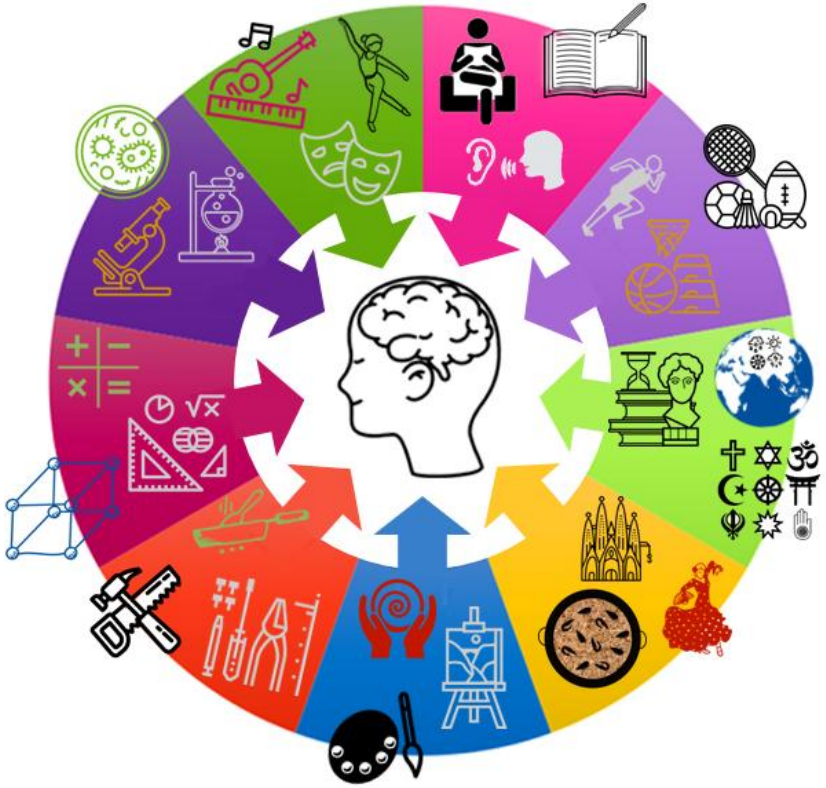
100% book - Year 10 Grammar

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



Term 3

Swindon Academy 2025-26	
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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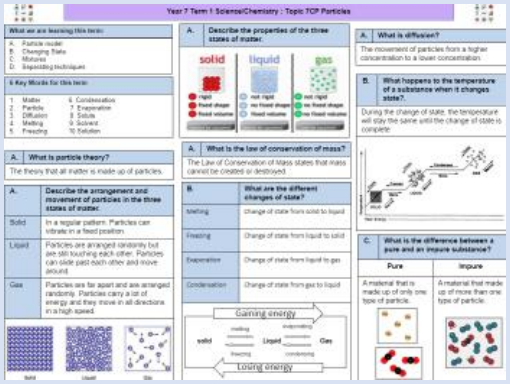
How to use your 100% book of Knowledge Organisers and Quizzable Organisers

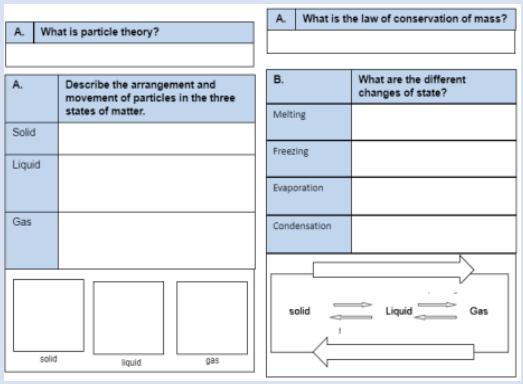
Knowledge Organisers



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!

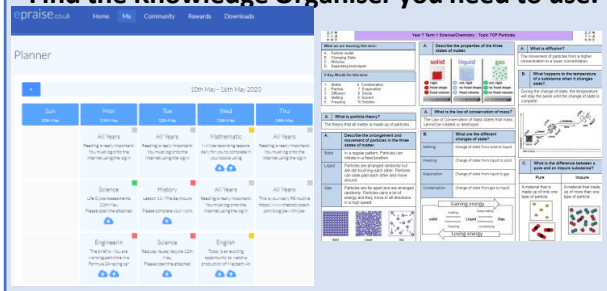
Expectations for Prep and for using your Knowledge Organisers

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?

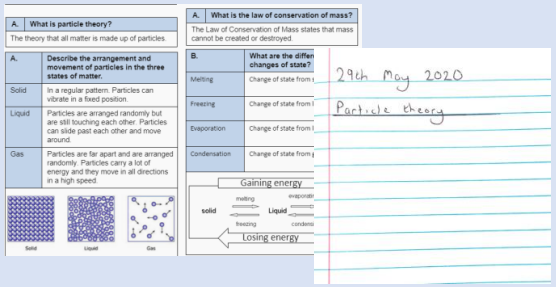
Step 1

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



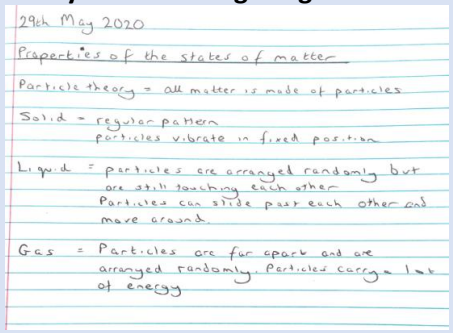
Step 2

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



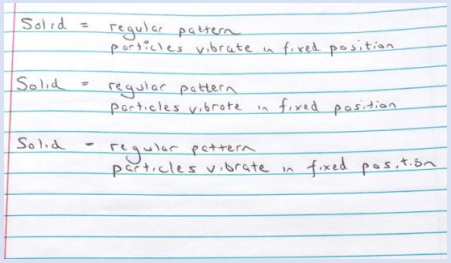
Step 3

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



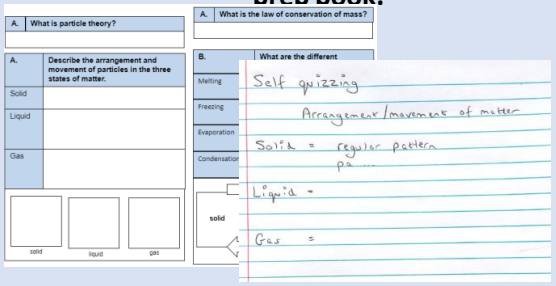
Step 4

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



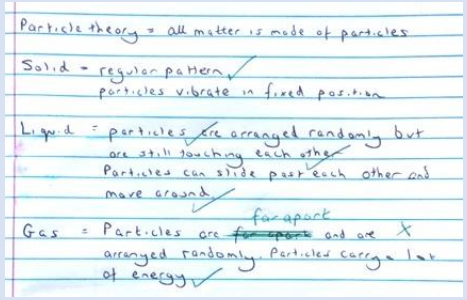
Step 5

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- Grammar

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- Grammar

The Big Ideas	Notes
Dickens promotes a social responsibility **in which he argues that everyone must contribute.**	.
Dickens suggests that change is possible, and that **everyone has capacity to redeem themselves and reform.**	
Dickens illustrates the injustice of wealth distribution in Victorian society and **highlights the dangerous consequences of allowing poverty to continue**	
Dickens uses contrasting **characterisation** to demonstrate how we must be generous and socially responsible.	
Dickens uses **contrasts** in setting to highlight social injustice	

T3 10GS – Homeostasis and Response

The nervous system

Job is to **detect** stimuli (changes in environment) and **respond** if needed.
Consists of:

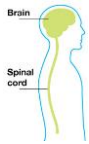
Receptors

Specialised cells that detect stimuli, found in sense organs and internally

Neurones

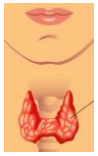
3 types – sensory, relay and motor
Carry **impulses** joining all parts of the nervous system

Co-ordination Centres



Brain, spinal cord, pancreas.
Coordinates the response

Effectors



Organs that bring about a response

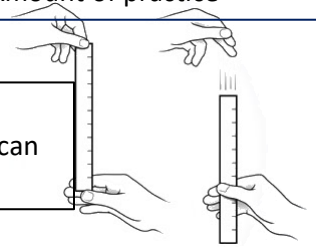
muscle or gland

RP 6 - Investigation into the effect of a factor on human reaction time.

1. Person A holds out hand with a gap between thumb and finger.
2. Person B holds ruler with the zero at the top of person A's thumb.
3. Person B drops ruler without telling Person A and Person A must catch it.
4. The distance on the ruler level with the top of person A's thumb is recorded
5. Repeat this ten times.
6. Repeat steps 1-5 after a factor has been changed
7. Use conversion table to convert ruler measurements into reaction time.

The 'factor' could be…
- Caffeine consumption
- Hours of sleep
- Alcohol consumption
- Amount of practice

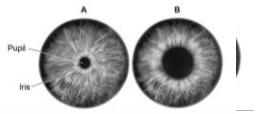
A computer reaction test can also be used.

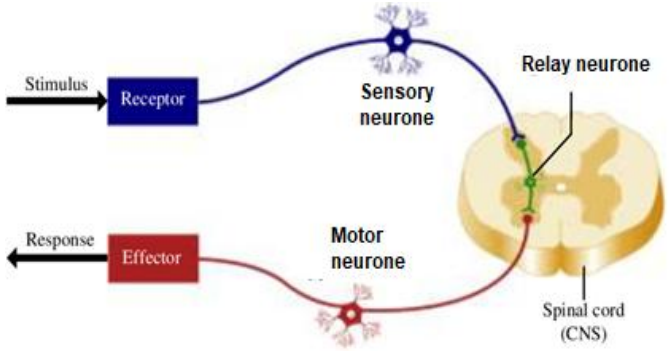


Control variables : distance above the hand, distance between finger and thumb, hand used (dominant or non-dominant, all other factors listed in the box above except the one being changed.

Reflexes

A reflex is an automatic, rapid response
Reflexes do not involve the conscious part of the brain, so cannot be overridden
The response might be brought about by:
- muscle - e.g. pupil being constricted with bright light or knee jerk response
- gland – e.g. mouth watering or tears being released when something gets in your eye





Reflex Arc

stimulus → receptor → **sensory neurone** → **relay neurone** → **motor neurone** → effector → response

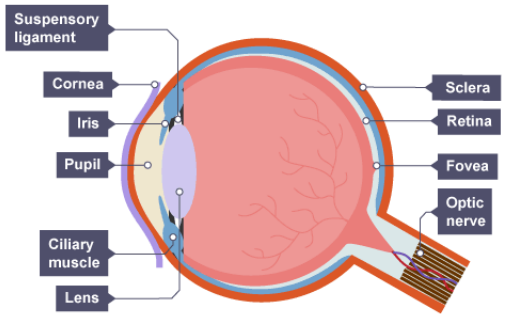
Example

Hot pan → pain receptors → **sensory neurone** → **relay neurone** → **motor neurone** → hand muscles → release pan

T3 10GS – Homeostasis and Response

The eye

The eye is a sense organ containing **receptors** sensitive to light intensity and colour.



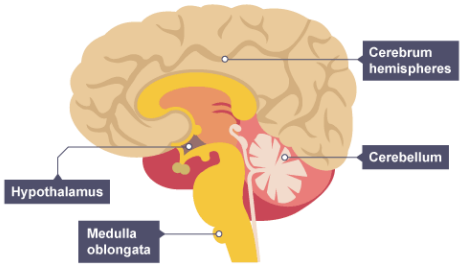
Structure	Function
Cornea	Refracts light - bends it as it enters the eye
Iris	Controls how much light enters the pupil
Lens	Further refracts light to focus it onto the retina
Retina	Contains the light receptors
Optic nerve	Carries impulses between the eye and the brain
Sclera	Tough white outer layer of the eye. It helps protect the eye from injury

To focus on a near object – the lens becomes thicker, this allows the light rays to refract (bend) more strongly.
To focus on a distant object – the lens is pulled thin, this allows the light rays to refract slightly.

The amount of light entering the eye is controlled by a reflex action. The size of the pupil changes in response to bright or dim light. This is controlled by the muscles of the iris.

The brain

The brain controls complex behaviour. It is made of billions of interconnected neurones and has different regions that carry out different functions.



There are four main areas in the brain:
•The **cerebrum** (the outer layer is called the cerebral cortex). It controls thought and high-level functions, such as language and verbal memory.
•The **cerebellum**, which controls balance, co-ordination of movement and muscular activity.
•The **medulla**, which controls unconscious activities such as heart rate and breathing rate,
•The **hypothalamus**, which is the regulating centre for temperature and water balance within the body.

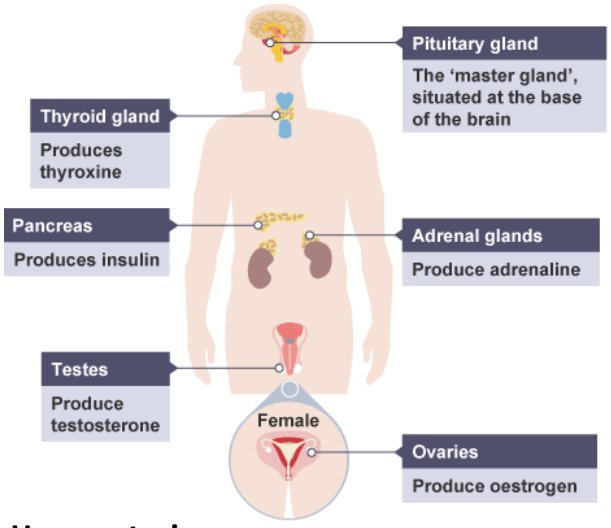
Neuroscientists have been able to map various regions of the brain to particular functions by studying patients with brain damage, electrically stimulating different parts of the brain and using **MRI.** They use strong magnetic fields and radio waves to show details of brain structure and function.

Scientists have stimulated different parts of the brain with a weak electrical current and asked patients to describe what they experienced. If the motor area is stimulated, the patient makes an involuntary movement.

T3 10GS – Homeostasis and Response

Hormonal responses

Hormones are chemicals released by glands
They are carried in the bloodstream.
Hormonal responses are slower than nervous responses but they last longer.



Homeostasis

This means keeping internal conditions (of the body or a cell) constant to ensure optimum functioning.
In humans, this includes regulating:

- temperature
- water levels
- blood glucose concentration

Homeostasis can involve nervous or hormonal responses.
Receptors detect changes in the body
Coordination centres (brain, pancreas, spinal cord etc) receive and process information
Effectors carry out responses to return to normal

Blood glucose concentration

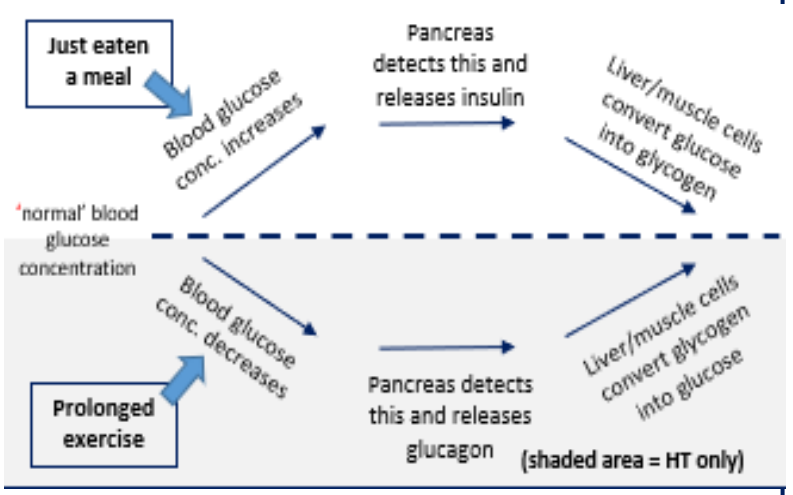
Blood glucose is monitored by the **pancreas.**

If glucose levels rise, the pancreas releases **insulin** into the blood.

This is a message to the liver to remove glucose and store it as **glycogen**.

If blood glucose is too low, **glucagon** is released.

The liver responds by breaking down glycogen into glucose and releasing it into the blood.



Diabetes

There are two types – Type 1 and Type 2
Both result in a lack of control over blood glucose levels

	Type 1	Type 2
Cause	No insulin is made by the pancreas	Insulin is made, but the liver and muscle cells do not respond
Treatment	Injections of insulin Pancreatic transplant	Controlling carbohydrate intake Losing weight

HT only
Negative feedback is when the release of something brings the levels back towards acceptable levels, it maintains a steady state.
E.g. if blood glucose increases, insulin is released to bring blood glucose back towards the normal range.

T3 10GS – Homeostasis and Response

Adrenaline and thyroxine (HT only)

Adrenaline is produced by the **adrenal glands**.
It is produced in times of fear or stress.
It **increases heart rate** to ensure **more oxygen and glucose** to the cells to prepare for the
'fight or flight' response.
Thyroxine is produced by **the thyroid gland.**
It is involved in regulating **metabolic rate** and growth and development.

Puberty

Females – **Oestrogen** is the main female reproductive hormone produced in the ovary. At puberty, eggs begin to mature, and one is released approximately every 28 days. This is called ovulation.

Males – **Testosterone** is the main male reproductive hormone produced by the testes and it stimulates sperm production.

Name of contraception	Description	+	–
Condoms/diaphragm	Barrier	Very effective, condom protects against STIs	Unreliable if not used properly
Oral Contraception (pill)	Hormonal (oestrogen or progesterone, stops FSH so no eggs mature)	Very effective	Must remember to take everyday, can have side effected
Injection/implant/skin patch	Slow-releasing hormone	Long lasting	Side effects such as heavy periods
Intrauterine Device (IUD or Coil)	Barrier method. Can also contain hormones	Long lasting (up to 5 years)	Side effects such as heavy periods
Surgical Sterilisation	Tying or cutting of sperm ducts/ oviducts.	Almost 100% effective	Difficult or impossible to reverse

Menstrual Cycle

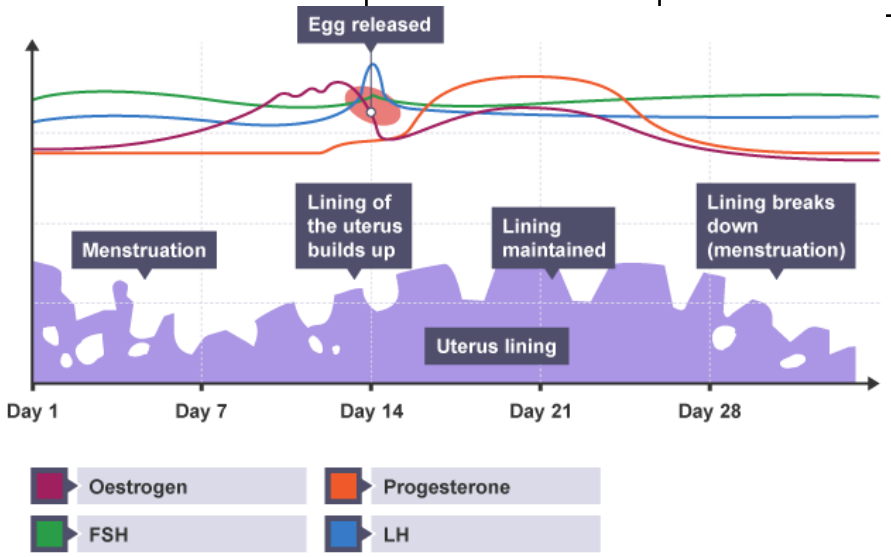
The menstrual cycle is controlled by several hormones:

FSH –from the pituitary. Causes an egg to mature in the ovary

LH – from the pituitary. Causes ovulation

Oestrogen and progesterone are involved in maintaining the lining of the womb.

HT – Oestrogen also feeds back to the pituitary to stop producing FSH.



Infertility (HT only)

Fertility drugs LH and FSH can be given to increase the number of eggs released and increase the change of fertilisation. .

IVF

- Woman takes a dose of FSH and LH - stimulates the maturation of several eggs.
- Eggs are collected and fertilised by sperm from the male
- Fertilised eggs develop into embryos.
- One or two embryos inserted into the female's uterus.

Negatives;

- very emotionally/ physically stressful
- success rates are not high
- can lead to multiple births (twins, etc.)
- Many embryos are not used & destroyed

T3 10GS – Energy Changes

Exothermic Reactions

- Energy transferred to the surroundings
- Temperature of the reaction mixture **increases**
- This energy is transferred **to** the surroundings

Examples include:
- Hand warmers
- Combustion reactions
- Respiration
- Neutralisation reactions
- Self-heating cans.

Endothermic Reactions

- Energy absorbed from the surroundings
- Temperature of reaction mixture often **decreases**
- Energy is transferred **from** the surroundings

Examples include:
- Ice packs (injuries)
- Reaction of citric acid and sodium hydrogen carbonate
- Thermal decomposition of calcium carbonate

Energy change of reactions (HT)

During a reaction:

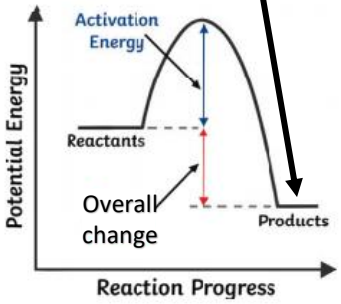
- Energy is **absorbed** in order to **break** bonds in the reactants 
- Energy is **released** when bonds are **made** in the products. 

Bond energy = the amount of energy that is released when a bond is made or that is needed to break a bond

Reaction Profiles – Exothermic

- Energy level diagrams show **difference in energy** between reactants and products.
- Exothermic = Energy of products is **lower than** reactants (energy is released)
- **Activation Energy** = minimum amount of energy needed to start the reaction.
- **Energy change** = the difference in energy between reactants and products.

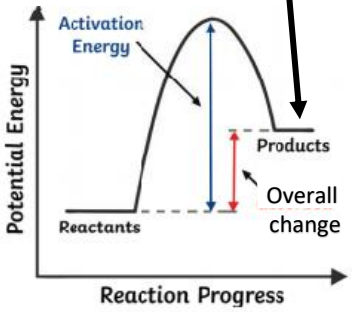
You may need to draw and label this in the exam!



Reaction Profiles – Endothermic

- Energy level diagrams show **difference in energy** between reactants and products.
- Endothermic = Energy of products is **higher than** reactants (energy is absorbed)
- **Activation Energy** = minimum amount of energy needed to start the reaction
- **Energy change** = the difference in energy between reactants and products.

You may need to draw and label this in the exam!

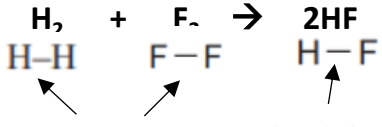


Calculating energy changes (HT)

Overall energy change = difference between energy needed to break bonds and the energy **released** when bonds formed.

To calculate energy change :

Energy change = bonds broken – bonds formed



Bond	Bond Energy / kJ mol^{-1}
F—F	158
H—H	436
H—F	568

Bonds broken =	Bonds formed
436 + 158	2 x 568
593	1136

Overall energy change = 593 – 1136

= -543 kJ/mol Exothermic

More energy is released in bond making than is required for bond breaking.

T3 10GS – Energy Changes

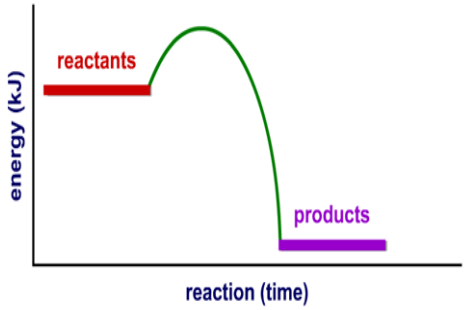
1. Which way is energy transferred in an exothermic reaction?
2. What happens to the temperature of the reaction mixture in an exothermic reaction?
3. State two examples of exothermic reactions.

1. Which way is energy transferred in an endothermic reaction?
2. What generally happens to the temperature of the reaction mixture of an endothermic reaction?
3. State two examples of endothermic reactions.

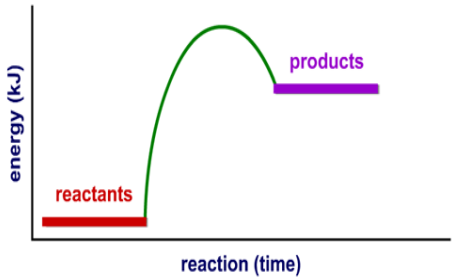
Higher Tier only

1. In terms of energy, what happens for bonds to be broken?
2. In terms of energy, what happens when bonds are formed?

1. Define activation energy.
2. On the graph below, draw and label the :
   - overall energy change
   - activation energy



1. What does an energy level diagram show?
2. On the graph below, draw and label the :
   - overall energy change
   - activation energy



Higher Tier only

1. Define overall energy change.
2. How do you calculate energy change?
3. Why, in terms of bond breaking and making, is a reaction exothermic?
4. Why, in terms of bond making and breaking, is a reaction endothermic?

T3 10GS – Energy Changes – Required Practical – Temperature Changes

Hypothesis

The energy change in the reaction between acid and alkali depends on the volume of alkali added.

Equipment

- Polystyrene cup and lid
- Thermometer
- 250cm^3 beaker
- Measuring cylinder
- Liquid reactants

Method (example for hydrochloric acid and sodium hydroxide)

1. Using measuring cylinder to measure 30cm^3 hydrochloric acid and put in polystyrene cup
2. Stand cup inside beaker to make stable.
3. Use a thermometer to measure the temperature of acid and record.
4. Using measuring cylinder – 5cm^3 sodium hydroxide → polystyrene cup
5. Fit the lid and gently stir with thermometer through hole.
6. When reading stops on thermometer, record temperature in table.
7. Repeat, each time adding 5cm^3 more sodium hydroxide up to a maximum of 40cm^3.
8. Calculate the temperature change on each attempt.
9. Repeat the experiment 3 times and calculate a mean temperature change for each volume of sodium hydroxide.

Variables

Independent – Volume of sodium hydroxide
Dependent – Temperature change
Control – Volume of hydrochloric acid, concentration of acid, concentration of sodium hydroxide

Common questions

Q1) Why do you use a polystyrene cup and lid?
A1) Because polystyrene cups are insulators, which reduces heat loss in the experiment, making the results more accurate.

Q2) Why should you calculate the temperature change, instead of just using the final temperature?
A2) Because the initial (starting) temperature of the acid may have been different.

Q3) Why is it important to stir the mixture?
A3) To make sure all of the reactants have reacted and to get a uniform temperature.

Q4) Why is the experiment conducted 3 times?
A4) So that anomalies can be seen and removed and a mean calculated

Energy changes could also be investigated using:

1. Changing the **mass of metal** added to acid and measuring the **temperature increase**
2. Changing the **type of metal** added to acid and measuring the **temperature increase**
3. Dissolving different **masses of potassium nitrate** into water and observing the **temperature decrease.**

T3 10GS – Energy Changes **Required Practical – Temperature Changes**

1. Write a method to investigate how the volume of sodium hydroxide affects the change in temperature when reacting with hydrochloric acid (6 marks)

2. For the investigation above, name the :
Independent variable :
Dependent variable :
2 control variables :

3. Why do you use a polystyrene cup and lid instead of a beaker?

4. Why should you calculate the temperature change, instead of just using the final temperature?

5. Why is it important to stir the mixture?

6. Why do we do repeat readings?

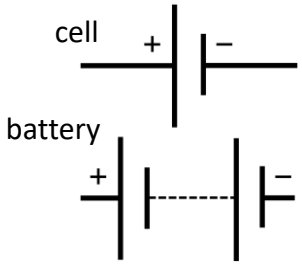
T3 10GS – Energy Changes (chemistry only)

Cells and batteries

Cells contain chemicals which react to produce electricity.
The voltage produced by a cell is dependent upon a number of factors including the type of electrode and electrolyte.

A simple cell can be made by connecting two different metals in contact with an electrolyte.

Batteries consist of two or more cells connected together in series to provide a greater voltage.



Non-rechargeable cells and batteries

The chemical reactions stop when one of the reactants has been used up. Alkaline batteries are non-rechargeable.

Rechargeable cells and batteries

Rechargeable cells and batteries can be recharged because the chemical reactions are reversed when an external electrical current is supplied.

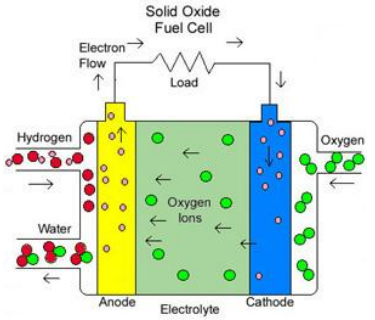
Fuel cells

Fuel cells are supplied by an external source of fuel (eg hydrogen) and oxygen or air.

The fuel is oxidised electrochemically within the fuel cell to produce a potential difference.

The overall reaction in a hydrogen fuel cell involves the oxidation of hydrogen to produce water.

Hydrogen fuel cells offer a potential alternative to rechargeable cells and batteries.



Fuel cells vs rechargeable cells and batteries

Fuel cells can provide electrical energy for a much longer duration, whereas rechargeable batteries can only provide energy in an intermittent schedule. ... Fuel cells are able to generate a large amount of electrical energy, much greater than that produced by rechargeable batteries.

Half equation for electrode reactions in hydrogen fuel cells

At the negative electrode: $2H_2 + 4OH^- \rightarrow 4H_2O + 4e^-$
At the positive electrode: $O_2 + 2H_2O + 4e^- \rightarrow 4OH^-$
When you add these two half equations together, you get the following overall equation:
$2H_2 + 4OH^- + O_2 + 2H_2O + 4e^- \rightarrow 4H_2O + 4e^- + 4OH^-$
The hydroxide ions, electrons and two H_2O molecules will now cance because they are on both sides, leaving the overall equation:
$2H_2 + O_2 \rightarrow 2H_2O$

T3 10GS – Energy Changes **Chemistry only**

1. What is the difference between a cell and a battery?

2. What is a cell?

3. What is a non-rechargeable battery?

4. Why are rechargeable batteries rechargeable?

4. What is a fuel cell?

5. How does a fuel cells compare to rechargeable cells and batteries?

6. What is the half equation for electrode reactions in hydrogen fuel cells?

T3 10GS P5 – Forces

Scalar and Vector Quantities

Scalar quantities – have **magnitude** only
e.g. temperature, mass and speed.
Vector quantities – have both **magnitude** and **direction**
e.g. velocity. displacement.

Vectors can be shown using **arrows:**
Size of arrow = magnitude of the quantity
Direction of arrow = direction of quantity

Contact and Non-Contact Forces

Force = a push or pull that acts on an object due to interaction with another object.

All forces are either:
- **Contact forces** – objects are physically touching
e.g. friction, air resistance, tension and normal contact force.
- **Non-Contact forces** – objects are physically separated
e.g. gravitational force, electrostatic force and magnetic force.

- Forces are **vectors** – shown by arrows.

Gravity

Weight = the **force** acting on an object due to gravity.

- Gravity close to Earth is due to the gravitational field.

- Weight of an object depends on the gravitational field strength at the point where the object is.

Weight can be calculated using:

weight = mass x gravitational field strength

$$W = m \times g$$

Newtons (N) — Kilograms (kg) — Newtons per kilogram (N/kg)

- Earth's gravitational field strength = 9.8 N/kg

- Weight of an object can be considered to act at a single point = object's '**centre of mass**'
-
  - Weight can be measured using a **newton meter**.

Newton meter →

Resultant Forces

Resultant force = The sum of all forces or overall force acting on an object

Bike is being pushed forward with a force of 13N but there are resistive forces of 13N backwards.
Resultant force = 0N

What happens to the motion depends on what the bike was doing before these forces were applied:
- If the bike was stationary, it will stay stationary
- if the bike was moving, it will continue to move at a constant velocity

Car is being pushed to the left by a force of 350N. It is also pushed to the right by 500N.
Resultant force is: 500N – 350N = 150N

What happens to the motion depends on what the car was doing before these forces were applied:
- If the car was stationary, it will **accelerate** to the right
- If the car was already moving to the right, it will move faster **(accelerate)**
- If the car was moving to the left (ie reversing), it will slow down (**decelerate)**

T3 10GS P5 – Forces

1. What is a scalar quantity?

2. Give 2 examples of a scalar quantity.

4. Give 2 examples of a vector quantity.

1. What is a force?

2. Describe what is meant by a 'contact force'

3. Give 2 examples of contact forces.

4. Give 2 examples of non-contact forces.

5. Are forces scalar or vectors?

1. Define weight.

2. What does the weight of an object depend on?

3. Give the equation which links gravitational field strength, mass and weight?

4. What is 'centre of mass'?

5. How can weight be measured?

6. What is the value for Earth's gravitational field strength?

1. What is a resultant force?

2. What happens to a moving object if the forces are balanced?

3. What does 'decelerate' mean?

4. If an object is stationary and there is a 0N resultant force, what happens to the object?

5. What is needed to make an object accelerate?

T3 10GS P5 – Forces

Vector Diagrams (HT only)

- Used to calculate resultant forces that are not acting directly opposite each other, on a straight line.

Rules ('tip to tail'):

- Draw first vector to scale, in the direction stated
- Draw second vector, from the tip of the first one in the direction stated.
- Join the two lines in a triangle and measure the resulting line
- Convert length to force using your scale – this is the resultant force

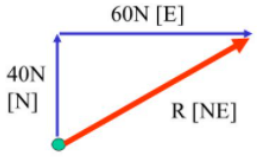
Example:
Two forces act on an toy boat - 40N acting north, 60N acting East. Calculate the resultant force and state the direction.

1. Draw the first vector to scale

2. Draw 2nd vector from tip of the first one. Again, to scale.

3. Join the two lines. Measure the resulting line.

Resultant force = 72N NE



Work done and Energy Transfer

- When a force acts on an object and makes it move – **work is done**.
Work done = energy transferred

Work done is calculated by:

work done = force x distance

$$W = F \times s$$

Joules (J) Newtons (N) Metres (m)

- One joule of work is done when a force of one newton causes a displacement of one metre.
  - 1 joule = 1 newton-metre

e.g A climber and his gear weigh 750N. Calculate the energy transferred to the top of the cliff

W = F s
W = 750 x 20m
W = 15000J

- Work done against the frictional forces acting on an object causes a rise in the temperature.

Forces and Elasticity

- When work is done on an elastic object (e.g. stretching or compressing a spring), energy is stored as elastic potential energy.

Elastic deformation:
- When force is applied, object changes shape and stretches.
- When the force is no longer applied, object returns to original shape.

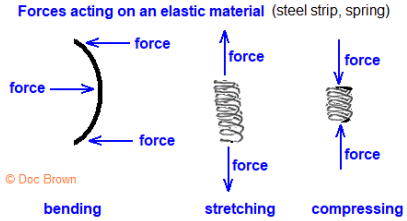
Inelastic deformation = stretched beyond limit – will not return to original shape and size.

Force = spring constant x extension

$$F = k \times e$$

Newtons (N) Newtons per metre (N/m) Metres (m)

Two forces are needed to stretch or compress



Work done in stretching (or compressing) a spring:

elastic potential energy = 0.5 x spring constant x (extension)^2

$$E_e = \tfrac{1}{2} \times k \times e^2$$

T3 10GS P5 – Forces

1. What are vector diagrams used to calculate?

2. Where do you draw the second force from?

3. Two forces act on a boat, pulling it along. The first force is 3N North and the second is 4N East. Follow the rules and draw the forces acting from the point of origin below:

●

4. What is the resultant force on the boat?

1. When is work done?

2. Give the equation which links distance, force and work done?

3. What is work done the same as?

4. Complete this sentence: One joule of work is done when…

5. What is the relationship between joules and newton-metres?

6. What does work done against the frictional forces acting on an object cause?

1. When an elastic object is stretched or compressed, which energy store is filled?

2. What is ‘elastic deformation’?

3. What is ‘inelastic deformation’?

4. What happens to a stretched spring when the force is removed?

5. What is the equation linking extension, force and spring constant

6. How many forces are needed to stretch or compress an object?

T3 10GS P5 – Forces

Required Practical

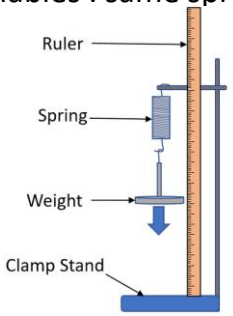
Aim: Investigate the relationship between force and extension for a spring (or any elastic object, eg elastic band)

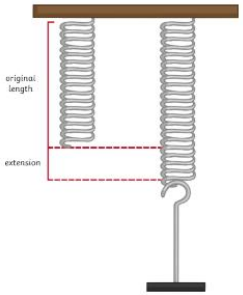
Method

1. Hang a spring from a clamp and stand
2. Measure original length of the spring and record this.
3. Attach a 100g mass – record the new length of the spring.
4. Continue adding 100g masses recording the length each time, up to a total of 500g.
5. Work out the extension for each mass using:

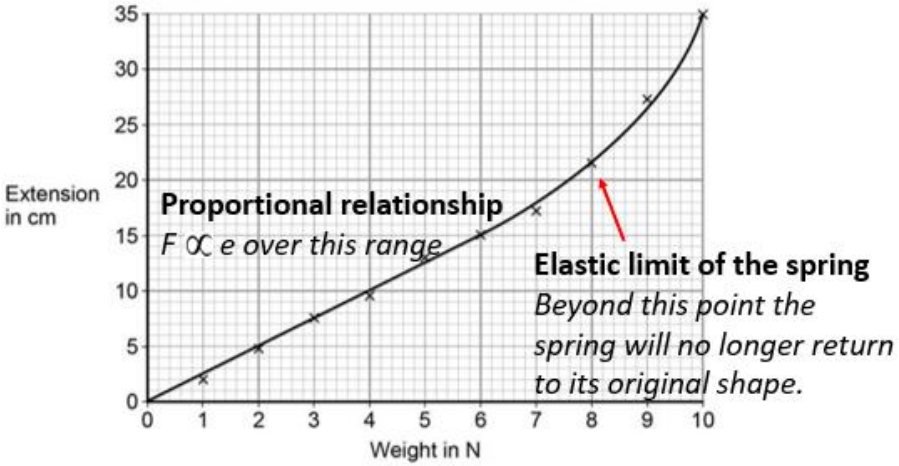
   final length – original length
6. Repeat steps 1-5 twice and calculate a mean
7. Plot a line graph with extension (m) on the x-axis and force (N) on the y-axis.

Independent variable : mass on the spring
Dependent variable : extension of the spring
Control variables : same spring

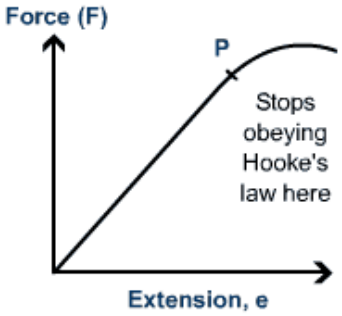




Results :



- There is a proportional relationship (shown by a straight line through the origin) at first.
- This means: **Force ∝ Extension** (F ∝ E)
- However, there comes a point when the 'elastic limit' of the spring is reached. This is also known as the **limit of proportionality**.
- If more force is applied after this, relationship is **no longer proportional**.
- After this point, the spring will not return to its original shape and size when the force is removed.



You may see the graphs with the axes switched – with extension on X and force on Y.

gradient of linear part = spring constant, k, for the spring being used.

T3 10GS P5 – Forces

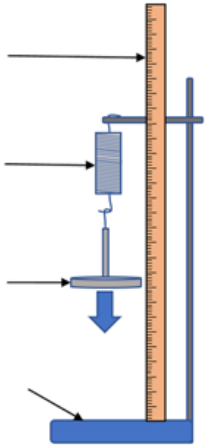
1. What is the independent variable in the investigation into the effect of force on extension of a spring?

2. What is the dependent variable?

3. How is the dependent variable measured?

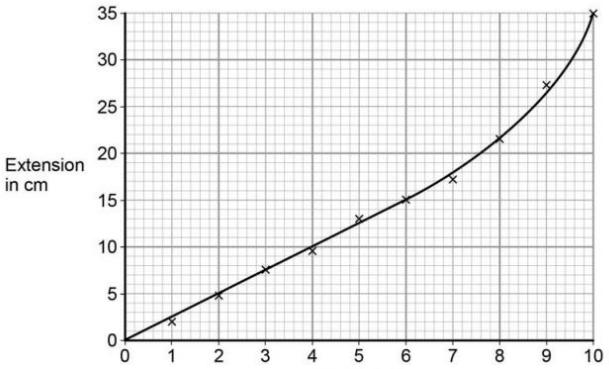
4. What range of masses could be used?

5. Label the equipment used to investigate the stretching of a spring below:



6. Why are repeated readings taken for each mass?

1. Label the X axis for the graph below, including units

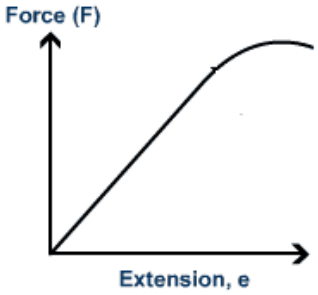


2. Label the part of the graph that shows force is directly proportional to extension

3. Label the limit of proportionality for this spring

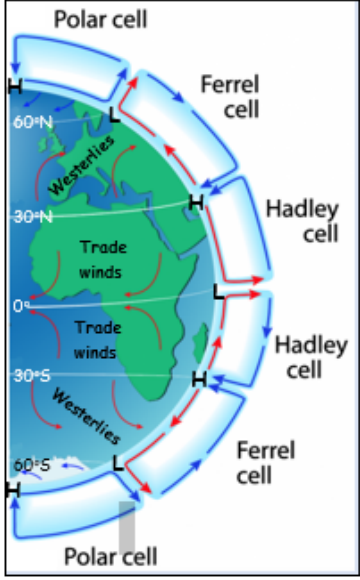
4. What is the symbol for 'proportional'?

5. How could you use a graph like this to calculate the spring constant of this spring?



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.

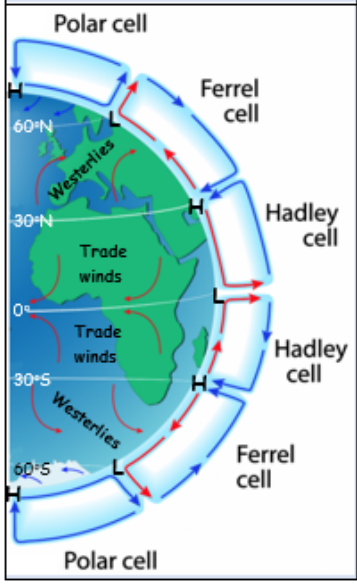
Hazard	Example
Temperature	10 warmest yrs all occurred since 1990 2018 joint hottest summer on record. Dec 2010 coldest month for 100 years.
Rainfall	More rainfall records broken between 2010 - 2014 than in any other decade. Dec 2015 wettest month on record.

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	

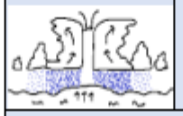
12. An example of a recent extreme weather event in the UK

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?

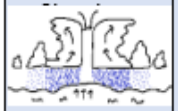
Strategy	Explanation
Prediction / monitoring	Satellites and aircraft to monitor storms. Computer models calculate the predicted track. Allows warnings so people can evacuate or protect their home.
Planning	New developments avoid high risk areas Emergency services train and prepare. Plan evacuation routes. 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		

Climate Change

Background:

1. Since the 1860s the global climate has been recorded.
2. Since then the climate globally has increased by 0.8° Celsius.
3. Climate scientists can use methods to find out about the global climate before we started recording it. ***(B)***
4. From this evidence we can see that the planet has always gone through periods of warming and cooling. ***(A)***
5. However, the rapid increase of carbon dioxide in the atmosphere from burning fossil fuels, is causing the enhanced greenhouse effect. ***(D)***
6. The enhanced greenhouse effect is causing changes to the planet, such as the melting of Artic sea ice, rising temperatures, and an increase in extreme weather events such as tropical storms. ***(E, F)***
7. Countries are trying to resolve the climate change issue by limiting the amount of carbon dioxide released into the atmosphere, this is known as mitigation. ***(G, H)***
8. Some countries are trying to adapt to climate change by building flood barriers and growing drought resistant crops. ***(G, H)***

A.	**Changes in climate *(3)***
Climate change	The process of the Earth's climate changing over time.
Glacial periods	Cold periods.
Inter-glacial periods	Warm periods.

B.	**Measuring climate change *(3)***
Ice cores	Each layer of ice in a core represents a different year. CO_2 can be measured in each layer, and therefore the temperature.
Tree rings	Each ring represents a different year. Thicker rings show a warmer climate.
Historical evidence	Paintings and diaries e.g. paintings of ice fairs on the frozen Thames 500 years ago.

C.	**Natural climate change *(3)***
Volcanic eruptions	Ash from volcanic eruptions can block sunlight, making it colder.
Sun spots	The sun can give out more energy due to an increase in sun spots.
Orbital change	The orbit of the sun changes from oval (ellipse) to circular approx. 98,000 yrs.

E.	**Effects on people *(6)***
Tropical storms	Increase in frequency and intensity so more damage.
Sea-level rise	Increased risk of floods, damaging property and businesses.
Melting Arctic ice	Affects trading routes in the Arctic Circle.
More droughts/ floods	Crop failure, could lead to starvation and famine.
Cost of defence	Governments have to spend more money on disasters instead of developing.
Environmental Refugees	Pressure on countries to accept refugees.

G.	**Strategies to resolve climate change *(4)***
Adaptation	Adapting to climate change to make life easier.
Adaptation examples *(3)*	1. Building flood defences. 2. Growing new crops to suit the new climate. 3. Irrigation channels, sending water from areas of surplus to deficit.
Mitigation	Trying to stop climate change from happening by reducing greenhouse gases.
Mitigation examples *(3)*	1. International agreements. 2. Alternative energies. 3. Carbon capture.

D.	**Human-induced climate change *(5)***
Greenhouse effect	The way that gases in the atmosphere trap heat from the sun. Like glass in a greenhouse they let heat in, but prevent most from escaping.
Greenhouse gases	Gases like carbon dioxide and methane that trap heat around the Earth, leading to climate change.
Transport	More cars, so more CO_2 causing the enhanced greenhouse effect.
Farming	Farming livestock produces methane, this is a greenhouse gas.
Energy	More energy required, meaning more fossil fuels burnt, so more CO_2.

F.	**Effects on the environment *(4)***
Sea temperature rises	Coral bleaching and destruction of marine ecosystems.
More droughts	Migration/ death of species which can not survive drought conditions.
Melting glaciers (ice rivers)	Will send more fresh water into the sea, causing the sea level to rise.
Melting Arctic ice	Loss of habitats for animals, such as polar bears.

H.	**Place specific examples *(2)***
Adaption	***The Thames Barrier.*** Positive: Stops flooding due to rising sea levels. Negative: Expensive
Mitigation	***The Paris Agreement.*** Positive: Countries are trying to lower CO_2 emissions. Negative: The USA pulled out and China did not sign up.

Climate Change

Background:

1. Since the 1860s the global climate has been recorded.
2. Since then the climate globally has increased by 0.8° Celsius.
3. Climate scientists can use methods to find out about the global climate before we started recording it. ***(B)***
4. From this evidence we can see that the planet has always gone through periods of warming and cooling. ***(A)***
5. However, the rapid increase of carbon dioxide in the atmosphere from burning fossil fuels, is causing the enhanced greenhouse effect. ***(D)***
6. The enhanced greenhouse effect is causing changes to the planet, such as the melting of Artic sea ice, rising temperatures, and an increase in extreme weather events such as tropical storms. ***(E, F)***
7. Countries are trying to resolve the climate change issue by limiting the amount of carbon dioxide released into the atmosphere, this is known as mitigation. ***(G, H)***
8. Some countries are trying to adapt to climate change by building flood barriers and growing drought resistant crops. ***(G, H)***

A.	**Changes in climate** *(3)*
Climate change	
Glacial periods	
Inter-glacial periods	

B.	**Measuring climate change** *(3)*
Ice cores	
Tree rings	
Historical evidence	

C.	**Natural climate change** *(3)*
Volcanic eruptions	
Sun spots	
Orbital change	.

E.	**Effects on people** *(6)*
Tropical storms	
Sea-level rise	
Melting Arctic ice	
More droughts/ floods	
Cost of defence	
Environmental Refugees	

G.	**Strategies to resolve climate change** *(4)*
Adaptation	
Adaptation examples *(3)*	
Mitigation	
Mitigation examples *(3)*	

D.	**Human-induced climate change** *(5)*
Greenhouse effect	
Greenhouse gases	
Transport	
Farming	.
Energy	

F.	**Effects on the environment** *(4)*
Sea temperature rises	
More droughts	
Melting glaciers (ice rivers)	
Melting Arctic ice	

H.	**Place specific examples** *(2)*
Adaption	
Mitigation	

GCSE History : Medicine in modern Britain c1900-present

What we are learning this term:

1.1 Ideas about the cause of disease and illness
1.2 Approaches to prevention and treatment
1.3 Case studies: Fleming, Florey, Chain and the fight against lung cancer in the 21st century

A.	*Can you define these key words?*
DNA	Short for deoxyribonucleic, DNA carries genetic information from one living thing to another
Genome	The complete set of DNA containing all information needed to build a particular organism
Haemophilia	A genetic disease passed from parent to child that stops blood clotting
Mastectomy	Surgery during which a person has one or both breasts removed.
Magic bullet	A chemical cure that will attack microbes in the body without damaging the body
Antibiotic	A Drug made from bacteria that kill other bacteria and so cure and infection or illness
Penicillin	The first antibiotic drug produced from the mould of penicillin to treat infections

C.	Lung Cancer (1.3)
What is lung cancer?	Lung cancer is the second most common cancer in the UK. It mainly affects people over the age of 40, it is an infection of the lungs.
Causes	Lung cancer became a much more common disease after 1900. Most lung cancers are caused by external factors such as smoking and chemicals in the air such as radon gas. In 1950, scientists proved that smoking was linked to lung cancer.
Treatments	There are three key treatments for lung cancer in the 21st century. People can be treated using a transplant, radiotherapy and chemotherapy. There is also research into genetic treatments, however it is not yet possible to treat lung cancer with genetics meaning its impact is limited.
Prevention	The British taking action through encouraging current smokers to quit, preventing people from becoming smokers and from protecting non-smokers from the dangers of second-hand smoke through varies pieces of legislation being produced.

B. Change and continuity in ideas about disease and illness in modern Britain. (1.1-1.2)

Causes	Prevention	Treatments
Germ theory – By 1900, the germ theory had been around for 40 years and microbes had been linked with outbreaks of disease.	Doctors now understood that the body produced antibodies to fight diseases that had previously infected it and that is how vaccines worked.	Mass production of penicillin – Florey and Chain proved that penicillin was effective in treating infections. The US government, observing the benefits funded the mass production.
Lifestyle factors – drinking too much alcohol leads to liver and kidney problems, intravenous drug taking and unprotected sex can spread diseases and the fashion of tanning led toa rise in skin cancer.	Antibiotics – Inspired by the discovery of penicillin, other scientists investigated molds and fungi in the search for more antibiotics. In the short term antibiotics have been a miracle cure for a variety of diseases, however their long-term impact has yet to be measured.	Science of technology in lung cancer treatment; the use of transplants, radiotherapy and chemotherapy. Genetic research is not yet used as a possible treatment for lung cancer.
Fundamental laws of inheritance: By 1900, a German scientist Mendel had theorized that genes come in pairs and one is inherited from each parent	New approaches to prevention through mass vaccinations – for example the national vaccination campaign against diphtheria was launched in 1942, the first of its kind.	Improved access to care – There was rapid improvement in the availability of care outside the home from 1948 onwards. The NHS made medical services free at point of service. This gave everybody access to medical care.
The human genome project –this was launched in 1990 and was originally led by James Watson. For a decade, 18 teams of scientists all over the world worked together to decode and map the human genome, this would make it possible for scientists to identify mistakes of mismatches in DNA	Government legislation - the government has passed laws to provide a healthy environment for the population. Examples of these were Clean Air Acts of 1956 and 1968. These two pieces of legislation were triggered by bad episodes of smog in London in 1952.	Specific, effective medicines matched with the diseases that they treat. In 1900 25% of deaths were caused by infectious diseases, by 1990 that number had fallen to less than 1%.
	Government lifestyle campaigns were also used to help people prevent disease themselves by promoting healthier lifestyles.	

D. Key People (1.3)

Fleming	Florey	Chain
Fleming was a British doctor working at ST. Mary's hospital in London. He had a keen interest in bacteriology and had been one of the first doctors to use the first 'magic bullet' to treat syphilis. Fleming identified the mould in his dirty petri dish as penicillin. The bacteria appeared to kill off the harmful staphylococcus bacteria. Fleming published his findings and at this time scientists were actively searching for chemical treatments.	Florey was an Australian pathologist working at Oxford medical school. Florey (with Chain) was conducting investigations into neglected research. Following the testing on mice, further tests of penicillin needed to be done on a larger scale, however Florey and Chain struggled to produce penicillin on a large scale. Florey refused to patent the drug, saying it should be available for everybody, meaning the development of the drug didn't cost much money.	Chain had escaped Nazi Germany where he had been a biochemist. Chain along with Florey was conducting investigations into previously neglected research. In 1940 he tested the extracted penicillin on infected mice. It appeared to be promising and the penicillin was working. Chain and Florey

GCSE History : Medicine in modern Britain c1900-present

What we are learning this term:

1.1 Ideas about the cause of disease and illness
1.2 Approaches to prevention and treatment
1.3 Case studies: Fleming, Florey, Chain and the fight against lung cancer in the 21st century

A.	*Can you define these key words?*
DNA	
Genome	
Haemophilia	
Mastectomy	
Magic bullet	
Antibiotic	
Penicillin	

C.	Lung Cancer (1.3)
What is lung cancer?	
Causes	
Treatments	
Prevention	

B. Change and continuity in ideas about disease and illness in modern Britain. (1.1-1.2)

Causes	Prevention	Treatments

D. Key People (1.3)

Fleming	Florey	Chain

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	
Tabarra	
Khums	
Lesser jihad	
Greater jihad	
Sunni	
Shi'a	
Niyyah	
Du'a	

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	
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	
The significance of fasting	
Reasons for fasting	
Night of power	

	The 5 Pillars - Hajj
The role of pilgrimage	
The significance of pilgrimage	
Actions	

	Id-ul-Adha, Id-ul-Fitr, Ashura
Id-ul-Adha Not an official holiday in UK	
Id-ul-Fitr Public holiday in Muslim majority countries, not UK	
Ashura	

Year 10 Spanish Knowledge Organiser Term 3

Techniques for learning vocab:

- Write down the vocabulary 3 times each word.
- Look / cover / write / check – ask your teacher for a sheet and to show you how.
- Mind maps
- Post it notes / flash cards
- Record yourself saying them
- Get a family member to quiz you – they say the English, you say the Spanish
- Write the word in a sentence – put it into context.
- Use TALKAL, free APP in the chat mode and speak with the AI Ema.

Spare copies of this kept in class. Just ask your teacher if you need one.

TOP 10 2get TOP Marks in Spanish writing

1) Use two tenses in the same sentence:

Impress the examiner by using two different tenses in the same sentence. For example, you could use both the **preterite** and **imperfect tenses:**E.g. **Fuimos a San Sebastián que era bonito pero bastante caro.**
We went to San Sebastian which was pretty but quite expensive.

2) Create more complex sentences by linking with "donde" or "cuando":

E.g. Pasé el verano en un pueblo en el sur de Francia donde tengo unos amigos.
I spent the summer in a village in the south of France where I have friends.

3) Refer to other people: Talk about a variety of people by changing the subject of the sentence. Make sure you use the correct verb ending.

E.g. A mí me gusta nadar pero mi amiga prefiere jugar al voleibol.
I like swimming but my friend prefers to play volleyball.

4) Use a variety of connectives such as:**También** *(also)*, **además** *(moreover)*, **pero** *(but)*, **sin embargo** *(however)*, **por eso** */* **por lo tanto** *(therefore)*, **así que** *(so)*, **entonces** *(then)*, **luego** *(later)*, **aunque** *(although)*, **aún** *(even)*, **antes**, *(before)*, **después** *(after)*, **por ejemplo** *(for example)*, **tal como** *(such as)* and so on.

5) Use exclamation expressions to show surprise, fear, happiness, etc.:

¡Qué horror! – *How awful!*
¡Qué miedo! – *How scary!* **¡Qué bien!** – *Great!*
Qué suerte! – *How lucky!* **¡Qué pena!** – *What a shame!*

6)Use the subjunctive.

Try to include a subjunctive verb if possible. Easy ways to use the subjunctive involve the following expressions:
Es importante que ... *(It is important that ...)* **Es probable que ...** *(It is likely that ...)*
Espero que ... *(I hope that ...)* **Quiero que ...** *(I want ...)* **No creo que ...** *(I don't believe that ...)*

7) Remember to justify your opinions:

E.g. **Me encanta viajar a otros países para practicar la lengua y para conocer otras culturas.**
I love travelling to other countries to practice the language and to learn about other cultures.

8) Use a wide range of vocabulary and show off how many different words you know!

9) Use a variety of opinion phrases, don't just stick to "Pienso que..." (I think that ...):

Creo que – *I believe that* **Opino que** – *I give the opinion that*
A mi modo de ver – *As I see it* **En mi opinión** – *In my opinion*
Me parece que – *It seems to me that* **Para mí** – *As for me*
(No) Estoy de acuerdo – *I agree (I don't agree)* **Me molesta que –** *It bothers me that*
No aguanto – *I can't stand* **No soporto** – *I can't tolerate*

10) Use comparative structures.

Más + **adjetivo** + **que**: **Mi hermano es más trabajador que yo.**
My brother is more hardworking than me.
Menos + **adjective** + **que:** E.g. **Mi amiga Ana es menos habladora que yo.** *My friend Ana is less talkative than me.* • **Make sure the adjective agrees with the noun it is describing. Tan + adjective + como: (as ... as):**
E.g. **La chaqueta es tan cara como el abrigo.** *The jacket is as expensive as the coat.*
Tanto/a/os/as + noun + como: *(as much/many as):*

¡Qué rico! (pages 80–81):

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

Learn the vocabulary on these pages.

Write 3 sentences with me gustaría probar:

_____

_____

_____

justify the opinion with dado que parece...

_____

_____

_____

¿Llevas una vida sana? (pages 82–83):

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

Learn the vocabulary on these pages.
Write sentences with Durante:

_____

_____

Antes de / después de

_____

_____

_____

_____

Write a list of your routines in weekdays:
Durante la semana and at the weekend:

_____

_____

_____

_____

_____

_____

_____

¿Somos lo que comemos? (pages 84–85):

¿A qué hora tomas ...	*What time do you have ...*
el desayuno/almuerzo?	*breakfast/lunch?*
la merienda/cena?	*afternoon snack/dinner?*
Normalmente/Generalmente	*Normally/Generally*
lo/la tomo ...	*I have it ...*
entre las ... y las ...	*between ... and ...*
A veces como a las ...	*Sometimes I eat at ...*
¿Te gustaría probarlos/las?	*Would you like to try them?*
Te recomiendo ...	*I recommend ...*
Hay que probar ...	*You have to try ...*
Es un postre / una bebida ...	*It is a ... dessert/drink.*
rico/a / típico/a.	*tasty/typical*
Me gustaría **probarlo/la/ probarlos/las** ...	*I would like to try it/them ...*
porque **parece/suena** ...	*because it looks/sounds ...*
porque **parecen**/suenan ...	*because they look/sound ...*

¿Cómo es tu dieta?	*What is your diet like?*
(No) Tengo una dieta sana porque ...	*I (don't) have a healthy diet because ...*
soy vegano/a / vegetariano/a	*I am vegan / vegetarian*
como comida sana/malsana	*I eat healthy/unhealthy food*
como demasiados *dulces/ pasteles	*I eat too many sweets/cakes*
¿Qué hay que hacer para tener una dieta sana?	*What do you have to do to have a healthy diet?*
Hay que / Se necesita ...	*You have to / need to ...*
Hace falta ...	*It is necessary to ...*
comer una dieta equilibrada	*eat a balanced diet*
tener **cuidado** con la cantidad de azúcar que tomas	*be careful with the amount of sugar you have*

Learn the vocabulary on these pages.

Write 3 sentences with me gustaría probarlo/a:

_____

_____

_____

Answer: ¿ Como es tu dieta?

_____

_____

_____

¡Los tiempos cambian! (pages 86–87):

¿Cómo eras antes?	*What were you like before?*
Cuando era pequeño/a ...	*When I was little*
Cuando era más joven ...	*When I was younger ...*
Antes / Cuando tenía ... años, ...	*Before / When I was ... years old, ...*
dormía bien/mal	*I slept well/badly*
me levantaba / **me acostaba** ...	*I got up / I went to bed ...*
temprano/pronto / tarde	*early / late*
(no) era muy activo/a.	*I was (not) very active.*
(no) tenía ...	*I had / I didn't have ...*
(mucha) energía	*(lots of) energy*
una vida sana	*a healthy life*
(nunca) iba al **gimnasio**	*I (never) went to the gym*
¿Qué te gustaba comer y beber?	*What did you like to eat and drink?*
Solía comer / beber ...	*I usually ate / drank ...*
(No) Comía ...	*I ate / I didn't eat ...*
Bebía demasiado café.	*I drank too much coffee.*
Me encantaban los postres.	*I loved desserts.*
Me gustaba comer *dulces.	*I liked eating sweets.*
¿Qué hacías en tu tiempo libre cuando eras pequeño/a?	*What did you do in your free time when you were little?*
(No) Hacía (mucho/suficiente) ejercicio/deporte.	*I did / didn't do (lots of/enough) exercise/sports.*
(No) Iba a la piscina (tres veces a la semana).	*I went / didn't go to the pool (three times a week).*
(No) Montaba en *bici (cada día).	*I rode / didn't ride my bike (every day).*
(No) Jugaba ...	*I played / didn't play ...*
(Siempre) Estaba cansado/a y enfermo/a.	*I was (always) tired and sick.*
¿Cómo es tu *rutina ahora?	What is your routine like now?
Cuido más mi dieta.	*I look after my diet more.*
¿Cómo eres ahora?	*What are you like now?*
Me siento mucho mejor.	*I feel a lot better.*
Soy bastante activo/a.	*I am quite active.*
No / **Ya no** ...	*I don't / no longer ...*
hago (mucho) ejercicio/ deporte	*do (lots of) exercise/sports*
hago nada para **mantenerme** en forma	*do anything to stay in shape*
me levanto temprano como antes	*get up early like before*
¿Qué te gusta comer y beber?	*What do you like to eat and drink?*
(No) Como comida rápida/ malsana.	*I (don't) eat fast/unhealthy food.*
(**Ya no**) Bebo/Como ...	*I (no longer) eat/drink ...*
Prefiero las bebidas con azúcar.	*I prefer sugary drinks.*
Me gusta comer comida sana.	*I like to eat healthy food.*
¿Qué haces en tu tiempo libre?	*What do you do in your free time?*
(No) Hago ejercicio/deporte.	*I (don't) do exercise/sports.*
(No) **Voy** al **gimnasio**/cine.	*I (don't) go to the gym/cinema.*
(No) Juego a *los videojuegos.	*I (don't) play videogames.*

Learn the vocabulary on these pages.

Write 3 sentences using Imperfect tense: Cuando era Pequeño/a...

_____

_____

_____

¡Qué mal estoy! (pages 88–89):

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

la pierna/**piel**	*leg/skin*
¿Desde cuándo estás así?	*Since when have you been like this?*
desde (ayer)	*since (yesterday)*
desde hace una hora / más de (dos días)	*for an hour / more than (two days)*
Debes / Necesitas ...	*You must / You need to ...*
Tienes que ...	*You have to ...*
quedarte en la cama / en casa	*stay in bed / at home*
descansar/dormir	*rest/sleep*
comprar medicinas (en la farmacia)	*buy medicine (at the chemist's)*
evitar el sol	*avoid the sun*
recuperarte/relajarte	*recover/relax*
ir al **médico**/hospital	*go to the doctor's/hospital*
Voy a pedir cita con el **médico**.	*I am going to ask for a doctor's appointment.*

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

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

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

Learn the vocabulary on these pages.

Write 3 sentences using Imperfect tense: me siento mal/bien porque...

_____

_____

_____

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	

18. Aims and Objectives in Business

Businesses have both financial and non-financial aims

Type of Objectives	Explanation
Financial Objectives	
Non-Financial Objectives	

19. Business Revenue, Costs & Profits

Term	Definition
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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- **Careful allowance for in flows and outflows of cash**

Key Term	Definition
Opening Balance	

26. Long Term Sources of FInance

Term	Definition
Crowdfunding	
Share Capital	
Venture Capital	
Retained Profit	

Year 10 PRODUCT DESIGN Term 3

A. Physical & Working Properties

Physical properties are the traits a material has before it is used.

Absorbency	Ability to soak up moisture, light or heat
Density	How solid a material is
Fusibility	Ability of a material to be heated and joined to another material when cooled
Electrical Conductivity	Ability to conduct electricity
Thermal Conductivity	Ability to conduct heat

Working properties are how a material behaves when it is manipulated.

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

What we are learning this term:

A. Physical & Working Properties B. Forces & Stressors C. Types of Motion
D. Paper & Card/Boards E. 6 R's F. Natural & Manufactured Timbers

B. Forces and Stressors

Forces apply stress to objects, causing them to break or change shape.

Different materials can withstand different forces.

Tension	Is a stretching or pulling force. E.g. the ropes of a suspension bridge
Compression	Is a pushing or squashing force, e.g. the weight of a building on its foundation
Bending	Is a combination of tension and compression. It exerts tension on one side and compression on the other, e.g. bending anything
Shear	Is a cutting force. The opposing forces are not directly opposite each other, e.g. cutting paper with scissors.
Torsion	Is a twisting force that attempts to rotate two ends of a material in opposite directions, e.g. wringing out a wet cloth.

C. Types of Motions

Linear	Moves something in a straight line. E.g. a train moving down a track
Reciprocating	Has a repeated up and down motion or back-and-forth motion. E.g a piston or pump
Rotary	Is where something moves around an axis or pivot point. E.g a wheel
Oscillating	Has a curved backwards and forwards movement that wings on an axis or pivot point. E.g a swing or clock pendulum

D. Paper & Card/Boards

Paper and cards/boards both come from wood pulp.

Paper	Board
Cartridge Paper	Corrugated Card
Grid Paper	Duplex Board
Layout Paper	Foil-Lined Board
Tracing Paper	Foam Core Board
Corrugated Card	Inkjet Card
	Solid White Board

E. 6 R's

You can use the 6R's when designing to help reduce the impact that new products have on the environment.

Repair	It's better to fix things instead of throwing them away.
Reuse	You can extend a products life by passing it on or using it again.
Recycle	The uses less energy than obtaining new materials.
Rethink	You should think about your design carefully. Is it needed?
Reduce	Making long-lasting durable products. Think rechargeable!
Refuse	You can refuse to buy a product if you think it is wasteful. Such as plastic bags.

F. Natural & Manufactured Timbers

Natural timber comes from trees.

Hardwood	Softwood
Ash	Larch
Beech	Pine
Mahogany	Spruce
Oak	Softwoods are faster growing and cheaper to buy.
Balsa	

Manufactured Boards

Manufactured boards are usually made from natural timber waste and adhesive.

- Medium-density fibreboard (MDF)
- Plywood
- Chipboard

Year 10 PRODUCT DESIGN Term 3

A. Physical & Working Properties

Physical properties are _____ _____.

Absorbency	
	How solid a material is
Fusibility	
	Ability to conduct electricity
Thermal Conductivity	Ability to conduct heat

Working properties are _____ _____.

Strength	
	The ability to withstand impact with damage
Toughness	
	Being able to bend or shape easily would make a material easily malleable
Ductility	
Elasticity	Ability to be stretched and then return to its original shape

What we are learning this term:

A. Physical & Working Properties B. Forces & Stressors C. Types of Motion
D. Paper & Card/Boards E. 6 R's F. Natural & Manufactured Timbers

B. Forces and Stressors

Forces apply _____ to objects, causing them to _____ or _____.

Different materials can withstand different forces.

Tension	
	Is a pushing or squashing force, e.g. _____ _____ _____
Bending	
	Is a cutting force. The opposing forces are not directly opposite each other, e.g. _____ _____
Torsion	

C. Types of Motions

Linear	
	Has a repeated up and down motion or back-and-forth motion. E.g _____ _____
Rotary	
	Has a curved backwards and forwards movement that wings on an axis or pivot point. E.g __ _____ _____

D. Paper & Card/Boards

Paper and cards/boards both come from _____.

Paper	Board
Cartridge Paper	
	Duplex Board
Layout Paper	
	Foam Core Board
Corrugated Card	
	Solid White Board

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You can use the 6R's when designing to help reduce the impact that new products have on the environment.

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	You can extend a products life by passing it on or using it again.
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Reduce	
	You can refuse to buy a product if you think it is wasteful. Such as plastic bags.

F. Natural & Manufactured Timbers

Natural timber comes from _____.

Hardwood	Softwood
Ash	
	Pine
Mahogany	
	Softwoods are _____ _____ _____
Balsa	

Manufactured Boards

Manufactured boards are usually made from _____.

Plywood

Year 10 Engineering Term 3 (Unit 1)

What we are learning this term:

A. Health & Safety | B. Manufacturing processes | C. reading technical drawings | D. Tools & Equipment

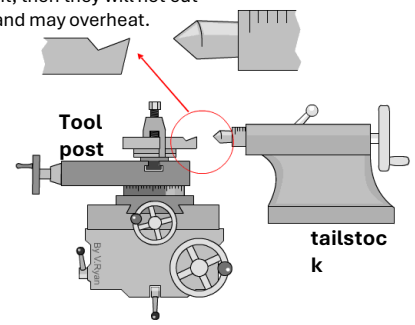
A. Health & Safety

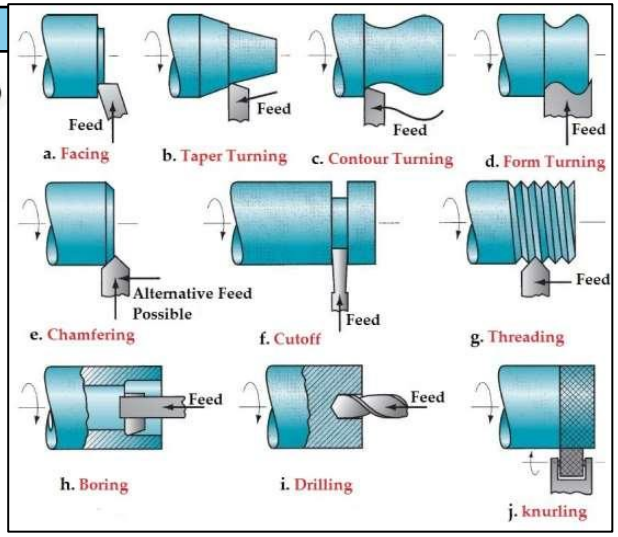
Risk Assessment	A risk assessment is the analysis of the risks involved when using equipment or performing a process.
Hazard – something that may harm someone. **Risk –** how likely a hazard is to happen. **Control measure –** actions taken to reduce the risk of harm	
Ejection hazard – material being thrown out of the machine toward the user	**Entrapment hazard –** the user being caught and pulled into the moving parts of the machine
Inhalation hazard – people in the vicinity of the hazard breathe in harmful dust or chemicals	**Sharp force hazard –** the user is cut, stabbed or scraped by the sharp material.
Slip, trip and fall hazards – common hazards caused by unclean or cluttered workspaces.	**Blunt force hazard –** a victim is crushed, hit or bruised by the blunt object. Major blunt trauma can cause fractures or internal bleeding.

B. Manufacturing processes

The **dead center tool** is used to align the tools in the **tool post**.

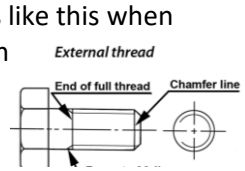
The dead center is placed in the **tailstock**. If the cutting tools are not in line with it, then they will not cut efficiently and may overheat.





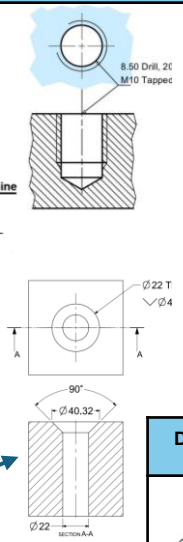
C. Reading technical drawings

M – the diameter of a threaded component. Looks like this when drawn



Ø – diameter

CSINK – counter sunk holes, look like this when drawn



D. Tools & Equipment

External calliper – used for measuring the external dimensions of a workpiece

Lathe tools – cutting tools for a range of functions.
From left to right; Parting tool, right-hand cutting tool, threading tool, left-hand cutting tool

Knurling tool - an attachment for the lathe that allows you to impress a diamond pattern into the material. Example shown here.

Tap and die set – these tools are attached to wrenches and allow you to cut an internal or external thread (spiral) in a hole. The hole must be pre-drilled 0.5mm smaller than the intended size of the final hole.

Year 10 Engineering Term 3 (Unit 1)

What we are learning this term:

A. Health & Safety | B. Manufacturing processes | C. reading technical drawings | D. Tools & Equipment

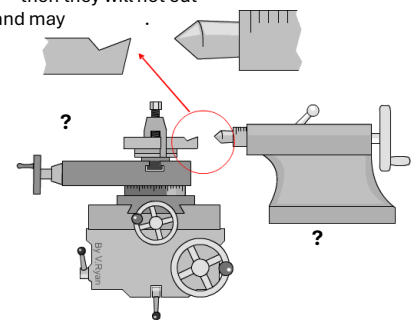
A. Health & Safety

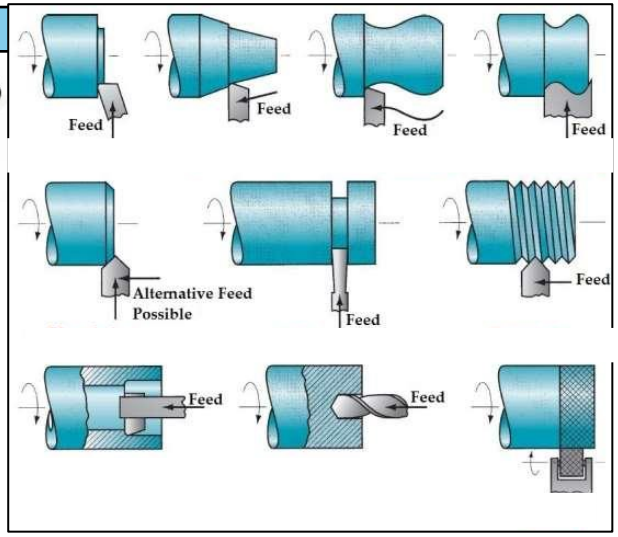
Risk Assessment	A risk assessment is the analysis of the risks involved when?
Hazard –. **Risk –** **Control measure –**	
Give an example of an Ejection hazard –	**Give an example of an Entrapment hazard –**
Give an example of an Inhalation hazard –	**Give an example of a Sharp force hazard –**
Give an example of Slip, trip and fall hazards –	**Give an example of a Blunt force hazard –**

B. Manufacturing processes

The ? is used to the tools in the .

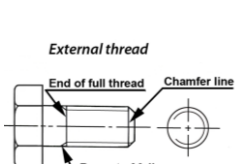
The dead center is placed in the . If the cutting tools are not then they will not cut efficiently and may .

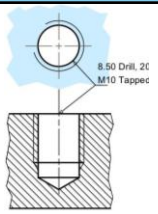


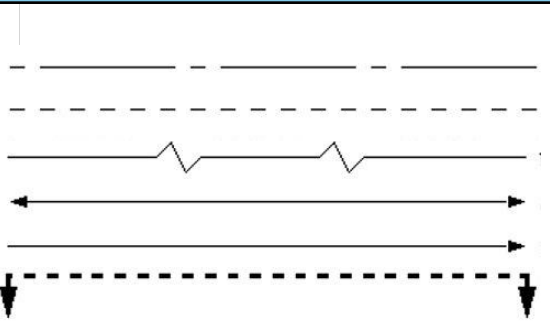


C. Reading technical drawings

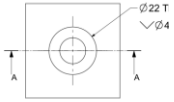
M – the diameter of a _____.



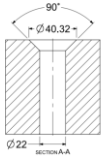




Ø – _____



CSINK – c_____ holes, look like this when drawn



D. Tools & Equipment

– used for measuring the external dimensions of a workpiece

– cutting tools for a range of functions.
From left to right; tool, cutting tool, tool, cutting tool

- an attachment for the lathe that allows you to impress a pattern into the material. Example shown here.

– these tools are attached to wrenches and allow you to cut an internal or external (spiral) in a hole. The hole must be pre-drilled smaller than the intended size of the final hole.

Year 10 Food & Nutrition Term 3

What we are learning this term:

A. Food Spoilage B. Enzymes C. Critical Temperatures D. Preparing Food Safely E. Date Marks F. Food Poisoning G. Ambient Foods

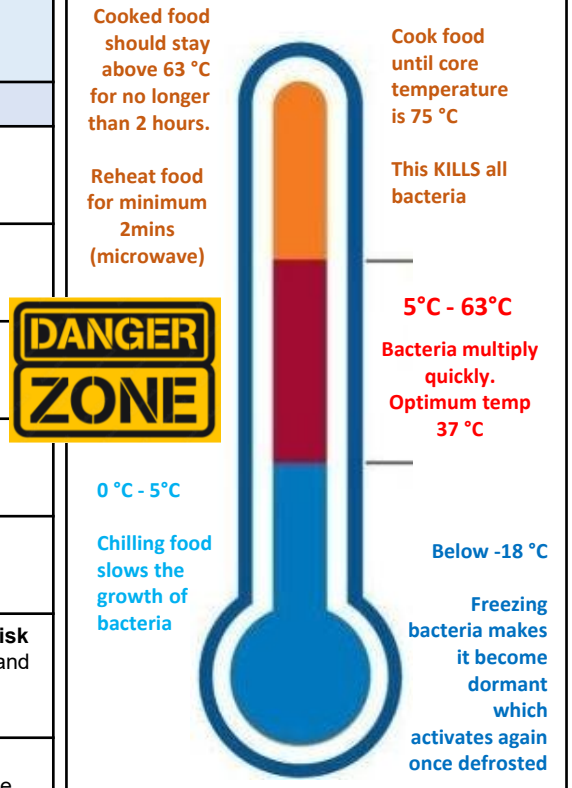
A. Food Spoilage

Most microorganisms are harmless, but **pathogenic** microorganisms **spoil** food and cause **food poisoning**

Microorganisms need <u>five</u> things to grow:

	**Warm** temperature
	Lots of **moisture**
	Lots of **food**
	Right **pH**
	Plenty of **time**
Bacteria:	**Ready-to-eat foods are at high risk** of bacteria (moist, high in protein and short shelf life) e.g. cooked foods, dairy products…
Moulds:	Can **spoil bread, cheese & fruit**. Make food look **'fuzzy'** and change the smell and taste.
Yeasts:	Can **spoil fruit by fermenting sugars** into alcohol & CO2

C. Critical Temperatures



Defrost meat completely in the fridge 24hours

Keep leftovers covered and tinned foods transferred to separate container.

D. Preparing Food Safely

Avoid **cross-contamination** by following **safety & hygiene procedures**:

Preparing	Have good personal hygiene, separate raw & cooked foods, wash veg, clean equipment, santise work surfaces, defrost food fully
Cooking	Cook at right temperatures for right amount of time, cook all the way through, use a temperature probes - 75°C
Serving	Serve hot food straight away or keep it above 63°C for up to 2 hours, cool food down within 90mins, keep food covered & dated

E. Date Marks – printed on food packaging

Use By	**Best Before**
- Short shelf life - Food may not be safe to eat after this date has past	- Longer shelf life - Food may not taste as nice after this date has past

Eggs has a best before date BUT should be treated like a use by date

F. Food Poisoning – from eating contaminated food

Symptoms include: sickness, diarrhoea, stomach cramps, fever *(even death)*

Campylobacter	2-5 days	Raw or undercooked poultry
E. Coli 0157	1-3 days	Raw beef, unwashed veg
Staphylococcus aureus	1-6 hours	Animals / people e.g. skin, hair
Salmonella	6-72 hours	Raw poultry, eggs
Listeria	Up to 70 days	Soft cheese, pate, shellfish

- Milk is **pasteurized** (heat treated to 72°C) to kill bacteria
- Chickens are **vaccinated** against salmonella to avoid contaminating eggs

B. Enzymes – proteins that act as a biological catalysts (which speed up chemical reactions)

- Make fruit ripen e.g. bananas become soft and sweet

- Cause food to turn brown e.g. sliced apples or potatoes

Slow enzymes by **adding an acid** (to stop browning) or destroy them by **blanching** (before freezing)

E. Ambient Foods – safely stored at room temperature

Should be stored in a sealed container in a cool, dry place. Preservation =

Freeze-drying	Vacuum Packing
Canning	Using Chemicals

Year 10 Food & Nutrition Term 3

What we are learning this term:

A. Food Spoilage B. Enzymes C. Critical Temperatures D. Preparing Food Safely E. Date Marks F. Food Poisoning G. Ambient Foods

A. Food Spoilage

Most microorganisms are harmless, but **pathogenic** microorganisms **spoil** food and cause **food poisoning**

Microorganisms need <u>five</u> things to grow:

	
	
	
	
	
Bacteria:	
Moulds:	
Yeasts:	

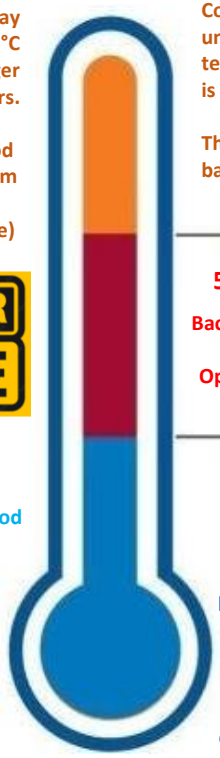
C. Critical Temperatures

Cooked food should stay above 63 °C for no longer than 2 hours.

Reheat food for minimum 2mins (microwave)

Cook food until core temperature is 75 °C

This KILLS all bacteria



5°C - 63°C

Bacteria multiply quickly. Optimum temp 37 °C

0 °C - 5°C

Chilling food slows the growth of bacteria

Below -18 °C

Freezing bacteria makes it become dormant which activates again once defrosted

Defrost meat completely in the fridge 24hours

Keep leftovers covered and tinned foods transferred to separate container.

D. Preparing Food Safely

Avoid **cross-contamination** by following **safety & hygiene procedures**:

Preparing	
Cooking	
Serving	

E. Date Marks – printed on food packaging

Use By	Best Before

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Staphylococcus aureus		
Salmonella		
Listeria		

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E. Ambient Foods – safely stored at room temperature

Should be stored in a sealed container in a cool, dry place. Preservation =

Freeze-drying	Vacuum Packing
Canning	Using Chemicals

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

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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

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.

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?

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:
• • • • •	• • • • • •

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

L How do relationships and isolation affect development?

1	
2	
3	
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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	

Film Music

Area of study 3 - Eduqas GCSE Music

Some film **SOUNDTRACKS** include specially composed **SCORES**, either for orchestra (e.g. composers like John Williams, Ennio Morricone) or songs written especially for the film (e.g. Disney films). Other films use pre-existing music e.g. popular songs from the era/place in which the film is set.

STRINGS
- Violin
- Cello
- Viola
- Double bass
- Harp

BRASS
- Trumpet
- Trombone
- French horn
- Tuba

PERCUSSION
- Bass drum
- Snare drum
- Triangle
- Cymbal
- Drum kit (untuned)
- Timpani
- Glockenspiel
- Xylophone (tuned)

WOODWIND
- Flute
- Clarinet
- Oboe
- Bassoon
- Saxophone

KEYBOARDS
- Piano
- Electronic keyboard
- Harpsichord
- Organ
- Synthesizer

OTHER
- Electric guitar
- Bass guitar
- Spanish/ classical guitar
- Traditional world instruments

Musical elements

Film composers use the **MUSICAL ELEMENTS** (tempo, texture, dynamics, timbre, tonality, rhythm, melody, harmony) to create mood and atmosphere to help to tell the story and enhance the action.

For example:

In a **sad, reflective scene**, a composer might use slow tempo, minor tonality, soft dynamics, legato, homophonic texture, long sustained notes, and a conjunct melody.

An **exciting car chase scene** in a thriller might have a fast tempo, busy, polyphonic texture, dissonant chords, loud dynamics, syncopated rhythms, a disjunct melody and short riffs.

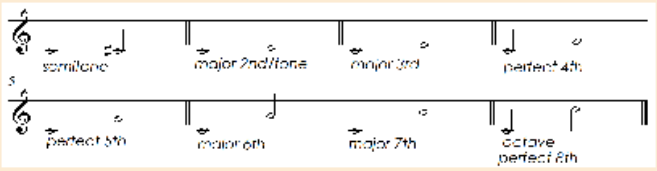
A scene where the **superhero 'saves the day'** might use a major tonality, brass fanfares, loud dynamics, accents, 4ths and 5ths (intervals).

Composers will often use **CONTRASTS** to create effect (e.g. using a wide range of pitch from very high to very low).

Intervals

Film composers often use intervals to create a particular effect (e.g. a rising perfect 4th sounds 'heroic', and a semitone can sound 'menacing').

An **interval** is the distance between two notes.



Rising interval: moving upwards (ascending)
Falling interval: moving downwards (descending)

Specific instrumental terms

Pizzicato	Plucking the strings.
Divisi	Two parts sharing the same musical line.
Double stopping	Playing two strings at the same time.
Arco	Using a bow to play a stringed instrument.
Tremolo	A 'trembling' effect, moving rapidly on the same note or between two chords (e.g. using the bow rapidly back and forth).
Tongued	A technique to make the notes sound separated (woodwind/brass).
Slurred	Notes are played smoothly.
Muted	Using a mute to change/dampen the sound (brass/strings).
Drum roll	Notes/beats in rapid succession.
Glissando	A rapid glide over the notes.
Trill	Alternating rapidly between two notes.
Vibrato	Making the notes 'wobble' up and down for expression.

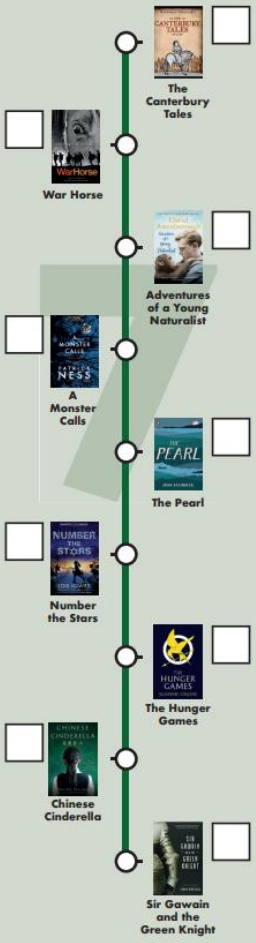
Composers also use:

Theme	The main tune/melody.
Motif	A short musical idea (melodic or rhythmic).
Leitmotif	A recurring musical idea linked to a character/object or place (e.g. Darth Vader's motif in Star Wars).
Underscoring	Music playing underneath the dialogue.
Scalic	Melody follows the notes of a scale.
Triadic	Melody moves around the notes of a triad.
Fanfare	Short tune often played by brass instruments, to announce someone/something important; based on the pitches of a chord.
Pedal note	A long, sustained note, usually in the bass/ lower notes.
Ostinato/riff	A short, repeated pattern.
Conjunct	The melody moves by step.
Disjunct	The melody moves with leaps/intervals.
Consonant harmony	Sounds 'good' together.
Dissonant harmony	Sounds 'clashy'.
Chromatic harmony	Uses lots of semitones/accidentals that's not in the home key.
Minimalism	A style of music using repetition of short phrases which change gradually over time.

Question	Answer	Question	Answer
What is a **Theme** in film music?		What does the word **Interval** mean?	
Define **Pizzicato**		A _____ **Texture** is typically used for a sad scene	**Polyphonic** **Monophonic** **Homophonic**
What is **Minimalism?**		A **Major tonality** is used for what kind of scene?	
How does a **Rising Perfect 4th** sound?		What is a **Trill**?	
Define **Ostinato**		The term for a piece of music written for a film is a…..	**Score** **Soundtrack**
What **Dynamics** could be used in a car chase scene?	***pp*** ***p*** ***f*** ***ff*** ***mp*** ***mf***	What is a **Falling interval**?	
Circle the correct definition for **Conjunct**	1. The melody moves in leaps 2. The melody moves in steps 3. The melody moves in octaves 4. The melody repeats the same 3 notes	List 3 film composers	
What is **Vibrato?**		If notes are **Slurred** they are played?	**Short and snappy** **Smoothly**
What do composers use to create effect? Circle the correct answer	**Contrast** **Brass Fanfares** **Dynamics**	What interval is an **Octave**?	**Perfect 4th** **Major 2nd** **Minor 2nd** **Perfect 8th**
What is the term for a theme that is repeated throughout a film?		What does **Scalic** mean?	

SWINDON ACADEMY READING CANON

Year 7



Year 8

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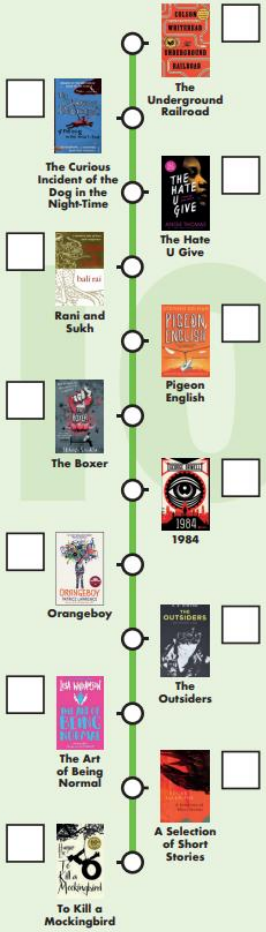
Year 10



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