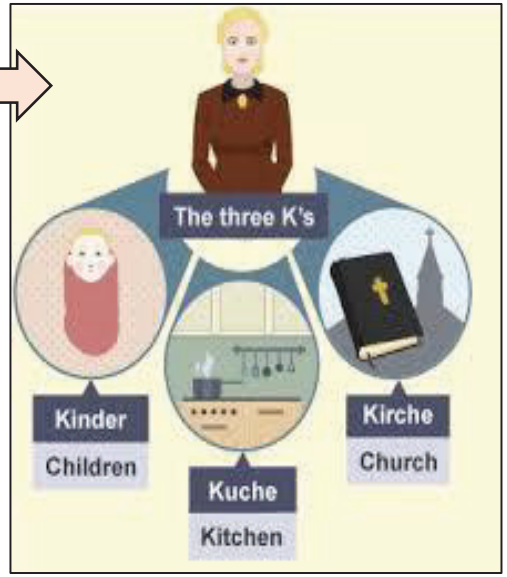


Nazi Women

Housewife: Women had to raise Aryan children in tradition families. They wore peasant-like clothing, focused on the Kitchen, Church, Children. This led birth rates to increase by 30% and the number of marriages increased.

Employment: 15% of women were fired (e.g. 4000 lawyers). They were discouraged from university and given 'marriage bonuses' to not work and get married, abortion and contraception was banned.

Motherhood: The Lebensborn Program, created from 1936, were centres opened to 'donate a baby to Fuhrer' by single Aryans to have sex. They were also offered financial support as single parents. As a reward, mothers were awarded the Motherhood Cross Medal and treated like celebrities in Germany in the community. They received a bronze (4), silver (6) or gold (8) medal.



The Hitler Youth

Boys aged 10-18 joined the Hitler Youth as an activity based club to experience the outdoors and wilderness with their friends.

- ❑ All other youth groups banned in 1933 (e.g. scouts and church groups).
- ❑ All Sports groups were taken over by the Nazis, had to join Hitler Youth.
- ❑ Hitler Youth Act, 1936 made joining compulsory, which increased the group to 8 million members
- ❑ Swore oath of loyalty, learnt Nazi ideology and went to lectures.
- ❑ Military training for army (marching, shooting, camping, stick grenade throwing and map reading. Military ranks and Navy/Air groups)
- ❑ Awarded with medals for weapon proficiency.
- ❑ Activities to increase comradeship and ruthlessness.
- ❑ Used as a brainwashing tool/training for future in the German army.

The League of German Maidens

Girls aged 14-18 joined the BDM to learn how to become future housewives.

- ❑ Prepared for life in the home by learning domestic science (cooking, sewing, cleaning and childcare).
- ❑ Physical education was a key emphasis in sports for healthy mothers, run 40m in 14 seconds. A healthier physique would increase women's chances of conceiving and carrying a child healthily.
- ❑ Swore an oath of loyalty and learnt Nazi ideology
- ❑ Also taught about racial hygiene and the need to marry an Aryan to continue the Reich.
- ❑ They dressed in uniform, with their hair tied back in peasant like style.
- ❑ They were not allowed to wear makeup or lipstick.

The Nazification of the Education System

Lebensraum
Geography focused on learning about the lands taken through the Treaty of Versailles and how they should reclaim them for more 'living space'.

Physical Education
Girls focused on having a good physique for child bearing. Boys were taught military drills and team building games.

Domestic Science
Girls were taught how to be good housewives through activities such as cooking, cleaning and cooking.

Maths/Science
Boys were given questions which focused on military problem solving and costings of minority groups on society.

Eugenics (race studies)
Students were taught about the superiority of the Aryan race and the 'Stab in the back myth' of the Jews during WWI. Books such as 'The Poisonous Mushroom' did this, as well as rewriting history books to blame WWI on the Jews.

Nazi Teachers Alliance
All teachers had to swear an oath of allegiance to Hitler. Only teachers part of this alliance could teach. They followed a Nazi curriculum which focused on gender specific skill sets for girls and boys. All Jewish teachers were banned.

Aryan Supremacy
The Nazi ideals were indoctrinated into students to believe they were superior to minority groups.

Anti-Nazi books burned
Books that criticised Germany or spoke of 'Jewish nonsense' were burned and removed.

Workers under the Nazis

Unemployment

One of Hitler's first aims when he came to power in 1933 was to reduce unemployment from 5 million.

- ❑ RAD: Compulsory for all men 18-25, work for 6 months, built Autobahns (7000km) for low pay and in poor conditions.
- ❑ Conscription: 1 million men in the army, more in factories e.g. 72,000 involved in aircraft construction = Rearmament.
- ❑ Fired Jews/Women from jobs = Invisible Unemployment.
- ❑ Unemployment dropped 6 million → 0.5 million in 1939 but the Nazis did lie about statistics and removed women/Jews.

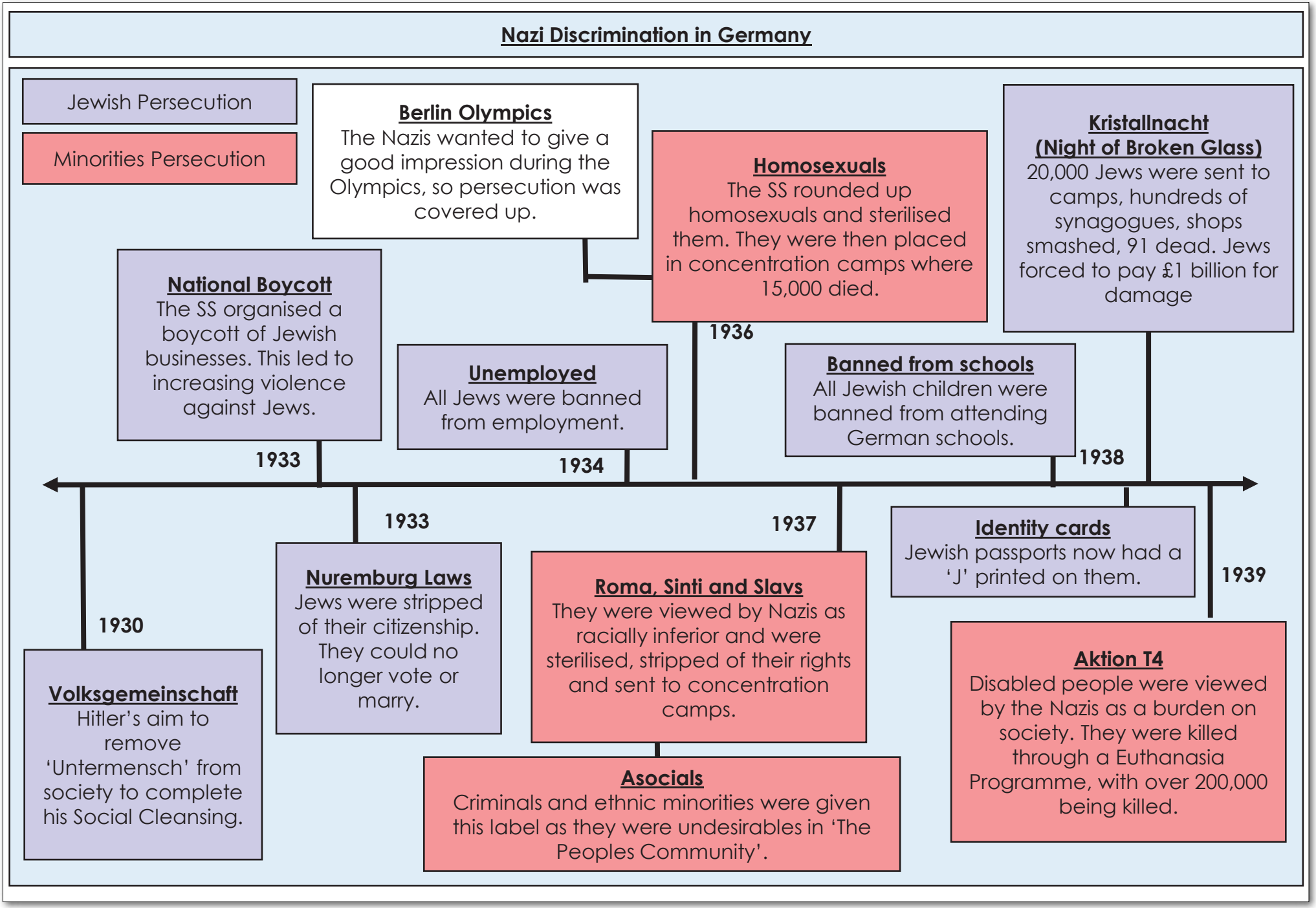
German Workers Front - DAF

- ❑ All workers had to join DAF, or were not allowed to get a job.
- ❑ Workers lost freedom as strikes/unions were banned, no wage rise & no permission to move job, average hours rose to 60+.

KDF (Strength Through Joy)

- ❑ To balance the loss of workers rights, Hitler had a 'carrot' to keep them happy: a Nazi leisure organisation.
- ❑ Cheap holidays/trips e.g. skiing cost a weeks wages
- ❑ 35 million joined KDF, 7 million did sports events.
- ❑ Volkswagen Programme gave workers false hopes of luxuries.

Nazi Discrimination in Germany



How to answer the 16-mark interpretation question

Question 3d builds on all the previous questions and requires you to make a **judgement** on which interpretation you agree with the most in relation to the topic in the question. **You can always agree with both!** For this question, you *must* write about **both** interpretations and support them with your own knowledge. You can use the sources from question 3a to support your answer as well.
The topic of the interpretations below is the attitudes of women in Nazi Germany.

Interpretation 1

"The main burden of complaint was against the married women who had a job, who, it was claimed, were giving some families an extra wage, over and above that earned by the actual breadwinner, the father, while in other families – as a consequence – the breadwinner was without work. These women were felt to be not only depriving able men of work, but were even threatening the very existence of whole families. It was thus against them that the full force of official concern and widespread unofficial propaganda was directed."
***Women in Nazi Society*, Jill Stephenson (2013)**

Interpretation 2

If women thought themselves undervalued by the Party, it did not dampen their enthusiasm. They lived in hope that their contribution to 'the struggle' would be rewarded when victory had been secured. But even after Hitler's succession, when it became clear that the Party's hard line would not be compromised and that there would be no concessions, few women leaders raised objections to the purge of women from political and public life.
***Nazi Women: the Attraction of Evil*, Paul Roland (2014)**

How to answer the 16-mark interpretation question

3d. How far do you agree with Interpretation 2 about the attitude of women in Nazi Germany?
Explain you answer using both interpretations and your knowledge of the historical context. [16+ (4SPaGT)]

Quotes from the interpretations

Own knowledge

Explaining the view in the interpretation

Link back to the question

Conclusion

I **partly** agree with interpretation 2 about the role of women in Nazi Germany. Firstly, interpretation 2 states '… it did not dampen their enthusiasm.' By this, the historian is arguing that many women in Nazi Germany supported Hitler and his policies towards them. For example, once Hitler was in charge lots of propaganda was produced showing women as mothers and housewives; this was in direct contrast to how some women had been behaving during the 1920s. Many women looked forward to having traditional gender roles re-established within Germany. Throughout Hitler's leadership, there was also a heavy emphasis on women's lives revolving around the three 'K's: children, church and the kitchen. Again, this is an example of where some women would have supported a return to tradition values. Therefore, I partly agree with interpretation 2 about the attitude of women in Nazi Germany.

However, I also **disagree** with interpretation 2 as I **agree** with interpretation 1 which presents a different point of view. Interpretation 1 states 'these women …. were threatening the existence of families.' Here, the historian is suggesting that women in Nazi Germany were treated poorly by the Nazis and that due to this treatment they would have been marginalised. Despite Hitler's attempts to restore traditional values, many women still went to work under the Nazis. The number of women in work actually increased due to the introduction of rearmament and military conscription. This suggests that not all women agreed with the Nazis views on where a woman should be and continued to defy Hitler throughout his leadership. It is also known that Hitler tried to get women into marriages and to avoid early pregnancies, yet despite the Lebensborn Programme, the Nazis themselves estimated that there was still 100,000 pregnancies terminated in Germany every year. This statistic suggests that the attitude was women was not completely positive towards the Nazis. Therefore, I somewhat also agree with interpretation 1.

Therefore, I somewhat agree with both interpretations as both provide valid arguments towards the topic of attitudes of women in Nazi Germany. Similarly, as both have likely used different sources and focused on different elements of the lives of women it is valid that they have both reached differing conclusions.

IT | Component 2 | Topic Dictionary

Word	Definition	In a sentence
Archiving	The process of storing data that is not in current use for security, legal or historical reasons.	
Backup	A copy of data that can be used if the original data is lost.	I used the **AVERAGE function** to work out the **average** on a list of numbers.
Cloud	A term often used to describe a location on the internet from which software applications are run and where data is stored.	
Client-server	A relationship in which data or web application is hosted on a server and accessed by client computers.	
Cyberattack	An attempt to expose, alter, disable, destroy, steal or gain unauthorized access to data on a computer system or smart device	So I can know what my graph is showing, it will need to have **axis titles**.
Cybersecurity	The range of measures that can be taken to protect computer systems from cyberattack.	I created a **bar chart** to present my **data**.
Cookies	Data downloaded from a website that allows the website to identify the comCloudputer in future.	I selected a **cell** on the **spreadsheet**.
Encryption	Conversion of data, using an algorithm, into cyphertext that cannot be understood by people without the decryption key.	Netflix uses **dashboard** about viewing history to give to anaylse recommended films.
data	Facts and figures.	I collected **data** about student's favorite subject.
data collection	Methods used to obtain data .(primary or secondary data)	The schools **data collection** method was surveys

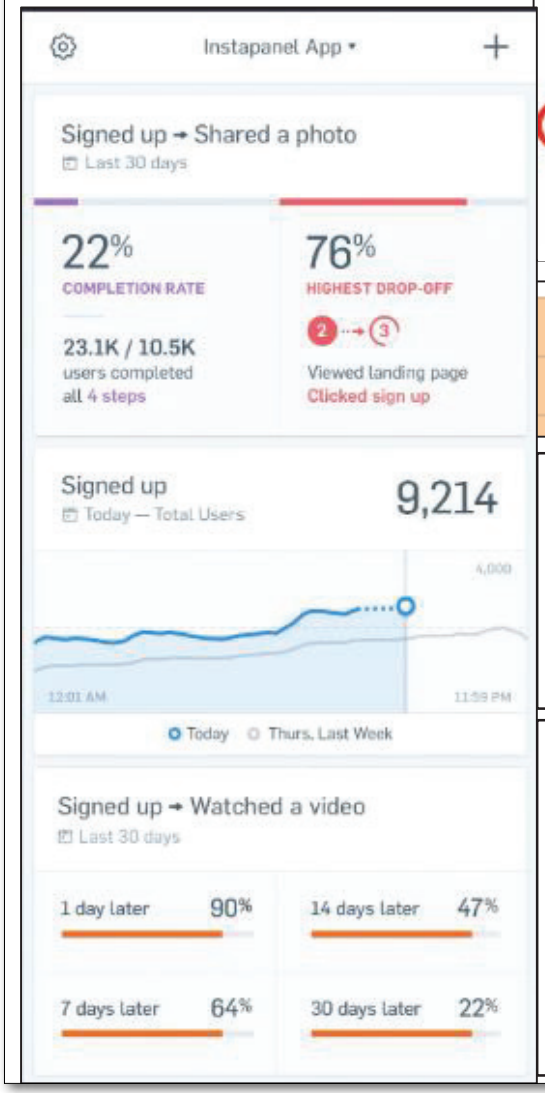
IT | Component 2 | Topic Dictionary

Word	Definition	In a sentence
format	The presentation and layout of work.	I am working to improve the **format** of my **data**.
formula	A mathematical calculation.	To complete calculations on my **spreadsheet** I will type in a **formula**.
function	Words used on a **spreadsheet** to complete maths calculations.	I can type in a **function** to find the total of my numbers.
information	Facts and figures that have been organised, so they have context and meaning.	I am organising my **data** so it can become **information**.
maximum	The highest number in a list.	The **maximum** (highest) value in my list is 15, which I found using the **MAX function**.
minimum	The lowest number in a list.	I know I can use the **MIN function** to find the lowest number in a list – the **minimum**.
pie chart	A graph that is a circle (like a pie), divided up into sections to show **data**.	I can understand **data** by viewing it in a **pie chart**.
spreadsheet	A grid on **application** that is used to manipulate with data.	I budget out my money on a **spreadsheet.**
trends	the direction in which something is developing or changing into	The sales figure have an upward **trend.**
validation	the action of checking or proving the validity or accuracy of something	the field requires **validation** or accuracy of the gender

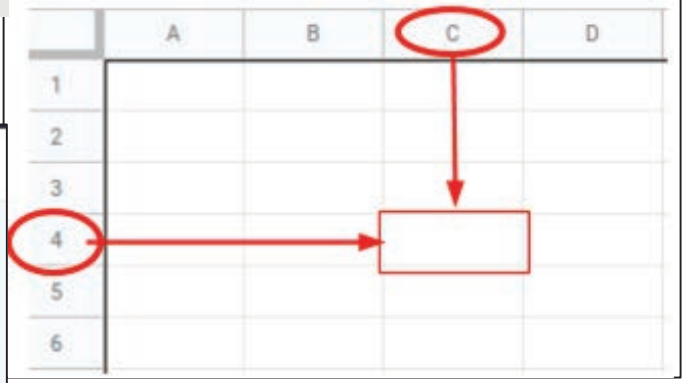
IT | Component 2 | Knowledge Organiser

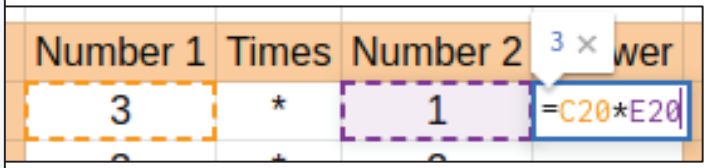
DASHBOARD

A graphical user interface. provides at-a-glance views.



This is cell C4





Formulas
Starts with =
To add: +
To subtract: -
To multiply: *
To divide: /

Functions
Starts with =
Use brackets ()
Write the first cell, and last cell in the range
Use colons :

Microsoft Excel

Big Data
Due to increase in internet usage, the volume of data is growing at a very fast rate. Big data is a collection of data so huge and complex that traditional management tools cannot store or process it efficiently. We see big data at work when Netflix recommends films. Because of the increasing amount of data being collected, there is a rising demand for data scientists and analysts.

Functions

Name	What it does	Example
MAX	Finds biggest number	=MAX(A1:A8)
MIN	Finds smallest number	=MIN(B3:F3)
SUM	Adds up all the numbers	=SUM(A2:C9)
COUNTA	Counts the cells which aren't empty	=COUNTA(D2:D10)
AVERAGE	Finds the mean average	=AVERAGE(C3:H3)
MODE	Finds the modal (most common) number	=MODE(J2:J12)
COUNTIF	Counts the cells if they meet are certain condition	=COUNTIF(E3:E7, 200)

IT | Component 2 | Skills Guide

Formatting

Charges for voting	
Telephone	1.2
Text	0.5

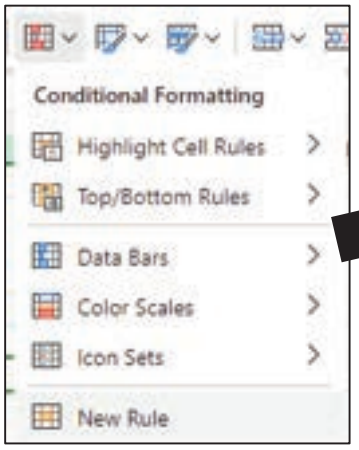
Currency

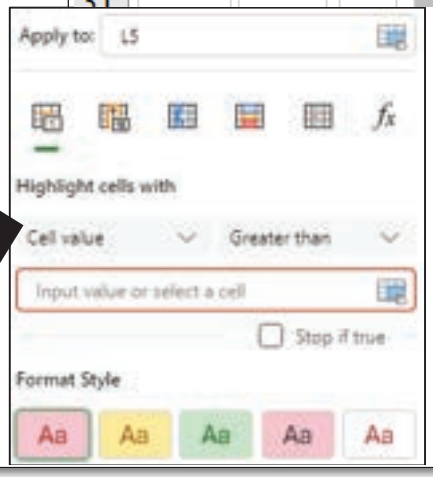
General

12 Number

Currency

Charges for voting	
Telephone	£ 1.20
Text	£ 0.50





Formulas

Add

	B	D	E	F	G	H
16	5	Add		5		=B16+F16
17						

Subtract

	B	D	E	F	G	H
22	50	-		40		=B22-F22
23						

Multiply

	B	D	E	F	G	H
26	10	x		20		=B26*F26
27						

Divide

	B	D	E	F	G	H
30	100	Divide		2		=B30/F30
31						

Functions

=

1. Type =

=SUM

2. Type the name of your function

=SUM(

3. Type (

4. Click and drag on the numbers you want

	D	E
16	£ 150.00	
17	£ 60.00	
18	£ 200.00	
19	£ 40.00	
20	=SUM(D16:D19	

=COUNTA(E12:I15)

=MIN(B4:B15)

=MAX(B4:B15)

=AVERAGE(B4:B15)

=MODE(B4:B15)

=COUNTIF(E12:I15, "A")

=SUM(B6:B10)

Making graphs

Player	Goals
Alexander Isak	21
Bukayo Saka	16
Cole Palmer	22

Insert

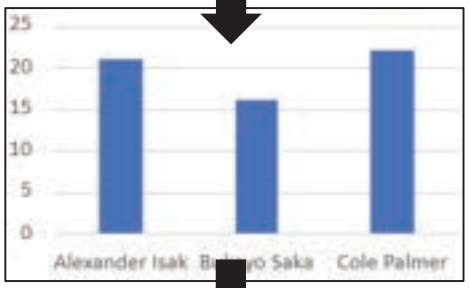


Chart Title Axis Titles

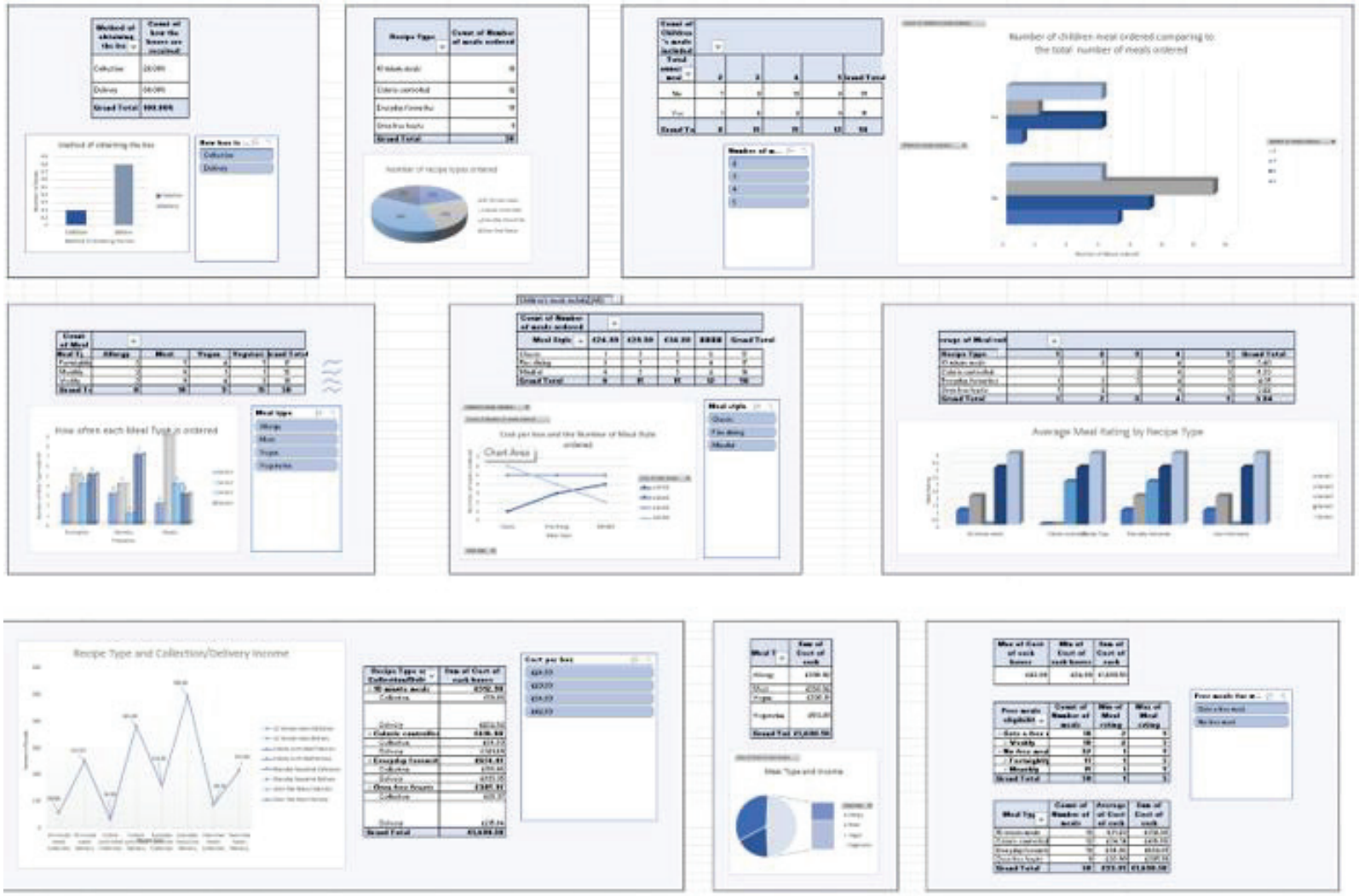
IT | Component 2 | Skills Guide

Task 2c

The learner has used pivot tables and charts.

These charts are appropriately displayed and cover areas from the dataset and analysis worksheets.

This report is clearly labelled with an appropriate title. The bars are clear to see and anyone viewing this chart would understand what was being shown.



Y10 BTEC Tech Award in Music Practice Skills guide: What will I be assessed on in Music?

Learning Aim B Practising and Performing

This is your opportunity to show that you can **sing/play** a 30-60 second piece in a style of music related to ONE of the four styles studied in Learning Aim A

Learning Aim B Composing

This is your opportunity to show that you can **compose TWO** 30-60 second pieces related to TWO of the styles studied in Learning Aim A in response to a theme set by Pearson

Listening to and analysing music

In this task you will be asked to create a portfolio demonstrating analysis of FOUR musical styles. For each style you will describe, compare and evaluate music in relation to:

- Compositional features
- Sonic Features

Exploring your thinking

Your Learning Aim A portfolio will show that can explore and describe the stylistic features of FOUR styles in detail with clearly explained examples, commenting on the effect of the music

PRACTICAL SKILLS involving performing and composing/creating music
Learning Outcome B: Apply understanding of the use of techniques to create music

ACADEMIC SKILLS involving research and writing
Learning Outcome A: Demonstrate an understanding of styles of music

Things to consider:

Instrumentation roles and functions of different instruments, e.g. transposing for other instruments and vocal ranges, use of timbre, special effects

How individual parts fit together, e.g. arrangements, SATB, orchestration, exploring timbre, rhythm section and soloists, call and response

Ensemble skills such as playing in time with a sense of pulse, sensitivity to others.

Impact of the music for the purpose and intended audience it was created for

Types of music product:
- live performance
- audio recording

Things to consider:

Starting points and stimuli (both musical and non-musical)
Repetition and contrast
Developing and extending musical ideas

Impact of the music for the purpose and intended audience it was created for.

Types of music product:
- composition for media, such as film, TV, adverts and computer games
- original song or composition
- Digital Audio Workstation (DAW) project.

Things to consider for each style:

Compositional features such as melody, harmony, tonality, rhythm and structure

Sonic features such as instrumentation, timbre, texture and production

How each feature is used in each style

The effect of the music on the audience

Further exploration of the use of features with audio/video examples

Things to consider:

Iconic composers, artists, bands and producers who have influenced and impacted musical styles

Impact of technology on musical styles, instruments, production and recording

Further exploration of stylistic features of:

Style 1: Reggae
Style 2: Britpop
Style 3: Music for Film (Horror)
Style 4: West African Music

How you have demonstrated understanding through analysis and practical workshops

Y10 Component 1: Exploring Music Products & Styles Task 1

Learning outcome A: Demonstrate an understanding of styles of music

For your portfolio you must create slides on each of the FOUR styles of music:

1. Reggae
2. Britpop
3. Film (Horror)
4. West African traditional

Each style MUST have a section on EACH of the features:

Compositional:
- Melody
- Rhythm
- Tonality
- Harmony
- Structure

Sonic:
- Instrumentation
- Timbre
- Texture
- Production

This is an example of how you could demonstrate a comprehensive understanding of the style chosen. This slide represents the compositional feature MELODY. Notice the use of time-codes, notation, audio and video examples as well as further listening.

To succeed you MUST ensure that you complete all research tasks, including weekly homeworks and practical assignments

In my portfolio I have included:

Feature: One slide per feature

Explanation: What does this word mean?

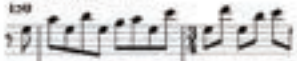
Example with time-code: Audio example (give examples of your own workshopping ideas if you can!)

Effect on the audience: Explain how it makes the audience feel and what the intentions of the music are

Listening examples from same style: This will show that you have fully researched your style and understand WHY each feature described is typical of the style

Melody: In the Exorcist by Mike Oldfield there is an ostinato, played on the tubular bells. An ostinato is a repeated melodic pattern. This creates an eerie atmosphere. The repetition represents the idea of possession. Other soundtracks that use ostinato are Jaws and Halloween (give examples)

0-0.03 We hear the first melodic pattern, which is 14 notes long. This is repeated as an ostinato throughout.



It is joined at 0.13 by the chime bars a 6th higher. Interestingly, there is no dissonance here. Tension and anxiety is created by the rushing tempo and uneven meter as well as the disjunct shape of the melody (there are few step-wise notes). The melody is played smoothly and the timbre is an electronic representation of a church organ, which links to the theme of religion, which is very important in this film

Here is an example of me playing the theme on the keyboard. I have tried to mimic the timbre here by choosing an electric organ sound

INSERT VIDEO link

Y10 Component 1:Exploring Music Products and Styles

TASK 2
Learning outcome B: Apply understanding of the use of techniques to create music

For your portfolio you will need to create three 30–60-second examples of ideas for music products using a range of realisation techniques. The examples created must cover three from the following list:

- a live performance (video)
- an audio recording (multitrack)
- music for film/media/computer games
- an original song or composition
- a DAW project (remix/arrangement).
- Your portfolio of evidence must include:

For each product you will write a commentary on ONE PP slide, showing:

how music realisation techniques have been used in the creation of the examples

how music theory and appreciation skills inform creative choices within the realisation process

You should provide a commentary to support points, in the most appropriate format, such as video, audio, written commentary or a combination of these.

In my portfolio I have included	I have demonstrated	TICK
Product 1: Performance 30-60 seconds with commentary	**WHY:** Deep thinking and planning about creative choices /elements chosen and how these link to the brief (Think key, melody, rhythm, lyrics, performance intentions) **HOW**: Clear explanation of how ideas are used in an interesting and experimental way with this evidenced in the recording/video! (Think techniques, dynamics, performing style, expression, tone, articulation, timbre) **WHAT** I am doing with the ideas chosen to develop them throughout the music so that there is interest and contrast (Think overall shape of the music and the effect of this)	
Product 2: Own Composition 30-60 seconds with commentary		
Product 3: Music for Film/Computer game/media with commentary		

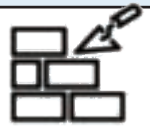
FOR HIGH MARKS

Top tip from Pearson Examiners: "Learners should use their commentaries to discuss the techniques they have used and the creative choices they have made and draw attention to the use of musical elements and experimental techniques. Learners should also explain how their music refers to the brief"

Successful candidates always:
Practise their singing/instrument at least 3 times weekly
Attend a music enrichment weekly
Complete all homework set
Include screenshots/audio/in-depth analysis of their work to showcase their musical talent!

1) Label your tracks, eg "Zither melody, played slowly and pianissimo"
2) Give bar numbers eg "In bar 9 there is imitation between the zither and synthesizer part, which builds tension.
3) Link to the theme of the brief eg "The dynamics at bar 11 are forte and the texture is thicker here, creating a sense of drama in keeping with the theme of war with different instruments representing conflicting characters.
4) Show creativity: I experimented with automation here as I wanted to vary the dynamics from pianissimo at the start to fortissimo at the end. I also placed some special effects (reverb and distortion) on the zither part to create a rough and disturbing timbre. I have used a lot of dissonance at start between the opening two instruments, to represent two warring factions. Dissonance is where sounds clash and makes the audience feel tense.

Y10 Component 1: Exploring Music Products and Styles: Glossary of Compositional and Sonic Features

Image	Musical term	Definition	Where we might find it
	**harmony**	How chords are used	Compositional feature In West African traditional vocal music people often sing in **harmony**
	**helody**	The combination of pitch and rhythm (tune)	Compositional feature **Melody** can be disjunct (moving in leaps) or conjunct (moving in steps)
	**tonality**	The key/main scales of a piece and how (if) it changes	Compositional feature The **tonality** of the Exorcist theme is minor, whereas the tonality of "One Love" by Bob Marley is major
	**rhythm**	The combination of different note durations	Compositional feature **Rhythm** is an important feature of West African Djembe music
	**structure**	The different sections of music and how they are laid out	Compositional feature The structure of most Britpop songs is intro/Verse/Chorus
	**instrumentation**	The instruments playing and how they are playing	Sonic feature The **instrumentation** of the famous Jaws theme is Double Bass/Low Strings
	**production**	How sound is manipulated with technology	Sonic feature Britpop **production** techniques were basic compared to nowadays because they did not rely on computers
	**texture**	How the layers of sound are arranged (Thick=many layers/Thin-one or few layers)	Sonic feature The **texture** of Bob Marley's "Three Little Birds" is melody plus accompaniment
	**timbre**	The specific quality of a sound	Sonic feature The Marimba has a wooden, mellow **timbre**

Y10 Tech Award in Music Practice Component 1: Mark Scheme

Marking Grid Learning Aim A

10-12	❑ Comprehensive knowledge and understanding of how musical elements have been used to create **compositional AND sonic features** that typify the styles of music. ❑ There will be minor errors that do not detract from being able to demonstrate secure explanations of almost all concepts. ❑ Almost all of the points made are supported by relevant examples.
7-9	❑ Good knowledge and understanding of how musical elements have been used to create **compositional features** that typify the styles of music. ❑ There will be few errors and clear explanations of concepts. ❑ Most of the points made are supported by relevant examples.
4-6	❑ Adequate knowledge and understanding of how musical elements have been used to create **compositional features** that typify the styles of music. ❑ There will be some errors and partial explanation of concepts. ❑ Some of the points made are supported by relevant examples.
1-3	❑ Limited knowledge and understanding of how musical elements have been used to create **compositional features** that typify the styles of music. ❑ There will be many errors and basic explanation of concepts. ❑ Few of the points made are supported by relevant examples.

Marking Grid Learning Aim A

10-12	❑ Comprehensive knowledge and understanding of how musical elements have been used to create **sonic features** that typify the styles of music. ❑ There will be minor errors that do not detract from being able to demonstrate secure explanations of almost all concepts. ❑ Almost all of the points made are supported by relevant examples.
7-9	❑ Good knowledge and understanding of how musical elements have been used to create **sonic features** that typify the styles of music. ❑ There will be few errors and clear explanations of concepts. ❑ Most of the points made are supported by relevant examples.
4-6	❑ Adequate knowledge and understanding of how musical elements have been used to create **sonic features** that typify the styles of music. ❑ There will be some errors and partial explanation of concepts. ❑ Some of the points made are supported by relevant examples.
1-3	❑ Limited knowledge and understanding of how musical elements have been used to create **sonic features** that typify the styles of music. ❑ There will be many errors and basic explanation of concepts. ❑ Few of the points made are supported by relevant examples.

Y10 Tech Award in Music Practice Component 1: Mark Scheme

Marking Grid Learning Aim B	
10-12	❑ Effective creative choices based on in-depth understanding of the **techniques used to create music** and use of perceptive appreciation skills. ❑ A thoroughly considered and holistic use of pertinent musical elements in the creation of music.
7-9	❑ Appropriate creative choices based on clear understanding of **techniques used to create music** and use of competent appreciation skills. ❑ A clearly considered use of relevant musical elements in the creation of music.
4-6	❑ Adequate creative choices based on a sufficient understanding of the **techniques used to create music** and use of some appreciation skills. ❑ A sufficient use of partially relevant musical elements in the creation of music.
1-3	❑ Limited creative choices based on a basic understanding of the **techniques used to create music**. ❑ A superficial use of musical elements in the creation of music.

Marking Grid Learning Aim B	
10-12	❑ Effective application of **experimental techniques** and processes used in the realisation of music in response to the brief. ❑ Perceptive exploration of creative opportunities.
7-9	❑ Competent application of **experimental techniques** and processes used in the realisation of music in response to the brief. ❑ Competent exploration of creative opportunities.
4-6	❑ Adequate application of **experimental techniques** and processes used in the realisation of music in response to the brief. ❑ Sufficient exploration of creative opportunities.
1-3	❑ Limited application of **experimental techniques** and processes used in the realisation of music in response to the brief. ❑ Tentative exploration of creative opportunities

Marking Grid Learning Aim B	
10-12	❑ Perceptively developed ideas based on secure application of **musical realisation techniques and resources** in response to the brief. ❑ Ideas for music products show cohesive use of pertinent elements of music that thoroughly fulfil intentions.
7-9	❑ Competently developed ideas based on appropriate application of **musical realisation techniques and resources** in response to the brief. ❑ Ideas for music products show mostly cohesive use of relevant elements of music that clearly fulfil intentions.
4-6	❑ Adequately developed ideas based on sufficient application of **musical realisation techniques and resources** in response to the brief. ❑ Ideas for music products show partially cohesive use of some relevant elements of music that adequately fulfil intentions.
1-3	❑ Superficially developed ideas based on limited application of **musical realisation techniques and resources** in response to the brief. ❑ Ideas for music products show limited cohesion in the use of elements of music with superficial fulfilment of intentions.

Previously

Criminal Psychology: Why do people commit crime?

Development: How do children learn and develop?

Big Idea: Nature vs Nurture
Is behaviour the result of nature of nurture?

Next

Psychological problems: How can psychological disorders be explained and treated?

Topic 1 – key concepts

There are 4 life stages;
Pre-natal
Childhood
Adolescence
Adulthood

Intelligence is the ability to learn, think and problem solve. Some people think IQ measures intelligence.

Others argue that IQ is culturally biased and that it tests only certain forms of intelligence.

Topic 2 – Piagetian theory

Piaget thought that human development was universally sequenced in 4 stages.

1. Sensori-motor
2. Pre-operations
3. Concrete operations
4. Formal operations

Piaget believed that learning happens through accommodation and assimilation.

Topic 3 – Dweck's growth midset

Dweck thought that some people have a 'fixed mindset'. These people think intelligence is preset. Dweck thought that others have a 'growth midset' and see intelligence as a skill to be developed.

Dweck found that people with a growth mindset generally learn faster and perform better in school.

Topic 4 – Piaget's conservation study

Piaget conducted lab experiments and found that children in the pre-operations stage (3 years old) could not conserve. Older children were more likely to conserve Conservation is the ability to understand that amounts stay the same even when they appear differently (e.g. 500ml of water in a long thing glass is the same as 500ml of water in a bowl.

Topic 5 – Blackwell, Trzesniewski, and Dweck

Longitudinal research suggests that a growth mindset promotes more effective learning, while a fixed mindset does not.

Blackwell et al also found that students could be taught to develop a growth mindset.

Topic 6 – Applications

Piaget has been applied to the education system in that;

1. Children should not be passive in their learning
2. The curriculum should be structured so students approach different levels of complexity only when they are cognitively ready.

Dweck has been applied to the education in that schools should reward effort more than achievement.

Intelligence	Universal	Innate	Conservation	Reductionism	Symbolic play

Knowledge check

Key concepts

I can describe the life stages

- Prenatal
- Childhood
- Adolescence
- Adulthood

I can describe

- How the nervous system changes throughout the life cycle

I can describe

- What is meant by intelligence
- How intelligence is measured

I can evaluate

- The usefulness of IQ tests

Applications

I can describe the influence of different theorists on the education system;

- Piaget
- Dweck
- Williams

I can evaluate

- The impact of different theorists on the education system

Theories

I can describe the 4 stages of cognitive development

- Sensori-motor
- Preoperational
- Concrete operations
- Formal operations

I know

- How the processes of accommodation and assimilation cause cognitive development

I can evaluate

- Piaget's stage theory

I can define

- Fixed mindset
- Growth Mindset

I know

- How mindset affects cognitive development

I can evaluate

- Dweck's theory
- William's theory

Studies

I can describe Piaget's study of conservation

- Aim
- Method
- Sample
- Procedure
- Results
- Conclusions

I can evaluate

- Piaget's study of conservation

I can describe Blackwell's

- Aim
- Method
- Sample
- Hypothesis 1
- Hypothesis 2
- Procedure
- Results
- Conclusions

I can evaluate

- Blackwell's study of mindset

Knowledge Organiser: Key Concepts

Stages of Development

Development – How we change and mature across our lifetime

- **Pre-natal** - Conception to Birth
- **Childhood** - Birth to 12 years - reliant on parents to gain self-confidence and independence, skills like walking and talking and we become more autonomous.
- **Adolescence** 13 to 19 years- Transition from child to adult. The body undergoes significant changes during this period as they mature sexually. Individuals begin to think, act and feel differently.
- **Adulthood** 20 until death- new responsibilitie such as parenthood and careers.

Brain Development

- **Pre-natal** – 16days neural tube (become brain and spinal cord). 6-20weeks cells –migrate to brain (become neurons)2 months cerebral cortex formed divides into frontal, temporal, occipital and parietal lobe.20 weeks neurons develop axon/dendrites allowing communication.
- **Childhood** – Brain continues to develop, visual cortex double number of synapse in first 4 months so by 5th month can see 3D.
- **Adolescence** – Grey matter reaches maximum density. Limbic system matures (emotion and memory). Pre-frontal cortex is last (decision making).
- **Adulthood** – Impulsiveness reduces due to development of pre-frontal cortex (look at long-term consequences

IQ Testing

Intelligence – Our ability and potential to learn, think and problem solve.

IQ Test – Intelligence Quotient test designed to measure intelligence.

Criticisms of IQ testing

Cultural bias – Tests favour some cultures EG Yerkes army test better suited American recruits so they got higher positions than none Americans.

Reliability and Validity – Some IQ tests have inconsistent results and require a too high level of reading EG Yerks therefore don't actually measure IQ.

Knowledge Organiser: Theory 1

AO1 Knowledge and Understanding

Development follows a fixed (invariant) order. The pattern of development is true for everyone (universal). The behaviour in question gets better during the stage.

Assimilation – New information incorporated into an existing schema.

Accommodation – New information alters an existing schema or makes a new one.

Sensori-Motor (0-2) Object Permanence: baby learns that things still exist even when they are out of sight. We know this because baby searches for them. Babies start searching from 8 months.

Pre-operational (2-7) Ego-centrism – children cannot see things from the point of view of others. When they can they are said to be de-centred. Animism – children treat inanimate objects as if they are alive e.g. talk to teddy as if he is alive Reversibility – children cannot think backwards.

Concrete Operational (7-11) Conservation – children learn objects are the same in mass volume or number even when their appearance seems to change.

Formal Operational (11+) Abstract thinking – the person can think of ideas and concepts which cannot be seen.

Piaget's theory is reductionist as he doesn't take into account the role of teachers in children's learning.

Research has shown on 50% of adults reach the formal operational stage, with many not capable of abstract thinking.

Piaget describes different stages but doesn't explain how these stages occur and what changes the child's thinking.

Knowledge Organiser: Theory 2

AO1 Knowledge and Understanding

Fixed Mindset -Thinking that intelligence is innate and therefore cannot be changed.

Growth Mindset - Thinking that they can develop their intelligence over time (it can be changed).

Successful athletes and musicians have a growth mindset - see **failure as a challenge** to improve, have resilience to cope with setbacks, have a positive attitude towards working hard and practicing theory craft.

Teachers should encourage their students to take their time to become proficient at new skills and the idea that being able to do something quickly is not necessarily a good thing, as it suggests the skill has not been deeply learnt.

Teachers should praised **effort** as those praised for intelligence chose easier tasks to allow them to continue succeeding whilst those praised for effort choose harder tasks that allowed them to learn more.

Dweck

One problem with the theory is that it places failure very firmly on the student. If they fail to achieve it is only due to mindset it doesn't take into account other factors such as personal circumstances like bullying that could affect their ability to learn or concentrate. This 'blame' can lead to lower self-esteem and mental health problems.

Nurture can have a negative impact on their self-esteem if they fail to succeed. It ignore the role of nature, innate traits might have a greater impact on a persons' ability to succeed.

Willingham

Meaning more important than learning style as students will learn the information more deeply and be more likely to recall it from long-term memory. Although he argues learners can have a preference this has no effect on learning under experimental conditions. Learner's preferences can be objective and dependent on what it is they are learning. A person's ability, background knowledge and their interest in the subject is more influential on performance than learning style.

Many teachers disagree with Willingham's views about there being no point in students trying to be like actual scientists. They argue it is important for students to conduct experiments so they learn the issues involved and see how extraneous variables affect the outcome of research

Knowledge Organiser: Study 1

AO1 Knowledge and Understanding

Background – Wanted to see when the ability to conserve number developed – when something changes in shape its quantity doesn't change.

Hypothesis – Concrete-operational children can conserve, pre-operational cannot.

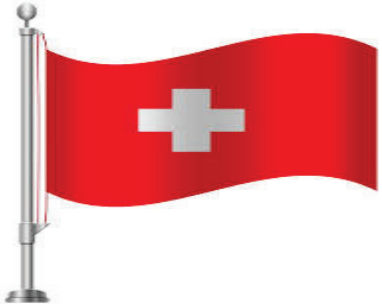
Method natural experiment. IV= age of children, DV= ability to conserve. Cross-sectional study with independent measure (each child can only do one condition).

Sample Details unknown as not reported but likely to be small sample of children from Switzerland (where he lived) including Piaget's own children.

Procedure – Individually children presented with two rows of coins directly opposite each other and equally matched. Child asked which row contains most counters? Then one row is stretched out in front of the child and the question is repeated.

Results – Pre-operational children stated stretched row had more counters in. Concrete operational children stated they remained the same,

Conclusion – Supports Piaget's hypothesis that conservation of number develops in concrete operational stage. They were also more likely to be able to justify their answer (say that they had changed but number remained the same



AO2 Evaluation/Criticisms

The sample size was small and biased therefore it is difficult to make generalisations - Only a limited number of children used and one country (cultural bias) therefore we cannot generalise the results to other ages and cultures.

Piaget was criticised for the way he questioned the children in the experiments as he repeated the same question twice. In normal circumstances if the same question is repeated twice it is because they got it wrong which may explain why younger children changed their response, this is an example of demand characteristics.

This study is artificial, adults don't normally question children in this way. When the study was repeated with a naughty teddy moving the counters more pre-operational children were able to show conservation.

Knowledge Organiser: Study 2

AO1 Knowledge and Understanding

Aim- To see whether theories of intelligence correlate with academic achievement in mathematics and to test the impact of academic intervention. **2 parts; longitudinal and a field exp.**

Part 1 - Hypothesis - There will be a relationship between 7th grade students' theories of intelligence (fixed/growth mindset) and their achievement grades on a standardised mathematics test.

Method Longitudinal (5 years) Correlation between students' theories of intelligence and achievement-related beliefs and achievement in mathematics.

Sample – 373 students from 7th grade in New York, varied in ethnicity, achievement and socio-economic status.

Procedure – Informed consent parents/pupils. baseline math scores from elementary school, maths scores end of 7th/8th grade. Motivational questionnaire to determine theory of intelligence etc start of 7th grade.

Results – No correlation between fixed or growth mindset and maths test scores at the start of the 7th grade. However, when tested at the end 7th/8th grade fixed or growth was a significant predictor of maths achievement.

Conclusion - Ppts that held the belief that they had the ability to change their intelligence (had a growth mindset) showed greater improvement on the maths test than those who thought their IQ was fixed at birth (had a fixed mindset).

Part 2 – **Hypothesis** - Students taught to think intelligence changeable show positive motivation and more highly.

Method - Field experiment, Independent measures. IV= Intervention or not. DV= motivation and achievement.

Sample – 91 pupils in 7th grade, New York.

Procedure – Ppts randomly assigned. Intervention teaches that intelligence is changeable. Complete motivational questionnaire before and after and teacher reports on motivation. Grades taken at end of 7th and 8th.

Results – Higher grades in experimental group, 27% positive report compared to 9% and more positive mindset.

Conclusion - Teaching students that they can change their intelligence has a positive effect on their motivation and achievement in maths

AO2 Evaluation/Criticisms

The study is culturally biased. The results may not be representative as although the sample had a variety of ethnicities within it all the students were from schools in New York so cannot be generalised to other states/countries.

Study was reductionist as it only focused on the students mindset. Changes might not have just been caused by the intervention. If both parents and teachers held the belief that intelligence is not fixed that might have reinforced the belief in the students.

Applications

AO1 Knowledge and Understanding

Applications of Piaget

Readiness - The idea that children are not ready to learn certain things until they have reached a particular stage of cognitive development. For example, a child in the concrete operational stage cannot work out a maths question in their heads as they need abstract thinking that doesn't occur until the formal operational stage.

Sensori-Motor - Simple toys like rattles, so child learns to grasp and shake it so they learn it makes noise.

Pre-operational - Dressing up clothes for role play to develop symbolic play and understand other peoples viewpoints (egocentrism)

Concrete Operational - Learning to cook so they develop conservation skills by measuring and pouring ingredients

Formal Operational - Use of debates to develop hypothetical thinking about hypothetical situations

Active Learning - The idea that children should not just be sat at a desk and given information but should be actively engaging with their environment to learn from it. Piaget believed that intelligence was innate and developed naturally as children interact with their environment and accommodate/assimilate new information into their schemas.

AO1 Knowledge and Understanding

Applications of Dweck

Create Growth Mindsets – Change to the idea that IQ is fixed. Teachers set small, doable tasks so that students achieve and feel they are making progress. Teacher praise students for effort not intelligence this helps to establish a growth mindset.

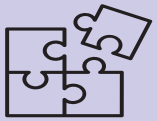
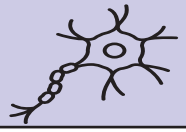
Applications of Willingham

Teaching the meaning - Current evidence suggest learning styles don't work. Teachers should focus on supporting the students to think about the meaning of information rather than teaching in a way to suit a learning style.

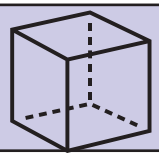
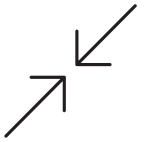
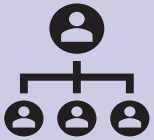
Subject/Topic Dictionary: Tier 2

Image	Word	Definition	In a sentence
	**adolescence**	From 13 to 19 years old.	GCSE and A-level exams are sat during **adolescence.**
	**adulthood**	From 20 years old to death.	**Adulthood** has many responsibilities.
	**childhood**	Birth to the age of 12.	Some people think **childhood** is a time of innocence.
	**cognitive development**	The changes that occur in the way a person thinks.	Studying psychology leads to great **cognitive development.**
	**curriculum**	A set sequence of learning.	Psychology should be a core part of every school's **curriculum**.
	**innate**	Something that you are born with.	Piaget believed that the sequence of development was **innate**.
	**intelligence**	The ability to learn, think and solve problems.	My i**ntelligence** gives the ability to respond the challenges.
	**pre-natal**	The time from conception (fertilisation) until birth.	**Pre-natal** experiences within the womb may have lifelong consequences.
	**universal**	Something which is true everywhere and all the time.	Piaget's believed that the sequence cognitive development was **universal** and not effected by culture.

Subject/Topic Dictionary: Tier 3

Image	Word	Definition	In a sentence
	**accommodation**	Changing schema to fit with new information	Learning about new things requires **accommodation**.
	**animism**	Viewing inanimate objects as though they are animate	Piaget believed that pre-operational children often show signs of **animism**.
	**assimilation**	Incorporating new information into existing schema	Developing a skill requires **assimilation**.
	**conservation**	The ability to understand that even as something appears to change it retains its features.	Piaget believed that learning **conservation** was a key achievement of the concrete operations stage.
	**decentricism**	The ability to view the world in a way other than ones own point of view.	Piaget thought **decentricism** is a learned ability.
	**egocentricism**	Being only able to view the world from one's own point of view	Piaget believed that children in the early pre-operations stage are **ego-centric**.
	**equilibration**	The motivation to learn to make sense of the world.	Piaget believed that all learning happens because of **equilibration**.
	**linguistic humour**	Making jokes with language (like word-play/punning)	Knock, knock jokes are my favourite form of **linguistic humour**.
	**neuron**	The carrier of impulses through the nervous system	There are three types of **neuron.**

Subject/Topic Dictionary: Tier 3

Image	Word	Definition	In a sentence
	**objective permanence**	The idea that something continues to exist even when out of view.	When I put my chocolate in my bag, I knew where to find it later because of **object permanence**.
	**reductionism**	A overly simple explanation.	It's **reductionistic** to think that accommodation and assimiliation are the only ways to learn.
	**reversibility**	Knowing that changing order of structure does not change volume or mass.	I know that 5 + 6 and 6+5 are the same because of **reversibility.**
	**schema**	An internal packet of information.	Studying psychology has helped me develop increasingly sophisticated **schema.**
	**seriation**	The ability to rank things in order	Piaget's believed that **seriation** developed in the concrete operations stage.
	**synapse**	A junction between neurons/when neurons communicate with each other.	Dopamine carries excitation across the **synapse.**
	**symbolic play**	When a child can play make belief (e.g. wearing a cap to symbolise being a superhero).	Playing with action figures is a form of **symbolic play**.

Skill Guide: AO1

1. **Outline what Piaget meant by ego centricism. [2 marks]**

Elaboration / Key term defined

Egocentricism is a feature of the preoperations (1) stage of cognitive development where the child is unable to view a situation from the view of another (2).

2. **Outline what Dweck meant by fixed mindset [3 marks]**

Key term defined / Elaboration

A fixed mindset is where people think their intelligence is innate and cannot be changed(1). A fixed mindset is a barrier to cognitive development (2).

3. **Describe how the brain changes in the pre-natal stage of development [4 marks]**

Pre-natal changes to brain occurs within 3 weeks of conception (1). First the fore, mid, and hind brain fuse together (2). Most of the brain develop happens during mid-pregnancy (3). This results in the development of 100 billion neurons by the time the baby is born (4).

A01 – knowledge

You score A01 points by demonstrating what you know. Description, statistics, key terms all achieve A01 credit.

2 marks definition questions

- 1 marks for a partial definition
- 2 marks for a complete definition (with an example or elaboration point)

4 marks mark scheme

- Level 2 (3-4 marks): There is a clear and informed description of changes.
- Level 1 (1-2 marks): There is a basic description of changes with some relevance.
- (0 marks): No creditworthy response

Skill Guide: AO2

A psychologist was interested in the cognitive development of children. The psychologist showed children two identical balls of clay. The psychologist then stretched one ball out and flattened the other. The psychologist then asked whether the balls whether one ball had more clay than the other, or whether they are the same.

1. **Identify the skill that the psychologist was testing (1 mark)**

Conservation (1)

The psychologist tested children of different ages. The psychologist found that children aged three often thought that the stretched clay had more.

2. **Explain the findings of the psychologist (2 marks)**

The three-year-old children were still in their early pre-operations stage (1). Piaget found that children developed conservation in the later pre-operations stage (2).

Philip and James are arguing about their schoolwork. Philip thinks that he will never get better at Maths, because he isn't very talented. James knows that practice will make him a better mathematician.

3. Identify the phrase that describes growth mindset (1 mark)

"James knows that practice will make him a better mathematician"(1)

4. Identify the person with a fixed mindset (1 mark)

Philip(1)

A02 – application

You score A02 points by demonstrating you know the relevance of your A01/knowledge. What examples can you give? If there is a source, can you quote it? Can you find similarities/dissimilarities between different parts of the source?

1 mark identify questions will typically require a single word or minor sentence.

1 mark identify the phrase questions require a direct quote from the source.

For multiple mark questions, look for links between the source and theories/studies on the course.

Skill Guide: AO3

1. Outline one criticism of Piaget's study into the conservation of numbers [3 marks]

Point

Explanation

Explanation

One criticism of Piaget's study into conservation is that his sample was not representative. Piaget only test western European (Swiss) children. This means the results cannot be generalised to wider population of children around the world.

1. Outline one criticism of Blackwell's research

Point

Explanation

One criticism of Blackwell's study is the potential for confounding variables. The experimental group has additional anti-stereotyping training which may have resulted in greater unity within the group.

A03 – Evaluation

You score A03 points by evaluating. What are the strengths and weaknesses of a theory or study? You can also score A03 by making a judgement e.g. which theory is the most useful?

For three mark questions

1 mark for the identification of an appropriate weakness

1 mark for explaining the why the weakness exists.

1 mark for explaining the consequence of the weakness

For two mark questions

1 mark for the identification of an appropriate weakness

1 mark for explaining the why the weakness exists.

Spanish | My region | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	**Una biblioteca**	A library	En mi insti hay **una biblioteca.**
	**un centro commercial**	a shopping centre	En mi pueblo, hay **un centro commercial grande.**
	**Un cine**	A cinema	**Un cine** está en mi ciudad.
	**Un hospital**	a hospital	En mi ciudad hay **un hospital.**
	**Un estadio**	A stadium	Me gusta visitar **un estadio** con mi amigo
	**Una librería**	A book shop	No hay **una librería** en mi pueblo.
	**Una pastelería**	A bakery	En mi ciudad hay **una panadería** excellente.
	**Un parque**	A park	Hay **un parque** fantástico.
	**Una tienda**	A shop	Hay **una tienda** pequeña.
	**un supermercado**	A supermarket	¿Dónde está **un supermercado**, por favor?
	**una estación de tren**	A train station	¿Dónde está **la estación de tren,** por favor?

Spanish | My region | Skills Guide

Have you used…

1. a verb?	2.)a noun?	3. a connective?	4. a complex phrase?	5. a noun?
En mi pueblo/ciudad hay (In my town/city there is) **En mi barrio hay** (In my neighbourhood there is)	**Un cine**(a cinema) **un centro commercial** (a shopping centre) **una pisicina** (a pool) **un hospital** (a hospital) **Una panadería** (a bakery) **Una iglesia** (a church) **un ayuntamiento** (a town hall) **Unas tiendas** (some shops)	**pero** (but) **Y** (and) **Sin embargo** (however)	**No hay** (there is not) **si fuera possible, preferiría tener** (if it were possible, I would prefer to have) **Me gustaría tener** (I would like to have)	**Un cine**(a cinema) **un centro commercial** (a shopping centre) **una pisicina** (a pool) **un hospital** (a hospital) **Una panadería** (a bakery) **Una iglesia** (a church) **un ayuntamiento** (a town hall) **Unas tiendas** (some shops)
En mi pueblo se puede (In my town you can) **En mi barrio hay** (In my neighbourhood you can)	**Ir de compras** (do shopping) **Hacer deporte** (do sport) **Ir al cine** (go to the cinema) **Visitar los museos** (visit the musuem) **Hacer senderismo** (go hiking) **Salir con amigos** (go out with friends)		**No se puede**(you cannot) **si fuera possible, preferiría** (if it were possible, I would prefer) **Me gustaría** (I would like)	**Ir de compras** (do shopping) **Hacer deporte** (do sport) **Ir al cine** (go to the cinema) **Visitar los museos** (visit the musuem) **Hacer senderismo** (go hiking) **Salir con amigos** (go out with friends)

Example: En mi ciudad hay un cine pero no se puede hacer senderismo.

(In my city there is a cinema but you cannot go hiking)/

Spanish | My regions | KO

Check for knowledge:

- ❑ I can say where I live (Step 1)
- ❑ I can describe my city (Step 1+2)
- ❑ I can give opinions on my local area (Step 2 + 3)
- ❑ I can use more complex ph rases in my writing. (Step 4)

Step 1: Saying where you live

Vivo en	*I live in*
Vivimos en	*We live in*
Un pueblo	*A town*
Una ciudad	*A city*
Una casa	*A house*
Un piso	*An apartment*
Con mi familia	*With my family*

Step 2: Describing your city

En mi ciudad hay		In my city there is	
En mi ciudad no hay		In my city there isn't	
Mi ciudad es/no es		My city is/isn't	
En mi ciudad se puede		In my city you can	
Un parque	A park	**Ir de compras**	Go shopping
Un supermercado	A supermarket	**Hacer deporte**	Do sport
Un cine	A cinema	**Comer en restaurantes**	Eat in restaurantes
Un hospital	A hospital	**Ver películas**	Watch films
Un centro commercial	A shopping centre	**Sacar fotos**	Take photos

Step 3: Giving opinions

Pienso que		*I think that*	
Diría que		*I would say that*	
En mi opinión		*In my opinion*	
(No) Es		*It is / It isn't*	
Grande	*big*	***Interesante***	*interesting*
pequeño	*Small*	***Aburrido***	*Boring*
Divertido	*Fun*	***Emocionante***	*Exciting*
Entretenido	*Entertaining*	***Fantástico***	*Fantastic*
Fatal	*Awful*	***Sucio -a***	*Dirty*
Histórico -a	*historic*	***Limpio -a***	*Clean*
Moderno -a	*modern*	**Viejo -a**	*Old*

Step 4: Elevate your sentences with connectives

También	*Also*
Además	*In addition*
Sin embargo	*However*
Pero	*but*
Y	*and*
O	*or*

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Success Criteria:

Have you **introduced yourself**?

- ❑ Can you describe **where** you live?
- ❑ Can you describe your **house?** Have you used a variety of **adjectives?** Could you add an **intensifier**?
- ❑ Can you describe **your local area?** Have you included a range of **nouns?**
- ❑ What was your area **like in the past?**
- ❑ Are there any problems? What would your **ideal city** have? Have you used any **complex structures?**

Simple answer:

Hola, me llamo Érica y vivo en una casa grande con mis padres en una ciudad que se llama Londres. Me gusta mucho mi ciudad porque es muy interesante. En mi ciudad hay un cine y un centro commercial. Sin embargo, no hay parque.

Extended answer:

Hola, me llamo Érica y tengo diez años. Vivo con mi familia en un piso bonito en el centro de la ciudad. En mi ciudad, hay mucho que hacer como visitar el parque o hay unas tiendas bastante interesantes. Me gusta mi barrio pero es un poco sucio, pero en el pasado era muy limpio y había más espacio verde. En mi ciudad ideal habría más parques y tendríamos menos polución

Connectives used to link ideas

Variety of **adjectives**

Intensifiers used to add detail

Fancy phrase

Spanish | School subjects | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	**el inglés**	English	Pienso que **el inglés** es interesante.
	**el dibujo**	Art	Pienso que **el dibujo** es aburrido.
	**el español**	Spanish	En mi opinión **el español** es el mejor.
	**la educación física**	PE	Estudio **la educación física** todos los dias.
	**el francés**	French	Estudio **el francés** con mi familia
	**la geografía**	Geography	Pienso que **la geografía** es dificil
	**la historia**	History	Estudio **la historia** y es interesante.
	**las matemáticas**	Maths	Diría que **las matemáticas** son importantes.
	**la música**	Music	Pienso que **la música** es interesante.
	**las ciencias**	Science	Estudio **las ciencias** porque son utiles.

Spanish | School uniform | Topic Dictionary

Image	Key Word	Definition	In a Sentence
	un abrigo	a coat	No tengo **un abrigo.**
	una camisa	a shirt	Llevo **una camisa** blanca.
	una chaqueta	a jacket	Se debe llevar **una chaqueta.**
	unos calcetines	socks	Mis **calcetines** son blancos.
	una corbata	a tie	No me gusta llevar **una corbata.**
	una falda	a skirt	Las chicas puede llevar **una falda.**
	un jersey	a jumper	Si hace frío, llevo **un jersey.**
	unos pantalones	trousers	A veces llevo **unos pantalones.**
	un vestido	a dress	No se puede llevar **un vestido.**
	unas zapatillas de deporte	trainers	Prefiero llevar **unas zapatillas de deporte**.
	unos zapatos	shoes	Mis **zapatos** son negros.

Spanish | My School | Skills Guide

Have you used..

1. a verb?	2. a noun?	3. a connective?	4. An opinion phrase?	5. a verb?	6. an intensifier?	7. an adjective?
Me encanta(n) (I love) **Me gusta(n)** (I like) **No me gusta(n)** (I don't like) **Odio** (I hate)	**el inglés**(english) **el español** (spanish) **el francés** (french) **la historia** (history) **la geografía** (geography) **la informática** (it) **el dibujo** (art) **la educación física** (pe) **el teatro** (drama) **la música** (music)	**porque** (because) **pero** (but) **y** (and) **sin embargo** (however)	**pienso que / creo que** (I think that) **diría que** (I would say that) **según yo** (according to me) **a mi modo de ver** (in my opinion) **encuentro que** (I find that)	**es** (it is)	**muy** (very) **bastante** (quite) **realmente** (really) **un poco** (a bit)	**divertido/a(s)** (fun) **entretenido/a(s)** (entertaining) **interesante(s)** (interesting) **fácil(es)** (easy) **difícil(es)** (difficult) **útil(es)** (useful) **inútil(es)** (useless)
	las matemáticas (maths) **las ciencias** (science)			**son** (it is/they are)		
	mi profe de … (my … teacher)			**es** (he/she is)		**estricto/a** (strict) **amable** (kind) **gracioso/a** (funny)

En mi colegio (At my school) **En nuestro colegio** (at our school)	**se debe** (you/one must) **se puede** (you/one can)	**traer el material escolar** (bring your equipment) **charlar en clase** (chat in class) **beber en clase** (drink in lessons) **correr en el pasillo** (run in the corridors) **decir palabrotas** (swear) **escuchar a los profes** (listen to the teachers) **ser puntual** (be on time)
En mi opinión es (In my opinion it is) **Lo encuentro** (I find it)	**muy** (very) **un poco** (a little) **bastante** (quite) **demasiado** (too) **realmente** (really)	**justo** (fair) / **logico** (logical) / **necesario** (necessary) / **razonable** (reasonable) **molesto** (annoying) / **frustrante** (frustrating) / **injusto** (unfair) **ridiculo** (ridiculous) / **inútil** (pointless)

Example: Me encantan las ciencias porque según yo son muy entretenidas.

(I love Science because according to me it's very entertaining)

Spanish | My school| Knowledge Organiser

Check for knowledge:

- ❑ I can say what subjects I like (Steps 1+4)
- ❑ I can describe my uniform and give my opinion (Steps 2+4)
- ❑ I can describe the rules in my school (Steps 3+4)
- ❑ I can give justified opinions (Step 4)

Step 1: Say what subjects you like

Me encanta(n) / Odio	*I love / I hate*
Me gusta(n) / No me gusta(n)	*I like / I don't like*
el español / el francés / el inglés	*Spanish / French / English*
la historia / la geografía	*History / Geography*
las matemáticas / las ciencias	*Maths / Science*
el dibujo / la informática	*Art / IT*
porque es / son…	*because it is / they are…*

divertido/a(s)	*fun*	**aburrido/a(s)**	*boring*
fácil(es)	*easy*	**difícil(es)**	*difficult*
interesante(s)	*interesting*	**inútil(es)**	*useless*
útil(es)	*useful*	**fatigante**	*tiring*
el/la profe es amable/estricto/a		*The teacher is kind/strict*	

Step 2: Describe your uniform

Llevo…		*I wear*	
Se debe llevar…		*You must wear…*	
una camisa	*a shirt*	**una corbata**	*a tie*
una chaqueta	*a jacket*	**una falda**	*a skirt*
unos pantalones	*trousers*	**unas zapatillas**	*trainers*
unos zapatos	*shoes*	**unos calcetines**	*socks*

Step 3: Discuss school rules

(No) se debe…	*You must (not)…*
(No) se puede…	*You can(not)...*
Está prohibido…	*It is forbidden…*
escuchar a los profes	*listen to the teachers*
comer chicle	*chew gum*
hacer los deberes	*do homework*
llevar uniforme	*wear uniform*
correr en el pasillo	*run in the corridor*
charlar en clase	*chat in class*
usar el móvil	*use your phone*

Step 4: Elevate your sentences with opinions

Pienso que / Creo que	*I think that*
Diría que	*I would say that*
Según yo	*According to me*
A mi modo de ver	*In my opinion*
Es…	*It is…*

cómodo	*comfortable*	**incómodo**	*uncomfortable*
elegante	*stylish*	**feo**	*ugly*
justo	*fair*	**injusto**	*unfair*
bonito	*pretty*	**ridículo**	*ridiculous*
importante	*important*	**molesto**	*annoying*
necesario	*necessary*	**frustrante**	*frustrating*

Spanish | My school | Skills Guide

Success Criteria:

- ❑ Have you **introduced yourself**?
- ❑ Can you give **opinions** and **reasons** about **school subjects**? Have you used the correct **word order** and **adjective endings**?
- ❑ Can you describe your **school uniform**? Can you express your opinion about it?
- ❑ Can you describe your **school rules**? Can you give your opinion using an **opinion phrase**? Could you add an **intensifier**?
- ❑ What would your ideal school be like?

Simple answer:

Buenos días, me llamo Elena y mi colegio se llama St Mark's. Me gusta el inglés porque es divertido. No me gustan las ciencias porque son dificiles. Llevo una camisa blanca y una chaqueta roja. En mi colegio se debe hacer los deberes.

Connectives used to link ideas

Variety of **adjectives**

Intensifiers used to add detail

Opinion phrases used to upgrade answer.

Examples/Complex reasons given to justify opinions

Extended answer:

Buenos días, me llamo Elena y mi colegio se llama St Mark's. Me chifla el inglés porque me interesa y es realmente útil porque me gustaría ser periodista. Sin embargo, no me gustan las ciencias ya que son dificiles y el profe puede ser muy estricto y antipático. Mi uniforme consiste en una camisa blanca y una chaqueta roja aunque lo encuentro un poco incómodo. También, en mi colegio se debe hacer los deberes y escuchar a los profes pero creo que es bastante lógico y justo. Sin embargo, en mi colegio ideal habría menos reglas.

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