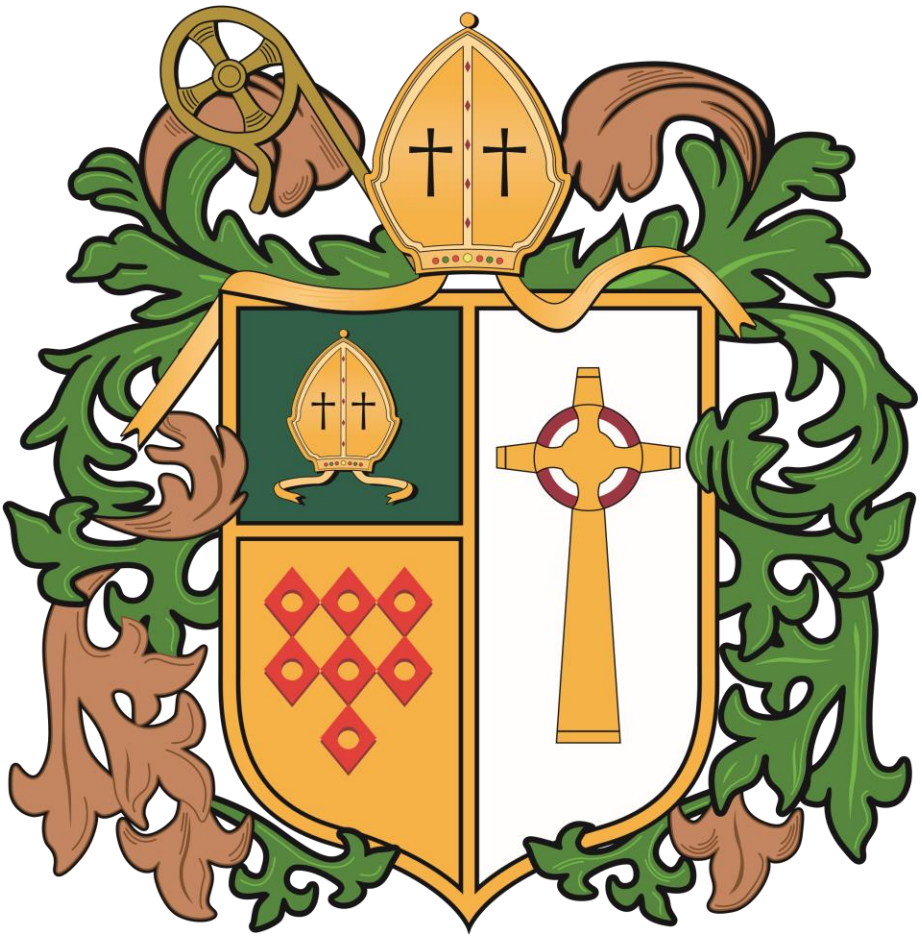
Cycle 1: Year 10



St Wilfrid's R.C. College

Name: _____

Form: _____

Tutor: _____

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How to use your 100% booklet:

1. Look at page 3 for what content you need to be learning for your CORE subjects and then use this contents page to take you to the right place

2. Make sure you're ready to be assessed during morning meeting time on the day stated

3. Option subjects will not be assessed during morning meeting time. Subject teachers will set you tasks and assess you in class.

4. At the back of your booklet, you will find a range of strategies (with blank sheets of these strategies) to help you learn your core knowledge

5. You will be given 5 questions to assess your knowledge during morning meeting time which will then be self assessed and corrected in green pen

Year 10 HW Cycle 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Monday: Maths	P27 Algebra Q1-5	P27 Ratio & Scale Q1-5	P29 Percentages Q1-5	P29 Formula Sheet Q1-5	P27 Algebra Q6-10	P27 Ratio & Scale Q6-10
Tuesday: English	P8-9 Qs 1-7	P8-9 Qs 8-15	P8-9 Qs 1-7	P8-9 Qs 8-15	P8-9 Qs 1-7	P8-9 Qs 8-15
Wednesday: Science	P43 Qs1-5	P49	P55 Qs1-6	P43 Qs6-10	P50	P55 Qs7-12
Thursday: RE	P31- 34 Qs 1-5 Jewish beliefs	P31- 34 Qs 6-10 Jewish beliefs	P31- 34 Qs 11-15 Jewish beliefs	P35- 37 Qs 1-5 Jewish practices	P35- 37 Qs 6-10 Jewish practices	P35- 37 Qs 11-15 Jewish practices
Friday: History / Geography	History p.16-17 Geography P 12&14	History p.16-17 Geography P12 & 14	History p18-19 Geography p12 &14	History p.18-19 Geography p12 & 14	History p.20-21 Geography p12 &14	History p.20-21 Geography p 13 &15

Year 10 HW Cycle 1	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Monday: Maths	P29 Percentages Q6-10	P29 Formula Sheet Q6-10	P27 Algebra Q11-15	P27 Ratio & Scale Q11-15	P29 Percentages Q11-15	P29 Formula Sheet Q11-15
Tuesday: English	P10-11 Qs1-10	P10-11 Qs11-20	P10-11 Qs1-10	P10-11 Qs11-20	P10-11 Qs1-10	P10-11 Qs11-20
Wednesday: Science	P45	P52	P57 Qs1-6	P47	P53	P57 Qs7-11
Thursday: RE	P38- 40 Qs 1-5 **Origins Ai)**	P38- 40 Qs 6-10 **Origins Ai)**	P38- 40 Qs 11-15 **Origins Ai)**	P41- 42 Qs 1-5 **Origins Aii)**	P41- 42 Qs 6-10 **Origins Aii)**	P41- 42 Qs 11-15 **Origins Aii)**
Friday: History / Geography	History p.22-23 Geography p.13 &15	History p.22-23 Geography p 13 &15	History p. 24-25 Geography p 13 &15	History p. 24-25 Geography p 13 &15	History – all Geography p 13 &15	History all Geography p 13 &15

St Wilfrid's Standard

We are **prepared** and **equipped** to learn.

In our school bag, we have...

Pupil planner

Reusable water bottle

Reading book

In our pencil case, we have...

Black pen

Pencil

Ruler

Green and purple pen

Rubber

Scientific calculator

This is how we present our books:

We write the date and title and underline using a ruler.

We always write in black pen.

We always start sentences with capital letters.

We always respond to feedback in green pen.

We use subheadings to structure our work, if appropriate.

We use a pencil and ruler for diagrams.

We correct any spelling, grammar or punctuation mistakes.

Monday 1st January

Romeo and Juliet: Act 2 Scene 2

Retrieve

1. Romeo doesn't really enter at the beginning of this scene, he's been there all along, on the other side of Capulet's garden wall. ✓
2. Bathos- an anti-climax which is abrupt; usually humour that comes from an odd and sudden change. ✓
3. In the patriarchal system of Elizabethan England, women's status and security depended on the status of their fathers or husbands. ✓
4.
   - Violence and conflict ✓
   - Role of women ✓
   - Loyalty and honour ✓
   - Transformative power of love
   - Tragic fate

Example- We Do

Explore the ways in which Shakespeare presents the power of love between Romeo and Juliet in act 2 scene 2.

Shakespeare presents love as more powerful than hatred and prejudice in the play. Both Romeo and Juliet defy danger and oppose stronger forces to pursue love. Shakespeare's tragedy illustrates the lengths the doomed lovers are willing to go to in order to oppose the prejudice and hatred between their families. Their marriage, and subsequent tragic deaths, symbolise the sacrifice they make in the name of love and peace. AO1 AO1

[SP]
Significant
Significant

In this extract, the power of the love Romeo feels for Juliet means he willingly puts himself in danger; he disregards the signifigant [SP] risk of trespassing on Capulet property. It is important to note that Romeo is hiding in the dark garden, and overhears Juliet.

We always write in our best handwriting.

Date is underlined

Questions answered in full sentences

We start sentences with capital letters

10/9/26

RE: 100% booklet

Q1) The word stewardship means to have a duty to care for the environment.

Q2) Laudato Si is an encyclical written by Pope Francis.

Q3) Tikkum Olam is a Jewish concept of repairing the world.

Q4) Just war theory was written by Thomas Aquinas

Q5) Thomas Aquinas said that your conscience must be your last part of a decision making process.

Q6) The word retribution means that a punishment is fit for the crime.

Q3) Laudato Si is an encyclical teaching Catholics about stewardship.

Spellings

Maths

We write the subject, the title & UNDERLINE

No gaps left between questions

We use BLACK pen

Corrections made underneath

At St Wilfrid's RC College, our vision is clear:

We strive for every pupil to realise their God-given potential, become the very best version of themselves, and leave us equipped with the knowledge, character and skills needed to thrive in society.

Respectful

- Perfect uniform
- No answering back

Responsible

- Be fully equipped
- Attendance and punctuality

Resilient

- On task
- Homework

Perfect uniform

Full uniform worn correctly every day
Shirt tucked in, tie and blazer worn
Grey tailored trousers or pleated grey skirt worn
Correct school shoes
No extreme hairstyle
Skirts unrolled
No makeup
No mobile phones

Attendance and punctuality

Attendance and punctuality to school each and every day
Every pupil will be on the school yard, equipped, at 08:35
Pupils will arrive on time to every lesson

No answering back

Listen without interrupting
Communicate in a respectful tone to all members of the school community
Follow instructions
Use appropriate language

On task

Focus for 100% of the lesson
Sit upright and track the teacher
Ask and answer questions
Be ‘on task’ when completing an independent task

Be fully equipped

Clear pencil case
Black pen
Green pen
Pencil
Ruler
Rubber
Scientific calculator

Homework

Homework will be completed on time
Write your homework in your planner
Use your knowledge organiser in lessons and at home

Respectful Responsible Resilient

SECTION ONE - CONTEXT

Fin-de-siècle fears – at the end of the 19th century, there were growing fears about: migration and the threats of disease; sexuality and promiscuity; moral degeneration and decadence.

Victorian values – from the 1850s to the turn of the century, British society outwardly displayed values of sexual restraint, low tolerance of crime, religious morality and a strict social code of conduct.

The implications of ***Darwinism and evolution*** haunted Victorian society. The idea that humans evolved from apes and amphibians led to worries about our lineage and about humanity's reversion to these primitive states.

Physiognomy – Italian criminologist Cesare Lombroso (1835-1909) theorised that the 'born criminal' could be recognised by physical characteristics, such as asymmetrical facial features, long arms or a sloping forehead.

Victorian London – the population of 1 million in 1800 to 6.7 million in 1900, with a huge numbers migrating from Europe. It became the biggest city in the world and a global capital for politics, finance and trade. The city grew wealthy.

Urban terror – as London grew wealthy, so poverty in the city also grew. The overcrowded city became rife with crime. The crowd as something that could hide sinister individuals became a trope of Gothic and detective literature.

Robert Louis Stevenson was born and raised in Edinburgh, giving him the dual identity of being both Scottish and British. Edinburgh was a city of two sides - he was raised in the wealthy New Town area, but spent his youth exploring the darker, more sinister side of town.

Deacon Brodie – a respectable member of Edinburgh's society and town councilor, William Brodie lead a secret life as a burglar, womaniser and gambler. He was hanged in 1788 for his crimes. As a youth, Stevenson wrote a play about him.

SECTION TWO - Plot

1 – The Story of the Door	Enfield tells Utterson how he saw Hyde trample a girl, enter Jekyll's building with a key, and use a cheque signed by Jekyll to buy everyone's silence.
2 – Search for Mr Hyde	Utterson discovers that Jekyll has left everything in his will to Hyde. He tries Dr. Lanyon, an old friend, then goes to Jekyll's house and where he finds Hyde.
3 – Dr Jekyll is Quite at Ease	Jekyll throws a party, and Utterson is the last guest. Jekyll makes him promise to carry out the will if Jekyll should die.
4 - The Carew Murder Case	A year later: an MP is murdered by Hyde. Utterson follows him to Soho, and the police find a cheque book there and the murder weapon: Dr Jekyll's walking cane.
5 – Incident of the Letter	Utterson finds a very ill Jekyll at home, claiming that his time with Hyde is over. He gives Utterson a letter from Hyde, and his clerk Guest says the handwriting is Jekyll's.
6 – Remarkable Incident of Dr Lanyon	Utterson visits Lanyon to discuss Jekyll; he finds Lanyon suddenly at death's door. Lanyon can't explain; he leaves a letter, to be opened when Jekyll dies.
7 –Incident at the Window	Utterson and Enfield take a walk to the Jekyll's house. They talk about Hyde being gone for good. They see Jekyll at the window, then he vanishes.
8 – The Last Night	Poole comes to Utterson's house to ask him to come to the laboratory. They break down the door to discover Hyde dead. The will now goes to Utterson. Jekyll's signed confession is found.
9 – Dr Lanyon's Narrative	Lanyon describes how Jekyll begged Lanyon to fetch chemicals for him. Hyde appeared one night to get them, and Lanyon witness him change into Jekyll. The horror quickly killed him.
10 – Dr Jekyll's Full Statement of the Case	Jekyll details his experiments into duality and his attempt to destroy his 'darker self.' However, he became addicted to Hyde, who destroyed him.

SECTION THREE - Characters

Gabriel Utterson	A **lawyer** – calm and rational. A friend of Jekyll.
Richard Enfield	A distant **cousin** of Utterson. Utterson's good friend and a well-known man-about-town.
Mr Edward Hyde	Has **no profession**. A small, violent and unpleasant-looking man ; a criminal.
Dr Henry Jekyll	A **doctor** and experimental **scientist;** both wealthy and respectable.
Sir Danvers Carew	**A Member of Parliament (MP)** and important man who is killed by Hyde.
Dr Hastie Lanyon	A **doctor** and scientist - respectable and conventional. A former friend of Jekyll.
Poole	Jekyll's butler (head of his servants.)
Mr Guest	Utterson's **clerk** (secretary in his law office.)

SECTION FOUR - Vocabulary and Spellings

Rational	Someone who uses **logic and evidence**
Reputable	Someone who has a **good reputation** for **doing the right thing**
Repressed	Someone who holds back or ignores their desires and **won't give in to temptation**
Orthodox	What is expected of people – what to do if you **follow all the rules**
Fanciful	Someone who has an unrealistic **imagination**
Animalistic	Looking or behaving **like an animal**
Depraved	Someone who is evil and has **no idea of what is right or wrong**
Transcendental	Something that **breaks the boundaries** of the physical or scientific world
Psychotic	Someone who has lost their relationship with reality, often due to **severe mental illness**
Duplicitous	Someone who lies and **leads a double life**
Morality	The idea that there is a **clear right and wrong**

SECTION FIVE – Universal Themes ('Big ideas')

Duality	The idea that both **good and evil can co-exist**, in the same person
Reputation	The importance **of looking professional and respectable** in the eyes of other people.
Scientific discovery	The **advances in science** (science based on evidence) can **make us proud**, but they can also **worry us.** Think about genetics or Artificial Intelligence today.
Anonymity	Moving to a big city allows people to move around un-noticed. This can lead to **isolation**, but it can also allow us to **behave more freely**.
Crime	**The fear of crime in large cities** like London, and the potential of everyone to have criminal thoughts.
Repression	The idea that **we should ignore or hide away our desires** and not give in to temptation – again, a focus on the Victoria era.
Silence and secrecy	The idea that **what is really happening needs to be kept secret**, and that everyone agrees not to talk about it.
Names and their meaning	**Hyde's name** indicates either something secret and hidden, or the rough skin of an animal (the 'hide') **Jekyll** 's b combines the French 'je' meaning 'I' with 'kill' – his name 'I kill' hints that he is the killer, although what he tries to kill in the end (Hyde) is part of himself ('I').

SECTION SIX – Literary Terms

Symbolism: When a **physical thing** represents an **idea**	**Allegory:** A story that has a **clear moral meaning** (a lesson to teach us about right and wrong)
Gothic imagery: Midnight, full moons, fog, shadows … all of these are **common images in Gothic novels**	**Non-chronological :** When the story is **not told in the order it happened**. This means we have to piece it together, just like Utterson does.
Pathetic fallacy: When the **weather reflects the mood** and atmosphere of a piece of writing or film	**Detective figure:** Utterson is not a detective, but he does play the **role of a detective** in this crime story.
Epistolary: A **story written using letters**, to make it seem more realistic.	**Multiple narrators:** When **more than one person tells the story**;

- 1. What is meant by the term *fin-de-siècle*?
- 2. Name two social concerns that were growing at the end of the 19th century.
- 3. What values did Victorian society promote?
- 4. Which scientific theory influenced Victorian ideas about human development?
- 5. What did physiognomy suggest?
- 6. What was Gabriel Utterson's profession?
- 7. How is Mr Hyde described in the character section?
- 8. What is Dr Jekyll's profession?
- 9. Who is described as a respected and conventional scientist?
- 10. What is Mr Guest's job?
- 11. According to the theme of duality, what can exist in the same person?
- 12. Why was reputation important in Victorian society?
- 13. What is one positive effect of anonymity?
- 14. What does the term *reputable* mean?
- 15. What is an epistolary narrative?

AQA English Language Paper 1 – Fiction
Section A – 15 mins reading time

Question 1

1. ***Marks***: 4
2. ***Time***: 4 minutes
3. ***Focus***: Identifying explicit information in the text.

Question 2

1. ***Marks***: 8
2. ***Time***: 8 minutes
3. ***Focus***: Analysis of language use and effects.
4. ***Tips***: Layers of meaning / alternative viewpoints / answer the Q

Question 3

1. ***Marks***: 8
2. ***Time***: 8 minutes
3. ***Focus***: Analvsis of the overall structure of text
4. ***Tips***: How does the focus change from the start to the end of the extract and why has the writer done this?

Question 4

1. ***Marks***: 20
2. ***Time***: 20 minutes
3. ***Focus***: Evaluation of effectiveness of text.
4. ***Tips***: Make sure you only explore the focus of the question – re-read it!

Question 5

1. ***Marks***: 40 (24 content / 16 technical accuracy)
2. ***Time***: 45 minutes
3. ***Focus***: Descriptive and / or narrative writing task.
4. ***Tips***: The task could be either writing style so practise both / PLAN first

Language devices and their effects (Q2 and Q4)
- Also can be used in Q5 response

1. Simile – A simile gives the person/thing being described the characteristics of something else. It therefore helps us to see these people/things in a new light - in a way we may have never seen them or thought about them before allowing the writer to exaggerate or create vivid imagery.

2. Hyperbole – Exaggerated statement or claims not to be taken literally, used specifically for effect in writing: 'I've told you a thousand times!'.

3. Alliteration –can create a harder or softer mood depending on which sound is being repeated.
Plosive /b/ /p/ /t/ /d/ sounds create an abrupt, sharp, sometimes shocking effect.
Sibilant /s/ sounds (<s> <ss> or <c> as in 'ice'. <sh> <dg> <x> <ks> or <ch>) can create a soft, devious or sinister atmosphere. It can also present a hissing sound.

4. Metaphor – Making a direct comparison to something than a simile does: 'Its eyes fired daggers into my very soul'.

5. Personification – Giving an object human qualities to make it sound more powerful or in control: 'The paintings stared at me menacingly as I crept along the hallway'.

6. Onomatopoeia – can be used to create atmosphere of being surrounded by the action by engaging the sense of sound. It can bring to life a scene and create vivid imagery.

7. Oxymoron – A figure of speech in which opposite words appear next to each other: 'Living dead', 'Working holiday'. – can make a character seem confused or lost.

8. Pathetic Fallacy – Using the weather to reflect to mood of the characters or scene – this creates tone and develops emotion in the writing.

9. Rhetorical Question– Can be used to emphasise: Humor—to emphasise how ridiculous an idea is / Obviousness—to emphasise how obvious an idea is (leading the audience to identify with the writers views) / Reflectiveness—to allow the reader to reflect on their own response to the question.

10. Repetition – A way that a writer can emphasise the importance of words or ideas or to highlight the repetitive nature of a certain message.

Evaluative vocabulary (Q4)		Emotional vocabulary (Q2, Q3, Q4)	
1. Subtle	5. Skilful	1. Outrage	5. Empathy
2. Challenging	6. Striking	2. Sympathy	6. Approval
3. Crucial	7. Significant	3. Pity	7. Satisfaction
4. Pivotal	8. Provocative	4. Remorse	8. Compassion

Structural choices and their effects (Q3)
- Also can be used in Q5 response

1. Juxtapositions – a deliberate Contrast between ideas to create tension / imagery

2. Dialogue – speech to reveal information about characters

3. Foreshadowing – a hint of what is to happen later to build dramatic tension

4. Narrative perspectives – the viewpoint of the narrator and how this develops and changes

5.Shifts or changes in time, topics, Places, tone and focus – changes to signpost new events or ideas to the reader – takes the reader on a journey

Extending analysis (Q2, Q3, Q4)

1. DEEPER ANALYSIS: Upon first glance, it would appear_____; however, on closer inspection…
2. TRACING IDEAS THROUGHOUT THE TEXT: The symbol/idea/concept of _____ is further developed at a later point when….
3. ANALYSING AN ALTERNATIVE INTERPRETATION: The image could also be interpreted as…
4. THE COMBINED EFFECT OF TECHNIQUES: The writer uses ____coupled with _____ to highlight…
5. READER POSITIONING: The reader is encouraged/ positioned in favour of/against _____because….

Phrases to ensure a sophisticated analysis (Q2 and Q4)

1. This suggests/ implies/ indicates/ demonstrates/ portrays/ presents/ highlights/ emphasises/ develops…
2. The line/adjectives/noun/verb/phrase/image…
3. It could be argued that/the reader may infer…
4. You get the impression/the reader is positioned to feel/ the writer causes the reader to consider..

1.What is a simile?
2.What is hyperbole?
3.What is juxtaposition?
4.What is foreshadowing?
5.What is personification?
6.What is pathetic fallacy?
7.What is repetition?
8.What do you do for question 2, and how many marks is it worth?
9.What do you do for question 3, and how many marks is it worth?
10.What do you do for question 4, and how many marks is it worth?
11.What is flipped narrative?
12.What does connotation mean?
13.What is an extended metaphor?
14.What is the difference between descriptive and narrative writing?
15.What is exposition?
16.What is a cliffhanger?
17.What is irony?
18.What is an oxymoron?
19.What is a declarative sentence?
20.What is exposition?

AQA English Language Paper 1 – Section B Knowledge Organiser

Descriptive writing	Focused creating an image in the reader's mind and describing a scene in detail	**Narrative writing**	Focused on character, setting and plot development with descriptive elements as well as dialogue and action.

STRUCTURING A DESCRIPTION

Overview	Describe the bigger picture (wide/panoramic)
Zoom in	Focus on an object and describe it in detail (close up)
The senses	Sights, sounds, smells, tastes, touch.
A person	Describe a person (or two) in an imaginative way, create personality through the way they move, speak and react.
Overview	Zoom back out, returning to the bigger picture (wide/panoramic)
Linking theme	Repeated reference to an object, person or idea throughout.

STRUCTURING A NARRATIVE

Exposition	A narrative device often used at the beginning of a work that provides necessary background information about the characters.
Inciting Incident	An event that begins the action/plot.
Rising Action	Events leading up to the climax
Climax	Most exciting moment of the story; turning point
Falling Action	Events after the climax, leading to the resolution
Resolution	Ends the conflict and leaves reader content
Cliffhanger	A dramatic moment leaving suspense over what is to come
Flashback	A method of narration in which present action is temporarily interrupted so that the reader can witness past events
The one sentence opener	Start with a one-sentence paragraph or rhetorical question. Your next paragraph should then jump back in time. Recount the events leading up to this first line.
Twist in the tale	Tell the story in a way that suggests one thing about a character only to surprise the reader at the end.
Flipped narrative	Start with the end - the most dramatic moment (present tense) and then flashback to the events leading up to it.
A tale of two halves	Tell the incident from one character's perspective and then tell the whole thing again from a completely different point of view.

SENTENCE UPGRADES

-Ing	Grabbing her bag, the woman stormed out of the shop.
Similes	Like a predator stalking its prey, the thief approached the boy.
Preposition	Under the dark clouds, the lamppost gleamed brightly.
Adverb	Cautiously, the girl reached out to touch the creature.
Connective	Despite the weather, the girl plunged into the sea.
-Ed	Petrified, the dog stood rooted to the spot.
Pair of adjectives	Pale and bright, the sun cast its light across the forest below.
Verb adverb	Perched precariously on a thin tree branch, a small robin sang.
Triple noun :	Owls, crickets, mice: the woods were alive with noise.
Triple adjective :	Thin, bare, skeletal: the trees towered over me like fingers.

LANGUAGE FEATURES

Pun	A joke exploiting the different possible meanings of a word or the fact that there are words which sound alike but have different meanings
Symbol	An object or action in a literary work that means more than itself, that stands for something beyond itself.
Onomatopoeia	A word that imitates the sound it represents.
Euphemism	An indirect, less offensive way of saying something that is considered unpleasant
Personification	A figure of speech in which an object or animal is given human feelings, thoughts, or attitudes
Alliteration	Repetition of consonant sounds
Metaphor	A comparison of two things without using the word like or as.
Simile	A comparison of two things using like or as
Hyperbole	A figure of speech that uses exaggeration to express strong emotion, make a point, or evoke humor
Irony	A contrast or discrepancy between what is stated and what is really meant, or between what is expected to happen and what actually does happen.
Connotation	The experience (associations) we bring to a word
Oxymoron	A figure of speech in which apparently contradictory terms appear in conjunction
Extended Metaphor	When a writer exploits a single metaphor or analogy at length throughout a poem or story.
Imperative	A command
Declarative	A statement
Pathetic fallacy	A type of personification where emotions are given to a setting, an object or the weather.
Emotive language	Language intended to create an emotional response.
Rhetorical Question	A question asked merely for rhetorical effect and not requiring an answer

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MSN 2020

T6

Find a playlist of explainer clips by scanning or clicking the QR code

CLICK ME

SCAN ME

Development and resource issues

Geography Knowledge Organiser

6.1.1 - Measuring development

Measures of development

Gross domestic product (GDP) - the total value of all goods and services produced within a country
Gross National Income (GNI) - (per capita) average wage per person
Employment structure - the type of work people do (for example, primary, secondary, tertiary)
Poverty - the % of the population that earn less than $1.90 a day

Limitations of these measures
They only measure wealth and not social factors (like life expectancy)
They do not show inequality in country (gap between rich and poor)
They do not show the cost of living (ie. the amount that can be bought with the average wage)

Development continuum

A development gap exists between richer and poorer countries. The "Brandt" line splits the world into more developed "global north" countries and less developed "global south" countries.

Less developed — More developed

LIC — Lower middle — Upper middle — HIC

However, the Brandt line is a bit too simplistic. In reality there is a "**development continuum**". This is a sliding scale from super rich countries to the very poor. The World Bank splits countries into 4 categories based on their Gross National Income (GNI):

HICs with GNI of $12,736 or above
Upper Middle Countries with GNI between $4126 and $12735
Lower middle countries with GNI of $1046 to $4125
LICs with GNI of $1045 or less

6.2.1 - Uneven development

Causes of uneven development

Trade involves buying goods from other countries (imports) and selling them (exports)
HICs generally export valuable goods such as electronics, cars and financial products. They import cheaper primary products like tea, sugar and coffee.
LICS do the opposite. This means they earn little and remain in poverty

The prices of these products go up and down but HICs tend to have the biggest influence over them. LICs lose out when the price drops, but have little control over it. Increasing this trade and changing the balance of imports/exports is essential for LICs to develop. Some HICs impose tariffs (import costs) and quotas (a limit to the amount of imports) which also affects LICs.

Multinational corporations (MNCs)

MNCs have grown as a result of globalisation. Often they are free to decide where they locate many aspects of their company. The headquarters if usually found in a global city such as London. However, other parts of the company can be located around the world. Factors like, government incentives, location of raw materials, labour costs and reduced costs for buildings and land make a difference.

Advantages of MNCs in LICs	Disadvantages of MNCs in LICs
Created jobs and improved local skills	Investment could be transferred to other countries quickly
Pays higher wages than most local Companies	They has large demand for energy/water
Helped attract more MNCs	They have reputation for workers abuse
Contributes to tax which helped pay for schools, hospitals etc.	They might undermine national culture

6.2.1 - Uneven development

Tourism

As a result of globalisation the tourist industry has grown rapidly. It now accounts for 1-in-11 jobs worldwide. It is increasingly becoming important for low and middle income countries. Rapid growth is due to:

Early retirement & higher life expectancy mean people can spend time travelling
People earn more so have more disposable income
Modern aircraft make is cheaper and quicker
The internet allows people to research destinations

Mass tourism
Where tens of thousands of people going to the same resort often at the same time of year

Enclave tourism
Where tourists pay one price and get all travel, accommodation, food and drink in one place

Cruise holidays
Cruise ships sell all inclusive packages

Advantages of tourism in LICs	Disadvantages of tourism in LICs
Employs thousands directly and hundreds of thousands indirectly, bringing billions to the economy	Many tourist development are partly owned by foreign companies. Some profits leak (send) overseas
Tourism is encouraging new skills and improving language skills of locals	Jobs are seasonal, many people lose their jobs in the wet or winter season
New services such as transport can be used by tourists and locals	The growth of sex tourism can become an issue in some countries
New national parks are being created to protect wildlife and encourage tourism	The arrival of tourists can cause a decline in local cultures, for example loss of language or religious traditions

6.2.2 - Managing development

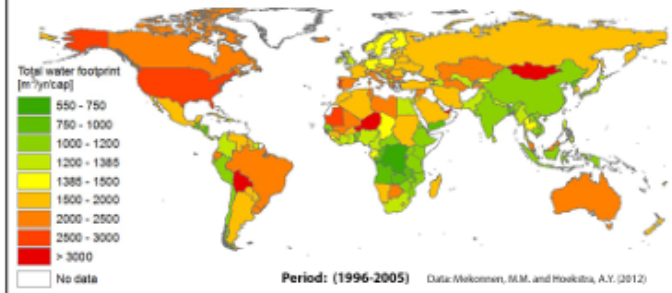
Aid

Aid is the transfer of resources from a richer country to a poorer country. Different types of aid include:

Bilateral aid – between two countries
Multilateral aid – money donated by richer countries via organisations such as the UN
Short term emergency aid – immediate relief following a natural disaster
Long term development aid – a sustained programme of aid which aims to improve the standard of living
Debt abolition – when richer countries cancel debt owed by poorer countries
Aid from non-governmental organisations (NGO's) – given through charities such as Oxfam.

Advantages of aid for LICs	Disadvantages of aid for LICs
Emergency aid saves lives and reduces misery	Aid can increase dependency on the donor country
Development aid can lead to long term improvements and increase standards of living	Profits from the large projects can go to multinationals and donor countries
Assistance in developing natural resources benefits global economy	Aid doesn't always reach the people who need it and can be kept by corrupt officials
Aid for industrial development creates jobs and aid for agriculture increases food supply	Aid can be spent on prestige projects in urban areas rather than in the areas of real need
Provision of medical training and supplies improves health	Aid can be used as a weapon to exert political pressure on the receiving country

6.3.1 - Water demand



The global consumption of water is rising. This is because:

Population is rising
Economic development - The more developed a nation the more water used
Increased need by agriculture - irrigating crops
Industrial growth - As more MNCs invest in NICs and LICs the more water needed
Consumerism - HICs use appliances like dishwashers and washing machines

Water footprint - a measure of humanity's use of fresh water and/or polluted
We don't just use water to drink and for hygiene reasons. 70% of our water is used to produce food (crops & animals). Industries use water in 'cooling processes'. Water is need in thing like clothing - fabrics have to be grown.

Water security - the capacity to safeguard the sustainable availability and access to drinking water
The UK generally have excellent access to water all year round. Some places don't, where water isn't clean or alway available. Sometimes it's too expensive to transport or access (economic scarcity) or it's not available due to droughts (physical scarcity).

6.3.2 - Water sustainability

Dams: Dams block the flow of a river, creating a large reservoir to the rear which can be used all year round. Dams can be expensive to build, and the reservoir may flood local settlements and ecosystems.

Water transfers: When water is transferred to from an area that has a surplus of water to an area that is experiencing a shortage. This may be conducted within a country, but it can also be conducted from one country to another. For example, Lesotho transfers water to areas of South Africa experiencing physical water scarcity.

Desalination plants: Desalination is the process by which salt is extracted from water. At these plants, salt is removed from seawater to make it safe to drink. Such plants are extremely expensive to run.

Water conservation: This is when an attempt is made to actually use less water in the first instance. For example, many toilets have dual-flush systems to reduce the amount of water used. In addition, meters may be installed within households so residents can check their water usage

Over-abstraction of groundwater

India is a country that is over extracting its groundwater (the water table is 4m lower than in 2000)

Reasons for this
Some states like Gujarat have a long dry season
Surface stores (like reservoirs) are often polluted
Cheap electricity has encouraged farmers to dig deeper wells
Solutions
The government can build more dams (this is an example of top down development)
Farmers could be encouraged to conserve water e.g. rainwater harvesting (this is bottom up development)

6.4.1 - NIC regional development

India's regional patterns

Northeast has higher levels of poverty (over 30% of people)

South has the least levels of poverty (less than 10%)

The east generally has lower levels of poverty (around 15%)

GDP per region in India

Physical reasons

Northern India is more mountainous and dry, so it has poor soil and climate to grow crops. **The south** has a more humid climate with rains.

Political reasons

Kerala (in the south) funds education and encourages families to have fewer children = better quality of life (less pressure on resources)
Kashmir (in the north) has seen conflicts/wars and is in a mountainous area = not very populated, poor access, dry climate.
Maharashtra (in the east) has the capital city and attracts lots of industries like manufacturing and has ports for trade

Cultural reasons

India had a **caste system** (some people had more rights than others). Although it's illegal now it still has an impact on people today with types of jobs people can do.

Girls and women are discriminated against particularly in rural areas

6.4.2 - UK regional development

UK's regional patterns

There is a north-south divide in the UK for development. The divide recognises the social and economic differences between Southern parts of the UK (more developed) and the rest of the UK (less developed).

Economic reasons

With the **largest markets located in the south-east,** which also includes **good access to European markets**, companies have greatest potential to **maximise profits by locating in the south**.

Social reasons

With over 20 million people of the UK's population living within a one hour commute of London, many **businesses prefer to locate themselves close to their customers**, and within **commuting distance of their staff. Many universities are in the south** of the UK, including Oxford and Cambridge, which provide many workers - who **employers may perceive as being most skilled** and desirable.

Political reasons

Many large companies have headquarters (HQ) in the south-east, making it easier to make crucial decisions. Even though government policy has tried to encourage investment in other parts of the UK it is **still more convenient for other smaller businesses to start up where there is already infrastructure** to support.

6.4.3 - Managing UK development

Positive multiplier effect

Regional inequality can be reduced by investment in deprived areas of the UK. Various strategies have been used in the past which usually includes investing in infrastructure in an area which is deprived to try and promote a **positive multiplier effect**. However, when industries close there is also a **negative multiplier effect**.

Positive multiplier effect

National strategies

Giving power to local authorities e.g. regional mayors (Manchester/Leeds)

The **creation of the "Northern Powerhouse"** which is a proposal to boost economic growth in the North of UK, this would attract investment and create skilled jobs in the area

The **improvement of transport links** to the Northern places in the UK. This improves accessibility, attract new investment and therefore may create a positive multiplier effect (eg. HS2)

Relocation of major business and offices, sometimes head offices in other parts of the UK, such as Manchester. This encourages other businesses to invest in the areas

Local strategies (Newcastle)

Newcastle Enterprise Package - supporting new business

Newcastle Science City - a partnership between Newcastle University, Newcastle City Council and the European Regional Development Fund supporting the innovation and technology sectors

The Millennium Bridge - crossing the river Tyne

Home study questions

DEVELOPING
Outline the measures of economic development **[3 marks]**
Give three reasons why LICs receive less money from international trade **[3 marks]**

SECURING
Analyse the pattern of global water usage (water footprint) (6.3.1) **[6 marks]**

MASTERING
Evaluate which factor/reason (social, economic or political) is the most significant cause of UK regional inequality **[8 marks]**

CHALLENGE
Create a concept map to show how MNCs and tourism are linked and how these are also linked to uneven development in LICs/NICs

10.1

Development and resource issues

Test yourself

6.1.1- Measuring development

1. Define GNI

2. Define GDP

3. Define employment structure

4. Define poverty

5. Define development continuum,

6.2.1- Uneven development

1. Define export

2. Define import

3. Identify the positive and negative impacts of MNCs on NICs
Nike: Vietnam

	Social	Economic
Positive		
Negative		

6.2.1 Uneven development
1. What is meant by enclave tourism?

2. What is meant by mass tourism?

3. Classify the statements as positive or negative impacts of tourism:
Generates employment

Jobs are often low paid and temporary

Brings foreign exchange (money)

Local culture is destroyed

Wealth can be invested in services such as health and education

Fragile ecosystems destroyed

New facilities provided for tourists can be used by locals

Increased pollution from road and air traffic

6.2.2-Mangaing development

1. Define bilateral aid
2. Define multilateral aid
3. Define short-term emergency aid
4. Define long term developmental aid
5. Give two advantages of aid for LICs
6. Give two disadvantages of aid for LICs

6.3.1-Water demand
1. Give three reasons why water consumption has changed

2. Define the term water footprint

3. Define water security

10.1

Development and resource issues

Test yourself

6.3.2-Water sustainability

1. Give one-way dams can increase water sustainability
2. Give one-way water transfers can increase water sustainability
3. Give two reasons for over-abstraction of ground water
4. Give two solutions to reduce over-abstraction of ground water

6.4.1-NIC Regional development: India

1. Give one physical cause of India's regional development pattern
2. Give one political reason for India's regional development pattern
3. Give one cultural reason for India's regional development pattern.

6.4.2-UK regional development

1. Give one economic reason for UK's north-south divide
2. Give one social reason for UK's north-south divide
3. Give one political reason for UK's north-south divide

6.4.3-Manging UK development

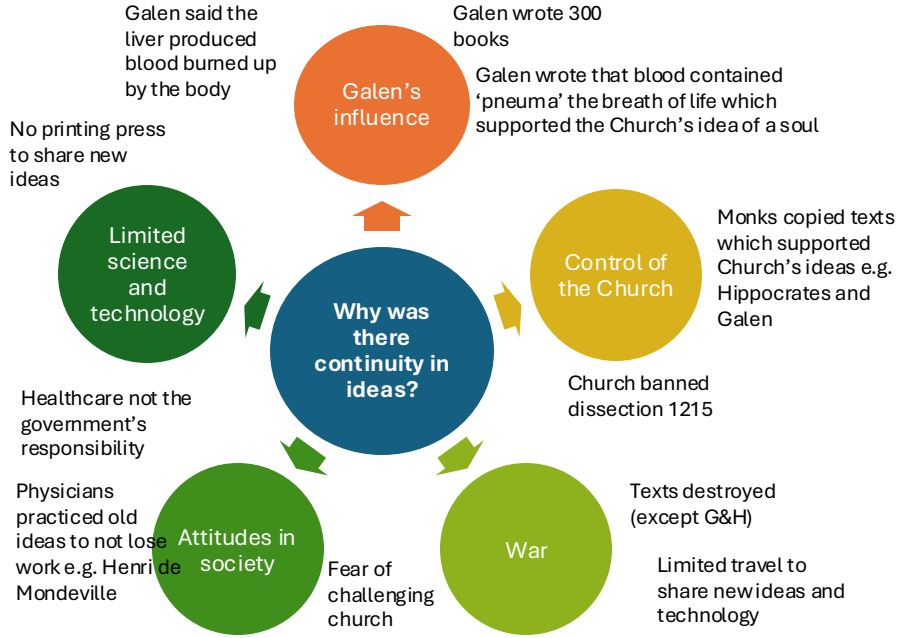
1. Give two national strategies to reduce UK's regional development pattern
2. Give two local strategies to reduce UK's regional development pattern

EDEXCEL GCSE HISTORY
Medicine in Britain, c1250-present

Topic 1: Medieval Medicine c1250-c1500

Ideas about the cause of illness and disease

Supernatural	**Religious** - sinners could be punished by God (e.g. famine or disease), the devil could send disease to test someone's faith or disease was sent by God to cleanse one's soul of sin. *E.g. Leprosy = punishment for sin. Banished from communities to leper houses or colonies.*
Supernatural	**Astrology** – Alignment of planets and stars caused disease. A physician would consult star charts, looking at when the patient was born and when they fell ill to diagnose illness.
Rational	**Four Humours** – Hippocrates created theory in ancient Greece. Blood, phlegm, black bile and yellow bile. Imbalance caused illness. **Urine Charts –** Diagnosed illness based on colour of urine, based on four humours.
Rational	**Miasma –** Bad air caused by rotting matter, swamps etc.



Treatment of illness and disease

Supernatural	**Religious treatments** – healing prayers, special mass, fasting, pilgrimages, touching holy relics, presenting an offering at a shrine.
Supernatural	**Supernatural remedies** – Chanting incantations, charms, amulets.
Rational	**Astrology** - Star charts helped decide treatments based on horoscopes and alignment of planets.
Rational	**Bloodletting** (Phlebotomy) – Cutting a vein, leeches, cupping.
Rational	**Purging** – Patients given emetic (to make them vomit), laxative or enema.
Rational	**Remedies –** Aloe vera, theriaca (spice mixture), blanc mangier, bathing.

Medics and caregivers

Physicians	Diagnosed and recommended treatment, didn't treat patients, used urine/astrological charts. Medical degree took 7-10 years. Most were clergymen (churchmen)
Apothecaries	Mixed herbal remedies, herbal manual *Materia Medica*.
Barber surgeons	Performed small surgeries e.g. pulling teeth and bleeding.

Hospitals

Role	Most provided hospitality not treatment 30% owned by Church, others funded by endowment
Staff	Staffed by monks and nuns
Patients	Treatment was prayer, rest, food. Infectious or terminal patients were rejected as were insane or pregnant patients. Most sick people were treated at home by woman mixing remedies.

Prevention of illness and disease

Religion -Live free of sin, regular prayers, confessions and tithes (money) to the Church

Hygiene – Regimen Sanitatis set of instructions by physicians to maintain good health e.g. bathing in public baths or stewes, homes smell nice.

Diet – Not eating too much, purging themselves. Hippocrates recommended an emetic once a fortnight in winter.

Purifying the air – Spread sweet herbs e.g. lavender as a bunch of flowers (posy) or pomander (locket). Local authorities tried to tackle miasma by making sure no rotting animals left lying around.

Case study: The Black Death 1348-9

Bubonic plague, carried by fleas. Symptoms buboes, fever, sneezing and coughing up blood. Killed within 3-5 days. 200 people buried a day in London. 1/3 population died

Causes	God punishment or alignment of planets Mars, Jupiter and Saturn. Miasma.
Treatment	Confess sins, ask for forgiveness. Bleeding and purging failed so physicians recommended strong smelling herbs e.g. aloe and myrrh. Lanced the buboes – sometimes worked.
Prevention	• Pray to God, fast, pilgrimage, self-flagellation (whipping). • Escape foul air, or carry posy or fragrant herbs. • Avoid bathing. • Doing joyful things e.g. listening to music. Avoid the disease. • New quarantine laws put in place to stop moving around – people new to an area had to stay away from everyone for 40 days. • Quarantine houses set up. Not well enforced • Stopped Cleaning the streets in the hope it would drive off miasma.

Y10 History GCSE Retrieval Questions

Topic 1: Medieval Medicine c1250-c1500

Question	Answer
1. What supernatural ideas did medieval people have about the cause of illness and disease? [2]	
2. When did the Church ban dissection?	
3. What were the Four Humours? How did they cause illness?	
4. What was miasma?	
5. How many books did Galen write?	
6. Give three examples of rational treatments for illness and disease	
7. Name three types of medieval medics	
8. What book contained herbal remedies	

Question	Answer
9. Who worked in medieval hospitals?	
10. Who was rejected from medieval hospitals?	
11. What was the name for the set of instructions physicians used to prescribe people to maintain good health?	
12. Name three other ways people tried to prevent illness	
13. What did people believe caused the Black Death?	
14. How did the government attempt to prevent the spread of the Black Death?	
15. Give two reasons why there was continuity in ideas in this period	

EDEXCEL GCSE HISTORY
Medicine in Britain, c1250-present

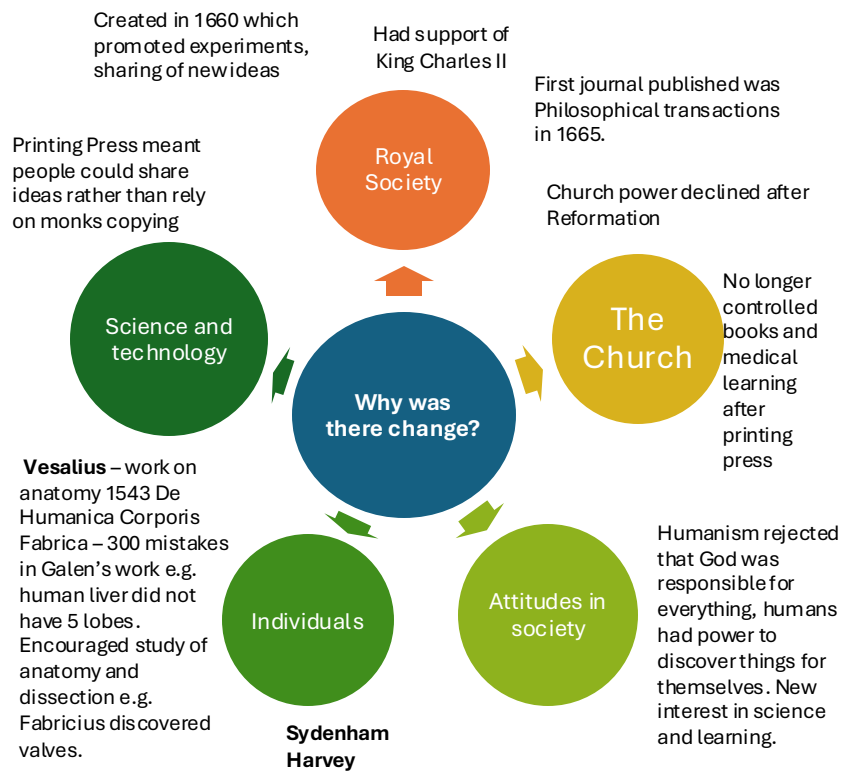
Topic 2: Renaissance c1500-c1700

Ideas about the cause of illness and disease

Continuity (same as medieval)	**Change** (new ideas)
• Miasma • In times of crisis (e.g. Great Plague) people returned to old ideas of God punishing mankind and astrology	• People stopped believing in Four Humours • Didn't use urine charts.

New ideas in diagnosis: Thomas Sydenham

- 1676 Medical textbook Observationes Medicae theorised illness caused by external factors (not imbalance of humours)
- need to observe patients' symptoms to diagnose not reading books



Treatment of illness and disease

Continuity	**Change**
• bleeding • purging • sweating to rebalance humours. • herbal remedies.	• **Transference** (disease could transfer to another object). • **Herbal remedies** chosen because of colour or shape e.g. red rash treated by drinking red wine. • **New remedies** from New World e.g. sarsaparilla, tea, coffee, nutmeg and tobacco used. • **Chemical cures**. Pharmacopoeia Londinensis 1618 manual of 2140 remedies including 122 different chemical preparations e.g. mercury and antimony.

Medics and caregivers

Physicians	**Continuity** Still trained at university, mostly still used books in Latin. **Change** New ideas about human anatomy and iatrochemistry were shared. Dissection was legalised but hard to get corpses. Physicians had access to more books due to printing press. Artists drew pictures of the anatomy.
Apothecaries and surgeons	**Continuity** Carried out simple operations and mixed remedies. **Change** Organised into guilds – men carried out apprenticeship, then became a journeyman then a master. Education increased, more surgery needed for battles. Both had to have a licence to practice.

Hospitals

Role	More people went to hospital with wounds and curable diseases. Many closed when Henry VIII dissolved monasteries. Hospitals specialised e.g. pest houses, plague houses and pox houses.
Staff	Physicians, apothecaries
Patients	Most of the sick still cared for at home.

Prevention of illness and disease

Continuity	**Change**
Regimen Sanitatis - still used. (set of instructions by physicians to maintain good health) **Cleanliness -** still important - home and body clean. Bathing was less fashionable due to spread of syphilis in bathhouses. Changed linen and rubbed selves down instead.	**Moderation** – moderation in all things e.g. avoiding draughts, exhaustion, rich and fatty foods, strong alcohol and being too lazy. **New instruments** – barometers and thermometers recorded weather conditions to see if there was a link with disease. **Government** - People fined for not cleaning street outside their house. Projects to drain swamps and bogs. Removing sewage and picking up rubbish was a punishment given to minor criminals.

Case study: The Great Plague of London 1665

Causes	**Astrology** unusual alignment between Saturn/Jupiter Oct 1664 and Mars/Saturn 12th Nov. **Punishment from God** to clean up his Kingdom. **Miasma** – rubbish and dunghills in warm weather.
Treatment	• Wrapped in cloths by a fire to sweat it out. • Transference – lancing with a chicken feather. • Herbal remedies – poultices or rubs. • Quack doctors mixed remedies.
Prevention	• Prayer and repentance, quarantine, carry pomander (ball of perfumed substances), diets e.g. garlic and sage fried in butter. • Plague doctors had special costumes (bird-like) masks with herbs. • Smoking tobacco, using plague water with herbs in e.g. mint and rosemary. • Government tried more to prevent spread e.g. Public meetings, fairs and large funerals were banned, 40,000 dogs and 200,000 cats killed. Searchers and wardens search houses and quarantine infected houses for 28 days and marked with red cross.

Case study: William Harvey

- Proved that blood flowed towards the heart in veins, contradicting Galen's idea that blood was made in the liver.
- Proved arteries and veins linked together and that blood passes through tiny passages (capillaries). Proved the heart acted as a pump.
- Harvey employed by Charles I as personal physician. Encouraged other scientists to experiment on actual bodies however it had no practical application.
- Textbooks continued to use Galen's ideas.

Y10 History GCSE Retrieval Questions

Topic 2: The Medical Renaissance c1500-c1700

Question	Answer
1. What did people continue to believe caused disease in the renaissance?	
2. What did Thomas Sydenham theorise?	
3. Who came first: Harvey, Vesalius or Sydenham?	
4. What did Vesalius discover?	
5. Give two reasons why there was change in ideas in the renaissance	
6. Name two new treatments in the renaissance	
7. What were the three main medical caregivers in this period?	

Question	Answer
8. Give two ways hospitals changed in the renaissance	
9. Name two new methods the government had in trying to prevent disease	
10. What did people believe caused the Great Plague?	
11. Name one method of treatment for the Great Plague	
12. Give two ways the government tried to prevent the spread of the plague	
13. What did William Harvey prove?	
14. Why was there little progress in treatment in this period?	

EDEXCEL GCSE HISTORY
Medicine in Britain, c1250-present

Topic 3: c1700-c1900

Ideas about the cause of illness and disease

Continuity	Change
Miasma	**Spontaneous Generation – 18th century** belief that decay created microbes. **Germ theory – Louis Pasteur 1861** • Proved spontaneous generation wrong – microbes in the air caused decay. • Theorised that microbes caused disease in the body as well. • *Many still believed in spontaneous generation – promoted by Dr Henry Bastion.* • Some scientists did believe Pasteur e.g. Joseph Lister. **Microbes - Robert Koch 1882** • First to identify microbes which caused disease e.g. bacteria for tuberculosis in 1882. • Published methods in identifying microbes • New method of growing bacteria in agar jelly in a petri dish as well as staining with industrial dyes. • Inspired other scientists to find bacteria which caused diphtheria, pneumonia, meningitis, the plague, tetanus etc. • Koch's proof that cholera caused by microbes in water was ignored by British government.

Hospitals

Role	• Operating theatres and specialist departments • New medical equipment, different wards
Staff	Doctors, surgeons, pharmacists, nurses
Patients	More patients went to hospital, became more unsanitary in the 18th century before they became cleaner in the 19th
Cleanliness	• Hospitals focused on cleaning using antiseptics • By 1900 focused on preventing germs to begin with – aseptic surgery • **Nightingale promoted the Pavilion plan**

Treatment of illness and disease

Continued to use herbal remedies and chemical cures. No longer used religious or astrological cures.

Medics and caregivers

Doctors	Physicians became doctors, trained at university, still mainly diagnosing illness and disease and recommending treatment.
Pharmacists	Apothecaries became chemists/pharmacists. Boots pharmacy opened in 1849.
Surgeons	New developments in surgery: **Anaesthetic – James Simpson 1847 discovered chloroform** which put patients to sleep, allowing lengthier and more complex surgeries, but caused more problems in terms of patients bleeding. **Antiseptic – Joseph Lister 1865** found **carbolic acid** sprayed in the air stopped wounds being infected. • Used Pasteur's knowledge about microbes causing disease. • Published in Lancet medical journal but didn't catch on quickly as many didn't believe germ theory, and carbolic spray left hands sore. • In the long term surgeons realised they could perform safe surgery. **Aseptic surgery** (means no bacteria able to be in the operating theatre at all) **-** By 1900 instruments were steam cleaned, operating theatres scrubbed, rubber gloves and surgical gowns introduced.
Nurses	**Florence Nightingale** • **1860** set up **Nightingale's school for Nursing** at St Thomas' Hospital, London. • Here nurses were trained mostly in sanitary matters. • Rigorous training meant nursing was turned into a profession, rather than a simple unskilled job. • The number and skill of nurses grew rapidly. • **1859 wrote Notes on Nursing** which set out the key role of a nurse and the importance of thorough training.

Prevention of illness and disease

Vaccinations	• **Jenner** developed first vaccination for smallpox **1796** (see case study) • **1879 Pasteur** proved that weakened strain of chicken cholera worked as a vaccine, so created vaccines for anthrax and rabies. • Inspired other scientists to find human vaccines. • **1890 Emil von Behring** developed vaccine against tetanus and diphtheria due to Koch's work on isolating microbes.
Public Health	**1860s** – government took more responsibility for public health due to vote increase and cholera. London 1300 miles of sewers built in 1865, slums demolished in Birmingham, Leeds court order to prevent sewage drained into river. **Public Health Act 1875** – city authorities had responsibilities to: • provide clean drinking water • dispose of sewage • build public toilets • employ public officer of health • provide public parks

Case study: Jenner's smallpox vaccine 1796

- Epidemics of smallpox 1722, 1723, 1740-42. 1796 3548 people died in London. People tried to inoculate themselves by rubbing pus from smallpox cut on the patient. Didn't always work.
- **Jenner's vaccination** – treated dairy maids for cowpox, realised they were immune to smallpox.
- 1796 infected James Phipps with cowpox, 6 weeks later infected with smallpox but didn't catch it.
- **1798** wrote findings in *An enquiry into the causes and effects of Vaiola Vaccinae*. Made instructions clear, many people against it but British government favoured it as cheaper than inoculations.
- **1852** – Government made vaccine compulsory
- **1872 -** government enforced the compulsory vaccine

Case study: Cholera in London 1854

- Caused diarrhoea and sickness, fatal, killed within 2-6 days, dehydration ruptured blood vessels and turned skin blue.
- Arrived in 1831, in London Feb 1832 5275 deaths.
- Believed miasmata caused it so cleaned up streets.
- **John Snow** believed it was caused by dirty drinking water, so proved it by creating spot map and found all deaths from **Broad Street Pump** (500 fatal cases within 200m). He removed handle and cholera went away. Pump close to a cesspit which had been leaking.
- **1855** presented findings to Parliament. 1860 government agreed to new sewer system planned by **Joseph Bazalgette**, not just due to Snow, also 'Great Stink' of 1858.
- Many still rejected his work in the short term, until Koch's microbes found.

Y10 History GCSE Retrieval Questions

Topic 3: c1700-c1900

Question	Answer
1. What did people continue to believe caused disease until the end of the 19th century?	
2. Who developed germ theory and when?	
3. What did Robert Koch discover and when?	
4. What did James Simpson discover and when?	
5. What did Joseph Lister discover and when?	
6. Name two ways Nightingale improved nursing	
7. What hospital layout did Nightingale promote which included separate wards, clean surfaces, windows and ventilation?	

Question	Answer
8. Name two changes made to hospitals by 1900	
9. Who developed the first vaccine, what for, when?	
10. Who developed the first 'true' vaccine? When?	
11. Describe two aspects of the Public Health Act 1875	
12. When did the government make the smallpox vaccine compulsory?	
13. Who discovered the cause of cholera?	
14. How did he discover the cause of cholera?	

EDEXCEL GCSE HISTORY
Medicine in Britain, c1250-present

Topic 4: Modern Medicine c1900-present

Ideas about the cause of illness and disease

Continuity
Germ theory (microbes cause disease)

Change
Genetics
- **1953** new electron microscopes meant DNA discovered by **Watson and Crick.**
- **1990 Human Genome Project** launched, 18 teams of scientists worked to map the human genome.
- By 2000 scientists had mapped the human genome and could find mistakes in DNA which caused illness.

Lifestyle and health
- By the 1950s doctors recognised *smoking* linked to lung cancer, now associated with other diseases e.g. high blood pressure, heart disease, gum disease.
- Second hand smoke linked to asthma.
- ***Diet*** advice given e.g. too much sugar and fat causes heart disease and type 2 diabetes.
- ***Alcohol*** can lead to kidney or liver disease.
- Diseases spread by ***intravenous drug* use** or ***unprotected sex***.
- ***Sun tanning*** can cause skin cancer.

New technology in diagnosis

Electron microscope – 1931 electron microscope developed by Ernst **Ruska** and Max **Knoll.** Optical microscopes could magnify 2000 times, but electron could magnify up to 10,000,000 times. Allowed scientists to see DNA.

Other technology

Blood tests **1930s**	blood sugar monitoring **1960s**
x-rays **1890s**	blood pressure monitors **1880s**
endoscopes **1900s**	ECGs **1900s**
MRI scans **1970s**	CT scans **1970s**
ultrasound scans **1940s**	

New treatment of illness and disease

Magic Bullets 1909	A chemical cure that attacked microbes in the body causing disease but leaving the body unharmed. **1909 – Salvarsan 606** (arsenic compound cured syphilis) discovered by Hata **1932 – Prontosil** discovered by Domagk **1938 – M&B 693** developed
Antibiotics	Anything that destroys or limits the growth of bacteria inside the body **1928 Penicillin** discovered by Fleming **1943 Streptomycin** discovered which worked against TB
New technology	• mass production of pills • development of capsules • hypodermic needles • insulin pumps. **Medical treatments** – Advanced x-rays for radiotherapy, smaller machines e.g. dialysis and heart bypasses, robotics (prosthetic limbs). **Surgical treatments** – Microsurgery (nerve endings and blood vessels), laparoscopic (keyhole) surgery using tiny cameras and surgical tools, robotic surgery e.g. brain surgery.

Developments in hospital care

NHS (1948)
- Paid for by **National Insurance**, everyone has access to the same treatment.
- Took over 1143 voluntary hospitals 1545 city hospitals.
- Many needed updating and more in South East than elsewhere.
- 1950s – GPs were not satisfactory, wait times increased and appointment times decreased.
- So in **1966 the GP's charter** was created to improve care which included GPs working in group practices and keeping up with medical research

Prevention of illness and disease

Vaccinations	**1942 – first national vaccination** campaign against **diphtheria.** Before this 3000 children died a year from diphtheria. Infection rates plummeted. **1956 – Salk developed vaccination for Polio** (8000 cases in 1950s), more effective one created in 1962. Last case of polio was 1984. Now we have mass vaccinations for many diseases e.g. meningitis, measles etc.
Government legislation	**1956 and 1968 - Clean Air Acts** triggered by bad smog in 1952 aimed to reduce pollution in cities **2007** – Illegal to smoke in public areas
Lifestyle campaigns	• Advertising warning against smoking, binge drinking, drug use and unprotected sex. • **Stoptober** and **Change4Life** campaign – healthier lifestyle.

Case study: Fleming, Florey and Chain and penicillin

1928 Fleming found that mould (penicillin) on petri dishes killed off staphylococcus bacteria. Joseph Lister had already used it to treat a patient. More noticed when Fleming published his findings. He didn't believe it could kill bacteria in people.
1940 Florey and Chain tested penicillin on mice and then in 1941 on a human policeman who had septicaemia. He showed signs of recovery but they couldn't make enough. Convinced 21 US pharmaceutical companies to mass produce it and by 1943 British companies were involved. Some penicillin resistant bacteria.

Case study: Lung Cancer

Affects mainly people over 40, highest among 70-74. 85% cases are smokers. 1973 26,000 deaths due to lung cancer.
Diagnosed using CT scan, then PET-CT scan using radioactive material to identify cancerous cells, or bronchoscopy to collect sample of lung cells.
Treated by removal, transplants, radiotherapy to shrink tumour, chemotherapy drugs to shrink tumour or prevent reoccurrence, genetic research is in development.
Prevented by 2005 ban on tobacco advertising, 2007 ban on smoking in workplaces, 2015 banned in cars carrying children, 2007 raised legal age to buy tobacco to 18.

Y10 History GCSE Retrieval Questions

Topic 4: Modern Medicine c1900-present

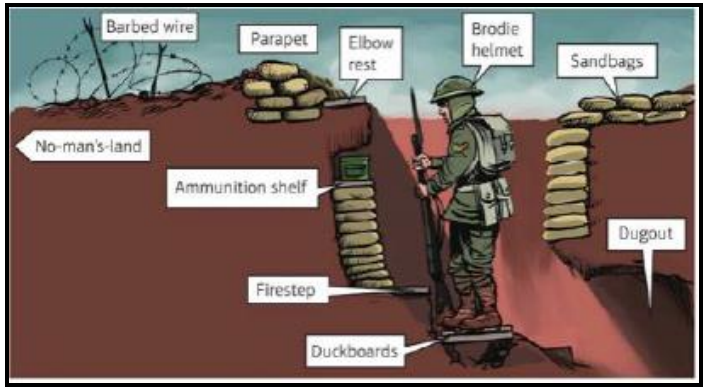
Question	Answer
1. When was the human genome project completed?	
2. What new ideas were there about the cause of disease in the 20th century?	
3. The electron microscope could magnify by how much?	
4. Name three other technological developments in diagnosing illness in the 20th century	
5. Name three new treatments from the 20th century	
6. Name two new surgical developments in the 20th century	
7. What were magic bullets? Name the first one	

Question13	Answer
8. In 1942 the first national vaccination campaign was launched, for which vaccine?	
9. Who developed the vaccine for polio and when was the last case?	
10. Name two other new developments in the prevention of illness in the 20th century	
11. Who discovered penicillin and when?	
12. Who developed penicillin into an antibiotic?	
13. How many US pharmaceutical companies were persuaded to mass produce penicillin?	
14. Name three ways that lung cancer is treated	
15. Name one way the government tried to prevent lung cancer	

EDEXCEL GCSE HISTORY
The British sector of the Western Front 1914-18

Key people

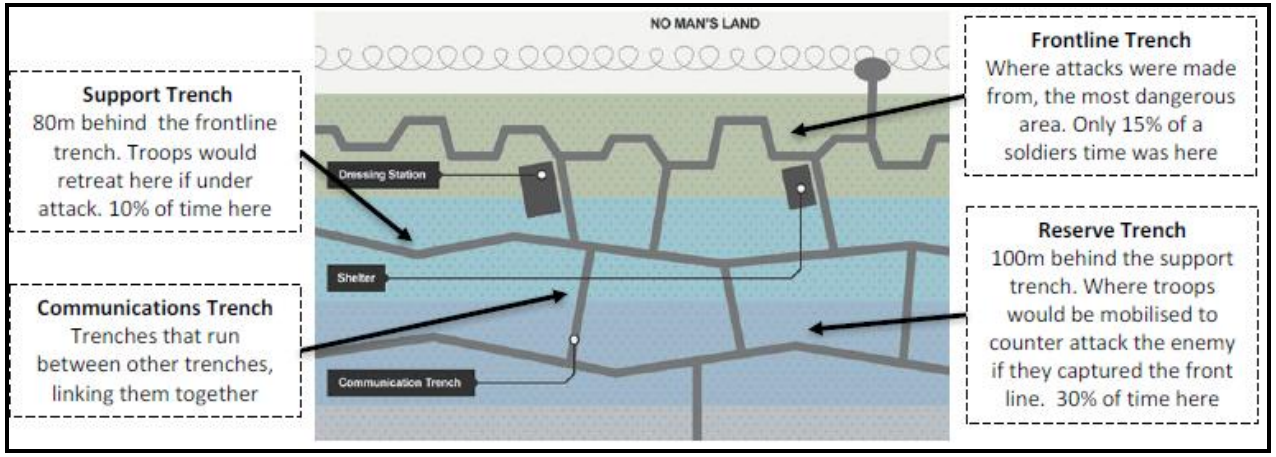
Harvey Cushing	Neurosurgeon who developed new procedures for brain injuries e.g. magnets and local anaesthetic.
Harold Gillies	Plastic surgeon who worked on facial reconstruction.
Oswald Hope Robertson	Stored 22 units of universal blood using **citrate glucose** solution and saved 11 of 20 men.
Geoffrey Keynes	Designed a portable blood transfusion kit with a device to prevent clotting.
Rous & Turner	Added **citrate glucose** solution to store blood for 4 weeks.
Hugh Owens Thomas	Invented the **Thomas Splint,** promoted by Colonel Robert Jones in WWI, increasing the survival rate for leg injuries from 20% to 82%.



The Chain of Evacuation

The method used to evacuate injured soldiers from the front line.

1. **Regimental Aid Post** (RAP) – first aid
2. **Advanced/Main Dressing Station** (ADS/MDS) kept wounded for 1 week
3. **Casualty Clearing Station** (CCS) – triaged patients, some operations
4. **Base Hospital** – near coast, treated wounded until return to war/home



Timeline of key events

1914	**4th August** Britain declared war on Germany
	27th Oct – First 6 FANYs arrived in France, but the British wouldn't use them.
	Oct-Nov: First Battle of Ypres – Britain lost 50,000 troops but held Ypres
1915	**Hill 60**: British tunnellers placed 5 mines under the hill and blew the top off.
	Second Battle of Ypres – First time the Germans used chlorine gas
	Nurses started working at the Advanced and Main Dressing Stations
1916	**Jan** – The British started using FANYs as ambulance drivers – first females
	Battle of the Somme – on the first day there were 57,000 British casualties.
	Arras tunnelling – The British built 2.5 miles of tunnels in 5 months – there were 25,000 men stationed underground with electric lights, running water, a railway & a hospital.
1917	**Battle of Arras** – The British advanced only 8 miles but with 160,000 casualties
	Third Battle of Ypres (Passchendaele) – British moved 7 miles with 245,000 casualties. In the CCS there were 379 doctors, 502 nurses and they operated on 30% of men.
	Battle of Cambrai – First large scale use of tanks (500), Oswald Hope Robinson stored 22 units of universal blood and saved 11/20 wounded men.
1918	**11th Nov** – armistice was signed ending WWI

Key terms

Ambulance	Horse-drawn and motor ambulances were used, both had problems.
Artillery	Large guns which fired shells (metal shells filled with explosives).
Aseptic surgery	Surgery where microbes are prevented from getting into a wound in the first place. By 1900 all surgery was aseptic using sterilisation.
BEF	The British Expeditionary Force – The professional British army.
FANY	First Aid Nursing Yeomanry was the first women's voluntary organisation to send women to the Western Front.
Field Ambulance	A mobile front line medical unit (not the same as an ambulance)
Gas attacks	Chlorine and Phosgene gas caused suffocation, mustard gas caused blistering. 6000 soldiers died from gas attacks
Gas gangrene	An infection which causes gas in gangrenous (dead) wounds.
Mobile X-ray units	There were 6 on the Western Front, a van with a tent attached.
RAMC	Royal Army Medical Corps - a specialist corps in the British Army which provides medical services to army personnel.
Shellshock	Now known as PTSD, caused tiredness, nightmares, loss of speech. 80,000 troops affected.
Shrapnel	Fragments of a shell or other object thrown out by an explosion.
Trench fever	Caused flu-like symptoms, affected 500,000 men, caused by lice.
Trench foot	Painful swelling caused by standing in cold water, caused gangrene.
Trench warfare	A type of combat where troops fight in trenches facing each other.

Y10 History GCSE Retrieval Questions

Topic 5: The British sector of the Western Front 1914-18

Question	Answer
1. Which trench was 80m behind the frontline trench?	
2. What was the name of the trenches which ran between other trenches?	
3. Name the four stages of the chain of evacuation	
4. Name two types of gas used in WWI	
5. At which battle was chlorine gas first used and in which year?	
6. How many casualties were there on the first day of the Battle of the Somme?	
7. How many miles of tunnels were dug under Arras by the British?	

Question	Answer
8. How many soldiers died from gas attacks in WWI?	
9. The Thomas Splint increased the survival rate for leg wounds from ____ to ____?	
10. How many mobile x ray units were there on the Western Front?	
11. What branch of the army was responsible for medical care?	
12. Name one problem with ambulances on the Western Front	
13. Who created the first blood bank and at which battle?	
14. What was introduced which reduced fatal headwounds?	
15. Name three illnesses soldiers got from the trench environment	

Year 10 Maths Cycle 1

Algebra

What do I need to be able to do?

By the end of this unit you should be able to:

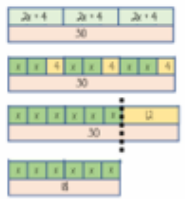
- Form and solve equations and inequalities
- Represent and interpret solutions on a number line as inequalities
- Draw straight line graphs and find solutions to equations
- Form and solve equations and inequalities with unknowns on both sides

Keywords

Solution: a value we can put in place of a variable that makes the equation true
Variable: a symbol for a number we don't know yet
Equation: an equation says that two things are equal – it will have an equals sign =
Expression: numbers, symbols and operators grouped together to show the value of something
Identity: An equation where both sides have variables that cause the same answer includes ≡
Linear: an equation or function that is the equation of a straight line
Intersection: the point that two lines meet
Inequality: an inequality compares two values showing if one is greater than, less than or equal to another

Solve equations (R)

$3(2x + 4) = 30$



$3(2x + 4) = 30$ — Expand the brackets

$6x + 12 = 30$

$-12 \quad -12$

$6x = 18$

$-6 \quad -6$

$x = 3$

Substitute to check your answer. This could be negative or a fraction or decimal

Form and solve inequalities (R)

Two more than treble my number is greater than 11

Form: $x \rightarrow \times 3 \rightarrow +2 \rightarrow 11$ — $3x + 2 > 11$

Solve: $x \leftarrow -3 \leftarrow -2 \leftarrow 11$ — $x > 3$

Solutions on a number line

$x < 1$ — Both represent values less than 1

$x \leq 1$ — Includes the value 1

$x > 1$ — Both represent values more than 1

$x \geq 1$ — Includes the value 1

● Includes the value it sits above
○ Does NOT include the value it sits above

Values less than or equal to 3 but also more than −1

$-1 < x \leq 3$

This includes the integer values 0, 1, 2, 3

Plotting straight line graphs (R)

$y = 3x - 1$ → 3 × the x coordinate then − 1

x	−1	0	3
y	−10	−1	8

Draw a table to display this information

This represents a coordinate pair (−3, −10)

You only need two points to form a straight line

Plotting more points helps you decide if your calculations are correct (if they do make a straight line)

Remember to join the points to make a line

Find solutions graphically

For linear equations there is only one point the graph meets the x value

$x = 2$, $y = 4$

These two lines will cross at (2,4) because they are just x- and y- they are parallel to axes and meet in one place

$y = 3x - 1$

$3x - 1 = 8$

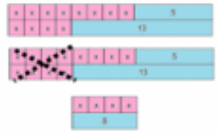
Remember equation of a line format is $y = mx + c$

The solution is the point the two lines meet

(3,8)

Equations: unknown on both sides (R)

$8x + 5 = 4x + 13$



$8x + 5 = 4x + 13$

$-4x \quad -4x$

$4x + 5 = 13$

$-5 \quad -5$

$4x = 8$

$\div 4 \quad \div 4$

$x = 2$

Inequalities: unknown on both sides

$8x + 5 \leq 4x + 13 \longrightarrow x \leq 2$

Any value 2 or less will satisfy this inequality

Ratio and Scale

What do I need to be able to do?

By the end of this unit you should be able to:

- Compare quantities using ratio
- Link ratios and fractions and make comparisons
- Share in a given ratio
- Link Ratio and scales and graphs
- Solve problems with currency conversions
- Solve 'best buy' problems
- Combine ratios

Keywords

Ratio: a statement of how two numbers compare
Equivalent: of equal value
Proportion: a statement that links two ratios
Integer: whole number, can be positive, negative or zero
Fraction: represents how many parts of a whole
Denominator: the number below the line on a fraction. The number represent the total number of parts
Numerator: the number above the line on a fraction. The top number. Represents how many parts are taken
Origin: (0,0) on a graph. The point the two axes cross
Gradient: The steepness of a line

Compare with ratio (R)

"For every dog there are 2 cats"

Dogs : Cats

1 : 2

The ratio has to be written in the same order as the information is given

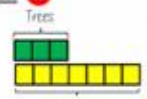
e.g. 2 1 would represent 2 dogs for every 1 cat

Units have the be of the same value to compare ratios

Ratios and fraction (R)

Trees : Flowers

3 : 7



Ratio

Fraction of trees

Number of parts of in group / Total number of parts = 3 / 10

Fraction

Sharing a whole into a given ratio (R)

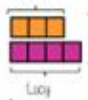
James and Lucy share £350 in the ratio 3:4

Work out how much each person earns

Model the Question

James : Lucy

3 : 4



£350

Find the value of one part

Whole: £350

7 parts to share between (3 James, 4 Lucy)

£350 ÷ 7 = £50

□ = one part = £50

Put back into the question

James : Lucy

3 : 4

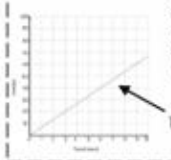
×50 ×50

£150 £200

James = 3 × £50 = £150

Lucy = 4 × £50 = £200

Ratio and graphs (R)



Graphs with a constant ratio are directly proportional

- Form a straight line
- Pass through (0,0)

The gradient is the constant ratio

Ratio and scale (R)

A picture of a car is drawn with a scale of 1:30

The car image is 10cm

Image	Real life
1cm	30cm
10cm	300cm

Conversion between currencies (R)

£1 = 90 Rupees

Currency is directly proportional

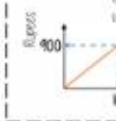
For every £1 I have 90 Rupees

£1 = 90 Rupees

×10 ÷10

£10 = 900 Rupees

Currency can be converted using a conversion graph



Convert 630 Rupees into Pounds

£1 = 90 Rupees

÷7 ÷7

£7 = 630 Rupees

630 ÷ 90 = 7

Ratios in 1n and n:1

This is asking you to cancel down until the part indicated represents 1

Show the ratio 4:20 in the ratio of 1n

The question states that this part has to be 1 and therefore divide by 4

4 : 20

1 : 5

This has to be divided by 4 too – to keep in proportion

The n part does not have to be an integer for this type of question

Best buys

4 pens costs £2.60

10 pens costs £6.00

"1 pen costs…" £2.60 ÷ 4 = £0.65 | £6.00 ÷ 10 = £0.60

"1 pound buys…" 4 ÷ 2.60 = 1.54 pens | 10 ÷ 6 = 1.67 pens

You could work out how much 40 pens are and then compare

Compare the solution in the context of the question

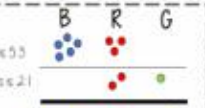
The best value has the lowest cost 'per pen'

The best value means £1 buys you more pens

Combining ratios

The ratio of Blue counters to Red counters is 5:3

The ratio of Red counters to Green counters is 2:1



B R G

Ratio of Blue to Red to Green

10 : 6 : 3

Use equivalent ratios to allow comparison of the group that is common to both statements

Lowest common multiple of the ratio both statements share

Page 1: Algebra

1. Solve $5x + 4 = 39$.
2. Solve $4(2x-1)=28$.
3. Solve $3x+7=2x+15$.
4. Solve $7x-4=3x+20$.
5. Form an inequality for: Five more than a number is less than 17.
6. Solve $2x+3>11$.
7. Solve $5x-7\leq 18$.
8. Represent $x<4$ on a number line.
9. Complete the table for $y=2x+1$ when $x=-2,0,3$.
10. Plot the points from Q9 and state the gradient.
11. Find the coordinates where $y=2x+1$ and $y=7$ intersect.
12. Expand $2a(4a - 3b)$
13. Explain the difference between an equation and an inequality.
14. State whether $4x+6=4(x+1.5)$ is an identity or a single-solution equation.
15. Solve $6x+8\leq 2x+24$.

Page 2: Ratio and Scale

1. Simplify 15:25.
2. Ratio boys:girls = 3:5. Write a comparison statement.
3. Ratio red:blue = 2:7. What fraction are red?
4. Share £360 in ratio 4:5.
5. Share £560 in ratio 3:2:2.
6. Scale 1:50,000. What does 4 cm represent?
7. Model scale 1:20, model length 12 cm. Real length?
8. Convert £25 to rupees if £1=90 rupees.
9. Convert 1350 rupees to pounds if £1=90 rupees.
10. Best buy: 6 pens £3.90 or 10 pens £6.20?
11. Combine A:B=2:3 and B:C=4:5.
12. Write 8:40 in form 1:n.
13. Recipe ratio flour:sugar=5:2. How much sugar for 750 g flour?
14. Graph through (0,0) and (4,20): state constant ratio.
15. Why do direct proportion graphs pass through origin?

Percentages

What do I need to be able to do?

By the end of this unit you should be able to:

- Convert and compare FDP
- Work out percentages of amounts
- Increase/ decrease by a given percentage
- Express one number as a percentage
- Calculate simple and compound interest
- Calculate repeated percentage change
- Find the original value
- Solve problems with growth and decay

Keywords

Exponent: how many times we use a number in multiplication. It is written as a power
Compound interest: calculating interest on both the amount plus previous interest
Depreciation: a decrease in the value of something over time
Growth: where a value increases in proportion to its current value such as doubling
Decay: the process of reducing an amount by a constant percentage rate over time
Multiplier: the number you are multiplying by
Equivalent: of equal value

Compare FDP (R)

Comparisons are easier in the same format

$\frac{70}{100}$ → This also means 70 ÷ 100 → 70 out of 100 squares → 70 'hundredths' = 7 'tenths' = 0.7 → 70 hundredths = 70%

Using a calculator: ■/□ → S⇔D → Convert to a decimal

This will give you the answer in the simplest form

× 100 converts to a percentage

Be careful of recurring decimals
e.g. $\frac{1}{3}$ = 0.3333333
= $0.\dot{3}$
The dot above the 3

Fraction/ Percentage of amount (R)

Find $\frac{3}{5}$ of £60

£60 → £12 £12 £12 £12 £12 → £36

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

10% of £60 = £6
50% of £60 = £30
60% of £60 = £36

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

60% of £60
= 0.6 × 60
= £36

Percentage increase/decrease (R)

100% → 42% Decrease by 58%

100% − 58% = 42%
100 − 0.58 = 0.42
Multiplier: Less than 1

100% → 100% + 12% = 112%
100 × 0.12 = 112
Multiplier: More than 1

Express as a percentage (R)

27 per every 50 shaded → $\frac{27}{50}$
54 per every 100 shaded → $\frac{54}{100}$ → 54%

$\frac{13}{30}$ → ■/□ → $\frac{13}{30}$ → × 100 → 43.3333...% → 43%

Can't use equivalence easily to find 'per hundred'

Decimal percentages are still a percentage

Simple and compound interest

Simple interest

James invests £2000 at 5% simple interest

100% → 5%
£2000 → £100

The original value increases by this amount every year

Compound interest

Tess invests £100 at 10% compound interest for 3 years

£100 Original amount
£100 → 10% → £110 Y1 £110
£110 → 10% → £121 Y2 £121
£121 → 10% → £133.10 Y3 £133.10

The multiplier 1.10 repeats each year

Repeated percentage change

Compound interest

Tess invests £100 at 10% compound interest for 3 years

£100 × 1.10 × 1.10 × 1.10

£100 × 1.10 ³

Original amount
Repeated multiplier
Number of occurrences

Depreciation

Depreciation calculations use multipliers **less than** 1

Multipliers are commutative – an overall multiplier effect can be calculated by combining the multipliers separately

e.g. Increase of 10% then a reduction of 10%: × 1.10 × 0.9 → × 0.99 The multiplier

Growth and decay

Compound growth | Compound decay

Compound growth and compound decay are exponential graphs

Decay – the values get closer to 0
The constant multiplier is less than one

Growth – the values increase exponentially
The constant multiplier is more than one

Find the original value

Percentage calculations

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.

Original × 0.6 = 24
24 ÷ 0.6 = 40 marks
10% = 6
100% = 40

60% → 24 Total questions on test

A car sold for a profit. £3000 with a profit of 20%. How much was the car originally?

100% → 120% → £3000

Original × 1.2 = 3000
120% = £3000
10% = £250
100% = £2500

Foundation Tier Formulae Sheet

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

$$\text{Area of a trapezium} = \frac{1}{2}(a+b)h$$

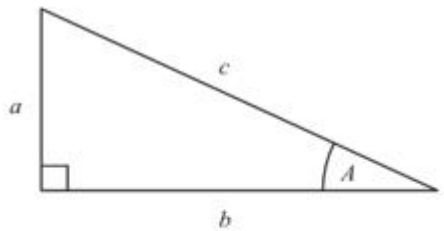
Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

$$\text{Total accrued} = P\left(1 + \frac{r}{100}\right)^n$$

Probability

Where P (A) is the probability of outcome A and P (B) is the probability of outcome B:

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

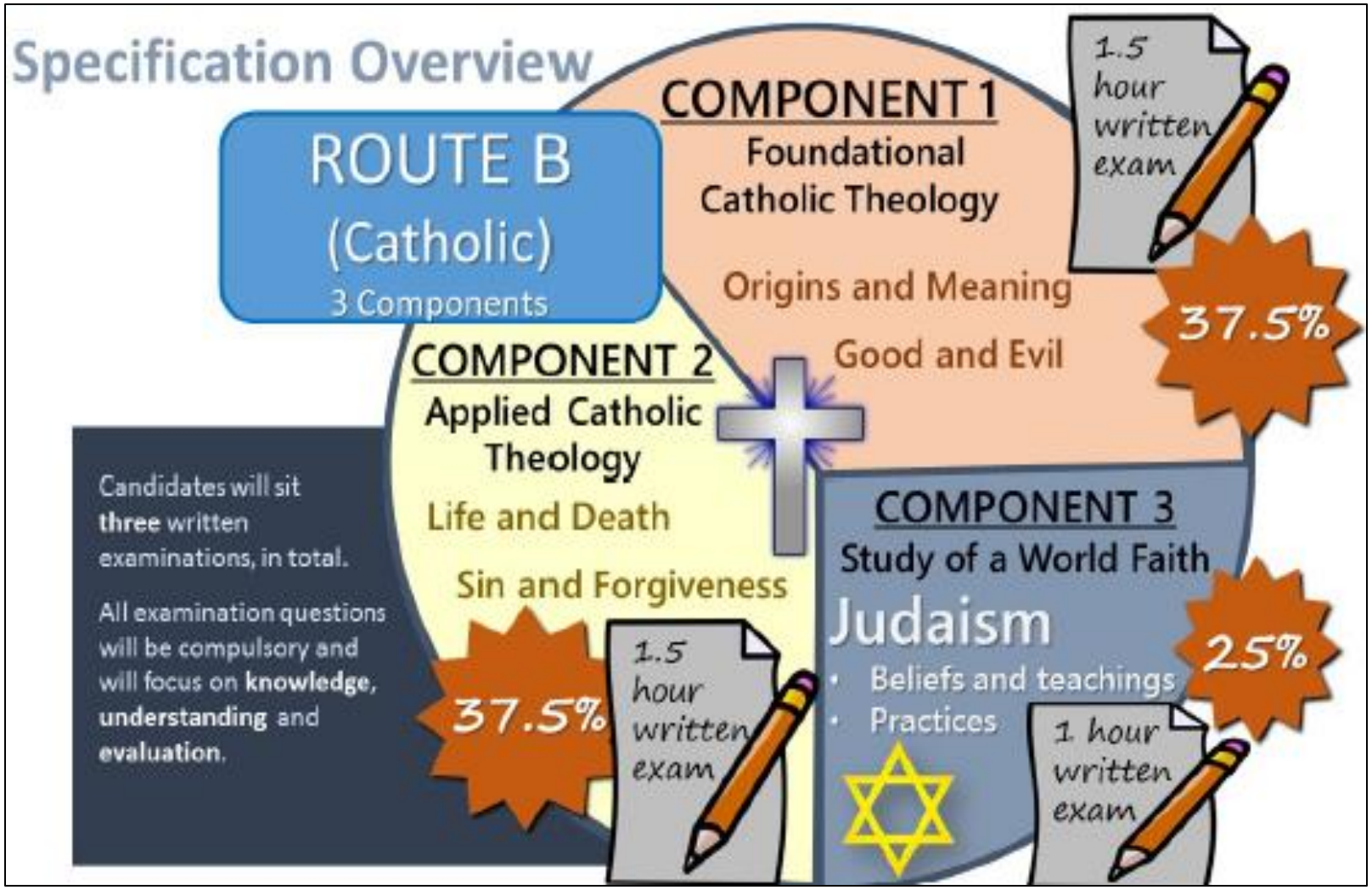
Page 3: Percentages

1. Convert 3/4 to a percentage.
2. Convert 0.65 to a percentage.
3. Convert 72% to a decimal.
4. Find 35% of £240.
5. Find 4/5 of £150.
6. Increase £80 by 15%.
7. Decrease £350 by 12%.
8. Laptop £500 to £575. Percentage increase?
9. Car £8000 to £6800. Percentage decrease?
10. Write 7/20 as a percentage.
11. £460 is 115% of original. Find original value.
12. Simple interest on £1200 at 4% for 5 years.
13. £500 at 8% compound interest for 2 years.
14. £200 multiplied by 1.05 for 3 years.
15. Difference between simple and compound interest.

Page 4: GCSE Formula Sheet

1. Area of trapezium sides 8 cm and 14 cm, height 5 cm.
2. Area of circle radius 6 cm.
3. Circumference diameter 12 cm.
4. Circumference radius 9 cm.
5. Prism cross-sectional area 15 cm^2, length 8 cm. Volume?
6. Prism volume 180 cm^3, length 12 cm. Cross-sectional area?
7. Right triangle a=6,b=8. Find c.
8. Right triangle c=13,a=5. Find b.
9. Find sin A if opposite=7, hypotenuse=25.
10. Find cos A if adjacent=12, hypotenuse=13.
11. Find tan A if opposite=9, adjacent=12.
12. Find angle A if sinA=3/5.
13. £1500 at 3% compound interest for 4 years.
14. $P(A)=0.4, P(B)=0.5, P(A\cap B)=0.15$. Find P(A or B).
15. When is $P(A \text{ or } B)=P(A)+P(B)-P(A\cap B)$ used?

Year 10 Homework



Religious Education

Judaism Key terms

Key concept	Meaning	Image
Synagogue	House of assembly. The building for public Jewish worship, prayer, study and assembly	
Shekhinah	The place where Gods presence can rest and be felt	
Shabbat	Day of spiritual renewal and rest. Beginning sunset Friday and closing at nightfall on Saturday	
Kosher	Means “Fit” or “proper”. Foods that are allowed to be eaten according to Leviticus 11. It is also used to refer to the purity of ritual objects such as Torah scrolls.	
Torah	The five books of Moses (Genesis, Exodus, Leviticus, Numbers and Deuteronomy) Regarded as the holiest books of the Tenakh	
Mitzvot	Duties (such as the 613 in the Torah) or good deeds	
Messiah	The anointed one who Jews believe will bring a new era or age for humankind. This will include rebuilding the temple and bringing universal peace.	
Covenant	A promise or agreement between two parties. Covenants were made between God with Noah, Abraham and Moses.	

Judaism Beliefs 1/2

Orthodox Judaism: a branch of Judaism that follow Jewish laws and practices strictly.
Reform Judaism: a branch of Judaism that take a liberal approach to Jewish law.

Jewish beliefs about the Nature of God

Jews are **monotheist** – they believe in **one God** which came from the covenant with Abraham. This teaching comes from the **Shema (daily prayer)** and the first commandment **"You shall have no gods before me".** They believe God has certain characteristics such as **omnipotence** (power) and **omniscience** (knowledge).

Jews believe that God is a creator. God created the world **'ex nihilo'** which means from nothing, and this teaching comes from the first book of the Torah called Genesis which says **"In the beginning God created the heavens and the earth".** Jews believe that God created the world in 6 days and rested on the 7th. Jews **celebrate Sabbath** as a day of rest to remember the day that God created the world. They celebrate **Rosh Hashanah**, which celebrates creation.

Jews believe God is a **lawgiver**. He gave the **10 commandments** to Moses on Mt Sinai as part of the **new covenant** with Moses. In addition, God gave **603 mitzvot**, which are actions that Jews must perform or avoid. Jews are expected to follow **613 laws known as mitzvot** to have a good relationship with God.

Jews believe God is a **judge.** He judges people on their actions. This is shown in the **Torah in the story of Adam and Eve**. Jews have a festival called **'Rosh Hashanah' and 'Yom Kippur'** where they ask God for forgiveness. Jewish people look ahead to the New Year on Rosh Hashanah and cast aside any sin from the previous year.

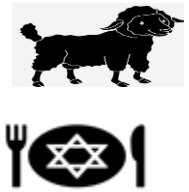
A **covenant is a promise or an agreement.**
The Jewish people believe that God has made many covenants with them throughout history.

Abrahamic Covenant

- Jews believe that G-d made a special covenant with Abraham that was the beginning of the Jewish nation.
- The covenant had three main parts:

1. **The Promised Land** – in the **book of Genesis God promised** Abraham and his descendants a new home, which is now referred to as Israel.
2. **Descendants** – G-d promised Abraham that he would build a great nation from him. The **book of Genesis** refers to Abraham as the **'father of many nations'**
3. **Circumcision** – the sign of the covenant was circumcision. Orthodox Jewish males show their loyalty by being circumcised at eight days old.

- Abraham is important to Jews because he is the **patriarch (founder father)**. He was obedient to God through **monotheism** and willingness to sacrifice his son, Isaac. He kept the covenant with God and all male Jews have **brit milah**. He is the foundation of the **Shema (daily prayer)** which states **"the Lord is one and only"**



Importance of the Ten Commandments & Mitzvot)

- The Ten Commandments are important to Jewish people because **they are the commandments that apply to all Jews including men,** women and children. Jews have 613 mitzvot, however, the Ten Commandments are the main rules.
- The first commandment links to **monotheism** and the **Shema** as it teaches that Jews shall worship no other gods.
- By following the commandments Jewish people can have a much better relationship with G-d and with others e.g. **'Do not commit adultery'** and **'Do not steal'**
- Jewish people believe that **God will judge them on their actions.** If they follow the commandments, then God will judge them kindly. They are important because the commandments are what the Jewish people must do to fulfil their part of the **covenant that Moses made with God.**
- The mitzvot are **actions that Jews must perform or avoid**. They ensure rules such as kosher are followed.
- The mitzvot allow Jewish people to make good choices and use their free will correctly.

Covenant with Moses

- Moses is important because God chose him to help the **Jews escape slavery in Egypt**. Moses delivered the Jews out of Egypt and through the Red Sea.
- Moses is also important to Jewish people because Moses made a new **covenant with God** on Mount Sinai: **"We will do everything the Lord has said"** This covenant meant Jewish people have a duty to follow the Torah and the commandments of God. Moses is important because he was given the **Torah (written Jewish Law)** from God. Moses was also given the other 603 mitzvot to guide the Jewish people on how to live a good and faithful life.
- Moses is also important because he met the Shekinah on Mount Sinai when he received the laws directly from God: **"The glory of the LORD rested on Mount Sinai…Moses entered the cloud as he went up to the mountain."** (Exodus)
- The actions of Moses in Egypt are the foundation of the Passover festival (Pesach)

Judaism Beliefs 2/2

Sanctity of Life & Pikuach Nefesh

- Jews believe that **life is sacred and belongs to God.** The **book of Genesis** teaches that G-d created all life, which shows that life is important.
- Life is so important that Jews believe that most of Jewish law can and should **be set aside to save or protect a life.**
- Saving human life overrides all the other commandments (mitzvot) in Judaism. The Torah teaches: **"Do not stand by while your neighbour's life is at risk." (Leviticus)**
- A Jewish person is not just permitted to break the law; they are required to! Any law that conflicts with life or health should be disregarded: **"It is a religious duty to disregard the Sabbath for any person afflicted with an illness that may prove dangerous" *Talmud***
- Genesis teaches humans are created in the **image of God** / Jeremiah – **"before I formed you…"**

The Shekinah (The place where Gods presence can rest and be felt)

- The word Shekinah is another aspect of God and **means "the dwelling," or "the Divine Presence"** of God. It refers to God being very close to the Jewish nation; He lives amongst them. It shows that G-d is always near and a part of what is happening to the Jewish people.
- The Shekinah is referred to in the **Torah**. It is sometimes shown as a **cloud,** which comes down to the earth and reaches out. It is usually a very frightening experience for those involved because God is so glorious.
- **Moses met the Shekinah on Mount Sinai.** It is also shown as being with the Jewish nation throughout the **Exodus from Egypt** (when they escaped slavery under Pharaoh). It is the spirit of God who supports and guides the Jews through the tough journey into freedom.

The Tanakh and The Talmud

- The word **Tanakh** is an acronym made from the first letters of : **T** for **Torah** – the Law, which includes the first five books **the three main parts of the Hebrew Bible** of Moses (like Genesis and Exodus). **N** for **Nevi'im** – the Prophets, which tell the stories and messages of prophets like Isaiah, Elijah, and Jeremiah. **K** for **Ketuvim** – the Writings, which include poems, songs, and wise sayings, like Psalms, Proverbs, and Job. So, **Tanakh** = **T**orah + **N**evi'im + **K**etuvim.
- The **Talmud** is a collection of Jewish discussions and debates about how to understand and follow the laws in the Tanakh. It was written later and helps explain what the Torah means and how it should be followed in everyday life.

Different Jewish beliefs about life after death

- Orthodox Jews believe in the **resurrection of the body.** They believe there will be a physical resurrection where they will be given a new body after death to live again.
- Reform Jews do not believe the body will be resurrected, life after death will be more of a **spiritual resurrection (the soul will live on).** They also believe the dead person will live on through the good they have done in the memories of the people they leave behind.
- Jews believe that when people leave this world, they are **rewarded or punished** for what they have done during their lives. Jews believe that **God is a judge** who will judge them on their actions.
- Orthodox Jews believe in the **Olam Ha Ba** which is the world to come.
- Talmud teaches: **"The world is like a lobby before the Olam Ha-Ba"**
- This will either be **Gan Eden (heaven**) or **Gahenna (hell).**
- Many Reform Jews **reject life after death completely** and focus on living a good Jewish life on earth by attending synagogue or taking part in rituals like Bar Mitzvah.
- Some Jews believe in **Sheol** – a place of darkness where all the dead will go before, they are judged by God on how well they have kept the mitzvot in their lives.

Different Jewish beliefs about the Messiah

- The Messiah for Jews is the **anointed one** who Jews believe will bring a new era or age for humankind. This will include rebuilding the temple and bringing universal peace.
- **Orthodox Jews** believe that in every generation there is a **descendent of King David who has the potential to be the Messiah.**
- This person will be directed by God to rule over all humanity with kindness and justice. He will also **follow and uphold the Jewish written law (The Torah)** and will be the ultimate teacher of it.
- He will **rebuild the Temple** that was destroyed in 70AD and bring Jews back to the land of Israel – this comes from the **book of Isaiah.**
- In contrast, **Reform Judaism**, rather than believing in a single, male descendant of King David who will be the Messiah, urges us to be more active in bringing a time of peace on earth through our actions.
- Instead of a particular person, they believe **Jewish people have the power to bring peace on earth through their actions and how they react to other people.** Reform Jews have the view that we should act the way we hope a messiah would act.

Exam 3 (Judaism)

A) Jewish Beliefs

1. Define Messiah
2. Define Covenant
3. Define mitzvot
4. What are the 4 characteristics of the Almighty in Judaism?
5. Describe the three promises made in the Abrahamic covenant
6. What are two reasons why the Ten Commandments are important in Judaism?
7. Explain why free will is important fro following the 613 mitzvot
8. What happened during the Covenant with Moses at Sinai?
9. What are two SOWA's that explain why Jews believe in sanctity of life?
10. What is meant by the term Pikuach Nefesh and how does this link to sanctity of life
11. What are two examples of the Shekhinah in the Torah?
12. What are two Orthodox Jewish views on life after death?
13. What are two Reform Jewish views on life after death?
14. What are Orthodox Jewish views on the nature and role of the Messiah?
15. What are Reform Jewish views on the nature and role of the Messiah?

Judaism Practices 1/2

Rituals

Wedding Ceremony

- The **badeken** is the veiling of the bride by the groom. The ceremony takes place under the **chuppah (canopy),** a **symbol of the home** that the new couple will build together.
- Two cups of wine are used in the wedding ceremony. The groom gives a ring and makes a vow to his wife.
- The reading of the **ketubah (marriage contract).** The Seven Blessings are then recited over the second cup of wine. A glass is now placed on the floor, and the groom shatters it with his foot and they shout **"mazel tov".** This serves as an expression of sadness at the **destruction of the Temple in Jerusalem.**

Mourning rituals

- **Onan:** Onan is the period right after a person dies, before the funeral, when close family members focus only on arranging the burial and are not expected to take part in normal religious duties. **Kaddish:** The Kaddish is a special prayer said by mourners to honour the person who has died and to praise God, often recited daily in the synagogue. **Shiva (Sheva):** Shiva is the first seven days of mourning after the funeral, when family members stay at home together, remember their loved one, and receive visitors who come to offer support. **Yahrzeit**: Yahrzeit is the anniversary of a person's death each year, marked by lighting a candle and remembering them, often including saying Kaddish. **Role of the Chevra Kaddisha:** The Chevra Kaddisha is a group in the Jewish community who care for the body after death, preparing it respectfully for burial according to religious traditions.
- There are five stages to mourning ritual. 1) Arrangements are made as soon as possible, preferably **24 hours.** Body is washed and dressed in a simple **white shroud (cloth).** The body is placed in a simple coffin and it is **buried not cremated.** Mourners make a small **tear in their clothes.** 2-3) A seven-day period following the burial known as **Shivah** is carried out; families will stay at home, mirrors are covered, men do not shave and people sit on **low chairs**.4) The 30-day mourning period begins. 5) The First Year (observed only by the children of the deceased).

Rituals

Bar and Bat Mitzvah (Bat Chayil – daughter of valour)

- Bar Mitzvah means **'Son of the Commandment'** and Bat Mitzvah means **daughter of the commandment.** It shows that they have reached adulthood in the eyes of the Jewish community. The commandments were given by God to Moses and are part of the **covenant agreement.**

- The **child now becomes an adult in the eyes of the Jewish community**. They have full responsibility and can take part in all the activities in the synagogue such as carrying the Torah scrolls and reading from the bimah.
- The ceremony means that the **child can now observe all the 613 mitzvot.** Prior to 13 years (boys) and 12 years (girls) of age the child only needed to follow the Ten Commandments but now they can take a fuller part in the Jewish community. A boy can become part of the Minyan in an orthodox synagogue.
- **Bat Chayil** is often used in Orthodox communities as a more informal celebration focusing on character and faith, whereas Reform communities usually hold a Bat Mitzvah.
- A Bat Chayil celebration usually includes a synagogue gathering, and sometimes a speech or presentation by the girl, focusing on her commitment to Jewish values

Festivals

Jewish Festivals

Rosh Hashanah - Wine is blessed and sliced apple in honey eaten. Round challah is prepared. **Shofar horn blown 100 times** to signify the start of the festival. Crumbs of challah thrown into water representing the sins Jews must throw away**. It is a High Holy Day**, which means it is commanded (mitzvot) that celebrates creation in **Genesis.** It is a time to plan and prepare for the year ahead. Happy as celebrates New Year and serious as you plan for the year ahead.

Yom Kippur – Known as the 'Day Atonement'**.** All Jewish people attend synagogue. Prayer and reflection asking God for forgiveness. Doors of the Holy Ark are open showing God is present. **Mikveh pool – ritual cleaning**. It is a **High Holy Day**, which means it is commanded (mitzvot). It is referred to as the **'Sabbath of Sabbaths'** and Jews **fast for 25 hours.** All Jews follow Sabbath laws on this day.

Passover (Pesach) - House thoroughly cleaned. All **yeast products removed**. Flat bread is eaten & **Seder meal** – lamb bone, salt water, bitter herbs, charoset and wine. **God commands Jewish people to celebrate Passover in the Torah**, namely the book of Exodus. It retells the story and ensures that the Jewish faith and religion are passed on. Lamb bone reminder of the lamb sacrificed in Passover. When they taste the bitter herbs on the **Seder plate** they are able to think about the bitterness of slavery. Helps Jews remember their freedom and entering the Promised Land.

Sukkot - Build tents/huts. Leaves, fruit and veg displayed. Torah is celebrated – singing/dance. Palm leaves and Etrog fruit waved in six directions. Jews are commanded to celebrate this festival in the Torah. **"You shall dwell in sukkot seven days so that you will know how the Israelites lived"**. It is one of the 613 mitzvot and helps Jews connect with their ancestors.

Rituals

Brit milah (circumcision ceremony)

- A circumcision takes place when a baby is **8 days old.** The women all leave the room. The baby is passed around all the males. The father asks the mohel to circumcise his son. The **sandek** has the honour of holding the baby on his lap during the circumcision. The baby is handed back to his mother after the circumcision. The baby has a little wine to sooth the pain. The baby is given two names. One Jewish and one family name.
- The Torah says that Jews should be circumcised; **"Every male among you must be circumcised."** The Torah states that Abraham was commanded by God to be circumcised.
- **Circumcision is part of the covenant (agreement or promise)** that binds a Jewish person to God.
- Failure to follow the commandment given to Abraham incurs the penalty of **karet (being cut off from the rest of the community of God).** Jewish people are expected to follow all the mitzvot so they should be circumcised.

Judaism Practices 2/2

The Sabbath (Shabbat)

- Shabbat is the Jewish day of rest that starts Friday evening and ends Saturday night, when people pause from work to relax, pray, and spend time with family.
- Jews worship on Shabbat because of the **creation story** found in the book of **Genesis.** The Torah states that God created the world in six days and on the seventh God rested.
- Shabbat is part of the **covenant that Moses made with God at Sinai.**. Keeping the Sabbath day holy is one of the **Ten Commandments**: **"Remember the Sabbath and keep it holy".**
- Jews will sit together and have a meal. Preparations are made in advance. The wife or mother lights two candles 18 minutes before sunset. Two candles represent the two parts of the commandment.
- A blessing is made over a glass of wine called **Kiddush**. People wash their hands and then a blessing over two pieces of bread called **Challah**. When three stars appear in the sky, Shabbat is over. The family sip wine and recite a special blessing over spices and the light of a plaited candle. They **wish each other a 'good week'**

Items worn for worship

Jewish people worship by **wearing tefillin.** These are small leather boxes containing extracts from the Torah, strapped to the wearer's arm and forehead for Morning Prayer. **They contain passages from the Torah and the words of the Shema.**

They also worship by **wearing a prayer shawl called a tallit.** This is made from wool or silk, with a long tassel called a tzizit attached to each corner. The **tzizit represent the 613 mitzvot.**

The Difference between Orthodox and Reform Synagogues

- The synagogue is the Jewish place of worship but is also used as a place to study and a community centre. **Orthodox men always cover their heads with a skull cap known as kippah**. In Orthodox synagogues married women will cover their heads. Most reform men will cover their heads but not all.
- Orthodox and Reform synagogues have all the same features such as the **Torah scrolls, the commandments and the ner tamid (everlasting light), Holy Ark, bimah)** but the services can look very different. In Orthodox synagogues men and women sit separately. In a Reform synagogue men and women can sit together.
- **Orthodox synagogue services are led by a male rabbi whereas Reform can have female rabbis.** In an Orthodox synagogue traditional Jewish worship requires a **minyan** (a group of ten adult males) to take place. Whereas Reform allow women to make up number.
- In an **Orthodox synagogue,** the service will be conducted in **Hebrew,** and the singing will be unaccompanied. In a **Reform synagogue** the service will be at least partly in English, there may a choir and instruments, and men and women can sit together.

Jewish Worship of God at Home

- **Jews worship God through prayers such as the modeh ani** and the **Amidah**. The modeh ani are the first words Jews should speak every morning—while still lying in bed. The **Amidah** is also called the standing prayer or eighteen blessings. It is prayed in silence **while facing Jerusalem and they pray 3 times per day.** Jews worship God by **fixing a mezuzah to the doorframe of their homes**. Every time you enter or leave your house, it reminds you that you have a covenant with God. It contains a small copy of the Torah and the words of the Shema
- **The Siddur** - Jewish prayer book containing a set of daily prayers. It contains the 3 daily prayers that Jewish people should say.
- **Shabbat** is carried out weekly as a way of worshipping God.

Kosher

- The **Torah** clearly states that Jews should not eat some foods. **'Of all the animals that live on land, these are the ones you may eat'.** Jews believe that the Torah contains the laws of God that must be obeyed.
- Kosher helps Jews keep a strong **relationship with God.** Like many other rituals practices in Judaism, kosher is an **important tradition.** Kosher in Hebrew means **'clean' or 'fit'.** It can be used to describe certain actions, but it usually refers to food that is okay to eat for Jewish people. Jews keep kosher kitchens so **meat and dairy are kept** separate from each other.
- Keeping kosher is a way in which Jews can show they are being obedient to God and keeping their part of the **covenant** which is to follow the mitzvot. Keeping Kosher is a **mitzvot.** That means it is one of the **613 commandments** that Jews are expected to follow once they have had their **bar or bat mitzvah.** By following these commandments Jews become closer to God.

Exam 3 (Judaism)

B) Jewish Beliefs

1. Define synagogue
2. Define Shabbat
3. Name two differences between Orthodox and reform synagogue services
4. Describe two items worn in Jewish worship
5. What are two key features found in Orthodox and Reform synagogues?
6. What is the Brit Milah ceremony and how does it link to the Abrahamic covenant?
7. How does the Bar Mitzvah ceremony link personal responsibility?
8. What are Orthodox and Reform Views on the Bat Chayil and Bat Mitzvah?
9. What are three features of the Jewish wedding ceremony?
10. What are the five stages in Jewish mourning and what is the role of the chevra kaddisha in mourning rituals?
11. What are two reasons why Jews should keep kosher?
12. What is the origin of Pesach and how is it celebrated?
13. What is the origin of Sukkot and how is it celebrated?
14. How and why is Rosh Hashanah celebrated?
15. How and why is Yom Kippur celebrated?

Origins and Meaning Key terms

Key concept	Meaning	
Creation ex nihilo	A Latin phrase meaning **creation "out of nothing".** For Christians this is the idea that the universe was **created by God** from nothing.	
Evolution	The process of **mutation and natural selection** which leads **to changes in species over time** to suit particular environments.	
Imago Dei	Translated from Latin **as 'the image of God'**. Humans are created in the image of God.	
Inspiration	**God breathed**. The belief that the spirit of God guides an individual to act or write what is good and true.	
Omnipotence	The idea that **God is all-powerful.**	
Revelation	The word used to describe all of the ways in which **God makes himself known to human beings.** Christians believe that God does this **finally and fully in the person of Jesus Christ**.	
Stewardship	**The duty to care for creation responsibly**, as **stewards rather than consumers**, and to protect it for future generations.	
Transcendence	**Existing outside of space and time**; **God exists** in a way that makes him nothing like anything that exists, **above and beyond creation**	

Origins and Meaning Part 1/2

Catholic and Fundamental Christian views on the Origins (creation) of the world

- Catholics believe that God created the world from nothing - **'ex nihilo' –** this teaching comes from **St Augustine** in his book 'The Confessions'.
- Catholic Church leaders state that the **Genesis accounts** of creation should be interpreted as **symbolic stories** and they **should not be read literally**. They convey messages, for example:
- **Genesis 1 teaches Catholics:** The world has a beginning. God is the creator of the universe ***'God created the heavens and the earth'*** This shows that God is **transcendent and omnipotent**. It does not mean God created the world in exactly 6 days. Each day could be 1 billion years. God created the world for a purpose.
- **Genesis 2 teaches** Catholics that humans have a duty to be **good stewards**. Humans must look after the universe as **God gave Adam and Eve dominion** (see below bow on stewardship). Humans were created last and are the pinnacle of God's creation, giving them **special dignity**.
- **Pope John Paul II** said that Catholics do not have to read Genesis literally. Instead, Catholics should read the story as a myth that teaches important things about God. Pope John Paul also there is **no conflict between evolution and religion.**
- **Catholics will accept scientific views on evolution and the Big Bang.**
- **Fundamentalist Christians** read the Bible literally. They believe the Bible is 100% correct and should be taken literally, word for word.
- **Fundamental Christians** do not accept that there are different literary forms (styles of writing) in the Bible that should be understood differently, they should all be taken as God's word and as fact. e.g. Stories of Origin like Genesis should be read as History or Science, instead of stories with a meaning.

Scientific views on the origins of the world

Stephen Hawking and Richard Dawkins are atheist (do not believe in God). They believe there is no need for God to explain the origins of the world. They argue that the theory of the Big Bang Theory fully explains the origins (creation) of the world and Charles Darwin's theory of **evolution** fully explains human life and how we have evolved.

The structure of the Bible and the different literary forms (styles of writing) in the Bible

The Bible is split into two parts, the Old and New Testament. The **Old Testament,** is known as the Hebrew Bible, is a collection of books that lays out the history, laws, prophecies, and poetry of the Jewish people. On the other hand, the **New Testament focuses on the life, teachings, death, and resurrection of Jesus Christ**. There are many different styles of writing in the Bible:

Stories of Origin e.g. Genesis **History** e.g. Kings, **Law** e.g. Exodus, **Prophecy** e.g. Jeremiah,

Wisdom e.g. Proverbs, **Gospels** e.g. Matthew, **Letters** e.g. of Paul

Apocalyptic .g. revelation

Catholics believe the Bible is the **'inspired'** word of God. God inspired the writers of the Bible. The Bible is a form of **revelation;** it reveals what God is like. Catholics believe that some of the stories in the Bible are metaphorical for example Genesis.

Stewardship

- Stewardship is the belief that humans have a duty to protect and preserve the environment for **future generations.**
- **Catholics** believe they have a duty to care for the planet and look after the world for future generations. This is based on the **teachings of Genesis** that say humans should '**rule over the land and animals. '**
- Catholic teachings are inspired by **Pope Francis** and **Laudato Si** – an encyclical (letter) aimed at everyone on the planet telling them to protect the earth.

Humanists like **Peter Singer** also think we should be stewards. We all are responsible, not just religious people. We need to recycle and reuse where possible to ensure a good quality of life for future generations.

Jewish people also believe we have a responsibility to be stewards. This teaching comes from **Genesis in the Torah (Jewish written law).**

The **mitzvot (actions to perform or avoid)** outline being stewards – Genesis gives dominion over the land to the Jewish people.

Christian and Jewish views on Abortion + Sanctity of Life

- Catholics believe all abortion is wrong. Life begins at the **moment of conception** so to remove the foetus before it can survive is murder. They believe in the **sanctity of life (life is holy and belongs to God)**
- God gave life and only God can take it away. This is because of **the belief in 'imago dei'** .The belief that humans are made in the image of God.
- The Bible teaches that they should not end life **"Do not kill"**
- **Catholics** believe that **adoption is an alternative** to abortion that should be carried out.
- Other Christians generally agree with Catholics, but some take a **relative approach** (consider the circumstances). For example, Church of England Christians accept abortion in some situations – they argue for mother's rights and believe it should be allowed in some scenarios based on Jesus' teaching 'Love your neighbour'.
- **Orthodox Jews** will reject abortion as it goes against the 10 commandments, 'Do not kill'. However, if the mother's life is at risk, based on **Pikuach Nefesh** they will break the mitzvot to save a life.

Humanist views on Quality of Life of life and abortion

Peter Singer is a humanist. He argues that it is wrong to put human beings above other animals, or to think of humans as somehow unique. He **rejects Sanctity of Life** (humans being made in the image of God).

Singer argues that **quality of life** is more important. This is the idea life must have some value to be worth living. He refers to 'non-human persons' as people with a low quality of life .

Catherine of Siena: Sanctity of life

Saint Catherine, believes all humans were created in the image of God – **imago dei.**

Humans are placed above all creatures. They are the pinnacle of creation. **"Man is placed above all creatures"** Humans reflect God. We are a **mirror image of God.**

Exam 1 (FCT)

Ai) Origins and meaning

1. Define imago dei
2. Define revelation
3. Define inspiration
4. What are Catholic beliefs about the origin of the universe?
5. What are Fundamentalist Christian views on the origin of the universe?
6. What are non-religious views on the creation of the universe?
7. Define stewardship
8. What does Genesis teach about stewardship?
9. What are Jewish beliefs about stewardship?
10. What are 2 Catholic teachings on the sanctity of life and how do they link to abortion?
11. What do the Church of England teach about abortion?
12. What do Orthodox Jews believe about abortion?
13. What does St Catherine of Siena teach about sanctity of life?
14. What are Peter Singer's views on the sanctity of life?
15. Describe three different literary forms used in the Bible

Origins and Meaning Part 2/2

Catholic charities: CAFOD and SVP

Catholic Charities are inspired to help others through teachings such as **'love thy neighbour', imago dei** and the **'Golden Rule'.**

CAFOD: CAFOD helps those in need by providing long term aid. For example, through development programmes such as schools, hospitals, education and jobs. They also offer short term aid. E.g. Emergency and disaster relief such as Food, water, medicine and shelter. CAFOD also help those in need by raising awareness of poverty. They use social media, the CAFOD website as well as posters and leaflets in churches and schools. CAFOD help those in need through education and fundraising.

SVP: The St Vincent de Paul Society (SVP) is a Catholic charity whose mission is to uphold human dignity and show love of neighbour. The charity is based on the Jesus' parable of the sheep and goats. The SVP feed the hungry through **food banks, soup kitchens and raising money in Catholic churches and schools.** The charity welcomes the stranger by **offering shelter for the homeless,** visiting those who may be lonely and **providing holiday camps for families that are in need.** The SVP work in the UK and abroad to provide doctors to care for the sick in the poorest parts of the world. They also have **volunteers who visit the sick and elderly**.

Laudato Si – Pope Francis wrote a letter called 'Laudato Si' which means 'Care for our Common Home' it states all humans have a responsibility to care for the environment.

Gaudium et Spes –A document put together at Vatican II which teaches that all humans should be treated with dignity

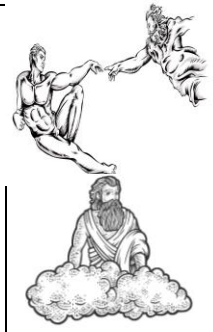
The Tree of Life- A Catholic church mosaic, symbolising God's connection with humanity.

The **hand of God** represents God reaching out to his son Jesus and taking him to heaven. Following Jesus' death on the cross it is believed that Jesus rose again. The hand shows God's power to overcome death.

Twelve of the lambs represent the twelve disciples who were given the task of passing on Jesus' message. The lamb in the centre with a halo represents Jesus who is known as the Lamb of God. It links back to the **Passover story in the book of Exodus.** Jesus will be sacrificed to save the world like the lambs were sacrificed to save the Jewish slaves. **Alpha and Omega** symbolise Christ is the beginning and end.

The **tree and vines are symbolic of how the message of Christianity will grow and spread throughout the world.** The tree is the tree of life and vines/branches will grow as the Jesus' message is passed on.

The **cross represents the belief that Jesus was a sacrifice** and he died on behalf of humanity. The **dead snake/serpent** shows Jesus' victory over death.



Michelangelo's Creation of Adam

God looks strong and powerful, and his grey beard and hair suggest age/wisdom. This is to show him as **omnipotent and omniscient.**

God is flying through the heavens and surrounded by a swirling crowd of angels. This also highlights that God is **transcendent** – above and beyond

The fingers about to touch represent the spark of life – this links to **sanctity of life.** Life is sacred and belongs to God.

Adam is young and naked which shows the **parent like relationship** between God and humans. God and Adam mirror one another in the picture which shows that humans are created in **God's image (imago dei)**. Arms and shoulders are identical.

Adam is on the earth which links to **stewardship** – humans were created to protect and preserve the environment.

Catholic Social Teaching

- Catholic Social Teaching is the official teachings of the Catholic Church on matters of social justice.
- Catholics believe that **all humans were created in the image and likeness of God**. This teaching comes from the book of Genesis and is called the Imago Dei.
- Catholics Social Teaching is focused on **people being treated fairly.** The Church produced a document in the 1960's called **Gaudium et spes** which teaches about treating people fairly and with dignity.
- Catholic Social Teaching focuses on areas such as human dignity, equal rights and care for creation. This shows that Catholics have a responsibility to show **"love of neighbour".**
- It teaches about care for creation which is linked to stewardship and the teachings of Genesis that we must look after the planet and hand more on to the next generation.

Interfaith dialogue : People of different faiths working together and listening to one another, engaging in **conversation** about what they have in common.

It is important because:

- **Jesus washed the feet of his disciples,** including Judas, to give us an example of how we should lovingly serve others, no matter who. - promotes mutual understanding and respect between faiths
- Helps you to appreciate your own faith Jesus taught us that the greatest person is the one who **"is servant to all"**. This includes people of other faiths.
- Helps **community cohesion:** a society where people respect each other is a united and peaceful society

Multifaith Britain

The UK is a culturally and religiously **pluralistic society. This means it** has many different cultures and religions. The UK encourages all people to practice their religion and culture freely.

Benefits of pluralism:

-Culturally enriching for the UK, as different food, music, fashions are introduced

-Makes the UK more tolerant and globally aware, as people encounter other races, religions and cultures.

-Immigrants are often highly motivated to make a success of their lives: they work hard and contribute to the economy and to society. Improves business opportunities with these countries.

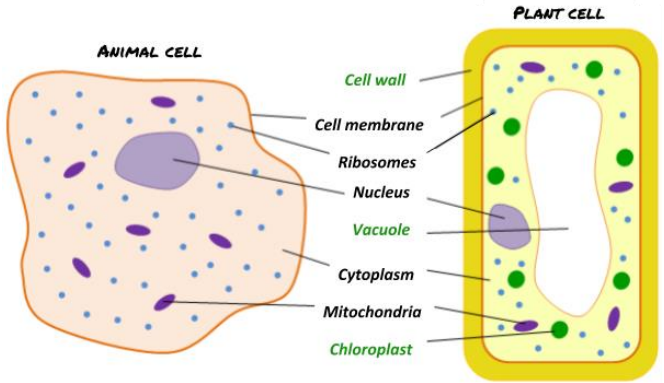
Exam 1 (FCT)

Aii) Origins and meaning

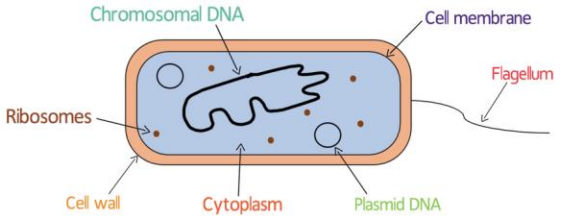
1. Name one Catholic charity and describe one way that the charity shows love of neighbour.
2. Name a second Catholic charity and describe one way that the charity shows love of neighbour.
3. What is Laudato Si and what does it teach?
4. What is the Tree of Life mosaic and what do the twelve lambs represent on it?
5. What does the 'tree and vine' and 'alpha and omega' symbolise on the Tree of Life Mosaic?
6. What is Michelangelo's, ‘Creation of Adam’? Describe one thing it teaches about God's nature
7. What does the 'Creation of Adam' teach about the sanctity of life?
8. What is Catholic Social Teaching and how does it link to imago dei?
9. How does Catholic social teaching links to the Catholic teaching of 'love thy neighbour' ?
10. How does Catholic social teaching link to stewardship
11. What is Gaudium et Spes and how does it link to imago dei?
12. What is interfaith dialogue and what it the role of the Catholic Church in interfaith dialogue?
13. What is one teaching of Jesus that can be used to describe Catholic views on interfaith dialogue?
14. What is meant by a multifaith society?
15. What are two benefits of living in a multifaith society?

B1 - Fundamentals

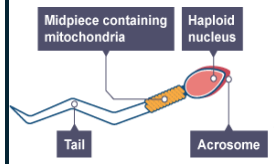
Eukaryotic cells – Cells **with** membrane-bound organelles (nucleus, mitochondria).



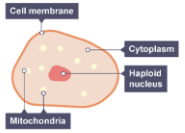
Prokaryotic cells – Cells **without** membrane-bound organelles (**no** nucleus, mitochondria).



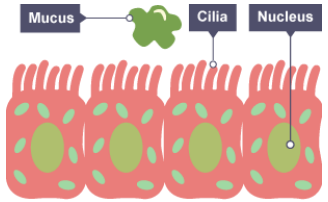
Specialised cells – cell that have differentiated to have a specific role to carry out a specific function



Sperm cell – swims to the egg cell to fertilise it

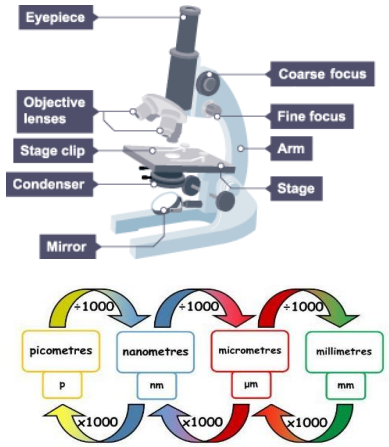


Egg cell – fertilised by a sperm cell



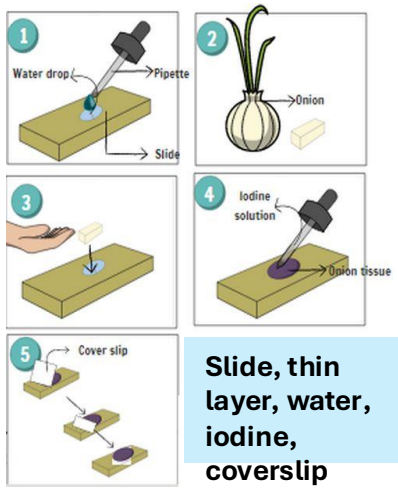
Ciliated epithelial cell – hair-like projections to sweep/ waft substances

Cell structure	How it is related to its function.
Cytoplasm	A jelly-like material that contains dissolved nutrients and salts and structures called organelles. It is where many of the chemical reactions happen.
Nucleus	Contains genetic material, including DNA, which controls the cell's activities.
Cell membrane	It is permeable to some substances but not to others and so controls the movement of substances in and out of the cell.
Mitochondria	Organelles that contains the enzymes for respiration, and where most energy is released in respiration.
Ribosomes	Tiny structures where protein synthesis occurs.
Chloroplast	Organelle that contains the green pigment, chlorophyll, which absorbs light energy for photosynthesis. Contains the enzymes needed for photosynthesis.
Cell wall	Plant and bacterial cell walls provide structure and protection. Only plant cell walls are made from cellulose.
Permanent vacuole	Filled with cell sap to help keep the cell swollen.
Chromosomal DNA	The DNA of bacterial cells is found loose in the cytoplasm. It is called chromosomal DNA and is not contained within a nucleus.
Plasmid DNA	Bacteria also have small, closed-circles of DNA called plasmids present in their cytoplasm. Unlike the chromosomal DNA, plasmid DNA can move from one bacterium to another giving variation.
Flagella	Bacteria can have one or more flagella (singular: flagellum). These can rotate or move in a whip-like motion to move the bacterium.
Cell wall	Plant and bacterial cell walls provide structure and protection. Only plant cell walls are made from cellulose.

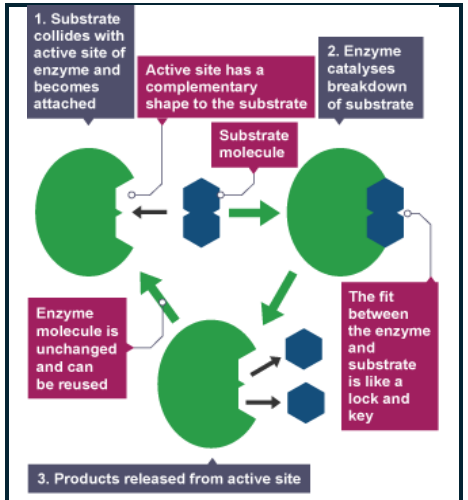


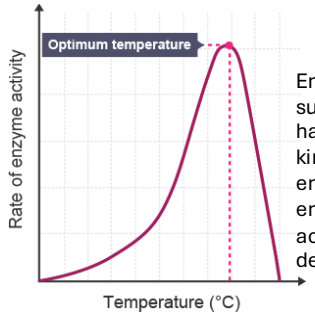
Electron microscopes have a higher **resolution** and a higher **magnification**

$$\text{magnification} = \frac{\text{size of image}}{\text{real size of object}}$$

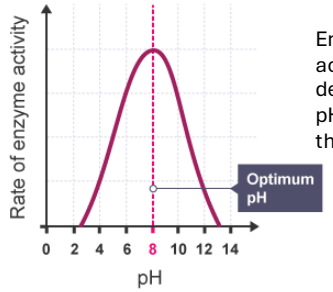


Slide, thin layer, water, iodine, coverslip

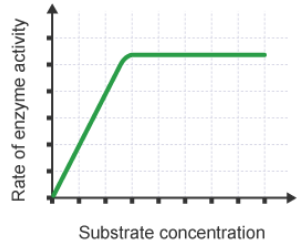




Enzymes and substrates have more kinetic energy, until enzyme's active site denatures



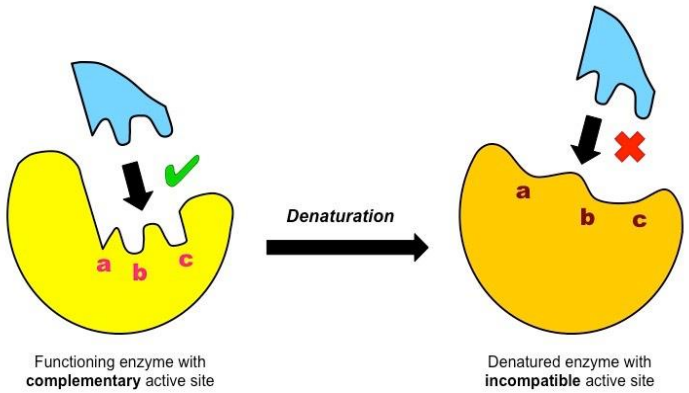
Enzyme's active site denatures if pH is not at the optimum



Eventually if you keep adding more substrates, you will run out of enzymes, so rate will level off

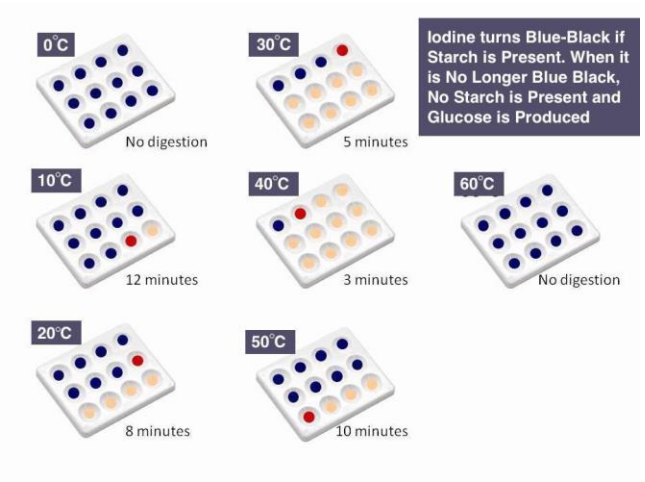
Key Question		*Answer*
1	Describe the differences between eukaryotic cells and prokaryotic cells	
2	State the function of the midpiece and acrosome of a sperm cell	
3	Why do electron microscopes allow scientists to see cells in more detail than a light microscope?	
4	Which part of a light microscope can be changed to increase magnification?	
5	State the equation to calculate magnification of an image	
6	State three cell structures that plant cells have but animal cells do not	
7	Name the part of an enzyme that binds the substrate	
8	Describe what happens to an enzyme when the temperature exceeds (goes beyond) the optimum	
9	Explain how a pH that is too acidic or too alkaline affects the rate of enzyme activity	
10	State what can be added to cells to make them more visible when viewing down a microscope	

B1 - Fundamentals



Enzymes **active sites** can change shape. This is called **denaturation**.

Enzyme	Substrate	Product
Protease	Protein	Amino acids
Lipase	Lipids	Fatty acids and glycerol
Amylase (carbohydrase)	Starch	Glucose



Independent variable : pH of solution

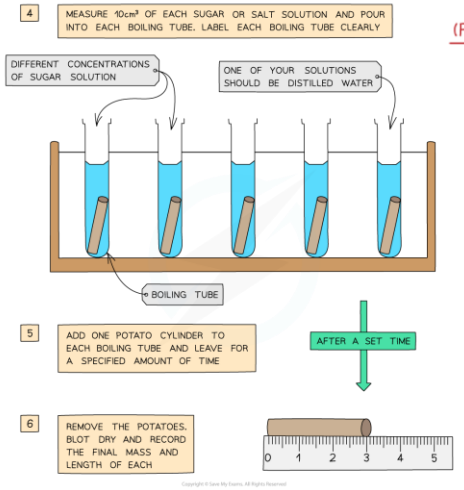
Dependent variable: time taken for iodine to remain orange (no starch)

Control variables: volume of starch, volume of amylase, volume of pH buffer, temperature

Diffusion – Movement of particles from a high concentration to a low concentration

Active transport – Movement of particles from a low concentration to a high concentration using energy

Osmosis – Movement of water from a high water concentration to a low water concentration through a semi-permeable membrane



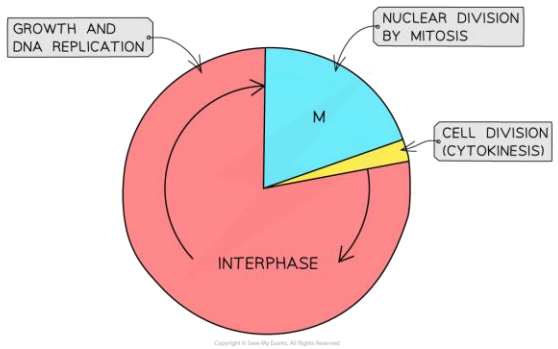
$$\frac{(\text{FINAL MASS} - \text{INITIAL MASS})}{\text{INITIAL MASS}} \times 100$$

- **Independent** variable:
  - **Concentration** of salt or sucrose solution in mol dm^3
- **Dependent** variable:
  - **Mass** and the **length** of each potato cylinder **before** and **after** it has been submerged in solution should be **measured**
  - **Percentage change** in mass and length will be calculated using these measurements
- Important **control variables** are:
  - type and volume of solute in solution
  - temperature
  - time

Process	Description	Substances transported	Energy required
Diffusion	Substances move from a high to a lower concentration down a concentration gradient	Carbon dioxide, oxygen, water, food substances, wastes, eg urea	No
Osmosis	Water moves from a high to a lower concentration across a partially permeable membrane and down a concentration gradient	Water	No
Active transport	Substances more from low to higher concentration up a concentration gradient	Mineral ions into plant roots. Glucose from the gut into intestinal cells, from where it moves into the blood	Yes

Key Question		*Answer*
1	State the product of protein digestion	
2	Name the enzyme that digests lipids	
3	State the substrate of amylase and the products of digestion of this substrate	
4	Describe how to test for the presence of starch	
5	Name the transport process that moves particles against the concentration gradient (low to high) using energy	
6	State the cell part that releases energy for active transport	
7	Give the definition of osmosis	
8	If a potato is placed in a beaker of water, what will happen to its mass? Why?	
9	Give the equation to calculate percentage change in mass	
10	Give the definition of diffusion	

B2 – Cells and control



Number of cells produced =

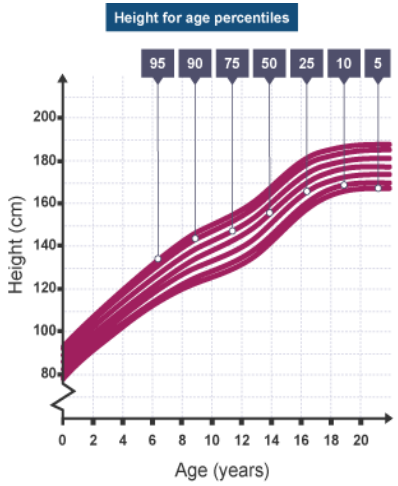
2^n

N = number of divisions

Mitosis is for growth, repair and asexual reproduction

Stage	What happens
Interphase	The cell spends most of its life in this phase. The DNA in chromosomes copies itself ready for mitosis.
Prophase	The DNA in chromosomes and their copies condenses to become more visible. The membrane around the nucleus disappears.
Metaphase	Chromosomes and their copies line up in the middle of the cell.
Anaphase	Chromosomes and their copies are pulled to different ends of the cell.
Telophase	New membranes form around the chromosomes at each end of the cell.
Cytokinesis	The cell membrane pinches in and eventually divides into two daughter cells.

Mitosis results in 2 genetically identical diploid daughter cells
Cancer is caused by uncontrollable cell division



Growth can be **monitored** by
- Percentile charts (image on left), if children start crossing lines this could indicate **abnormal** growth.
  - BMI
  - Waist: hip
- Head circumference

Cells divide by mitosis and then **differentiate** into a specialised cell.

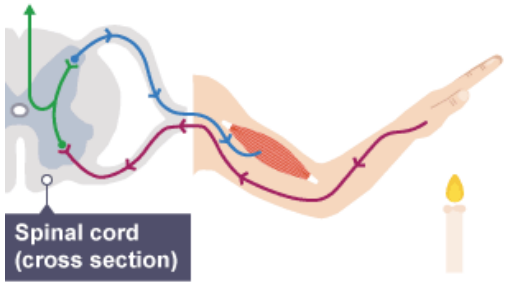
In plants cells grow by **mitosis** (in meristems) and **cell elongation**.

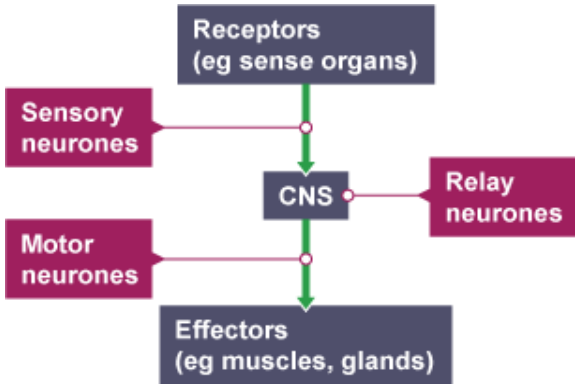
Stem cells are **undifferentiated** cells that can specialise to have a particular function.

Stem cell	Location
Adult	Bone marrow, nose, brain, eyes
Embryonic	Embryo
Meristem	Tips of shoot and roots in plants

Advantages	Disadvantages
Replacing damaged cells	Might divide rapidly and form cancer
Medical research	Cells might be infected whilst in lab
Growing organs for transplants	Chance of rejection

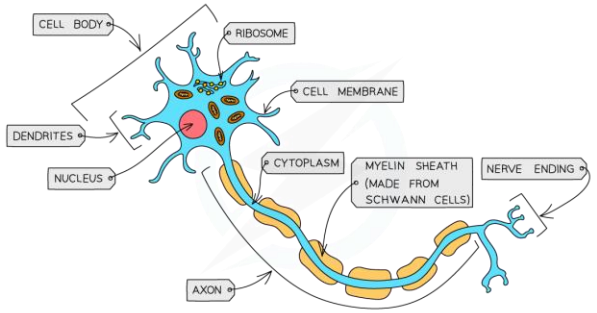
In a reflex reaction the **brain is bypassed** so the response happens faster, to protect you from harm





Sensory neurone
Motor neurone
Relay neurone

A **synapse** is a gap between 2 neurones.
A **neurotransmitter** is released over the synapse to pass on the information.

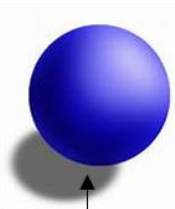


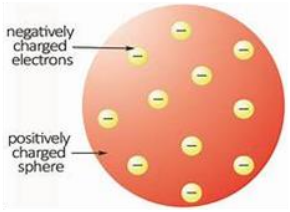
Key Question		*Answer*
1	Give three reasons why mitosis is important for organisms	
2	State the product of mitosis	
3	Describe what happens during interphase	
4	Describe what happens during anaphase	
5	What are percentile charts used for?	
6	What is a stem cell?	
7	Where are stem cells found in a plant?	
8	Give the definition of a synapse	
9	Give the function of a reflex action and explain why it is faster than a normal nervous response	
10	Name the part of a neurone that carries electrical impulses along the neurone	

Year 10 Chemistry Module 1a
Atomic Structure and the Periodic Table

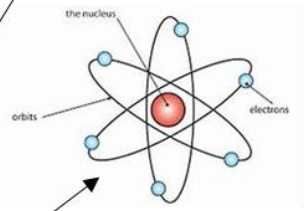
Keyword	Definition
Electronic Configuration	How many electrons are in each shell of an atom
Atom	Particle that contains protons, neutrons and electrons. The number of protons and electrons are always the same
Element	A substance that contains atoms that are all the same type, and have the same number of protons
Nucleus	The centre of an atom. Contains protons and neutrons
Isotope	An atom with the same number of protons, but a different number of neutrons
Property	A word that describes the use of an object or substance, or how it looks and acts
Group	Column of the periodic table
Period	Row of the periodic table

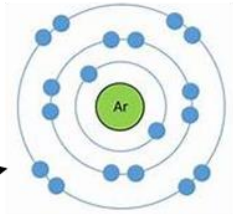
Development of the Atomic Model

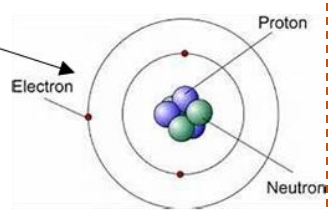




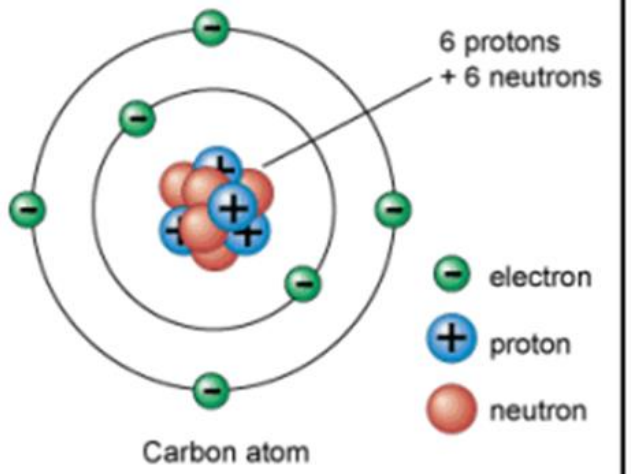
Year	History of the Atom
1800s	John Dalton came up with the idea of the atom—tiny, hard spheres.
1800s	J.J. Thomson discovered the electron and theorised the Plum Pudding model.
1900s	Geiger and Marsden completed the gold-foil experiment and discovered the nucleus.
1914	Niels Bohr came up wit h the idea of energy levels.
1932	James Chadwick discovered the neu-tron.







Atomic Structure



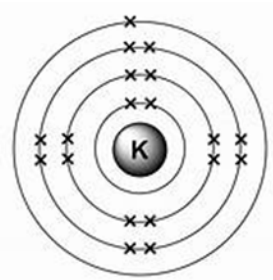
Carbon atom

Name	Charge	Mass
Proton	+1	1
Neutron	0	1
Electron	-1	1/1840

Electronic Configuration

1st shell – maximum 2 electrons
2nd shell – maximum 8 electrons
3rd shell – maximum 8 electrons

Example – potassium (K) contains 19 electrons



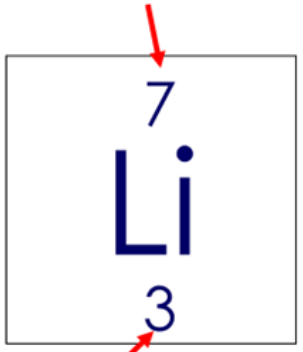
2, 8, 8, 1

Higher Only – Isotopic Abundance

$$\text{Relative atomic mass} = \frac{(\text{mass isotope 1} \times \text{abundance isotope 1}) + (\text{mass isotope 2} \times \text{abundance isotope 2})}{\text{total abundance}}$$

Calculating Sub-Atomic Particles

Mass number= total number of protons and neutrons



Atomic number or proton number= number of protons – this is unique to every element!

Number of protons = atomic number

Number of electrons = atomic number

Number of neutrons = Mass number – atomic number

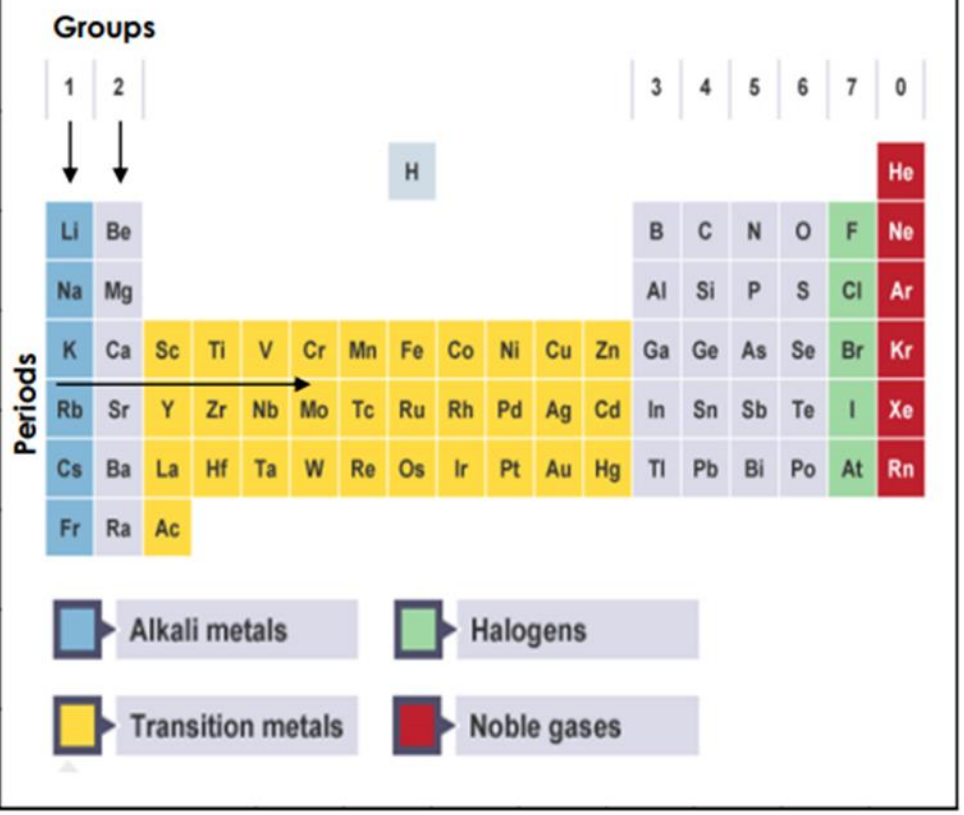
Periodic Table Development

History of the Periodic Table	
Invented by	Dmitri **Mendeleev**, a Russian scientist.
Arranged	In order of **atomic mass**, and by their **chemical properties**
What was special about it?	**Predicted** the existence of **other elements** not discovered, and **left gaps** for them in his table
Why was it used?	**New elements** were **discovered** that **matched these gaps**

Modern Periodic Table

Period	No. of shells
1	1
2	2
3	3
4	4
5	5
6	6
7	7

Layout of the periodic table



Group	1	2	3	4	5	6	7	8
Electrons in outer shell	1	2	3	4	5	6	7	8

Elements are arranged in order of atomic number.

Y10 Module 1 Homework - Chemistry Knowledge Organiser Questions Page 1

Question number	Question	Answer
1	State the charge of a proton, neutron and electron	
2	State the mass of a proton, neutron and electron	
3	Which two particles are found in the nucleus of an atom?	
4	Define the term isotope.	
5	What does the term electron configuration mean?	
6	Draw the electron configuration of lithium (Atomic number = 3)	
7	Why is an atom electrically neutral?	
8	Which scientist proposed the plum pudding model? Describe the plum pudding model.	
9	What did the gold foil experiment discover about the atom?	
10	In the periodic table, what is a group and what is a period?	

Y10 Module 1 Homework - Chemistry Knowledge Organiser Questions Page 2

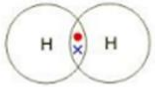
Question number	Question	Answer
1	What does atomic number of an element tell you?	
2	Define the term mass number	
3	How do you calculate the number of neutrons in an atom?	
4	How do you calculate the number of protons in an atom?	
5	How do you calculate the number of electrons in an atom?	
6	What property is used to arrange elements in the modern periodic table?	
7	How did Mendeleev arrange the elements in his periodic table?	
8	What did Mendeleev leave for undiscovered elements?	
9	What does the period number tell you about an atom?	
10	What does the group number tell you about an atom?	

Year 10 Chemistry Module 1b Bonding and Types of Substance

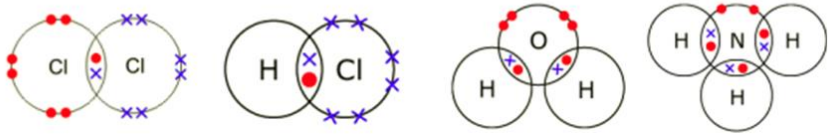
Keyword	Definition
Ion	A charged atom. When an element has gained or lost electrons.
Ionic Bond	When electrons are transferred from a metal to a non-metal. There are strong electrostatic forces of attraction between oppositely charged ions
Covalent bond	When two non-metal atoms share pairs of electrons
Molecule	A number of non-metal atoms that are covalently bonded together
Malleable	Able to be flattened into a sheet, and easily shaped
Ductile	Able to be drawn out into a wire
Alloy	Mixture of metal atoms with another element, usually another metal
Polymer	A very large molecule made from many monomers joined together

Covalent Bonding

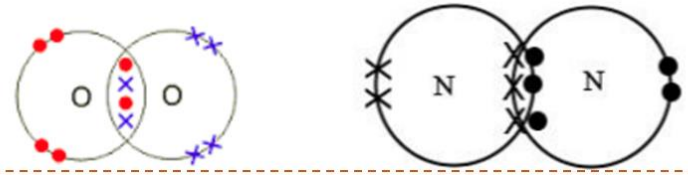
Covalent bonding occurs between non metals. **Electrons are shared between the atoms**, so that they have a full outer shell. Covalent bonds are strong and require a lot of energy to break. The simplest example is hydrogen: both hydrogen atoms have **one electron in their outer shell. Therefore both hydrogen atoms share one electron each,** to give them both a full outer shell, we can show this bond on a dot and cross diagram.



When drawing covalent molecules we use "dot cross diagrams" as we do with ionic compounds. It is important to represent the electrons on one atom with a dot and on the other atom with an X.
The first five examples, **hydrogen, chlorine, water, hydrogen chloride and ammonia (NH_3)** all share one electron per atom in a to make a full outer shell of electrons on each atom.

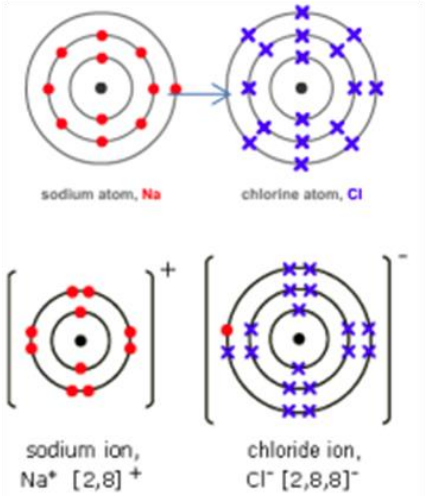


Some atoms need more than one electron to give them a full outer shell, for example oxygen needs 2 electrons to complete its outer shell. Oxygen therefore shares two electrons per atom to **make a double bond.** Nitrogen needs three electrons to complete its outer shell, this forms a triple bond between the two **nitrogen atoms, to make a nitrogen molecule.**



Ionic Bonding

When a metal atom reacts with a non-metal atom electrons in the outer shell of the **metal atom are transferred to the non metal atom**. This means the metal has a positive charge and the non metal has a negative charge. This means there is an **electrostatic attraction** between the two ions, this is what forms an ionic bond. Both atoms will have **a full outer shell** (this is the same as the structure of a noble gas) see example below of sodium chloride.



Properties of Simple Covalent Compounds

<u>Low melting and boiling points</u>
This is due to their weak intermolecular forces, which don't require a lot of energy to break apart
<u>Do not conduct electricity</u>
There are no charged particles to carry an electric current

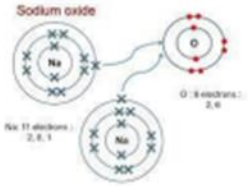
Properties of Ionic Compounds

Ionic compounds have **high melting points, due to strong electrostatic forces between the oppositely charged ions.** This means a lot of energy is required to break these bonds. For example the melting point of sodium chloride is 801 °C.

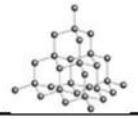
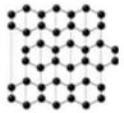
Ionic compounds **do not conduct electricity** as a solid. They **doconduct electricity** if they are dissolved in water (aqueous) or in the liquid state. This is because the ions are free to move, carrying the electric charge.

Working out the formula of an ionic compound

In sodium chloride, 1 sodium atom gives an electron to a chlorine atom, therefore the empirical formula is NaCl. However there are some examples where the ratio of atoms is not 1:1. For example when sodium bonds with oxygen, sodium only wants to lose one electron but oxygen needs to gain two. So you need two sodium atoms for every oxygen so the **empirical formula is Na_2O.**



Giant Covalent Substances

Substance	Diagram	Description	Properties
Diamond		Each carbon is covalently bonded to four other carbons	Very hard, very high melting point, due to strong covalent bonds. Does not conduct electricity – no free electrons/ions.
Graphite		Each carbon is covalently bonded to 3 other carbons, there are weak (non covalent) bonds between the layers.	High melting point, conductor of electricity due to **delocalised electrons which can carry a charge.** Slippery as layers can slide over each other

There are other forms of carbon which have been discovered recently: **graphene is a single layer of graphite** so it is 1 atom thick. Fullerenes are molecules of carbon with hollow shapes. The most famous example is Buckminsterfullerene (C_{60}). Fullerenes have use in drug delivery and as catalysts. Carbon nanotubes are cylinder shaped fullerenes, these are strong and are excellent conductors of both **heat and electricity.**

Properties of Metals

<u>Good conductors of electricity</u>

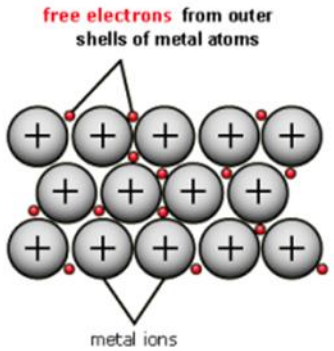
They have delocalised electrons which can move and carry a current

<u>Malleable and ductile</u>

Metal atoms are arranged in rows, which can easily slide across each other

Metallic Bonding

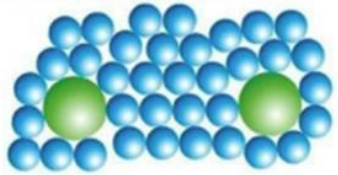
Metals form giant structures. The metal atoms form a regular pattern and the donate their outer electron to the **"sea of delocalised electrons".** These electrons are free to move. The 2D structure of metallic bonding looks like this:



This would be the structure of a group 1 metal like sodium, if it were a group 2 metal like magnesium then the charge on the ions would be Mg^{2+}.

Alloys

Alloys are mixtures of **2 or more elements, one of which is a metal.** Examples of alloys include brass and steel. Metals are alloyed so that the regular structure of metals is changed and the layers of ions can no longer slide over one another; therefore making it much stronger.



Y10 Module 1 Homework - Chemistry Knowledge Organiser Questions

Page 3

Question number	Question	Answer
1	Define the term ion	
2	What charge does a metal atom become when it turns into an ion?	
3	What charge does a non-metal atom become when it turns into an ion?	
4	What is an ionic bond?	
5	What is a covalent bond?	
6	What is a molecule?	
7	Why do simple covalent substances have low melting and boiling points?	
8	Do simple covalent molecules conduct electricity? Explain your answer.	
9	Why do ionic compounds have high melting and boiling points?	
10	When do ionic compounds conduct electricity?	

Y10 Module 1 Homework - Chemistry Knowledge Organiser Questions

Page 4

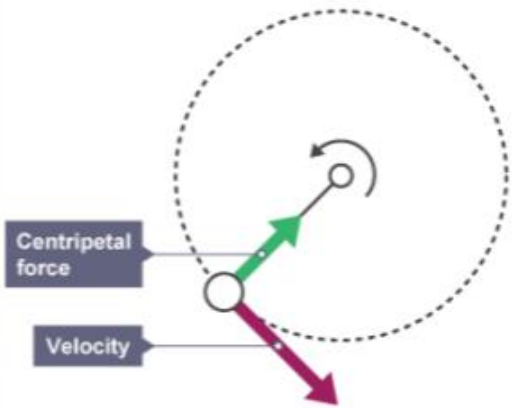
Question number	Question	Answer
1	Describe the structure of diamond.	
2	Why does diamond have a very high melting point?	
3	Describe the structure of graphite	
4	Why can graphite conduct electricity?	
5	Does graphite have a low or high melting/boiling point? Explain your answer.	
6	State one use of Buckminster fullerene	
7	Describe the structure of a metal	
8	State two properties of metals	
9	Explain why metals can conduct electricity	
10	What is an alloy?	

Y10 Combined science / Physics
Cycle 1 Topic 1 Knowledge Organiser: Motion

Scalars and vectors

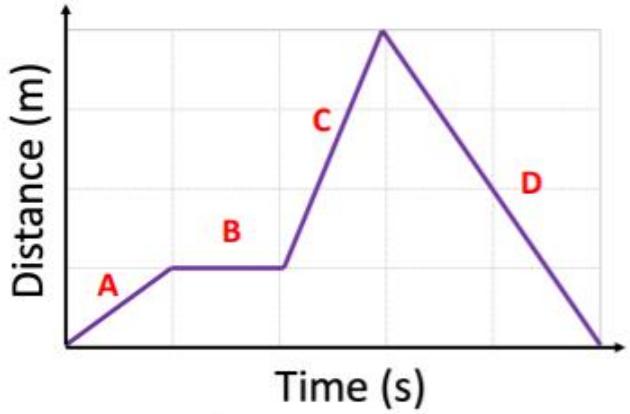
Scalars	Vectors
Size (magnitude) only	**Size (magnitude) and direction**
Speed (e.g. 2 m/s)	Velocity (e.g. 2m/s left)
Distance (e.g. 4 metres)	Displacement (e.g. 4 m up)
Mass (e.g. 5 kg)	Weight (e.g. 50 N down)
Time (e.g. 30 seconds)	Force (e.g. 40 N right)
Temperature (e.g. 100°C)	Acceleration (e.g. 4.5 m/s² forward)
Energy (e.g. 20 J)	Momentum (e.g. 9 kg m/s backwards)

Circular motion - **Higher**



- When objects move in a circle, they are **accelerating** (even if they are moving at a constant speed)
- This is because they are changing **direction**
- If their direction changes, the velocity changes because velocity is a **vector**
- If the velocity changes, the object has **accelerated**
- The force which causes accelerating is called the **centripetal force**
- The centripetal force can also be described as the resultant force on objects moving in a circle. It points towards the **middle** of the circle

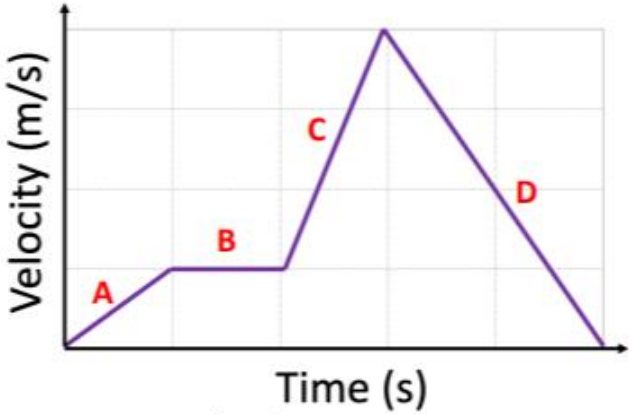
Distance-time graphs



A – constant speed
B – stationary
C – constant speed (faster)
D – constant speed (backwards)

The gradient = speed/velocity

Velocity-time graphs



A – constant acceleration
B – constant speed
C – constant acceleration (faster)
D – constant deceleration

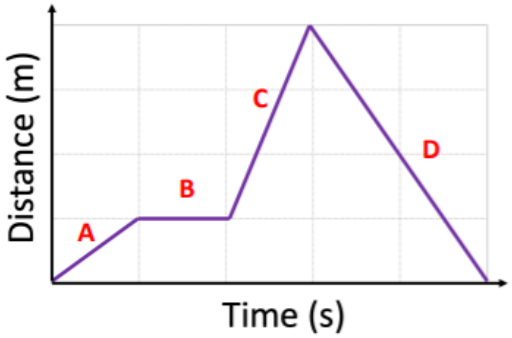
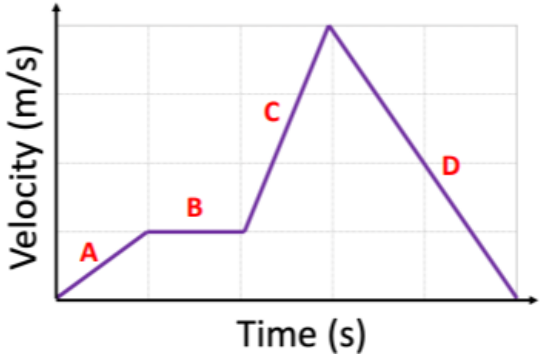
The gradient = acceleration
The area under the graph = the distance travelled

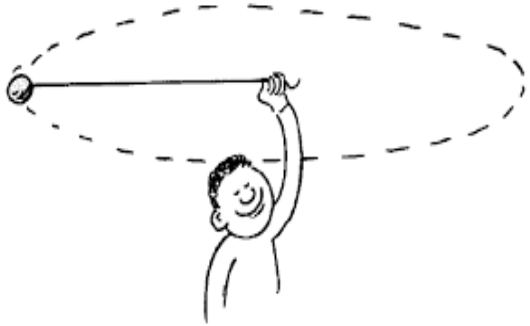
Describing motion

Key word	Meaning	When it happens
At rest/ stationary/ still	The object is not moving The speed is 0 m/s	When all forces are balanced When there is no resultant force
Constant velocity	The object is moving, but the velocity isn't changing	When all forces are balanced When there is no resultant force
Accelerating /decelerating	Either the speed **and/or** direction is changing	When all forces are unbalanced When there is a resultant force

Physics Y10 Cycle 1: Topic 1 Motion

Retrieval Questions

Question	Answer
1. Give the definition of a vector quantity	
2. Give the definition of a scalar quantity	
3. Give three examples of vector quantities	
4. Give three examples of scalar quantities	
5. Describe the motion in section A, B, C and D of this distance-time graph	
6. Describe the motion in section A, B, C and D of this velocity-time graph	

Question	Answer
7. What is shown by the gradient in a distance-time graph?	
8. What is shown by the gradient of a velocity-time graph?	
9. What does it mean if something is accelerating?	
10. What is the motion of an object if all forces are balanced, and there is no resultant force?	
11. What is the name of the force that causes circular motion	
12. Draw the direction of the force causing circular motion	

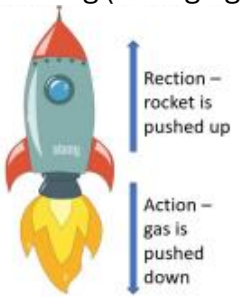
Y10 Combined science / Physics
Cycle 1 Topic 2 Knowledge Organiser: Forces

Newton's Laws

Newton's 1st Law
- If forces balanced: object is either stationary or moving at constant velocity
- If forces are unbalanced: object is accelerating (changing velocity, shape or direction)

Newton's 2nd Law
- Force = mass x acceleration

Newton's 3rd Law
- Every action force has an equal and opposite reaction force
- These forces act on different objects

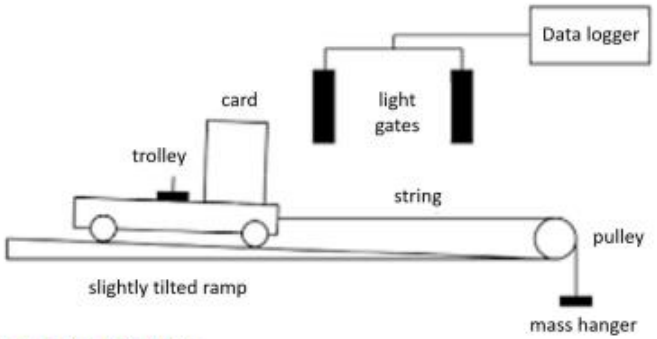


Core Practical: Investigating Newton's Second Law

Independent variable (changing)
The force – add more weights onto the hanger.

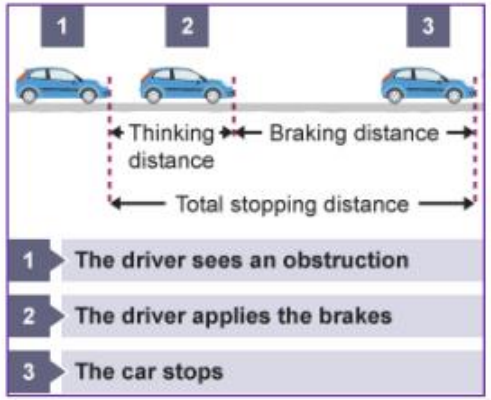
Dependent variable (measuring)
The acceleration – using the light gates and data logger.

Control variable (keep the same)
The total mass – stick weights on top of trolley at start of experiment. Transfer to hanger when increasing the force.



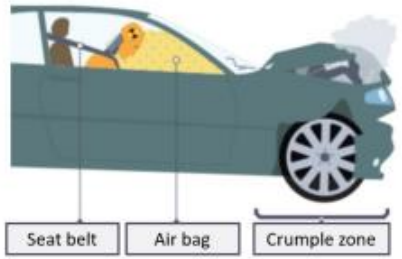
Reducing friction
Use ramp – lift one end of the ramp until the trolley *just* starts to move.

Cars, braking, and crashing



- **Thinking distance**
  Affected by anything which effects the driver (e.g. reaction time, alcohol, drugs, tiredness, distraction)
- **Braking distance**
  Affected by anything which effects the road (e.g. worn-out tyres, icy/rainy road)
- **Stopping distance**
  = thinking distance + braking distance

Safety features
- Seatbelt
- Air bags
- Crumple zone

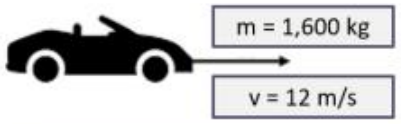


All the safety features **increase the time** it takes for a car to stop. This **decreases the force** on the passengers because…

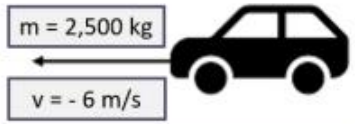
force = change in momentum/time

Momentum - **Higher**

- Velocity and momentum are vectors (they have a direction)
- If two objects are moving in opposite directions, one has a positive momentum and one has a negative momentum



p = m x v
p = 1600 x 12
p = 19,200 kg m/s



p = m x v
p = 2500 x (-6)
p = -15,000 kg m/s

Conservation of momentum
- Momentum is conserved. This means that the total momentum before a collision is equal to the total momentum after a collision.
- E.g. (for the two cars above) the total momentum = 19,200 + (-15,000) = **4,200 kg m/s**
- After they crash together, the total momentum will still be 4,200 kg m/s

Momentum and forces
- Back of the paper equation:
- **If** the time it takes for something to stop increases, the force it experiences decreases

force = change in momentum ÷ time

$$F = \frac{(mv - mu)}{t}$$

Physics Y10 Cycle 1: Topic 2 Forces

Retrieval Questions

Question	Answer
1. State Newton's First Law	
2. State Newton's Second Law	
3. State Newton's Third Law	
4. Define thinking distance	
5. Define braking distance	
6. Identify three safety features in a car	

Question	Answer
7. Complete the sentences:	An independent variable is something that you _____. A dependent variable is something that you _____. A control variable is something that you _____.
8. Describe how to reduce friction in the Newtons Second Law Core practical	
9. How do you measure acceleration in the Newton's Second Law Core practical?	
10. Why do safety features in cars benefit passengers in a crash?	
11. What is the law of conservation of momentum?	

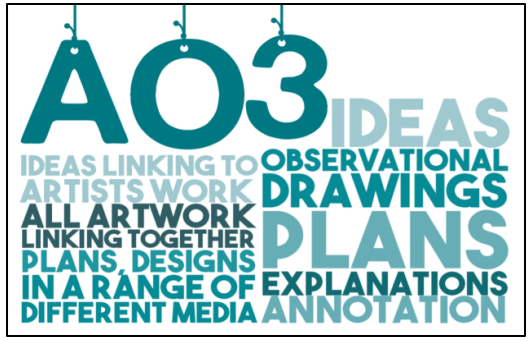
St. Wilfrid's RC College - Knowledge Organiser

GCSE - Fine Art - AQA

How to develop ideas
- Artist research
- Mind maps/mood boards
- Sketches
- Experiments
- Observations
- Photography

AO1 – Develop Ideas (Research & Inspiration)

- Research artists, designers and other relevant sources.
- Gather inspiration from a range of sources, such as artworks, photographs, objects, books, memories, observations, culture and nature.
- Analyse your sources rather than simply collecting them.
- Explain what interests you and how it links to your theme.
- Show how artists and other sources have influenced your ideas.
- Compare sources and make connections between them.
- Use your research and inspiration to develop personal and original outcomes.



Ways to record:
- Observational drawings
- Photography and contact sheets
- Annotations
- Sketches
- Colour studies

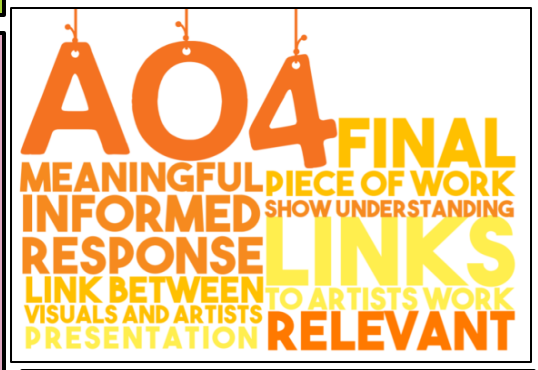
AO3-Record Ideas (Observations & Thinking)

- Create observational drawings from primary and secondary sources.
- Use annotations to explain ideas and decisions.
- Record your process through sketches, photos and notes.
- Show how ideas develop step-by-step.
- Make your intentions clear throughout the project.
- Demonstrate growing understanding and confidence.

How to refine:
- Experiment
- Practise
- Review
- Improve
- Repeat

AO2-Refine Work (Experiment & Improve)

- Develop and improve ideas over time.
- Experiment with a range of materials and techniques.
- Take creative risks and explore new approaches.
- Record what works and what doesn't.
- Make improvements based on your discoveries.
- Adapt artist techniques in your own way.



How to Present a Personal Response:
- Final piece
- Personal style
- Artist links
- Refined techniques
- Considered choices

AO4- Present a Personal Response (Final Piece)

- Create a final outcome linked to your theme and research.
- Combine artist inspiration with your own ideas.
- Demonstrate skill, creativity and control.
- Show a clear journey from research to final outcome.
- Explore and develop several ideas before deciding on a final piece.
- Produce a personal and meaningful response.

St. Wilfrid's RC College - Knowledge Organiser

GCSE - Fine Art - AQA

How to develop ideas:

Sources can include:

- Artists & designers
- Photographs
- Objects
- Books & articles
- Personal experiences
- Culture
- Nature

Show development through:

- Research
- Mind maps
- Mood boards
- Observational studies
- Photography
- Sketches
- Experiments

AO1 – Develop Ideas (Research & Inspiration)

- ❑ Is your source historical, contemporary or personal?
- ❑ What themes, ideas or subjects does it explore?
- ❑ What do you notice first about it?
- ❑ What colours, tones, textures, lines, shapes or forms can you see?
- ❑ What mood, atmosphere or message does it communicate?
- ❑ Why is this source relevant to your theme?
- ❑ What do you find interesting about it and why?
- ❑ What visual elements, techniques or ideas could you use in your own work?
- ❑ How does this source connect to other sources you have researched?
- ❑ How could it inspire the development of your ideas?
- ❑ What have you learnt from this source that could influence your next piece?

Remember: Focus on analysing why the source is relevant and how it can inspire your work. Information such as where an artist was born, when they were born, or details about their personal life are only useful if they help you understand the artwork or ideas being explored.

How to refine:

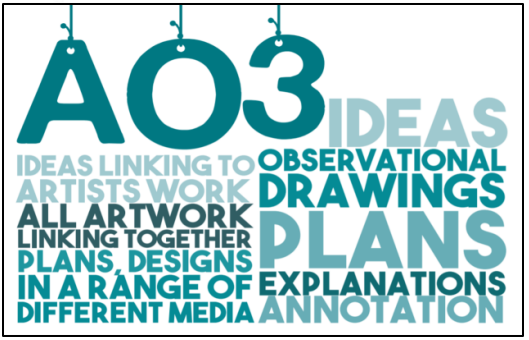
- Experiment
- Practise
- Review
- Improve
- Repeat

AO2 – Refine Work (Experiment & Improve)

- ❑ Have you explored a range of materials and media?
- ❑ Have you completed artist-inspired experiments?
- ❑ Have you tried different compositions or layouts?
- ❑ Have you tested colour combinations and techniques?
- ❑ Have you taken creative risks and tried new ideas?
- ❑ Have you documented your process with photographs?
- ❑ Have you explained what worked well and why?
- ❑ Have you explained what didn't work and how you improved it?
- ❑ Have you developed your ideas from one experiment to the next?
- ❑ Have you shown clear refinement throughout your project?

St. Wilfrid's RC College - Knowledge Organiser

GCSE - Fine Art - AQA

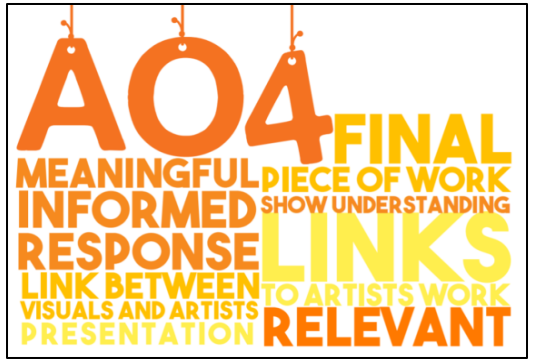


Ways to record:

- Observational drawings
- Photography and contact sheets
- Annotations
- Sketches
- Colour studies

AO3 – Record Ideas (Observations & Thinking)

- ❑ Are your observational drawings clear and detailed?
- ❑ Have you worked from primary sources (real objects, photographs, first-hand observations)?
- ❑ Have you recorded details such as line, tone, texture, shape and form?
- ❑ Have you included annotations explaining your ideas and decisions?
- ❑ Have you used photographs, sketches and notes to record your process?
- ❑ Have you shown how your ideas developed over time?
- ❑ Have you included studies from different viewpoints or compositions?
- ❑ Have you clearly communicated your intentions?
- ❑ Have you linked your observations to your theme?
- ❑ Have you shown evidence of a creative journey?



How to Present a Personal Response:

- Final piece
- Personal style
- Artist links
- Refined techniques
- Considered choices

AO4 – Present a Personal Response (Final Piece)

- ❑ Have you mind-mapped or planned your final ideas?
- ❑ Have you created communicative sketches to explore and develop your final outcome?
- ❑ Have your sketches helped you explain composition, layout, colour or design choices?
- ❑ Have you explored more than one possible outcome?
- ❑ Have you included influences from artists you have researched?
- ❑ Have you explained why you selected your final idea?
- ❑ Have you combined your own style with artist inspiration?
- ❑ Does your final piece link clearly to your theme?
- ❑ Does your final piece show skill and control?
- ❑ Have you shown how your experiments informed your final outcome?
- ❑ Is your response creative, personal and original?
- ❑ Have you clearly presented and evaluated your final outcome? (For coursework projects)

Annotation:
Look, Think, Link

LOOK – Observational Recording

☐ I have worked from **primary sources** (real objects, my own photographs, observations from life) or **secondary sources** (artists, artworks, photographs, books, films, articles, etc.)
☐ I have drawn from **different angles or viewpoints**
☐ I have used a **range of media** (pencil, ink, paint, charcoal, etc.)
☐ I have recorded **details carefully** (texture, tone, shape, form)
☐ I have **interacted with the subject** (not just copied an image)

Key question:
What can I see, and how accurately can I record it?

THINK – Analyse & Understand

☐ I have researched **relevant artists, designers or other sources** of inspiration
☐ I have analysed the **formal elements** (colour, line, tone, texture, pattern, form, shape)
☐ I explain **why** the artist made certain choices
☐ I describe **how the work makes me feel and why**
☐ I identify the **message or meaning** behind the work
☐ I avoid simple comments like *"I like it"* without explanation

Key question:
What is the artist communicating, and how?

LINK – Develop & Apply

☐ I have applied **artist techniques** to my own work
☐ I have combined **artist ideas with my own observations**
☐ I show **clear development** from research to my own outcomes
☐ I explain **how my work is influenced**
☐ I take **creative risks** and try new approaches
☐ My work becomes more **personal and original**

Key question:
How will this influence my next piece?

Sentence Starters (Use these in your annotations!)

- *The artist/source uses… to…*
- *This communicates…*
- *This creates… because…*
- *This makes me think/feel…*
- *I could/will apply this by…*
- *This links to my work because…*
- *This has inspired me to…*
- *I will develop this idea by…*

What Good Annotation Looks Like

✓ Written clearly next to your work
✓ Explains **ideas and decisions** (not just describes)
✓ Uses **art vocabulary (keywords)**
✓ Shows **thinking and development over time**

1.1 The role of business enterprise and entrepreneurship

Entrepreneur	An individual to takes a risk to set up a business
Enterprise	Seeing an opportunity to provide and create a product or service
Opportunity	Taking advantage of a possibility
Characteristics	Features of an entrepreneur (listed to the right)

Characteristics of an Entrepreneur

- Risk taker
- Determined
- Confidence
- Creative

Three purposes of business enterprise and entrepreenurship

Spotting an opportunity
- improving a product or servcice already provided
- spotting a gap in the market
- producing a product or service more cheaply

Developing an idea
- designing the product or service
- planning production

Satisfying customer needs
- producing the product or providing the service
- marketing the product or service

Rewards

Financial – potential to make a lot of money
Non-financial – independence, self-satisfaction, making a difference

Risks

Financial – losing savings and other assets paying off debts
Non-financial – health – mental and physical illness

Rewards for Risk Taking

- Financially-the greater the risk the bigger the reward. Potentially entrepreneurs can make large profits.
- Independence-entrepreneurs can be more independent and make all of their own decisions.
- Self satisfaction-an entrepreneur will get great satisfaction from taking a risk and succeeding.

Drawbacks for Risk Taking

- Financially-entrepreneurs take big financial risks and could potentially invest in an opportunity that isn't successful.
- Health-if an opportunity fails or it requires more work than anticipated it can put a huge amount of stress on the entrepreneur.

Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What is an entrepreneur?

.....

2 State TWO characteristics of a successful entrepreneur.

.....

3 What does the term 'enterprise' mean in a business context?

.....

4 Identify the THREE purposes of business enterprise.

.....

5 Give ONE financial reward an entrepreneur might gain.

.....

6 Give ONE non-financial reward an entrepreneur might gain.

.....

7 Describe ONE financial risk an entrepreneur takes when starting a business.

.....

8 Describe ONE non-financial risk an entrepreneur takes.

.....

9 Explain why identifying an opportunity in the market is important for an entrepreneur.

.....

10 'The rewards of being an entrepreneur always outweigh the risks.' Do you agree? Give a reason.

.....

knowledge and understanding

1.2 Business Planning

Aims and objectives	Statements of what the business is trying to achieve e.g. profit
Business plan	Simple plan which sets out details of the product or service being sold, and how it will be financed, marketed and details of market research findings.
Finance	A business word used instead of money. The finance needed to start a business is the money required to buy the resources needed
Markets	Where a business sells its goods and services
Resources	The things a business sells needs to make it work, including finance, staff and materials
Operate	A term used to explain how a business works
Success	For a business, can take many forms, including making profit, surviving and providing a good service to customers

Why businesses plan:

1. Reduce the risk of failure
2. To be as successful as possible

The business plan explains how they will achieve their objectives. **It is written before the business starts or when planning a change in how an existing business operates.**

Objectives must be:

Specific	Measurable	Achievable	Realistic	Timely
S	M	A	R	T
G	O	A	L	S
What do you want to do?	How will you know when you've reached it?	Is it in your power to accomplish it?	Can you realistically achieve it?	When exactly do you want to accomplish it?

Steps in developing a business plan

The idea
- Identifying what the business will produce and sell and what resources it will need
- Identifying the aims and objectives of the business and how these will be met

The people
- Identifying who will be invovled
- Identifying the human resource requirements the business will need to operate, including the number of people needed and the skills and experience they should have

Market reserch
- Identifying the markets that the business will target
- Identifying marketing activities to make the business successful
- Identifying the marketing resources needed

Finance
- Identifying how much finance is needed, for what and how it will be raised
- A good business plan is necessary to present to investors if a business hopes to obtain external finance

Competitors
- Identifying the competitors
- Identifying how the product or service will be different to those of competitors - better, cheaper?

Business Plan

Identifying the market
The age, gender and income of target customers for example

Identifying the resources
The resources that are needed to operate, i.e. worker, equipment, machinery

Identifying the finance needed
How much is needed, when it is needed and how it will be obtained i.e. selling shares, obtaining a loan or an overdraft

Achieve the business' aims and objectives
Making a profit, expanding the business, increasing market share or just surviving

Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What is a business plan?

2 State TWO reasons why a business writes a business plan.

3 What does SMART stand for when setting business objectives?

4 What is the difference between an aim and an objective?

5 Identify FOUR steps involved in developing a business plan.

6 What does 'finance' mean in a business context?

7 Why is identifying the market an important part of a business plan?

8 Give TWO examples of resources a business might need to operate.

9 When should a business plan be written?

10 'A business plan is only useful when starting a new business.' Do you agree? Give a reason for your answer.

knowledge and understanding

1.3 Business ownership

Sole trader	One person owns and finances a business
Partnership	2-20 partners own and finance a business
Deed of partnership	A document stating who owns the partnership, how much money each partner has invested and their role in the business
Private limited company (LTD)	Shares are sold to family and friends
Public limited company (PLC)	Shares are sold to anyone on the stock exchange

Unlimited Liability

The owners of the business **ARE** responsible for the debt of the business. They may have to sell their personal possessions if the business gets into debt.

Limited Liability

The owners of the business **ARE NOT** responsible for the debt of the business. They **DO NOT** have to sell their personal possessions if the business gets into debt. They only lose their ***INITIAL INVESTMENT***.

Sole Trader

Advantages

- Owner keeps ALL of the profit **THEREFORE** can decide what to do with it.
- Owner makes ALL of the decisions **THEREFORE** can decide on the objectives for the business.

Disadvantages

- Unlimited liability **THEREFORE** the owners are responsible for the debt and may lose personal possessions which makes it more **RISKY**.
- May be difficult to get a loan **THEREFORE** more difficult to finance any short term (overdraft) and long term (loan) issues.

Partnership

Advantages

- More ideas and skills **THEREFORE** the business is likely to be more efficient.
- Increased amount of start-up capital **THEREFORE** easier to start the business off.

Disadvantages

- Unlimited liability **THEREFORE** the owners are responsible for the debt and may lose personal possessions which makes it more **RISKY**.
- There may be arguments between partners **BECAUSE** they have different views.

Private Limited Company LTD

Advantages

- Can sell shares to family and friends **THEREFORE** raise more capital to invest into the company.
- Limited liability **THEREFORE** shareholders are not responsible for the debt of the business, they only lose their initial investment which makes it less risky.

Disadvantages

- Dividends are paid to shareholders **THEREFORE** a percentage of the profits will have to be distributed.
- It takes time and money to become incorporated **THEREFORE** there is an additional cost of time and money

Public Limited Company PLC

Advantages

- Can sell shares on the stock exchange **THEREFORE** raise more capital to invest into the company.
- Limited liability **THEREFORE** shareholders are not responsible for the debt of the business, they only lose their initial investment which makes it less risky.

Disadvantages

- Dividends are paid to shareholders **THEREFORE** a percentage of the profits will have to be distributed.
- It takes time and money to become incorporated **THEREFORE** there is an additional cost of time and money

Sole Trader
Suitable for start-ups that:
- only need a small amount of finance
- usually have a low financial risk
- require limited or non-specialist skills

Partnership
Suitable for start-ups or established businesses wanting to grow that:
- need larger amounts of finance (than a sole trader)
- low financial risk
- need a wider range of skills
- owners want to keep control

Private Limited Company
Suitable for start-ups and established businesses wanting to grow:
- need more finance
- increased or high financial risk
- have owners who wish to keep control

Public Limited Company
Suitable for established businesses that:
- wish to grow
- needs very large amounts of finance
- has a very high financial risk

Evaluation

Reasons to change to an LTD or PLC:

- Ability to raise capital from selling shares
- Limited liability protects shareholders from company debt

In context:

If a business is growing and requires more capital to invest into the business = change to a LTD or PLC

If a business is growing, there is likely to be more risk therefore changing to a LTD or PLC = limited liability

Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What is a sole trader?

2 What is a partnership? How many partners can a partnership have?

3 What is a deed of partnership?

4 What is the difference between a private limited company (LTD) and a public limited company (PLC)?

5 What does 'unlimited liability' mean?

6 What does 'limited liability' mean?

7 State ONE advantage of being a sole trader.

8 State ONE disadvantage of being a sole trader.

9 State ONE advantage and ONE disadvantage of a partnership.

10 'A sole trader is a better type of business ownership than a partnership.' Do you agree? Give a reason for your answer.

knowledge and understanding

1.4 Business aims and objectives

Business objectives	These are the aims of a business, and can include survival, profit, growth and providing a service
Evolving	Refers to the ways a business develops and changes over time, by becoming bigger or smaller and by selling different goods and services or a wider range, as well as selling in different places and in different ways

How and why objectives might change as businesses evolve

As businesses evolve they will have different objectives because:

- They are at different stages of their development
- Their owners have different motivations
- They are influenced by different market conditions
- They are experiencing different economic conditions

Survival
- Concerned with a businesses ability to continue trading in the long term
- Businesses may survive for a short period of time without making a profit

Profit
- The reward to owners for taking risks.
- Many businesses seek to maximise their profits for the benefit of the owners.

Growth
- Increasing sales or market share.
- Both are ways of increasing profits

Providing a service
- Some owners want satisfaction of giving customers a good service (provided they can still make profit)
- Can be seen as a way of making profit as customers are likely to return

Market Share
- Refers to the percentage of the market that a business occupies.
- The market is the industry that a business operates in, for example the fast food industry.

Reasons behind business objectives

Survival
- For a new business – to become established and secure
- For a business during economic downturn or when a market is competitive

Growth
- New business = growth of sales or market share to help survive
- Established business = gain more power in the market, reduce competition and increase profit

Profit
- New business = minimum level of profit to survive
- Established business = earn profit to reinvest and expand
- Good profits encourage investors to put money into the business to help it grow

Providing a service
- Helps to get a good reputation = attract new customers and retain existing customers
- Can help survival and increase profits

Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What are business objectives? Give TWO examples.

2 What does it mean for a business to 'evolve'?

3 What is the 'survival' objective? Why might a business prioritise it?

4 What is 'profit' and why do many businesses seek to maximise it?

5 What is 'growth' as a business objective? Give ONE way a business can grow.

6 What is 'market share' and what is a market?

7 Why might 'providing a service' be a business objective?

8 State THREE reasons why a business's objectives might change as it evolves.

9 Explain the difference between the profit objective for a NEW business versus an ESTABLISHED business.

10 'Survival is the most important objective for any business.' Do you agree? Give a reason for your answer.

Business Activity

1.5 Stakeholders in business

Stakeholder	Interest
Customers	Quality/price/range /availability of products, customer service
Employees	Wages, holidays, working conditions
Suppliers	Size of order, payment
Bank	Can afford to pay loan/overdraft back, amount of finance, amount of savings
Owners/shareholders	Profit, growth, dividends

Objectives of stakeholders:
Owners – make profits
Employees – satisfaction of having a job and income, fair treatment, enjoyment of social aspect of working with colleagues

Customers – affordable prices, benefits of the good and services
Suppliers – make sales, earn profits
Government – encourage businesses as leads to high employment, increases the taxes paid to government
Local Community - have local area which is prosperous, healthy and safe

Conflicting Objectives

How would the interests of each stakeholder conflict:

1. Customers and owners

Customers will want the cheapest price and the highest quality. Whereas owners want to set a high price to ensure a higher profit.

2. Owners and employees

Employees will want high pay and good working conditions. This will increase business costs. Owners want to make as much profit as possible which means paying lower wages.

Tesco are buying one of their major suppliers of food and drink. **Analyse** how 2 stakeholders will be effected. Remember U/APP/AN

Stakeholder 1: ***Customers*** ✓

Effect: ***will potentially have cheaper food and drink*** ✓ *APP* ***products to buy which saves them money*** ✓

Stakeholder 2: ***Tesco*** ✓

Effect: ***will be able to secure food and drink*** ✓ *APP* ***supplies at a cheaper price which lowers costs.*** ✓

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Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What is a stakeholder? Give TWO examples.

2 What are the interests of CUSTOMERS in a business?

3 What are the interests of EMPLOYEES in a business?

4 What are the interests of OWNERS/SHAREHOLDERS in a business?

5 State the difference between an internal and an external stakeholder. Give ONE example of each.

6 What are the objectives of the GOVERNMENT as a stakeholder?

7 Explain how the interests of CUSTOMERS and OWNERS might conflict.

8 Explain how the interests of OWNERS and EMPLOYEES might conflict.

9 What is the objective of the LOCAL COMMUNITY as a stakeholder?

10 'Owners are the most important stakeholder in a business.' Do you agree? Give a reason for your answer.

knowledge and understanding

1.6 Business growth

Organic growth	Concerned with the internal growth of a business e.g. by increasing sales
External growth	The growth of a business by takeover or merger
Backward vertical growth	When a business merges with, or takes over, a business that supplies it with goods or services
Diversification	When a business merges with or takes over another business with which it has no connection
Forward vertical growth	When a business merges with, or takes over, a business that it supplies goods or services to
Horizontal growth	A merger or takeover where the two businesses are involved in a similar operation
Merger	Where two or more businesses agree to join to become one business
Takeover	Where a business takes a controlling interest in another business, for example, by buying more than 50% of the shares in it.

Examples of external growth

Horizontal growth - another furniture manufacturer
- Each factory can specialise in a particular type of furniture
- One factory could be closed if not needed, reducing costs

Diversification - A perfume manufacturer
- Risk is spread, success does not rely only on furniture sales

Backwards vertical growth - A timber merchant
- It guarantees a supply of wood to make the furniture
- The manufacturer can benefit from the timber merchant

Forward vertical growth - Furniture retailer
- The manufacturer is guaranteed somwehere that will sell what it produces to consumers

Organic Growth

Increasing output
Business increases the amount it produces
- using resources more efficdently
- using spare capacity (how much output it can produce)
- increasing the capcity e.g. building new factory

Gaining new customers
the business gains new customers by:
- reducing prices
- opening new shops
- better marketing

Developing new products
- researching and developing
- copying ides from others
- buying ides from others

Increasing market share
- increasing its own sales
- taking business from other firms

	Advantages	Disadvantages
Organic	- Less risk than external - financed through internal funds - business can grow at more sensible rate	- slower form of growth - shareholders may prefer this to be quicker - growth can be limited
External	- Competition can be reduced - market share can be increased very quickly	- very expensive - managers may lack experience to deal with the other business

Quick Quiz

Answer all questions. Write your answers in the space provided.

1 What is organic growth? Give ONE example of how a business can achieve it.

2 What is external growth? State TWO ways it can happen.

3 What is the difference between a merger and a takeover?

4 What is horizontal growth? Give an example.

5 What is backward vertical growth? Give an example.

6 What is forward vertical growth? Give an example.

7 What is diversification?

8 State ONE advantage and ONE disadvantage of organic growth.

9 State ONE advantage and ONE disadvantage of external growth.

10 'External growth is always better than organic growth for a business.' Do you agree? Give a reason for your answer.

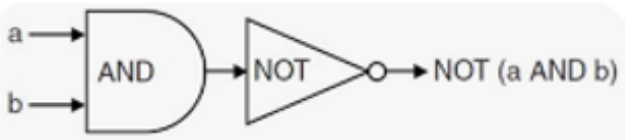
GCSE Computer Science Knowledge Organiser
Year 10 – Cycle 1

Boolean Logic

Boolean Logic

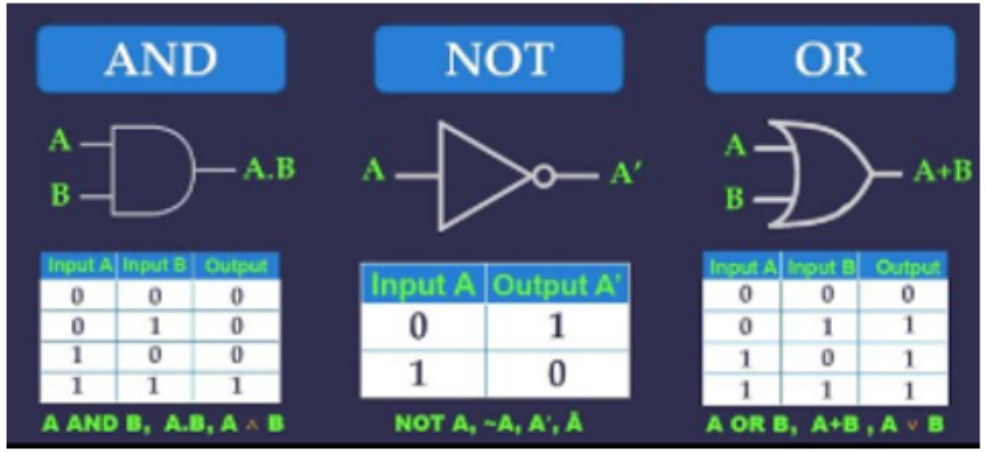
Key Term	Definition
Binary	The patterns of 1's and 0's used to represent all forms of data in a digital format.
Truth Table	A notation used in Boolean algebra for defining the output of a logic gate or logic circuit for all possible combinations of inputs.
Boolean Logic Gates	The fundamental building blocks of digital electronics and computer processors. They include AND, OR and NOT gates.
Boolean Logic Operators	The fundamental logical conditions used to compare variables and establish relationships between terms. They include AND, OR and NOT.
Boolean Logic Expressions	A logical statement or diagram that evaluates to one value (1,0). Often combines the AND, OR and NOT operators/gates.

Combining Gates



A	B	NOT (a AND b)
0	0	1
0	1	0
1	0	0
1	1	0

AND, OR, NOT Gates - Symbols and Truth Tables

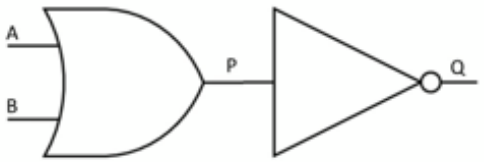


Input A	Input B	Output
0	0	0
0	1	0
1	0	0
1	1	1

Input A	Output A'
0	1
1	0

Input A	Input B	Output
0	0	0
0	1	1
1	0	1
1	1	1

Boolean Logic Expressions in diagram form



A logic diagram is a **visual representation** of combinations of Boolean operators within a logic circuit
An example would be **Q = NOT(A OR B)**

Key Concept for GCSE Computer Science

The **purpose** of a TRUTH TABLE is to identify all the possible inputs and outputs for a circuit.

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Year 10 – Cycle 1

Legal (1.5.1) and Ethical Considerations (1.5.2)

Why do we have legislation for Computer Science in the UK?

The legislation (laws) have been created due to the increased use of computer science and its related technologies and their impact on society e.g Copyright the theft of digital content.

Legal Laws that apply to Computer science

Key Term	Definition
Computer Misuse Act 1990	There are three separate parts to the Act: 1. It is illegal to access a computer unless you have permission to do so. 2. It is illegal to access data on a computer when that material will be used to commit further illegal activity, such as fraud or blackmail. 3. It is illegal to make changes to any data stored on a computer when the user does not have permission to do so.
Data Protection Act 2018	This law protects your **personal** data when used by companies and organisations. Personal data must be: Fairly & lawfully processed / Obtained for legitimate purposes Adequate, relevant & not excessive / Accurate & up to date Not be kept longer than necessary / Handled securely.
Copyright, designs and Patents Act 1998	The Copyright, Designs and Patents Act 1988 exists to protect content created by people and people's ideas. This can include • A song • An image • An idea
Regulator Investigatory Powers Act	To provide a legal framework for public authorities to monitor and intercept digital communications.

Software Licensing

Open Source	Closed Source
Generally Free but not always **Source code is public** and can be modified Support not available. Can be lower quality.	May require a fee or purchase **Source code is hidden** and cannot be modified Support often available. Better quality.

Impacts of Digital Technology on Society

We consider the impacts of technology in 4 key areas

- Ethical Issues
- Cultural Issues
- Environmental Issues
- Privacy Issues

The impacts of technology in 4 key areas

Key Concept	Considerations
Ethical Issues	Ethics are moral principles, or rules, which govern a person's attitudes and behaviour in society • Health problems. Using technology for too long • Peer Pressure. The need to buy what you may not be able to afford to fit in • Data security – companies can misuse data they have about you
Cultural Issues	The introduction of computers has changed society, sometimes for the better, sometimes for the worse. 'Cultural issues' is the term used for computer matters that have an effect on the nature and culture of society. • Censorship (Restricting what you can see) • Surveillance (Watching what you do, see or read) • The Digital Divide (old/young, rural/urban, financial) • Access to education
Environmental Issues	Computers are having a significant impact on the environment, both good and bad. • Zoom and Teams video conferencing can reduce the number of car journeys and therefore pollution • Technology can help us less energy e.g. smart meters / solar power • Making computer devices uses a lot of precious metals such as gold, cadmium • Devices uses a lot of energy and this can come from fossil fuels leading to climate change • We throw away a lot of old devices creating e-waste and polluting the soil with harmful chemicals
Privacy Issues	We share increasing amounts of data with companies online and through social media • Social media companies actively encourage children to post even more personal information • Cyberbullying and trolling on social media have major impacts on a persons health

GCSE Computer Science Knowledge Organiser
Year 10 – Cycle 1

Programming fundamentals (2.1)

Data Types

Key Term	Definition	Example
Integer	Whole Number	1, 2
Real/Float	Decimal Number	1.5, 3.4
String	Text within quotes	“Hello”
Char	Single character	‘p’, ‘!’
Boolean	True or False, 1 or 0	True, False,1,0

Incrementing Variables

Use a VARIABLE to store and change data in your program:

```
iScore = iScore + 1
```

Sequence

The sequence of steps (lines) in a program. All algorithms are examples of **Sequence.**

Selection

Where an algorithm makes a decision, allowing a program to choose different paths of execution based on whether a specific condition evaluates to True or False.

Use of the IF/ELSE command

```
if iPinNumber == "2473":
    print("Welcome - phone unlocked")
else:
    print("Incorrect PIN Number")
```

Use of the Switch CASE command

```
Switch Age
   case 5
     print(“Primary”)
   case 12
     print(“Secondary”)
   default
     print(“Somewhere”)
```

Programming Terminology

Key Term	Definition
Variable	A variable is memory location that holds a value that may change during the run of a program.
Constant	A constant is memory location that holds a value that will **not** change during the run of a program.
Casting	Changing the data type of a variable.
Programming Construct	A fundamental building block of code that dictates the execution flow of a program. Includes Sequence, selection and Iteration.

Iteration

Use the FOR or WHILE command to repeat lines of code:

```
for counter in range(1,11)
    print counter

while counter < 11:
    print counter
    counter = counter + 1
```

Inputting Data

Use the INPUT command to get information from the user into your program.

To INPUT a STRING:

```
sName = input("Please enter your name")
```

To INPUT a WHOLE number (you need to cast):

```
iWholeNumber = int(input("Please enter a whole number"))
```

To INPUT a DECIMAL number (you need to cast):

```
rDecimalNumber = float(input("Please enter a decimal"))
```

Outputting Data

Use the PRINT command to display information to the user from your program.

To OUPUT a STRING: `print("Hello World!")`

To OUTPUT a WHOLE or a DECIMAL number you need to **cast:**

```
print("A whole number: " + str(iNumber))
print("A decimal number: " + str(fNumber))
```

Programming Syntax

Ask for a copy....

GCSE Computer Science Knowledge Organiser
Year 11 – Cycle 1

Introduction to Digital Skills

Core Knowledge

Keyword	Definition
Digital Graphics	Images created or edited using computer software
Raster Graphics	Pixel-based images that lose quality when scaled
Vector Graphics	Scalable images made from mathematical paths
Resolution	Amount of detail in an image (e.g., 1920×1080)
Pixels	Tiny coloured squares that form images
DPI	Dots per inch; measure of print quality

Colour and Typography

Keyword	Definition
Colour Theory	Rules for combining colours effectively
RGB	Colour mode for screens
CMYK	Colour mode for printing
Colour Palette	Set of colours used in a design
Typography	Style and arrangement of text
Font	Type/style of text
Kerning	Space between letters
Leading	Space between lines of text

File Formats

Keyword	Definition
JPEG	Compressed image for photos
PNG	Supports transparency
GIF	Simple animation format
SVG	Scalable vector format
PSD	Editable Photoshop file
Exporting	Saving in suitable format

Design Principles

Keyword	Definition
Composition	Arrangement of elements in a design
Balance	Distribution of visual weight
Contrast	Differences that make elements stand out
Hierarchy	Order of importance in design
Alignment	Lining up elements for structure
Repetition	Reusing styles for consistency
White Space	Empty space improving readability

Tools and Features

Keyword	Definition
Graphic Software	Tools like Photoshop, Illustrator, Canva
Layers	Editable stacked elements in designs
Selection Tools	Tools to select parts of an image
Brush Tool	Tool for painting/drawing
Transform Tools	Resize, rotate, distort elements
Filters	Effects applied to images

Editing techniques

Keyword	Definition
Cropping	Removing unwanted parts of an image
Resizing	Changing image dimensions
Masking	Hiding/revealing parts non-destructively
Opacity	Transparency level
Blending Modes	How layers interact
Retouching	Improving image quality

The Purpose of Visual Identity

Visual identity helps audiences recognise a brand and get a feel for what the company's all about. It's a bit of a tricky concept to get your head around, but it's also a pretty key part of the course. Better get reading then...

A Strong Visual Identity is Easily Recognisable

1) Visual identity is any sort of image or graphic that a brand uses, for example:

   Logos | Characters | Typography (in names or slogans)

2) Successful brands build a visual identity by using the same features repeatedly. This repetition helps the brand's visual identity to become familiar to the audience.
3) Familiarity helps an audience recognise a brand, its products and services, which means they can find a company's products easily.

A strongly established brand might only need to be seen for a moment to get its message across.

An Established Visual Identity Can Extend Across Product Ranges

1) The visual identity of a brand can be applied to other products sold by a company.
2) A well-established visual identity will help attract attention and trust from consumers as they already recognise the brand or product on offer.
3) However, just because one product made by a company has a strong visual identity, it doesn't mean all the company's other products need to look the same.

EXAMPLE

McVities® products all have their own visual identities, even though they're made by the same company.

Visual Identity Can Help Build Brand Loyalty

1) Brand loyalty is when consumers pick one brand over another simply because they are more familiar with it or trust it more.
2) Visual identity helps consumers to recognise brands they already like and choose those products over competitors.

Visual Identity Communicates More Than the Brand Name

Brands want the audience to associate the following things with their visual identity:

1. The nature of the business or organisation.
2. What they stand for. E.g. Do they try to reduce their environmental impact or use natural ingredients?
3. An emotional response. E.g. Does familiarity create a feeling of comfort or reassurance?

Component Features and Elements

The visual identity of a brand can be broken down into three main features — a brand name, a logo and a slogan. It's funny how the best things come in threes, like colours on a traffic light.

Video Guide

The Brand Name is Often the Most Memorable Part

1) Any business or organisation needs a name, although sometimes a company will change their name as part of a re-brand.
2) Brand names are important as they're what people use when they talk about products or businesses. They often give consumers their first impression of the brand.
3) Brand names can be based around:

The name of the person (or people) who founded or own the company, e.g. John Lewis.	A description of the business, e.g. We Buy Any Car.	A word that already exists, e.g. Caterpillar®.
A made-up word e.g. Kodak.	A combination of words joined together, e.g. Pinterest is 'pin' and 'interest' merged.	An acronym, e.g. HSBC stands for 'Hongkong and Shanghai Banking Corporation'.

The Logo is an Image That Represents the Brand Name

1) A logo can be a direct representation of the name or an abstract graphic related to what the business does.
2) Designers have to think about shapes, colours and lettering when creating logos.
3) Logos are often fairly simple, but sometimes they have lots of details.
4) Normally a logo will include the name of a business. However, once a brand is established, a business can sometimes use simplified versions of the logo (that don't include the name) and still be recognisable to consumers.
5) There are different types of logo:

An abstract graphic is one that doesn't look like a real thing.

EXAMPLES

An image

An emblem or badge

A character

Letterform

Abstract symbols

The Slogan is a Short, Catchy Phrase

1) Like brand names and logos, slogans (also called straplines) are meant to represent a brand.
2) Slogans can be in the form of a spoken catchphrase or description about the brand. They are often used in a brand's advertising.
3) It's not unusual for a slogan to change and develop over time. However, in general they should always:
   - Be catchy and easy to remember.
   - Promote the positive values of the brand.
   - Link to things the brand and the audience want to be associated with.

Creative iMedia Knowledge Organiser
Year 10 – Cycle 1

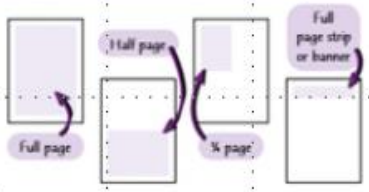
Layout Conventions
Sourcing Assets
Mind maps

Layout Conventions for Graphic Products

This page is all about the usual ways that printed products are laid out. Printed products are things like magazines, newspapers, posters, flyers and leaflets and even... this book you're reading right now.

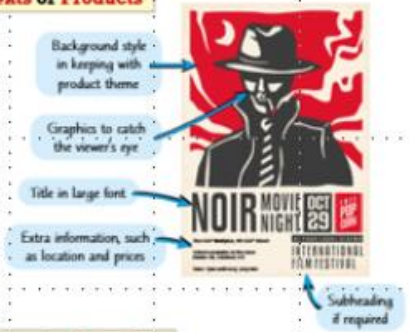
Adverts are Placed in Publications Which Share Their Target Market

1) Adverts are purchased per issue, and the cost depends on the size and position of the advert. The larger and more prominent the advertisement, the higher the cost.
2) Adverts typically show an image of the product, as well as its name, price, any relevant offers and a strapline or slogan.
3) Sometimes a magazine will dedicate a whole front cover to an advert and then have a second, more typical front cover on the inside.



Posters Promote Upcoming Events or Products

1) The purpose of a poster is to grab the viewer's attention and inform them about an upcoming event.
2) It may also aim to persuade them to buy something, e.g. a ticket for a film that's about to be released.
3) When designing printed material, remember to leave a margin around the edge — space needs to be left so that the document can be trimmed without anything important being lost.



A Leaflet is Designed to Slip Through a Letterbox

1) Leaflets may have more information than posters or adverts. This information is sometimes called 'copy'.
2) Leaflets don't have a fixed size or orientation but they're normally one of the following layouts (either landscape or portrait):
   - Standard A4 (297 × 210 mm)
   - A5 (half A4)
   - A4 or A5 folded into 2 or 3 panels
   - A6 (half A5)
   - A7 (half A6)

Sourcing Assets for Digital Graphics

If you were hankering after even more information about sourcing assets, it's your lucky day...

Original Photography Can Prevent Copyright Issues

1) Original photography (commissioning a photographer to take specific photos) can sometimes avoid ownership issues. However, the subject of the photo (e.g. a branded product) might come with its own copyright issues.
2) Designers can provide their own photos to a client and give permission for them to be used again by the client in the future.

Assets Can Be Sourced From Stock Photo Libraries

1) Stock libraries provide high-quality assets intended for designers to use. Using them is quicker and cheaper than hiring a photographer or artist.
2) Depending on the stock library, you may have to pay a fee to use the assets. Companies that use assets regularly (like newspapers) may have a subscription to a stock library.

Popular commercial stock libraries include:
Adobe® Stock, Getty Images, Shutterstock, iStock, Alamy

Some stock libraries have artificial intelligence (AI) generators that create images to match a description. E.g. a cat-shake wearing a santa hat, on snow, with a white Christmas tree.

3) There are also stock libraries that provide assets that can be used for free, although they don't always offer as much choice as the libraries that charge money.
4) If you use anything from a free-stock library, remember that you need to check the terms and conditions — you might need to give credit to the creator, or you might only be able to use the image for personal purposes (so not for a business).

Many stock library websites now offer videos, music and sound effects.

Popular free stock libraries include:
Pexels, Freeimages®, Unsplash, Pixabay

Record the Details of Assets as You Go Along

1) It's important to create an asset table for each project.
2) This means you'll always know where an asset has come from, in case you need to apply for a licence to use it. For example:

Asset description	Filename	Properties (e.g. file type, size)	Source	Legal issues	Use
Photograph of sparkler	Proj34_Sparkler_1475106199.jpg	JPEG 5655 × 3770 pixels	FabPiccIesRUs	Must credit Pete Pyro. One-time use only	Page 65
Graphic of hamster-on-rollerskates	hamster-on-rollerskates.jpg	JPEG 5035 x 3357 pixels	Maja Mazur's website (include the web address too)	Free to use commercially. Owner: Maja Mazur	Back cover

3) It's best to build an asset table as you work through a project — it's far more difficult to go back and track down all the links and sources afterwards.

Storing Assets

It's important on any project to make sure that you save your assets in a suitable location, using appropriate file types and naming conventions. A naming convention is a set of rules you stick to when naming files.

Create a Folder Structure and Naming Conventions Before You Start

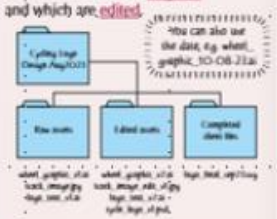
1) File names should follow the same conventions — they should contain the same information in the same order.
2) A good folder structure sorts assets into three categories:

1 Original/Raw Assets
These are original graphics files (e.g. graphics you've made yourself) or those from secondary sources like image libraries.

2 Edited Assets
These are the files you're currently working on. They're edited versions of the original graphics files.

3 Completed Client Files
These finished files are ready to be sent to the client.

EXAMPLE
This folder structure makes it clear which assets are originals and which are edited.



3) There are many benefits to having a file management system:
   - It avoids having more than one file with the same name.
   - It can help prevent accidental overwriting (saving one file over another).
   - You can easily find files if they're saved in the wrong folder.
   - You can make sure only the completed files are sent to the client.

Media Projects Have Three Types of Files

1 Original Graphics Files
These are graphics files in the format they were downloaded or created. It's important to check the copyright status of assets and download the highest quality version available.

2 Editing Files
Editing files are saved in the file format of the software they are created in. For example, files containing shapes, editable text blocks or multiple layers need to be kept in the software's own format.

3 Exported Files
- These are high quality files suitable for printing or publishing.
- Commercial printers request high quality graphics files in a print-friendly format such as TIFF or PDF. If the image includes transparency (e.g. a logo designed to be placed on other images), a suitable graphic format needs to be chosen, e.g. TIFF or PNG for bitmap images and EPS for vector graphics.

PDFs (Portable Document Format) can include both high quality images and text. This makes them ideal for final documents.

Q1. What are digital graphics?

Q2. What are raster graphics?

Q3. What are vector graphics?

Q4. What is resolution?

Q5. What are pixels?

Q6. What does DPI stand for?

Q7. What is composition in graphic design

Q8. What is contrast?

Q9. What is hierarchy in design?

Q10. What is RGB used for?

Q11. What is CMYK used for

Q12. What is typography?

Q13. What are layers in graphic design software?

Q14. What file format supports transparency?

Knowledge Organiser: KS4 Design Technology

New and Emerging Technologies: CAD CAM

CAD Computer Aided Design	
Examples; 2D Design, Autodesk Inventor, Fusion 360, Photoshop, etc	
Advantages	Disadvantages
• Easy to change designs • Designs are easily saved and sent • Can be worked on by multiple people simultaneously • Can be used for virtual testing • Can produce high-quality designs	• Complex and time-consuming to learn • Expensive to buy • PCs can crash or be hacked – causing work to be lost • Takes up PC memory

CAM Computer Aided Manufacture	
Examples; 3D Printing, Laser Cutting, CNC Router, Automated Machines and Robotics, etc	
Advantages	Disadvantages
• Faster and more accurate than traditional tools • Repetitive accuracy/ consistent outcomes • Machines can run 24/7	• Expensive to buy the equipment, etc • Training takes cost and time • Need specialists to maintain and repair the machines • Dependence on CAM can cause unemployment

Key words

CAD
CAM
Just In Time
Lean Manufacturing
CNC Router
Automation
3D printer
Laser cutter
Application
CNC Milling machine
Prototype

Knowledge Organiser: KS4 Design Technology

Developments in new materials: Modern and Smart materials

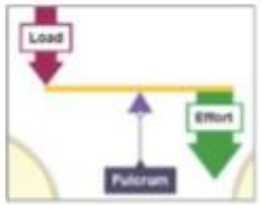
Smart Materials are materials that change and react to the stimuli		
Material	Key info	Examples
Thermochromic Pigments	Change colour in reaction to heat	Kettles, baby bottles, etc
Photochromic Pigments	Change colour in reaction to light	Colour changing glasses, windows, etc
Shape Memory Alloy	Returns to its original shape, in reaction to heat	Braces and glasses
Polymorph	Granules that once exposed to hot water, become a modelling material (like a dough or clay)	Modelling and repairs

Modern Materials are materials that have been developed recently		
Material	Key info	Examples
Corn-starch Polymers	These are plant-based polymers that are a replacement for plastics that are biodegradable but cannot be recycled.	Plastic bottles, tubs, food containers, etc
Flexible MDF	Made in the same way as normal MDF but with grooves cut into the surface so it is flexible. Flexiply is the same but for Plywood. These can easily be shaped into curves	Modern furniture, interior walls and room dividers
Titanium	High strength to weight ratio. Doesn't corrode or rust. Suitable for medical use as its hypo-allergenic	Prosthetics, medical applications, sports cars, etc
Kevlar	A woven polymer with a high strength to weight ratio.	Bullet-proof vests, tyres, helmets, etc

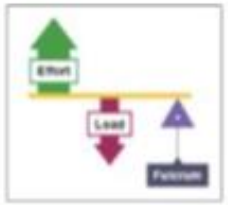
Knowledge Organiser: KS4 Design Technology

Mechanical Devices

Levers

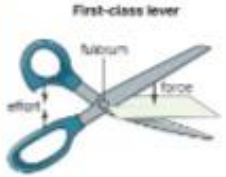


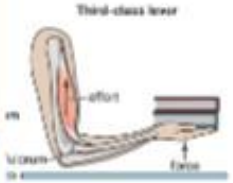
1st Class Lever:
Fulcrum in the centre
E.g. Scissors



2nd Class Lever:
Load in the centre
E.g. wheelbarrow

3rd Class Lever:
Force in the centre
E.g. Lifting a dumbbell





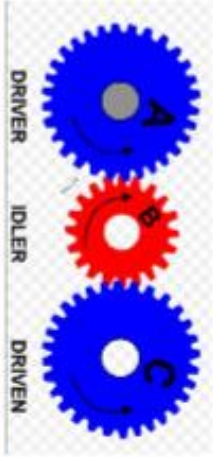
Gears and Pulleys

A Pulley is a grooved wheel, that has a belt running through it

This uses rotary motion and is often used to help with heavy loads, and transfer force from a motor to a tool in machines like drills, etc

Gears have teeth that mesh together with each other (like teeth on a zip)

They mainly focus on rotary motion on tools and machinery e.g. car steering and pillar drills



KS4 Design Technology – Module 1 Questions

Name: _____ Date: _____

1. What does CAD stand for?

☐	Computer Aided Design
☐	Computer Application Design
☐	Controlled Auto Drawing
☐	Computer Assisted Device

2. What is a key advantage of CAD?

☐	Difficult to edit
☐	Easy to change designs
☐	Always free
☐	Cannot be shared

3. What is CAM used for?

☐	Designing products
☐	Manufacturing products using machines
☐	Testing food
☐	Storing data

4. Which machine is used in CAM?

☐	3D printer
☐	Hammer
☐	Scissors
☐	Paintbrush

5. What is a disadvantage of CAD?

☐	Low quality designs
☐	Expensive software and training
☐	Cannot save work
☐	Too simple

6. Why is CAM useful in manufacturing?

☐	Slow production
☐	Accurate and consistent results
☐	Manual work only
☐	Uses no machines

7. What is a smart material?

☐	Very strong material
☐	Changes in response to a stimulus
☐	Cheap material
☐	Natural material

8. What happens to thermochromic pigments?

☐	Change colour with heat
☐	Change shape
☐	Melt easily
☐	Become stronger

9. Why is titanium used in products?

☐	It is weak
☐	It is strong and corrosion resistant
☐	It melts easily
☐	It is cheap

10. What is an advantage of automation?

☐	Less accuracy
☐	Machines can work continuously
☐	Slower production
☐	More human labour needed

Knowledge organiser: Topic Area 1: Engineering materials

Types of materials

Metals

Ferrous Metals	Ferrous metals contain iron. They may have small amounts of other metals or other elements added, to give the required properties. The are also magnetic. They will *rust* if unprotected.	Iron, carbon steels, high speed steels
Non-ferrous	Non-ferrous metals do not contain iron. Pure metals (have no other metal or element). They are not magnetic.	Copper, brass, bronze, aluminium, zinc, tin, lead, titanium
Alloys	Metal alloys involve mixing two or more metals and other elements to improve their properties.	Brass, aluminium and titanium alloys.

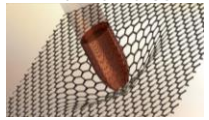
Other engineering materials

Ceramics	A ceramic is an inorganic non-metallic solid made up of either metal or non-metal compounds that have been shaped and then permanently hardened by heating to high temperatures.	Tungsten carbide, Glass, ceramic bearing material
Composites	Composite material is made from two or more materials with significantly different physical or chemical properties that, when combined, produce a material with characteristics different from the original components.	Glass reinforced plastic, Carbon fibre, Concrete
Smart materials	Smart materials are material that respond or adapt to changes in their environment dur to stimuli such as: external stress, moisture, electric or magnetic fields, light, temperature, or chemical compounds	Shape memory alloys, thermochromic pigments, photochromic materials, phosphorescent pigment, Quantum Tunnelling Composite.

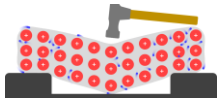
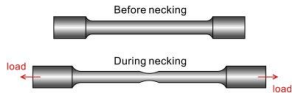
Polymers

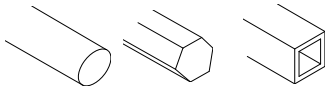
Thermoplastics (thermoforms)	Thermoplastics - a polymer which becomes soft when heated and hard when cooled. Thermoplastics can be cooled and heated several times without any change in their chemistry or mechanical properties.	ABS, polyethylene, HIPS, PVC, polycarbonate, polypropylene, nylon, polymethylmethacrylate (PMMA/Acrylic).
Thermosetting-pl s)	Polymer that irreversibly becomes rigid when heated. Cannot be reheated and reshaped, making them harder to recycle.	Polyester resin, urea – formaldehyde, epoxy resin, phenol-formaldehyde.

New and emerging materials

Nano technology	Developing and engineering materials at an atomic level. Allowing for nano particles to be added to fabric or glass.	Self-cleaning glass, stain-proof fabrics, graphene.
Metal foams	Think AERO chocolate but in metals. Common in aluminium alloys, allowing for strength but reducing the weight.	Metal Foams
Self-healing materials	As the name suggests, these materials 'heal' themselves when they become damaged. They usually contain some from of bacterial which then 'seals' the damage.	Self-healing concrete
Aramid fibres 	A type of aramid fibre that is woven into a textile material and is extremely strong and light weight.	Kevlar

Knowledge organiser: Topic Area 1: Engineering materials

Material properties			
Malleability 	The ability of a material to permanently deform in all directions without fracturing.	**Corrosion Resistance**	How well a material (especially a metal) can withstand damage caused by oxidization or other chemical reactions
Ductility 	The ability of a material to deform without fracturing, usually by stretching along its length.	**Brittleness**	The opposite of malleability - Brittle materials are often those which can also be described as 'hard'. They don't cope well with impacts and tend to shatter.
Conductivity/Resistivity	The ability of a material to conduct heat or electrical energy. Resistivity – the ability to resit conducting heat or electrical energy.	**Machinability**	How easily the materials can be cut by means of turning, drilling, milling, filing etc.
Hardness	Resistance of a material to deformation, indentation, or penetration by means such as abrasion, drilling, impact, scratching.	**Elasticity**	The ability of a material to return to its original shape after a force has been applied.

Material characteristics		
Relative cost	**Ease of use**	**Forms of supply** 
Availability	**Sustainability**	**Safety in use**

Testing of materials		
Destructive testing	This type of testing is uundertaken in order to understand a specimen's performance or material behavior. Those procedures are carried out to the test the specimen to failure.	Tensile testing, hardness testing
Non-destructive Testing	A testing and analysis technique used by industry to evaluate the properties of a material, component, structure or system for characteristic differences or welding defects and discontinuities without causing damage to the original part.	Conductivity testing, crack testing, ultrasonic testing.

Q1. Which statement correctly explains why thermoplastics are easier to recycle than thermosetting plastics?

- ☐ They contain fewer elements
- ☐ They can be reheated and reshaped
- ☐ They are biodegradable
- ☐ They are stronger

Q2. A manufacturer needs a lightweight but extremely strong material for body armour. Which is best?

- ☐ Epoxy resin
- ☐ Kevlar
- ☐ Glass
- ☐ PVC

Q3. Why are non-ferrous metals used outdoors and in wiring?

- ☐ Always cheaper
- ☐ Magnetic
- ☐ Resist corrosion
- ☐ Contain carbon

Extended Response Questions

Q13. Explain why ferrous metals require protection in outdoor environments. (4 marks)

.....

.....

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.....

Q14. Describe the difference between ductility and malleability using examples. (4 marks)

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.....

Q15. Explain why engineers must consider both material properties and cost when designing products. (6 marks)

.....

.....

.....

Q4. Which properties are needed for easy shaping without cracking?

- ☐ Brittleness & hardness
- ☐ Ductility & machinability
- ☐ Elasticity & conductivity
- ☐ Corrosion & hardness

Q5. Why are composites used in aerospace?

- ☐ Single material
- ☐ Combine properties
- ☐ Cheaper
- ☐ Low strength

Q6. Advantage of self-healing materials?

- ☐ Increase conductivity
- ☐ Repair damage
- ☐ Can melt repeatedly
- ☐ Transparent

Q7. Property allowing return to original shape?

- ☐ Hardness
- ☐ Elasticity
- ☐ Brittleness
- ☐ Conductivity

Q8. Why are alloys preferred over pure metals?

- ☐ Always lighter
- ☐ Improve properties
- ☐ Recycle easily
- ☐ Softer

Q9. Non-destructive testing example?

- ☐ Tensile test
- ☐ Hardness indent
- ☐ Ultrasonic
- ☐ Breaking

Q10. Material that shatters easily?

- ☐ Ductile
- ☐ Elastic
- ☐ Brittle
- ☐ Malleable

Q11. Why is graphene important?

- ☐ Cheap heavy
- ☐ Strong thin conductive
- ☐ Biodegradable
- ☐ Ceramic

Q12. Key factor for outdoor material selection?

- ☐ Colour
- ☐ Corrosion resistance
- ☐ Painting
- ☐ Weight

	Techniques	Effect
Cinematography	Establishing/Long Shots	Reveal glamorous and beautiful locations or create a sense of spectacle. Shows the characters to be isolated sometimes within their surroundings. Used to introduce the characters of Bond and Silva.
	POV/CU/MS/HA	Emotionally engages them and immerses the audience into the action.
	Low angle 'straight at the viewer' shots	Add to the sense of danger and the audience are placed within the action sequences. The opening action sequence.
	Hand Held Shots	Sense of action and allows the audience to feel it during the crash at the market. Unstable nature of the shot creates tension between M and Bond in the living room scene.
	Symmetrical/central framing	Forces us to compare characters such as Q and Bond and Silva and Bond. Central framing shows that M and Bond are stable and have a sense of control even though they may be overwhelmed by their surroundings.
	Lighting – dark, silhouettes	MI6 are working in the shadows. Eerie atmosphere. Forces us to take the character of Bond seriously. Opening sequence and the skyscraper fight with Patrice. Also used in the montage sequence when Bond is removing the bullet from his shoulder.
Sound	Old Bond theme but in a new way	The version of Bond is unfamiliar. Newman uses old and new reflecting the theme of 'old vs new'. We hear a slight hint of the theme tune but then it turns into something else. The Motorbike chase over the rooftops in Istanbul
	Dialogue – Jokes and sarcasm	Bond is still in control and is calm enough to make jokes in difficult situations. 'We weren't using that' and 'what makes you think it is my first time' when being interrogated by Silva.
	Ticking Rhythm	Time is running out
	Use of brass instruments	Similar to 'A Dark Knight' Brass instruments give the feeling that Bond, like Batman is rising up from the ashes. He is being rebuilt as a hero.
	Diegetic Sound	Use of diegetic sounds to link scenes together and draw us away from one place to another. We often hear the sounds first before we go there. London Rain into the river than Bond falls in. Plane noise before we go to the airport.
Mise-en-Scene	Blues and Orange tones	Blue indicates the 'virtual word' of cyber-crime in Shanghai and Greys in London. The technological ages. Oranges are gritty, dirty reality of espionage. Dusty Istanbul chase sequence and the fire at the mansion.
	Bond's changing costume and makeup	Shows how in control he is and how comfortable he is in his environment during different stages of the film. Smart grey suit shows control and professionalism. Washed out look at the beginning to hint that he has lost his edge. Slowly gets it back through the film. Contrast his costume to Q's in the art gallery.
	Actors Facial Expressions	Look for Daniel Craig playing Bond with a darker emotional range than other versions of Bond. Silva's macabre and menacing performance establishes him as sinister and malevolent. Severine's trembling tension of her nervous smile as she describes Silva.
	Props to enhance themes and messages	Use of the 'Old Warship' Painting in drive home the message that the old way of espionage is being 'towed away for scrap' and the new technological age of espionage is upon us. This is a clever metaphor and the audience will then hopefully see this as a deeper, clever film aesthetically.
	Nostalgic use of Props	Old Aston Martin and the Walter PPK gun to create the cool iconography of Bond. Old fans will relive and be excited by the use of props they have seen before.
Editing	Cross-Cutting	Between Istanbul, London and Eve in the Jeep. Forces us to compare gritty way of spying being assisted by the new technological way of spying
	Cuts between LS/ELS and MS/CU/POV	Uses shots that create spectacle and then shots that immerse the audience in the action. Doing this creates a sense of tension and excitement for the audience.
	Cuts to CU	Emotional, character driven film. The facial expressions are characters reaction to situations are important.
	Continuity Editing	Editing is used to ensure the narrative is moved forward.
	Montage	Montage is used a couple of times to move the story on and show a passing of time. Bond recovering from his injury, Setting up the mansion for the final battle etc.

Skyfall (Mendes, 2012, 12A)
Knowledge Organiser

Characters	
Name	**Contribution to Aesthetic/Context**
James Bond	Postmodern icon created. Bond is the Hero of Britain and the rest of the world. Deeper, humane and darker Bond. We see Bond in an unfinished developing state.
Silva	Mirror image of Bond. Both created by M.
Eve Moneypenny	Stronger woman and larger part in the narrative
M	The 'creator' of Bond. Stable, dependable presence. Relationship between controller and controlled
Q	Represents the new digital age
Serverine	The traditional 'Bond Girl'. Vulnerable
Patrice	Expendable Villain

Institutional Information
Director: Sam Mendes
Writer: Neal Purvis and Robert Wade
Cinematographer: Roger Deakins
Music: Thomas Newman
Editor: Stewart Baird

Themes
Relationship between controller and controlled – between Bond and M and between M and Silva and between Silva and Bond. Key elements especially camera angles deliver clues as to who is being controlled

Aesthetics
Beautiful and glamourous. 'Dancing silhouettes, cold blues, the warmth of fiery reds, oranges and yellows. It is beautiful' and 'a mix of real world dirtiness and beauty'.
Virtual world vs the dirty realistic world -Blue/Orange colour scheme
Mirrors/doubles and reflections/symmetry – Connection between Silva and Bond. Mirror images of each other. How the virtual world reflects the actual world
Britishness – 'Keep Calm and Carry On'/'Cool Britannia'. Makes Britishness cool and slick
Influenced by the Nolan, the director of the Dark Knight. Made a recognisable character darker and grittier. Mendes has also taken elements of 'old' Bond and turned him into something new and darker. More realism to the aesthetic of the film. Colours are less saturated.
Influence of Film Noir style – lighting uses deep shadows and silhouettes. Film Noir are dark and downbeat American crime and detective films. Literally means 'black film of cinema'
Roger Deakin, the cinematographer, **uses symmetry**. Framing of Bond and M in the centre suggesting stable and dependable in the face of a changing chaotic world
Beautiful film with lots of establishing shots to take in the environments around the character
More **complex character** of Bond. He is darker and more emotion and we should take him seriously
Nostalgic – Almost back to basics and references to older James Bond Films.

Context
Social: Society is ensuring that the representation and treatment of **women** is improving. Two strong female characters in Eve and M with larger influence on plot. However, there is still a reflection of the Bond tradition of having women in the film for the 'male gaze'. Old Vs New, traditional Vs modern.
Historical: Explores the contemporary threat of **cyber terrorism**. Fit with the celebration of Britishness of the **Olympic Games**. Iconography that is familiar to fans. Make **Britishness cool**.
Cultural: Not linked to any Fleming Novel but Casino Royale and Skyfall wanted to get Bond's character **'back to Fleming'**. Darker, dangerous and more emotional.
Political: **Is MI6 relevant** in today's world of globalization. Everyone is operating internationally so do we need an agency, just for the UK. MI6 and Bond are both destroyed but then rebuilt.
Technological: Filmed in high definition and then **converted to IMAX**. Film asks if technology is the cause of the problem or does it help to fix the problem. Old vs New. Gadgets are back to basics and are more realistic
Institutional: **50th Anniversary of the Bond Film**. Shows Bond being resurrected. The Bond film is an institution in its own right. Reflected in the nostalgia of the film with the old Aston Martin and the simple Walter PPK gun. Still high production values with big stars and sophisticated expensive cinematography – still making it a Bond Film (which is an institution in itself)

Foundational knowledge question- Y10 Film Studies Cycle 1

1. What is mise en scene?
2. What is cinematography?
3. Who directed Skyfall?
4. Name three characters from the film.
5. What is genre?
6. Name three genres of film.
7. What genre is Skyfall?
8. List three characteristics of the action genre.
9. Name one key prop from the film.
10. Name one setting from the film.
11. What is montage?
12. What is a cutaway?
13. Describe a costume used in the film.
14. List a type of editing used in the film.
15. What is an establishing shot?

BTEC Tech Award Health and Social Care: Component 1 Knowledge Organiser

Learning Aim A — *Understand Human Growth and Development across life stages and the factors that affect it.*

A1: Growth and Development

Life Stages

Infancy (0-2yrs) — Develop fine and gross motor skills

Early Childhood (3-8yrs) — Learning to play

Adolescence (9-18yrs) — Peer group develop, emotional affected by hormones, build relationships and onset of puberty.

Early Adulthood (19-45yrs) — Achieve full growth and maturity. Begin work and start a family.

Middle Adulthood (46-65yrs) — Transitional age between young adult and elderly. Possible onset of midlife crisis, menopause etc.

Later Adulthood (65+yrs) - Importance of finding meaning and satisfaction in life. Potential onset of dementia.

Physical - Physical growth, muscles, strength, balance, co-ordination, illness/health.

Intellectual - Development of thinking and language skills, brain development.

Emotional - Development of feelings, emotions, sense of self and understanding of others.

Social - Forming relationships, socialising and communicating with others.

A2: Factors affecting Growth and Development

Physical Factors can affect growth and development such as diet and exercise. This enables a person to be healthy and means they are strong enough to fight off illness.

Economic Factors can affect a person's growth and development. Having a substantial (enough) income can ensure a person has successful growth and development by providing good housing and having enough money for food, water and shelter.

Social and Cultural Factors include relationships, influence of role models, educational experiences , religion, gender etc. These experiences will help to shape an individual.

KEYWORDS & DEFINITION

Gross motor skills — Used to control large muscle groups in the body e.g. legs for walking.

Fine motor skills — Used to control small muscle groups e.g. hands and finger for writing.

Milestones — A significant stage or event in the development of an individual.

Puberty — Release of hormone sin the brain which cause sexual characteristics to develop e.g. hair growth.

Menopause — Physiological changes leading to the gradual end of menstruation and shrinkage of sexual organs.

Abstract thinking — Thinking about something that might not be there or exist.

Bonding — Forming an attachment with a parent or carer.

Attachment — The close emotional connection between people.

Self-esteem — How much a person likes/values/accepts themselves.

Contentment — Feeling satisfied and happy with what you have and what you have achieved.

Self-image — How an individual will think and feel about themselves and how they imagine others see them.

BTEC Tech Award Health and Social Care: Component 1 Knowledge Organiser

Learning Aim B — *Investigate how individuals deal with life events.*

B1: Different types of Life Event

Physical Events which may cause harm to the individual physically e.g. an accident, injury or illness.

Relationship Changes

Can take the form of many different types including entering into relationships, marriage, divorce, parenthood, bereavement.

Life Circumstances Can sometimes be expected or unexpected. Usually they are unexpected and have a negative impact e.g. being excluded from school, made redundant or being imprisoned.

B2: Coping with change caused by Life Events

When an individual experiences a life event, they may adapt easily or they may require support to help them. People who experience the same life event can have two different ways of coping.

Practical Help — Can take the form of financial help, child care and transport. This can be offered by a range of people including informal and formal support networks also community groups and voluntary and faith based organisations.

Informal Support — Friends, family and partners can volunteer time to support individuals. This can offer reassurance, advice and encouragement.

Formal Support — Professional carers and services e.g. GP. Help people to cope with different types of life events e.g., a mother having a baby will rely on a midwife. A person who has experienced an accident may need the support of a medical professional to treat the injury, and a counsellor to talk through their emotions.

LIFE EVENTS

EXPECTED	UNEXPECTED
-Starting/leaving school	-Exclusion/dropping out of education
-Employment	-Unemployment
-Moving house	-Promotion
-Living with a partner	-Imprisonment
-Marriage	-Illness
-Parenthood	- Accident/Injury
-Retirement	- Death

KEYWORDS & DEFINITION

Life circumstances — Factors that play a part in determining aspects of an individual's life.

Relationship changes — Altering the way two or more people connect with each other.

Expected life events — An expected major event that changes a person's status or circumstances e.g. giving birth, marriage, divorce , death of a spouse, loss of job.

Unexpected life events — Unplanned events that takes individuals by surprise as they do not know that they are going to happen e.g. an accident or an unexpected death.

BTEC Tech Award Health and Social Care – Component 1

20 Knowledge Organiser Questions and Answers

1. What is infancy?
2. What are gross motor skills?
3. What are fine motor skills?
4. What happens during adolescence?
5. What is a milestone?
6. What are the four areas of PIES development?
7. What is physical development?
8. What is intellectual development?
9. What is emotional development?
10. What is social development?
11. Name one physical factor that can affect growth and development.
12. How can economic factors affect growth and development?
13. What are social and cultural factors?
14. What is self-esteem?
15. What is attachment?
16. What is a relationship change life event?
17. What is an expected life event?
18. What is an unexpected life event?
19. What is informal support?
20. What is formal support?

Challenge Questions

1. Explain two ways economic factors can affect development.
2. Compare formal and informal support.
3. Explain how an unexpected life event could affect emotional development.
4. Give an example of a social factor and explain how it could influence development.

French	English
canadien	Canadian
blanc	white
beau/belle	beautiful
bi(sexuel)	bi(sexual)
jeune	young
intelligent	intelligent
inquiet	worried, anxious
heureux	happy (m)
ton /ta / tes	your
la belle-mère	step-mother, mother-in-law
la femme	woman, wife
la fille	girl, daughter
la génération	generation
l'identité	identity
connu	known
né	born
communiquer	to communicate
aimer	(to) like, love
se ressembler	(to) look alike
le chien	dog

French	English
bouddhiste	Buddhist
britannique	British
allemand	German
musulman	Muslim
noir	black
paresseux	lazy
triste	sad
travailleur	hard-working
ensemble	together
aide	help
la famille	family
la copine	friend, girlfriend
la couleur	colour
la date	date
la dame	lady
écouter	(to) listen (to)
se disputer	to argue
définir	to define
américain	American
amusant	funny, fun

French	English
bleu	blue
brun	brown
calme	calm, quiet
anglais	English
joli	pretty, attractive
juif	Jewish
méchant	nasty, naughty
mort	dead
mariage du même sexe	same sex marriage
la confiance	confidence, trust
la colère	anger
le visage	face
le sentiment	feeling
le problème	problem
le père	father
le parent	parent
chatter/tchatter	(to) chat
changer	(to) change
appeler; s'appeler	(to) call; be named
bavard	chatty, talkative

HW 1

affreux	dreadful, awful
agréable	pleasant, nice
petit	short, small, little
sérieux	conscientious
rouge	red
religieux	religious
la langue	language, tongue
la jeunesse	youth
l'indépendance	independence
le PACS	civil partnership
l'oncle	uncle
le nom	full name, surname
le membre	member
disputer	to scold, tell off
discuter	to discuss
coûter	(to) cost
le beau-père	step-father, father-in-law
occuper	(to) fill, keep busy
hétéro	straight
handicapé	disabled

grand	tall, big, large
gentil	kind (m)
seul	alone (m)
spécial	special
strict	strict
sympathique/sympa	nice
vert	green
la mère	mother
la personne	person
la personnalité	personality
la naissance	birth
la mort	death
connaître	(to) know
comprendre	to understand
l'enfant	child (m, f)
l'adulte	Adult (m,f)
l'animal	animal, pet
le copain	friend, boyfriend
ennuyeux	boring (m)
embêtant	annoying

familial	family
fier	proud
espagnol	Spanish
fort	strong, loud
français	French
la vie	life
la tradition	tradition
la tante	aunt
la taille	size, height
la sœur	sister
la société	society
parler	to speak, talk
mourir	(to) die
montrer	(to) show
se marier	(to) get married
marier	(to) marry
inviter	(to) invite
s'occuper de	(to) take care of
célibataire	single, unmarried
égal	equal

HW 2

drôle	funny
court	short
chrétien	Christian (m)
terrible	terrible, dreadful
traditionnel	traditional
timide	timid, shy, bashful
vieux/vieil	old
transgenre	trans
L'amour	love
L'ami	friend (m)
L'âge	age
L'adolescent/ado	teenager
s'excuser	(to) apologise
excuser	(to) excuse
s'entendre	(to) get along
Entendre	(to) hear
encourager	(to) encourage
Le/la partenaire	partner
Le frère	brother
Le fils	son

la blague	joke
africain	African
arabe	Arabic, Arab
gris	grey
francophone	French-speaking
patient	patient
québécois	from Quebec
l'étape	stage, step
l'émotion	emotion, feeling
l'enfance	childhood
le citoyen	citizen
le conflit	conflict
l'air	air, appearance
l'argument	argument
permis	allowed, permitted
critiquer	to criticise
avouer	to admit to, confess
unir	to unite
se tromper	make a mistake
se sentir	to feel

l'européen	European
le cousin	cousin
le couple	couple
l'homme	man
le marriage	marriage
le mari	husband
passer	(to) spend
tomber	(to) fall
sourire	(to) smile
sortir	(to) go out
se séparer	(to) break up
séparer	(to) separate
se passer	(to) happen
prêter	(to) lend
promettre	(to) promise
rencontrer	(to) Meet
ressembler à	(to) look like
proche	nearby, close

HW 3

HW 1

1. La fille canadienne est belle
2. Elle se ressemble à ton ami inquiet
3. La jeune femme est bien connue
4. Mon père est méchant avec beaucoup de colère
5. Je voudrais être un parent calme avec un joli visage
6. Je veux changer mon nom après mon marriage du même sexe
7. Je me dispute avec ma copine allemande car elle est triste
8. On peut définir les bouddhistes comme des personnes travailleuses
9. Nous écoutons ensemble la dame musulmane

HW 2

1. J'ai discuté le PACS avec mon beau-père hétéro
2. J'ai un oncle qui est handicap et très sérieux
3. J'aime ma jeunesse et mon indépendance agréable
4. Je suis fier de ma tante espagnole qui est célibataire
5. La société parle souvent de la vie familiale et les traditions fortes
6. Je voudrais me marier pour montrer que je suis égal
7. Une personnalité gentille est important pour connaitre et comprendre
8. L'enfant est êmbetant mais sympa
9. La naissance et la mort sont spéciales

HW 3

1. Je m'entends bien avec l'ado drôle
2. Mon fils est chrétien
3. J'excuse mon vieux frère timide
4. Le couple aime sourire et sortir
5. Mon cousin se sépare de son mari européen
6. Je veux rencontrer un homme riche
7. Le conflit n'est pas permis pour se sentir heureux
8. C'était une blague de mon enfance
9. Il faut avouer que le citoyen québecois s'est trompé

l'œil	eye
belge	Belgian
marocain	Moroccan
responsable	responsible
suisse	Swiss
vif	lively
la promesse	promise
la maman	mum, mummy
la foi	faith
l'handicap	disability
le rapport	relationship
l'individu	individual
l'oiseau	bird
dépendre de	(to) depend on
manquer	(to) miss
grandir	(to) get bigger, get taller, grow
tromper	(to) cheat
soutenir	(to) support
sentir	(to) smell
mentir	(to) lie

actif	active
jambe	leg
dangereux	dangerous
jeunesse	youth
faible	weak
habitude	habit
se coucher	to go to bed
équilibré	balanced
inquiétude	worry, anxiety
boire	(to) drink
difficile	difficult
perdre	to lose, losing
lecture	reading (noun)
courir	to run
main	hand
améliorer	(to) improve
arrêter	stop
se perdre	(to) get lost, getting lost
peser	(to) weigh, weighing
coucher	(to) lie down, sleep

catholique	Catholic
indépendant	independent
libéral	liberal
chinois	Chinese
sensible	sensitive
la qualité	quality
la responsabilité	responsibilty
la relation	relationship
le respect	respect
le soutien	support
le type	type, guy
le sexe	sex
moi-même	myself
toi-même	yourself
garder	(to) keep, take care of, look after
admettre	(to) admit, confess
sembler	(to) seem
prier	(to) pray
se présenter	(to) introduce
permettre	(to) allow

HW 4

grave	serious, grave
faim	hunger
nourriture	food
fort	strong, loud
glace	ice cream, ice
frais	fresh
menace	threat
natation	swimming
entrée	entrance, starter
dîner	to have dinner
forme	form, shape
fatigué	tired
détester	to hate
maladie	illness
déjeuner	to have lunch
énergie	energy
tôt	early
coûter	(to) cost
dormir	to sleep
danser	to dance

médical	medical
oreille	ear
inquiétant	worrying
eau	water
cigarette	cigarette
jeune	young
recette	recipe
promenade	walk
science	science
malade	ill
jouer	(to) play
drogue	drug
mauvais	bad, wrong
essayer	(to) try
cuisine	cooking, kitchen
éviter	(to) avoid
fumer	(to) smoke
lever	(to) raise
santé	health
crise	crisis

HW 5

sportif	sporty
activité	activity
végétarien	vegetarian
bouche	mouth
mort	dead
soif	thirst
urgence	emergency
carte	menu, map, card
vie	life
végan	vegan
lire	(to) read
boisson	drink, beverage
tête	head
manger	(to) eat
sain	healthy
cause	cause
viande	meat
mourir	(to) die
marcher	(to) walk, work
se lever	(to) get up

les frites	fries
se préparer	(to) get ready
préparer	(to) prepare
proposer	(to) propose, offer
proposer de + infinitive	(to) suggest + verb
rechercher	(to) look for
recommender	(to) recommend
remplir	(to) fill
rester	(to) stay, remain
se relaxer	(to) relax
supporter	(to) tolerate, bear, put up with
tomber	(to) fall
tuer	(to) kill
vapoter	(to) vape
visiter	(to) visit

HW 6

HW 4

1. Ma maman n'aime pas mentir
2. La foi et les rapports sont très importants pour l'individu
3. Je dépends de mon ami vif
4. Le type chinois est sensible
5. Prier est essential pour les catholiques
6. Je veux garder ton soutien moi-même
7. Boire du vin est une habitude dangereuse
8. Je veux arrêter mon inquiétude
9. Courir est necessaire pour une vie équilibrée

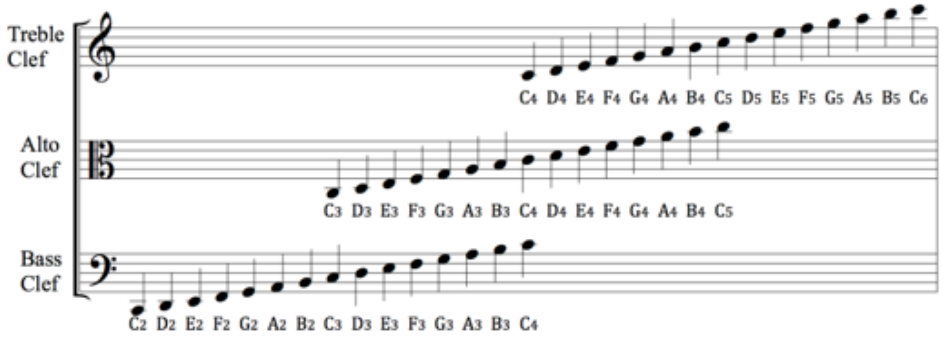
HW 5

1. Être fatigué est une menace grave
2. Il faut dormir tôt pour être fort
3. Ja vais manger plus de nourriture fraiche pour être en bonne forme
4. La drogue est mauvaise pour la santé
5. Fumer est inquiétant pour les jeunes
6. Les promenades sont bien pour les personnes malades

HW 6

1. J'aime les boissons saines
2. Je ne mange pas de viande car je suis végétarien
3. Je ne vais pas mourir car j'ai une vie saine
4. Vapoter tue beaucoup de personnes
5. Je propose de se relaxer pour rester en forme
6. Je ne supporte pas les frites

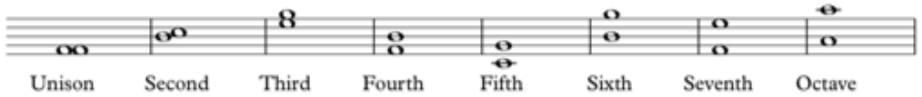
GCSE Music Year 10 Module 1 - Knowledge Organiser



Rhythmic Values

𝅝	Semibreve	4 beats
𝅗𝅥	Minim	2 beats
♩	Crotchet	1 beat
♪	Quaver	½ beat
𝅘𝅥𝅯	Semi-quaver	¼ beat
♫	2 Quavers	1 beat
𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯	4 Semi-quavers	1 beat

Interval Guide



Time signatures

Simple Time Signatures	Compound Time Signatures
Each Beat Subdivides Into Two	Each Beat Subdivides Into Three
3/4	6/8
• Non-dotted beats • Has a 2,3,4 at the top	• Dotted beats • Has a 6, 9, 12 at the top
If you need to split up a beat, you will halve it (e.g. two quavers in a crotchet beat)	If you need to split up a beat, you will split it into three (eg three quavers in a dotted crotchet beat

Key Terms: Melody

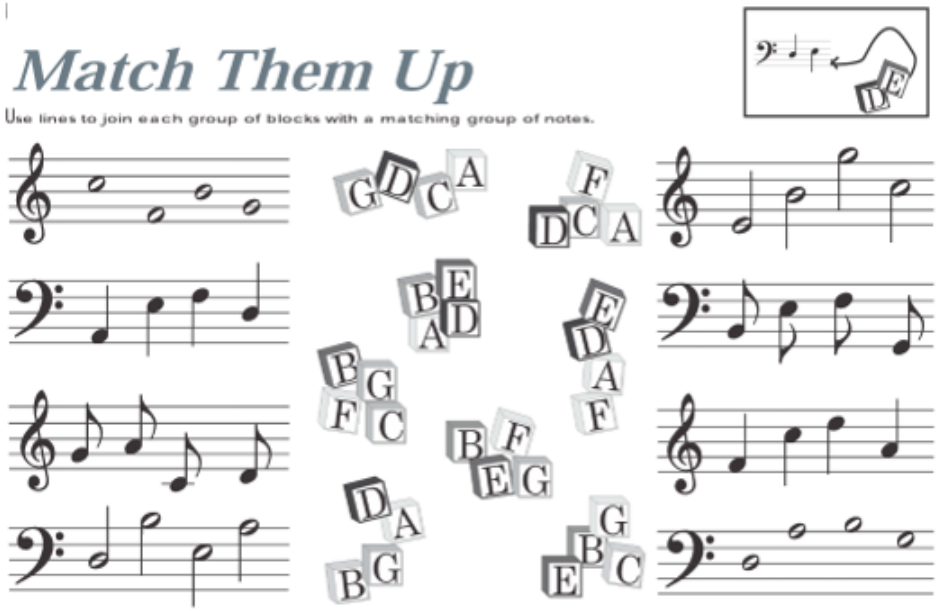
Key Term	Definitions
Pitch	How high or low the notes are
Conjunct	The pitch moves by step
Disjunct	The pitch moves by leap
Scalic	The pitch moves by step - up and down a scale
Arpeggio	A pattern built on the 1st, 3rd, 5th and 8th of a scale
Interval	Distance between the pitch of two notes
Anacrusis	Notes that are played before the first bar of a melody
Sequence	A restatement of an idea at a different pitch
Imitation	An idea is repeated by another part
Range	The difference between the lowest and highest pitch of a part
Repetition	The same idea occurs again
Leitmotif/Motif	A musical theme used to represent an idea/emotion
Chromatic	A scale made up of semitones
Pentatonic	A five note scale
Blues Notes	Non diatonic notes used in blues and jazz music
Countermelody	Melody played against the main melody
Answering Phrase	Second phrase played
Thematic	Music that represents a certain theme
Fanfare	A short ceremonial tune played on brass instrument
Ornamentation	A decoration of extra notes added to a melody
Trill	An ornament that adds a quavering effect to a note

Key Terms: Tempo

Key Term	Definition	Key Term	Definition
Allegro	Fast	Moderato	Moderate
Vivace	Lively	Adagio or Lento	Slow
Allegretto	Quite fast	Accelerando	Getting faster
Andante	Walking pace	Rallentando or Ritardando	Getting slower

GCSE Music Year 10 Homework 1 - Questions

1) Note naming in the treble and bass clef.



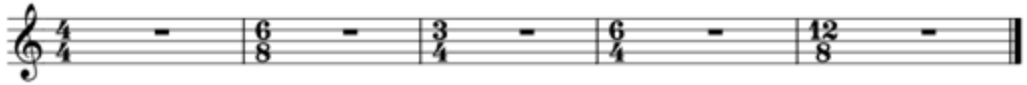
2) Musical maths

1. ♩ + ♩ =_____ beats
2. ♩ + 𝅗𝅥 =_____ beats
3. 𝅝 + ♩ =_____ beats
4. 𝅗𝅥 + 𝅗𝅥 =_____ beats
5. 𝅝 + 𝅝 =_____ beats
6. 𝅗𝅥 + ♩ + ♩ =_____ beats
7. 𝅝 + 𝅗𝅥 + 𝅗𝅥 =_____ beats
8. ♩ + ♩ + ♩ + 𝅗𝅥 =_____ beats
9. 𝅝 + 𝅝 + ♩ + 𝅗𝅥 =_____ beats
10. ♩ + ♩ + 𝅗𝅥 + 𝅝 =_____ beats

3) Name the intervals

_____ _____ _____ _____

4) Identify if these time signatures are simple or compound



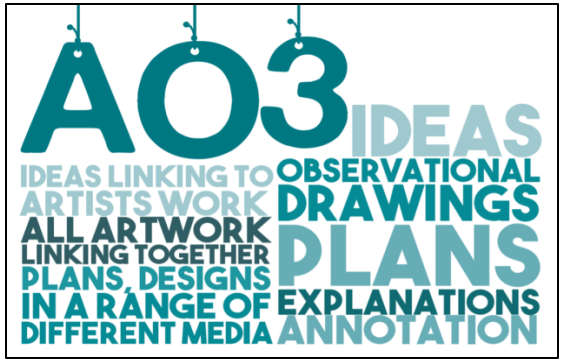
_____ _____ _____ _____ _____

5) Fill in the blanks

Key Term	Definitions
Pitch	
	The pitch moves by step - up and down a scale
	Notes that are played before the first bar of a melody
Range	
Chromatic	
	Melody played against the main melody
Fanfare	A short ceremonial tune played on brass instrument

St. Wilfrid's RC College - Knowledge Organiser

GCSE - Photography - AQA



AO3- In a nutshell

- Drawing, annotations
- Showing in annotation or drawings your ideas/conclusions/thoughts
- Creating plans, reviewing, evaluating experiments/ideas/thoughts

How to show ideas:

- Contact sheet
- Annotations
- Drawings
- Photographs - clear

AO1- In a nutshell

- Researching and analysing the work of a range of photographers, craftspeople and designers
- Showing links to work of other photographers in your own work- styles/themes/techniques.
- Writing about photographers and how they have informed and influenced your work.

AO2- In a nutshell

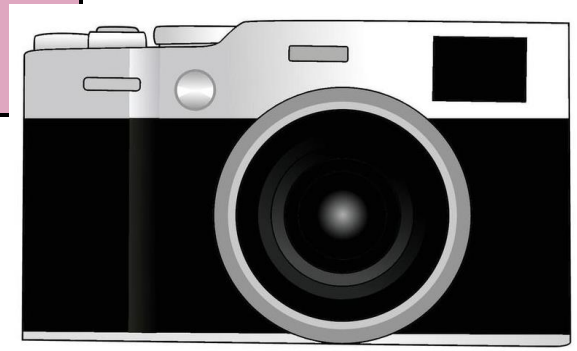
- Try different photography techniques
- Experiment with camera settings, composition, lighting, and angles
- Edit and manipulate photos
- Explore different artists' influences in your own work
- Select the most successful outcomes
- Explain what worked, what didn't, and how you improved your ideas

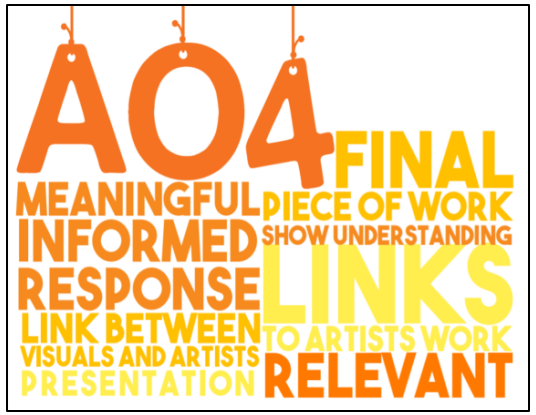
AO4- In a nutshell

- Creating a final piece
- Combining your research/artist/experiments together to create a final outcome
- Making visual links between your artists to come to a conclusion

How to refine:

- 5x edits
- Practice
- Trial
- Multiple Photoshoots





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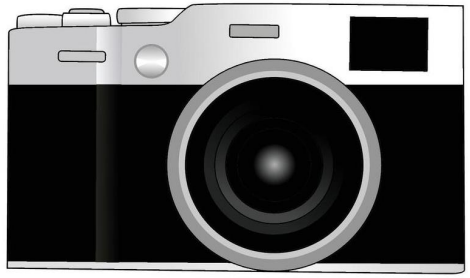


Photographer Research Page

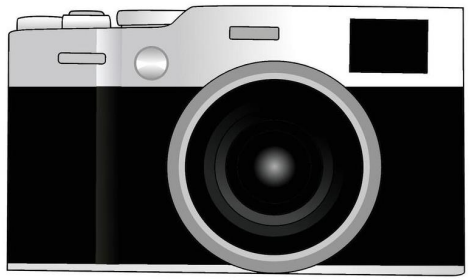
- Who is the photographer/artist?
- What themes or subjects do they explore?
- What inspired their work?
- What is the first thing you notice about their images?
- How do they use composition?
- How do they use lighting?
- What camera angles or viewpoints do they use?
- How do they use colour, tone, or contrast?
- Are there any patterns, textures, shapes, or lines in their work?
- What mood or atmosphere do their photographs create?

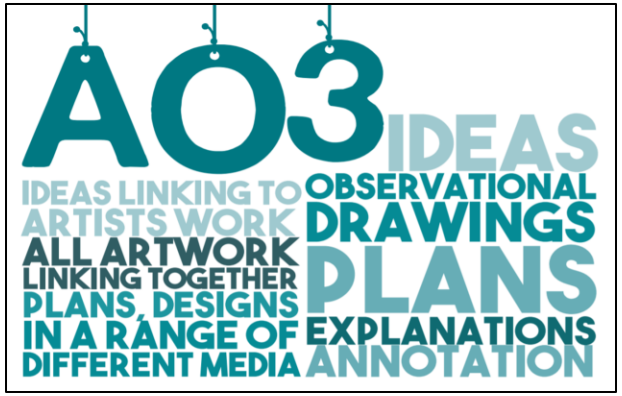
Experimenting.

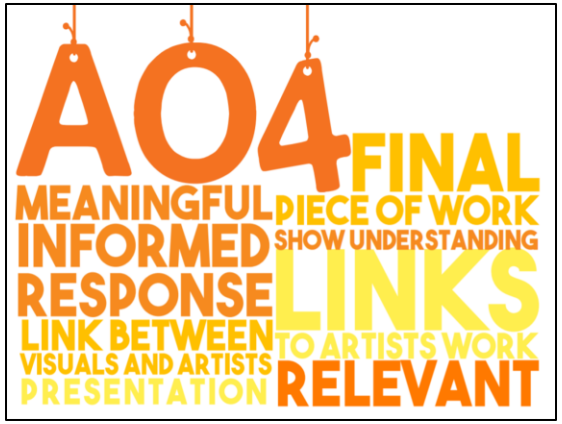
- Have you taken 20-25 photographs per shoot?
- Have you taken two photoshoots per photographer?
- Are your edits and photoshoots inspired by the photographer or theme you are exploring?
- Have you edited 5 images from each photoshoot?
- Have you digitally edited your images?
- Do you need to physically edit your images? (draw, burn, collage, rip, tear)
- Do you have photographs or screenshots of your process?

St. Wilfrid's RC College - Knowledge Organiser

GCSE - Photography - AQA







Recording

- Are your photographs clear?
- Have you taken 25-20 photographs per shoot?
- Have you created a contact sheet? (Which are successful? Which are not successful? Why not? What are you next steps? How do they link to your photographer/theme?)
- Are your final edits clear?
- Have you drawn out your final ideas? (you need too as this is worth 4 marks)
- Have you included screenshots of your editing process?
- Have you annotated your screenshots? (What have you done? Why? What effect has it had? How does it link to your photographer/theme?)
- Have you analysed the photographers work using the annotation support sheet?
- Have you communicated your ideas visually but also through notes/annotations?

Final Ideas

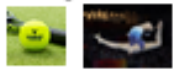
- Have you mind mapped out your final ideas?
- Have you included influences from the photographers you have explored?
- Have you drawn out your final ideas? (you need too as this is worth 4 marks)
- Have you analysed your final edits using the annotation support sheet?
- Have you realised your intentions which you set out?
- Have you clearly shown and annotated how you have used the photographers you have explored to inform your final ideas?
- Have you clearly represented the theme you chose?

Learning aim A: Task 1

Types of Activities

Sport is an organised **competitive** physical activity bound by a set of **rules and regulations** and overseen by a **National Governing Body (NGB)**.

- **Team sport** - performed with team mates
- **Individual sport** - performed solo against others. Often judged by officials.



Physical Activity is any bodily movement produced by skeletal muscles that requires energy expenditure.

Examples: Zumba, Yoga, Circuit training, boxercise, walking etc.

Outdoor activity refers to recreation engaged with in the **natural environment** and commonly involves **adventure** and elements of risk.

Examples: Paddle boarding, rock climbing, Canoeing, sailing, hiking etc.

Benefits of taking part

Benefits of taking part in Sport:

- Meet new people
- improved fitness
- improved skill development & tactical awareness.
- Resilence
- self confidence from taking part in competition.

Benefits of taking part in Physical activity:

- Meet new people
- Set fitness goals
- Improve confidence
- Improve body composition
- Improve physical and mental health

Benefits of taking part in Outdoor activity:

- Improved confidence/self-esteem
- Meet new people
- Improve teamwork
- Learn new skills
- Reduce stress
- Spend time away from electronic devices

Types of provision

Public sector provides 'sport for all' in local facilities such as leisure centres and schools.

The provision is provided by government and local authorities using money frm taxes to meet the aim 'sport for all'.

leisure world

Examples: Clacton leisure centre, skate park, Colchester leisure centre, swimming pools etc

Private sector provides sport through individuals or companies who ivest their own money to offer business considering the demands of the community while they make a profit.

Examples: Anytime fitness, jump street, CLip and climb, Clacton Golf Club. etc

Voluntary sector: This relies on local volunteers to offer sport and physical activities, the facilities are often hired from local authorities e.g. playing fields.

Examples: Sunday league football teams, Clacton Cannons Basketball, Clacton Rugby club etc

Aims & Funding of each provision

Aim: Provide sports facilities at a low cost to encourage/increase participation.

Funding: Taxes & National lottery

Aim: Make a profit (money!) while meeting the demands of the current sport participation trends.

Funding: Investors (business people)

Aim: Empower local people to come together and be more active.

Funding: Fund raising, sponsorship and members subs

Advantages & Disadvantages of each provision

Advantages:

- Cost is kept down/Booking made easy
- Location of facilities is accessible.
- Additional services including creche and refreshments are common.

Disadvantages:

- Bespoke and cutting edge technology or classes are not usually available.
- Quality of provision can vary.

Advantages:

- Bespoke equipment and a range of classes available.
- Additional services compliment the offering *i.e. sports therapist services often on-site.*

Disadvantages:

- Costly for membership
- Facilities are fewer.

Advantages:

- Allows for a wide range of opportunities in local areas.
- Under represented groups can be catered for.
- Promotes physical and mental well-being.

Disadvantages:

- Level of expertise is often low.
- High turnover of classes/clubs starting and closing due to a lack of volunteers.
- Lack funding.

Types and needs of Participants

Children: 5-11 years old

- 60 minutes of moderate or vigorous activity per day
- Activities should be fun and engaging, learning to master basic skills.

Adolescents: 12-17 years old

- 120-180 minutes of moderate to vigorous intensity per week.
- Activities should be more competitive or new trendy sports to increase participation and stop the drop out.

Children & young people with a disability: 120-180 minutes moderate or vigorous activity per week

Adults: 18-49years old

Older Adults: 50+years old

- Both should do: 150 minutes of moderate or 75 minutes of vigorous exercise per week.
- This will help reduce chance of heart attack and stroke.
- Older adult should also do some balance and strengthening exercises to reduce the chance of them falling and getting Osteoporosis.

Adults with a disability: 150 minutes of moderate to vigorous exercise per week with no less than 10 minutes for each session.

- **Visual** – this may be partially sighted or totally blind.
- **Hearing** – this refers to impaired or fully deaf athletes.
- **Physical** – this can injury spinal cord injuries, paraplegia (loss of function to legs), tetraplegia (loss of legs and arms) and cerebral palsy.

Long term medical conditions:

- Asthma
- Type 2 diabetes
- High blood pressure
- Coronary Heart Disease (CHD)

Barriers to participation

Cost: The amount of disposable money a person has can be a barrier to participation.

Activities that have a lot of equipment or specialist equipment can make it very expensive and membership fees.

Transport can be costley as well, does the activity mean you have to travel lots? Petrol and train tickets are expensive.

Examples expensive sports:

Skiing, cricket, golf, horseriding

Examples of affordable sports: Football, Basketball, Netball

Possible Solutions:

- Discounted sessions
- Over 50's or student discounts
- Free parking at facilities
- Hire equipment
- Shuttle buses

Accessibility: For people to participate in sport and physical activity, facilities, sessions and resources need to be available in the area.

If activities are too far away then it is unlikely that you take part in them, especially if you do not have a car.

Disabilities may cause some issues with accessibility, if a swimming pool does not have a chair hoist then they would not be able to access the pool.

Examples; if you do not live near a swimming pool then you are less likely to either learn to swim or get involved in swimming.

If there are no climbing walls in your area, again you are less likely to participate in climbing.

Possible Solutions:

- Taster days
- Better staff training to support individual needs
- Increased range of sports
- Ramps
- Assistive technology – pool hoist, braille and hearing loops.

Time: lack of time due to other commitments

Long working hours, family commitments , school and a lack of free time affect participation in sport.

Example; working 9-5pm, 5 days a week and also having child will reduce the amount of time you have to attend a sports club or exercise class.

Methods to address barriers to participation

Possible Solutions:

- Extended opening hours
- 24 hour opening times
- Creche for younger children

Possible Solutions:

- Private changing rooms
- Marketing campaigns have used a range of people with different body shapes in e.g. This Girl Can
- Allowed participants to wear clothing that they feel comfortable in.
- Parents and child sessions

Cultural barriers: Some religions and cultures have laws or expectations which make it more difficult to participate in sport.

- Restrictions on clothing for women
- Time of day may also affect participation, as many religions have specific times for rituals and worship.
- Lack of role models
- Specialist sports clothing is hard to come by and expensive

Examples: Ramadan, were Muslims fast from April to May and Salat is when Muslims pray 5 times a day, this can make it difficult to fit in physical activity.

Possible Solutions:

- Women-only sessions staffed by female staff
- Ask employers to reflect on diversity of their staff
- Cultural and diversity training for all staff
- Prayer rooms at leisure centres or extended opening times to offer more variety
- Adapted sports wear

Personal barriers: A range of other personal barriers may exist:

- Body image
- Lack of self confidence
- Parental/guardian influence
- Low fitness levels
- Concerns around existing health conditions
- Limited or time off previous participation

Learning aim B: Task 2

Protective equipment

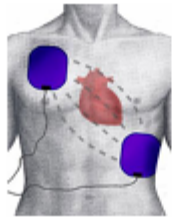
Protective equipment category	What injuries/hazards does the equipment protect against?	Sport/physical activity/outdoor activity its used in.
Goggles	Used to protect the eyes from weather conditions, water and projectiles. In skiing googles protect your eyes from snow blindness.	Skiing Snowbaording Swimming Shooting
Mouth Guard	Mouth guards typically cover the upper front teeth, and are designed to protect against broken teeth which can lead to, cut lips and other damage to your mouth.	Boxing Rugby Basketball
Floatation device	A personal flotation device (PFD) is something you wear that will keep you afloat should you enter the water. It will reduce your chance of drowning.	Open water swimming Sailing Canoing Sailing Kayaking Paddle boarding
Helmets	Helmets absorb, dissipate, and reduce impact forces to an athlete's head and brain during collisions between players or a fall to the ground.	American football Rock climbing Canoing Ice Hockey Racing driving Skiing Cricket
Body protection	Contact sports always put stress on your body, all body armour is designed to minimise the impacts of regular contact training on your body. The main function of shin pads is to protect the soft tissues and bones in the lower extremities from external impact. Shin guards provide shock absorption and facilitate energy dissipation, thereby decreasing the risk of serious injuries.	Rugby Cricket Horseriding Football

First aid

Defribrillator: A defibrillator is **a device that gives a high energy electric shock to the heart of someone who is in cardiac arrest**.

It is automated and takes the user through the process step by step. Where for find them?

- Schools
- Leisure centres
- Train stations
- Work offices
- Public spaces



First aid kit:

It's important to have a well-stocked first aid kit in your home **so you can deal with minor accidents and injuries**.

Some items you may find in a first aid kit:

- Scissors
- Plasters
- Bangages
- Eye wash
- Tweezers
- Burn gel
- Ice packs

Officials

Officials: All sports will have some form of official, that might be a; referee, judge or umpire.

Some of the equipment they will need is:

- Whistle
- Earpiece
- Watch
- Microphone
- Disciplinary cards
- Note pad

Officiating technology

VAR: video assistant referee, is used in football to check decisions made by the officials, such as penalties, offsides and fouls.

Pros:

- Better decision making
- Player discipline
- Avoid controversial decisions

Cons:

- Time wastage
- Decisions can still be wrong
- Only used at top level games

Hawkeye: Is used in tennis and cricket, it used 10 cameras to predict where the ball will land.

Pros:

- Better decision making
- Descision made on under 10 seconds

Cons:

- Accurate to 5mm so there are still errors
- Only used at top level games

Goal line technology: Uses the same technology as Hawkeye, 14 high speed ameras are used to detect if the ball has fully crossed the goal line or not. The referee is notified through a watch on his wrist. It will vibrate for 10 seconds if a goal is scored.
Pros: Accurate decisions.
Cons: 5mm error margin, costly & only used in the top leagues.

Sports facilities

Sportshalls: A number of sports can be played in a sports hall, there will be court markings for different sports.
For example:

- Volleyball
- Basketball
- Handball
- Netball
-

Pros:
Can rent a hall easily in the public sector.
Cons:
It can be expensive and might not be available when you need it.

4G pitches: All weather pitches used for football and rugby. They have artificial grass and a rubber layer to help replicate the bounce of a grass surface.

Pros: Can be used in all weather conditions, they can be rented in the public sector.

Cons: Injuries e.g. skin burns and joint injuries due to the impact. They can be expenive to rent.

Indoor climbing wall: A climbing wall is an artificially constructed wall **with grips for hands and feet**. It replicates the experience of outdoor climbing in a more accessible environment. Climbing walls are usually found in the private sector.

Pros:
More affordable and you can rent equipment.
Cons:
High risk activity, expensive equipment if you buy your own, it can be repetitive. You may have to travel far as there are not that many indoor walls.

Swimming pool: Can be used for fitness swimming or fun, you can play water polo and in some pools have a go at diving. They can be found in the public and private sector.

Pros: Accessible to all at a local leisure cente, lower prices in the public sector.
Cons: They have a timetable which means they may not be available when you need it.

Dry Ski slopes: A dry ski slope or artificial ski slope is a ski slope that mimics the attributes of snow using materials that are stable at room temperature. They are found in the private sector.

Pros:
Cheaper, can do it in any conditions, you can hire equipment.
Cons:
It's not the same as snow, they can be far away and there aren't very many of them.

Gym: Fitness centres and gyms will have a number of cardiovascular and weight machines to suit your fitness needs. They are found in the public and private sector.

Pros: A variety of equipment, in the public sector the membership will be more affordable or pay as you go. The equipment in the private gyms will be state of the art.
Cons:
Private gyms are more expensive and require membership fees. Equipment in public gyms may not be the newest.

Footwear

Hiking boots: High sides to support ankles, waterproof, thick firm soles to provide grip on rocky terrain.

Football boots: Studs to reduce the chance of slipping.

Basketball trainers: High sides to reduce chance of rolling an ankle, rubber soles with grip to reduce the chance of slipping.

Running trainers: Cushioned to reduce impact on the joints and gripped soles.

Clothing

Warm gear: Feather weight fabric utilizes moisture transportation, which wicks sweat away from the wearer's body and filters it through the material, where it is then evaporated. This keeps athletes cool and dry in hot conditions.
Cold gear: In cold conditions the body loses 4-5% in performance. Cold gear is specially designed to help keep you warm; Light weight, soft brushed interior, 4 way stretch to stop it riding up and it traps air to keep you warm. They also have quick dry fabric so sweat can evaporate quickly to prevent chill.

Aerodynamic: Mainly used in cycling, tight speicalist fabrics like lycra cling to your skin to reduce drag. Wearing lycra when cycling makes your 2km per hour quicker! They also wick sweat away to keep you warm and dry.

Waterproof jackets: Waterproof materials mean that water will bead up and roll off, this is because the fibres are so close together that the water in unable to penetrate it. Hikers will always have a waterproof jacket with them! It will keep them dry and protect them from the elements.

Compression

Compression clothing: Tight fitting clothing that has many benefits:

- raises the temperature of the skin and tissues to increase blood flow and promote healing.
- Reduces muscle vibration that can cause muscles to burn energy and cause fatigue
- support the body and reduce the chance of injury

Adaptive equipment

Sports wheelchairs: Cambered wheels to improve a player's turning circle and stability in performing sharp turns. The addition of rear caster wheels to stop athletes from falling out backwards and carbon fibre spokes to increase the strength of their wheels.

Pros: They are light weight and move easily.
Cons: Expensive and need to be specially made.

Cheetah blade: A running blade used to assist people with amputations. They make it easier for people to take part in sports or physical activities.
Pros: Blades are tailor made for each individual.
Cons: They are expensive and you may have to travel far to get fitted for one.

Hearing impairment: Radio aids help reduce the impact of background noise. The coach or instructor wears a transmitter and the participant wears the receiver.

Visual impairment: Adapted equipment can be used e.g. bells inside balls, brightly coloured balls or larger balls.

Smart watches

Smart watches: a wearable computing device that closely resembles a wristwatch or other time-keeping device. They track a number of things that can help to improve your health and fitness. E.g. iwatch, garmin & fitbit.
Advantages:

- Track heart rate
- Calories
- Activity
- GPS and many more features!

Disadvantages:

- Cost, it can be expensive
- Tracking is inacurate

GPS

GPS: Global Positioning System. Athletes wear GPS trackers when they train and play. They give them data on their distances, speeds and area covered.
Advantages:

- Reduce the chance of injury
- Help you improve

Disadvantages:

- Cost, it can be expensive
- It doen't track touches on the ball
- Unreliable when used inside

Pulse Raiser

Pulse raiser: This is a gradual increase in heart rate. To elevate the heart rate so it matches the intensity of the exercise about to be undertaken.

How long: 3-5 minutes

Example activities:

- Jogging
- Skipping
- Star jumps
- Side steps
- High knees
- Spotty dogs

Musculoskeletal Responses to a pulse raiser

The musculoskeletal system is the interaction of the **muscles, bones** and **connective tissues** (tendons and ligaments)

1. **Increased muscle temperature** – muscle contractions create movement and several by-products, one of which is heat.
2. **Increased pliability of muscles** – When the muscles and ligaments/tendons are warm they can stretch further. This will make movements much easier when you are playing sports.
3. **Reduced risk of muscle strain** – the chances of injury are reduced when a pulse raiser is carried out. This is because your muscles are able to move and stretch further as they are warm.

Cardiorespiratory

Musculoskeletal

Learning aim C: Task 3

Body's response to a pulse raiser

Cardiorespiraroty Responses to a pulse raiser

1. **Increased heart rate** – this is a response to the oxygen demand at muscle sites. The muscles need oxygen to help break down energy to produce movement. The more movement a person does the more oxygenated blood they will need.
2. **Increased blood flow to muscles** – blood is re-directed to areas of need. *i.e. working muscles. If a person starts to jog the muscles in the lower body will need to contract more often and with more force. To do this the muscles will need more oxygenated blood.*

3. Increased breathing rate – This is a bodily response to the lack of oxygen at tissue sites. Breathing rate will go up to cope with the demand for more oxygen.

4. Increased depth of breathing – this aids a faster removal of waste products. With each breath you will be able to breath out more carbon dioxide.

5. Increased removal of carbon dioxide – this is the waste product of respiration.

Cardiorespiraroty & Musculoskeletal Responses to stretching

Response of **cardio-respiratory system:**

- **Static stretches** - Further drop in heart rate and breathing rate due to stillness when performing the stretches.
- **Dynamic Stretches** - Maintained elevated heart rate and breathing rate as this involved active movements.

Response of **musculo-skeletal system:**
Extends the muscle beyond a normal state to reduce the risk of a tear during the sport or activity session.

Mobilsers

Mobilsers: These are exercises that take the joint through their range of movement. The movements will start small and progressively get bigger as you warm up.

Example activities:

- Wrist circles
- Shoulder rolls
- Lunges
- Open and close gates at the hips
- Ankle circles
- Hip rotation

The bodys response to mobilsers:

1. **Slight drop in Heart Rate** – As exercise intensity reduces heart rate will falls to reflect this.
2. **Slight drop in breathing rate** – The rate of breathing will fall by at least a 50% reduction.

3. **Increased Synovial fuild** - Mobiliser actions will **increase production of synovial fluid** in the joints to increase **lubrication** of the area. This will increase the range of movement possible.

Preparation stretches

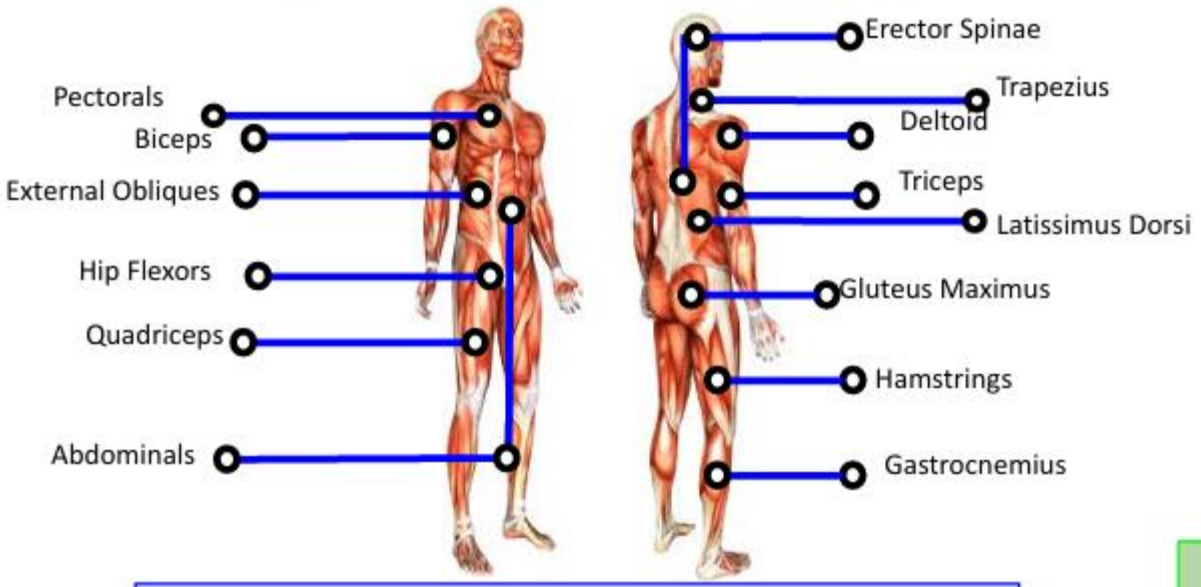
Preparation stretches: These are completed once the muscles are warm. The stretches picked should target the muscles that will be used in your chosen activity.

How long: Hold each stretch for 10-15 seconds and can be repeated

Static stretch: when a person holds a position for a short period of time.

Dynamic stretch: when a person carries out a stretch on the move.

Muscular system



Example stretches

Obliques: Dynamic stretch

Deltoids: Static stretch

Bicep & Tricep: Static stretch

Erector Spinae: Static stretch

Hip Flexors: Dynamic Stretch

Gluteus Maximus: Static stretch

Quadricep: Static Stretch

Hamstrings: Static stretch

Gastrocnemius: Static stretch

Adapting warm ups

Adapting:

It may be necessary to adapt your planned warm up to suit the participants needs. Warm ups can be adapted in a number of ways:

- **Intensity** of the activity (moderate or vigorous intensity)
- **Impact** (high or low)
- **Timings**
- Different type of **stretch**

Low impact activities:

High impact activities:

Sports specific activities

The last part of the warm up should include the opportunity to practice some of the skills used in the selected sport/physical activity or outdoor activity.

Examples of sport specific activities

- **Football** - passing, 2v2, shooting drills.
- **Basketball** - layup and rebound drills, ball handling skills, 3 man weaves
- **Boxing** - shadow boxing, boxing combinations
- **Kayaking** - pracitise the paddling action out of the water to help mobilse the shoulder joints

Organising your warm up

Things to think about when organising your warm up:

- **Space**: Is it indoor or outdoors? How weill you mark out your area?
- **Indoor or outdoor:** Is the weather suitable e.g. too hot, too cold or raining?
- **Equipment**: What equipment do you need and how much?
- **Participants**: Will they be in groups or in pairs?
- **Timings**: How much time will you allocate to each section?

Delivering your warm up:

Positioning: Think about where you stand when giving instructions. All participants should be infront of you and looking at you.

Demonstrating: You should be prepared to demonstrate each activity and you should also have alternative activities incase you need to adapt the warm up.

BTEC Tech Award Travel & Tourism

Component 3 (External Unit)

Need to know it:

-Factors affecting tourism
-Responses to factors
-Impacts of factors
-Managing impacts of factors/ Management of factors

-Stages of Butler's TALC model.
-Emerging and mature destinations
-The role of local and national government
-Partnerships/ Destination Management Organisations

Economic Factors:

- Recession/Boom
- Levels of employment
- Changing cost of fuel
- Fluctuations in currency exchange rates
- Level of disposable income

Natural Factors:

Natural Disasters: Earthquakes, volcanic eruption, tsunami, landslides, avalanches.

Severe Weather: Flooding, Drought, Wildfire, Hurricanes/Cyclones, Tornadoes, Blizzards

Media Factors:

Types of media:

- **Print** (newspapers, magazines, books).
- **Broadcast**- (Tv, films, social platforms, websites).

Safety and security factors:

Risks related to **personal safety:** theft, pickpocketing, physical attacks, accidents, bribery, getting lost, dangerous wildlife.

Safety measures: CCTV, Transport/tourist police, body and luggage scanner, emergency phone number, safety deposit box, security staff.

Political Factors:

Types of legislation: Health and safety, Equality, Employment Law, Planning laws.
Reasons for legislation: visitor security, customer financial protection, controlling development.

Political Factors:
-Airport, trade taxes
-Passports and visas
-Government promotion/ marketing campaigns
-Tax incentives
-Political instability/civil unrest

Health risk factors:

Endemic- A disease that is present permanently in a region or population.

Epidemic/pandemic- an outbreak that affects many people at one time and can spread through one or several communities.

Endemic	***Epidemic/Pandemic***
Malaria Yellow Fever Cholera Typhoid	-Norovirus -Avian/Bird Flu -Zika Virus -Coronavirus

Ways of transmission- air, water, food, contact

Precautions against contracting- vaccinations, protective clothing, medicines, equipment, appropriate insurance, hygiene, food and drink choices.

Travel and Tourism Organisation Responses to Factors:	***Government (local, regional and national) Responses to Factors:***	***Voluntary Organisation Responses to Factors:***
T&T Organisation: Airlines, Hotels, Travel Companies (TUI).	Government: VisitBritain, South Tyneside Council.	Voluntary: Charity run organisations.
-Adapt and develop new products/services -Adapt operational procedures -Review destinations offered -Review Pricing Structures- adjusting prices to maintain visitor numbers/types of visitors. -Managing Public Relations	-Provide public with up-to-date information -Impose travel restrictions -Promote a positive image -Encourage employment -Improve infrastructure -Introduce or tighten security measures.	-Promote sustainability, conservation and protection -Campaign for governments to affect change -Raise awareness of issues- ethical and environmental -Raise funds

Retrieval:

1) State two economic factors

1) Give me two types of severe weather

2) State one media factor (type of media)

3) Give me two safety measures you would expect at an airport

4) Give me one risk to personal safety when travelling aboard

5) Explain the difference between epidemic and endemic diseases.

6) Give me two features of Malaria

7) Give me two types of legislation

8) State three political factors

9) How can diseases/viruses be spread?

10) Give me three ways tourists can prevent catching a virus/disease

Retrieval:

1) Give me two travel and tourism organisational responses to factors:

2) Give me two government responses to factors:

3) Which type of organisation is likely to impose travel restrictions?

4) Campaigning and raising funds would be the response of what type of organisation?

5) During an earthquake- what would a government response be?

Socio-cultural impacts of tourism:	***Economic Impacts of tourism:***	***Environmental Impacts of tourism:***
Socio-cultural impacts are the changes to the everyday lives of people living in global destinations. **Negative impacts:** Disruption to everyday life; loss of culture, resentment towards visitors, increased crime, staged authenticity, exploitation of locals, loss of traditional lifestyles. **Positive impacts:** Improved quality of life, access to facilities, improved transport, improved essential infrastructure, including healthcare, education and improved cultural awareness.	Definition: the effect of the actual amount spent by tourists and indirect effects on the local and wider economies and other sectors: **Negative impacts –** low-paid jobs, seasonal unemployment, leakage, increased cost of living **Positive impacts** – employment opportunities, training, multiplier effect, foreign currency earnings, contribution to taxes and gross domestic product.	Definition: the result of the strain tourism can place on local land use and resources as well as the natural and built environments of global destinations. **Negative impacts –** loss of habitats, loss of wildlife, threatened species; increased pollution, including noise, air, water; overcrowding, traffic congestion; reduced biodiversity, environmental degradation; erosion to footpaths, riverbanks, lakeshores **Positive impacts –** conservation, including protection of wildlife, protected areas, national parks; environmental education; creation of open spaces; improved street furniture; regeneration, including urban renewal and the reuse of traditional buildings for new activities.

Managing Economic Impacts:

Tourism can provide employment and training opportunities for local people and give them access to higher-paid jobs.

- Visitors can be encouraged to support local communities by buying local produce, crafts and food, and using local transport
- Governments **can restrict the involvement of foreign-owned companies,** all-inclusive resorts and foreign staff to benefit the local economy; **have tourist prices and local prices**
- **Visitor spend can be increased** and retained by encouraging overnight stays, longer breaks, local currency schemes.

Managing Environmental Impacts

The aim of sustainable tourism is to increase the benefits and to reduce the negative impacts caused by tourism for destinations.

Managing sustainable tourism:

- Protecting natural environments, wildlife and natural resources when developing and managing tourism activities
- **Providing authentic tourist experiences** that celebrate and conserve heritage and culture
- Creating economic benefits for communities through employment and income-earning opportunities.

Retrieval:

1) Socio-cultural impacts refer to…

2) Give me one positive and one negative economic impacts of tourism.

3) Give me one positive and one negative environmental impact of tourism.

4) Give me one positive and one negative socio-cultural impact of tourism.

5) Label the impacts (S, Ec, EN) and determine whether it is positive (+) or negative (-).

-Loss of wildlife
-Loss of culture
-Seasonal unemployment
-Leakage
-Improved quality of life
-Access to medical aid

Retrieval:

1) Give me one way that visitors can support local communities.

2) Give me one way that visitor spend can be increased.

3) Explain why the government might restrict foreign hotel ownership.

4) Providing tourists with authentic experiences helps to manage what?

5) What is the aim of sustainable tourism?

Visitor Management:	***Traffic Management:***	***Planning Control:***	***Visitor Education:***
➢ **R**estricting the number of visitors allowed into a destination ➢ **C**ontrolling movements ➢ **D**irection of flow ➢ **I**ssuing visas and permits	➢ **R**estricting traffic/vehicle types allowed into a destination ➢ **P**roviding frequent public transport ➢ **A**dequate parking and facilities ➢ **P**ark and ride schemes ➢ **V**isitors are encouraged to use alternate types of transport – hybrids, green and electric-powered transport	➢ **B**uilding regulations ➢ **P**lanning permission ➢ **S**ize and location of developments ➢ **M**aintaining local style in scale and design	➢ **H**ow they can reduce their impact on the local environment ➢ **W**ays to contribute towards looking after the local environment ➢ **T**he wildlife, natural world and special qualities of the environment
		• resources are controlled responsibly, including waste management, energy and water supplies – restricting fountains and water features that do not recycle water, limit the amount of pools • natural areas vulnerable to the high volume of visitors are protected by legislation/regulations; creating nature/marine reserves; limiting or preventing access.	

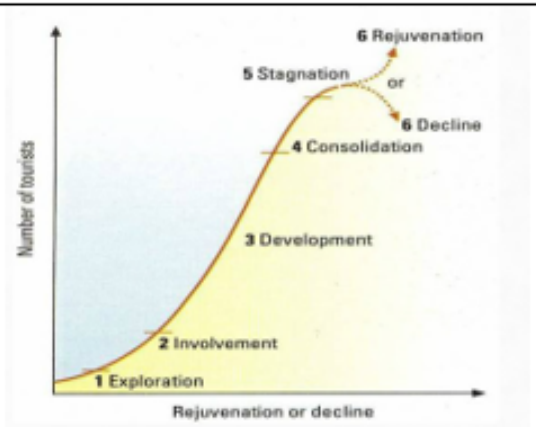
Retrieval:

1) How can destinations manage visitors?
Give me three;
-
-
-

2) How can traffic be managed in built up areas?

Give me three:
-
-
-
3) How can planning be controlled?

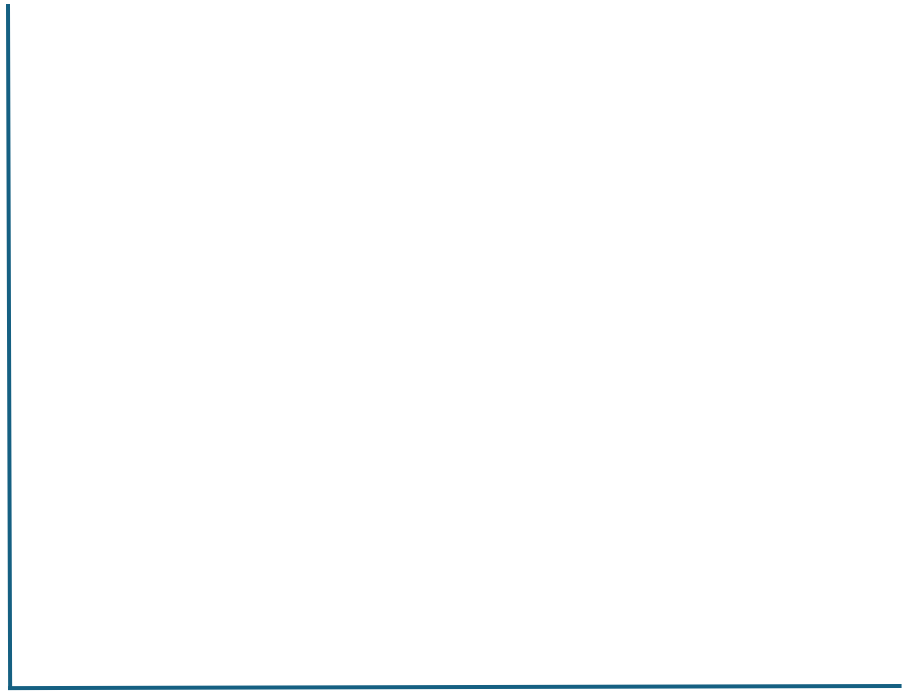
Give me three:
-
-
-
4) How can we educate visitors?

What does TALC stand for?	Tourist Area Life Cycle
Can you draw and label the TALC?	
What does each stage of Butlers Tourist Are Life Cycle Mean? Exploration, involvement development; consolidation; stagnation; decline/rejuvenation	**Exploration** – A secret spot is discovered, there are no amenities. **Involvement** – The number of people is increasing residents now see economic benefits **Development** – A well-defined tourism industry with advertising and promotion taking place **Consolidation** – Tourism becomes a dominant feature of the local economy **Stagnation** – Tourism growth slows and carrying capacity is reached, the area is no longer a hotspot, maybe it's over built **Decline** – holidaymakers replaced by weekend or day trippers, hotels mat be converted into retirement homes or flats **Rejuvenation** – steps taken to bring the resort back to life, facilities such as a promenade updated, investment by government.

Retrieval:

CHECK: Do you have 7 stages?

Draw and label the TALC model below:



Stage:	What happens at this stage? Key points.
E	
I	Local people begin to offer services such as transport and accommodation.
D	
C	
S	
D	
Or R	

What is an Emerging destination?	Destinations that have recently (within the last ten years) grown in popularity and have a growth rate of visitor arrivals of over 4 per cent year on year.
What are the Characteristics of emerging destinations?	➢ visitors seek adventure, 'authentic' experience, culture or nature based ➢ may be difficult for overseas visitors to access ➢ transport links likely to be undeveloped ➢ basic infrastructure – energy, water, waste disposal ➢ local people may not have access to healthcare and unspoilt natural and cultural features are the main attraction ➢ local communities follow traditional lifestyles ➢ seek to develop tourism to boost economies, raise living standards ➢ low volume of visitors – may have to make own travel arrangements o limited awareness of the destination globally.

What is a mature destination?	destinations that have been popular for over twenty years with growth rates of visitor arrivals around 2 per cent year on year.
What are the Characteristics of mature destinations?	➢ high volume/mass tourism with organised package holidays ➢ fully integrated transport links ➢ fully developed infrastructure ➢ may be a strain on resources such as water ➢ natural and cultural features may be damaged, diluted, overwhelmed by tourism ➢ established season ➢ extensive advertising of the destination, which is well known globally ➢ standard of visitor facilities may become run-down ➢ local economy is reliant on tourism o may be some conflict between locals and visitors.

Magic Numbers:
10 years, 20 years, 4% per year, 2% per year.

Retrieval:

Recall the four magic numbers:

Emerging Destinations:

Define it:	.....
Key Characteristics:	- - - -
Magic numbers:	

Mature Destinations:

Define it:	.....
Key Characteristics:	- - - -
Magic numbers:	

C2 the role of local and national governments in tourism development

What are the Reasons governments may want to develop tourism include?	➢ maximise the economic benefits of tourism ➢ attract foreign currency ➢ diversify the economy ➢ raise funds to help reduce poverty, improve mobility, healthcare and education ➢ create employment opportunities ➢ attract funding from foreign investors, private sector ➢ improve the quality of life.
What are the government roles including controlling tourism development through legislation to reduce potential negative impacts and increase the benefits of tourism	➢ tax incentives/tax relief to encourage investment, raise funds ➢ considering travel restrictions, security measures and entry requirements, including passport and visa requirements ➢ improving transport infrastructure, links and networks – road, rail, air, sea, gateways and hubs ➢ improving/establishing essential infrastructure – energy supply, water supply, waste disposal ➢ supporting, approving and controlling tourism infrastructure – accommodation, food and drink outlets, communication links – accessibility to the internet, Wi-Fi providing funding for new initiatives in transport, events, training and infrastructure projects that support the local community and/or protect the environment ➢ managing destinations by implementing sustainable tourism policies.

C3 The importance of partnerships in destination management

You will understand that partnerships between organisations can help ensure destinations are managed effectively for the benefit of visitors, local communities and environments, and for the future. You will learn about partnerships between different organisations and sectors within travel and tourism, the reasons organisations form partnerships and the advantages and disadvantages of partnership working

What are the types of partnership and their purpose?	**public and private sector** – new tourism developments such as a hotel funded by private sector, local authority may require restrictions on design, size and scale o private sector and private sector
	accommodation and transport providers for transfers from airport/train station to accommodation o voluntary and private sector **private sector may** assist with the costs of promoting or running an event and in return receive positive publicity **public and voluntary sector** – to promote good causes, raise awareness, educate and inform by sharing skills and resources **destination management organisations** – bring a range of different organisations together to work on a major project which may be short term or temporary, to raise profile; launch new products; advertise/promote; fund; sponsor – for the benefit of the destination.
What are the possible advantages of partnerships?	➢ shared resources/skills/expertise ➢ new ideas ➢ shared costs ➢ increased coverage/publicity/profile.
What are the possible disadvantages of partnerships?	➢ conflicting aims and priorities ➢ less flexibility ➢ slows down decision-making process ➢ difficulty in responding quickly to changes/events.

Retrieval:

1) Give me three reasons why the government might want to develop tourism?

1) What is the difference between local and national governments?

2) What are the government roles to reduce potential negative impacts and increase the benefits of tourisms?

Give me three:
-
-
-

4) Give me an example of a partnership

5) One advantage of a partnership is…

6) One disadvantage of a partnership is…

7) The government working with Jet2 Holidays is an example of what type of partnership?

Revision Strategy One: Look, Cover, Write, check

Make sure you have a copy of your knowledge organiser or your exercise book for the subject you are revising.

Step 1
Read the information carefully

Step 2
Cover the page

Step 3
Write down as much information as you can remember. Focus on ideas, key vocabulary, dates, events and people

Step 4
Check your notes against the knowledge organiser. Make any corrections and then add to your notes

Revision Strategy Two: Folding Notes

Step 1

Write a page of notes on A4 paper. Focus on key ideas, vocabulary, dates, events or people.

Fold in half

Step 2

Create a mindmap summarising your notes and only including the most important information.

Fold in half

Step 3

Write a list of only the most important key words for this topic.

Fold in half

Step 4

Dual code- summarise the topic with **only** symbols, diagrams or pictures.

Revision Strategy Three: Flashcards

Step 1

Read through a page of notes in your exercise book or a topic from your knowledge organiser. Write the title of this topic on one side of a card.

Step 2

On the other side of the card summarise the topic in short bullet points focusing on:

- Key words
- Dates
- Events
- People

Step 3

Use images or diagrams to summarise key ideas or concepts to help you remember.

Step 4

Revise using your flashcards!

Revision Strategy Four: Self Quizzing

Research surrounding effective revision tells us that one of the most effective techniques for revision is to self-test.

Self- quizzing requires you to recall information from memory. This not only highlights what you do or don't know but also strengthens your ability to recall that information.

There are many ways to test your knowledge

- Turn over / cover the section of the knowledge organiser you are studying and write as much as you can down from memory as accurately as you can.
- Then flip over / uncover the knowledge organiser and check the accuracy of what you have written down.
- Use a different coloured pen to correct any errors and fill in any gaps.
- Make your own quizzes and tests and return to them after a few days to check how much you can remember.

Look: Identify key vocabulary and fundamental knowledge from your knowledge organiser.

Look and write: write the key words, formulae or important information in the first column.

Cover and write: cover the look and write column. Try to repeat the information in the cover and write column.

Check: check your answer. Make any corrections in the final column in green pen.

St. Wilfrid's R.C. College

Look and write	Cover and write	Check

Look: Read the key information in the look column.

Look and write: write the key words, formulae or important information in the first column.

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St. Wilfrid's R.C. College

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Cover and write	Check

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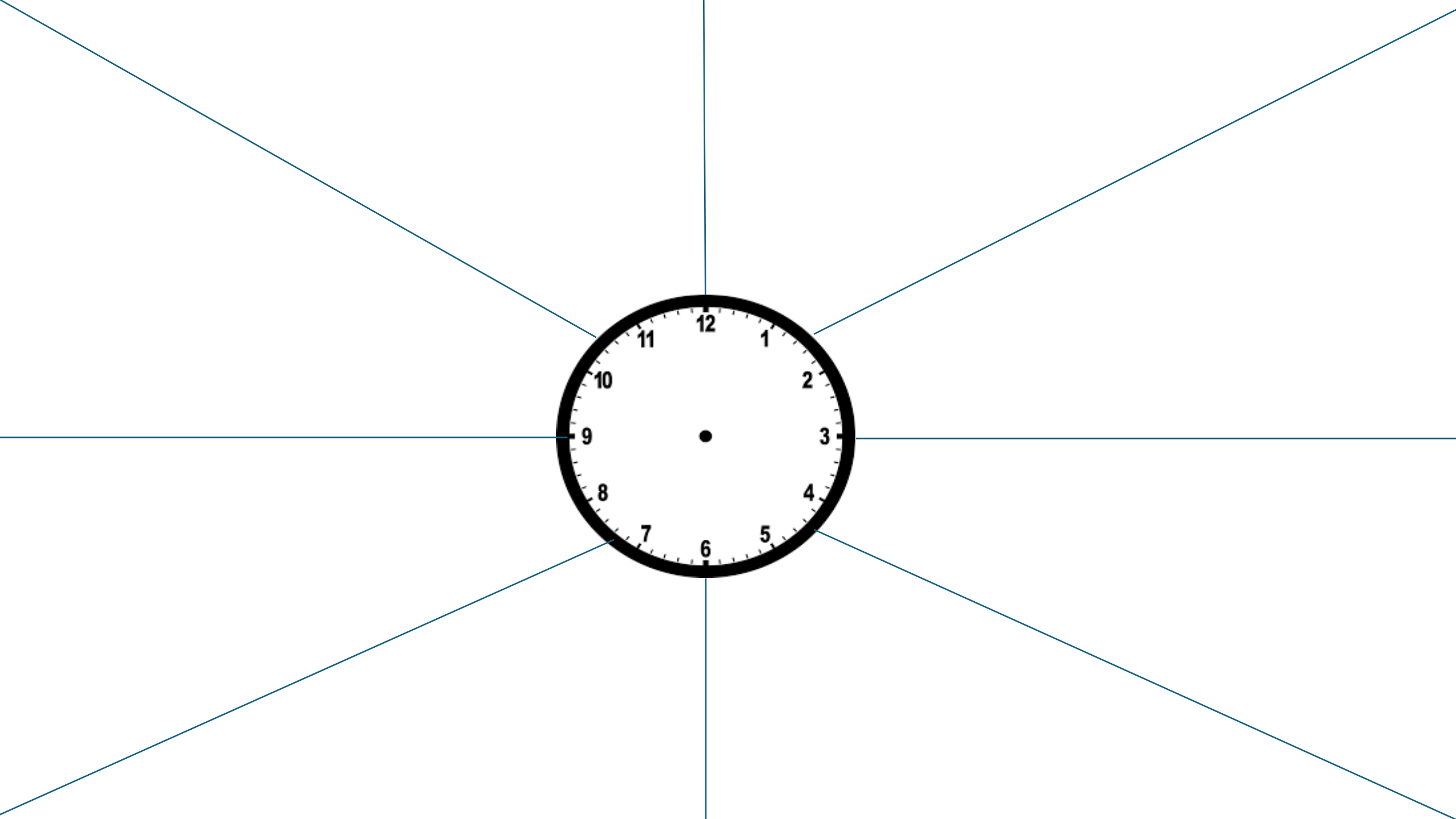
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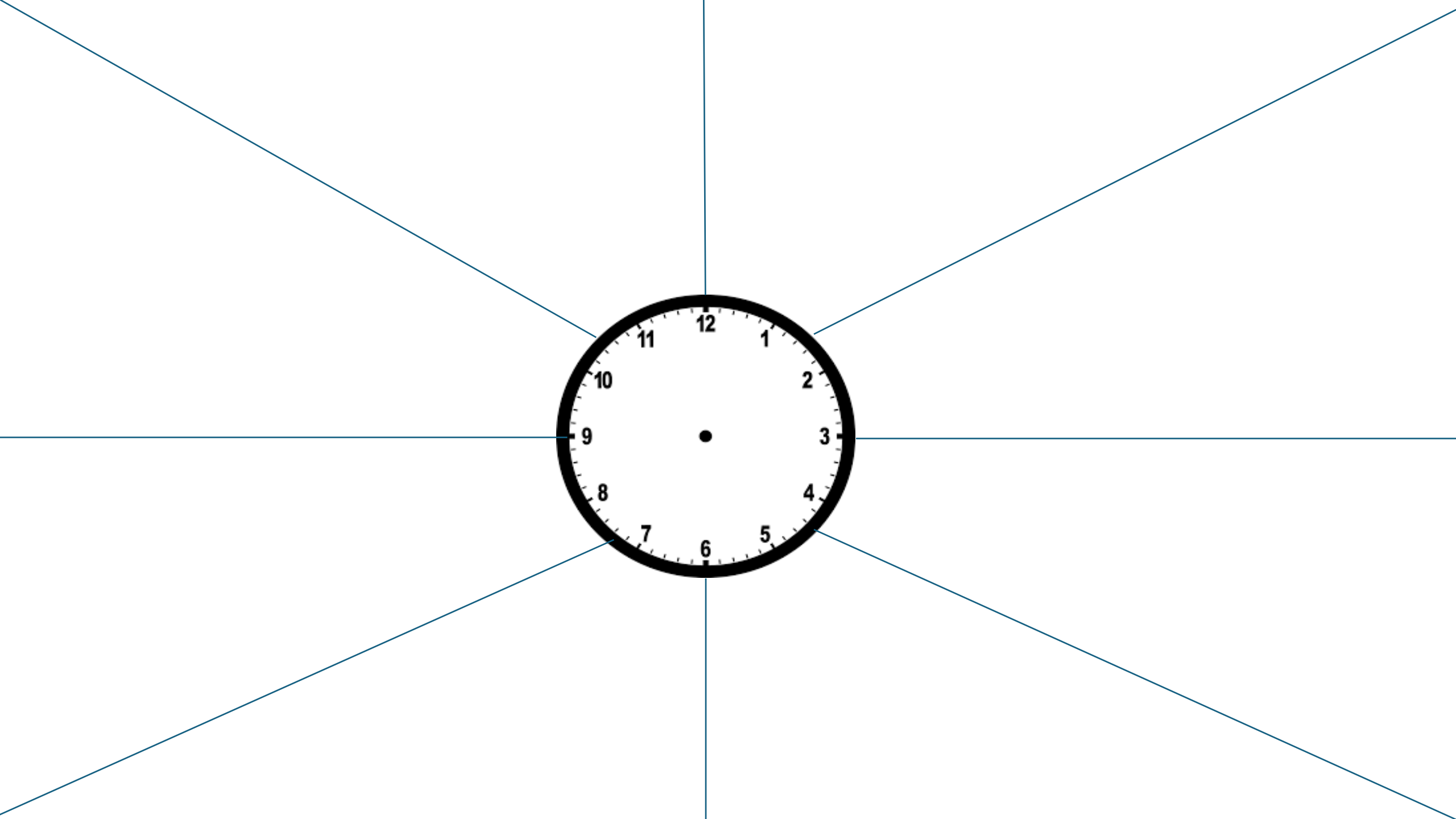
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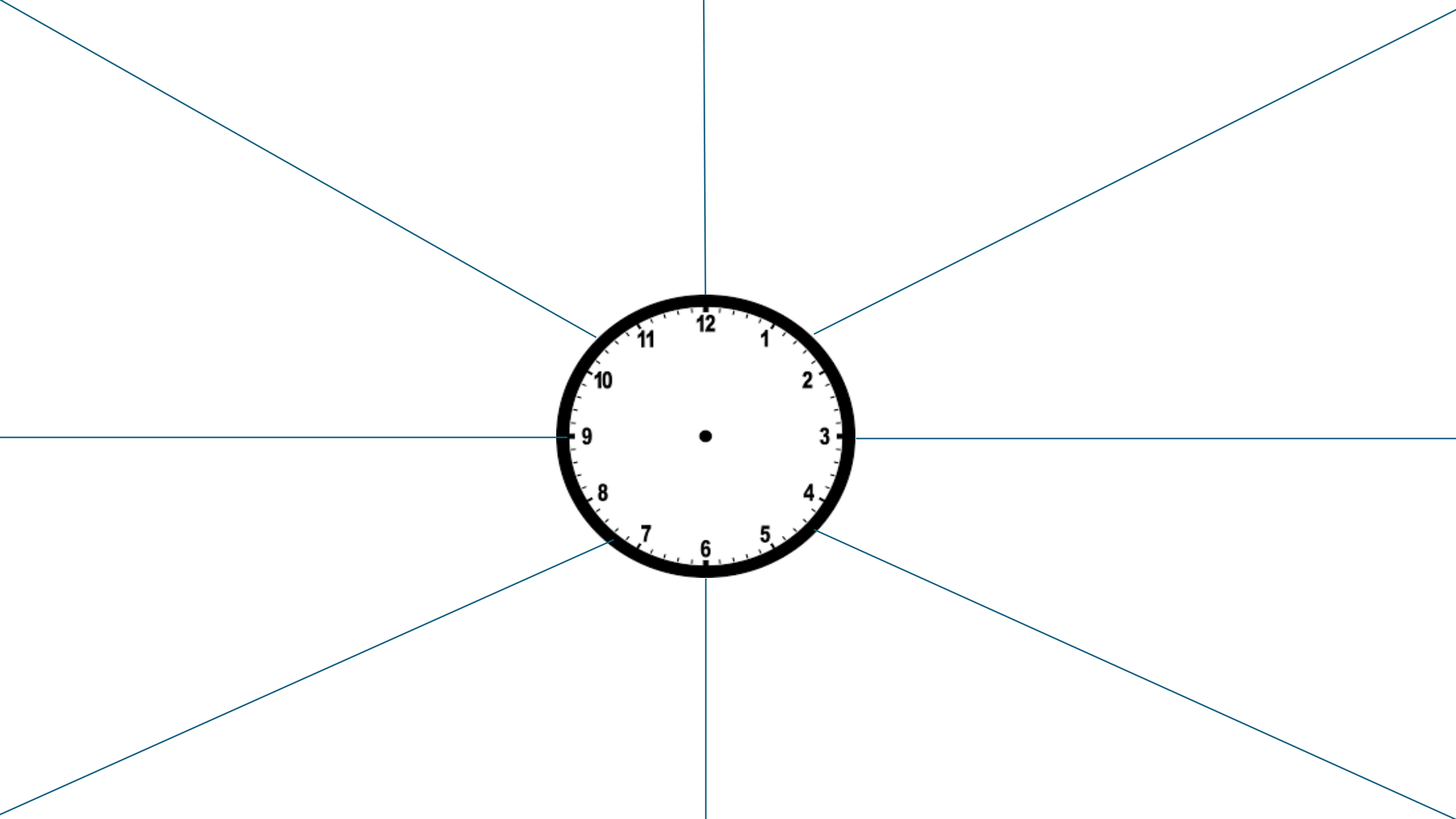
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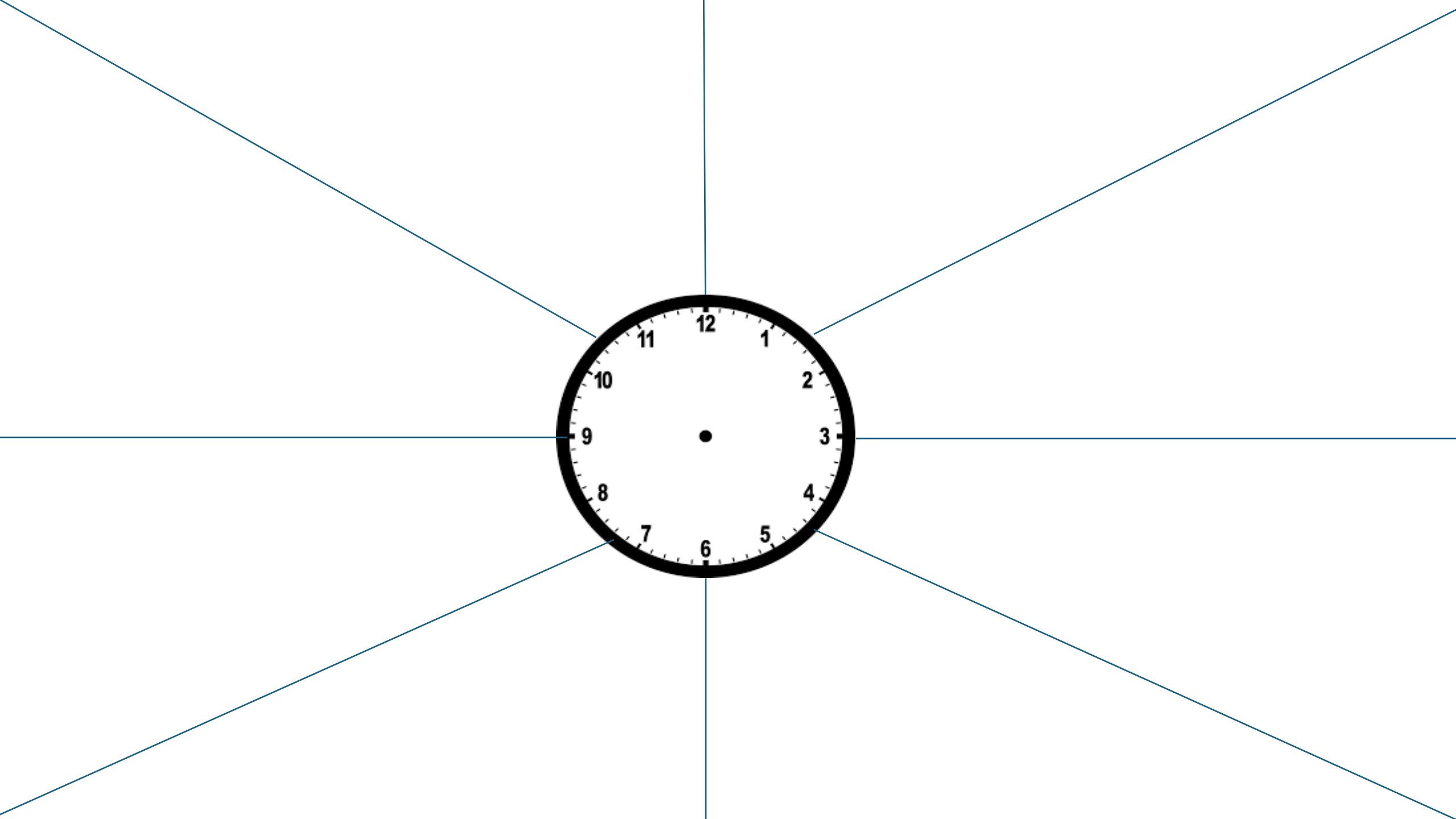
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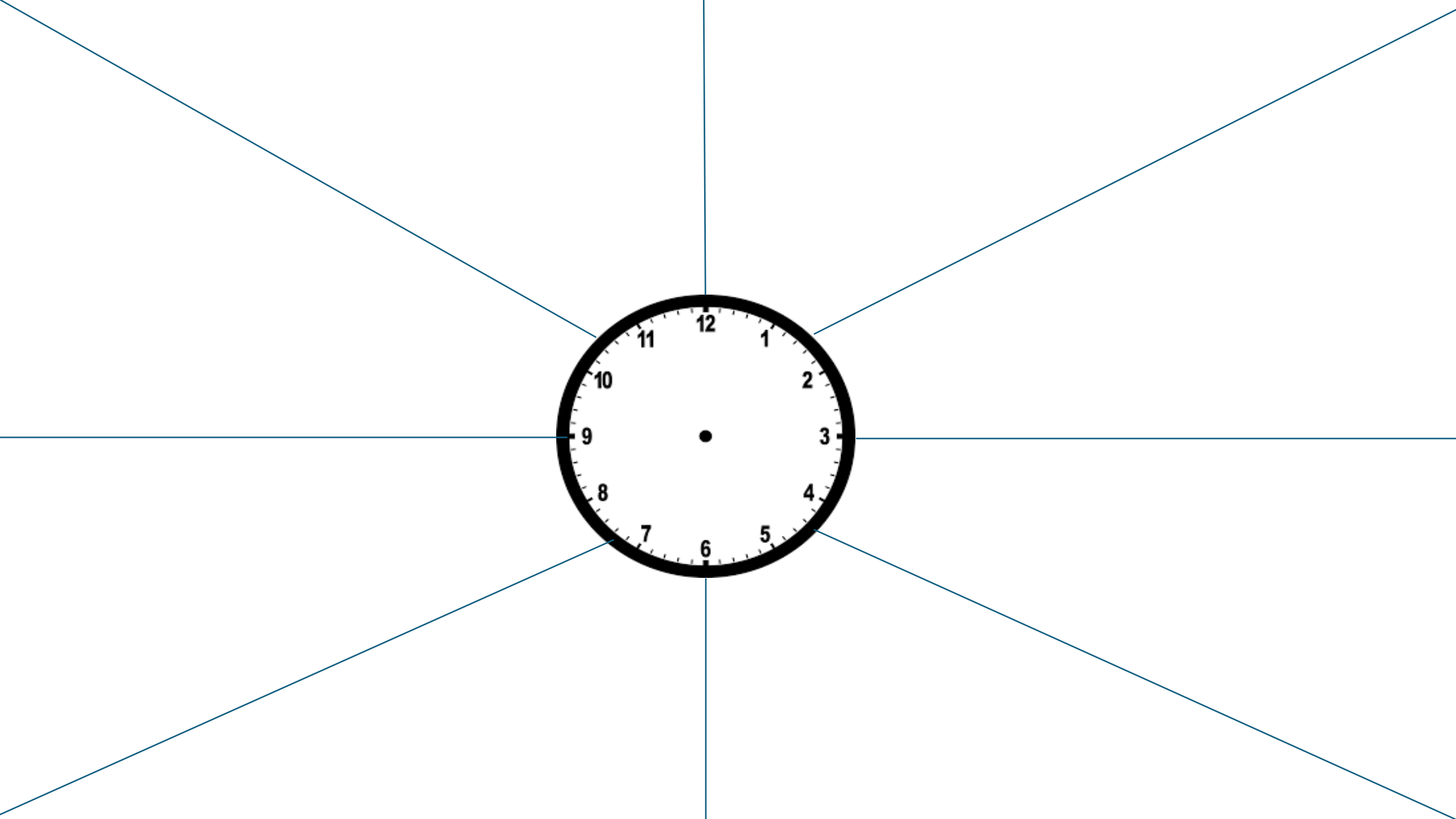
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