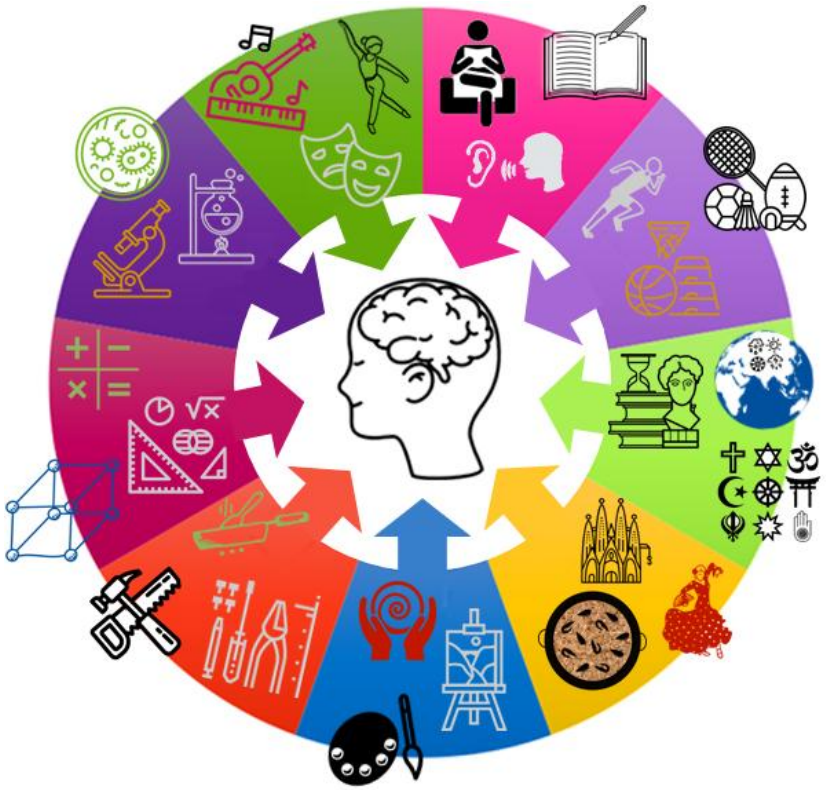
100% book - Year 11 Mainstream

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



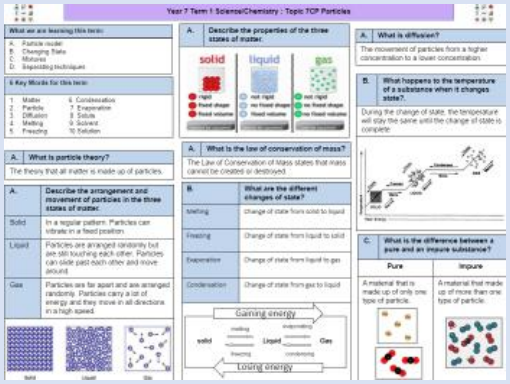
Term 1

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."

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

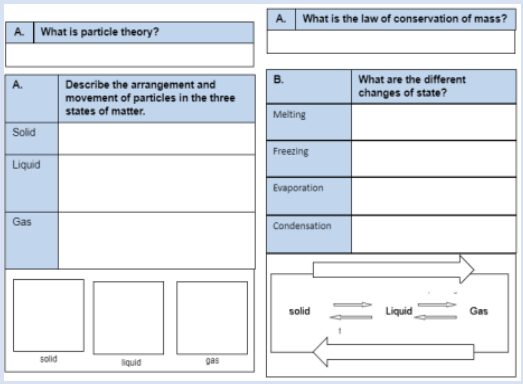
Knowledge Organisers



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!

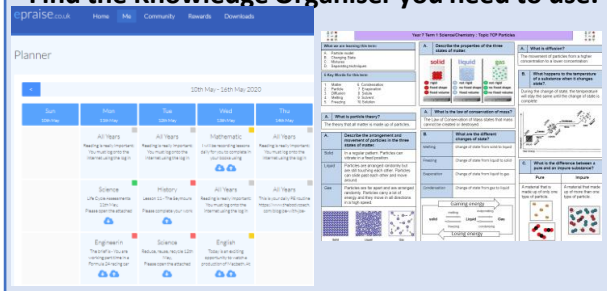
Expectations for Prep and for using your Knowledge Organisers

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?

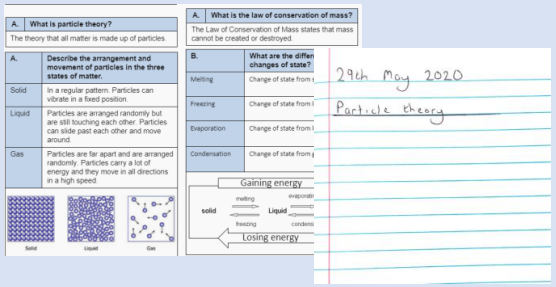
Step 1

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



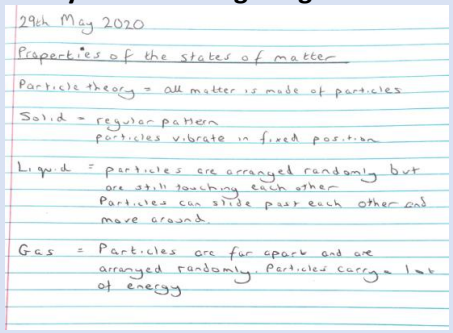
Step 2

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



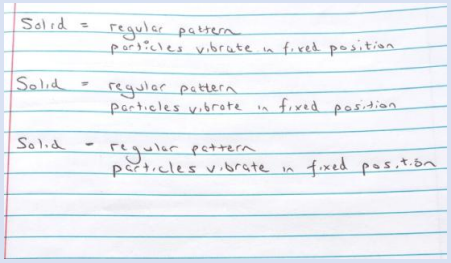
Step 3

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



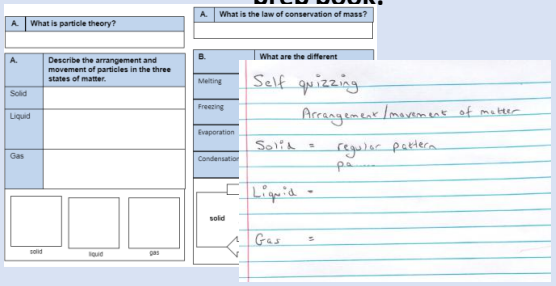
Step 4

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



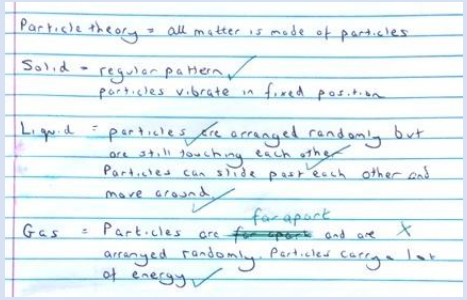
Step 5

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.

AN INSPECTOR CALLS Traditional

1. Context

Playwright: John Boynton Priestley (1894-1984)
Dates: Written in 1945
First performed: In Moscow, Russia, in 1945
Era: Edwardian
Genre: Drama
Set: Fictional town Brumley 'an industrial city in the north Midlands' in 1912
Structure: Three Act Play

Biography of Priestley

- Born in Yorkshire in 1894.
- Fought in the first world war and became politicised by the suffering of it
- Became concerned with the effects of social inequality in Britain in 1930s
- Set up a new political party in 1942, The Commonwealth Party. It merged with the labour Party and was integral in developing the welfare state

Pre and Post War – Before the first world war there was deemed to be a general air of complacency regarding the prospect of any war taking pace. There were strong distinctions between upper and lower classes, society was deeply patriarchal. After the second word war ended in 1945, class distinctions had been greatly reduced by the two wars and women had earned a more valued place in society After 1945 there was a desire for more sweeping social change.

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

Social and Moral Responsibility – Attitudes towards social and moral responsibility changed rapidly in the tine between when the play was set (1912) and the time the play was written (1945). In 1912 the general attitude of those with social status and wealth was towards looking after one's own. By the mid-1940s however, the Labour party under Attlee won a landslide election reflecting a wave of enthusiasm towards communal responsibility for everyone in society.

The Titanic – RMS Titanic was a British passenger liner that sank in the North Atlantic ocean in the morning hours of 15th April 1912, killing around 1500. The Titanic was designed to be the pinnacle of both safety and comfort, and due to its enormous size and quality was frequently labeled 'unsinkable'. In *An Inspector Calls* Birling claims this, thus immediately losing the respect of the audience. It can serve as a symbol of the hubris and arrogance of man.

FORM – The play fits into three possible forms:

Well-Made Play

- A popular type of drama from the 19th century
- The events build to a climax
- Primarily concerned with events that happened before the play
- Plot is intricate and complex

Morality Play

- Most popular during 15th and 16th centuries
- They taught the audience lessons that focused on the seven deadly sins
- Characters who committed those sins were punished

Crime Thriller

- Involves a gripping tale based around a crime
- The audience receives clues and must guess what has happened before the end
- All is revealed by the climax

2. Key Characters

Inspector Goole: An enigmatic (mysterious) figure who serves as Priestley's mouthpiece and advocates social justice. He serves as the Birling's conscience and exposes their sins.

Mr Arthur Birling: A capitalist and business owner who opposes social change and greater equality. He is a self-made man and lacks the refined manners of the upper classes. Made a fool by Priestley to highlight the arrogance and absurdity of his views.

Mrs Sybil Birling: Her husband's social superior, Mrs Birling is involved in charity work but contradictorily believes in personal responsibility and looking after one's-self. Fails to understand her own children.

Shelia Birling: Young and initially enthusiastic, Sheila grows and changes throughout the play, embracing the views of the Inspector and challenging the social indifference of her parents. She becomes wiser and more cautious in her relationship with Gerald.

Eric Birling: In his early twenties, he drinks too much and forces himself upon Eva Smith. Whilst she is pregnant with his child, he steals from his father to attempt to support her. Grows and changes, realises his own wrongs along with everyone else's. Critical of parents.

Gerald Croft: A businessman engaged to Sheila, Gerald a relationship with Daisy Renton (Eva Smith). Even though he sits between he two generations he is politically closest to Birling and fails to embrace the Inspector's message, instead seeking to prove he wasn't real.

Eva Smith: Doesn't appear in the play, but her suffering and abuse represents that of all the working classes. She also calls herself both Daisy Renton and Mrs Birling. The older characters begin to question whether she really is one person.

3. Central Themes

Social Responsibility	Priestley advocates a socialist message of collective responsibility for one another. The Inspector serves as his voice in conveying this ideology, but the younger generation also come to embrace it. The suffering of Eva Smith highlights the powerlessness of the working classes and the need for a society that protects is most vulnerable.
Age and the Generational Divide	Priestley presents a view that there is hope for change and that it lies with the younger generation. Both Sheila and Eric change for the better, maturing and becoming more empathetic as they come to embrace the Inspector's message. They also become vocal critics of their parents' indifference to Eva's suffering.
Class and Power	Priestley highlights the immense power that business owners wielded over their workers and presents them as arrogant and lacking in empathy. He demonstrates Edwardian society's preoccupation with wealth and status at the cost of the individual as a way of promoting change in post-WW2 Britain.
Gender	At the time the play was first performed, women had just played a pivotal role in World War 2 and were empowered by the freedom work provided them. In the 1912 setting, we see Sheila's growing independence vs her mother. However, the play still highlights the awful vulnerability of women and the outdated stereotyping of them.

4. Key Vocabulary

Capitalist	Believing in private wealth and business aimed at making profit for business owners. Independent and self-reliant.
Socialist	Believing in shared ownership, collective responsibility for one another and social equality for all.
Ideology	A political viewpoint or set of beliefs, for example socialism.
Responsibility	Being accountable or to blame for something, or having a duty to deal with something.
Hierarchy	A ranking of status or power e.g. the strict class hierarchy of Edwardian England.
Patriarchy	A society in which power lies with men.
Prejudice	An opposition to or opinion about something/someone based upon what they are e.g. working class, female etc.
Morality	The belief that some behaviour is right and some is wrong.
Proletariat	The working class.
Bourgeoisie	The capitalist class in possession of the means of acquiring wealth.
Aristocracy	The highest class in society and often holding titles passed from father to son, for example Lord and Lady Croft.
Façade	A false front or surface-level illusion, for example the façade of family happiness in the opening scene of the play.
Catalyst	Someone or something that speeds up or triggers an event.
Antithesis	When something is the opposite of something else.

5. Key Terminology, Symbols and Devices

Dramatic Irony	When the audience is aware of something that a character is not aware of, for example Birling believing war won't happen.
Plot Twist	When a story suddenly departs from its expected path and something very unexpected happens. The final phone call.
Cliffhanger	Each act ends on a particularly dramatic, revealing moment that creates a sense of tension and anticipation.
Stage Directions	When the playwright instructs actors/director to perform in a particular way. Priestley's are unusually detailed.
Entrances/Exits	Characters frequently leave or enter the stage at dramatic moments. Some characters miss important events.
Lighting	Priestley uses stage directions to indicate how the stage should be lit. Changes to 'brighter and harder' for Inspector.
Props	Physical objects used in the play. The photograph plays a key role in identifying Eva. The doorbell interrupts Birling.
Contrast and Juxtaposition	Deliberately placing two very different things along side one another to draw comparisons e.g. Birling and the Inspector.

AN INSPECTOR CALLS Traditional

1. Context

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First performed:

Era:
Genre:
Set:

Structure:

Biography of Priestley
-
-
-
-

Pre and Post War –

Socialism –

Social and Moral Responsibility –

The Titanic –

FORM – The play fits into three possible forms:

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2. Key Characters

Inspector Goole:

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Mrs Sybil Birling:

Shelia Birling:

Eric Birling:

Gerald Croft:

Eva Smith:

3. Central Themes

Social Responsibility	
Age and the Generational Divide	
Class and Power	
Gender	.

4. Key Vocabulary

Capitalist	
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Bourgeoisie	.
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5. Key Terminology, Symbols and Devices

Dramatic Irony	
Plot Twist	
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Stage Directions	
Entrances/Exits	
Lighting	
Props	
Contrast and Juxtaposition	

T1 Y11 a2 and a3 Science/BiologyB5 – Homeostasis and Response

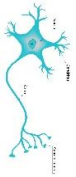
The nervous system

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

Receptors

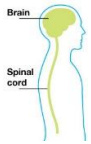
Specialised cells that detect stimuli, found in sense organs and internally

Neurones



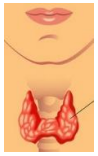
3 types – sensory, relay and motor
Carry **impulses** joining all parts of the nervous system

Co-ordination Centres



Brain, spinal cord, pancreas.
Coordinates the response

Effectors



Organs that bring about a response

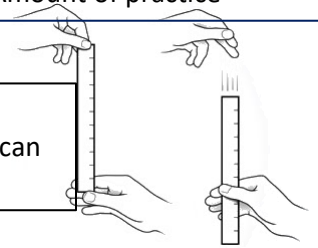
muscle or gland

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

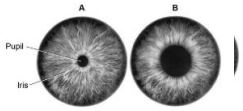
A computer reaction test can also be used.

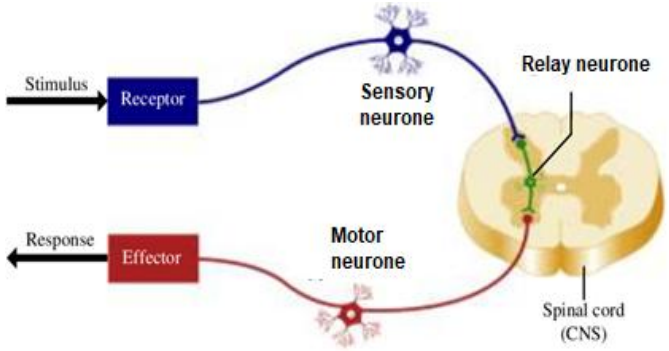


Control variables : distance above the hand, distance between finger and thumb, hand used (dominant or non-dominant, all other factors listed in the box above except the one being changed.

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

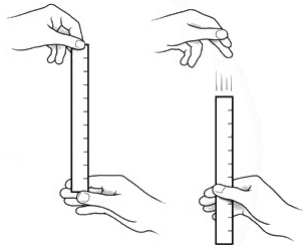
Example

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

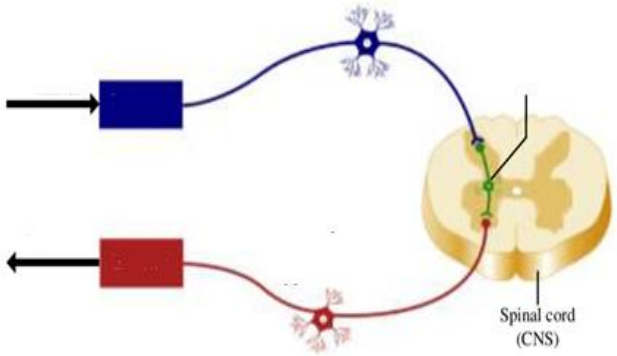
T1 Y11 a2 and a3 Science/BiologyB5 – Homeostasis and Response

1. What are the two main jobs of the nervous system?
2. What are receptors?
3. What are stimuli?
4. Name the 3 types of neurone?
5. What are the 3 coordination centres?
6. What is an effector?
7. What are the 2 types of effector?

1. Where should the ruler be held at the start of the investigation?
2. What could be used instead of a ruler drop test?
3. If you are testing the hypothesis 'The amount of sleep a person has affects their reaction time' what would be the:
   - independent variable
   - Dependent variable
   - 2 control variables
4. How is the distance the ruler travels converted into a reaction time?



1. What is a reflex?
2. Which part of the nervous system is NOT involved in a reflex?
3. Give an example of a reflex reaction
4. Label the diagram using the labels below:
   relay neurone sensory neurone
   motor neurone effector
   receptor stimuli



Reflex Arc

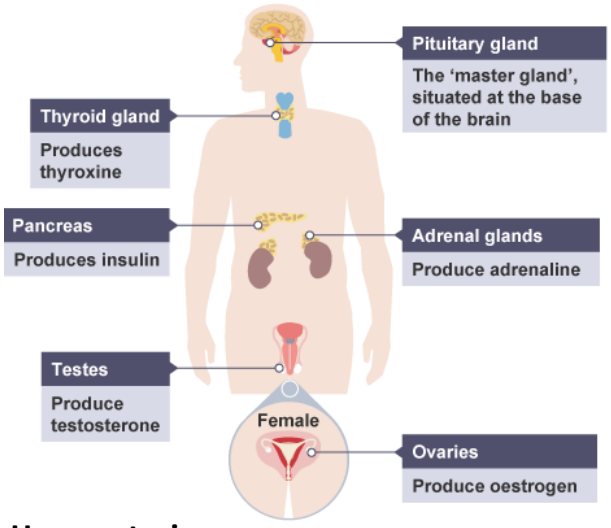
Complete the gaps to show the order of a reflex reaction:

stimulus → → **sensory neurone** → → **motor neurone** → → response

T1 Y11 a2 and a3 Science/BiologyB5 – 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

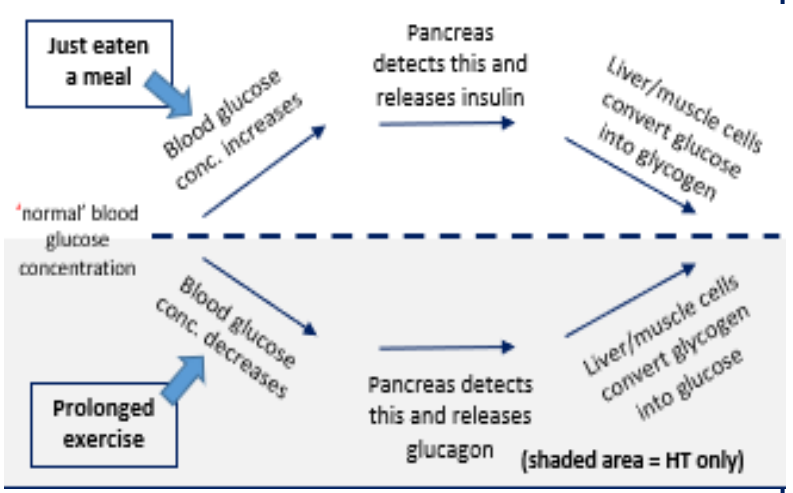
Blood glucose is monitored by the **pancreas.**

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.

T1 Y11 a2 and a3 Science/BiologyB5 – Homeostasis and Response

1. What is a hormone?
2. Where are hormones released from?
3. Which gland is known as the 'master gland'?
4. How do hormones travel?
5. How does the speed and duration of a hormonal response compare to a nervous response?
6. Which hormone is made by the thyroid gland?
7. What is homeostasis?
8. Give two examples of conditions that are controlled within the human body

Blood glucose concentration

1. Which organ monitors blood glucose?
2. Which hormone is released when blood glucose increases?
3. What causes blood glucose to increase?
4. Which hormone is released when blood glucose falls?
5. Which organ releases the hormones involved in blood glucose control?

1. What are the two types of diabetes?
2. Why are type 1 diabetics unable to control their blood glucose?
3. What is the treatment for type 1 diabetes?
4. What is the problem in type 2 diabetes?
5. What is the treatment for type 2 diabetes?

T1 Y11 a2 and a3 Science/BiologyB5 – 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

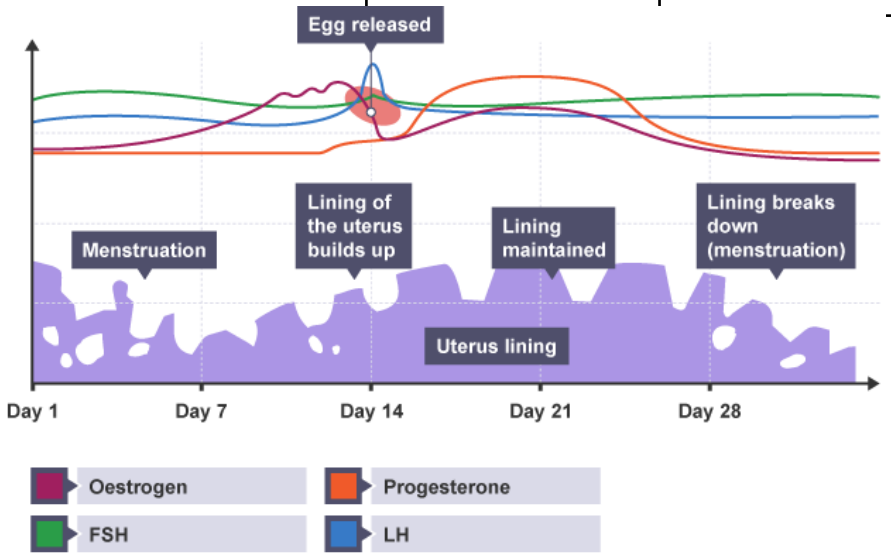
The menstrual cycle is controlled by several hormones:

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

T1 Y11 a2 and a3 Science/BiologyB5 – Homeostasis and Response

Adrenaline and thyroxine (HT only)

1. Where is adrenaline released from?
2. What effects does adrenaline have?
3. What does thyroxine do?

1. What is the male hormone?
2. What is ovulation?
3. Which organ produces oestrogen?

1. Which hormones are contained in the contraceptive pill?
2. Name a 'barrier' method of contraception
3. How does the contraceptive pill prevent pregnancy?
4. Give one advantage and one disadvantage of taking the contraceptive pill.
5. Give one disadvantage of surgical sterilisation

Menstrual Cycle

1. Which organ releases FSH and LH?
2. What are the two other menstrual cycle hormones?
3. Approximately how long is one cycle?
4. Around which day of the cycle does ovulation occur?
5. What is the role of oestrogen and progesterone?

1. Which drugs are given as fertility drugs?
2. How do they increase the chances of getting pregnant?
3. How many embryos are transferred to the womb in IVF?
4. Give two negatives of IVF treatment

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

Rate of reaction.

Measuring the rate of anything always involves a **measurement of time**

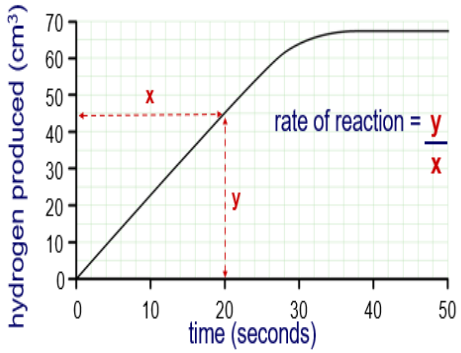
The rate of a chemical reaction can be found using:

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

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

Quantities for reactants or products are measured in **mass in g** or by **volume in cm³**

Rate calculations can be done from tables of data or graphs:



Volume of hydrogen produced = 45cm
Time taken = 20 seconds
Rate = $\frac{45}{20}$ cm³
rate = 2.25 cm³/s

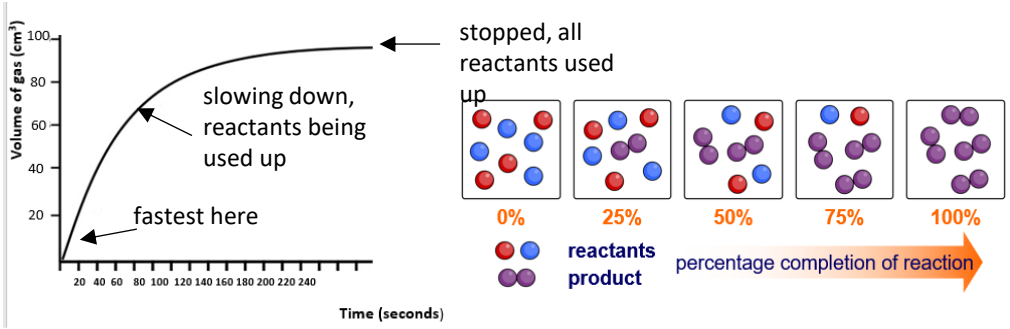
The progression of a chemical reaction

For a reaction to take place, reactant particles have to collide.

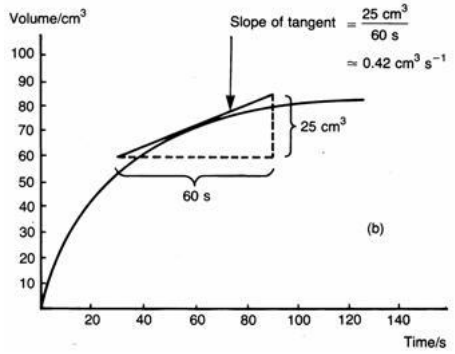
The rate of a reaction depends on the **frequency of collisions** and **the energy with which the particles collide.**

The minimum amount of energy needed to start a reaction is called the **activation energy**.

A reaction is always **fastest at the beginning** and slows down over time as the reactants get used up and the frequency of collisions decreases.



Using a tangent to calculate rate (HT)

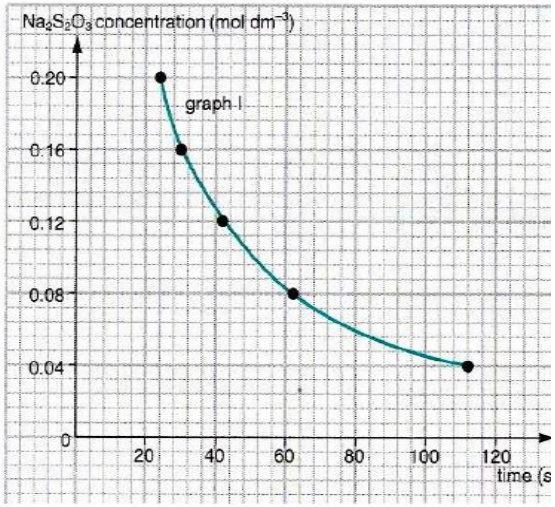


- Draw a line along the point you're interested in. The line should touch the curve at the point given.
- Make a triangle. Try to make the angles either side of the line equal.
- Measure the change in volume and change in time
- Calculate the gradient
- Use units from the axes to determine the units for rate

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

1. Give two ways of calculating the rate of a reaction
2. What does a rate calculation always have to include?
3. What are solid reactants or products measured in?
4. What are liquid or gaseous products measured in?
5. How is the rate calculated from a graph?

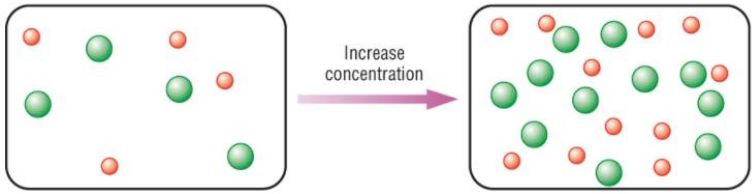
1. What point in a reaction is the fastest?
2. Why does a reaction slow down as it progresses?
3. Why do reactions stop?
4. What two factors affect the rate of a reaction?



1. Describe how to draw a tangent at 50s.
2. Draw the tangent at 50s
3. What will the units for the rate of this reaction be?

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

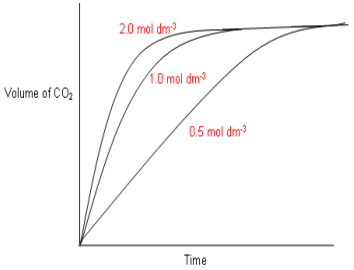
The effect of concentration



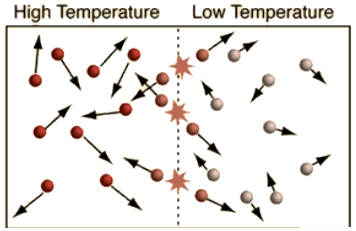
Concentration means number of particles per cm^3

Increasing the concentration of any of the reactants increases the rate of the reaction

This is because there are more particles per cm^3 so there are **more frequent collisions**, increasing the rate.



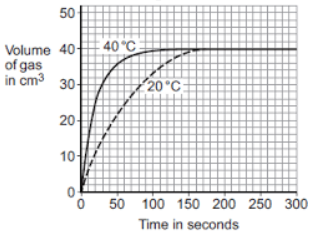
The effect of temperature



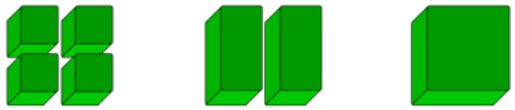
Increasing the temperature of the reactants increases the rate of the reaction.

This is because the particle have more kinetic energy and therefore move faster, so there are **more frequent collisions**, increasing the rate.

Figure 2



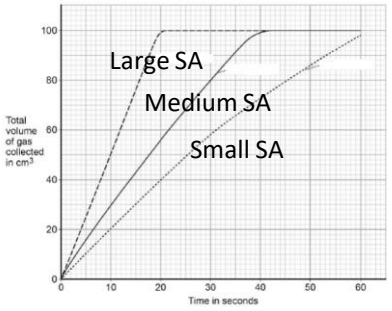
The effect of surface area



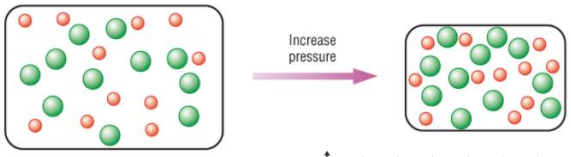
The smaller the pieces of a solid, the higher the surface area

Increasing the surface area of solid reactants increases the rate of reaction.

This is because there is a greater area available for collisions to occur so there are **more frequent collisions**, increasing the rate.

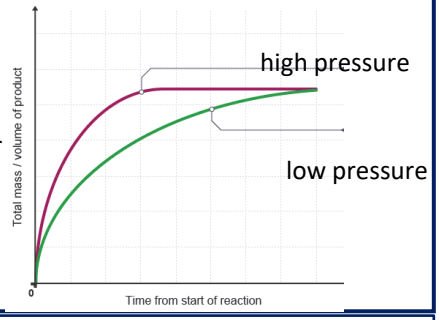


The effect of pressure



Increasing the pressure of gaseous reactions increases the rate of the reaction.

This is because the same number of particles are now in a smaller volume, so there are **more frequent collisions**, increasing the rate.

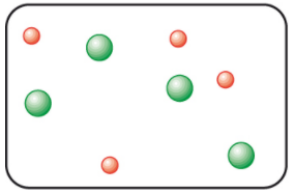


In all cases, the overall amount of product is the SAME, the end point of the reaction is just reached faster

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

The effect of concentration

1. In the box below, draw a reaction involving a higher concentration of the green reactant molecules.



2. What happens to the rate of a reaction if you increase the concentration?

The effect of temperature

1. Describe how increasing the temperature affects the rate of a reaction.

2. Explain why this happens in terms of particles.

The effect of surface area

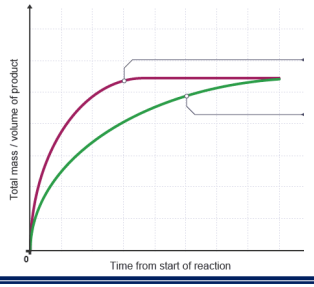
1. Reactions involving what sort of reactant are affected by surface area?

2. What type of piece has a large surface area?

The effect of pressure

1. Reactions involving what type of reactants are affected by pressure?

2. Label the diagram with 'low pressure' and 'high pressure'



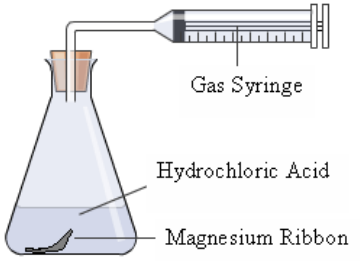
What happens to the overall amount of product if you change the rate of a reaction?

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

Experiment 1

Using volume of gas collected over time as a measure of the rate

$$Mg + 2HCl \rightarrow MgCl_2 + H_2$$

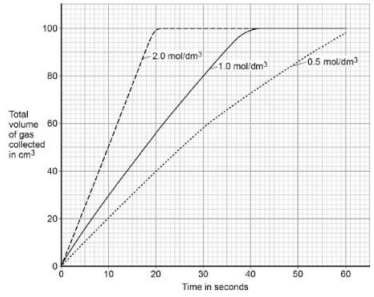


Independent variable: concentration of HCl
Dependent variable : Volume of gas produced / min
Control variables : volume of HCl, mass of Mg, temperature of acid

Method

1. Measure 20cm^3 0.5M HCl into a conical flask.
2. Insert 2 x 2cm pieces of Mg and attach a gas syringe
3. Start a stopwatch and measure the volume of gas collected every 20 seconds until the reaction is over.
4. Repeat using different concentrations of HCl.

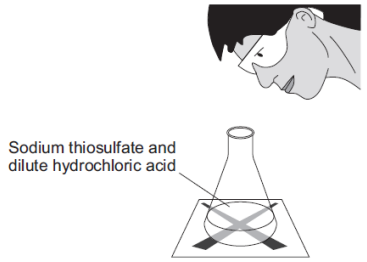
An increase in the concentration leads to an increase in the rate of the reaction, but the same volume of product overall



Experiment 2

Investigating the effect of changing the concentration of HCl on the rate of reaction

$$HCl_{(aq)} + Na_2S_2O_{3\ (aq)} \rightarrow NaCl_{(aq)} + SO_{2(g)} + S_{(s)} + H_2O_{(l)}$$



The sulphur being made is insoluble and is what makes the liquid go cloudy

Independent variable: concentration of HCl
Dependent variable : Time taken for the cross to disappear
Control variables : volume of HCl, volume of sodium thiosulphate, temperature of both solutions, concentration of sodium thiosulphate

Method

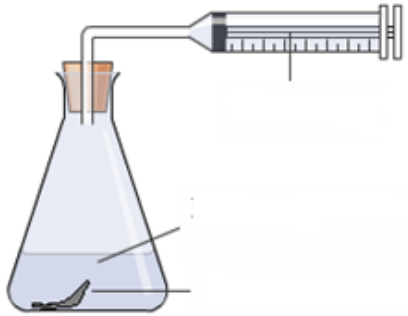
1. Use a measuring cylinder to put 10 cm^3 sodium thiosulfate solution into the conical flask.
2. Put the conical flask on the black cross.
3. Put 10 cm^3 of 0.5M hydrochloric acid into the 10 cm^3 measuring cylinder.
4. Put this acid into the flask. At the same time swirl the flask gently and start the stopwatch.
5. Look down through the top of the flask. Stop the stopwatch when you can no longer see the cross. Record the time.
6. Repeat steps 1-5 using different concentrations of HCl – 1M, 1.5M, 2M and 2.5M

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

Experiment 1

Using volume of gas collected over time as a measure of the rate

$$Mg + 2HCl \rightarrow MgCl_2 + H_2$$

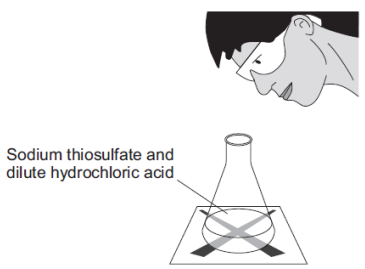


1. Label the diagram to show the equipment and chemicals used in this investigation
2. What is the independent variable?
3. Name two control variables.
4. What is a sensible volume of HCl to use?
5. Which piece of equipment, essential for a rate calculation, is not shown?

Experiment 2

Investigating the effect of changing the concentration of HCl on the rate of reaction

$$HCl_{(aq)} + Na_2S_2O_{3\ (aq)} \rightarrow NaCl_{(aq)} + SO_{2(g)} + S_{(s)} + H_2O_{(l)}$$

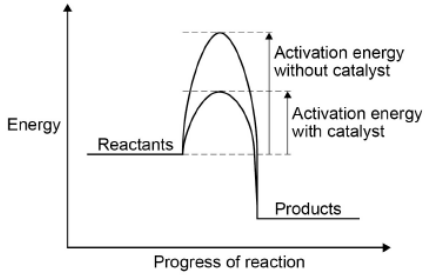


1. What is the dependent variable in this reaction?
2. Why does the solution go cloudy?
3. Name two control variables.

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

Catalysts

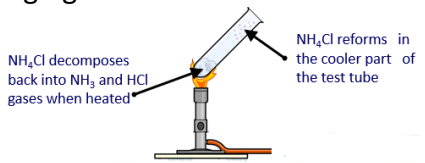
- Catalysts are substances that speed up chemical reactions without themselves being used up.
- They provide a different pathway for the reaction with a lower activation energy.
- Different reactions require different catalysts.



Reversible reactions

These are reactions in which the products can react to produce the original reactants
They are represented by the symbol ⇌
The direction of the reaction can be changed by changing the conditions
For example:

ammonium chloride $\underset{\text{cool}}{\overset{\text{heat}}{\rightleftharpoons}}$ ammonia + hydrogen chloride



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

hydrated copper sulfate (blue) $\underset{\text{exothermic}}{\overset{\text{endothermic}}{\rightleftharpoons}}$ anhydrous copper sulfate (white) + water

When a reversible reaction takes place in sealed apparatus, then a point occurs when the forward and backward reactions occur at the same rate. This is **equilibrium**

The effect of changing conditions on equilibrium (HT)

If a system is at equilibrium and a change is made to the conditions, then the system responds to counteract the change.
E.g. – if the temperature is increased, then the system will respond by increasing the rate of the endothermic reaction, to bring the temperature back down

If the concentration of the reactants is increased, then equilibrium will shift right and more products will be made.

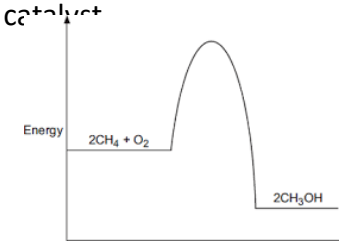
In gaseous reactions, a change in pressure will result in equilibrium shifting to the side that restores the pressure.
E.g. :

$N_2 + 3H_2 \rightleftharpoons 2NH_3$

In this reaction, there are 4 moles of gas on the reactants side and only 2 on the product side
If the pressure is increased, equilibrium will shift right as there are fewer moles on the products side, and this will decrease the pressure.

T1 Y11 a2 and a3 Science/Chemistry C6 – Rate and extent of chemical change

1. What is a catalyst?
2. How do they speed up reactions?
3. Draw on the energy level diagram below to show how it would change in the presence of a catalyst



1. What is a reversible reaction?
2. What symbol is used in an equation to represent a reversible reaction?
3. If a reaction is endothermic in the forward direction, what does this tell us about the backward reaction?
4. If 300J of energy is absorbed during an endothermic reaction, how much will be released in the opposite direction?
5. What is equilibrium?

1. When a change is introduced into a closed system, what does the system respond in order to do?
2. If the temperature of a reaction mixture at equilibrium is increased, what would the change aim to do?
3. What sort of reaction would achieve a drop in temperature?
4. If the pressure is increased in a gaseous reaction, which way would equilibrium shift?

Side with fewest moles/side with most moles

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:

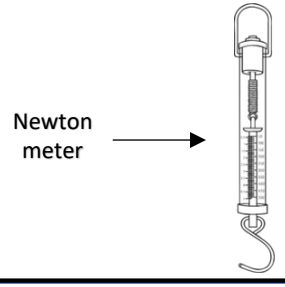
weight = mass x gravitational field strength

$$W = m \times g$$

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**.



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)**

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?

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'):

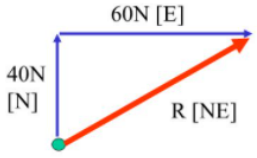
- Draw first vector to scale, in the direction stated
- Draw second vector, from the tip of the first one in the direction stated.
- Join the two lines in a triangle and measure the resulting line
- Convert length to force using your scale – this is the resultant force

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.

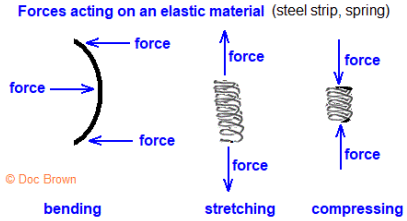
Inelastic deformation = stretched beyond limit – will not return to original shape and size.

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

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

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?

T1 Y11b Science/Physics P5 – Forces

Required Practical

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

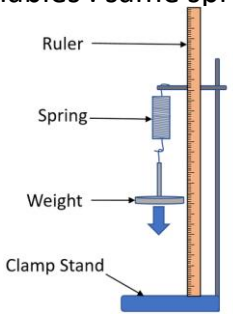
Method

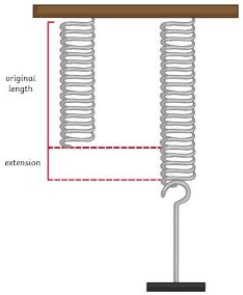
1. Hang a spring from a clamp and stand
2. Measure original length of the spring and record this.
3. Attach a 100g mass – record the new length of the spring.
4. Continue adding 100g masses recording the length each time, up to a total of 500g.
5. Work out the extension for each mass using:

final length – original length

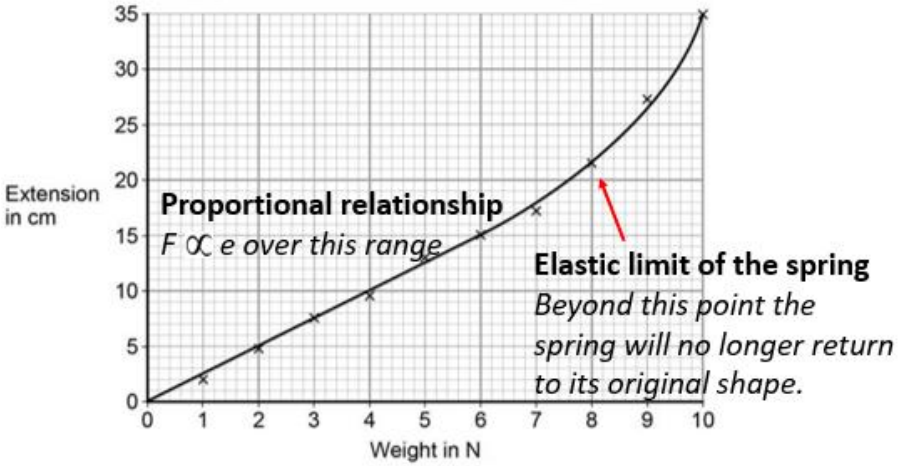
6. Repeat steps 1-5 twice and calculate a mean
7. Plot a line graph with extension (m) on the x-axis and force (N) on the y-axis.

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

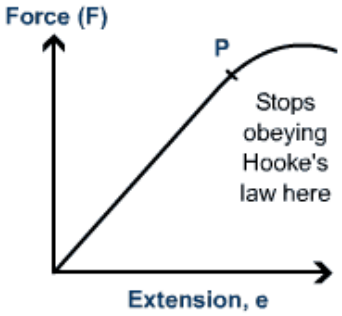




Results :



- 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.

T1 Y11b Science/Physics P5 – Forces

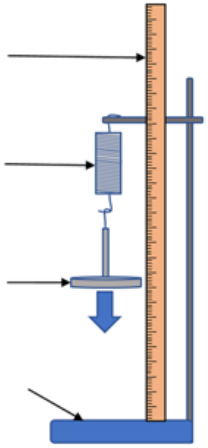
1. What is the independent variable in the investigation into the effect of force on extension of a spring?

2. What is the dependent variable?

3. How is the dependent variable measured?

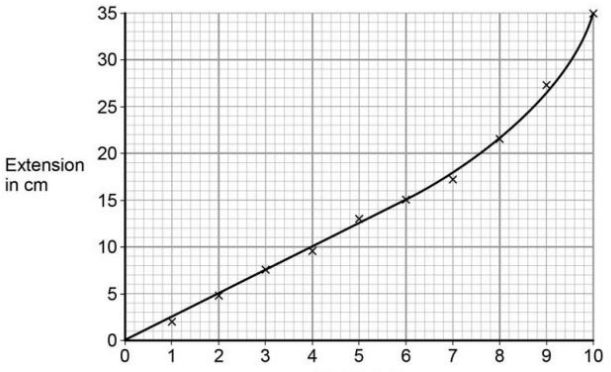
4. What range of masses could be used?

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

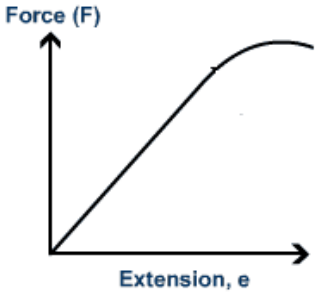


2. Label the part of the graph that shows force is directly proportional to extension

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?



T1 Y11b Science/Physics P5 – Forces

Distance and Displacement

Distance

- How far an object moves
- Does not involve direction
- Distance = scalar quantity

Displacement

- Includes both the **distance** an object moves, measured in a straight line, from start to finish point and the **direction** of that straight line.
- Displacement = vector quantity

Speed

You should be able to recall the following typical speeds:

Activity	Typical Speed (m/s)
Walking	1.5
Running	3
Cycling	6
A car	25
A train	55
Speed of sound	330

Calculating speed:

speed = distance x time

E.g. A car travels 100 metres in 3.8 seconds. What is the average speed?

v=s/t

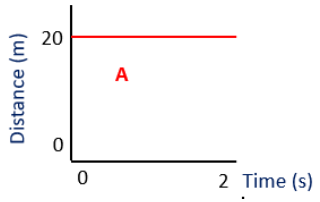
v = 100 m / 3.8 s

v= 26 m/s

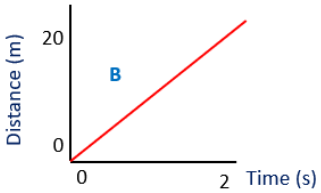
Distance time graphs

Distance time graphs show the motion of an object

The gradient tells us the speed of the object



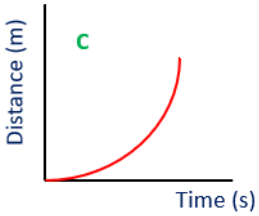
Object is stationary (distance not changing)



Object is travelling at constant speed

v = 20/2

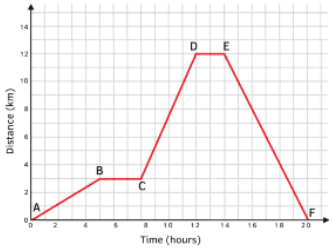
v = 10 m/s



Object is accelerating

(HT only) Speed can be calculated by:

- Drawing a **tangent** and finding the **gradient** of the tangent



A journey generally has different speeds. Average speed can be calculated by using total distance ÷ time

Velocity and Acceleration

Velocity & acceleration = vector quantities

1. Velocity = **speed** in a given **direction**
   - positive velocity = forwards (eg +5 m/s)
   - negative velocity = backwards (eg -5 m/s)
2. Acceleration is a **change in velocity**
   - positive acceleration = speeding up
   - negative acceleration = slowing down

Average acceleration of an object can be calculated using:

acceleration = final velocity – initial velocity

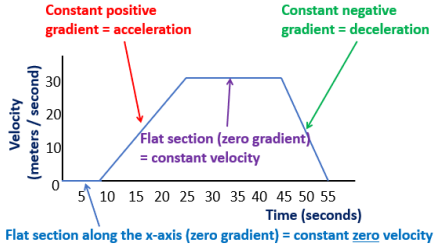
time taken

Units for acceleration are m/s^2

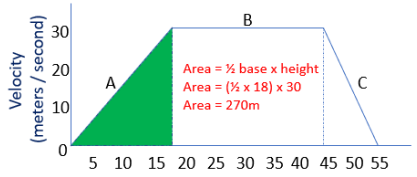
Velocity time graphs

Show how velocity changes during a journey

The gradient shows the acceleration



HT only - area underneath a velocity time graph is the distance travelled by an object



T1 Y11b Science/Physics P5 – Forces

1. What type of quantity is distance?
2. What is 'displacement'?
3. Why is displacement a vector quantity?

Speed

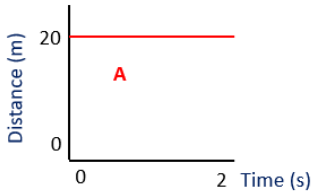
1. Complete the table:

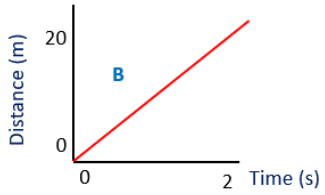
Activity	Typical Speed (m/s)
Walking	
Running	
	6
A car	
	55
Speed of sound	

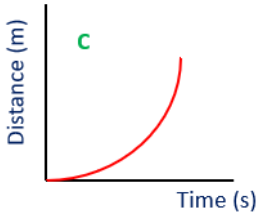
2. What is the equation linking distance, speed and time?

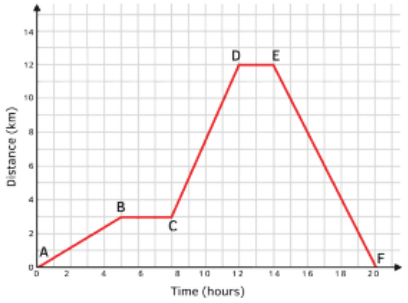
3. What are the units for speed?

1. Describe the motion of the objects:

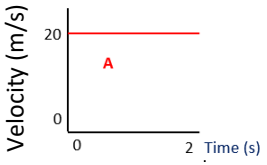


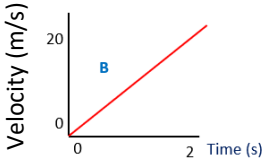


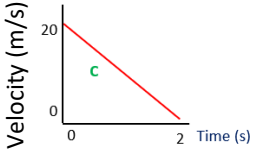




1. Define velocity and acceleration. Give the units.
2. What does a negative velocity indicate?
3. What does a negative acceleration indicate?
4. What is the equation linking acceleration, final velocity, initial velocity and time?
5. Describe the motion of the objects shown in the graph (include numbers if you can!)





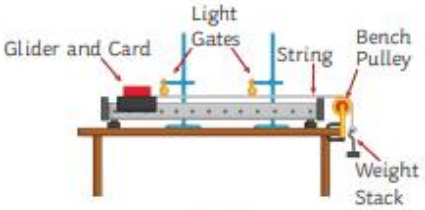


5. How do you calculate acceleration from a velocity time graph?

6. (HT) What does the area under the line on a velocity time graph show?

T1 Y11b Science/Physics P5 – Forces

Aim: To investigate the effect of **varying force** on the acceleration of an object of constant mass.
You may be given any of the following apparatus set-ups to conduct these investigations:
Independent variable = force applied
Dependent variable = acceleration
Control variables = mass of toy car and surface car is on.



or

or

Method (using toy car)
1) Place the car on a ramp. Incline the ramp until the car just does not move. This is to remove as much of the effect of friction as possible.

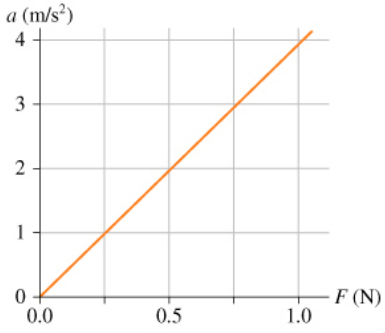
2) Set up a light gate at the end of the ramp

3) Place a 1N weight on the pulley attached to the toy car.

4) Allow the weight to drop and read the acceleration of the car from the light

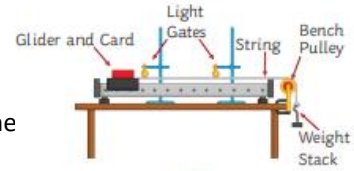
5) Repeat the experiment several times, decreasing the weight on the pulley each time (e.g. 0.8N, 0.6N, 0.4N etc.) Place the removed mass onto the car to keep the mass of the system constant

Results
Acceleration is proportional to force applied



Aim: Investigate the effect of **varying mass** of an object on the acceleration produced by a constant force.
You may be given any of the following apparatus set-ups to conduct these investigations:
Independent variable = mass of glider
Dependent variable = acceleration of glider
Control variables = force applied and surface car is on

Method (using glider)
1) Place the glider on the track. Switch on the air blower and adjust until the glider just doesn't move. This is to remove as much of the of friction as possible.



or

or

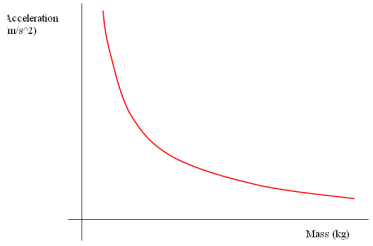
2. Set up a light gate at the end of the air track

3) Add a 10g mass onto the glider. Place a 1N weight on the pulley attached to the glider and let go.

4) Record the acceleration from the light gate

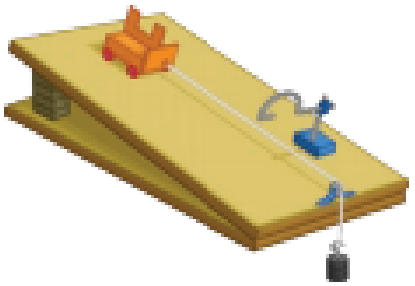
5) Repeat the experiment several times, increasing the mass on the glider each time (e.g. 20g, 30g, 40g etc.) whilst keeping the weight (1N) on the pulley constant.

Results
Acceleration is inversely proportional to mass



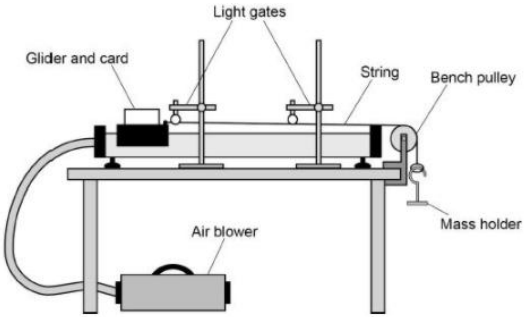
T1 Y11b Science/Physics P5 – Forces

A student was investigating the effect of changing the force on the acceleration of a toy car down a ramp, using the equipment shown below:



1. What provides the force for the car to move?
2. Why is the ramp tilted?
3. What is the independent variable in the investigation?
4. What is the dependent variable?
5. How is force changed during the experiment?
6. What is the name of the piece of equipment shown that measures the acceleration?
7. How is mass kept constant throughout the experiment?
8. What relationship do you expect to see between force and acceleration?

A student was investigating the effect of changing the mass of an object on the acceleration, using the equipment shown below



1. What is the independent variable?
2. What is the dependent variable?
2. What variables need to be controlled?
4. Why is the air blower switched on?
5. Describe the relationship you would expect to find between mass and acceleration

T1 Y11b Science/Physics P5 – Forces

Stopping Distance

Stopping distance = thinking distance + braking distance

- Greater the speed of vehicle – greater the stopping distance.

Thinking Distance (reaction time)

Thinking distance = distance travelled before driver reacts and presses brakes.

Reaction times are typically 0.2s to 0.9s

Factors that affect a driver's reaction time:

- Tiredness
- Drugs
- Alcohol
- Age
- Distractions (e.g. phone/music)

Momentum (HT only)

- Defined by the equation:

momentum = mass x velocity

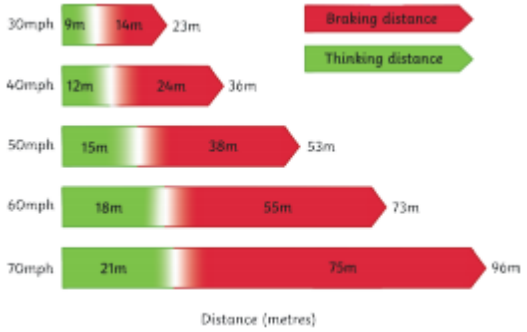
$p = m \times v$

Units:
momentum = kilograms metre per second (kg m/s)
mass = kg
velocity = m/s

- In a closed system, total momentum before an event is equal to the total momentum after the event – this is called **conservation of momentum**.

Braking Distance

Braking distance = the distance travelled by a vehicle once with **brakes are applied** until it reaches a full stop.



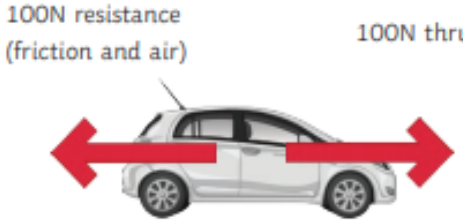
It can be affected by:
- wet/icy roads
- poor vehicle conditions (brakes/tyres)

When a force is applied to brakes, **work is done** by the friction between the car wheels and the brakes.

Work done – reduces the **kinetic energy store** and energy is transferred to **the thermal store of the brakes**, increasing their temperature.
Increased speed = increased force required to stop the vehicle
Very large decelerations can lead to brakes overheating and/or loss of control of the car.

Newton's First Law

If resultant force acting on object is zero:
- Stationary object will remain stationary
- Moving object will continue at a steady speed and in the same direction.



(HT only) Inertia = tendency of an object to continue in a state of rest of uniform motion (same speed and direction)

Newton's Second Law

Acceleration of an object is proportional to resultant force acting on it and inversely proportional to the mass of the object

Resultant force = mass x acceleration

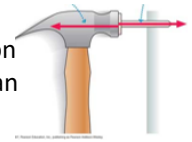
$F = m \times a$

(HT only) Inertial mass = how difficult it is to change an object's velocity. Defined as ratio of force over acceleration.

Newton's Third Law

When two objects interact, forces acting on each other are always equal and opposite.

e.g. a hammer hitting a nail
The hammer exerts a force on the nail, and the nail exerts an equal and opposite force on the hammer.



T1 Y11b Science/Physics P5 – Forces

1. What is stopping distance?
2. What is the equation linking braking distance, stopping distance and thinking distance?
3. What is the typical reaction time range of a human?
4. What factors may affect a driver's reaction time?

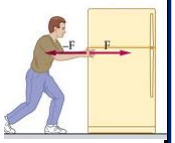
1. What is the equation linking mass, momentum and velocity?
2. What are the units for momentum?
3. What happens to total momentum during a collision or explosion?

1. What is 'braking distance'?
2. What factors affect braking distance?
3. Describe the energy transfers when brakes are applied to stop a moving car
4. Why are large decelerations dangerous?

1. What happens to a stationary object when the resultant force acting on the object is zero?
2. What happens to a moving object when the resultant forces are zero?
3. (HT) What is inertia?

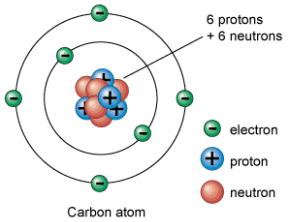
1. State Newton's second law.
2. What is the equation linking acceleration, force and mass?
3. What is inertial mass? (HT)

1. State Newton's third law.
2. Describe the forces acting in the picture



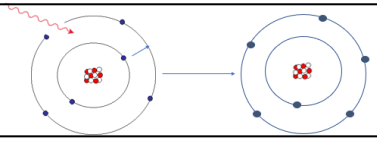
T1 Y11 a2 and a3 Science/Physics P4 – Atomic Structure

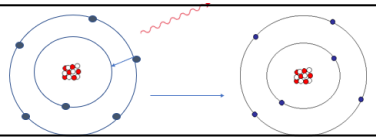
Atoms



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

Electrons can move further away or closer to the nucleus





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

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

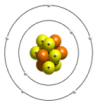
How the atomic model developed:

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

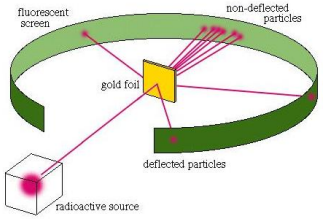
Atoms were first thought to be tiny spheres that could not be divided

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

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



Chadwick discovered neutrons
Bohr discovered the electrons orbit in shells



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

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

(Mass number) 23
(Atomic number) 11 Na

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

Isotopes

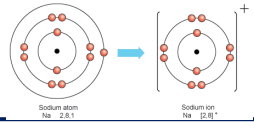
Isotopes are atoms with same number of **protons**, but different numbers of **neutrons** (different mass number)

E.g. $^{16}_{8}O$ $^{18}_{8}O$

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

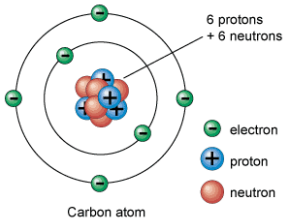
Ions

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

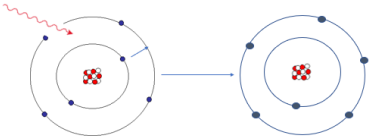


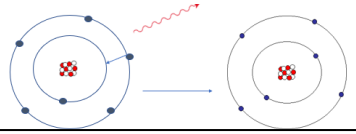
T1 Y11 a2 and a3 Science/Physics P4 – Atomic Structure

Atoms



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





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

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

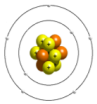
1. What causes scientific ideas to change and develop?

2. What was the thinking about atoms initially?

3. Which particle was discovered by JJ Thomson?

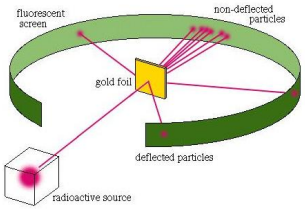
4. Where is the positive charge in this model?

5. Where is the positive charge in this model?



6. Who discovered neutrons?

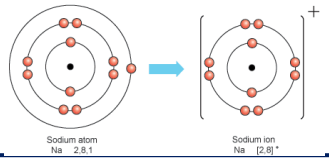
7. What was the discovery that Bohr made?



Rutherford's experiment:

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

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



T1 Y11 a2 and a3 Science/Physics P4 – Atomic Structure

Nuclear radiation

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

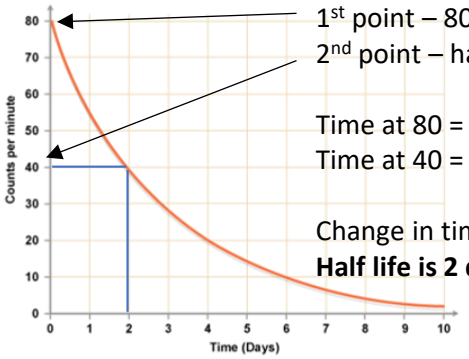
Radiation	What is it?	How far does it travel?	Ionising power	Penetrating power
Alpha α	2 protons and 2 neutrons	A few cm	Strong	Stopped by paper
Beta β	A fast moving electron	Metres	Medium	Stopped by aluminium
Gamma γ	An electromagnetic wave	kilometres	Weak	Takes thick concrete or lead to stop it

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

Half life

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

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



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

Time at 80 = 0
Time at 40 = 2 days

Change in time = 2 days
Half life is 2 days

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

Alpha decay:

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

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

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

Beta decay:

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

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

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

Irradiation is the exposure to alpha, beta or gamma radiation

Contamination is the presence of radioactive atoms on materials.

T1 Y11 a2 and a3 Science/Physics P4 – Atomic Structure

Nuclear radiation

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

2. Which radiation is the most strongly ionising?

3. What is an alpha particle made of?

4. Which radiation is the most difficult to stop?

5. Which radiation is a fast moving electron?

6. Which radiation can only travel a few cm?

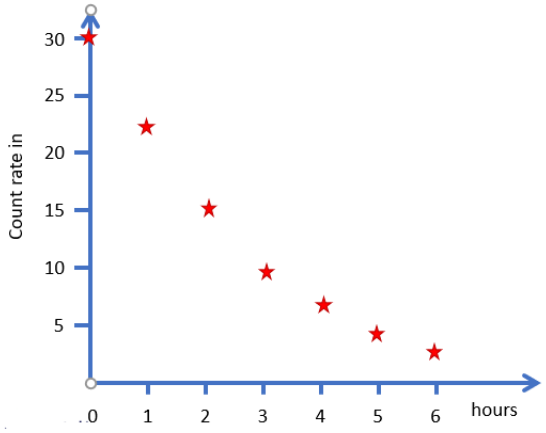
Half life

1. What is half life?

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

3. Draw a line of best fit onto the graph

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



Alpha decay:

1. How is an alpha particle written?

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

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

4. What happens in the nucleus during beta decay?

5. How is a beta particle written?

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

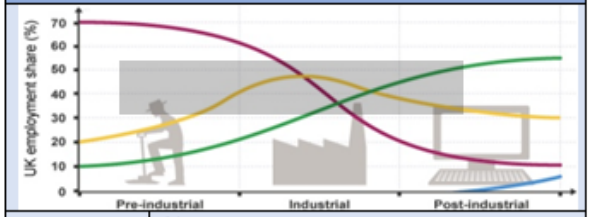
7. What happens to the mass number during beta decay?

8. What is irradiation?

9. What is contamination?

GCSE Geography. Paper 2. 2. Economic world. UK futures

1. Economic change in the UK



Primary	↘ due to mechanisation.
Secondary	↗ due to industrial revolution then ↘ due to de-industrialisation.
Tertiary	↗ due to wealth (↗ disposable income)
Quaternary	High-tech jobs including research and IT. ↗ due to government policies and the increase in technology.
Why has our economy changed?	
De-indust-rialisation	The decline of a county's traditional manufacturing industry due to exhaustion of raw materials, loss of markets and competition from NEEs.
Government policies	A plan decided by a government to manage issues in a country.
Global-isation	The process which has created a more connected world; with increases in the movement of goods/people worldwide

2. Post industrial economy

Tertiary and quaternary sector employed 81% in 2011.	
IT	Employs over 60,000 people.
Services	Retail is the largest sector. Employs 4.4mill
Finance	London is the world's leading centre. HSBC
Research	Government invested £30bill in 2013.
Science parks	Groups of high tech industries and those doing scientific research. Located near universities (for graduates, share facilities).
Business parks	Purpose built areas of offices and warehouses (on edge of cities as less congestion, cheaper, good transport links).

3. Environmental impact of industry

Air and water pollution. Soil degradation.
Releases CO_2 increasing the rate of global warming.
Transport of materials is by road ↗ air pollution.

Example of modern industry being environmentally sustainable

Google	London Landscraper started 2018.
686 bikes spaces 4 car spaces	Encourages cycling to work. < congestion/CO_2 emissions.
Solar panels. 19,800 kWh	Reduces fossil fuel consumption and reduces carbon footprint.
Rooftop gardens	Urban greening. < CO_2. Collects rainwater. Encourages wildlife.

4. Changes in the rural landscape

Population decline	Outer Hebrides (away from cities, limited opportunities).
Social changes	Declined by >50% since 1901. ↑ aging population = care issues. Less children > schools shut.
Economic changes	Services close ie post offices. ↑ tourists but infrastructure not there. Government subsidies cost of ferries.
Population growth	South Cambridgeshire (near large cities, people can commute).
Social changes	Migrants from Cambridge, some now from Eastern Europe too. Proportion of elderly increasing (>65). 80% car ownership = > congestion. Young people are costed out.
Economic changes	↑house prices. Less affordable housing Petrol prices ↑.

5. Improvements in infrastructure

Road	Upgrading 'Smart motorways' M4. Variable speeds, reducing accidents, extra lanes. 2014 Road investment strategy £15 bill. New construction jobs, boost economy.
Rail	Crossrail in London. Puts extra 1.5 million within 45 mins commute of capital city. HS2 to reduce journey times. London to Manchester in 1 hr 8 minutes.
Port	Liverpool 2. Doubles capacity to over 1.5 million containers a year. 96% of UK imports/exports through ports.
Airports	Heathrow expansion. 3rd runway £18.6bill

6.. North-South divide

Causes	Decline of heavy industry in North (coal) Investment in finance and service industry in the South Investment in infrastructure in South
Impacts in north	Higher unemployment / lower wages (40%) Poor health, lower life expectancy (10 yrs) Poor education. There are SOME exceptions

Strategies attempting to resolve regional differences

Devolving more powers	Give more power to local councils and Welsh and Scottish governments. Plan best how to use their money.
Northern Powerhouse	A plan to attract investment to north. Improve transport links to northern cities. e.g. HS2, Liverpool2. BUT just a CONCEPT not a plan.
Enterprise Zones	55 EZs to encourage businesses to set up in areas of high unemployment. Reduce taxes, simple planning rules, superfast broadband to the area. Created more than 15,000 jobs.

GCSE Geography. Paper 2. 2. Economic world. UK futures

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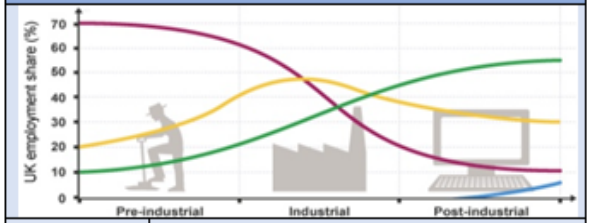

Primary	
Secondary	
Tertiary	
Quaternary	

Why has our economy changed?

De-indust-rialisation	
Government policies	
Global-isation	

2. Post industrial economy

Tertiary and quaternary sector employed 81% in 2011.

IT	
Services	
Finance	
Research	
Science parks	
Business parks	

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Road	
Rail	
Port	
Airports	

6.. North-South divide

Causes	
Impacts in north	

Strategies attempting to resolve regional differences

Devolving more powers	
Northern Powerhouse	
Enterprise Zones	

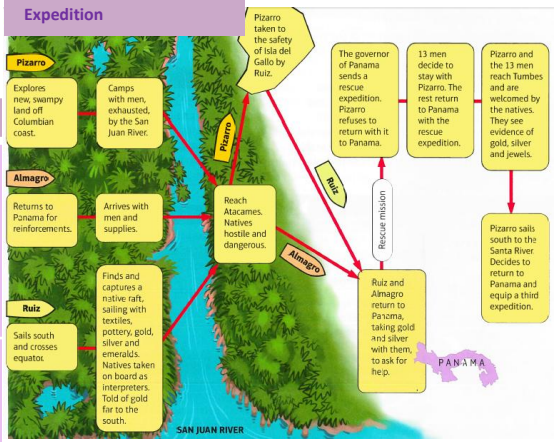
3. The Spanish Empire 1528-1555

Pizarro – First Expedition

Pizarro was with Balboa when they reached the Pacific. Pizarro was impressed by Cortes and his success in Mexico.
Tales of vast wealth in Peru encouraged Pizarro to find his own success.

November 1524 – First expedition
Not a success. Only reached Columbia before bad weather, lack of food and attacks by hostile natives forced Pizarro to turn back.
The mangrove swamps put off any idea of establishing a settlement too.

Pizarro's Second Expedition



Pizarro's appeal to the Spanish King Charles I

In 1528 Pizarro returned to Spain with evidence of Inca wealth, including Llamas, silver and gold.
Having been refused permission to launch a third expedition by the governor of Panama, he appealed to Charles I.
Pizarro received a licence, the *Capitulacion de Toledo*, in July 1529, authorising him to conquer Peru.

Pizarro and the Conquest of the Inca Empire

Date	Event
Dec 1518	Smallpox epidemic in Haiti.
Sept 1520	First cases of smallpox in Mexico
1525-1527	Smallpox spreads along the Caribbean coast.
1527	Smallpox reaches Peru. Huayna Capac dies from smallpox after returning to help his people.
1529	Civil War breaks out between Huascar and Atahuallpa (Huayna Capac's son).
April 1532	Huascar is captured and killed. Atahuallpa takes over Cuzco.
Nov 1532	The Battle of Cajamarca – Pizarro's men hid in the town square of Cajamarca. When Atahuallpa's men entered the town they met with a priest who showed them a bible. Atahuallpa threw the bible on the floor which was the signal needed for Pizarro's men to attack and they took Atahuallpa prisoner.
July 1533	Atahuallpa promised to fill his prison with treasure in order to secure his release. Although he did this, the Spanish still sentenced him to death. On 26th July he was garrotted.
1533	Manco made puppet ruler of the Inca Empire.

Revolt of the Incas 1536

The Spanish saw Manco as a puppet king who would rule on their behalf. When Manco escaped from the Spanish he assembled an army and attacked the base at Cuzco.

The Seige of Cuzco 1536-1537
-10,000 Inca warriors faced 150 Spanish and 1000 native allies.
-The Inca warriors broke into town , burning buildings to try to drive out the Spanish, but the Spanish were able to put the fires out.
-The Spanish used their cavalry to attack the Inca warriors.
-The Spanish captured the fortress of Sacsahuaman from the Incas, which the Inca army then besieged.
-The siege ended when Spanish forces exploring Chile returned.
-Manco withdrew and established a separate kingdom which lasted until 1572.

Governing the Empire

The Spanish needed to find a way to govern the discovered territories to restore peace and stability. They needed to make sure basic essentials were available, laws were in place, conquistadors didn't fight among themselves and ensure daily life was managed effectively.

Bartolome de las Casas – was a priest that tried to encourage the fair treatment of natives in the New World. 1527 he wrote a book 'A Short Account of the Destruction of the Indies'.

The New Laws:
- It was made illegal to enslave natives.
- The amount of tribute that could be collected was limited.
- Encomiendas had to be passed back to the Spanish government on the death of the encomendero.

The role of the Viceroys:
The Council of the Indies appointed two viceroys to govern Spanish territories: one in Mexico city and one in Lima (Peru).
They acted on behalf of the government.
Justice was managed through the audiencias (courts), with judges who were independent of the viceroys.

The role of the **encomienda system:**
This was imposed officially across the Spanish Empire.
An encomienda was land granted to a Spaniard, who was then called an encomendero. He could demand tribute from natives. In return he was responsible for their protection and their conversion to Christianity.

Significance of the New Laws 1542:
Laws introduce to improve the rights of native people, but encomenderos opposed them and the viceroy of Peru refused to implement them.
Revolts in Peru: the most serious in 1544 had to be put down by the Spanish government and led to a temporary halt in the Spanish conquest of the New World in 1550.
Although forced to suspend the laws, Charles I insisted encomiendas be passed back to the crown on the death of an encomendero. Natives continued to be exploited in the New World.

Impact of Gold and Silver on Spain

Used to make 8 sided coins – 'pieces of eight. Widely accepted in Europe due to high silver content.

The Crown took 25% of bullion coming into Spain .

75% of wealth went to Spanish merchants and conquistadors.

European traders put up prices for the wealthy Spanish merchants.

High prices led to inflation – workers demanded higher wages in Spain.

Charles I invested money in the military – not industry and business.

Spanish were getting wealthy by finding bullion instead of making products and selling.

Founding of La Paz, 1548

La Paz was founded to symbolise the end of the revolt and to demonstrate that Spain had the overall authority in the New World, not the conquistadors.
It became the administrative centre of the Spanish Empire. The Viceroy and the audiencias (courts) were based here.
It was founded close to trade routes to ensure it maintained control over the silver mines based in Potosi and Oruro.

Discovery of silver in Bolivia and Mexico

By 1550 silver had been discovered in Potosi (Bolivia) and in Guanajuato and Zacatecas (Mexico). Some was sent back to Spain but most was kept by the conquistadors.
Large mining towns developed to house workers for the mines.
Colonisation of the New World increased as adventurers, merchants, speculators and their employees came in search of wealth.
25% of silver shipped to Spain went straight into the treasury.

Conquistador Revolt in Peru 1544

A serious revolt took place as the encomenderos were unhappy with the New Laws. This revolt was led by Gonzalo Pizarro, brother of Francisco Pizarro.
It was a success and Gonzalo ruled over the Inca territory for 2 years.
The arrival of a Spanish army resulted in his execution and the restoration of Spanish authority.
The revolt raised the issue of control. Spain needed to govern its territories and control the rebellious conquistadors and encomenderos. This led to the founding of La Paz in 1548.

Pirates and Privateers

Spanish treasure was a target for Pirates and Privateers (funded by government/monarchy).

The ships were easy to find as they took well-defined and predictable routes across the Atlantic.

War with France (1542-46) meant Spain had to adapt ships and develop systems to deal with French privateers.

Galleons patrolled the sea routes and started carrying treasure as they were well armed.

Treasure fleet system developed: the **Tierra Firme** (went to S. America) and the **New Spain** (went to Mexico).

Growth of Seville
All goods imported to Europe had to go through Seville. Merchants travelled from all over Europe to buy and sell goods. This gave Spain a monopoly over trade with the New World.

The Slave Trade
Due to the number of deaths of natives in the New World, there was a labour shortage.
Under the Treaty of Tordesillas, Spain could not directly get slaves from W. Africa.
Spanish merchants could get licences (asientos) to supply slaves to the New World. Licences sold to the highest bidder who could then buy from Portuguese merchants and sell to merchants in the New World.

Casa de Contratacion (House of Trade)
Established in 1503 by Isabella. Collected colonial taxes. Approved voyages of exploration and trade and kept secret information on new lands and trade routes. Licenced captains of ships.
In theory, no Spaniard could sail anywhere without the approval of the Casa.

Council of the Indies
Formed in 1524 and based in Spain. Controlled all matters concerning the New World. Messages received from Viceroys would be discussed and advice given to the King. Decisions made were sent from the Council to the Viceroys. This was Spain's way of trying to maintain control over its empire in the New World.

3. The Spanish Empire 1528-1555

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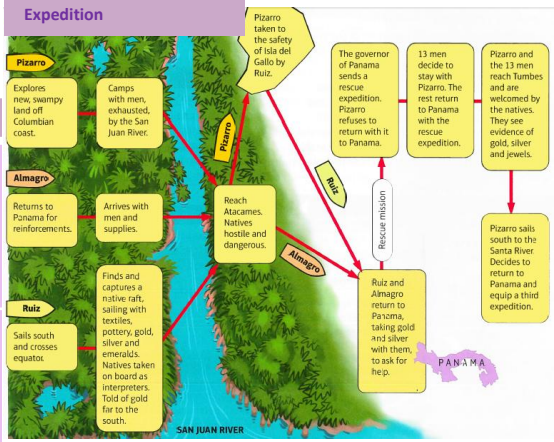

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The role of the **encomienda system:**

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Casa de Contratacion (House of Trade)

Council of the Indies

Year 11 Spanish Knowledge Organiser
Term 1
Module 6

Use this knowledge organizer to help you with revision for GCSE Spanish. You can make flashcards with the words, create vocab lists and write sentences with the words putting the vocabulary into content. This KO contains all the important words from Module 1 GCSE Spanish.

Any questions please ask your Spanish Teacher ☺

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

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

Medellín, ciudad inteligente (pages 134-135):

¿Has visitado ...?	*Have you visited ...?*
(Ya) He/Has/Hemos ...	*I/You/We have (already)...*
También he/has/hemos ...	*I/You/We have also ...*
Todavía no he/has/hemos ...	*I/You/We haven't ... yet.*
alquilado / probado...	*rented / tried ...*
bebido / comido ...	*drunk / eaten ...*
ido (al museo)	*been (to the museum)*
subido / visto ...	*gone up / seen ...*
descubierto ...	*discovered ...*
viajado (en metro)	*travelled (by underground)*
visitado (el parque famoso)	*visited (the famous park)*
¿Dónde está el centro comercial más cercano?	*Where is the nearest shopping centre?*
Está ...	*It is ...*
al lado de ...	*next to ...*
delante de / detrás de ...	*in front of / behind ...*
cerca de / lejos de ...	*close to / far from ...*
la estación (de metro)	*the (underground) station*
el banco	*the bank*
Mira el plano.	*Look at the map.*
Pasa / Cruza ...	*Go past / Cross ...*
el puente / la plaza	*the bridge/square*
Toma la primera/segunda/ tercera calle ...	*Take the first/second/third street ...*
a la derecha/izquierda	*on the right/left*
Está a la derecha/izquierda.	*It is on the right/left.*
¿Qué hacemos mañana?	*What are we doing tomorrow?*
Me encantaría / Quiero ...	*I would love to / I want to ...*
Podemos ...	*We could ...*
Voy/Vamos a ...	*I am / We are going to ...*
ir de excursion / en autobús	*go on an outing / by bus*
tomar el metro	*take the underground*

Medellín ahora y antes (pages 136–137):

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

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

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

¡A comprar! (pages 138–139):

¿Dónde prefieres ir de compras?	*Where do you prefer to go shopping?*
Por un lado, ... / **Por otro lado**, ...	*On one hand, ... / On the other hand, ...*
(No) Me gusta / Me encanta ...	*I (don't) like / I love ...*
Prefiero / Odio ...	*I prefer / I hate ...*

Suelo/Solemos ...	*I/We usually ...*
ir a las tiendas de mi barrio.	*go to the shops in my neighbourhood*
comprar ropa de segunda mano	*buy secondhand clothes*
comprar por Internet / en línea	*buy on the internet / online*
ir al centro comercial	*go to shopping centre*

Es/Son ...	*It is / They are ...*
menos/tan ...	*less/so ...*
barato/a(s)	*cheap*
económico/a(s)	*cheap*
caro/a(s) / fácil(es)	*expensive / easy*
práctico/a(s)	*practical*
sostenible(s)	*sustainable*
más barato/a(s) / caros	*cheaper / more expensive*
Hay **tanta**/demasiada gente.	*There are so/too many people.*
(No) Se puede **probar** la ropa.	*You can/can't try on the clothes.*
Los precios son más bajos.	*Prices are lower.*
Las tiendas son muy pequeñas.	*The shops are very small.*
(No) tengo que hacer **cola**.	*I (don't) have to queue.*
¿En qué puedo servirle?	*How may I help you?*
Ayer / Hace una semana compré ...	*Yesterday / A week ago I bought ...*

Quiero devolver/cambiar ...	*I want to return/exchange ...*
este jersey/vestido/traje	*this jumper/dress/suit*
esta camisa/camiseta	*this shirt/T-shirt*
esta corbata/falda	*this tie/skirt*
estos pantalones	*these trousers*
estos calcetines/zapatos	*these socks/shoes*
estas zapatillas de deporte	*these trainers*
porque es/son demasiado ...	*because it is/they are too ...*
pequeño/a(s).	*small*
largo/a(s)	*long*
grande(s)	*big*
ajustado/a(s)	*tight*
porque es/son de mala calidad	*because it is / they are poor quality*
porque no me gusta el color	*because I don't like the colour*

¿Dónde prefieres vivir? (pages 140–141):

¿Prefieres vivir en el campo o en la ciudad?	*Do you prefer to live in the country or in the city?*
Prefiero vivir en la ciudad/el campo porque ...	*I prefer to live in the city/ countryside because ...*
es más/menos ... que ...	*it is more/less ... than ...*
hay más/menos ... que ...	*there is more/less ... than ...*
es imposible aburrirse	*it is imposible to be bored*
¿Qué es lo bueno/malo de vivir en ...?	*What is the good/bad thing about living in ...?*
Lo bueno/malo de mi pueblo...	*The good/bad thing about my town...*
Lo positivo/negativo de mi ciudad ...	*The positive/negative thing about my city ...*
es que ...	*is that ...*
tiene mucha polución/gente	*it has a lot of pollution/ people*
(no) es ... divertido/a / tranquilo/a	*it is (not) ... fun / quiet*
está en la costa / las montañas	*it is on the coast / in the mountains*
no hay más posibilidades de trabajo	*there aren't more job prospects*
hay tanto tráfico	*there is so much traffic*
hay tanta gente	*there are so many people*
la gente (no) *se conoce	*people (don't) know each other*
conozco a todos mis **vecinos**	*I know all my neighbours*
hay una gran **variedad** de tiendas	*there is a large variety of shops*
siempre hay algo que hacer	*there is always something to do*
Cuando **tenga** más dinero, ...	*When I have more money, ...*
Cuando **sea** mayor, ...	*When I am older, ...*
Cuando **tenga** dieciocho años, ...	*When I am eighteen, ...*
compraré una casa pequeña	*I will buy a small house.*
viviré con mi novio/a	*I will live with my boyfriend/ girlfriend*
compartiremos un piso	*we will share a flat*
¿Cambiarías algo de tu zona?	*Would you change anything about your area?*
Cambiaría/Mejoraría ...	*I would change/improve ...*
Me encantaría/gustaría ...	*I would love/like ...*
Preferiría / **Construiría** ...	*I would prefer/build ...*

Un intercambio cultural (pages 142–143):

¿Qué es lo mejor de tu pueblo/ciudad?

Mi pueblo/ciudad es ...
- divertido/a / moderno/a
- **preciosa** / muy *dinámico/a

Lo bueno/**mejor** es ...
- la gente/comida

¿Cuál es tu lugar favorito de tu pueblo/ciudad/zona?

Mi **lugar** favorito es el mercado/ parque.

¿Qué hiciste ayer / la semana pasada?

Ayer / La semana pasada ...
- alquilamos unas bicicletas.
- compré ...
  - mucha fruta
  - unos zapatos nuevos
- fui ...
  - a la playa / al estadio
  - a un concierto/restaurante

¿Qué vas a hacer este fin de semana?

Primero / Luego ...
Me/**Nos** gustaría ...
Podremos ...
Quiero/Queremos ...
Voy/Vamos a ...
- salir a comer / ir de compras
- ir a la playa
- visitar el castillo / sitios históricos
- comprar helados
- participar en muchos eventos

Jugaré a ...
Iré (a la playa) para ...
- celebrar / disfrutar de ...
- tomar el sol

What is the best thing about your town/city?

My town/city is ...
- *fun / modern.*
- *a beautiful city / very dynamic.*

The good/best thing is ...
- *the people/food*

What is your favourite place in your town/city/area?

My favourite place is the market/ park.

What did you do yesterday / last week?

Yesterday / Last week ...
- *we rented some bicycles.*
- *I bought ...*
  - *lots of fruit*
  - *some new shoes*
- *I went ...*
  - *to the beach/stadium*
  - *to a concert/restaurant*

What are you going to go this weekend?

First / Later/Afterwards ...
I/We would like to ...
We could/will be able to ...
I/We want to ...
I am / We are going to ...
- *go out to eat / go shopping*
- *go to the beach*
- *visit the castle / historic places*
- *buy ice creams*
- *participate in lots of events*

I will play ...
I will go (to the beach) (in order) ...
- *to celebrate / enjoy ...*
- *to sunbathe*

1. Methods of growth

When a market is growing, it is important for a business to grow in order to retain market share.

Method of growth	Explanation
Internal/organic growth	A business can grow by creating new products, entering new markets, increasing their advertising and opening new premises.
External/inorganic growth	A business can grow by merging with another company or by winning a takeover of another company.

2. Finance for growth

A business must find sources of capital to pay for growth.

Term:	Definition:
Internal sources of financing.	A business can use 'retained profit' (capital they have saved from profit) or they could 'sell assets' (selling old or unused machinery/equipment). Internal sources of funding are from an internal sources such as an existing business owner or the business itself rather than from someone or an organisation outside of the business.
External Sources of financing.	A business could take out a loan (loan capital), or sell shares (share capital). External sources of funding are from an external sources such as a bank or an investor rather than from the business owners or the business itself.

3. Why do aims & objectives change?

As businesses evolve, they need to adapt their aims and objectives to changing circumstances.

Changing market conditions	Controlled by customer behaviour, what do customers want?
Changing technology	As technology changes, business needs to adapt to how customers use technology.
Changes in performance	If costs increase, the chances are the profit margin of the business will decrease. A business needs to be clear on whether they are aiming for quality or price.
Changes in legislation	If the law changes, this can bring uncertainty as the business may have to stop manufacturing/selling a certain product or be unable to predict future trends.
Internal Reasons	Changes in management or changes to the culture of the company.

1. Methods of growth

When a market is growing, it is important for a business to grow in order to retain market share.

Method of growth	Explanation
Internal/organic growth	
External/inorganic growth	

2. Finance for growth

A business must find sources of capital to pay for growth.

Term:	Definition:
Internal sources of financing.	
External Sources of financing.	

3. Why do aims & objectives change?

As businesses evolve, they need to adapt their aims and objectives to changing circumstances.

Changing market conditions	
Changing technology	
Changes in performance	
Changes in legislation	
Internal Reasons	

4. Globalisation

The increasing tendency for countries to trade with each other and to buy global goods such as Coca-Cola or services such as Costa Coffee.	
Imports	Goods brought into one country from another.
Exports	Goods sold to one country from another

4. Globalisation

Barriers to trade	Definition: Measures put in place by a government to control the numbers of goods imported into a country.
Tariffs	Import taxes – taxes on imported goods.
Trade blocs	An agreement between some countries to trade freely without any tariffs, but countries not within the agreement will be charged tariffs.

5. Ethics & business

How the behaviour of a business is judged against human morals.	
Term	Definition
Fair Trade	A global scheme that states that farmers or producers are paid a fair price for their goods. Business costs are higher, but customers will pay more for Fair Trade products.
Environmental	Businesses are constantly monitored for their environmental impact. Behaving in an environmentally ethically manner means to not pollute or damage the local/national/global environment – sea, land or sky.
Labour	Human morals dictate that a business should pay its workers fairly and that working conditions should be safe and clean. If a business sub-contracts work to international manufacturers in Asia, human morals dictate that those workers of the contractor are paid fairly and work in safe, clean conditions also.

6. Ways to extend the Product Life Cycle of a Product

Idea:	Explanation
Find new uses for the product	If a product can be used for multiple purposes, ensure that your target audience is aware of this
Change the appearance, format or packaging	Changing the appearance of a product can give it a new lease of life and allow the customer is perceive it as new again.
Encourage use of the product on more occasions	If a product can be used for multiples different occasions make sure the customer base is aware of this
Adapt the Product	Continue to make small adaptations to products to improve the quality of the product on offer.

4. Globalisation

The increasing tendency for countries to trade with each other and to buy global goods such as Coca-Cola or services such as Costa Coffee.	
Imports	
Exports	

4. Globalisation

Barriers to trade	
Tariffs	
Trade blocs	

5. Ethics & business

How the behaviour of a business is judged against human morals.	
Term	
Fair Trade	
Environmental	
Labour	

6. Ways to extend the Product Life Cycle of a Product

Idea:	Explanation
Find new uses for the product	
Change the appearance, format or packaging	
Encourage use of the product on more occasions	
Adapt the Product	

1. Product (Part of the Marketing Mix)

When designing a new product, the key is to design a product that matches the needs or wants of your chosen target market. Every product needs the right balance between:

Product strategy	Explanation
Economic Manufacture	Making sure that the design of the product to be made cost effectively. A complex or expensive design can lead to increased costs.
Function	The design of the product is crucial. The product must work/function effectively
Aesthetics	How much does the design of the product appeal to the senses. When designing a product it is crucial to consider the way it looks

2. Product (Key Terms)

At the heart of the marketing mix is the product

Term:	Definition:
Product Differentiation	The extent to which consumers see your product as being different from its rivals
Product Life Cycle	The theory that every product goes through the same four stages of introduction, growth, maturity and design

4. Ways to extend the Product Life Cycle of a Product

Idea:	Explanation
Find new uses for the product	If a product can be used for multiple purposes, ensure that your target audience is aware of this
Change the appearance, format or packaging	Changing the appearance of a product can give it a new lease of life and allow the customer is perceive it as new again.
Encourage use of the product on more occasions	If a product can be used for multiples different occasions make sure the customer base is aware of this
Adapt the Product	Continue to make small adaptations to products to improve the quality of the product on offer.

3. Stages of the Product Life Cycle

Term:	Explanation:
Introduction	First a company needs to spend time researching the product and the marketplace. The product will be developed, tested, and launched.
Growth	At this stage the product becomes known in the market. At this stage customer awareness increases, prices will still be high.
Maturity	At this point the market may become saturated as 'me too' products are launched into the market. Advertising is increasing to remind consumers about the quality of the product. Brand image needs reinforcing with its customers. The market is highly competitive, and prices are lower as a result
Decline	The product's sales and profit's start to fall. The product is no longing offering what customers want or new technology has made the product obsolete.

5. Promotional Strategy (Part of the marketing mix)	
Promotional strategy is the plan for how to communicate effectively with customers in order to meet sales revenue targets.	
Promotional Strategy:	**Explanation:**
Advertising	Advertising is how a business promotes its products and communicates with its customers.
Sponsorship	Sponsorship is where a business pays to have a brand or company name attached to an activity that has credibility with its customers.
Branding	Branding is a way that businesses can give their products an identity that appeals to its target audience.
Product Trials	A product trial means giving potential customers a free taste of a new product. This may entice new customers.
Special Offers	Businesses can use special offers such as 'buy one get one free' to entice customers to purchase their products.
Using Technology	In recent years, online advertising through social media and other platform such as websites and e-newsletters has become commonplace for firms.

6. Pricing Strategy	
Pricing strategy is vital for any business – pricing your products can be the difference between business success and business failure.	
Market Segment:	**Pricing Strategy**
Mass Market	In mass markets where both competition and customer consumption are high. These markets are generally characterised by low prices and very similar products.
Niche Markets	A niche market is based on a type of customer needs or wants something different to the majority. Generally these markets have few competitors but high prices.
Pricing at each stage of the Product Life Cycle	
Introduction	Pricing at the introduction phase of the product life cycle in some cases will be low to entice new customers to sample the product.
Growth	Once a product is established within a market and has a customer base, businesses will sometimes increase prices to increase revenue.
Maturity	When product growth is at an end, new pricing decisions may be needed. Business will ensure that pricing is competitive to ensure continuous revenue, other firms may decide that the brand may be in irreversible decline and will keep prices high to make a short-term profit.
Decline	When sales have made a decisive step downwards, firms tend to lower prices to ensure a steady stream of revenue. However some firms with a loyal customer base may decide to increase prices in an attempt to gain short term profits.

7. Placing Strategy	
This element of the marketing mix is about how to get the product from the producer to the customer. There are three main distribution channels – traditional, modern and direct.	
Type of Distribution	**Explanation:**
Direct Distribution	This is where a product is distributed directly from the producer to the consumers. An example of this is buying things directly from firms on the internet.
Modern Distribution	This method is common in the grocery sector, where producers will deliver to distribution depots and then the products will be taken to stores to be sold. This method became popular when supermarkets become common place in the 1980s
Traditional Distribution	This method, in the first instance involves a wholesaler buying goods directly from the consumers. From their the wholesaler will sell the products directly to firms who will then sell onto the consumers.

8. Placing Strategy – Key Terms	
Term	**Definition**
Distribution	How ownership changes as a product goes from producer to customer
E-Tailer	An electronic retailer; in other words selling products electronically, either by e-commerce or, more likely these days, mobile commerce.
Retailer	A shop or chain of shops, usually selling from a building in a high street or shopping centre

9. Marketing mix and Business Decisions – Key Terms	
Business decisions are always about the future. So, when the marketing mix is being used to inform and carry out business decisions.	
Term	**Definition**
Budget	A ceiling on the amount of money that can be spent; a marketing budget of £1 million means the marketing manager can spend up to that figure, but no more.
Informed Decisions	Evidence that can be used to make a better decision; a company can gain a better understanding of it's customers through the 4p's, which helps in decision making

Year 11 PRODUCT DESIGN Term 1

A. New and emerging technologies

Companies are trying to **save money**, **improve products**, **develop new materials** and become more **efficient**. New technologies are developed to positively **impact** the **manufacturing industry** and **society**.

Crowdfunding	Uses websites to advertise products as investment opportunities, where people can choose to back a project with a financial donation
Virtual marketing and retail	Promotion of products online and sharing experiences, reviews and recommendations
Cooperatives	Cooperatives are organisations with lots of people working together towards common goals.
Fair trade	Fair trade is a trading partnership that ensures workers in developing countries are given suitable working conditions and are paid a fair wage.

B. Sustainability

If materials are not reused or recycled, the planet will run out of them. If trees are not replanted as quickly as they are felled, we will run out of timber. A material is said to be sustainable if it can be replaced continuously or if it can be recycled or reused indefinitely.

What we are learning this term:

A. New and emerging technologies B. Sustainability
C. Impact on environment D. Impact on People E. Informing design decision

C. Impact on the environment

Modern companies are encouraged to be less wasteful and more considerate of how they affect the natural environment.

Continuous improvement

Continuous improvement is the practice of continually making small adjustments to production techniques to improve speed and quality and save resources.

Efficient working

It is important to ensure that companies work in an efficient manner. This includes increasing the speed of production, reducing errors and reducing waste, which can be done by utilising **automation** or **computer aided manufacture (CAM)**.

Pollution

Pollution is caused when harmful substances are released into the natural environment. Pollution can occur in the air, water or natural land. Legislation has been brought in to help with this issue.

Global warming

- Manufacturing processes in factories or the use of day-to-day products like cars can cause harmful chemicals, such as carbon monoxide and nitrogen oxides.
- These chemicals pollute the air and natural land.

D. Impact on people

People influence how technology is developed to suit their own wants and needs; however, technological developments can change people's lifestyle and behaviours.

Technology push

- Research and development in science and industry can lead to new discoveries
- This is known as technology push, and it happens before there is consumer demand for a product.
- SMART phones are a good example of technology push

Market Pull

- Market pull is when product ideas are produced in response to market forces or customer needs.

Changes in culture

- Fashion trends continue to be influenced by changing technology.
- Wearable items embrace new technology, such as high-tech watches, while textile technology utilises electrically-conductive material or 3D-printing technology.

E. Informing design decision

Physical Disability

Products aimed at users with physical disabilities will ensure they can use the product with ease.

- User needs are met by understanding the nature of the physical disability, eg visual impairment, mobility restrictions or motor control.

Elderly

When designing products aimed at elderly users, it is important to understand –

- The difficulties this user group may experience, such as mobility issues, visual impairment and hearing loss.

Religious Groups

Religious groups have a variety of preferences that can be addressed through design. The use of certain symbols, dietary restrictions and clothing requirements all need to be considered so that beliefs are upheld.

User centred design

User-centered design (UCD) is a design process in which designers **focus on the users** and **their needs** in each **phase of the design process**. In UCD, design teams **involve users** throughout the design process via a **variety of research and design techniques**, to create highly **usable and accessible** products for them.

Universal Design

Universal Design: focuses on serving the broadest range of users as possible (90%), rather than trying to address individual accessibility or inclusion objectives.

Year 11 PRODUCT DESIGN Term 1

A. New and emerging technologies

Companies are trying to _____ _____ **improve products**, _____ _____ and become more _____. New technologies are developed to positively **impact** the _____ _____ and **society**.

Crowdfunding	
Virtual marketing and retail	
Cooperatives	
Fair trade	

B. Sustainability

What we are learning this term:

A. New and emerging technologies B. Sustainability
C. Impact on environment D. Impact on People E. Informing design decision

C. Impact on the environment

Modern companies are encouraged to be ____ _____ and more considerate of how they affect the _____ _____.

Continuous improvement

Efficient working

Pollution

Global warming

D. Impact on people

People influence how technology is developed to suit their own _____ and _____; however, technological developments can change people's _____ and _____.

Technology push

Market Pull

Changes in culture

E. Informing design decision

Physical Disability

Elderly

Religious Groups

User centred design

.

Universal Design

Universal Design:

Year 11 Food & Nutrition Term 1

What we are learning this term:

A. Proteins B. Carbohydrates C. Fibre & Water D. Fats E. Minerals F. Vitamins

A. Proteins – contain amino acids

	Used for growth, repair and maintenance of the body.
Source 	Seeds, meat, fish, dairy, nuts and beans. **Alternative:** soya, mycoprotein, TVP & tofu.
Excess 	Strain on liver and kidneys. These organs process the proteins consumed.
Deficiency 	Slows growth, weak immune system, oedema, kwashiorkor, poor hair /skin / nails.
High Biological Value Proteins 	**These contain ALL the essential amino acids.** These come from mainly animals sources (as well as soya and quinoa).
Low Biological Value Proteins 	**These are missing <u>one or more</u> of the essential amino acids.** These come from plant sources.

Protein Completion: when you combine LBV proteins to get all the essential amino acids.

B. Carbohydrates – used for energy

	**Sugars –** digested quickly & energy released quickly. Monosaccharides or Disaccharides
Source 	Fruit or added to food.
	**Starch –** digested slowly & slow released of energy. Polysaccharides.
Source 	Potatoes, cereals. Have a lot of nutrients & fibre.
Excess 	Gets converted into fat (may lead to obesity), tooth decay, type 2 diabetes.
Deficiency 	Low blood sugar (hunger, dizziness, tiredness), body starts to use up fat & protein (weight & muscle loss).

Glycaemic Index (GI): show how quickly carbohydrates affect blood sugar levels.

C. Fibre & Water

Fibre	Water
• Helps with digestion • Prevents constipation • Found in fruit, pulses, nuts, veg, wholegrain foods	• Helps get rid of waste & digest food • Controls body temperature • 6-8 glasses of water a day • More during a hot day or exercising

D. Fats

Needed for energy, vitamins, insulation (warmth) and protecting your bones & organs, making cholesterol.

Saturated Fats	Unsaturated Fats
Usually come from animal sources	Mostly from vegetable sources.

Excess 	Obesity, Type 2 Diabetes, higher Cholesterol (increased risk Coronary Heart Disease).
Deficiency 	Vitamin deficiency, weight loss, less insulation / bone & organ protection.

E. Minerals

Calcium	Strong bones & teeth, healthy nerves & muscles, blood clotting
Iron	Forms part of haemoglobin in red blood cells
Sodium	Controls body's water content, helps nerves / muscle function
Phosphorus	Healthy bones & teeth
Fluoride	Helps strengthen teeth & prevent tooth decay
Iodine	Helps make some hormones

F. Vitamins

Micronutrients which help the body to function.

Fat Soluble Vitamins

Found in fatty food. Stored in fat tissue if not used up.

A	For good eyesight, healthy immune system / skin
D	Helps absorb minerals (especially calcium)
E	For healthy skin, eyes & immune system
K	Helps heal wounds, keeps immune system / bones healthy

Water Soluble Vitamins

Vitamins that dissolve in water & lost through urine – need to take daily! They are also lost when fruit and vegetables are exposed to air.

B	Keep the nervous system healthy
B1, B2 & B3	Help with energy release
B9 & B12	Help make red bloody cells.
C	Protects body from infection, heals wounds

Antioxidants

Vitamins A, C & E are antioxidants which may protect cells from **free radicals** - chemicals you encounter every day.

Year 11 Food & Nutrition Term 1

What we are learning this term:

A. Proteins B. Carbohydrates C. Fibre & Water D. Fats E. Minerals F. Vitamins

A. Proteins – contain amino acids

Source

Excess

Deficiency

High Biological Value Proteins

Low Biological Value Proteins

Protein Completion:-.

B. Carbohydrates – used for energy

Sugars

Source

Starch

Source

Excess

Deficiency

Glycaemic Index (GI): .

C. Fibre & Water

Fibre	Water
• -	• -
• -	• -
• -	• -

D. Fats

.

Saturated Fats	Unsaturated Fats
	.

Excess

.

Deficiency

E. Minerals

Calcium	
Iron	
Sodium	
Phosphorus	
Fluoride	
Iodine	

F. Vitamins

Fat Soluble Vitamins

A	
D	
E	
K	

Water Soluble Vitamins

B	
B1, B2 & B3	
B9 & B12	
C	

Antioxidants

Year 11 Engineering Term 1 (Unit 2)

What we are learning this term:

A. Client briefs and building specifications
B. Product analysis
C. Design generation and analysis
D. Planning production

A. Client briefs and building specifications

As an engineer you may be given a **brief** of what the customer wants from their product. The steps to analyze this are:

1. Highlight the **key information,** what are they actually asking for?
2. Consolidate the information into a **bullet point list**
3. **Rank** the list in terms of importance, most important first. Make those points the focus of your design.

Specifications: Documents listing the specific properties a design should have. These are most useful when given as **quantitative information,** as you can more easily check if you have completed it.
Quantitive information – can be measured/counted i.e number of wheels on a car, how much it weighs.
Qualitative information – opinions based/ descriptive i.e how beautiful something is

B. Product analysis

A is for **Aesthetics**
Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**
Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**
Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**
Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable? Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**
Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit? Would it be improved if it was bigger or smaller?

S is for **Safety**
Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves? What's the correct and safest way to use the product? What are the risks?

F is for **Function**
Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**
Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

C. Design generation and analysis

S	C	A	M	P	E	R
Substitute	Combine	Adapt	Modify	Put to another use	Eliminate	Reverse
Replace a part, material, or process with something else.	Join elements, ideas, or functions together in new ways – or find a new element you can merge with.	Modify something to better suit a new purpose, person or context.	Enlarge, reduce, change the shape, or alter attributes. Can a small change have a big effect?	Rather than changing the thing itself, consider changing the context it exists in.	Remove elements, simplify, or pare down to essentials. Is less more?	Flip the script, re-order your priorities, invert cause and effect, and turn it all upside-down.

Strengths
- key features that match the design brief
-Key features that match the specification
- Things that the target market would like

Weaknesses
- Limitations of the idea
- Things the target market might not like
- Points on the specification it did not meet

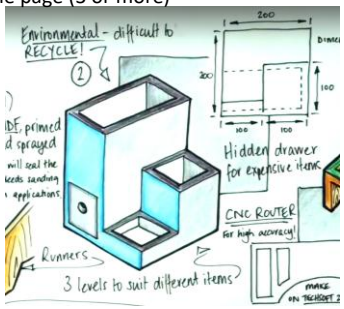
SWOT evaluation for new design ideas

Opportunities
- The ways in which the design could be improved
- New ideas or technology that could change the way the product could be used

Threats
- Other products in the market that are similar
- Extra resources needed to make it
- Extra money / time/ skills needed to make it

C. Design generation example

Is part of a range of ideas on the page (3 or more)



Notes on material/ production choices and why

Notes link designs to the brief and specification

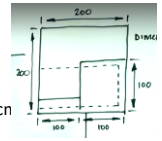
Very clear drawings, use of rendering to show depth

D. Planning production

Calculating the cost of a product:

1. Calculate area/volume of material used
2. Research what **stock** is used and what price a **unit** of stock is
3. Calculate how many **whole products** can be made from that unit of stock
4. Divide the cost of the unit of stock by the number of **whole products** can be made from it

Worked example



Calculate the cost of the 20x20cm component if it is Made from a sheet of 100x100cm plywood that cost £4.

1. Component area = 20x20=40cm
2. Stock = £4 for 1000cm^2
3. 1000 / 40 = 25
4. £4 / 25 = 400p/25 = **16p**

Year 11 Engineering Term 1 (Unit 2)

What we are learning this term:

A. Client briefs and building specifications
B. Product analysis
C. Design generation and analysis
D. Planning production

A. Client briefs and building specifications

Analyse this brief. Show you can: Highlight the **key information, bullet point list** the info, **Rank** the list.

A company which sells products online is creating a new range of designs. Create a concept for a pendant light. The light must be low cost to manufacture so suitable processes and materials should be considered. To keep transportation costs down, the light must be lightweight. The dimensions of the light must not exceed 45cm in any direction.

Ranked Bullet points:

B. Product analysis

A C C M E F S S

Analyse this collapsible plywood shade using ACCESSFM

C. Design generation and analysis

Use the SWOT tool to analyse the design of the existing lampshade.

Strengths	**Weaknesses**
Opportunities	**Threats**

Draw below how you would **adapt** the design to be more lightweight or attractive

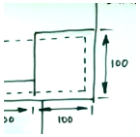
D. Planning production

Calculating the cost of a product:

1. Calculate area/volume of material used
2. Research what **stock** is used and what price a **unit** of stock is
3. Calculate how many **whole products** can be made from that unit of stock
4. Divide the cost of the unit of stock by the number of **whole products** can be made from it

Practice questions:

1 What is the cost of the 100x100mm component if it is made from 1000x1000mm plywood that costs £4?



2. What is the cost of this component if it is made from 1000x1000mm plywood that costs £4?

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:

A. Key words
B. What are the different types of health care services?
C. What are the different types of social care services?
D. What barriers are there to accessing care services?

A.	Key words for this Unit
Primary care	First point of contact when seeking health care
NHS	National Health Service – Tax funded health care in the UK.
Secondary care	Specialist health treatment and/or care
Tertiary care	Advanced specialist health treatment and/or care.
Allied health professionals	Professionals who are involved in patient care from diagnosis to recover
Clinical support staff	Support allied health professionals with the treatment and care of patients.
Foster care	A stable family home where care is provided on either a short or long-term basis.
Residential care	Accommodation and care for a number of children, young people or adults living together in one building.
Respite care	Short-term care which provides relief for family member who are carers.
Domiciliary care	Care received in the person's own home.
Sensory impairment	Difficulties with senses, most commonly vision and hearing.
Braille	Raised lettering to help visually impaired.
Occupational therapist	Offers support to develop independence for daily living activities.

B	What are the different types of health care services?
Primary Care	• Primary care is the first point of contact a patient is likely to have with the NHS – you can refer yourself to primary care providers. • Primary care providers include pharmacists, Registered GPs/doctors, walk-in centres, accident and emergency departments (A&E), dentists and Opticians.
Secondary Care	• Secondary care is specialist treatment or care. A primary care provider will refer a patient for secondary care if they feel it is necessary for the patient to receive further advice, tests or treatment. • Secondary care providers include cardiologists (heart), gynaecologists (female reproduction), paediatrics (children), obstetrics (childbirth and midwifery), psychiatry (mental health) and dermatology (skin).
Tertiary Care	• Tertiary Care is advanced specialist treatment or care. A secondary care provider will refer a patient for tertiary care for long-term treatment and/or care. • Tertiary care areas include spinal, cardiac (heart), cancer care, chronic pain, burns and neonatal (premature and ill new born babies).
Allied Health Professionals	• Allied health professionals work in a range of specialities They support patients through all stages of care – from diagnosis to recovery. To work with the public they must register with the Health and Care Professions Council (HCPC). • Allied health professionals include art therapists, dieticians, paramedics, physiotherapists, speech and language therapists and radiographers.
Clinical Support Staff	• Clinical support staff work within a range of departments under the guidance of allied health professionals. They are trained in their roles but are not required to register with the HCPC. • Clinical support staff include theatre support workers, prosthetic technicians, dietetic assistant, phlebotomist (collects blood samples), hearing aid dispensers and maternity support workers.

C.	What are the different types of social care services?
Children and young people	• Children and young people may need support on a temporary or permanent basis because their parent of carer is ill; they have family problems, they have behavioural issues or additional needs. • Types of support for children and young people include foster care, residential care and youth work.
Children or adults with specific needs	• Children and adults may need support with specific needs including learning disabilities, sensory impairments and long-term health issues. • Types of support for children and adults with specific needs include residential care, respite care and domiciliary care.
Older Adults	• Older adults may need support with a range needs including arthritis, cardiovascular disease, dementia and depression. • Types of support for older adults include residential care, carers and personal assistants.
Informal Social Care	• Not all carers get paid for what they do – they are known as informal carers and social services would really struggle without them. • Informal carers include a spouse or partner, children, friends and neighbours. • Informal carers do practical household duties, shopping, laundry, walk the dog and help with personal care.

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:

A. Key words
B. What are the different types of health care services?
C. What are the different types of social care services?
D. What barriers are there to accessing care services?

A.	Key words for this Unit
Primary care	
NHS	
Secondary care	
Tertiary care	
Allied health professionals	
Clinical support staff	
Foster care	
Residential care	
Respite care	
Domiciliary care	
Sensory impairment	
Braille	
Occupational therapist	

B	What are the different types of health care services?
Primary Care	
Secondary Care	
Tertiary Care	
Allied Health Professionals	
Clinical Support Staff	

C.	What are the different types of social care services?
Children and young people	
Children or adults with specific needs	
Older Adults	
Informal Social Care	

D.	What barriers are there to accessing care services?
Physical Barriers 	• Difficulty accessing care due to mobility and/or disability. • Obstacles include uneven and rough pavements and services, narrow doorways, no lift and transport. • Access could be improved by planning journeys in advance and reporting any problems to the council.
Sensory Barriers 	• Sensory impairments can be a barrier to accessing care. • A person with poor vision may need glasses or documents in large print. Profound sight problems may benefit from Braille. • A person with a hearing impairment may benefit from a hearing aid or sign language interpreter.
Social, Cultural and Psychological Barriers 	• Social, cultural and psychological barriers may leave people feeling nervous about accessing support. • These can include: religion/cultural barriers, negative experience, self-diagnosis, substance misuse, opening hours. • Care services can give individuals opportunities to share their concerns, offer different gender practitioners, facilities to worship and show respect and understanding.
Language Barriers 	• Language can be a barrier to accessing care services because individuals and care providers may struggle to understand each other. • Support for individuals could include translated documents, translators and interpreters and support from family members.
Geographical Barriers 	• Individuals may struggle to reach care services because public transport may not run regularly, specialist treatments may require long distance travel and travel can be expensive. • Support could include being provided with direct travel or having travel costs reimbursed.
Intellectual Barriers 	• If an individual has a learning disability is can cause difficulty in them accessing care services. • Support might include a learning disability nurse, speech and language therapist or occupational therapist.
Resource Barriers 	• As the population ages and more disorders are being successfully treated, there is a huge strain on health and social care resources – at times it might seem that not everyone can access what they need. • There are huge staff shortages which puts strain on people that work in the health and social care sector.
Financial Barriers 	• Seeing a GP or using emergency services are free but some services, such as optical and dental care, often involve some payment. • This can be difficult for people if they are from a low-income household as they may not feel they can afford to access the care they need.

D.	What barriers are there to accessing care services?
Physical Barriers 	
Sensory Barriers 	
Social, Cultural and Psychological Barriers 	
Language Barriers 	
Geographical Barriers 	
Intellectual Barriers 	
Resource Barriers 	
Financial Barriers 	

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:

E. Define the key words
F. What are the care values and how can they be implemented?

E.	Define the key words
Self-respect	Valuing yourself
Person centred approach	Planning care around the wants and needs of a service user
Empowerment	Supporting people to take control of their lives and futures by involving them decisions on their care and treatment
Confidentiality	Not passing on information or discussing a private conversation to anyone
Dignity	Being respected and treated with care
Safeguarding	Policies to ensure children and vulnerable adults are protected from harm, abuse and neglect
Discrimination	Treating a person or group of people unfairly or less well than others
Compassionate	Feeling or showing sympathy and concern for others
Competence	The ability to do something successfully and efficiently
Consequences	A result or effect, typically one that is unwelcome or unpleasant
Review	Involves assessing or inspecting something with the intention of making change if necessary
Empathy	Being able to understand and share feelings and views of another person.
Insomnia	Difficulties in sleeping

F.	What are the care values and how can they be implemented?
Empowering and promoting independence 	• Empowerment is when an individual feels in control of their own life and have a say in what happens to them. • Some people might need help with empowerment because of their age, circumstances or confidence e.g. elderly people, children, adult with learning disabilities. • You can promote empowerment and independence by involving individuals, where possible, in making choices about their treatment.
Respect for others 	• You can show respect for the individual by respecting their privacy, needs, beliefs and identity. • Show respect by being patient when someone takes longer to perform simple tasks due to their age, disability or injury. • Do not leave personal files around for others to see or discuss your patients' case with friends. • Gain permission before entering a room, provide private place for personal conversations.
Maintaining confidentiality 	• It is a person's right by law to have information about them kept confidential. • Care workers and not allowed to talk about one service user to another, or someone who is not involved in helping them get better. This involves not having those private conversations in public places where other can overhear. • Paper and electronic files are to be kept confidential and only shared with care workers which are involved in the treatment of the patient.
Preserving dignity 	• Preserving the dignity of individuals to help them maintain self-worth, privacy and self-respect. • You do this by involving the person in their own care; helping them go to the bathroom; giving the person time they need, checking what they would like to be called; closing door or curtain when they are changing; making sure their clothes are clean; dealing with embarrassing situations sensitively and professionally.
Effective communication 	• In health and social care it is important to communicate effectively with service used in order to build trusting relationships. These can be lost of the care worker appears not to care or listen. • Recognising different communication needs and trying to overcome them shows that cares respect the individual e.g. when visually impaired providing a leaflet in braille; if can't speak English well, have a translator organised beforehand. • Show you value the person through showing empathy, asking questions, not judging, smiling, using their name, giving appropriate eye contact, open body language, giving time to process.
Safeguarding and duty of care 	• Health and social care workers have a legal duty to protect service users from harm, neglect or abuse. They must recognise the signs and symptoms of abuse so they can protect people. • Signs of abuse include low self-esteem, STDs, unexplained injuries or bruises, insomnia, change in appetite, change of personality, self-harming, fear of being alone etc. • What to do: report the abuse, never promise to keep the abuse secret, make it clear that you will have to tell someone e.g. your supervisor or the police. DUTY OF CARE • Care workers must work in ways that never put individuals at any risk or harms. They need to know their responsibilities, procedures, deliver care as the care plan states and always report and record any concerns about the service user even if they appear minor.
Promoting anti-discriminatory practice 	• Discrimination can be obvious but sometimes it can be subtle and hidden, and The Equality Act 2010 makes it illegal to discriminate against people because of their e.g. age, gender, race, disability, religion, sexual orientation, marital status etc. • You can promote anti-discriminatory practice by: having patience with someone who doesn't speak English well; communicating in a way that the person will understand; showing tolerance towards people who have different beliefs and values from you; challenging unkind behaviour.

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:
E. Define the key words F. What are the care values and how can they be implemented?

E.	Define the key words
Self-respect	
Person centred approach	
Empowerment	
Confidentiality	
Dignity	
Safeguarding	
Discrimination	
Compassionate	
Competence	
Consequences	
Review	
Empathy	
Insomnia	

F.	What are the care values and how can they be implemented?
Empowering and promoting independence 	
Respect for others 	
Maintaining confidentiality 	
Preserving dignity 	
Effective communication 	
Safeguarding and duty of care 	
Promoting anti-discriminatory practice 	

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:
G. How to apply care values in a compassionate way. H. Identifying own strengths and areas for improvement against the care values

G	How to apply care values in a compassionate way?
Show empathy and care by:	• Being patient • Showing sensitivity • Understanding • Actively listening • Having a positive outlook • Being encouraging • Having genuine concern for other people.
Care workers can check themselves against the '**Six C's of Compassionate Care**' checklist to make sure they are applying care values with compassion.	
Care	Helps to improve an individual's health and wellbeing. Care should be tailored to each person's needs and circumstances
Compassion	Shows the care worker understands what the individual is experiencing. Being empathetic to their situation shows care and value to the individual
Competence	Shows that care workers can safeguard and protect individuals from harm
Communication	How to adapt to individuals and their circumstances to ensure important information is given and shared- keeping the individual at the heart of everything that is done
Courage	Protecting individuals by speaking up if you think something is wrong; being brave enough to own up if you have made a mistake.
Commitment	Carrying out your duties to care for others to the best of your ability.

H	Identifying own strengths and areas for improvement against the care values
Working together	• All care works have the responsibility to uphold care values. If everyone works together, doing their 'bit', service users and colleagues alike will all be able to have positive experiences. • Put any feelings aside, some clients can show anger or aggressions towards you, continues to work in a way that respects each of the care values. Staff training: • Staff training keeps everyone updated. Even if they also ready had care values training it is important to have it again and remind them of their importance.

Making mistakes	• Everyone sometimes make mistakes. It is crucial that staff own up to mistakes that they have made, not matter how small. This is part of the duty of care to safeguard individuals, it demonstrates respect.
	• You need to be honest about your mistake, do not pretend it never happened and do not blame someone else.
	• You can:
	  • Tell your supervisor, admit it and apologise
	  • Be honest and accurate about what happened,
	  • Suggest ways to avoid it happening again
	  • Earn back the trust of the person involved
	  • Prove you can do the job
	  • Do no be too hard on yourself; seek help and guidance from others.

Reviewing own applications of care values	• One way to improve skills is to look carefully at the areas you are good at, what you are able to do well and things that you find difficult. • Knowing your strengths will allow you to take on task with ease and make you feel confident that you are doing a good job. • Knowing your weaknesses and what needs improving will help you work on them and develop. It is important to be open with yourself and others in order to progress further and be better at your job. • Regularly review your strengths and weaknesses because they change overtime
Receiving feedback	• The purpose of feedback is to let you know what you are doing well and the areas you need to improve. • This can be formal- like reports and following an observation at work and Informal- like chatting to colleagues at break time. • Both types encourage you to feel pleased with what you have done well and motivate you to improve in weaker areas, perhaps even provide a way forward. • Remember: when giving and receiving feedback, positives must be noted so that you know what you are doing well and continue to do so. Negatives are hard to uncomfortable to hear, but do not take them personally, you need them to get better at your job and feel more confident.
Using feedback	• Create yourself a SMART action plan to set yourself Specific, Measurable, Achievable, Realistic and Time-related targets or goals to help plan for your improvements

Year 11 BTEC Health and Social Care- Component 2: Health and Social Care Services and Values.

What we are learning:
G. How to apply care values in a compassionate way. H. Identifying own strengths and areas for improvement against the care values

G	How to apply care values in a compassionate way?
Care	
Compassion	
Competence	
Communication	
Courage	
Commitment	

H	Identifying own strengths and areas for improvement against the care values
Working together	
Making mistakes	
Reviewing own applications of care values	
Receiving feedback	
Using feedback	

What we are learning in LAA:

A. Key words
B. Definitions of health and wellbeing
C. Genetic inheritance

A. Key words for this Unit

Genetic inheritance	The genes a person inherits from their parents
Predisposition	Someone is more likely to suffer from a particular condition
Chronic	Gradual illness that is long term (longer than 3 months) and generally can be treated but not cured
Acute	A short-term illness that can be cured
Monitor	To check progress over a period of time.
Person-Centred	Planning care around the wants and needs of a service user
Bereavement	The process of coming to terms with the death of someone close.
Circumstances	Events that change your life, over which you have no control
Physiological	Relates to how a person and their bodily parts function normally.
Interpret	understand an action, mood, or way of behaving as having a particular meaning
Collaboratively	Working well together with other poeple or services
Obstacles	Difficulties a person might face when they implement a plan.
Goal	What you want to achieve in the long term
Norm	Something that is usual, typical or standard
Targets	Challenges to help you reach your goal

B. Definitions of heath and well-being

Positive Definition

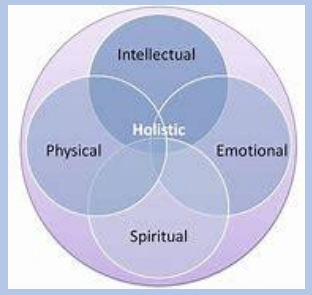
Looks at how physically fit and mentally stable a person is. You have a positive attitude towards health and wellbeing if you realise that there is something you can do to improve your health and wellbeing and do it.

Negative definition

Looks at the absence of physical illness, disease, and mental distress. You have a negative attitude towards your health and wellbeing if you:

- Base your attitude on not having anything wrong with you.
- Continues as you are- Inc. keeping bad habits like smoking.
- Assume that because you currently feel fine you will stay healthy in the future.

Holistic definition



It is a combination of physical health and social and emotional wellbeing. It is not just the absence of disease or illness; it looks at all aspects of a person's health and wellbeing. You have a holistc attitude towards health and wellbeing if you look after your:

- **Physical Health:**
By meeting the needs we have to keep our bodies working as well as they can, e.g. Food, water, shelter, warmth, clothing, rest, exercise and good personal hygiene.

- **Intellectual health:**
By meeting the needs we have to develop and keep our brains working as well as possible; these include mental stimulation to keep us motivated and interested.

- **Emotional aspects of wellbeing:**
By meeting the needs we have that make us feel happy and relaxed, e.g. being loved, respected and secure. Knowing how to deal with negative emotions, having positive self-concept and being respected by others.

- **Social aspects of wellbeing**:
By meeting the needs we have to help us develop and enjoy good relationships with others, including mixing with others in appropriate environments and having access to leisure facilities/ activities.

C. Genetic inheritance

Inherited physical Characteristics

- Children inherit their physical; characteristics from their parents e.g. height, skin and eye colour and hair type and colour.
- These characteristics can affect social and emotional welling because they influence a person's self-concept (self-image and esteem).

Genes and environment

- Chromosomes carry genes that determine aspects of persons physical makeup.
- Gene is a section of DNA that carries a code. Different versions of a gene are called **alleles** (they can be faulty).
- Environmental factors such as diet, also influence physical appearance. For example, a person may not grow to their full, genetically determined height if they do not have enough food.

Allele type

Dominant:
If a gene is dominant a child inheriting it from only one birth parent will have the condition, e.g Huntington's disease.

Recessive:
If the gene is recessive a child would only develop the condition if it was inherited from both birth parents, e.g. Cystic fibrosis.

Effects of inherited disorders

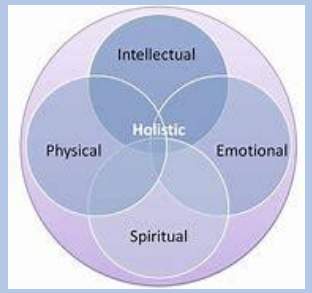
- Physical health: Body systems, growth and mobility
- Intellectual welling: learning, thinking, problem solving and decision making.
- Emotional wellbeing: how people feel about themselves.
- Social wellbeing: the ability to build relationships and maintaining them.

What we are learning in LAA:

A. Key words
B. Definitions of health and wellbeing
C. Genetic inheritance

A.	**Key words for this Unit**
Genetic inheritance	
Predisposition	
Chronic	
Acute	
Monitor	
Person-Centred	
Bereavement	
Circumstances	
Physiological	
Interpret	
Collaboratively	
Obstacles	
Goal	
Norm	
Targets	

B	**Definitions of heath and well-being**
Positive Definition	
Negative definition	
Holistic definition	



C.	**Genetic inheritance**	
Inherited physical Characteristics		**Genes and environment**
Allele type		Effects of inherited disorders

What we are learning in LAA:

D. Balanced diet
E. Chronic and acute illness
F. What are the effect of exercise?
G. What are the effect of excessive substance use?

D. Balanced diet

What is a balanced diet?	• Diet that contains the correct nutrients in the right proportions to keep out bodies and minds healthy. • It is also a lifestyle choice • Choosing to eat too much or too little might make us less able to take all the opportunities that life offers.
Overweight or underweight may:	A person over weight or under weight may: • Be prone to illness and conditions • Have their life expectancy reduced • Be less able to exercise effectively • Miss out on learning experiences • Miss out on some sporting activities • Be less successful in job interviews • Feel embarrassed and self-conscious about their appearance in social situations.
Essential parts of a healthy diet:	• Fats (saturated and unsaturated) • Carbohydrates (sugars and starches) • Minerals • Vitamins • Proteins
Eat well guide says you should eat:	• Eat at least 5 portions of a variety of fruit and vegetables every day. • Base meals on potatoes, bread, rice, pasta or other starchy carbohydrates; choosing wholegrain versions where possible. • Have some dairy or dairy alternatives (such as soya drinks); choosing lower fat and lower sugar options. • Eat some beans, pulses, fish, eggs, meat and other proteins (including 2 portions of fish every week, one of which should be oily). • Choose unsaturated oils and spreads and eat in small amounts. • Drink 6-8 cups/glasses of fluid a day.
If you eat <u>more</u> than you need:	• The body will store food as fat and this can lead to: • Obesity, heart disease, high blood pressure, Strokes, Tooth decay or cancer
If you eat <u>less</u> than you need	• The body does not get enough nutrients to grow and develop properly and this can lead to: • Eating disorders, stunned growth, anaemia, heart failure, depression, tiredness, cancer or rickets.

E. Chromic or Acute Illness

Chronic illness- Illness comes on gradually, is long term (more than 3 months) and generally can be treated but not cured. E.g Asthma, Diabetes, epilepsy, bipolar disease, Alzheimer's disease

Acute illness- Illness comes on quickly, is short term and can be cured. E.g. Cold, flue, broken bones, heartburn, appendicitis or Diarrhoea.

Some chronic conditions are acute but may develop because of chronic conditions. For example: osteoporosis (a chronic condition that weakness bones) making their bones fragile and more likely to break. Broken bones are then an acute condition.

Possible negative effects of chronic illness

Physical: • poor rate of growth • Unusual physiological change during puberty • Restricted movement	Emotional: • Negative self-concept • Stress • Decision making
Intellectual: • Disturbed learning because of missing school • Difficulties in thinking and problem solving • Memory problems.	Social • Isolation • Loss of independence • Difficulties developing relationships

F. What are the effect of exercise?

Positive effects of exercise 	**<u>Physical:</u>** maintain a healthy weight, reduce BMI, boosting energy levels. Improved flexibility, stamina, endurance and stronger bones and muscles. Reduce risk of heart disease and diabetes. **<u>Intellectual</u>**: improved brain function like mental and thinking skills. **<u>Emotional:</u>** improves confidence and mood and reduces stress. Aid relaxation and sleep and lead to better self concept. **<u>Social</u>**: encourages social interaction, reducing isolation and improving social skills.
Negative effects of exercise	**<u>Physical:</u>** Obesity and associated health problems. **<u>Intellectual</u>**: Reduced pain performance, hard to concentrate and retain information. **<u>Emotional:</u>** poor self-concept and reduced ability to cope with stress. **<u>Social:</u>** Fewer opportunities for social interactions.

G. What are the effect of excessive substance use?

Negative effects of excessive alcohol consumption 	**<u>Physical:</u>** Alcohol dependence, damage to major organs: liver, heart, kidneys, pancreas. Cancers: mouth, throat, oesophagus, liver, breast. Infertility and impotence, weight gain. **<u>Intellectual</u>**: difficulty in making decisions, depression and anxiety, chance of stroke and brain damage, impaired brain development of unborn baby. **<u>Emotional</u>**: poor self-concept, poor judgement leading to a risk of accidents and unsafe sex, can have an impact on relationships, depression. **<u>Social</u>**: breakdown of relationships, domestic violence, social isolation

What we are learning in LAA:

D. Balanced diet
E. Chronic and acute illness
F. What are the effect of exercise?
G. What are the effect of excessive substance use?

D.	Balanced diet
What is a balanced diet?	
Overweight or underweight may:	
Essential parts of a healthy diet:	
Eat well guide says you should eat:	
If you eat more than you need:	
If you eat less than you need	

E	Chromic or Acute Illness

Possible negative effects of chronic illness	

F.	What are the effect of exercise?
Positive effects of exercise 	
Negative effects of exercise	

G.	What are the effect of excessive substance use?
Negative effects of excessive alcohol consumption 	

What we are learning in LAA:

H. The effects of social interactions on wellbeing
I. What are the effects of stress on health and wellbeing
J. What are the hazards of smoking
K. What are the effects of personal hygiene

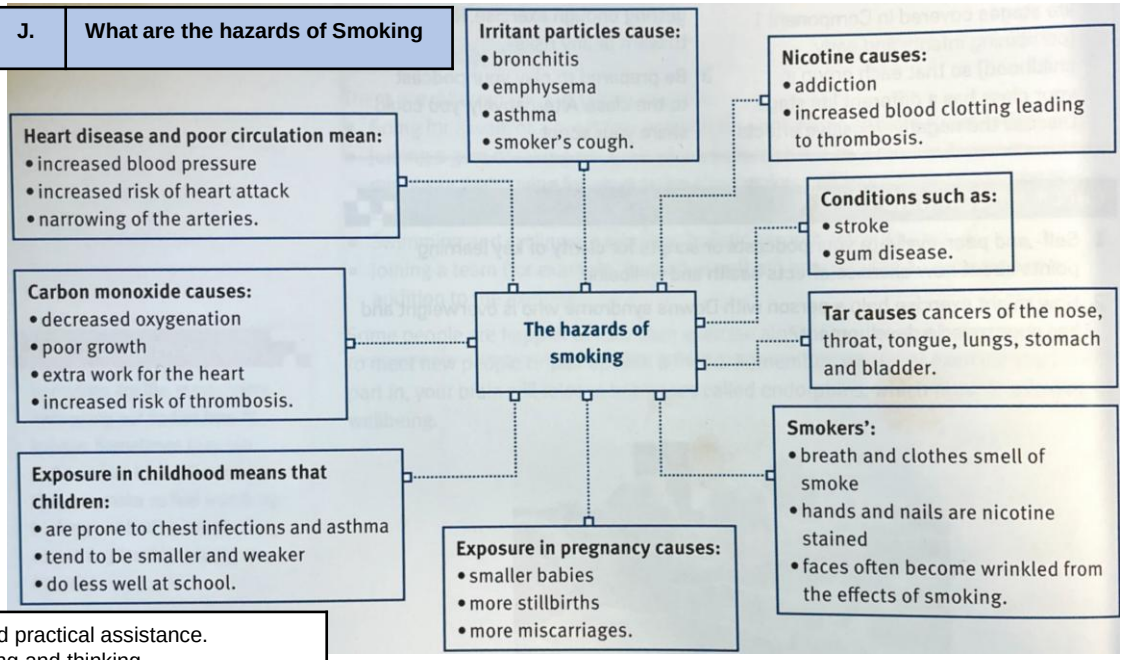
H. The effects of social interactions on wellbeing

Social integration	When people feel they belong to a group and can interact with others. Social interactions can happen between family members and friends, work colleagues, school learners, members of a community or interest groups.
Social isolation	Occurs when people do not have regular contact with others. This may be because they don't go out much because of physical illness, reduced mobility or unemployment. They might have a difficulty in communicating if they have a mental illness, depression or learning difficulties. Lastly, a person might be discriminated against because of culture, religion or disability.
Positive effects of relationships 	**Physical:** physical support and day to day care and practical assistance. **Intellectual:** shared experiences, supported learning and thinking **Emotional:** unconditional love, security and encouragement, positive self-concept, feeling content, ability to build relationships with people outside the family, independence and confidence. **Social:.** Companionship, social circle increases.
Negative effects of social isolation 	**Physical:** poor lifestyle choices like smoking and drinking, poor diet that can cause eating disorders. **Intellectual**: reduced ability to use thinking skills, missing school/work **Emotional**: feelings insecure, depression, anxiety, negative self-concept, feeling of hurt, loneliness and distrust, lack of independence, difficulty in controlling emotions. **Social**: difficulties in building relationships as lack skills.

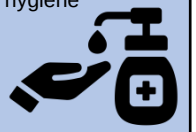
I. What are the effects of stress on health and wellbeing

Physical effects	Intellectual effects	Emotional effects	Social effects
Increased heartbeat Increased breathing rate Tense muscles Sweaty palms Dry mouth High blood pressure Loss of appetite Sleeplessness Digestive problems	Forgetfulness Poor concentration Difficulty in making decisions	Difficulty in controlling emotions Feeling insecure Negative self-concept Feeling anxious and frightened Loss of confidence	Difficulty in making friends and building relationships Breakdown of close relationships Social isolation

J. What are the hazards of Smoking



K. What are the effects of Personal Hygiene?

Positive effects of good personal hygiene 	• Helps prevent the spread of infection • Improves self-concept • Reduces number of bacteria that lives on us. **You must:** • Brush you teeth • Shower daily or bath • Wash your hair regularly • Keep fingernails and toenails clean and trimmed
Negative effects of poor personal hygiene	**Physical:** catching and spreading disease like food poisoning, sore throat, meningitis and athlete's foot. Bad body odour, bad breath and tooth decay. **Emotional:** loss of friendships and social isolation. Might be bullied and poor self-concept. **Social:** low social interactions as people don't want to be friends with someone that neglects their hygiene. Social isolation.
When caring for others:	• Bad hygiene can stop effect communication. • Negative effect on the person being cared for and their health and wellbeing- pass on infection • Discomfort for the person being cared for because of the odour or visible dirt under fingernails.

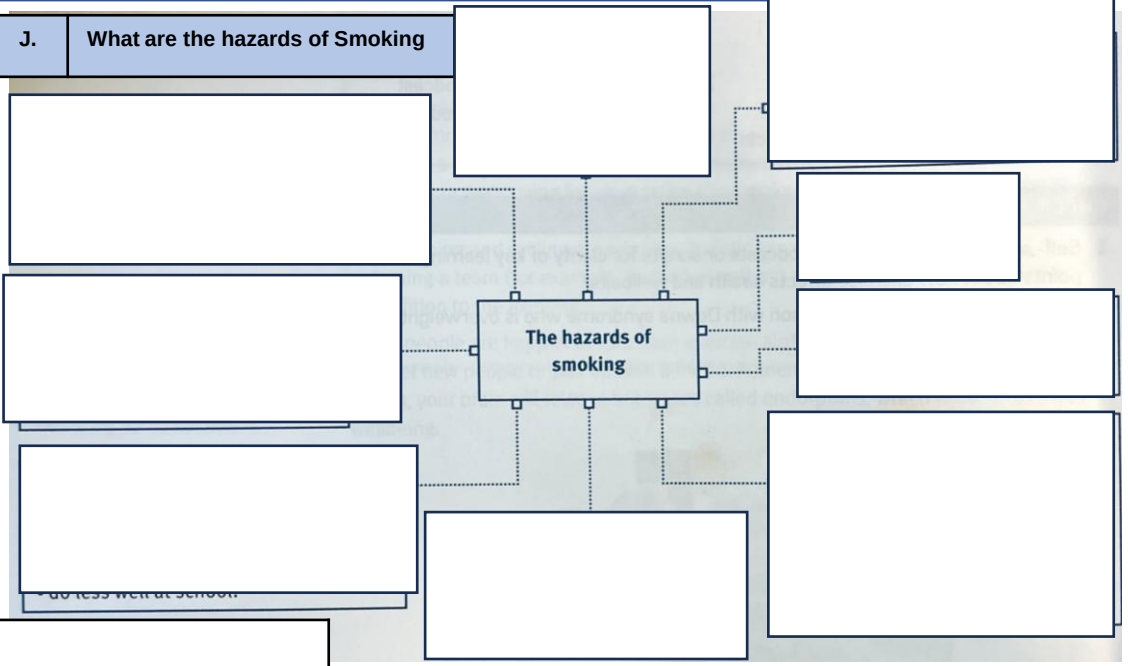
What we are learning in LAA:

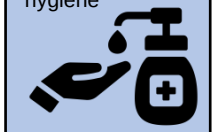
H. The effects of social interactions on wellbeing
I. What are the effects of stress on health and wellbeing
J. What are the hazards of smoking
K. What are the effects of personal hygiene

H.	The effects of social interactions on wellbeing
Social integration	
Social isolation	
Positive effects of relationships 	
Negative effects of social isolation 	

I.	What are the effects of stress on health and wellbeing		
Physical effects	**Intellectual effects**	**Emotional effects**	**Social effects**

J.	What are the hazards of Smoking



K.	What are the effects of Personal Hygiene?
Positive effects of good personal hygiene 	
Negative effects of poor personal hygiene	
When caring for others:	

What we are learning in LAA:

L. What are the barriers to seeking help.
M. What are the effects of unexpected life events on health and wellbeing
N. What are the effects of economic factors (e.g, income) on health and wellbeing
O. What are the effects of expected life events on health and wellbeing

L.	What are the barriers to seeking help.
Culture	Accessing HSC services can be influenced by values, traditions, way of life and beliefs of the society or group. • Some may have received discrimination when accessing other services. • Some may not speak English well enough. • Values and traditions not understood e.g. eye contact means respect in some cultures but not others. • Some cultures a woman must be treated only by a female professional. • Alternative therapies are used in some cultures
Gender	Research shows that men are lesson likely to talk about their health and wellbeing than woman. This is because men are: • Often less open about their feelings • Sometimes reluctant to appear vulnerable by asking for help • Not aware of poor health signs as health campaigns target women's health more • Unhappy to be examined by a female health worker.
Education	Research shows that people who are better educated are more likely to seek help. This is because: • They like to research symptoms and know when help is needed • Understand the importance of early diagnosis and treatment • Know how and where to access services.
Stigma	In some cultural groups there is a stigma attached to certain condition like depression. Stigma is a word used to describe something that people feel embarrassed about. Therefore, they wouldn't seek help.

M.	What are the effects of unexpected life events on health and wellbeing	
Life event	**Negative Effects:**	**Positive Effects:**
Imprisonment	• Depression • Loss of contact with family and friends • Social isolation • Restrictions on physical activity	• Opportunity to study • Improvement in health through balanced diet, lack of alcohol, reduced use of nicotine
Redundancy	• Poor self-concept • Anxiety about finances • Fewer opportunities	• Opportunities to study or train for a new job • More time to spend with family and friends
Exclusion or dropping out of education	• Loss of contact with friends • Social isolation • Poor self-concept • Lack of learning opportunities	• Catalyst for change of behaviour • Opportunities for more suitable study or work situation

N.	What are the effects of economic factors (e.g, income) on health and wellbeing	
	Positive Effects:	**Negative Effects:**
Physical	• Better financial resources can result in good housing conditions and healthy diet • Manual jobs may improve muscle tone and stamina.	• Low wages can affect diet ad housing, leading to poor health. • Manual jobs can cause muscular and skeletal problems • Desk jobs lead to less activity and weight gain.
Intellectual	• Better financial resources can result in more leisure time for intellectual activities • Work, education or training helps to develop problem solving and thinking skills	• Some people work very long hours to improve their financial position, leading to less leisure time and reduced learning opportunities. • Being unemployed can result in poor mental health.
Emotional	• A well-paid job gives a feeling of security. • Being financially secure promotes positive self-concept	• Financial worried can result in stress and breakdown of relationships. • Unemployment or low-status work can lead to low self-concept
Social	• Better financial resources provide opportunities for socialising. • Work gives opportunities for socialising with colleagues.	• Lack of financial resources reduces opportunities for socialising. • Unemployment reduces opportunities for relationships, leading to social isolation.

O.	What are the effects of expected life events on health and wellbeing	
Life event	**Positive Effects:**	**Negative Effects:**
Starting school, college or uni	• Build new relationships • Extend knowledge and learning • Develop new skills • Improve confidence	• Anxiety about new routines and meeting new people • Insecurity about leaving parents and other families
Start a new job or career	• Develop independence • Improve thought processes • Improve self-concept	• Stress about learning new skills and routines • Anxiety about meeting new people
Moving to a new house or area	• Excitement • Develop new friendships and relationships	• Unhappiness at loss of old life • Stress of moving • Social isolation
Retirement	• Reduced stress • Time to socialise with family and friends • Opportunities for leisure of physical activities	• Loss of relationships with colleagues • Possible loss of fitness and mobility • Loss of intellectual stimulation and status

What we are learning in LAA:
L. What are the barriers to seeking help. M. What are the effects of unexpected life events on health and wellbeing N. What are the effects of economic factors (e.g, income) on health and wellbeing O. What are the effects of expected life events on health and wellbeing

L.	What are the barriers to seeking help.
Culture	
Gender	
Education	
Stigma	

M.	What are the effects of unexpected life events on health and wellbeing	
Life event	Negative Effects:	Positive Effects:
Imprisonment		
Redundancy		
Exclusion or dropping out of education		

N.	What are the effects of economic factors (e.g, income) on health and wellbeing	
	Positive Effects:	Negative Effects:
Physical		
Intellectual		
Emotional		
Social		

O.	What are the effects of expected life events on health and wellbeing	
Life event	Positive Effects:	Negative Effects:
Starting school, college or uni		
Start a new job or career		
Moving to a new house or area		
Retirement		

What we are learning in LAB:

A. Physiological health indicators
B. What are health indicators?
C. Interpreting lifestyle data

A.	Physiological health indicators
Pulse	**Resting pulse rate** is measured when a person has been still for about 5 minutes. Health reading for an adult is 60-100 bpm. **Pulse rate during exercise:** 220bpm minus the person's age.
Blood pressure	• This is the pressure exerted by blood against the artery walls. • It is measured in millimetres of mercury (mm Hg) and is shown in two numbers: • Systolic pressure: (the top number) is the maximum pressure in the blood vessels as the heart pushes out blood. • Diastolic pressure: (the bottom number) as the minimum pressure in the vessels when the heart relaxes between the beats.
Peak flow	• Measured how quickly you can blow air out of your lungs. • it is measured in litters per min (L/min).
BMI	• Measures the amount of fat on your body in relation to your height to tell you if your weight is healthy.

B.	• What are health indicators?
Importance of understanding indicators	• Detect health problems at an early stage • Track improvements or deterioration in health • Make recommendations about health and treatments • Give advice about future health risks • Support individuals to make different lifestyle choices.
What are lifestyle indicators?	• These indicators can be used to assess risks to an individual's health and wellbeing now and in the future. • Professionals collect information about lifestyle choices by asking about a person's: • Weekly alcohol consumption • Smoking habits • Levels of physical activity and exercise.
What are physiological indicators?	• They show how well the body's systems are functioning. • Health professionals check a person's heath by taking measurements. • They compare the results with published guidance.

C.	Interpreting lifestyle data
Interpreting data on smoking 	• Smoking causes around 96,000 deaths in the UK annually. • Smoker under the age of 40 are 5 times more likely to have a heart attack than non-smoker. • Smoking causes 80% of deaths from lung cancer, 80% of bronchitis and 14% of deaths from heart disease. • More than 25% of all cancer deaths are caused by smoking. • On average a smoker will die 10 years earlier than a non-smoker. • Smokers are more likely to develop facial wrinkles. • Smoking is a cause of impotence and can lead to sperm abnormalities.
Interpreting data on alcohol 	• Strongly linked to at least 7 types of cancer • Alcohol-related liver disease accounts for 37% of liver disease and deaths. • 2/3s of cases of chronic pancreatitis are caused by heavy drinking • You are between 2 and 5 times more likely to have an accident or injury • Each drink per day increases the risk of breast cancer in woman between 7-13% • Men and woman should not drink more than 14 units a week and not all in one go.
Interpreting data on inactivity 	• Increased risk of breast cancer by 17.8% and colon cancer by 18.7% • Increased risk of type 2 diabetes by 13%. • Increased risk of coronary heart disease by 10.5% • Leads to obesity and joint pain • 16.9% of all premature deaths are caused by inactive lifestyle. • Active people have a lower risk of premature death. • People who are inactive visit their GP more often and they spend 38% more time in hospital.

What we are learning in LAB:
A. Physiological health indicators B. What are health indicators? C. Interpreting lifestyle data

A.	Physiological health indicators
Pulse	
Blood pressure	
Peak flow	
BMI	

B.	• What are health indicators?
Importance of understanding indicators	
What are lifestyle indicators?	
What are physiological indicators?	

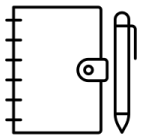
C.	Interpreting lifestyle data
Interpreting data on smoking 	
Interpreting data on alcohol 	
Interpreting data on inactivity 	

What we are learning in LAC:

A. What is a person-centred approach
B. Health improvement plan
C. Recommended action to meet health and wellbeing improvement goals
D. SMART targets for health improvement plan
E. Sources of support

A.	What is a person-centred approach.
Person-centred approach	A holistic approach that puts the individual at the heart of health care planning, so that the whole range of physical, intellectual, emotional and social health needs are met.
When planning for health improvements include:	• The needs: physical, intellectual, emotional and social. • The wishes: likes, dislikes, choices and desired health goals. • Circumstances: illness or disability, access to facilities, previous experiences, family and relationships, responsibilities.
Benefits of person-centred approach:	• Will feel involved • Is more likely to trust a health professional who listen to them • Will feel more secure • Is more likely to follow the plan and achieve the targets • Will take responsibility for their own health.

B.	Health improvement plan
What is it?	Health and welling improvement plans are often based on an individual's physiological and lifestyle indicators. Plans should be person-centred and include goals, actions and targets and possible sources of support.
The plan will identify:	• The health issues and goal • The recommended actions to take • A set of targets for health improvement • The supports that are needed • Possible obstacles to progress and way to overcome them.
Positive effects of a health improvement plan	• Be fitter • Loose weight • Have improved self-concept • Lower blood pressure, healthier heart • Reduced risk of cancer • Taking control of their health outcomes and reaching health goals



C.	Recommended action to meet health and wellbeing improvement goals
To lower blood pressure: • Eat five or more portions of fruit and veg a day • Cut out salt • Use relaxation techniques to reduce stress • Join a gym • Drink water alongside alcohol to reduce consumption	**To reduce BMI:** • Reduce fat and sugar intake • Do not exceed the recommended daily calories intake • Get off the buss a stop early and walk the rest of the way • Drink water instead of sugary drinks.
To increase peak flow reading: • Half the number of cigarettes smoked each day • Use nicotine replacement therapies • Join an exercise or dance class.	**To reduce pulse rate and improve recovery time after exercise:** • Walk for half and hour at lunchtime • Drink decaffeinated drinks • Take up a physically active hobby • Join a yoga group.

D.	SMART targets for health improvement plan
Specific	The target must be clearly stated. It should say exactly what you mean, such as to 'lose 2 kg in weight in a week'. The target should be clear and not open to any misunderstanding.
Measurable	A target of to 'lose weight' is too vague. A specific amount must be stated so you can prove you have met your target.
Achievable/ attainable	If you are following a health and wellbeing improvement plan you must feel it is possible to achieve it. If you do not, you will probably give up before you have even started. An achievable target is to 'lose 1kg this week'. An unachievable target would be to 'lose 20kg this week'.
Realistic	The target set must be realistic in that you must be able to physically do it. It is not realistic to expect a person who is older and not very fit to run for 30 minutes a day to help weight loss, but it is realistic to ask the same of a fitter, younger person.
Time-related	The target must have a deadline, so that you know when you need to achieve the target by, and progress can be assessed.

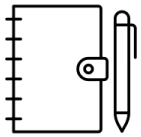
E.	Sources of support
Informal support	Informal support is the support an individual receives from partners, family and friends. It is usually the first form of support an individual experiences after and expected or unexpected life event. Informal support can provide reassurance, encouragement, advice, a sense of security, someone to talk through options with and practical help.
Professions (formal) 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.

What we are learning in LAC:

A. What is a person-centred approach
B. Health improvement plan
C. Recommended action to meet health and wellbeing improvement goals
D. SMART targets for health improvement plan
E. Sources of support

A.	What is a person-centred approach.
Person-centred approach	
When planning for health improvements include:	
Benefits of person-centred approach:	

B.	Health improvement plan
What is it?	
The plan will identify:	
Positive effects of a health improvement plan	



C.	Recommended action to meet health and wellbeing improvement goals

D.	SMART targets for health improvement plan
Specific	
Measurable	
Achievable/ attainable	
Realistic	
Time-related	

E.	Sources of support
Informal support	
Professions (formal) support	
Voluntary support	

F.	What are the potential obstacle to implementing plans?
Emotional/ psychological- Lack of motivation	• A conflict between choices such as worrying that giving up smoking could result in weight gain • Other priorities in a person's life- such as getting married or bereavement. • Having negative attitude- believing change will be too difficult • Lack of progress for example losing eight quickly in the first weeks but then slowing down. • Having a blip- thinking there is no point in continuing the plan after briefly returning to an old lifestyle.
Emotional/ psychological- Low Self-concept	• People with low self-concept don't value themselves, • Feel powerless to change their lifestyle or that there's no point in starting because the task seems too big. • Some thin that because they were unsuccessful in other aspects of their life, they won't achieve their health goals. • They may not feel they have support and approval from family and friends even if they really do.
Emotional/ psychological- Acceptance of the current state	• People my accept their present health problems or lifestyle choices, as it Is easier to stay the same than to make changes. • Have no incentive to make a change because they do not understand the health risks. • Have no desire to change, for example, if they are happy with their weight or don't want to give up smoking.
Time constraints	People find that they do not have the time to achieve their health improvements targets because of: • Care of young children, family members that are not well. • Regular and additional work and study commitments • Domestic chores • Medical appointments
Availability of resources	Financial obstacles: • Gym memberships, entry fee for a swimming pool • Cost of attending exercise classes • Cost of travel to the gym. pool or to attend health appointments • Higher costs of some healthy foods. • Lack of and the cost of exercise equipment
Unachievable targets	• Expectations too high • Targets are not clear • There are too many targets • Timing is wrong/poor • Targets are not suitable for the individual • Fear of not being able to meet targets • Not being in the right frame of mind to commit to the plan, e.g. due to depression.
Lack of support	• Diet- find it difficult if a person on a healthy eating plan is surrounded by others that eat junk food or tempted by the chocolate and biscuits in the cupboard, Family and friends go out for meals instead of doing other activities. • Smoking- friends and family smoking and offering them cigarettes. Lacking will power to quit. • Alcohol consumption- someone that is used to drinking with family and friends will find it difficult to stop without their support. It would be hard to quit if the family and friends drink wine with their meals, friends centre a night out around heavy drinking at pubs and clubs.
Ability, disability and addiction	• Understand what they need to do • Learn how to make the required changes in their lives. • Any places the person uses are wheelchair accessible • Any exercise advised is wheelchair friendly. • If stop smoking, then can put on weight- put people off. • Like the way alcohol makes them feel but cant admit that they have a problem

G.	What are the possible obstacles to accessing services?	
Type of obstacle	**Possible obstacles**	**Suggestions to overcome obstacles**
Geographical	• Service is difficult to get to because of poor bus or train services.	• Arrange hospital transport • Suggest telephone helplines or internet support groups.
Financial	• Charges to use the services • Time off from work would mean loss of pay	• Check for entitlements, such as medicines and treatments • Direct the person to advice on benefits and employee rights.
Psychological	• Fear of being judged because there is stigma around a health problem (mental health, obesity)	• Talk about concerns and reassure • Direct the person to a charity that supports people with a particular health problem.
Physical	• Difficulty getting into the buildings where the service is provided (no wheelchair access). • No where to park near the service	• Be aware of services that are adapted for easy access • Ask a friend or family member to drop the person off at the service
Personal needs	• Communication difficulties because of pool language skills, sensory or learning disability . • Concern that cultural needs are not understood	• Provide support services that meet the person's needs, such as a BSL signer, interpreter, advocate • Use anti-discriminatory practice and encourage others to do so
Resources	• Limits on services, such as support aids and equipment • Staff shortages, leading to long waits for appointments and support.	• Suggest sources of second-hand equipment • Look for alternative strategies, for example an exercise DVD if there are no places at an exercise class.

F.	What are the potential obstacle to implementing plans?
Emotional/ psychological- Lack of motivation	
Emotional/ psychological- Low Self-concept	
Emotional/ psychological- Acceptance of the current state	
Time constraints	
Availability of resources	
Unachievable targets	
Lack of support	
Ability, disability and addiction	

G.	What are the possible obstacles to accessing services?	
Type of obstacle	Possible obstacles	Suggestions to overcome obstacles
Geographical		
Financial		
Psychological		
Physical		
Personal needs		
Resources		

JS Bach: Badinerie

eduqas

Form and structure:

The piece is in **Binary** form (**AB**).

Section A is 16 bars long.

Section B is 24 bars long.

Each section is repeated (**AABB**).

Harmony:

Diatonic; mixture of root position and inverted chords; uses V7 chords and a Neapolitan sixth chord.

Imperfect and perfect cadences are clearly presented throughout. Both sections end with a **perfect cadence**.

Dynamics:

Mostly ***forte*** throughout, although no markings appear on the score.

On some recordings, **terraced dynamics** (sudden changes) are included.

Metre and rhythm:

Simple duple time – 2/4 – with two crotchet beats in every bar.

Uses **ostinato rhythms** which form the basis of two short musical ideas (X and Y), consisting almost totally of **quavers and semi-quavers**.

Background details:

Composed by **Johann Sebastian Bach** (1685 – 1750), one of the main composers of the **Baroque** era in music.

Badinerie is the last of seven movements from a larger piece called **Orchestral Suite No.2**.

The piece was composed between **1738-1739**.

Instrumentation:

Flute, string orchestra and harpsichord.

The score has five parts (flute, violin 1, violin 2, viola and cello). The harpsichord player reads from the cello line and plays the notes with their left hand whilst filling in the chords with their right hand.

Tonality:

Section A begins in **B minor** (tonic) and ends in **F♯ minor** (dominant minor).

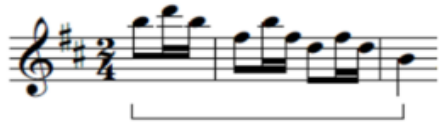
Section B begins in **F♯ minor** (dominant minor) and ends in **B minor** (tonic).

Section A modulates from B minor through **A major** before arriving at F♯ minor.

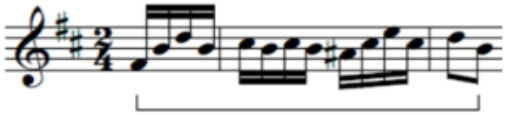
Section B modulates from F♯ minor through **E minor, D major, G major** and **D major** before arriving at B minor.

Melody:

The movement is based on **two musical motifs**.



X



Y

Both motifs begin with an **anacrusis**. Motif X is entirely **disjunct** whilst motif Y **combines disjunct and conjunct** movement.

Typical **ornaments and compositional devices** of the period are used including **trills, appoggiaturas** and **sequences**.

Texture:

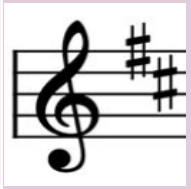
Homophonic: melody and accompaniment.

The flute and cello provide the main musical material; however, the 1st violin participates occasionally.

The 2nd violin and viola provide harmony with less busy musical lines.

Tempo:

The tempo is **Allegro** (quick, lively, bright), although not marked on the score.

Question	Answer	Question	Answer
This piece is in Binary form. Explain what binary form means.		Which key term best describes the dynamics (even though they aren't written on the score)	Piano Forte
How many bars long is section A?		How many bars long is section B?	
Each section in Badinerie is repeated, circle the correct symbol that shows this		Define terraced dynamics	
Define simple duple time		Both motifs begin with an anacrusis, what does this mean?	
State the name of the Minor key this piece of music is in		Section A modulates through which key? Underline the correct answer	A minor A major D major G major
Give an appropriate tempo for this piece		What year was this piece composed?	
Which two note values form the basis of motif X and Y.		From which larger work does this belong to?	
Section A begins in B minor (tonic) and ends in F# Minor, state the relationship between these two keys.		Give the full name of the composer of this piece.	

Sentence Stems: Year 10 to Year 13

Listen and Mark

Pay close attention to others and point out important moments.

- I notice you used the word / phrase ___ , which implies ___ .
- When you said ___ , it anchored the idea that ___ .
- Did anyone notice what ___ said about ___ ? This seems important because ___ .

Introduce and Invite

Begin your contribution and encourage others to participate.

- I suggest that ___ because ___ .
- ___ , what is your perspective on ___ , and why?
- We should discuss ___ because ___ .

Challenge and Verify

Disagree and ask others to prove or clarify information.

- You said ___ . How do you know?
- I think you said ___ , which implies that you believe ___ . Is that right?
- I disagree with what you said about ___ because ___ .

Defend and Unpack

Defend your perspective and explain your thought process.

- I understand your perspective on ___ , but have you thought about ___ ?
- I actually think this because ___ . (Furthermore, finally).
- Actually, [evidence] suggests that ___ .

Build and Support

Add to others' ideas and bolster points by giving evidence.

- Your point about ___ implies ___ , and I would like to further this by saying ___ .
- ___ supports the idea that ___ .
- Drawing upon points made by ___ and ___ , we can conclude that ___ because ___ .

Summarise and Map

Draw together big themes and track the discussion.

- Our main findings were ___ .
- On the whole, we believe that ___ .
- Initially, we thought ___ , but we eventually decided ___ .

SWINDON ACADEMY READING CANON

Year 7


War Horse


A Monster Calls

Number the Stars


Chinese Cinderella


Sir Gawain and the Green Knight


Adventures of a Young Naturalist


The Pearl


The Hunger Games

The Canterbury Tales

Year 8


The Dark Lady


The Diary of a Young Girl


The Amazing Maurice


Salt to the Sea


Witch Child


Trash


Ghost Boys


The Bone Sparrow


The Giver

Year 9


Skin


I am Malala


Noughts and Crosses


Liccle Bit


Fahrenheit 451


The Black Flamingo


One


Simon vs the Homo Sapiens Agenda


Long Way Down


Northern Lights


The Boy Who Steals Houses


The Woman in Black


The Book Thief

Year 10


The Underground Railroad


The Curious Incident of the Dog in the Night-Time


The Hate U Give


Rani and Sukh


Pigeon English


The Boxer


1984


Orangeboy


The Outsiders

The Art of Being Normal

A Selection of Short Stories

To Kill a Mockingbird

#ReadingisPower