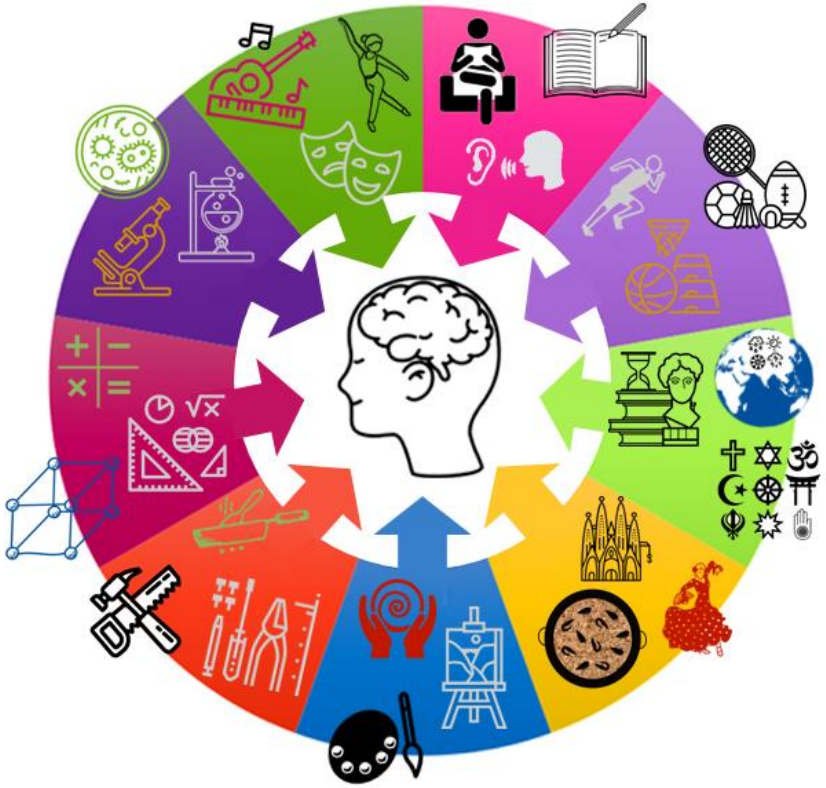
100% book - Year 10 Mainstream

Aim to memorise 100% of the knowledge on these Knowledge Organisers.



Term 3

Swindon Academy 2022-23	
Name:	
Tutor Group:	
Tutor & Room:	

"If you are not willing to learn, no one can help you.
If you are determined to learn, no one can stop you."

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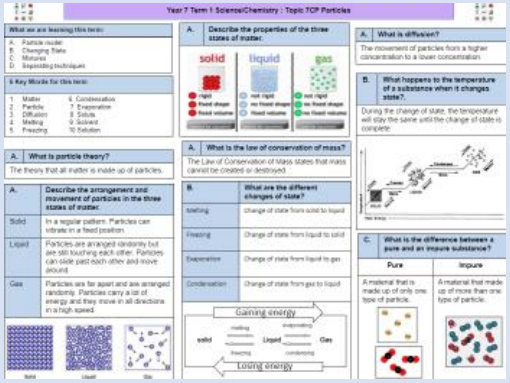
How to use your 100% book of Knowledge Organisers and Quizzable Organisers

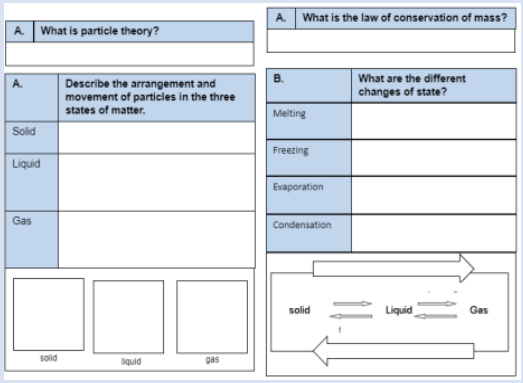
Knowledge Organisers



Knowledge Organisers contain the essential knowledge that you MUST know in order to be successful this year and in all subsequent years.

They will help you learn, revise and retain what you have learnt in lessons in order to move the knowledge from your short-term memory to long-term memory.

Quizzable Knowledge Organisers



These are designed to help you quiz yourself on the essential Knowledge.

Use them to test yourself or get someone else to test you, until you are confident you can recall the information from memory.

Top Tip

Don't write on your Quizzable Knowledge Organisers! Quiz yourself by writing the missing words in your prep book. That way you can quiz yourself again and again!

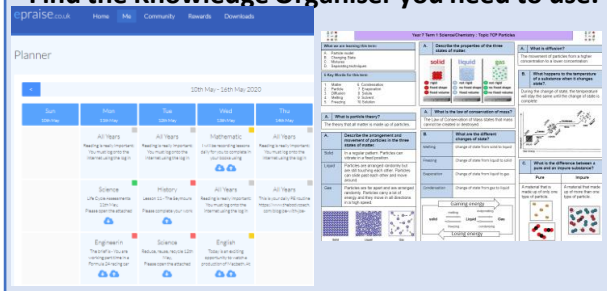
Expectations for Prep and for using your Knowledge Organisers

1. Complete all prep work set in your subject prep book.
2. Bring your prep book to every lesson and ensure that you have completed all work by the deadline.
3. Take pride in your prep book – keep it neat and tidy.
4. Present work in your prep book to the same standard you are expected to do in class.
5. Ensure that your use of SPAG is accurate.
6. Write in blue or black pen and sketch in pencil.
7. Ensure every piece of work has a title and date.
8. Use a ruler for straight lines.
9. If you are unsure about the prep, speak to your teacher.
10. Review your prep work in green pen using the mark scheme.

How do I complete Knowledge Organiser Prep?

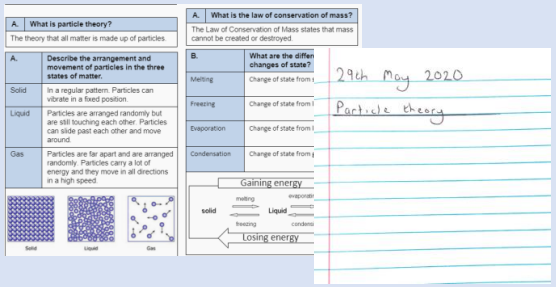
Step 1

Check Epraise and identify what words /definitions/facts you have been asked to learn. Find the Knowledge Organiser you need to use.



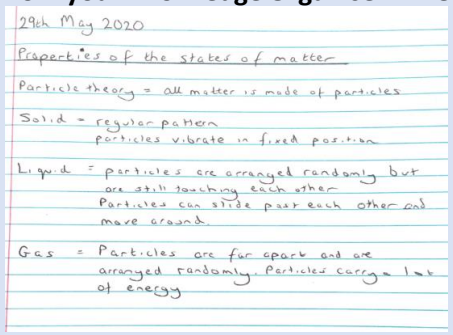
Step 2

Write today's date and the title from your Knowledge Organiser in your Prep Book.



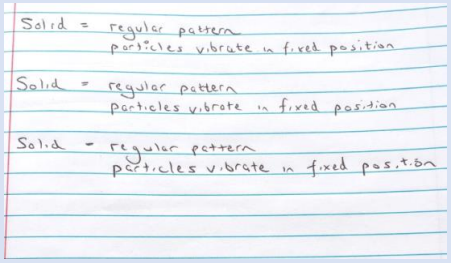
Step 3

Write out the keywords/definitions/facts from your Knowledge Organiser in FULL.



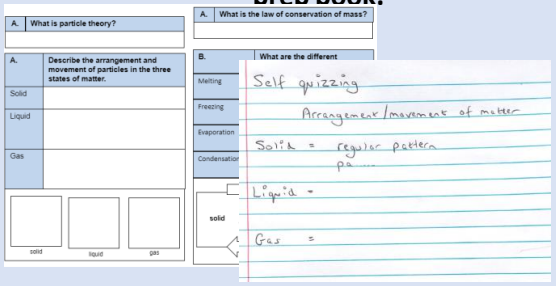
Step 4

Read the keywords/definitions/facts out loud to yourself again and again and write the keywords/definitions/facts at least 3 times.



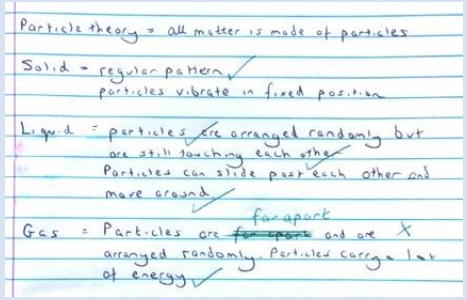
Step 5

Open your quizzable Knowledge Organiser. Write the missing words from your quizzable Knowledge organiser in your prep book.



Step 6

Check your answers using your Knowledge Organiser. Repeat Steps 3 to 5 with any questions you got wrong until you are confident.



Make sure you bring in your completed Prep notes to demonstrate that you have completed your prep.

ENGLISH –A Christmas Carol- Traditional

1. Context

Writer: Charles Dickens (1812-1870)
Dates: First published in 1843
Genre: Allegorical; a ghost story.
Era: Victorian
Set: Victorian London
Structure: The novella is divided into 5 staves (chapters).

Biography of Dickens

- Born in Portsmouth in 1812
- When Dickens was 12, his father was sent to debtors' prison as he was unable to pay his bills.
- His mother and youngest siblings were sent with him, whilst Dickens stayed with a family friend. In order to help his family, Dickens had to leave school and work in a factory sticking labels on bottles.
- Dickens dedicated his life to writing works that revealed the horrors of life in Victorian London for those living in poverty.

Christmas:
Dickens grew concerned that, due to capitalism, society had lost sight of traditional values (Christian morals, forgiveness, charity). He felt that Christmas was the perfect time to reconnect with these values and used his novella to do this. He also knew that Christmas would be a popular topic so it would sell well – therefore enabling his message to reach a wider audience.

London and inequality:
Dickens juxtaposes scenes of middle-class comfort and poverty to emphasise the close proximity and contrast of the different classes. It highlights the Christian concept of 'love thy neighbour'. The urban setting allows Dickens to exercise his fondness for hyperbole, with the exaggerated extremes of poverty adding to the effect of the 'plight of the poor'.

The Poor Law, 1834
In order to deter poor people from claiming financial help, the government made claimants live in workhouses: essentially, prisons for the poor. Dickens hated this law. He spent 1843 touring factories and mines in England and wished to highlight the situation facing poor people. A Christmas Carol was published soon after – in December 1843.

Malthusian Theory
The reformation of The Poor Law was partially informed by the writings of Thomas Malthus. Malthus argued that if living standards increased, population would increase and eventually the number of people would be too great for the food that could be produced. As a result, Malthus argued it was important not to support the poor or improve their standards of living, but to allow them to die if they couldn't support themselves because charity would only prolong their suffering.

The Supernatural: Victorian society was fascinated by the supernatural, including mediums, ghosts, and spiritualism. However, this belief in the supernatural was also heavily influenced by the church, with the belief that ghosts were souls who were trapped in purgatory (a place of suffering where the souls of sinners were trapped).

2. Key Characters

Ebenezer Scrooge: The protagonist is initially established as an archetypal villain who dismisses the goodwill and generosity associated with Christmas. After being forced to transform, he feels remorse for his avarice and becomes a symbol of Christmas spirit. Scrooge embodies the relentless capitalist spirit of the time, but also demonstrates that everyone has the capacity to reform.

Bob Cratchit: Bob is Scrooge's downtrodden but loyal employee. His family are a symbol of Victorian poverty, cheerfulness in adversity, togetherness and Christmas Spirit. Bob shows pity for Scrooge, and provides a contrast to Scrooge's isolation and meanness. His son, Tiny Tim, is an emblem for noble poverty; he accepts his disability without complaint.

Fred: Fred juxtaposes the character of Scrooge and epitomises the concept of goodwill and forgiveness, refusing to be discouraged by his uncle's misery. People speak highly of Fred and his generosity, in contrast to how they speak of Scrooge. Fred shows that Scrooge has chosen isolation and shows forgiveness to Scrooge, welcoming him in Stave Five.

Marley's Ghost: Marley's ghost is the spiritual representation of Scrooge's potential fate. The chains that drag him down symbolize the guilt caused by his failure to help people in need. Marley's ghost warns Scrooge that he too will experience the same guilt if he continues to deny people help.

The ghosts: The Ghost of Christmas Past is a symbol of childhood, truth and enlightenment. The Ghost of Christmas Present represents goodwill, plenty and the festival of Christmas. The Ghost of Christmas Yet to Come symbolises a catastrophic future for mankind.

Belle: The woman that Scrooge was engaged to when he was a young man. Belle's role is crucial in Scrooge's transformation, as the scenes show Scrooge what he might have had in his life if he had not been so avaricious. Through the character of Belle, Dickens sets emotional love directly against Scrooge's love of money and suggests that avarice can lead to a deprivation of kindness, love and empathy.

3. Central Themes

Social injustice	Dickens highlights the unfairness within society through the juxtaposition of the poor and wealthy. Through Scrooge's refusal to give to charity and his exclamation that the poor should be in workhouses or die, Dickens illustrates the selfishness of the higher classes and the injustice of wealth distribution in Victorian society. The children, Ignorance and Want, personify the dangerous consequences of allowing poverty to continue.
Transformation and redemption	By establishing Scrooge as an archetypical villain, Dickens is able to emphasise the idea that everyone is capable of transformation and redemption. From starting as a greedy, avaricious miser, Scrooge is able to reflect upon his actions and to understand that he must live his life helping others to avoid Marley's fate.
Social responsibility	Dickens felt that every individual had a responsibility for those around them. Marley's Ghost conveys the message of the novella when he cries, 'Mankind was my business' demonstrating that the proper 'business' of life is not about seeking financial reward but having concern for others. Dickens highlights the importance of trying to make a difference- whether that be large financial contributions (Scrooge), smaller contributions (Fezziwig) or simply showing compassion and kindness to one another.

4. Key Vocabulary

Avarice	Extreme greed of possessions or money
Salvation	Saving someone from harm or destruction
Miserly	someone who is greedy and does not like spending money
Callous	Mean or cruel
Antithesis	The exact opposite of something
Epiphany	A moment of sudden understanding
Redemption	The act of being saved or freed from sin or error
Benevolence	Kind and helpful towards others
Philanthropic	Showing concern for others by being charitable
Misanthropic	Someone who has a hatred for other people
Penitence	sincere regret for wrong or evil things that you have done
Remorse	a strong feeling of sadness and regret about something wrong that you have done
Deprivation	When someone is unable to have the things they need or want
Despotism	exercising power in a cruel and controlling way
Capitalism	A political system in which property, business, and industry are owned by private individuals and not by the government

5. Key Terminology, Symbols and Devices

Stave	Chapters in the novella, but we normally associate staves with music, as if the **book** is a Christmas carol, and each chapter is part of the song. As Christmas carols are repetitive and easy to remember, it links to how Dicken's wishes his message to be remembered.
Intrusive Narrator	A narrator who interrupts the story to provide a commentary to the reader on some aspect of the story or on a more general topic. In 'A Christmas Carol' the narrator helps to shape our impressions of Scrooge.
Circular structure	Circular narratives cycle through the story one event at a time to end back where the story originated.
Allegory	A story that can be interpreted to reveal a hidden meaning, typically a moral or political one.
Allegorical figures	An **allegorical** figure is a **character** that serves two purposes: first, they are an important person in the story in their own right, and, second, they represent abstract meanings or ideas.
Foreshadowing	Foreshadowing is a literary device in which a writer gives an advance hint of what is to come later in the story.
Didactic	A type of literature that is written to inform or instruct the reader, especially in moral or political lessons.
Semantic Field	A set of words that are related in meaning. Dickens frequently uses semantic fields of warmth and coldness that are associated with the characters.

ENGLISH –A Christmas Carol- Traditional

1. Context

Writer: **Dates:** **Genre:** **Era:** **Set:** **Structure:**	**Biography of Dickens** • • • •
Christmas:	**London and inequality:**
The Poor Law, 1834	**Malthusian Theory**
The Supernatural:	

2. Key Characters

Ebenezer Scrooge:
Bob Cratchit:
Fred:
Marley's Ghost:
The ghosts:
Belle:

3. Central Themes

Social injustice	
Transformation and redemption	
Social responsibility	

4. Key Vocabulary

Avarice	
Salvation	
Miserly	
Callous	
Antithesis	
Epiphany	
Redemption	
Benevolence	
Philanthropic	
Misanthropic	
Penitence	
Remorse	
Deprivation	
Despotism	
Capitalism	

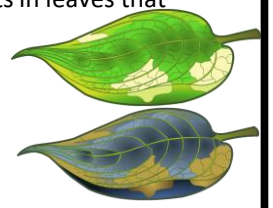
5. Key Terminology, Symbols and Devices

Stave	
Intrusive Narrator	
Circular structure	
Allegory	
Allegorical figures	
Foreshadowing	
Didactic	
Semantic Field	

B4 Bioenergetics – Photosynthesis

Photosynthesis

Endothermic chemical reaction that takes place in chloroplasts in leaves that produces glucose and oxygen from carbon dioxide and water



carbon dioxide + water $\xrightarrow{\text{light}}$ oxygen + glucose

$6CO_2 + 6H_2O \xrightarrow{\text{light}} 6O_2 + C_6H_{12}O_6$

What do plants do with the glucose?

- Stored as starch
- Stored as fats and oils
- For making cellulose (for cell walls)
- For respiration
- For making amino acids (along with nitrates from soil)

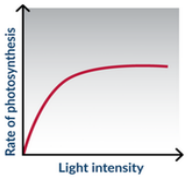
Testing the leaf for starch:

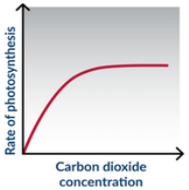
- Boil the leaf for 5 minutes to soften
- Put into heated ethanol to remove chlorophyll (turn off Bunsen burner!)
- Spread leaf on a white tile
- Add iodine
- In the places that contain starch the iodine will turn blue/black
- In a variegated leaf, only the parts containing chlorophyll turn blue black
- This shows chlorophyll is essential for photosynthesis

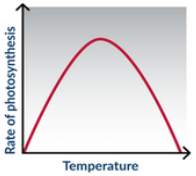
Factors the affect rate of photosynthesis

- Light
- Temperature
- CO_2 concentration

Whichever one is in the shortest supply is called the **limiting factor** – as it is the one limiting the rate of photosynthesis

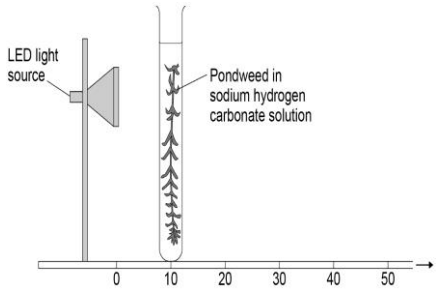






Increased light intensity increases the rate, but only up to a point, when CO_2 or temperature become limiting	Increased CO_2 conc increases the rate, but only up to a point, when light or temperature become limiting	Increased temperature increases the rate, but only up to a point, then the enzymes are denatured & rate drops

RP5 – Effect of light intensity on rate of photosynthesis



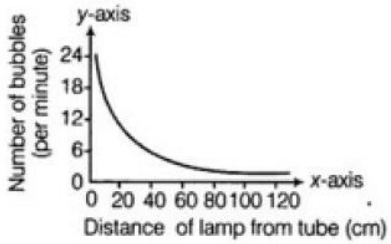
Independent variable: distance between lamp and plant (or light intensity)
Dependent variable – number of bubbles per second / rate of photosynthesis
Controls – temperature of solution, piece of pondweed

1. Measure 10cm length of pondweed and cut with scissors.
2. Place into beaker of 250ml $NaHCO_3$ solution. (this provides CO_2)
3. Place lamp 10cm away from pondweed – turn on lamp and leave for 2 minutes to adjust to light intensity.
4. Count number of bubbles produced in 60 seconds and record in table.
5. Repeat steps 3 and 4 for lamp distances of 20cm – 50cm at 10cm intervals.
6. Keep the temperature of the solution the same (LED light is used to not give off heat)

Inverse Square Law (HT only)

As distance of the lamp doubles the light intensity of the plant quarters $I = \frac{1}{d^2}$

Typical results:



As the **distance** between the lamp and the pondweed **increases**, the **number of bubbles per minute decreases**

B4 Bioenergetics – Photosynthesis

Photosynthesis

1. What are the two reactants for photosynthesis?
2. What are the two products?
3. Where in a cell does this reaction happen?
4. Name two uses of glucose produced in photosynthesis.
5. What else is needed for plants to produce amino acids?
6. What chemical is used to test for starch?
7. Which parts of the leaf contain starch in a variegated leaf?

Factors the affect rate of photosynthesis

1. What are the three main factors that affect the rate of photosynthesis?
2. What is a 'limiting factor'?
3. Why does increasing the temperature above a certain point cause the rate to drop?
4. Describe the effect of increasing the concentration of CO_2 on the rate of photosynthesis

RP5 – Effect of light intensity on rate of photosynthesis

1. What is the independent variable in this investigation?
2. What needs to be kept the same?
3. What is the dependent variable?
4. Why is an LED lamp used rather than a regular lamp?
5. Why is sodium hydrogen carbonate solution used?
6. What is a good range and interval for the distance measurements?
7. Why is the plant left for 2 minutes every time the lamp is moved?
8. Describe the relationship between distance and the number of bubbles per minute

B4 Bioenergetics - Respiration

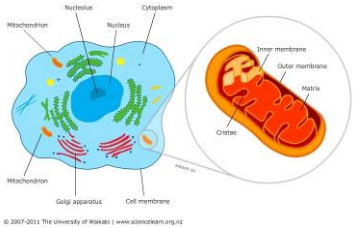
Respiration

Respiration is a chemical reaction that happens in the mitochondria of cells to release energy from glucose.
There are two types – Aerobic and Anaerobic.

Aerobic: - with oxygen

oxygen	+	glucose	→	carbon dioxide	+	water
$6O_2$	+	$C_6H_{12}O_6$	→	$6CO_2$	+	$6H_2O$

Organisms need energy for:
- chemical reactions to build larger molecules
- movement
- keeping warm.



Exercise

During exercise, more energy is needed so that muscles can keep contracting.
This means more respiration is needed.

Increased breath depth - Get more oxygen into blood per breath and remove CO_2

Increased breathing rate - Get oxygen into blood quickly.

Increased heart rate - Get more oxygenated blood to muscles.

Heart beats harder - more blood is pumped with every beat.

During intense exercise, there is just not enough oxygen getting into the body.
The muscles start to respire anaerobically.
The build up of lactic acid can cause cramp/stitch.
(HT ONLY) When exercise is over, the lactic acid has to be oxidised to CO_2 and H_2O. The amount of oxygen needed to do this is called the oxygen debt

Anaerobic respiration

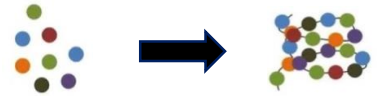
Respiration without oxygen

In animal cells = **glucose → lactic acid**
In plant/yeast cells = **glucose → ethanol + carbon dioxide**
In yeast, this is fermentation and is used in brewing and baking

	Aerobic	**Anaerobic**
Oxygen used?	Yes	No
Waste products	CO_2 and H_2O	Lactic acid (animals) Ethanol + CO_2 (plants/yeast)
Energy released	Lots	Much less

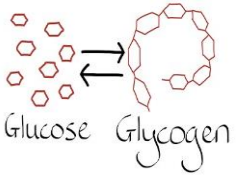
Metabolism

Metabolism is the sum of all the reactions in a cell or the body.
The 'metabolic rate' is the rate at which all of these reactions take place.
An example of a reaction = making proteins using amino acids from digestion.



amino acids **protein**

More examples:
- glucose → glycogen (in muscles/liver)
- respiration
- protein → urea
- glycerol and fatty acids → fats



B4 Bioenergetics - Respiration

Respiration

1. What is respiration?
2. Where does respiration take place?
3. What does aerobic mean?
4. Give two uses for the energy released from respiration
5. What are the two types of respiration?
6. What are the reactants in respiration?
7. Write the equation for respiration below

Exercise

1. Describe two changes to breathing during exercise
2. Why does breathing need to change during exercise?
3. What happens to heart rate during exercise?
4. When does anaerobic respiration happen?
5. Which chemical builds up in muscles during anaerobic respiration?

Anaerobic respiration

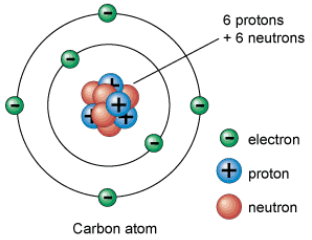
1. What is anaerobic respiration?
2. What is 'fermentation'?
3. What are the waste products of anaerobic respiration in humans?
4. What are the waste products of anaerobic respiration in plants and yeast cells?
5. Which type of respiration releases most energy?

Metabolism

1. What is the metabolic rate?
2. Give two examples of metabolic reactions other than respiration
3. What is glucose stored as in muscles?
4. What are fats made of?

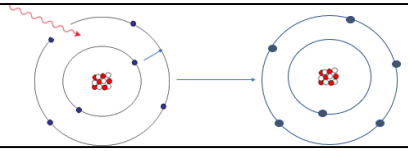
P4 Mainstream Higher - Radioactivity

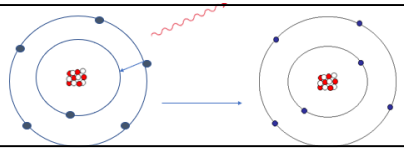
Atoms



- Atoms are tiny – around 10^{-10}m
- There is a positive nucleus made of protons and neutrons
- Electrons orbit in shells or energy levels
- The nucleus is 10,000 x smaller than the atom (4 orders of magnitude) so around 10^{-14} m

Electrons can move further away or closer to the nucleus





If EM waves (eg UV /light) are **absorbed** electrons can move up energy levels

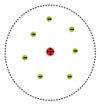
If EM waves are **emitted** by the atom, then electrons move closer to the nucleus

How the atomic model developed:

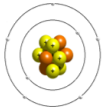
The atomic model has developed over time, when new evidence was discovered.

Atoms were first thought to be tiny spheres that could not be divided

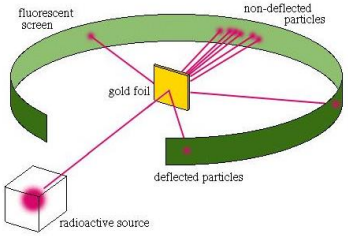
JJ Thomson then discovered the electron
Led to the plum pudding model
Atoms a cloud of positive charge with electrons randomly scattered



Rutherford discovered the positive charge is very small and in the nucleus
This discovery was from the Gold leaf experiment



Chadwick discovered neutrons
Bohr discovered the electrons orbit in shells



Rutherford's experiment:

Alpha particles fired at gold leaf
Most went straight through
Some deflected to the side
Some came straight back
This told him that most of the atom was empty space and that the positive charge was in a tiny nucleus

- Atoms of the same element have the same number of protons.
- This is the atomic (proton number)
- In an atom, the number of electrons is equal to the number of protons.
- The total number of protons and neutrons is called the mass number

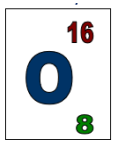
(Mass number) 23
(Atomic number) 11
Na

Sodium has :
11 protons
11 electrons
12 neutrons (23-11)

Isotopes

Isotopes are atoms with same number of **protons**, but different numbers of **neutrons** (different mass number)

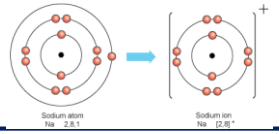
E.g.



These two isotopes both have 8 protons
One has 8 neutrons (16-8)
One has 10 neutrons (18 – 8)

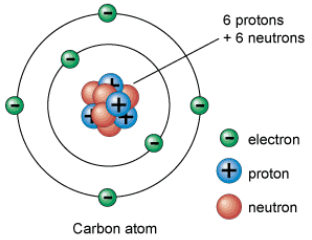
Ions

If atoms lose one or more outer electrons, they turn into positive ions

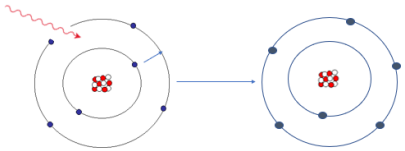


P4 Mainstream Higher - Radioactivity

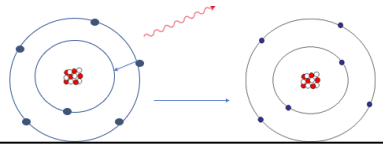
Atoms



1. What is the size of an atom?
2. What is in the nucleus?
3. What is the size of the nucleus?
4. How many orders of magnitude smaller than the atom is nucleus?



4. What can cause electrons to move further from the nucleus?



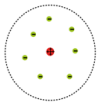
5. What can cause electrons to move closer to the nucleus?

1. What causes scientific ideas to change and develop?

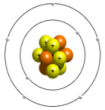
2. What was the thinking about atoms initially?

3. Which particle was discovered by JJ Thomson?

4. Where is the positive charge in this model?

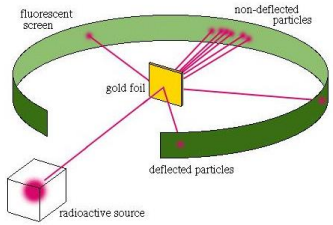


5. Where is the positive charge in this model?



6. Who discovered neutrons?

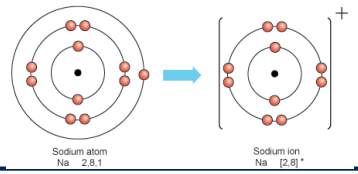
7. What was the discovery that Bohr made?



Rutherford's experiment:

1. What did Rutherford fire at gold leaf?
2. What happened to most of them?
3. What two conclusions did he come to?

1. What do all atoms of the same element have in common?
2. What does the bottom number on the elements in the periodic table represent?
3. What does the mass number show?
4. What is the number of electrons in an atom equal to?
5. What is an isotope?
6. What is an ion?
7. What type of ions are formed when atoms lose electrons?



P4 Mainstream Higher - Radioactivity

Nuclear radiation

If an isotope is **unstable**, then **particles** and **energy** are emitted from the nucleus.
There are 3 main types :

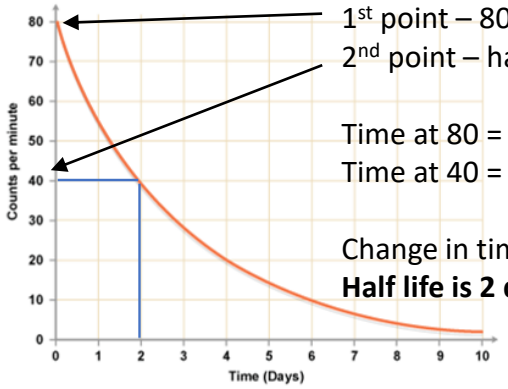
Radiation	What is it?	How far does it travel?	Ionising power	Penetrating power
Alpha α	2 protons and 2 neutrons	A few cm	Strong	Stopped by paper
Beta β	A fast moving electron	Metres	Medium	Stopped by aluminium
Gamma γ	An electromagnetic wave	kilometres	Weak	Takes thick concrete or lead to stop it

Neutrons can also be emitted from the nucleus**.**

Half life

Radioactive decay is random.
The half life of an isotope is the time it takes for half of the atoms in the sample to decay OR for the count rate to fall by half

Half life is calculated from a graph by reading two points off the y axis – one value being half the other.
Read the corresponding change in time**.**



1st point – 80
2nd point – half of that, so 40

Time at 80 = 0
Time at 40 = 2 days

Change in time = 2 days
Half life is 2 days

Isotopes are selected for use depending on their properties and half life – e.g. a medical tracer needs to have a short half life so it isn't in the body for very long

Alpha decay:

An unstable nucleus gives out 2 protons and 2 neutrons
An alpha particle is written as : $^{4}_{2}\alpha$

So when a particle gives out alpha radiation, it loses 2 from the proton number and 4 from the mass number
E.g

$$^{226}_{88}Ra \rightarrow {}^{222}_{86}Rn + {}^{4}_{2}\alpha$$

Beta decay:

In an unstable nucleus, a neutron changes into a proton and an electron.
The electron is fired out as the beta particle
Beta particles are written as $^{0}_{-1}\beta$ or $^{0}_{-1}e$

The proton number increases
The mass number stays the same
E.g. $^{14}_{6}\text{carbon} \longrightarrow {}^{14}_{7}\text{nitrogen} + {}^{0}_{-1}e$

The emission of a gamma ray **does not change the nucleus**

Irradiation is the exposure to alpha, beta or gamma radiation

Contamination is the presence of radioactive atoms on materials.

P4 Mainstream Higher - Radioactivity

Nuclear radiation

1. Why do atoms give out particles or energy from the nucleus?

2. Which radiation is the most strongly ionising?

3. What is an alpha particle made of?

4. Which radiation is the most difficult to stop?

5. Which radiation is a fast moving electron?

6. Which radiation can only travel a few cm?

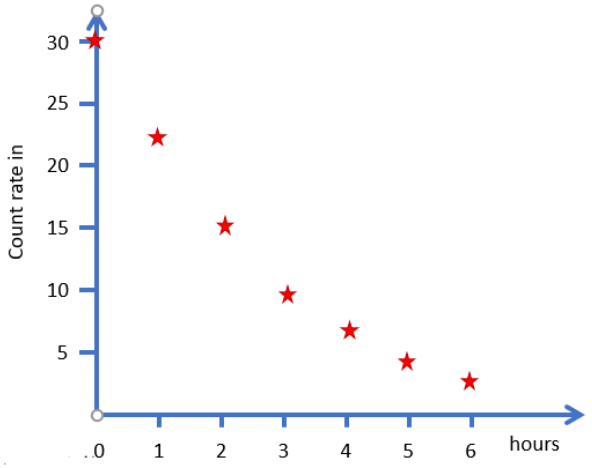
Half life

1. What is half life?

2. What is the unit missing from the Y axis on the graph opposite?

3. Draw a line of best fit onto the graph

4. What sort of half life would you want in an isotope being used as a medical tracer?



Alpha decay:

1. How is an alpha particle written?

2. What happens to the proton number of an atom when alpha decay happens?

3. What happens to the mass number when alpha decay happens?

4. What happens in the nucleus during beta decay?

5. How is a beta particle written?

6. What happens to the proton number during beta decay?

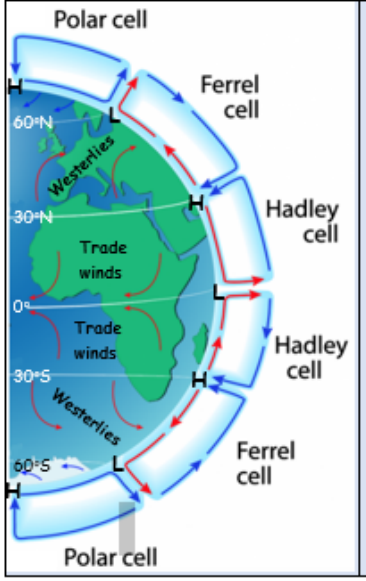
7. What happens to the mass number during beta decay?

8. What is irradiation?

9. What is contamination?

GCSE Geography AQA. 3. Natural Hazards

9. Global atmospheric circulation

Factor	Explanation
Global atmospheric circulation	Worldwide system of winds, which transport heat from the equator to the poles.
Key information	Wind is large scale movement of air from HIGH to LOW pressure. This is caused by differences in temperature at the Equator and the poles. The circulation is divided into loops called CELLS. Low pressure = Rising air = Rain. High pressure = Sinking air = Clear skies.
	At the poles, cool air sinks creating high pressure. (<250mm rainfall). At 60°N air rises between the Ferrel and Polar cell creating an area of low pressure. The UK gets lots of low pressure weather blown in from the Atlantic. At 30°N air sinks between the Ferrel/Hadley cell creating high pressure (deserts <250mm rain). On the equator air rises as the sun's heat is most concentrated. This creates a low pressure area with high rainfall. (Rainforests >2000mm of rain). Surface winds blow towards the equator (trade winds). Direct hurricanes to west. Here winds blow towards the poles and are called Westerlies. (From the west). The winds curve due to the spin of the earth (Coriolis effect).

10. Weather hazards in the UK

Hazard	Example
Extreme weather	A weather event that is significantly different from the average pattern and is especially severe or unseasonal.
Strong winds	Damage property / disrupt transport. 2018 Storm Ali killed 2 people.
Heavy rain	Can cause flooding, costing millions. Cockermouth 2009 314 mm in 24 hrs.
Snow	Injury, death, travel disruption. March 2018 Beast from East. 50 cm.
Drought	Crop failure, rules to conserve water. April 10-March 12 only 75% of rain.
Heatwaves	Pollution builds up- breathing problems. Death. BUT tourism benefits. 2018.

11. Evidence that weather is becoming more extreme…

Our weather is naturally variable BUT extreme events are becoming more common and severe.

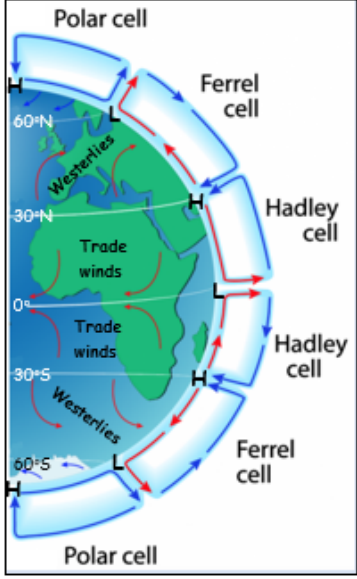
Hazard	Example
Temperature	10 warmest yrs all occurred since 1990 2018 joint hottest summer on record. Dec 2010 coldest month for 100 years.
Rainfall	More rainfall records broken between 2010 - 2014 than in any other decade. Dec 2015 wettest month on record.

12. An example of a recent extreme weather event in the UK

Name	Somerset Floods, 2014
Causes	350mm rain fell in Jan and Feb High tides, rivers not dredged for 20 yrs
Impacts	1 £10 million damage 2 14,000 ha of farmland flooded 3 600 homes flooded 4 Moorland and Muchelney cut-off 5 Floodwaters contaminated 6 Soil damaged for 2 years after
Manage-ment strategies	**Immediate responses** • Army helped with rescue boats • Volunteers and community groups • Locals used boats to go shopping/school **Long term responses** • £20 million flood action plan • Rivers dredged • Road levels raised • Tidal barrage by 2024

GCSE Geography AQA. 3. Natural Hazards

9. Global atmospheric circulation

Factor	Explanation
Global atmospheric circulation	
Key information	
	

10. Weather hazards in the UK

Hazard	Example
Extreme weather	
Strong winds	
Heavy rain	
Snow	
Drought	
Heatwaves	

11. Evidence that weather is becoming more extreme…

.

Hazard	Example
Temperature	

12. An example of a recent extreme weather event in the UK

Name	
Causes	
Impacts	
Manage-ment strategies	

GCSE Geography AQA. 3. Natural Hazards

13. Tropical storms

Hurricanes, cyclones, typhoons. An area of low pressure with winds moving in a spiral around the calm central point called the eye of the storm. Winds are powerful and rainfall is heavy.

Factor	Explanation
Global distribution	5° – 30° north and south of equator (sea temp warm, wind shear low). More in the northern hemisphere. Move towards the west.
Relationship with ACM	Trade winds (from high to low pressure) send tropical storms to west.
Structure 	Circular, can be 100s of km wide. Eye- calm in centre (air ↓, LOW). Eyewall- strong winds, torrential rain. Edges- Wind speed falls, rain reduces.
How will climate change affect them?	
Distribution	Increase to higher latitudes (warmer sea temperatures).
Frequency	Number could increase. (Longer season)
Intensity	Stronger? More evaporation.

14. Formation of tropical storms

Include processes and ensure correct sequence.

Conditions	5-30° latitude. Ocean depth > 60m deep. Sea temperature > 27°C. Form summer and autumn.

1. Sun heats the ocean (27°C) > **rapid evaporation**.
2. **Condensation** occurs quickly leading to a large amount of cloud forming (**tropical depression**).
3. Due to the earth's rotation, this cloud mass starts to spin. An eye is formed in the centre.
4. Due to rising air, a **low pressure** area forms below. Air rushes into this creating high wind speeds. (>74mph = **tropical storm**)
5. The low pressure results in the ocean being uplifted forming a **storm surge**.

15. How can we reduce the impacts?

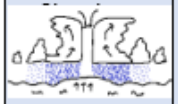
Strategy	Explanation
Prediction / monitoring	Satellites and aircraft to monitor storms. Computer models calculate the predicted track. Allows warnings so people can evacuate or protect their home.
Planning	New developments avoid high risk areas Emergency services train and prepare. Plan evacuation routes. Reduces the injuries and deaths.
Protection	Building design- reinforced concrete, stilts to reduce flood risk. Flood defences along rivers and coasts. Reduces the number of buildings destroyed so fewer injuries and deaths.

16. Tropical storms affect people and environments.

	Generic	Typhoon Haiyan 2013 Philippines
Primary effects	Direct results of strong winds, high rainfall, storm surges. Flooding, buildings destroyed, death.	6,201 deaths. (Most drowned in storm surge.) 1.1 million houses damaged. 90% of Tacloban city destroyed.
Secondary effects	Homelessness > lead to poor health. Lack of sanitation > diseases (cholera) Food shortages, price increase.	4.1 million homeless. Damage cost US$12 billion. 1.1 million tonnes of crops destroyed (rice).
Immediate responses	Evacuate before the storm. Rescue those affected. Provide food, water, blankets. Aid workers arrive from abroad. Recover dead bodies (prevent disease).	➢ Over 1200 evacuation shelters set up. ➢ Philippines Red Cross delivered basic food aid. ➢ UK sent shelter kits. ➢ 800,000 evacuated (warnings given 2 days early).
Long term responses	Repair homes and infrastructure. Promote economic recovery.	➢ More cyclone shelters built. ➢ No build zones. ➢ 'Cash for work' programmes.

GCSE Geography AQA. 3. Natural Hazards

13. Tropical storms

Factor	Explanation
Global distribution	
Relationship with ACM	
	
How will climate change affect them?	
Distribution	
Frequency	
Intensity	

14. Formation of tropical storms

Conditions	

15. How can we reduce the impacts?

Strategy	Explanation
Prediction / monitoring	
Planning	
Protection	

16. Tropical storms affect people and environments.

	Generic	Typhoon Haiyan 2013 Philippines
Primary effects		
Secondary effects		
Immediate responses		
Long term responses		

Year 10 OCR - Unit 2 GEOGRAPHY - Knowledge organiser: People of the UK

What we are learning this term:

A. The UK is connected to many other countries and places.
B. The UK is a diverse and unequal society which has geographical patterns.
C. There are different causes and consequences of development within the UK.
D. The UK's population is changing.
E. There are causes for and consequences of urban trends in the UK.
F. Cities have distinct challenges and ways of life, influenced by its people, culture and geography.

6 Key Words for this term

1. Trade	4. Suburbanisation
2. Deindustrialisation	5. Counter-urbanisation
3. Infrastructure	6. Re-urbanisation

A. The UK is connected to many other countries and places.

1. Trade	The movement of goods and services across the world.
2. Imports	Products brought into a country
3. Exports	Products taken out of a country.
4. Trade deficit	When a country imports more than they export.
6. Tariffs	Tax that must be paid on imports or exports.

B. The UK is a diverse and unequal society which has geographical patterns.

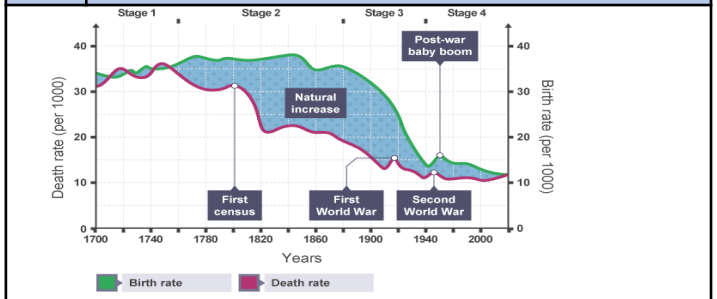
1. Tertiary sector	Employment in the services industry such as education or healthcare.
2. Quaternary sector	Employment is research, technology and media.
3. Disposable income	The money people have to live on once their taxes, pensions and rent have been paid.
4. Diversity	Differences within society. For example, race, levels of education and wealth.

C. There are different causes and consequences of development within the UK.

North-south divide	The difference in wealth in the UK between North and South.
Deindustrialisation	The closing down of factories and industry in an area.
Geographical location	The south of England is closer to London so there are more job opportunities.
Economic change	Deindustrialisation in the North led to mines and factories closing down. This led to widespread unemployment.
Infrastructure	Transport, services and communications are better in the South meaning it is easier to travel to Europe.
Government policy	The government invest more in the south because it is closer to London. This can lead to improved infrastructure, education and healthcare.

How has **Swindon** experienced economic growth?	How has **Swindon** experienced economic decline?
1. **Great Western Railway** was opened in **1843** providing many jobs and connecting Swindon to London and Bristol. 2. **Honda** was built in **1985** and has attracted many other car companies such as BMW and Jaguar. 3. The old train sheds were converted into the **Outlet centre** which attracts tourists.	1. **GWR** yard was closed in **1986** meaning that **40%** of Swindon lost their jobs. 2. **Honda** closed in **2019** because it was cheaper to produce cars abroad. Over **3,000** jobs lost. 3. Low levels of employment mean that people have **less disposable income** to spend in local businesses.

D. The UK's population is changing.



1. Demographic transition model (DTM).	Shows the changes in population over time by measuring birth rate and death rate.
2. Ageing population	Growing proportion of people above the age of 60.
3. Economically active	Proportion of the population who are employed and pay taxes.
4. Immigration	Inward movement of people to the UK.

D. The UK's population is changing

Causes of an ageing population (2)	1. Improved healthcare. 2. People living more active lifestyles.
Positive effects of an ageing population *(2)*	1. Skilled workforce 2. More money spent in leisure facilities or resorts.
Negative effects of an ageing population (2)	1. Cost of healthcare is high. 2. Elderly people do not work so do not pay taxes.
Government responses to an ageing population (2)	1. Pension age raised to encourage people to continue working. 2. Increased investment in care homes and healthcare.

Year 10 OCR - Unit 2 GEOGRAPHY - Knowledge organiser: People of the UK

What we are learning this term:

A. The UK is connected to many other countries and places.
B. The UK is a diverse and unequal society which has geographical patterns.
C. There are different causes and consequences of development within the UK.
D. The UK's population is changing.
E. There are causes for and consequences of urban trends in the UK.
F. Cities have distrinct challenges and ways of life, influenced by its people, culture and geography.

6 Key Words for this term

1.	4.
2.	5.
3.	6.

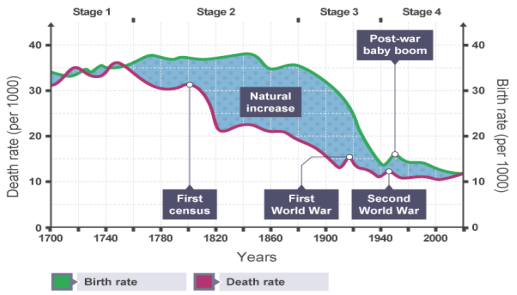
A.	The UK is connected to many other countries and places.
1. Trade	
2. Imports	
3. Exports	
4. Trade deficit	
6. Tariffs	

B.	The UK is a diverse and unequal society which has geographical patterns.
1. Tertiary sector	
2. Quaternary sector	
3. Disposable income	
4. Diversity	

C.	There are different causes and consequences of development within the UK.
North-south divide	
Deindustrialisation	
Geographical location	
Economic change	
Infrastructure	
Government policy	

How has **Swindon** experienced economic growth?	How has **Swindon** experienced economic decline?
1.	1.
2.	2.
3.	3.

D.	The UK's population is changing.
1. Demographic transition model (DTM).	
2. Ageing population	
3. Economically active	
4. Immigration	



D.	The UK's population is changing
Causes of an ageing population (2)	1. 2.
Positive effects of an ageing population *(2)*	1. 2.
Negative effects of an ageing population (2)	1. 2.
Government responses to an ageing population (2)	1. 2.

Year 10 OCR - Unit 2 GEOGRAPHY - Knowledge organiser: People of the UK

D.	The UK's population is changing
Immigration in the 21st century.	1. International migration has increased in the 21st century due to increase in job opportunities, high quality education and global conflict. 2. Immigrants come from all over the world including Poland, India and Pakistan.

Positive impacts of migration on the UK		Negative impacts of migration on the UK	
Social (2)	1.Different cultures including food, music and fashion. 2.They bring skills that may be in short supply in the UK.	Social (2)	1.People may feel that they are taking local jobs and houses. 2.Can lead to cultural conflict
Economic (2)	1.Workers pay taxes which can be invested into the community. 2.Immigrants are often highly skilled and well educated (e.g. doctors)	Economic (2)	1.Extra costs for healthcare and education. 2.Money may be sent home and not spend in the local community,

E.	There are causes for and consequences of urban trends in the UK
Urban	Towns and cities
Rural	Countryside and villages
Urbanisation	The growing proportion of people moving to cities
Suburbanisation	The outward spread of cities into surrounding green areas.
Counter-urbanisation	The movement of people from urban to rural areas.
Re-urbanisation	Improving inner city areas to attract people and businesses.

E.	There are causes for and consequences of urban trends in the UK
Causes of suburbanisation (3)	1.Overcrowding in cities. 2.Improved transport links into inner-city areas. 3.Land may be cheaper outside of the city.
Causes of counter-urbanisation (3)	1. Overcrowding in cities. 2. People want a more peaceful lifestyle. 3. Poor air quality in cities.
Causes of re-urbanisation (3)	1. Government investment. 2. Counter-urbanisation. 3. Inner city decline.

E.	There are causes for and consequences of urban trends in the UK				
Consequences of suburbanisation		**Consequences of counter-urbanisation**		**Consequences of re-urbanisation**	
Social (2)	1.Increased traffic congestion. 2.Longer commutes.	Social (2)	1.Housing prices in countryside increases. 2.Crowded public services	Social (2)	1.over-crowding. 2.Housing prices increase
Economic (2)	1.Commute is more expensive. 2.Shops in city centres close.	Economic (2)	1.House prices increase in countryside. 2.Inner-city decline	Economic (2)	1.Housing prices increase. 2.Office space is expensive.
Environmental (2)	1.Poor air quality. 2.Green areas destroyed	Environmental (2)	1.More traffic congestion. 2.Pressure on local water supply	Environmental (2)	1.Increased traffic in cities. 2.Air pollution

D.	Cities have distinctive challenges and ways of life, influenced by its people, culture and geography. (CASE STUDY OF BRISTOL)
Location	South-west England. Near the Bristol Channel 1.5 hours from London
importance within the UK and wider world	1.Two universities 2.UKs 8th largest tourist destination 3.Home of Airbus and Rolls Royce 4.Home of Aardman Animations
Migration	1.Population has doubled between 1851 and 1891. 2.50 countries are represented in Bristol 3.St Paul's carnival brings music from African and Caribbean communities.
Challenges: Housing availability	1.Average house price is £350,000 2.Highest homeless population in the UK
Challenges: Transport provision	1.UK's most congested city. 2.Poor public transport links
Challenges: Waste management	1. High amount of food waste. 2. Half a million tonnes of waste per year.
Sustainable strategies: Housing	Brabazon housing estate with provide over 2,500 new affordable homes. • **Successful** because it uses brownfield sites. • **Unsuccessful** because the homes are still expensive
Sustainable strategies: Transport	Voi electric scooters. Park and ride to connect the suburbs to the inner city. • **Successful** because it reduces CO2 emissions. • **Unsuccessful** because the park and ride is unreliable.
Sustainable strategies: Waste	'Slim my waste, feed my face' initiative to cut down on food waste. • **Successful** because it has led to food being recycled • **Unsuccessful** because it is not well monitored.

Year 10 OCR - Unit 2 GEOGRAPHY - Knowledge organiser: People of the UK

D.	The UK's population is changing
Immigration in the 21st century.	1. 2.

Positive impacts of migration on the UK		Negative impacts of migration on the UK	
Social (2)	1. 2.	Social (2)	1. 2.
Economic (2)	1. 2.	Economic (2)	1. 2.

E.	There are causes for and consequences of urban trends in the UK
Urban	
Rural	
Urbanisation	
Suburbanisation	
Counter-urbanisation	
Re-urbanisation	

E.	There are causes for and consequences of urban trends in the UK
Causes of suburbanisation (3)	1. 2. 3.
Causes of counter-urbanisation (3)	1. 2. 3.
Causes of re-urbanisation (3)	1. 2. 3.

E.	There are causes for and consequences of urban trends in the UK				
Consequences of suburbanisation		**Consequences of counter-urbanisation**		**Consequences of re-urbanisation**	
Social (2)	1. 2.	Social (2)	1. 2.	Social (2)	1. 2.
Economic (2)	1. 2.	Economic (2)	1. 2.	Economic (2)	1. 2.
Environmental (2)	1. 2.	Environmental (2)	1. 2.	Environmental (2)	1. 2.

F.	Cities have distinctive challenges and ways of life, influenced by its people, culture and geography. (CASE STUDY OF BRISTOL)
Location	1. 2. 3.
importance within the UK and wider world	1. 2. 3. 4.
Migration	1. 2. 3.
Challenges: Housing availability	1. 2.
Challenges: Transport provision	1. 2.
Challenges: Waste management	1. 2.
Sustainable strategies: Housing	• **Successful** because • **Unsuccessful** because
Sustainable strategies: Transport	• **Successful** because • **Unsuccessful** because
Sustainable strategies: Waste	• **Successful** because • **Unsuccessful** because

GCSE History : Medicine in 18th and 19th Century Britain

What we are learning this term:
3.1 Ideas about the cause of disease and illness 3.2 Approaches to treatment and prevention 3.3 Key Individuals and fighting cholera in London, 1854

A.	*Can you define these key words?*
microbes	Any living organism that is too small to see without a microscope. Microbes include bacteria.
vaccination	Treatment with a vaccine to produce immunity against a disease
spontaneous generation	Claimed rotting matter created microbes.
bacteriology	The study of bacteria.
inoculate	Deliberately infecting yourself with a disease to avoid a more severe case later on.

C.	Fighting cholera in London , 1854 (3.3)
What is Cholera?	Cholera was a terrible water borne disease that spread quickly across England from 1831. There were lots of cases in slum dwellings.
Attempts to prevent it	Some steps were taken to clean up the filthiest areas of the city. Idea that it was caused by miasma was widespread, so local councils focused on cleaning up the mess in which they were living
John Snow	John Snow was surgeon who investigated the 1854 epidemic. He created a spot map to show the deaths and noticed they were concentrated around a water pump in Broad Street, SoHo. Clear the water pump was the source of the outbreak
Impact of Snows work	In the short-term Snow removed the handle from the Broad Street pump and the deaths in that area went away. Long-term Snow presented his work to the government arguing clean water needed to be supplied. Many rejected his work and clung to the idea of miasma causing cholera

B. Change and continuity in ideas about disease and illness in the 18th and 19th Century. (3.1-3.2)

Causes	Prevention	Treatments
Religion – People no longer believed that God was responsible for illnesses and world events	Vaccinations – the work of Edward Jenner in the 18th century led to the first vaccination being created for smallpox. This led the way to other vaccinations being produced as Pastuer and Robert Koch isolated microbes which caused certain diseases	Continuance – despite the new ideas about the cause of disease and illness in the 18th century, it took a while for medical science to catch up. Not a great deal of understanding how to remove germs as part of treatment
Age of Enlightenment/Scientific Revolution – people started to look for answers in the world about disease and illness. There was also great change across science influencing ideas about cause	Public Health Act 1875 – in the 18th Century the government had a very *laissez-faire* attitude to public health. This changed when more men could vote. The government realised changes were needed and passed the Public Health Act. This Act stated that clean water, sewage system, public parks, housing officers and street lighting had to be provided	Hospitals – Florence Nightingale was a pioneer in changing hospitals and hospital care in the 19th Century. Following her success at the war hospital in the Crimea, Nightingale changed the way that hospitals were designed to having separate wards and more ventilation. Also set up a training school for nurses to give better care
Miasma – people still believed in the theory that disease and illness was caused by harmful fumes in the air. BUT it was becoming less popular	Role of the government – Took a more active role in preventing disease, making smallpox vaccinations compulsory	Anaesthetics – one of the big problems in the 18th and 19th centuries was pain during surgery. Ether and laughing gas had been used but they were not good enough. **John Simpson** discovered that chloroform could be used as a pain relief – this led to more complex surgeries being performed
Spontaneous Generation – this theory stated that rotting matter caused bacteria to form, causing people to get ill		Antiseptics – another big problem with surgery was infections. **Joseph Lister** built on Pasteur's work and discovered that carbolic acid could be used to prevent infections. Used on wounds and Sterlised equipment, but some surgeons did not like the change
Germ Theory – this correct theory put forward by Louis Pastuer was that germs caused matter to rot. He linked this to disease and illness, stating that germs caused people to get ill		

D. Key People (3.3)

Edward Jenner	John Snow	Edwin Chadwick
Country doctor who realised that milkmaids who got cowpox did not catch smallpox – decided they must be connected. Tested his theory by infecting a local boy with cowpox and then tried to infect him with smallpox but he did not get ill. Wrote up his findings to make sure doctors could follow. Had successfully developed the first vaccine, which was supported by the government.	Used scientific methods to prove that cholera was a water borne disease in the 1850's. Snow presented his findings to the government, recommending that the sewer systems were improved, which they were eventually.	Published his *Report on the Sanitary Conditions of the Labouring Classes* in 1842. he spent time researching the urban poor and discovered that people living in cities had a lower life expectancy than people living in the countryside. Campaigned for all cities to set up boards of health, responsible for clean water and disposing sewage.

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Attempts to prevent it	
John Snow	
Impact of Snows work	

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Causes	Prevention	Treatments

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Year 10 GCSE Religious Education KO - Islam Practices

Keywords	
Tawalla	Showing love for God and for those who follow Him
Tabarra	Disassociation with God's enemies
Khums	The obligation to pay one-fifth of acquired wealth
Lesser jihad	The physical struggle or holy war in defence of Islam
Greater jihad	The **daily** struggle and inner spiritual striving to live as a Muslim
Sunni	Muslims who believe in the successorship of Abu Bakr, Umar, Uthman and Ali as leaders after the Prophet Muhammad
Shi'a	Muslims who believe in the Imamah, leadership of Ali and his descendants
Niyyah	Intention during prayer - having the right intention to worship God
Du'a	A personal prayer that is done in addition to Salah e.g. asking Allah for help

What we are learning in this unit

A. The 5 Pillars and 10 Obligatory Acts
B. Salah
C. Sawm
D. Zakah
E. Hajj
F. Jihad
G. Id-ul-Adha
H. Id-ul-Fitr

A.	*5 Pillars of Islam and 10 obligatory acts*
What are the 5 pillars	• 5 key practices or duties for Muslims • Both Sunni and Shi'a keep these (Shi'a have them as part of the 10 obligations) • They are seen as pillars "holding up the religion" and are all of equal importance
What are the 10 obligatory acts	• There are 10 obligations for a Muslim according to the Shi'a branch of Islam. • These include prayer, fasting, almsgiving, pilgrimage, jihad, khums, directing others towards good, forbidding evil, tawalla and tabarra
Shahadah	• Shahadah is the first of the 5 pillars • It is the Muslim declaration of faith • ***"there is no God but Allah, and Muhammad is His messenger"*** • This is a statement that Muslims reject anything but Allah as their focus of belief • It also recognises that Muhammad has an important role and his life is an example to follow

	Jihad

Lesser Jihad	• Originated when Prophet Muhammad and early Muslims were being attacked and oppressed by the Meccans and had no choice but to engage
	• ***"Fight in the way of God those who fight against you but do not transgress"***
	• Conditions for declaration
	  • self-defense
	  • proportionate
	  • legitimate authority
	  • no harm to civilians

Greater Jihad	• A struggle within oneself to follow the teachings of Islam and be a better person • e.g. perform the Five Pillars, follow Sunnah and avoid temptation • ***"encourage what is right and forbid what is wrong"***

B.	*The 5 Pillars - Salah*
What is it?	• ***"Salah is a prescribed duty that has to be performed at the given time by the Qur'an"*** • ***Muslims pray 5 times per day and this allows them to communicate with Allah.*** • The prayers are done at dawn (fajr), afternoon • (zuhr), late afternoon (asr), dusk (maghrib) and night (isha) • Muslims face the holy city of Makkah when paying.
Wuzu	• The washing process to purify the mind and body for prayer • Muhammad said the key to Salah is cleanliness • Hands, arms, nose, mouth, head, neck and ears are cleaned as well as both feet up to the ankle.
Rak'ahs and recitations	• These are the movements that Muslims make during prayer • Takbir – raise hands to ears and say 'Allahu Akbar' • Qiyam – Standing, Muslims recite Surah • Then bow to the waist saying ***"Glory be to my Great Lord and praise be to Him"*** • Then sink to their knees saying ***"Glory be to my Lord, The Most Supreme...".***
Salah at home	• Salah is a big part of family life • Meals and other activities are usually scheduled to fit around prayer times • Families pray all together and might have a room set aside for prayer
Salah in the mosque	• All mosques have a qiblah wall which is to show where to face Makkah • Men and women pray in separate rooms at the Mosque
Jummah	• Jummah is congregational prayer held on a Friday at the mosque where the imam leads the prayer • Praying together as a community develops the feeling of unity amongst Muslims • Men are obliged to attend unless they are sick or too old • Women do not have to go – they may pray at home instead
Differences between Sunni and Shi'a	• Shi;a Muslims combine some prayers so they may only pray 3x a day • Shi'a use natural elements e.g. clay where their head rests

Year 10 GCSE Religious Education KO - Islam Practices

Keywords	
Tawalla	
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What we are learning in this unit

A. The 5 Pillars and 10 Obligatory Acts
B. Salah
C. Sawm
D. Zakah
E. Hajj
F. Jihad
G. Id-ul-Adha
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A.	*5 Pillars of Islam and 10 obligatory acts*
What are the 5 pillars	
What are the 10 obligatory acts	
Shahadah	

	Jihad
Lesser Jihad	
Greater Jihad	

B.	*The 5 Pillars - Salah*
What is it?	
Wuzu	
Rak'ahs and recitations	
Salah at home	
Salah in the mosque	
Jummah	
Differences between Sunni and Shi'a	

Year 10 GCSE Religious Education KO - Islam Practices

	The 5 Pillars - Zakah
The role of giving alms	• ***Muslims believe it is their duty to ensure Allah's wealth has been distributed equally as everyone is the same*** • The Qur'an commands to give to those in need
The significance of giving alms	• Giving 2.5% of savings/wealth to charity • Wealth can cause greed which is evil, so Zakah purifies wealth – wealth is given by God and must be shared • The Prophet Muhammad practiced Zakah as a practice in Medina • Given to the poor, needy and travellers • ***Sadaqah*** is giving from the heart out of generosity and compassion
Khums	• Shi'a Islam – one of the 10 obligatory acts • 20% of any profit earned by Shi'a Muslims paid as a tax • Split between charities that support Islamic education and anyone who is in need • ***"know that whatever of a thing you acquire, a fifth of it is for Allah, for the Messenger, for the near relative, and the orphans, the needy, and the wayfarer"***

	The 5 Pillars - Hajj
The role of pilgrimage	• A pilgrimage to Makkah which is compulsory for Muslims to take at least once as long as they can afford it and are healthy
The significance of pilgrimage	• God told Ibrahim to take his wife and son on a journey and leave them without food or water • Hajira ran up and down two hills in search of water, could not find any and prayed to God. Then water sprung from the ground. This is the Zamzam well • When Ibrahim returned he was commanded to build the Ka'ba as a shrine dedicated to Allah • Hajj is performed in the month of Dhu'l-Hijja
Actions	• Ihram – dressing in two pieces of white cloth • Circling the Ka'aba 7 times (tawaf) • Drinking water from the Zamzam well like Hajar • walking between Al-Safa and Al-Marwa hills seven times • Throwing stones at 3 pillars (jamarat) to represent casting out the devil and remembering Ibrahim throwing stones at the devil to drive him away • Asking Allah for forgiveness at Mt Arafat • Collecting pebbles at Muzdalifah

	The 5 Pillars - Sawm
The role of fasting	• Fasting during Ramadan (9th month in Muslim calendar) • Muslims give up food, drink, smoking and sexual activity in daylight hours • Pregnant people, children under 12, travellers and elderly people are exempt from fasting.
The significance of fasting	• Ramadan is believed to be the month that Prophet Muhammad began to receive revelations of the Qur'an • Helps Muslims to become spiritually stronger
Reasons for fasting	• Obeying God and exercising self-discipline • Develops empathy for the poor • Appreciation of God's gifts • Giving thanks for the Qur'an • Sharing fellowship and community with other Muslims
Night of power	• The night when the Angel Jibril first appeared to Muhammad and began revealing the Qur'an. • The most important event in history – ***"better than a thousand months" (Surah 97:3)*** • Laylat Al-Qadr is the holiest night of the year. Muslims try to stay awake for the whole night to pray and study for the Qur'an

	Id-ul-Adha, Id-ul-Fitr, Ashura
Id-ul-Adha Not an official holiday in UK	• ***Festival of sacrifice*** • Marks the end of Hajj and is a chance for whole Ummah to celebrate • ***Origins*** – Ibrahim's commitment to God in being willing to sacrifice his son, Ishmael. God was testing Ibrahim • ***Key events –*** new clothes, sacrificing an animal, visiting the Mosque. • People ask a butcher to slaughter a sheep for them and share the meat with the community
Id-ul-Fitr Public holiday in Muslim majority countries, not UK	• ***Festival of fast-breaking*** • Marks the end of Ramadan • ***Key events –*** Decorate homes with colourful light and banners, dress in new clothes, gather in Mosques, give gifts and money, give to the poor • ***Zakah ul-Fitr –*** donation to the poor so that everyone can eat a generous meal at the end of Ramadan.
Ashura	• Sunni celebration – many fast on this day which was established by Prophet Muhammad • Shi'a mourning – Husayn was murdered and beheaded. Muslims remember his death and betrayal • ***Key events –*** public displays of grief, day of sorrow, wear black, re-enactments of martyrdom, not a public holiday in Britain but Muslims may have day off school

Year 10 GCSE Religious Education KO - Islam Practices

	The 5 Pillars - Zakah
The role of giving alms	
The significance of giving alms	
Khums	

	The 5 Pillars - Sawm
The role of fasting	
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Night of power	

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The role of pilgrimage	
The significance of pilgrimage	
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Id-ul-Adha Not an official holiday in UK	
Id-ul-Fitr Public holiday in Muslim majority countries, not UK	
Ashura	

GCSE Unit 10 SPANISH Knowledge organiser.
Topic Life at School and College

What we are learning this term:

A. Talking about your school and daily routine
B. Talking about school rules and uniform
C. Translating into English
D. Revising 'se debe', 'hay que', 'tener que'
E. Using questions to help your answer
F. Using quantifiers and intensifiers

6 Key Words for this term

1. acabar de
2. actuar
3. la ausencia
4. demostrar
5. las instalaciones
6. el maquillaje

10.1G El día en el instituto

acabar de	to have just done something
actuar	to perform
el aire libre	the open air
aislado/a	isolated
el/la alumno/a	pupil
aprender	to learn
la asignatura	subject
el bachillerato	A-level equivalent
el bocadillo	sandwich
bonito	lovely
campo de deportes	sports field
la clase	class
el/la compañero/a	classmate
corto/a	short
durar	to last
empezar	to start, to begin
el equipo	team, equipment
el estante	shelf
la evaluación	assessment
funcionar	to work, to function
ganar	to win
ir al baño	to go to the bathroom
el juego de mesa	board game
la hora de comer	lunch hour
el laboratorio	laboratory
la obra de teatro	play
la opción	option
la oportunidad	opportunity
pasar la lista	to take the register
el producto químico	chemical

10.1F Las reglas y el uniforme

la agenda	diary, planner
el apellido	surname
el artículo	article
la ausencia	absence
buscar	to look for
el chicle	chewing gum
el daño	harm
dejar	to let, allow
demostrar	to show, demonstrate
el edificio	building
escolar	school (adj.)
firmar	to sign
el individuo	individual
las instalaciones	facilities
el intercambio	exchange
llevar	to take, carry, wear
el maquillaje	make up
los materiales	materials
mientras	while
el nombre	name
la palabra	word
el pasillo	corridor
el pendiente	earring
ponerse en contacto	to get in touch
prohibido	prohibited, banned
la puntualidad	punctuality
la regla	rule
el respeto	respect
sufrir	to suffer
traer	to bring
el trayecto	journey
el uniforme	uniform

Key Verbs

Acabar de To have just finished	Mejorar To improve	Maquillarse To put makeup on oneself	Hacer – to do/make	Ofrecer To offer
Acabo de I have just finished	Mejoro I improve	Me maquillo I put make up on	Hago I do	Ofrezco I offer
Acabas de You have just finished	Mejoras You improve	Te maquillas You put make up on	Haces You do	Ofreces You offer
Acaba de He/she it has just finished	Mejora He/she/ it improves	Se maquila He/she/it puts make up on	Hace s/he does	Ofrece He/she/it offers
Acabamos de We have just finished	Mejoramos We improve	Nos maquillamos We put make up on	Hacemos We do	Ofrecemos We offer
Acaban de They have just finished	Mejoran They improve	Se maquilan They put make up on	Hacen They do	Ofrecen They offer

10.1H Lo bueno y lo malo del instituto

el acoso	bullying
aguantar	to put up with
aislado/a	isolated
alegrar up	to brighten up, to cheer
aprobar	to pass an exam
el aspecto	appearance
la calefacción	heating
el castigo	punishment
el comportamiento	behaviour
la conducta	behaviour
corregir	to mark, to correct
cumplir con	to fulfil
en cuanto a	as regards
encenderse	to be turned on
enfadado/a	angry
enseñar	to teach, show
el equipo	equipment
la espalda	back
el estante	shelf
la explicación	explanation

10.1H Lo Bueno y lo malo del instituto

travieso/a	naughty, badly behaved
el trimestre	term
ya que	since, as
el fracaso	failure
golpear	to hit
hace falta	it is necessary
incómodo/a	uncomfortable
la intimidación	bullying
la pizarra	digital smartboard
mejorar	to improve
molestar	to disturb, to annoy
el ocio	leisure
la pared	wall
recordar	to remember
el repaso	revision
sucio/a	dirty
tardar	to take time, to delay

GCSE Unit 9 SPANISH Knowledge organiser.
Topic My Studies

What we are learning this term:

A. Giving your opinion about different subjects
B. Talking about your studies
C. Talking about your school life and daily routine
D. Talking about school rules and uniform
E. Translating into English

6 Key Words for this term

1. asignaturas
2. notas
3. aprobar
4. suspender
5. licienciatura
6. elegir

9.1G El instituto y las asignaturas

el arte dramático drama
la asignatura subject
la carrera career, university course
las ciencias science
la clase class
la cocina cooking, food technology
continuar to continue, carry on
los deberes homework
dejar to drop
el dibujo art
difícil difficult, hard
divertido/a fun
la educación física PE
Escoger to choose
el español Spanish
estudiar to study
fácil easy
el francés French
la geografía geography
la historia history
el inglés English
las matemáticas maths
práctico/a practical
próximo/a next
la selección choice
Útil useful

9.1F ¿Cómo ser buen estudiante?

abrir to open
Afectar to affect
el apoyo support
aprender to learn
los apuntes notes
asistir a to attend
la biblioteca library
el/la compañero/a classmate
completar to complete
Consultar to consult
el debate discussion
los deberes homework
el diccionario dictionary
la duda doubt, query
el ejercicio exercise
entender to understand
la escuela school
Esperar to hope, to wait, to expect
el examen, exámenes exam, exams
la excursión trip
faltar a clase to miss lessons
la frase sentence
Intentar to try
interrumpir to interrupt
el instituto school
levantar la mano to raise your hand
la literatura literature
llevar to take, to carry, to wear
mejorar to improve
mirar to look at
el mundo world
necesitar to need
la nota grade
ofrecer to offer
el ordenador computer
organizar to organise
la palabra word
la pantalla screen
participar to take part
pedir to ask for, to request
pegado/a a glued to
perder to lose, miss
la pizarra blackboard
la pizarra interactiva smartboard
Preguntar to ask
el/la profesor(a) teacher
el progreso progress
la prueba test
Repasar to revise

Key Verbs

Aprobar To pass	Elegir To choose	Suspender To fail	Estudiar To study	Pensar To think
Apruebo I pass	Eligo I choose	Suspendo I fail	Estudio I study	Pienso I think
Apruebas You pass	Eliges You choose	Suspendes You fail	Estudias You study	Piensas You think
Aprueba He/she/it passes	Elige He/she/it chooses	Suspende He/she/it fails	Estudia He/she/it studies	Piensa He/she/it thinks
Aprobamos We pass	Elegimos We choose	Suspendemos We fail	Estudiamos We study	Pensamos We think
Aprueban They pass	Eligen They choose	Suspenden They fail	Estudian They study	Piensan They think

9.1F ¿Cómo ser buen estudiante?

el repaso revision
responsable responsible
resultar en to end up with, to lead to
saber to know
sacar buenas / malas notas to get good / bad grades
serio/a serious
las tareas homework
el trabajo work, piece of work
la tutoría tutorial
Usar to use
el vocabulario vocabulary

9.1H ¿Qué tal el instituto?

preocupar to worry
la sala de informática IT room
sencillo/a simple
Sentirse to feel
usar to use
el viaje journey
la zona área

9.1H ¿Qué tal el instituto?

el/la alumno/a pupil
antiguo/a old
asustado/a frightened
asustar to frighten
el atasco traffic jam, blockage
atento/a attentive
el aula (fem.) classroom
ayudar to help
buscar to look for
cambiar to change
cansado/a tired
conocer to meet, to get to know
contento/a glad, happy
contestar to answer
el curso school year, course
los deberes homework
deteriorado/a dilapidated, shabby
distinto/a different
la emoción excitement
emocionante exciting
encima on top
encontrar to find
explicar to explain
feo/a ugly
el gimnasio sports hall, gym
hambriento/a hungry
el idioma language
inmenso/a immense
el laboratorio laboratory
largo/a long
mejor better
nervioso/a anxious, nervous
el patio del recreo the school yard, playground
la pregunta question

GCSE Unit 10 SPANISH Knowledge organiser. Topic Life at School and College

Translation Practice. G – blue F – orange H - Green	
Irene _____ porque estudió muy poco	Irene **failed** because she studied very little
No practicamos _____ atletismo.	We don't practise **much** athletics.
Cuando _____ de clase hay mucha gente	When **we change** class there are too many people
No _____ bastantes ordenadores	**We don't have** enough computers
El instituto está _____ lejos	The school is **too** far away
Hay _____ posibilidades de estudiarlo	There are **few** possibilities to study it
Hay ____ llevar uniform	**You have to** wear a uniform
No _____ usar el móvil	**We cannot** use mobile phones
No _____ fumar	You **must** not smoke
Me gustaría _____ para ir al colegio	I would like **to put makeup on** to go to school
Soy educado y _____	I am polite and **considerate**
Odio _____ los deberes en casa	I hate **doing** homework at home
Hay muchas _____ entre los dos	There are many **differences** between the two
Las aulas _____ ser más grandes	The classrooms **ought** to be bigger
Debería _____ más ordenadores	There ought **to be** more computers
Deberían _____ una piscina	They ought **to build** a swimming pool
He _____ mis estudios	I have **finished** my studies
Han _____ a casa	They have **returned** home

Key Questions: Answer the following in your own words. Use these model answers	
¿Qué crees que es lo peor / lo mejor aspecto del instituto?	El mejor aspecto del colegio es … porque … El peor aspecto del colegio es … porque …
¿Qué cambiarías de tu colegio si tuvieras la oportunidad?	Si tuviera la oportunidad, cambiaría/me gustaría cambiar las reglas. Me gustaría cambiar el uniforme porque me parece que es tan feo, me gustaría cambiar las reglas porque son demasiadas estrictas, me gustaría cambiar unos profesores porque son tan antipáticos
En tu opinión, ¿cuáles son las características más importantes de un buen profesor?	En mi opinión, un buen profesor es siempre simpático, nunca malhumorado, es de vez en cuando gracioso, es comprensivo y cariñoso, es siempre alegre y no es nunca antipático
¿Cómo es tu colegio, las reglas, los edificios, las instalaciones?	Mi colegio es un colegio grande que tiene circa ochocientos alumnos. Está en las afueras de Swindon en los barrios de Pinehurst y Penhill. Tenemos una biblioteca nueva, una cantina acogedora, un patio grande … En el colegio no debes comer chicle, no debes acosar, no tienes que gritar, no deberías comportarse mal… En el colegio tienes que comportarse bien, llevar el uniforme, ir al baño solo durante el recreo, llegar al colegio a hora ….

Key Grammar	
Forming the preterite (past tense). Always remove the –AR, -ER, -IR endings first	Remember the preterite (past) tense endings for –AR, -ER, -IR verbs. They are: -AR: -é, -aste,-ó, -amos, -astéis, -aron -ER: -í, -íste, -ió, -imos, -istéis, - ieron -IR : -í, -iste, -ió, -imos, -istéis, - ieron
Forming the conditional ('would like to' tense). Always remove the –AR, -ER, -IR endings first	Remember the conditional ('would') tense endings for –AR, -ER, -IR verbs. They are: -AR, -ER, -IR: -ía, -ías, -ía, -íamos, -íais, -ían
Using the immediate future tense IR + A + INFINITIVE	Voy a casarme = I'm going to get married Va a discutir con su padre = He / She is going to argue with his/her father
Perfect Tense *('have done…')* Formed with the verb '**haber**':	Formed with the verb '**haber**': he, has, ha, hemos, habéis, han + past participle: -ar: **-ado** -er/ir: **-ido** e.g. *He estudiado = I have studied*

Y10 Computer Science – Term 3 & 4 Fundamentals of programming Fundamentals of Data Representation

Functions / Procedures / Subroutines

```
#defining the function
def greeting_function():
    name = input("Please enter your name: ")
    print(name+",","I like it.")

#calling the function
greeting_function()
```

```
Please enter your name: Mr.Weston
Mr.Weston, I like it.
>>>
```

String Manipulation

Using .upper() .lower() methods.

```
userName = input("Enter lowercase name: ")
userName = userName.upper()
print(userName)
```

```
Enter lowercase name: mr.weston
MR.WESTON
```

Concatenation (merging strings together).

```
firstName = input("Enter first name")
lastName = input("Enter last name")
fullName = firstName + lastName
print(fullName)
```

```
Enter first nameSamuel
Enter last nameWeston
SamuelWeston
```

```
userSentence = input("Enter a sentence")
sentenceList = userSentence.split()
print(sentenceList)
```

```
Enter a sentenceSphinx of black quartz, judge my vow
['Sphinx', 'of', 'black', 'quartz,', 'judge', 'my', 'vow']
```

Using .split() to put each word into a list.

Using .replace("wordToReplace", "wordReplacing") to replace individual words in a string.

```
userSentence = input("Enter a sentence for judgement")
judgedSentence = userSentence.replace("here","leaving")
print(judgedSentence)
```

```
Enter a sentence for judgementI am here
I am leaving
```

Text Files

```
#setting the file which needs to be opened
fileName = "greeting.txt"
#instructing the program to open the file in "r" reading mode.
fileOpen = open(fileName, "r")
#reading and then printing the file
fileRead = fileOpen.read()
print(fileRead)
```

```
Hello there!
Good morning!
Hi everyone!
```

```
#opening the file in "a" append mode.
fileOpen = open(fileName, "a")
#adding a greeting at the end, on a new line "\n"
fileOpen.write("\nGreetings!")
#closing the file when we are done with it
fileOpen.close()
```

greeting - Notepad

File Edit Format View Help

```
Hello there!
Good morning!
Hi everyone!
Greetings!
```

```
#If the file doesn't exist, you can make it using open()
newFile = open("Newfile.txt","w")
#writing to the new file and then closing it to save changes
newFile.write("Life as a file is great!")
newFile.close()
```

Newfile - Notepad

File Edit Format View Help

```
Life as a file is great!
```

Validation

```
userPassword = str(input("Enter password: "))
passwordLength = len(userPassword)

if passwordLength < 8:
    print("Password too short")
elif passwordLength >= 8:
    print("Password accepted")
```

```
Enter password: pencil
Password too short
>>>
= RESTART: C:/Users/samu
tion.py
Enter password: pencils!
Password accepted
```

```
try:
    #put all your program code here (indented) in order to catch any errors when they arise
    prin("Everything is fine")

#the catch to print an error message and end the program gracefully
except:
    print("An unhandled exception occured.")
```

```
An unhandled exception occured.
>>>
```

Y10 Computer Science – Term 3 & 4 Fundamentals of programming Fundamentals of Data Representation

Number Bases

Three common bases in computer science.
Decimal / Denary – Base 10, Our normal number system.
Binary – Base 2, used by Computers.
Hexadecimal – Base 16, easier for humans to understand and work with than binary and relates more to binary than denary does.

DECIMAL	HEX	BINARY
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111

Uses for hexadecimal: Memory locations, error codes, colour codes, MAC addresses.

Units of Memory

Bits – Binary digits. Either 1 or 0.
Nibble – Four bits.
Byte – Eight bits.

1,000 bytes (1,000 B)	1 kilobyte (KB)
1,000 kilobytes (1,000 KB)	1 megabyte (MB)
1,000 megabytes (1,000 MB)	1 gigabyte (GB)
1,000 gigabytes (1,000 GB)	1 terabyte (TB)
1,000 terabytes (1,000 TB)	1 petabyte (PB)

Character Sets

Assigning a binary pattern to characters. There are two primary character sets.

ASCII -American Standard Code for Information Interchange. Uses seven bits for characters, which means it can hold at maximum 128 characters

Unicode - Uses sixteen bits as standard, allowing for just over 65,000 characters. Used for different languages, scientific symbols, emojis etc.

Terms

Term	Definition
Overflow Error	An overflow error occurs when the result of a calculation requires more bits than are in the available range.
Bit Depth / Sample Resolution	The number of bits we assign or are used for each sample
Colour Depth	The number of bits we assign for each pixel in an image. More bits means more colours available.
Pixel	Smallest part of a bitmapped image.
Bitmap Image	An image made up of a grid of pixels.
Resolution	The fineness of detail that the image contains, the higher the resolution, the more detail it contains and the higher the quality.
Compression	Compression reduces the file size by the reducing the number of bits inside the file. This makes transferring a file quicker and it takes up less storage.
Lossy Compression	Reduces digital file size by removing data.
Lossless Compression	Reduces digital file size without losing detail.

Run-Length-Encoding

Lossless compression where the data within the file is checked and when there is a consecutive series of the same data, they are stored as one entry instead of many.
E.g. for the data below - 6 0 , 8 1, 6 0

Huffman Coding

A form of lossless compression which makes files smaller using the frequency with which characters appear in a message. This works particularly well when characters appear multiple times in a string as these can then be represented using fewer bits.

17. Business Aims & Objectives

Businesspeople like to use the term SMART objectives

Which Objective?	Explanation of Objective
Specific	Businesses set very specific targets that are very clear and to the point
Measurable	Businesses set measurable targets that can be measured. For example: Business set themselves specific sales targets over a set period.
Achievable	Businesses set realistic targets that are ambitious yet achievable.
Realistic	Businesses set realistic targets that will motivate employees at the same time they will be achievable
Time- Bound	Businesses set their targets over a period of time as this creates a sense of excitement and urgency.

18. Aims and Objectives in Business

Businesses have both financial and non-financial aims

Type of Objectives	Explanation
Financial Objectives	Profit. Sales. Market Share. Reduce costs.
Non-Financial Objectives	Social objectives. Independence. Control.

19. Business Revenue, Costs & Profits

Term	Definition
Fixed Costs	Costs that don't vary just because output varies for example 'rent'.
Profit (gross/net)	The difference between revenue and total costs; if the figure is negative the business is making a loss
Revenue	The total value of the sales made within a set period, such as a month.
Total Costs	All the costs for a set period, such as a month
Variable Costs	Costs that vary as output varies such as raw materials

20. Business Revenue, Costs & Profits

Term	Formulae
Sales Revenue	**Price x Quantity Sold**
Total Costs	**Variable costs + Fixed Costs**
(Gross) Profit	**Total Revenue – Total Costs**

21. Breaking Even

Term	Definition
Break - Even	The level of sales at which total costs are equal to total revenue. At this point the business is making neither a profit nor a loss.
Break-even Chart	A graph showing a company's revenue and total costs at all possible levels of output
Margin of Safety	The amount by which demand can fall before the business starts making losses

17. Business Aims & Objectives	
Businesspeople like to use the term SMART objectives	
Which Objective?	
Specific	
Measurable	
Achievable	
Realistic	
Time- Bound	

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Type of Objectives	Explanation
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Fixed Costs	
Profit (gross/net)	
Revenue	
Total Costs	
Variable Costs	

20. Business Revenue, Costs & Profits	
Term	Formulae
Sales Revenue	
Total Costs	
(Gross) Profit	

21. Breaking Even	
Term	Definition
Break - Even	
Break-even Chart	
Margin of Safety	

22. The Importance of Cash

Question	Answer
Why does Cash matter to a Business?	Cash matters because, without it, bills go unpaid and a business can fail. If you have no cash, you can't pay suppliers or employees.
Why is cash important to a business?	Cash is required to pay suppliers, employees or other costs. Typical overheads include: **Salaries/ Rent and Rates/ Utilities and Bills**
What is the difference between cash and profit?	Cash flow shows the immediate impact of a transaction on a company's bank account; profit shows the longer-term impact after costs have been taken into account.

23. The Importance of Cash (definitions)

Term	Definition
Cash	The money the firm holds in notes and coins, and in its bank accounts
Cash Flows	The movement of money into and out of the firm's bank account.
Insolvency	When a business lacks the ability to pay its debts
Overdraft	A short-term form of credit. A bank will allow a business to spend more money than it actually has.
Overdraft Facility	An agreed maximum level of overdraft

25. Short Term Sources of Finance

Term	Definition
Bank Overdraft	**If a company requires some short term finance they can negotiate to extend their overdraft facility with the bank**
Trade Credit	**When a supplier provides goods without immediate payment – This gives the business time to sell products in order to pay off the debt.**

24. Cash Flow Forecasts

Cash flow forecasting means predicting the future flows of cash into and out of a Business.

Successful cash flow forecasts require:

- **Accurate prediction of monthly sales**
- **Accurate predictions of when customers will pay for the goods they have bought**
- **Careful allowance of operating costs and the timing of payments**
- **Careful allowance for in flows and outflows of cash**

Key Term	Definition
Opening Balance	The amount of cash in the bank at the start of the month
Net Cash Flow	Cash inflow minus cash outflow over the course of a month
Negative Cash Flow	When cash outflows are greater than cash inflows
Closing Balance	The amount of cash left in the bank at the end of the month

26. Long Term Sources of FInance

Term	Definition
Crowdfunding	Raising Capital online from many small investors (but not through the stock market.
Share Capital	Raising finance by selling a share of the business, Shareholders have the right to question the directors and take profit out the firm.
Venture Capital	A combination of share capital and loan capital, provided by an investor.
Retained Profit	Profit kept within the Business that is used for business growth.

22. The Importance of Cash

Question	Answer
Why does Cash matter to a Business?	
Why is cash important to a business?	
What is the difference between cash and profit?	

23. The Importance of Cash (definitions)

Term	Definition
Cash	
Cash Flows	
Insolvency	
Overdraft	
Overdraft Facility	

25. Short Term Sources of Finance

Term	Definition
Bank Overdraft	
Trade Credit	

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Key Term	Definition
Opening Balance	

26. Long Term Sources of FInance

Term	Definition
Crowdfunding	
Share Capital	
Venture Capital	
Retained Profit	

KS4 FOOD AND NUTRITION KNOWLEDGE ORGANISER T3

Food science

Functions of ingredients
Ingredients provide a variety of functions in recipes.

Carbohydrate, protein and fat
Carbohydrate, protein and fat all have a range of properties that make them useful in a variety of food products.

Carbohydrates perform different functions in food.
They can:
- help to cause the colour change of bread, toast and bakery products (dextrinisation);
- contribute to the chewiness, colour and sweet flavour of caramel;
- thicken products such as sauces and custards (gelatinisation).

Maillard reaction
Foods which are baked, grilled or roasted undergo colour, odour and flavour changes. This is primarily due to a group of reactions involving amino acids (from protein) and reducing sugars.

Dextrinisation
When foods containing starch are heated they can also produce brown compounds due to dextrinisation. Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins which produce a brown colour.

Caramelisation
When sucrose (table sugar) is heated above its melting point it undergoes physical and chemical changes to produce caramel.

Gelatinisation
When starch is mixed with water and heated, the starch granules swell and eventually rupture, absorbing liquid, which thickens the mixture. On cooling, if enough starch is used, a gel forms.

Proteins perform different functions in food products.
They:
- aerate foods, e.g. whisking egg whites;
- thicken sauces, e.g. egg custard;
- bind ingredients together, e.g. fishcakes;
- form structures, e.g. gluten formation in bread;
- gel, e.g. lime jelly.

Gluten formation
Two proteins, gliadin and glutenin, found in wheat flour, form gluten when mixed with water. Gluten is strong, elastic and forms a 3D network in dough. In the production of bread, kneading helps untangle the gluten strands and align them. Gluten helps give structure to the bread and keeps in the gases that expand during cooking.

Gelation
Gelatine is a protein which is extracted from collagen, present in animal connective tissue. When it is mixed with warm water, the gelatine protein molecules start to unwind. On cooling, a stable, solid network is formed, trapping the liquid.

Denaturation
Denaturation is the change in structure of protein molecules. The process results in the unfolding of the protein's structure. Factors which contribute to denaturation are heat, salts, pH and mechanical action.

Coagulation
Coagulation follows denaturation. For example, when egg white is cooked it changes colour and becomes firmer (sets). The heat causes egg proteins to unfold from their coiled state and form a solid, stable network.

Aeration
Products such as creamed cakes need air incorporated into the mixture in order to give a well-risen texture. This is achieved by creaming a fat, such as butter or baking spread, with sugar. Small bubbles of air are incorporated and form a stable foam.

Fats performs different functions in food.
They help to:
- add 'shortness' or 'flakiness' to foods, e.g. shortbread, pastry;
- provide a range of textures and cooking mediums;
- glaze foods, e.g. butter on carrots;
- aerate mixtures, e.g. a creamed cake mix;
- add a range of flavours.

Plasticity
Fats do not melt at fixed temperatures, but over a range. This property is called plasticity.

Raising agents
Raising agents include anything that causes rising within foods, and are usually used in baked goods. Raising agents can be:
- biological, e.g. yeast;
- chemical, e.g. baking powder;
- mechanical, e.g. adding air through beating or folding.

Functional ingredients
These are ingredients that are specifically included in food for additional health benefits. They include:
- probiotics – 'good' bacteria that may have a positive impact on human health;
- prebiotics – food ingredients that promote the growth of beneficial microorganisms in the gut;
- sterols/stanols – compounds that can lower cholesterol;
- healthy fats (e.g. omega-3);
- added vitamins and minerals (more than in the original food).

Colloidal systems
Colloidal systems give structure, texture and mouthfeel to many different products.

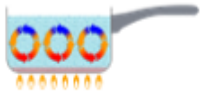
System	Disperse phase	Continuous phase	Food
Sol	Solid	Liquid	Unset jelly
Gel	Liquid	Solid	Jelly
Emulsion	Liquid	Liquid	Mayonnaise
Solid emulsion	Liquid	Solid	Butter
Foam	Gas	Liquid	Whipped cream
Solid foam	Gas	Solid	Meringue

Food is prepared and cooked to:
- make the food more palatable – improves flavour, texture and appearance;
- reduce the bulk of the food;
- provide variety and interest to meals.

Methods of cooking food
The methods of cooking are divided up into groups. These are based on the cooking medium used.
They are:
- moist/liquid methods, e.g. boiling;
- dry methods, e.g. grilling;
- fat-based, e.g. frying.

Selecting the most appropriate way of preparing and cooking certain foods is important to maintain or enhance their nutritional value.
- Vitamins can be lost due to oxidation during preparation or leaching into the cooking liquid.
- Fat-based methods of cooking increase the energy (calories) of the food.
- The use of different cooking methods affects the sensory qualities of the food.

There are three ways that heat is transferred to food.
- Conduction – the exchange of heat by direct contact with foods on a surface.
- Radiation – energy in the form of rays.
- Convection – currents of hot air or hot liquid transfer the heat energy to the food.



Tasks
- Choose a recipe that you enjoy or have made recently and explain in detail the functions of the ingredients.
- Explain the function of raising agents, giving examples of recipes.

Key terms
Conduction: the exchange of heat by direct contact with foods on a surface.
Convection: currents of hot air or hot liquid transfer the heat energy to the food.
Functional ingredients: Included in food for additional health benefits.
Heat transfer: transference of heat energy between objects.
Radiation: energy in the form of rays.

Tenderisation
- Mechanical tenderising – a meat cleaver or meat hammer may be used to beat the meat. Cutting into small cubes or mincing can also help.
- Chemical tenderisation (marinating) –the addition of any liquid to flavour or soften meat before cooking.

KS4 FOOD AND NUTRITION KNOWLEDGE ORGANISER T3

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-
-
-
-
-
-

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-
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Gelatine is a protein which is extracted from collagen, present in animal connective tissue. When it is mixed with warm water, the gelatine protein molecules start to unwind. On cooling, a stable, solid network is formed, trapping the liquid.

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Denaturation is the change in ……of……molecules. The process results in the unfolding of the protein's structure. Factors which contribute to denaturation are heat, salts, pH and mechanical action.

Functional ingredients
These are ingredients that are specifically included in food for additional health benefits.
They include:
probiotics –
prebiotics –
sterols/stanols –
healthy fats (e.g. omega-3);

Coagulation
Coagulation follows denaturation. For example:

Aeration
Products such as creamed cakes need air incorporated into the mixture in order to give a …… texture. This is achieved by creaming a fat, such as butter or baking spread, with sugar.
Small bubbles of air are incorporated and form a stable foam.

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They help to:

Plasticity
Fats do not melt at fixed temperatures, but over a range. This property is called ……

Key terms
Conduction:

Convection:

Functional ingredients:

Heat transfer:

Radiation:

Food is prepared and cooked to:
-
-
-

Tenderisation
- Mechanical tenderising
- Chemical tenderisation (marinating)

Colloidal systems
Colloidal systems ……to many different products.

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Year 10 PRODUCT DESIGN Term 3

What we are learning this term:

A. Scales of Production
B. Production Methods
C. Impact on Enterprise
D. Anthropometric Data
E. Impact on People
F. Impact on Design
G. Ergonomics

A. Scales of Production

Type	How Many?	Examples
One-off Production	**1**	• Towers /bridges • Bespoke house • Custom made clothes
Batch Production	**10s-1000s**	• Baked Foods • Limited Edition • Socks • Chairs
Mass Production	**10,000s – 100,000s**	• Cars • Bottles • Microchips • Plain shirts
Continuous Production	**100,00s+**	• Energy • Water • Paper • Plastic

B. Production Methods

Flexible Manufacturing Systems (FMS)

This is where **automated** machines are adaptable and can produce different products if needed.

Lean Manufacturing

This is where waste and energy is kept to a minimum. This saves money and resources in production, as well as helping minimise the **environmental impact** of producing products.

Just-in-Time (JIT) Manufacturing

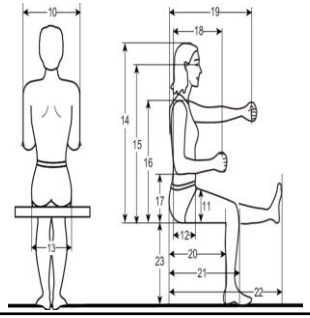
This is where manufacturers only order materials, parts, etc, when needed. This can be used in any **scale of production** but its particularly useful for one-off production.

C. Impact on Enterprise

Crowdfunding	A way of raising money from large numbers of people to launch a new product through websites.
Virtual marketing and retail	Promotion of products online and sharing experiences, reviews and recommendations.
Cooperatives	A business that is owned and managed by it's workers, all working towards a common goal.
Fair trade	An organisation that helps workers have fair trading and working conditions in developing countries

D. Anthropometric Data

The study of human measurements to ensure the products and environments are the correct size for the intended user.



E. Impact on People

Technology Push	When technological discoveries are used to drive the development or creation of a product
Market Pull	When products are developed or created to meet the needs of society or a gap in the market.
Universal Design	When designs are focused on serving the broadest range of users possible, rather than trying to address individual accessibility or inclusion objectives.
Inclusive Design	When the designer focuses on exploring ways of serving a full spectrum of people, regardless of age, gender, and disability.
User Centred Design (USD)	When designers focus on the end-user's wants and needs in each phase of the design process.

F. Impact on Design

Planned obsolescence	Designing products that will have a limited life and that will become obsolete and require to be replaced, such as disposable razors.
Design for Maintenance	Designing products that are more durable and have spare parts available to mend and maintain them, such as a push bike.
Design for Disassembly	When a product has reached the end of its life it can be taken apart and parts reused or recycled, such as a school seat.
Environmental Design	Designing products to be more sustainable and improving the overall environmental impact of a product, such as paper straws.

G. Ergonomics

This is the consideration that leads to a product being designed in a way that makes it easy to use. Such as a person sitting at their computer desk or the type of water bottle they use.

Year 10 PRODUCT DESIGN Term 3

What we are learning this term:

A. Scales of Production
B. Production Methods
C. Impact on Enterprise
D. Anthropometric Data
E. Impact on People
F. Impact on Design
G. Ergonomics

A. Scales of Production

Type	How Many?	Examples
One-off Production		
Batch Production		
Mass Production		
Continuous Production		

B. Production Methods

Flexible Manufacturing Systems (FMS)

.

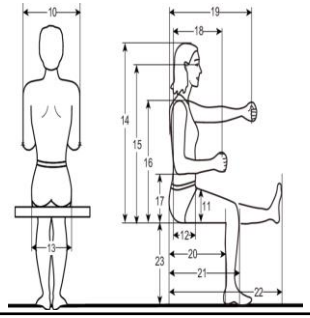
Lean Manufacturing

Just-in-Time (JIT) Manufacturing

C. Impact on Enterprise

Crowdfunding	
Virtual marketing and retail	
Cooperatives	
Fair trade	

D. Anthropometric Data



E. Impact on People

Technology Push	
Market Pull	
Universal Design	
Inclusive Design	
User Centred Design (USD)	

F. Impact on Design

Planned obsolescence	
Design for Maintenance	
Design for Disassembly	
Environmental Design	

G. Ergonomics

Year 10 PRODUCT DESIGN Term 3

What we are learning this term:

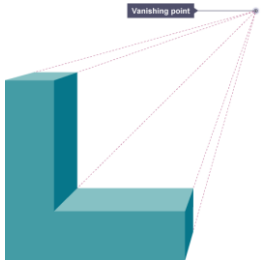
A. One-Point Perspective B. Two-point Perspective C. Isometric Drawing
D. Exploded Drawing E. Oblique Drawing F. CAD G. Orthographic Drawing

Design Strategies Introduction.

Design strategies are used to create technical drawings, to show an object in 3D on a 2D page. Perspective drawings show an object getting smaller in the distance. The rest are done to scale.

A. One-point Perspective Drawing

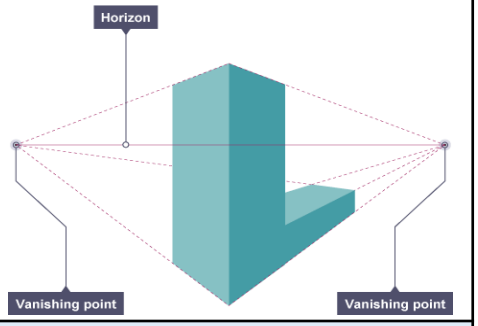
Single-point perspective shows an object from the front in a realistic way. The front view goes back towards a vanishing point on the horizon.



Commonly used by interior designers to a show a view into a room.

B. Two-point Perspective Drawing

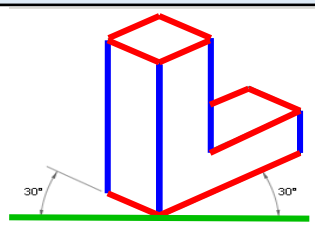
Two-point perspective shows an object from the side with two vanishing points. It gives the most realistic view of a product as it shows the item edge on, as we would see it. It is often used to produce realistic drawings of an object.



Commonly used by architects to show realistic building ideas.

C. Isometric Technical Drawing

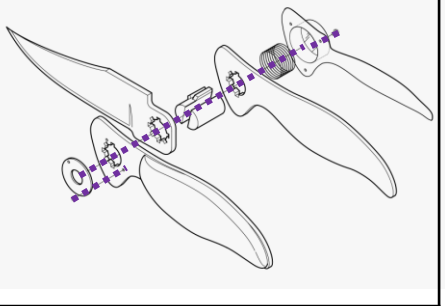
Made up of a series of parallel **vertical lines** and parallel **30-degree lines**. But no **horizontal lines.**



Used by architects and engineers to communicate their ideas to the client and manufacturer.

D. Exploded Technical Drawing

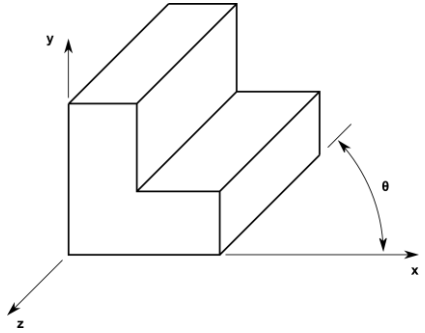
Exploded technical drawing is an Isometric drawing of all the parts and components of an object.



All parts are shown separately so you can see all aspects. **Dashed lines** indicate where everything goes and in what order.

E. Oblique Technical Drawing

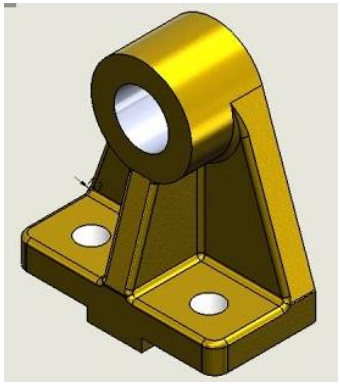
Consists of an object where the front view is drawn flat with height and width of the object draw to the correct lengths. Diagonal lines are drawn at 45-degrees.



Commonly used by engineers for drafting ideas.

F. CAD (Computer Aided Design)

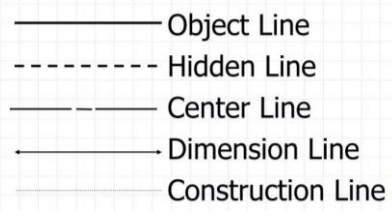
This is designing using a computer using a software such as 2D Design or Solidworks.



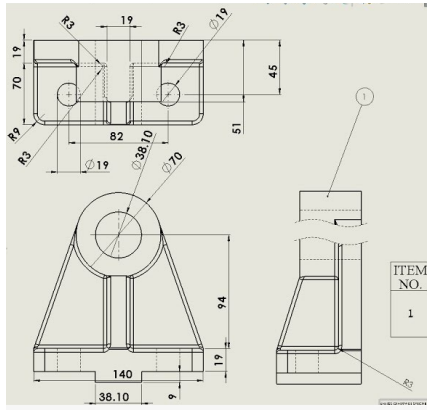
Commonly used to model, test and develop an idea before manufacture.

G. Orthographic Projection – 2D NOT 3D Drawing Strategy!

This shows 2D views of a 3D object from different angles – front, plan and end. Lines are dimensions have specific meaning to avoid confusion.



Commonly used in industry to help the manufacturer understand the design.



Year 10 PRODUCT DESIGN Term 3

What we are learning this term:

A. One-Point Perspective B. Two-point Perspective C. Isometric Drawing
D. Exploded Drawing E. Oblique Drawing F. CAD G. Orthographic Drawing

Design Strategies Introduction.

Design strategies are used to create technical drawings, to show an object in 3D on a 2D page. Perspective drawings show an object getting smaller in the distance. The rest are done to scale.

A. One-point Perspective Drawing

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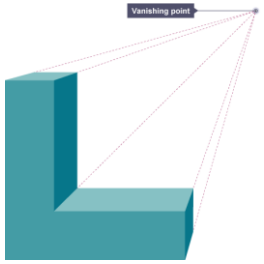

B. Two-point Perspective Drawing

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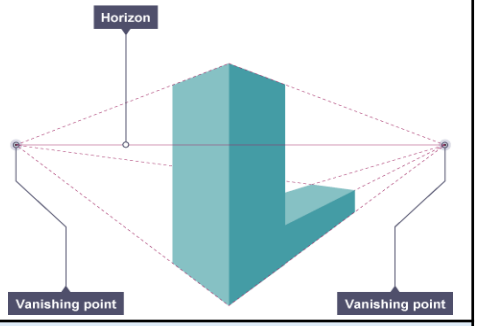
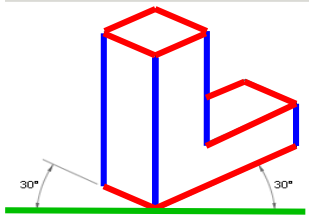
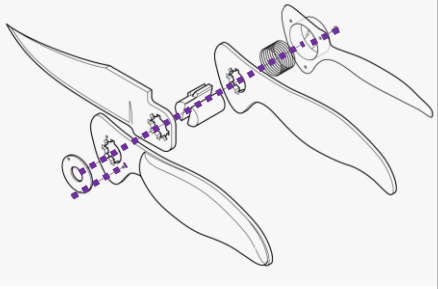


C. Isometric Technical Drawing



D. Exploded Technical Drawing



E. Oblique Technical Drawing

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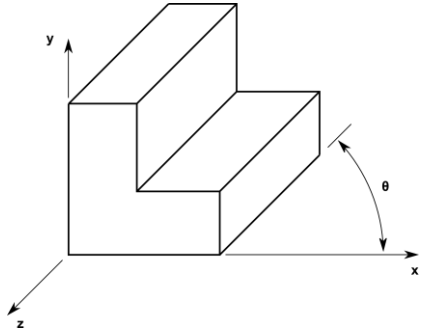
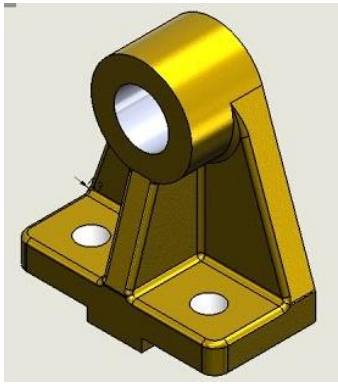
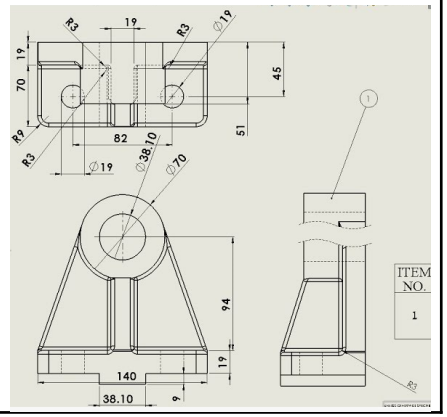


F. CAD (Computer Aided Design)



G. Orthographic Projection – 2D NOT 3D Drawing Strategy!

Object Line
Hidden Line
Center Line
Dimension Line
Construction Line



YEAR 10 BTEC DRAMA KNOWELDGE ORGANISER – COMPONENT ONE

What we are learning this term:

A. Understanding professional works
B. What is a professional work
C. What is a practitioner
D. How do we analyse a performance
E. What are physical skills
F. What are interpretive skills
G. Three different performance styles / genres

6 Key Words for this term

1 Practitioners
2 Physical skills
3 Interpretive skill
4 Performance material
5 Analyse
6 Intentions

A. Key question – What is the artistic purpose of a performance work?

When watching a professional performance, the key questions you need to think about are the following…
How do we Explore artistic purpose?
Explore artistic purpose (across all three disciplines/styles) including:
to educate
to inform
to entertain
to provoke
to challenge viewpoints
to raise awareness
to celebrate.

A. *Component 1 – Key focus*

In this component of the qualification students will develop their understanding of drama by examining the work of existing practitioners and the processes used to create performance. Students should experience a range of work across the discipline of drama by viewing recorded and/or live work.
While this is primarily a theoretical study of the performing arts practical investigations, students will be working at developing practical skills through workshops and links with Component 2 Developing Skills and Techniques in the Performing Arts, to engage in primary exploration of specific repertoire.

C. Key question from Assessment objectives

1. What are physical skills	1. What is a professional work
2. What are interpretive skills	2. What is a practitioner
3. How do we use these skills practically?	3. How do we analyse a performance
4. How do we IMPROVE on these skills?	4. What are a practitioners creative intentions

G. Key learning aims from Component 1

Learning aim A: Examine professional practitioners' performance work	**A1: Professional practitioners' performance material, influences, creative outcomes and purpose** Examine live and recorded performances in order to develop understanding of practitioners' work with reference to influences, outcomes and purpose. Focus on thematic interpretation of particular issues and how artists communicate their ideas to an audience. Roles and responsibilities in theatre.
Learning aim B: Explore the interrelationships between constituent features of existing performance material	Processes used in performance ●Responding to stimuli to generate ideas for performance material. ●Exploring and developing ideas to develop material. ●Discussion with performers. ●Setting tasks for performers. ●Sharing ideas and intentions. ●Providing notes and/or feedback on improvements.

E. Keywords

Practitioners	A professional theatre maker who creates in a specific style led by a specific theatre ideology.
Performance material	The practical work that a practitioner creates for performance.
Creative Intentions	The ideas behind the choreography, why the choreographer choose to create the work.
Review	Look over your current work and the work of others and be able to review and comment on your own and others practice
Analyse/ Evaluate	Watch and then analyse your own performance and the work of others and giving comments and judgements on what you see
Influences	How the practitioner has been influenced by others, their experiences, their training and how this has affected the work they create.
Physical skills	The physical attributes that an actor uses, stamina, strength, flexibility, control, to dance with technical accuracy.

YEAR 10 BTEC DRAMA KNOWELDGE ORGANISER – COMPONENT ONE

What we are learning this term:

A. Understanding professional works
B. What is a professional work
C. What is a practitioner
D. How do we analyse a performance
E. What are physical skills
F. What are interpretive skills
G. Three different performance styles / genres

6 Key Words for this term

1 Practitioners
2 Physical skills
3 Interpretive skill
4 Performance material
5 Analyse
6 Intentions

A. Key question – What is the artistic purpose of a performance work?

When watching a professional performance, the key questions you need to think about are the following…
How do _____?
(across all three disciplines/styles) including:
to _____
to _____
to _____
to _____
to _____ _____
to _____
to _____

A. *Component 1 – Key focus*

In this component of the qualification students will develop their understanding of drama by examining the work of _____ _____ s and the _____ used to _____ _____.
Students should experience a range of work across the discipline of drama by viewing recorded and/or live work.
While this is primarily a theoretical study of the performing arts practical investigations, students will be working at developing practical skills through _____s and links with Component 2 _____and Te_____s in the Performing Arts, to engage in primary exploration of specific repertoire.

C. Key question from Assessment objectives

1. What are physical skills	1. What is a professional work
2. What are interpretive skills	2. What is a practitioner
3. How do we use these skills practically?	3. How do we analyse a performance
4. How do we IMPROVE on these skills?	4. What are a practitioners creative intentions

G.	**Key learning aims from Component 1**
Learning aim A: Examine professional practitioners' performance work	**A1: Professional practitioners' performance material, influences, creative outcomes and purpose** Examine _____and _____ performances in order to develop _____ of practitioners' work with reference to _____s, o_____s and p_____se. Focus on _____ i_____ of particular i_____ and how artists c_____te their ideas to an _____e. Roles and responsibilities in theatre.
Learning aim B: Explore the interrelationships between constituent features of existing performance material	Processes used in performance ●Responding to _____to generate id_____s for performance material. ●Exploring and developing ideas to develop material. ●D_____on with performers. ●Setting_____for performers. ●S_____ng ideas and intentions. ●Providing _____ and/or fe_____ck on imp_____nts.

E.	**Keywords**
Practitioners	
Performance material	
Creative Intentions	
Review	
Analyse/ Evaluate	
Influences	
Physical skills	

Year 10 Cambridge National- Leadership- Term 3

Main assessment objectives

Learning outcome: Know the personal qualities, styles, roles and responsibilities associated with effective sports leadership.
Be able to plan sports activity sessions.

What we are learning this term:

A. **Different leadership roles**
B. **Role-related responsibilities**
C. **Personal qualities**
D. **Leadership styles**
E. **Key considerations when planning sports activity**

Can you give examples of managers from different sports?

Gareth Southgate
Eddie Jones

Role models

Positive
Mo Farah
Nicole Adams

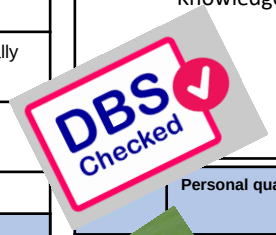
Negative
Luis Suarez
Nick Kyrigos

A. The different leadership roles within sport

Role	Definition
Coach	A person involved in the direction, instruction and training of the operations of a sports team
Manager	Responsible for handling the business matters of athletes and sports teams
Captain	The leader of the team who is usually also a player
Teacher	A person who teaches, especially in a school
Expedition leader	Someone who leads groups on adventurous activities
Role model	A person looked to by others as an example

A. Role related responsibilities

Knowledge of activity
Enthusiasm for activity
Knowledge of safety
Knowledge of child protection issues
Knowledge of basic first aid



Personal qualities

Reliability
Punctuality
Confidence
Communicatior
Creativity

G. Considerations when planning sports activities

Session content	Objectives for the session appropriate venue Equipment needs Supervision needs Timing of activities Introduction/conclusion of session Basic warm up/cool down Skills and technique development Engaging Organisation
Safety	Risk assessments- facilities, equipment/clothing checks, activity-specific risks Corrective action- wiping up puddles, removing litter, reporting faulty equipment Emergency procedures- procedures in the event of an accident, procedures in the event of other emergencies, summoning qualified help, completion of relevant documents

A. Leadership styles

Autocratic- Relating to a ruler who has absolute power

Democratic- Members of the group take a more participative role in the decision-making process

Laissez-Faire- Leaders are hands-off and allow group members to make the decisions

Key sections

Different leadership roles and opportunities

Captain
Coach
Expedition leader

Manager
Teacher
Role model

Role related responsibilities

Knowledge of;
Activity
Safety
Child protection
Basic first aid

Enthusiasm for activity

Personal qualities

Reliability
Punctuality
Communication
Confidence
Creativity

Leadership styles

Autocratic
Democratic
Laissez-faire

Year 10 Cambridge National- Leadership- Term 3

Main assessment objectives

Learning outcome: Know the personal qualities, styles, roles and responsibilities associated with effective sports leadership.
Be able to plan sports activity sessions.





What we are learning this term:

A. Different leadership roles
B. Role-related responsibilities
C. Personal qualities
D. Leadership styles
E. Key considerations when planning sports activity

C. Can you give examples of managers from different sports?

Role models

Positive	Negative

A. The different leadership roles within sport

Role	Definition
Coach	
Manager	
Captain	
Teacher	
Expedition leader	
Role model	

A. Role related responsibilities

A. Leadership styles

A. Personal qualities

G. Considerations when planning sports activities

Session content	
Safety	

Key sections

- Different leadership roles and opportunities
- Role related responsibilities
- Personal qualities
- Leadership styles

Year 10 Engineering Term 3

What we are learning this term:

A. Health & Safety
B. Manufacturing processes
C. Isometric
D. Marking and measuring tools
E. Materials and properties

A. Health & Safety

Risk Assessment	A risk assessment is the analysis of the risks involved when using equipment or performing a process.
Signage	Signage is the word used for all the signs that you may see in a workshop environment. sowing how to translate and understand the signs in a workshop is vital when dealing with potentially dangerous equipment and processes.

Mandatory sign- Specific instruction on behaviour

Prohibition sign- Prohibiting or actions

Warning sign- Giving warning of hazard or danger

No danger sign- Information on exits, first aid etc

B. Manufacturing processes

Pillar drill

Pillar drills are free standing machine tools that use high powered motors to rotate drill bits at varying speed

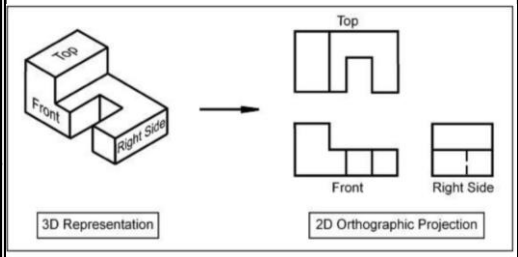
Milling machine

A milling machine is a device that rotates a circular cutting tool that has a number of cutting edges. The workpiece is held in a vice or similar device clamped to a table that can move in directions. X, Y & Z axis

Centre lathe

A centre lathe is used to manufacture cylindrical product /objects and is 'turned' to create different shapes. Different cutting tools can be used such as **facing**, **parting** and **knurling.**

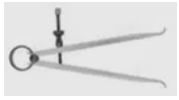
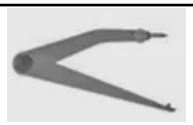
C. Isometric



Isometric Drawing — 2D Orthographic Projection

⌀12	The symbol ø on this dimension represents **Diameter** – so it is telling us how wide the circle is overall.
R25	The letter R on this dimension tells us the **Radius** of the curve or circle – the distance from the centre to the outside

D. Marking and measuring tools

	**Inside calliper** – Used by placing it inside the object to be measured and expanding the arms. Measures the inside of a hollow space.
	**Outside calliper** – Used by closing the arms on to the outside of the object to be measured. Wide arms allow it to reach around protruding parts of the object.
	**Dividers -** The ends of these legs are very sharp, so it can scratch into surfaces. Is used for measuring, transferring, or marking off distances onto materials.
	**Odd-leg or "jenny" calliper** – One leg has a scratching tool while the other has a notch. This allows the user to hook the tool to the edge of a workpiece and slide it along to make marks equidistant from the edge.
	**Vernier Calliper –** The most versatile calliper. Can measure depth, inside measurements, and outside measurements of objects. May also have a digital display.

E. Materials and properties

Strength	Ability of a material to withstand compression, tension and shear
Hardness	Ability to withstand impact without damage
Toughness	Materials that are hard to break or snap are tough & can absorb shock
Malleability	Being able to bend or shape easily would make a material easily malleable
Ductility	Materials that can be stretched are ductile
Elasticity	Ability to be stretched and then return to its original shape

Year 10 Engineering Term 3 (Unit 1)

What we are learning this term:

A. Health & Safety
B. Manufacturing processes
C. Orthographic
D. Tools & Equipment
E. Materials and properties

A. Health & Safety

Risk Assessment	
Signage	

_____ sign-
Specific instruction on behaviour

_____sign-
Prohibiting or actions

_____ sign-
Giving warning of hazard or danger

_____sign-
Information on exits, first aid etc

B. Manufacturing processes

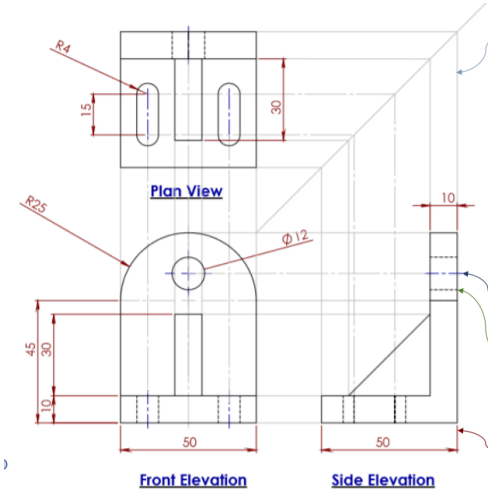
Pillar drill

Milling machine

Centre lathe

C. Orthographic

The study of human measurements to ensure the products and environments are the correct size for the intended user.



Φ12	
R25	

D. Tools & Equipment

E. Materials and properties

Strength	
Hardness	
Toughness	
Malleability	
Ductility	
Elasticity	

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

A. Key words
B. What are the main life stages
C. What are the 4 areas of growth and development (PIES)?
D. How do Humans develop physically (P)?

A.	Key words for this Unit
Characteristics	Something that is typical of people at a particular life stage.
Life stages	Distinct phases of life that each person passes through.
Growth	Increased body size such as height, weight.
Development	Involves gaining new skills and abilities such as riding a bike.
Gross motor development (**G**)	Refers to the development of large muscles in the body e.g. Legs
Fine motor development **(F)**	Refers to the development of small muscles in the body e.g. Fingers
Language development	Think through and express ideas
Contentment	An emotional state when people feel happy in their environment, are cared for and well loved
Self-image	How individuals see themselves or how they think others see them
Self-esteem	How good or bad an individual feels about themselves and how much they values their abilities.
Informal relationships	Relationships formed between family members
Friendships	Relationships formed with people we meet in the home or in situations such as schools, work or clubs
Formal relationships	relationships formed with non-family/friends – such as teachers and doctors.
Intimate relationships	romantic relationships.

B	What are the main life stages?	
Age Group	**Life Stage**	**Developmental Characteristics and Progress**
0-2 years	Infancy	Sill dependent on parents but growing quickly and developing physical skills.
3-8 years	Early Childhood	Becoming increasingly independent, improving thought processes and learning how to develop friendships.
9-18 years	Adolescence	Experiencing puberty, which bring physical and emotional changes.
19-45 years	Early Adulthood	Leaving home, making own choices about a career and may start a family.
46-65 years	Middle Adulthood	Having more time to travel and take up hobbies as children may be leaving home; beginning of the aging process.
65+ years	Later Adulthood	The aging process continues, which may affect memory and mobility.

C	What are the 4 areas of growth and development (PIES)?
Physical Development (P) 	P = growth patterns and changes in the mobility of the large and small muscles in the body that happen throughout life.
Intellectual Development (I) 	I = how people develop their thinking skills, memory and language.
Emotional Development (E) 	E = how people develop their identity and cope with feelings.
Social Development (S) 	S = describes how people develop friendships and relationships.

D.	How do humans develop physically (P)?
0-2	• Gross Motor Development (G) = life head, roll over, sit unaided, walk holding onto something, walk unaided, climb stairs, kick and throw, walk upstairs, jump. • Fine Motor Development (F) = hold a rattle for short time, reach for an item, pass item from one hand to other, hold between finger and thumb, scribble, build a tower, use a spoon, draw lines and circles, turn page of a book.
3-8	• G = ride a tricycle, catch a ball with two hands, walk backwards and step to the side, bounce a ball, run on tiptoes, ride a bike, catch a ball with one hand, balance along a thin line. • F = hold a crayon to make circles and lines, thread small beads, copy letters and shapes with a pencil, make detailed models with construction bricks, joined up writing, use a needle to sew.
9-18	• Girls = puberty starts at 10-13 years, breasts grow, hips widen, menstruation begins, uterus and vagina grow. • Boys = voice deepens, muscles and strength increase, erections, facial hair, produce sperm. • Both = pubic and underarm hair, growth spurts.
19-45	• Physically mature, sexual characteristics are fully formed, peak of physical fitness, full height, women at most fertile. • Later in the life stage people may put on weight, hair turn grey and men may lose hair, women's menstrual cycle was slow down
46-65	• People may put on weight, hair turn grey and men may lose hair, women's menstrual cycle was slow down. • Women go through the menopause – when menstruation ends and they can no longer become pregnant. • Men may continue to be fertile throughout life but decrease in sperm production in this life stage.
65+	• Women's hair becomes thinner, men may lose most of their hair, skin loses elasticity and wrinkles appear, nails hard and brittle, bones weaken, higher risk of contracting infections disease and illness. • Stamina, reaction time, muscle and senses (hearing, sight, taste) all reduce.

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

A. Key words
B. What are the main life stages
C. What are the 4 areas of growth and development (PIES)?
D. How do Humans develop physically (P)?

A.	**Key words for this Unit**
Characteristics	
Life stages	
Growth	
Development	
Gross motor development (**G**)	
Fine motor development **(F)**	
Language development	
Contentment	
Self-image	
Self-esteem	
Informal relationships	
Friendships	
Formal relationships	
Intimate relationships	

B	**What are the main life stages?**	
Age Group	**Life Stage**	**Developmental Characteristics and Progress**
0-2 years		
3-8 years		
9-18 years		
19-45 years		
46-65 years		
65+ years		

C	**What are the 4 areas of growth and development (PIES)? Explain them.**
Physical Development (P) 	
Intellectual Development (I) 	
Emotional Development (E) 	
Social Development (S) 	

D.	**How do humans develop physically (P)?**
0-2	
3-8	
9-18	
19-45	
46-65	
65+	

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

E. How do humans develop intellectually (I)?
F. How do humans develop emotionally (E)?
G. How do humans develop socially (S)?

E. *How do humans develop intellectually (I)?*

Infancy 	At birth brains are already well developed. Infants use all of their senses to learn about the world around them. Infancy is a time of rapid intellectual development. At 3 months infants can remember routines. At 9-12 months infants are developing their memory. At 12 months to 2 years infants understand processes and how things work. Language begins to develop during this stage.
Early childhood 	At 3-4 years of age children become more inquisitive and enjoy exploring objects and materials. They ask lots of questions and enjoy solving simple problems. At 5-6 years old children's memory is becoming well developed. This helps them to talk about the past and anticipate the future.
Adolescence 	During this time abstract thought is developed – thinking logically and solving complex problems are possible by the end of this life stage. Adolescents may find it difficult to understand the consequences of their actions but they are developing empathy – seeing things from another's point of view.
Early and Middle Adulthood 	By these life stages most adults have a good range of general knowledge. They use this knowledge and experience to solve problems that they come across in their personal and work lives.
Later adulthood 	During this life stage people continue to learn and develop intellectually, however, their speed of thinking and memory may decline. This may affect their ability to think through problems and make logical decisions.

F. How do humans develop emotionally (E)?

Infancy and Early Childhood	Adolescence and adulthood
Bonding and Attachment Bonding and attachment describe the emotional ties an individual forms with others. It starts in the first year of life between infants and their main carer because that person fulfils the infants needs which makes them feel safe and secure.	**Self-image and Self-esteem** Self-image is heightened during adolescence because of the physical changes we experience. Our self-esteem can change from day to day based on a variety of factors including employment and health status.
Security For infants and young children, security is mainly the feeling of being cared for, being safe and loved – it is closely linked with attachment.	**Security** Adolescence may feel insecure because of puberty. Adults may feel insecure about relationships, job security of income. Later in life adults may feel insecure about staying in their own home or going into a care home. Feeling secure helps us cope better with everyday situations.
Contentment Infants and young children are content if they have had enough food, love, are clean and dry and all other needs are met.	**Contentment** When people feel discontented with aspects of their life – for example, relationships or work – their emotions can be negatively affected.
Independence Independence is to care for yourself and make your own decisions. Infants are completely dependent on their carer. As children enter early childhood they develop more independence – feed self and get dressed. However, children still need a lot of help from their carer.	**Independence** Adolescence are dependent on their parents but are beginning to enjoy more independence and freedom to make their own choices. Adults enjoy living independently and controlling their own lifestyle and environment. Later in adulthood people become more dependent on others again.

G. How do humans develop socially (S)?

Life Stage	Types of relationships and social development
Infancy	• Solitary Play - From birth to 2 years, infants tend to play alone although they like to be close to their parent or carer; they may be aware of other children but not play with them.
Early childhood	• Parallel Play - From 2 to 3 years, children enjoy playing next to other children but are absorbed in their own game; they are not socialising or playing with other children. • Cooperative or social play – from 3 years upwards, children start to play with other children; they have developed social skills that help them to share and talk together; they often make up games together, such as being a shopkeeper and customer.
Adolescence	• People become more independent and build more informal and formal relationships. • Social development closely linked to emotions. • Often strongly influenced by peers – 'peer group pressure'.
Early adulthood	• Increased independence means greater control of decisions about informal relationships. • People may be developing emotional and social ties with partners and their own children. • Social life often centred on the family but social skills are required to build and maintain formal relationships.
Middle adulthood	• Children have often left home, but there are likely to still be strong family relationships. • Social circles may expand through travel, spending more time on hobbies or joining new groups.
Later adulthood	• Retired by this stage and so may enjoy more social time with family and friends or join new groups. • However, later in the life stage people may begin to feel isolated if they struggle to get out or if partners and friends pass away.

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

E. How do humans develop intellectually (I)?
F. How do humans develop emotionally (E)?
G. How do humans develop socially (S)?

E.	***How do humans develop intellectually (I)?***
Infancy 	
Early childhood 	
Adolescence 	
Early and Middle Adulthood 	
Later adulthood 	

F.	**How do humans develop emotionally (E)? Explain each.**
Infancy and Early Childhood	**Adolescence and adulthood**
Bonding and Attachment	**Self-image and Self-esteem**
Security	**Security**
Contentment	**Contentment**
Independence	**Independence**

G.	**How do humans develop socially (S)?**
Life Stage	Types of relationships and social development
Infancy	
Early childhood	
Adolescence	
Early adulthood	
Middle adulthood	
Later adulthood	

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

H. Key words
I. How do physical factors affect development?
J. How does lifestyle affect development?
K. How do social and cultural factors affect development?
L. How do relationships and isolation affect development?
M. How do economic factors affect development?

H	Key words:
Genetic inheritance	Genes the person inherits from their parents
Genetic disorders	Health conditions that are passed on from parent to child through their genes. e.g. cystic fibrosis
Lifestyle Choices	Include the food you eat and how much exercise you do. They also include whether you smoke, drink alcohol or take illegal drugs.
Appearance	The way that someone or something looks
Factor	A circumstance, fact, or influence that contributes to a result
Gender role	The role and responsibilities determined by a person's gender.
Culture	ideas, customs, and social behaviour.
Role models	Someone a person admires and strives to be like.
Social Isolation	Lack of contact with other people
Material possessions	Things that are owned by an individual
Economic	To do with person's wealth and income.

I. How do physical factors affect development?

	Genetic Disorders	Disease and Illness
Physical Development	A person's physical build can affect physical abilities. Inherited diseases may affect strength and stamina needed to take part in exercise.	May affect the rate of growth in infancy and childhood. Could affect the process of puberty. Could cause tiredness and/or mobility problems. Could limit of prevent participation in physical activity.
Intellectual Development	Some genetically inherited diseases may result in missed schooling, or have a direct impact on learning – conditions such as Edward's syndrome impact learning.	School, college, university, work or training could be missed. Memory and concentration could be affected.
Emotional Development	Physical appearance affects how individuals see themselves (self-image), and how others respond to them impacts on their confidence and wellbeing.	May cause worry and/or stress. Individuals may develop negative self-esteem. Could lead to feelings of isolation.
Social Development	Physical characteristics or disease may affect opportunities or confidence in building friendships and becoming independent.	May cause difficulty in having opportunities to socialize with other and build wider relationships.

J. How does lifestyle affect development?

Lifestyle choices include**;** diet, exercise, alcohol, smoking, sexual relationships and illegal drugs, appearance.

Positive lifestyle choices lead to:
- Healthy hair, skin, nails and teeth
- Positive self-image
- Energy and stamina
- Good health
- Emotional security

Negative lifestyle choices lead to:
- Being overweight or underweight
- Lack of energy
- Ill health
- Negative self-image
- Sexually transmitted diseases (STDs)
- Unplanned pregnancy

Our **appearance** includes: body shape, facial features, hair and nails, personal hygiene and our clothing.
Our appearance can affect the way we view ourselves- self-image

Positive self-image:
- Feel good about yourself.
- Healthy hair, skin, nails and teeth
- Big social circle.
- High self-esteem.
- High self-confidence.

Negative self-image
- Low self-esteem
- Low self-confidence
- Can lead to eating disorders e.g. anorexia
- Can lead to anxiety or depression
- Can lead to self-harm
- Negative impact on building relationships- social circle decreases.

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

H. Key words
I. How do physical factors affect development?
J. How does lifestyle affect development?
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M. How do economic factors affect development?

H	Key words:
Genetic inheritance	
Genetic disorders	
Lifestyle Choices	
Appearance	
Factor	
Gender role	
Culture	
Role models	
Social Isolation	
Material possessions	
Economic	

I. How do physical factors affect development?

	Genetic Disorders	Disease and Illness
Physical Development		
Intellectual Development		
Emotional Development		
Social Development		

J. How does lifestyle affect development?

Lifestyle choices include**;** diet, exercise, alcohol, smoking, sexual relationships and illegal drugs, appearance.

Positive lifestyle choices lead to:

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Negative lifestyle choices lead to:

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Our **appearance** includes: body shape, facial features, hair and nails, personal hygiene and our clothing.
Our appearance can affect the way we view ourselves- self-image

Positive self-image:

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Negative self-image

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Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

K. How do social and cultural factors affect development?
L. How do relationships and isolation affect development?
M. How do economic factors affect development?

K How do social and cultural factors affect development

Development can be influenced by the persons **culture or religion** because it affected their:
- **Values**: how they behave
- **Lifestyle choices**: diet, appearance

Positive affects of a persons culture/religion:	Negative affects of a persons culture/religion:
• A sense of security and belonging from sharing the same values and beliefs with others. • Good self-esteem through being accepted and valued by others	• Feeing discriminated against by people who do not share their religion/culture which leads to low self-image • Feeing excluded and isolated because their needs like diet, are not catered for.

Community refers to: local area where people live, school, religious group or hobby clubs. They have common values and goals.

Belonging to a community:	Not belonging to a community:
• Brings sense of belonging essential for emotional development. • Building and maintaining relationships- social development • Feeling of security. • Increases self-image and self-confidence	• Minimal contact with others- isolation • Anxiety leading to depression • Making negative lifestyle choices • Feeling less secure • Difficulty in building relationships • Slow self-image and self-confidence

Traditionally, men and women had distinctive responsibilities and expectations which for their gender called **gender roles**. However, nowadays UK equality legislation stops people being discriminated against because of their gender.

What happens when people face discrimination because of gender:
- They might be excluded from a group
- They may be refused promotion at work
- They may be expected to carry out a particular role
- They may be paid less.

L How do relationships and isolation affect development?

1	In adolescence, young people often argue with parents because they want more independence- negative affect on family relationships- can lead to isolation from them.
2	In later life, older people might need to rely on their children for support. This then has a positive affect on their development because all their need are catered for.
3	Relationships are important because they provide emotional security, contentment and positive self- esteem.
4	The breakdown of personal relationships can have a negative effect on persons PIES development: Low self-esteem, loss of confidence, stress.
5	Isolation can happen when individuals do not have the opportunity of regular contact with others. They have no one to share their feelings, thoughts and worries with resulting in feeling insecure and anxious.
6	Isolation can happen because they live alone, are unemployed or retired, are discriminated against or have an illness or a disability.
7	People have role models- infants learn by copying others, and adolescence base their identity on their role models. Role models can influence how people see themselves compared to others and their lifestyle chices0 can be positive or negative.

M How do economic factors affect development

Having enough money gives individuals and their families feeling of content and security →	Not having enough money causes stress and anxiety.
Having enough money means that the whole family is eating healthy. →	Not having enough money can mean that the family is not about to eat well balanced diet, and this has a negative effect on their physical development

Elderly people rely on state pension to live which is not enough and have to cut down on travel, shopping, bills, therefore it speeds their aging process and lead to health decline.

Living in good housing with open spaces:	Living in a poor housing with cramped and damp conditions:
• Feeling good about themselves • Be more likely to stay healthy, • Space to take exercise • Feel safe ad secure • Warmth	• Have low self-esteem and self-image • Be more likely to experience ill health • Be lesson likely to exercise • Anxious and stressed.
Material possession like a new phone or coat has a positive effect on the persons development because they might have more friends as they look nicer, high self-image. →	Not having a phone or the newest trainers can have a negative affect in the persons self-image and self-esteem. They might feel isolated from others.

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAA

What we are learning this term:

K. How do social and cultural factors affect development?
L. How do relationships and isolation affect development?
M. How do economic factors affect development?

K How do social and cultural factors affect development

Development can be influenced by the persons **culture or religion** because it affected their:
- **Values**: how they behave
- **Lifestyle choices**: diet, appearance

Positive affects of a persons culture/religion:	Negative affects of a persons culture/religion:
• •	• •

Community refers to:

Belonging to a community:	Not belonging to a community:
• • • •	• • • • •

Traditionally, men and women had distinctive responsibilities and expectations which for their gender called **gender roles**. However, nowadays UK equality legislation stops people being discriminated against because of their gender.

What happens when people face discrimination because of gender:
-
-
-
-

L How do relationships and isolation affect development?

1	
2	
3	
4	
5	
6	
7	

M How do economic factors affect development

Having enough money….	Not having enough money ……
• •	• •
Having enough money means that….	**Not having enough money can mean that…**
• •	• •

Elderly people rely on state pension to live which is not enough and have to cut down on travel, shopping, bills, therefore it speeds their aging process and lead to health decline.

Living in good housing with open spaces:	Living in a poor housing with cramped and damp conditions:
• • • • •	• • • • •
Material possession like a new phone or coat has a positive effect on the persons development because…..	Not having a phone or the newest trainers can have a negative affect on…. Because….
• • •	• • • •

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAB

What we are learning this term:

N. What are life events?
O. How do people deal with life events?
P. How is dealing with life events supported?

N.	What are life events?
Life Events	Life events are expected or unexpected events that can affect development. Examples include starting nursery, getting married or becoming ill.
Expected Life Events	Expected life events are life events that are likely to happen. Examples include starting primary school aged four and secondary school aged 11.
Unexpected Life Events	Unexpected life events are events which are not predictable or likely to happen. Examples could include divorce and bereavement (the death of a loved one).
Physical Events	Physical events are events that make changes to your body, physical health and mobility. Examples include illnesses such as diabetes and injuries and accidents such as car accidents.
Relationship Changes	Relationship changes could be new relationships such as the birth of a sibling, a new friendship or romantic relationship. Relationship changes can also be changes to existing relationships such as divorce.
Life Circumstances	Life circumstances are different situations that arise in our life that we must deal with. Examples include redundancy (losing a job), moving house or retirement (finishing work in later adulthood).

O.	How do people deal with life events?
Individual	• The effects of life events vary from person to person based on how they deal with their new situation. • Some people react to able to react to life events positively, others find it more difficult due to a range of factors.
Factors	• Factors that may affect how people cope with life events: age, other life events happening at the same time, the support they have, their disposition (their mood, attitude and general nature), their self-esteem, their resilience (how quickly they recover).
Adapting	• Adapt – to adjust to new conditions or circumstances. • Expected on unexpected life events can often force people to make changes to their lives. Individuals must find their own way to adapt to the changes that life throws at them.
Resilience	• Resilience – a person's ability to come to terms with, and adapt to, events that happen in life. • Resilience is stronger in people who have a positive outlook on life, accept that change happens, has supportive family and friends and plans for expected life events.
Time	• Sometimes people need a long time to adapt to unexpected life events. • It can take time for people to move on from and accept difficult changes in their life.

P.	How is dealing with life events supported?
Types of Support	**How this helps individuals deal with life events**
Emotional Support	Emotional support is needed to help individuals deal with all life events – expected and unexpected. Having someone to talk to helps people feel secure and adapt to change. Sometimes individuals can find this support in family and friends or professionals to process difficult life events – such as bereavement.
Information and Advice	Life events, particularly unexpected ones, can cause people to feel like they do not know what to do. Information and advice can help people to have a better understanding of their situation, which allows them to deal with it more successfully. Information and advice help them know where to go for help, the choices than are available to them and how to make healthy choices.
Practical Help	• Financial help – an individual may need money to help them adapt to a life change i.e. money to pay for a stair lift if their mobility has been effected. • Childcare – an individual may need support looking after their children i.e. a lone parent after a divorce that needs to go to work. • Transport – an individual may need support with transport if they have mobility problems i.e. a car could be adapted to support a person who has had an accident and can no longer walk.
Informal Support	Informal support is the support an individual receives from partners, family and friends. It is usually the first form of support an individual experiences after and expected or unexpected life event. Informal support can provide reassurance, encouragement, advice, a sense of security, someone to talk through options with and practical help.
Professional Support	Formal support may be provided by statutory care services (the state), private care services and charitable organizations. Professional support may include counsellors, teachers, careers advisers, occupational therapists, social workers and health specialists. Professional support may be needed to help people with a health condition, regain mobility, deal with life changes and emotions, get advice and information or change their lifestyle.
Voluntary Support	Organizations offering voluntary support are charities, community groups and religious groups. At voluntary support services, many staff are volunteers (they work for free), but they also employ qualified people who are paid by donations. Community groups work at a local level to meet the needs of people living in a specific neighbourhood i.e. foodbanks. Religious groups are formed by people who share the same religious or spiritual beliefs but they help all people in need regardless of their beliefs and background i.e. a church run soup kitchen for the homeless.

Year 10 BTEC Health and Social Care- Component 1: Human Lifespan Development. LAB

What we are learning this term:
N. What are life events?
O. How do people deal with life events?
P. How is dealing with life events supported?

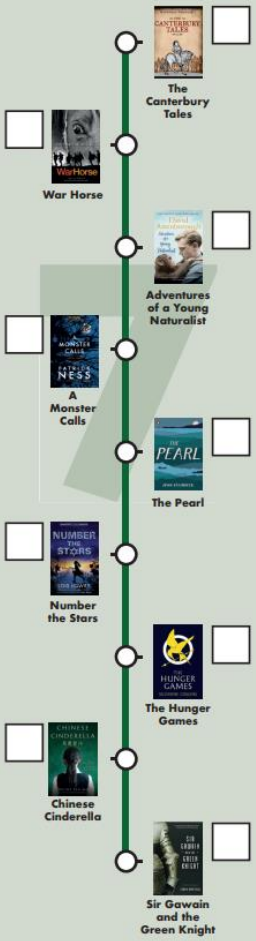
N.	What are life events?
Life Events	
Expected Life Events	
Unexpected Life Events	
Physical Events	
Relationship Changes	
Life Circumstances	

O.	How do people deal with life events?
Individual	
Factors	
Adapting	
Resilience	
Time	

P.	How is dealing with life events supported?
Types of Support	**How this helps individuals deal with life events**
Emotional Support	
Information and Advice	
Practical Help	
Informal Support	
Professional Support	
Voluntary Support	

SWINDON ACADEMY READING CANON

Year 7



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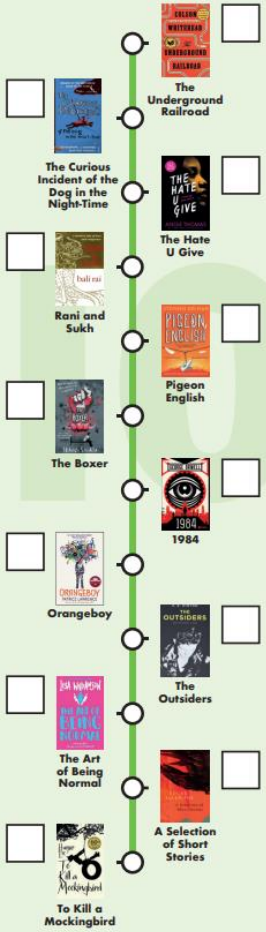
Year 10



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