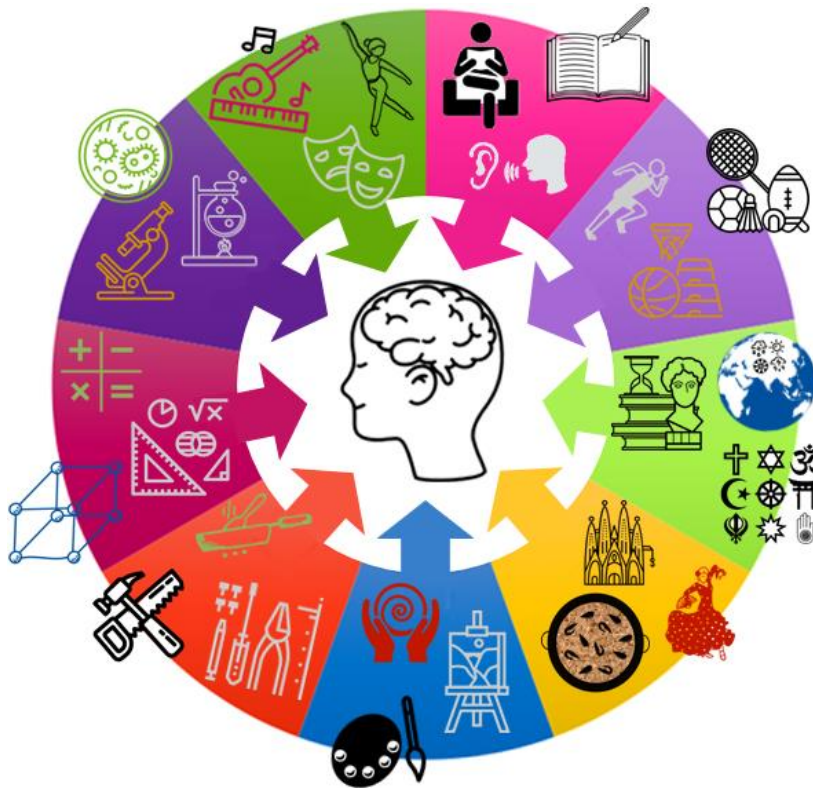


# 100% book - Year 10 Grammar

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

## Term 4



### Swindon Academy 2022-23

Name:

Tutor Group:

Tutor & Room:

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

*If you are determined to learn, no one can stop you."*

# 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.

The image shows the Epraise website interface. On the left is a 'Planner' for the week of 20th May to 26th May 2020, with columns for Sun, Mon, Tue, Wed, Thu, and Fri. On the right is a 'Knowledge Organiser' for 'Particle Theory'. It contains various sections: 'What is particle theory?', 'What is the law of conservation of mass?', 'What are the different states of matter?', 'What are the differences between the states of matter?', and 'What is the difference between a solid, liquid and gas?'. Each section includes text and diagrams of particle arrangements.

## Step 2

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

This image shows a printed page from the knowledge organiser. Handwritten in blue ink at the top right is the date '29th May 2020' and the title 'Particle theory'. The page content includes:
 

- A. What is particle theory?** The theory that all matter is made up of particles.
- A. Describe the arrangement and movement of particles in the three states of matter.**
  - Solid:** In a regular pattern. Particles can vibrate in a fixed position.
  - Liquid:** Particles are arranged randomly but are still touching each other. Particles can slide past each other and move around.
  - Gas:** Particles are far apart and are arranged randomly. Particles carry a lot of energy and they move in all directions in a high speed.
- B. What are the different changes of state?**
  - Melting: Change of state from solid to liquid.
  - Freezing: Change of state from liquid to solid.
  - Evaporation: Change of state from liquid to gas.
  - Condensation: Change of state from gas to liquid.
- Energy changes:**
  - Gaining energy: melting, evaporation, boiling.
  - Losing energy: freezing, condensation.

 At the bottom, there are diagrams for 'Solid', 'Liquid', and 'Gas' showing particle arrangements.

## Step 3

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

Handwritten notes on lined paper:
 

- 29th May 2020
- Properties of the states of matter
- Particle theory = all matter is made of particles
- Solid = regular pattern particles vibrate in fixed position
- Liquid = particles are arranged randomly but are still touching each other Particles can slide past each other and move around.
- Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy

## Step 4

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

Handwritten notes on lined paper repeating definitions:
 

- Solid = regular pattern particles vibrate in fixed position
- Solid = regular pattern particles vibrate in fixed position
- Solid = regular pattern particles vibrate in fixed position

## Step 5

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

This image shows a printed page from the quizzable knowledge organiser. Handwritten answers in blue ink are:
 

- A. What is particle theory?** (blank)
- A. Describe the arrangement and movement of particles in the three states of matter.** (blank)
- B. What are the different changes of state?**
  - Melting: Self quizzing
  - Freezing: Arrangement/movement of matter
  - Evaporation: Solid = regular pattern
  - Condensation: pa
- Energy changes:**
  - Gaining energy: (blank)
  - Losing energy: (blank)

 At the bottom, there are boxes for 'Solid', 'Liquid', and 'Gas'.

## Step 6

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

Handwritten notes on lined paper with corrections:
 

- Particle theory = all matter is made of particles
- Solid = regular pattern ✓ particles vibrate in fixed position
- Liquid = particles are arranged randomly but are still touching each other ✓ Particles can slide past each other and move around ✓
- Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy ✓

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

## ENGLISH –Poetry cluster 3: The Problem with Power - Grammar

Poem	Context	Events in the poem	Message	Form/ structure
<b>Kamikaze-Beatrice Garland</b>	<ul style="list-style-type: none"> <li>During WW2, the term 'kamikaze' was used for Japanese fighter pilots who were sent on suicide missions. They were expected to crash their planes into enemy warships. The word 'kamikaze' literally translates as 'divine wind'.</li> <li>Flying a kamikaze mission was portrayed as a great honour by the Japanese government. It was claimed that there were many volunteers, although some have argued that not every kamikaze soldier would have been willing. By the end of the war, nearly 4,000 kamikaze pilots had died.</li> </ul>	<ul style="list-style-type: none"> <li>The narrator of this poem is a kamikaze pilot's daughter. Unlike many of his comrades, this pilot turns back from his target and returns home. The poem explores the moment that the pilot's decision is made and sketches out the consequences for him over the rest of his life. Not only is he shunned by his neighbours, but his wife refuses to speak to him or look him in the eye. His children gradually learn that he is not to be spoken to and begin to isolate and reject him.</li> </ul>	<ul style="list-style-type: none"> <li>The poem explores the conflict between personal and national duty and suggests that individual desire and extreme patriotism cannot be achieved together.</li> <li>Through the pilot, Garland may be expressing how it is not honour that gives life meaning, but rather being with loved ones.</li> <li>The poem explores the impossible situation that the pilots were put in by those in power- dying in glory or being shamed and rejected by your family. It also deals with the lasting effects that war can inflict on people, families, and communities. This poem not only deals with the kamikaze pilot's own story, but the implications for those around him.</li> </ul>	Kamikaze is a narrative poem. It begins as a report, summarising another conversation or story told by someone else. Sections of the poem are presented in italics as first-person narrative, where the storyteller speaks directly for herself. This has the effect of heightening the sense of sadness she feels.
<b>Checking Out Me History-John Agard</b>	<ul style="list-style-type: none"> <li>Since the early 17<sup>th</sup> century, the country of Guyana has been colonised and controlled by the Dutch, French and British. The indigenous population spoke Arawak, but the British introduced English as the language of the government, courts and education system.</li> <li>For centuries, nations would repress the culture and identity of the countries that they colonised. They did this to control the population and get rid of any rebellion against the colonisers.</li> <li>Born in Guyana in 1949, Agard moved to Britain in 1977 and so sees the culture as both an insider from living there and an outsider from moving to Britain</li> </ul>	<ul style="list-style-type: none"> <li>The poem focuses on the omission of indigenous history and discusses how colonized people were forced to learn about <i>British</i> history—which had little to do with their actual lives. Not only does the poem call attention to the oppressive nature of colonial education, but it also praises important figures who were left out—figures such as Toussaint L'Ouverture, the leader of the Haitian revolution.</li> <li>The poem suggests the curriculum deliberately blinded colonized people to their own histories, and argues that in order to understand their own identity they must learn their own history.</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge should not be denied to anyone. No one has the right to oppress others by denying them facts about their past. This can lead to feelings of inferiority and there should be more equality in the world. History is important and there is power in knowing your heritage and culture. People should never exclude this from you – especially if it is replaced with less relevant examples.</li> <li>There is a sense of caution in this poem in relation to believing what you are told. We are reminded that we should always seek the truth for ourselves and question what others choose to teach us. The education system has power to mould our thinking and we should be aware of this.</li> <li>There is a warning that, when people are denied knowledge, they can become bitter and angry, and this could lead to rebellion, protests and uprisings.</li> </ul>	The open form highlights Agard's rebellion against the status quo and the restrictions of a colonial curriculum. His use of italics separates and celebrates the important historical figures from the history he was a taught. The sing-song rhyme scheme holds a bitterness and anger that he was taught trivial things whilst his own history was omitted.
<b>The Émigrée-Carol Rumens</b>	<ul style="list-style-type: none"> <li>Carol Rumens was born in South London in 1944</li> <li>Published her own poems and translations of Russian poems</li> <li>She has a 'fascination with elsewhere'</li> <li>The Émigrée is not autobiographical poem, but is inspired by living in London (a diverse society)</li> <li>The poem sympathises with people who have been exiled</li> <li>Emigrants are people who have left the country of their birth to settle elsewhere in the world.</li> </ul>	<ul style="list-style-type: none"> <li>A displaced person pictures the country and the city where they were born. The city and country are never named in order to increase the relevancy to as many people who have left their homelands as possible.</li> <li>The speaker's home country appears to be war-torn, or under the control of a dictatorship government that has banned the language the speaker once knew.</li> <li>Despite this, the émigrée's childhood memories are filled with light and happiness. Though there is a clear sense of fondness for the place, there is also a more threatening tone in the poem, suggesting that not all of her memories are happy and that the country she has emigrated to is not always welcoming.</li> </ul>	<ul style="list-style-type: none"> <li>Rumens presents the importance of empathy and sympathy. She reminds us of how traumatic conflict can be and that people are forced to make heart-breaking decisions when they live under cruel leadership.</li> <li>The poem highlights the importance of belonging and is a celebration of diversity – we should make people feel welcome when they move to a new home.</li> <li>Memories are shown to be powerful and to have a strong hold over us with the ability to bring both pain and comfort. The past can be difficult to escape and can restrict us from moving forward in life.</li> <li>There is also a sense of the power of the media – their portrayal of immigrants can lead to a lack of sympathy in society; it is important we do not become insensitive to the pain that can lead to people moving to a new home.</li> </ul>	The use of enjambment reflects the chaos and confusion of her situation. The poem consists of two stanzas with eight lines and a third stanza with nine lines. The added line in the final stanza could suggest she doesn't want to let her memories go, stop writing about her homeland or give up her past.
<b>Storm on the Island-Seamus Heaney</b>	<ul style="list-style-type: none"> <li>For many centuries, there has been conflict in Northern Ireland.</li> <li>The majority of Northern Ireland's population were unionists, who wanted to remain within the United Kingdom. Most of these were Protestant Christians.</li> <li>Seamus Heaney was a Catholic born in Northern Ireland in 1939. Catholics were seen as the underclass and were discriminated against by the government and police. This resulted in strong political and guerrilla warfare movements in an attempt to overthrow British rule and re-unite Ireland.</li> </ul>	<p><b>There are two interpretations of this poem- literal and metaphorical.</b></p> <p><b>Literal:</b> The narrator describes how well prepared they are for the storm. The storm attacks the island. As the poem progresses, the narrator's confidence decreases, and they begin to worry.</p> <p><b>Metaphorical:</b> Heaney uses the storm as a metaphor for the conflict in Northern Ireland. The 'Islanders' suffer under enemy occupation with quiet resignations.</p>	<ul style="list-style-type: none"> <li>Heaney portrays nature as a powerful force that humans should fear and not attempt to control.</li> <li>Heaney presents the idea that life under constant enemy occupation can leave people accepting this presence with sadness, but stop trying to do anything about it.</li> <li>He warns that the enemy can appear reasonable, but can quickly turn in to a dangerous threat – this threat may not always be physical; the gradual erosion of human rights and liberties is just as perilous.</li> </ul>	Heaney's use of iambic pentameter may appear strange given its use in traditional British poems. However he subverts the traditional structure by swapping the stressed and unstressed syllables on certain lines, resisting the regularity of British control.
<b>Tissue-Imtiaz Dharker</b>	<ul style="list-style-type: none"> <li>Imtiaz Dharker was born in Pakistan but grew up in Scotland. Her poetry often deals with themes of identity, the role of women in society and the search for meaning.</li> <li>Tissue is from her poetry collection called 'The terrorist at my table'. Most of the poems in that collection relate to religion, terrorism and global politics.</li> </ul>	<ul style="list-style-type: none"> <li>Tissue explores the varied uses of paper and how they relate to life.</li> <li>It is written from the point of view of someone looking out at the conflict and troubles of the modern world; destruction, war and politics, money and wealth as well as issues like terrorism and identity.</li> <li>The poem remarks how nothing is meant to last.</li> </ul>	<ul style="list-style-type: none"> <li>Human power is ephemeral. No matter how much we try to build structures to display our power, nature will always outlast it.</li> <li>Our relationship with paper is unhealthy. We rely on it too much to make records, document ownership and build debt. Instead, we should realise that the significance of human life will outlast the records we make of it on paper or in buildings.</li> <li>Human life is fragile, and not everything can last. We must understand our fragility and should not try to build our lives through making recordings or building with blocks and bricks, we should focus on living.</li> </ul>	The poem has an irregular structure and no rhyme scheme reflecting the irregularity of life and the lack of and predictability. The fragile structure is symbolic of the fragile nature of our lives.

## ENGLISH –Poetry cluster 3: The Problem with Power - Grammar

Key Vocabulary		The Big Ideas	Notes
<b>Patriotism</b>		Garland questions the importance of honour and patriotism and demonstrates how we must have the individuality to learn for ourselves and not just to follow others.	
<b>Colonialism</b>		Agard explores the importance of identity and the power of history and education.	
<b>Dominate</b>		Rumens demonstrates impact of dictatorial governments and the power of memory. She highlights the need for compassion and empathy.	
<b>Defiance</b>			
<b>Isolated</b>		Heaney warns of the dangers of enemy occupation and the emotional toll of silent resignation.	
<b>Dictatorial</b>			
<b>Nostalgia</b>		Dharker emphasises the fragility of life through the extended metaphor of paper.	
<b>Fragility</b>			

# T4 Y10 B3.10 Grammar – Homeostasis and Response

## The nervous system

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

### Receptors



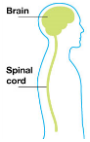
Specialised cells that detect stimuli, found in sense organs and internally

### Neurons



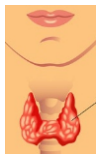
3 types – sensory, relay and motor  
Carry **impulses** joining all parts of the nervous system

### Co-ordination Centres



Brain, spinal cord, pancreas.  
Coordinates the response

### Effectors



Organs that bring about a response

muscle or gland

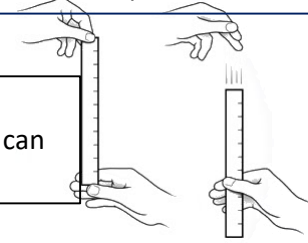
## RP 6 - Investigation into the effect of a factor on human reaction time.

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.

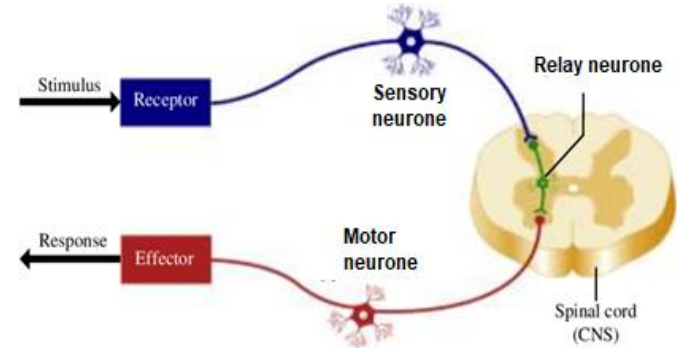
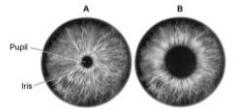
## Reflexes

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

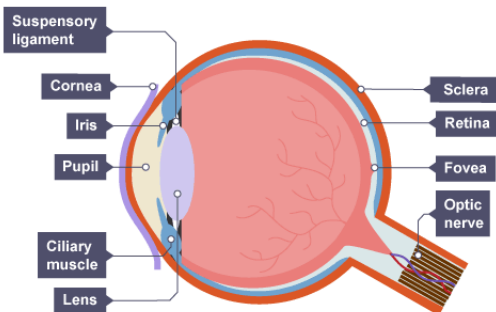
Hot pan → pain receptors → **sensory neurone** → **relay neurone** → **motor neurone** → hand muscles → release pan



## T4 Y10 B3.10 Grammar – Homeostasis and Response

### The eye

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



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

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

To focus on a distant object – the lens is pulled thin, this allows the light rays to refract slightly.

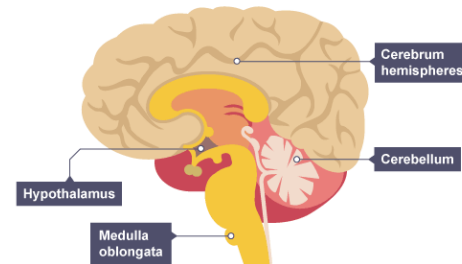
The amount of light entering the eye is controlled by a reflex action. The size of the pupil changes in response to bright or dim light. This is controlled by the muscles of the iris.

### The brain

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

There are four main areas in the brain:

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



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

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

#### Questions

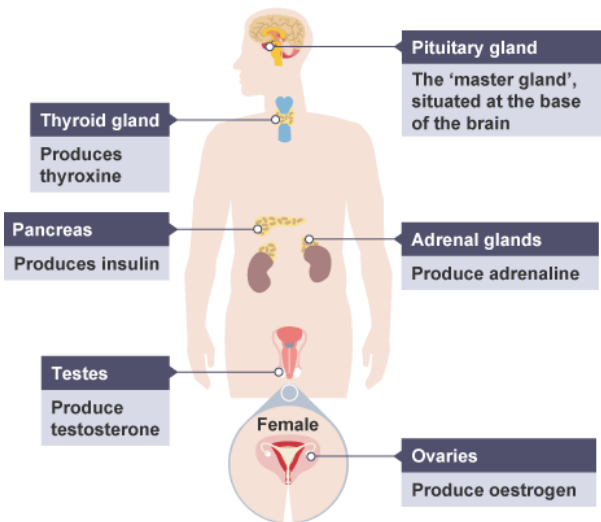
1. What is the function of the following:
  1. How does the eye focus on near objects?
  2. How does the eye focus on far objects?
  3. How does the eye focus in the light and dark?
  4. What does the brain control?
  5. What does the cerebrum control?
  6. What does the medulla control?
  7. What does the hypothalamus control?
  8. How have scientists discovered more about the brain



# T4 Y10 B3.11– Grammar 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

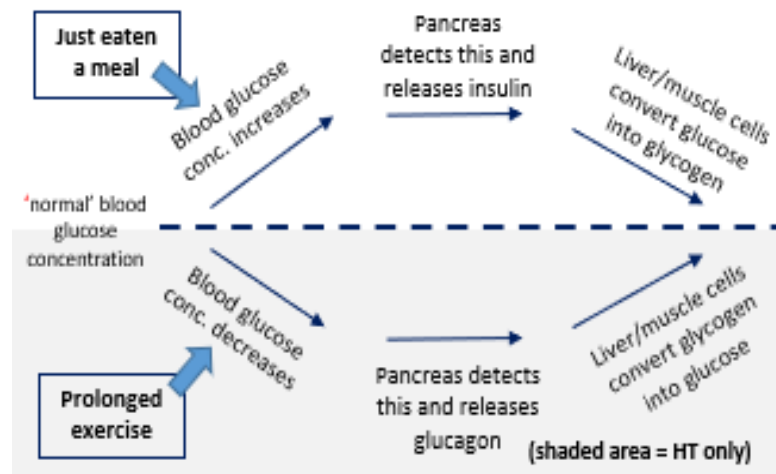
Blood glucose is monitored by the **pancreas**.

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.

## T4 Y10 B3.11– Grammar 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 effects
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

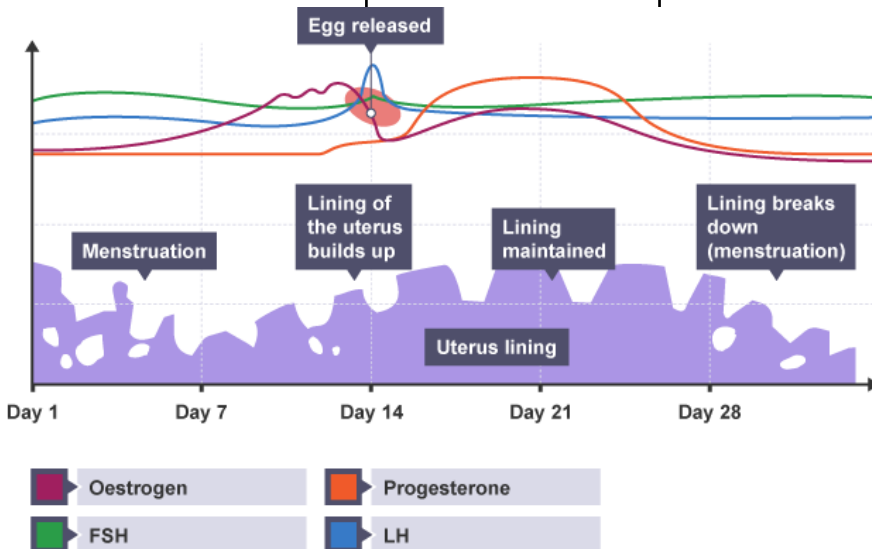
The menstrual cycle is controlled by several hormones:

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:

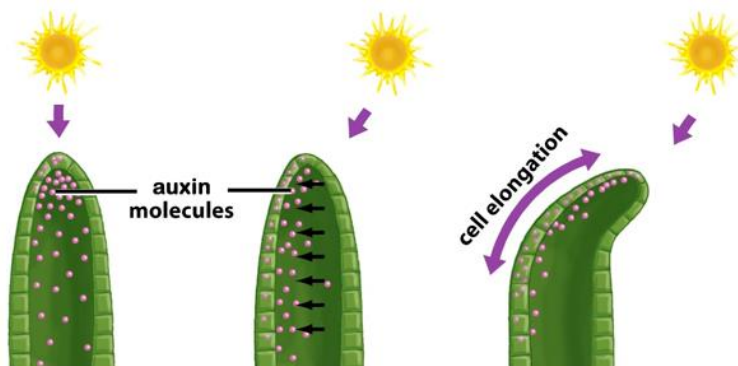
- very emotionally/ physically stressful
- success rates are not high
- can lead to multiple births (twins, etc.)
- Many embryos are not used & destroyed

## T4 Y10 B3.11– Grammar Homeostasis and Response

### Plant hormones

Plants produce hormones to coordinate and control growth and responses to light (phototropism) and gravity (gravitropism or geotropism).

Unequal distributions of auxin cause unequal growth rates in plant roots and shoots.



The auxin collect on the side of the plant in the shade.

Gibberellins are important in initiating seed germination.

Ethene controls cell division and ripening of fruits.

### The uses of plant hormones

Plant growth hormones are used in agriculture and horticulture.

Auxins are used:

- as weed killers
- as rooting powders
- for promoting growth in tissue culture.

Ethene is used in the food industry to control ripening of fruit during storage and transport.

Gibberellins can be used to:

- end seed dormancy
- promote flowering
- increase fruit size.



## T4 Y10 C3.10 Grammar – Organic Chemistry reactions

### Alkenes

Alkenes are hydrocarbons with a double carbon-carbon bond.

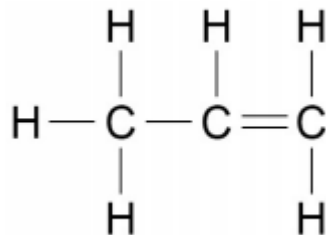
The general formula for the homologous series of alkenes is  $C_nH_{2n}$

Alkene molecules are unsaturated because they contain two fewer hydrogen atoms than the alkane with the same number of carbon atoms.

The first four members of the homologous series of alkenes are ethene, propene, butene and pentene.

Alkene molecules can be represented in the following forms:

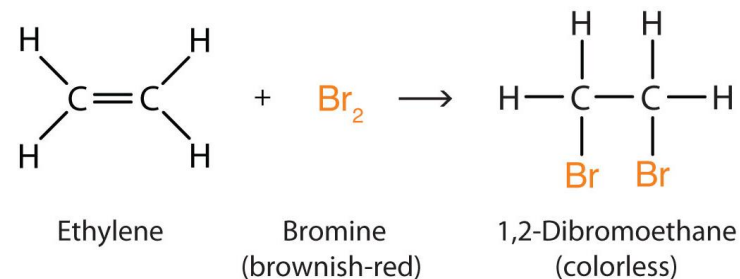
$C_3H_6$  (propene)



It is the functional groups that determine the reactions of organic compounds.

Alkenes react with oxygen in combustion reactions in the same way as other hydrocarbons, but they tend to burn in air with **smoky flames** because of incomplete combustion.

Alkenes react with hydrogen, water and the halogens, by the addition of atoms across the carbon-carbon double bond so that the double bond becomes a single carbon-carbon bond.

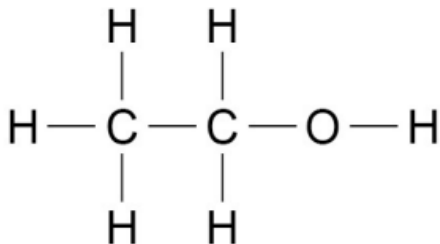


## T4 Y10 C3.10 Grammar – Organic Chemistry reactions

Alcohols contain the functional group  $\text{-OH}$ .

Methanol, ethanol, propanol and butanol are the first four members of a homologous series of alcohols.

Alcohols can be represented in the following form:  $\text{CH}_3\text{CH}_2\text{OH}$  or as



Aqueous solutions of ethanol are produced when sugar solutions are fermented using yeast. The conditions used for fermentation is sugars dissolved in water, mixed with yeast. an air lock to allow carbon dioxide out, while stopping air getting in. warm temperature , 25-35°C.

1. What is an alcohol?
2. What is the functional group in an alcohol?
3. What is the general formula for an alcohol?
4. List the first four members of the homologous series of alcohols
5. Show the two ways which ethanol can be represented
6. How is ethanol produced
7. What are the conditions for fermentation

When any of the first four alcohols react with sodium, they form a salt (sodium alkoxide) and hydrogen gas. You will see fizzing.

Alcohols are flammable. They burn in air because of the presence of a hydrocarbon chain. They burn to produce carbon dioxide and water. This property allows alcohols to be used as a fuel.

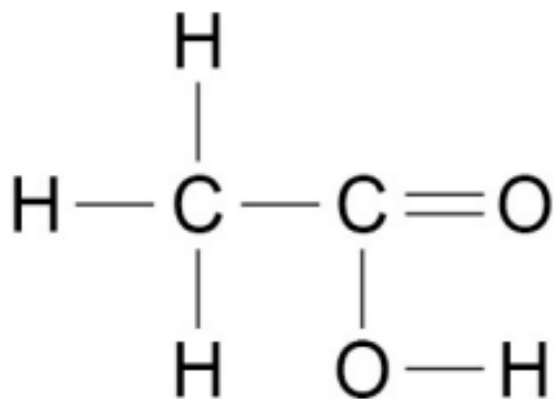
When alcohols are added to water, they mix easily to produce a solution.

When alcohols can react with an oxidising agent. The oxidation of alcohols is an important reaction in organic chemistry. Primary alcohols can be oxidized to form aldehydes and carboxylic acids; secondary alcohols can be oxidized to give ketones. Tertiary alcohols, in contrast, cannot be oxidized without breaking the molecule's C-C bonds.

1. What happens when alcohols react with sodium?
2. What happens when alcohols react with water?
3. What happens when alcohols react with air?
4. What happens when alcohols react with oxidising agents?

**T4 Y10 C3.10 Grammar – Organic Chemistry reactions**

Carboxylic acids have the functional group  $\text{-COOH}$ . The first four members of a homologous series of carboxylic acids are methanoic acid, ethanoic acid, propanoic acid and butanoic acid. The structures of carboxylic acids can be represented in the following forms:  $\text{CH}_3\text{COOH}$



When any of the first four carboxylic acids react with carbonates, to form a salt, water and carbon dioxide

When they dissolve in water to form acidic solutions with pH values less than 7

Carboxylic acids can react with alcohols to form esters in a process called Fischer esterification. An acid catalyst is required and the alcohol is also used as the reaction solvent.

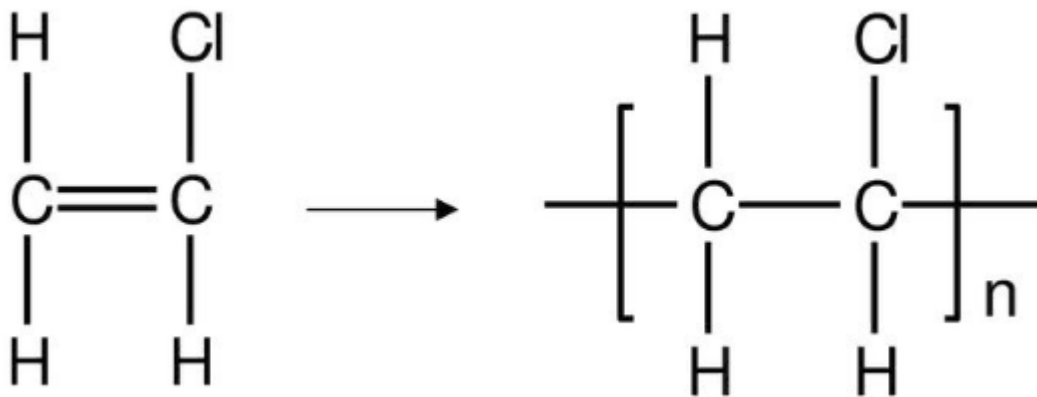
Carboxylic acids are weak acids because they only partially ionise in solution. Their solutions do not contain many hydrogen ions compared to a solution of a strong acid at the same concentration. A weak acid's pH will be higher than a strong acid's pH at the same concentration. In a solution of strong acid, the molecules are fully ionised. In a weak acid, few of the molecules are ionised.

## T4 Y10 C3.11 – Grammar Polymers

Alkenes can be used to make polymers such as poly(ethene) and poly(propene) by addition polymerisation.

In addition polymerisation reactions, many small molecules (monomers) join together to form very large molecules (polymers).

For example: In addition polymers the repeating unit has the same atoms as the monomer because no other molecule is formed in the reaction.



What is used to make polymers?

What is a monomer?

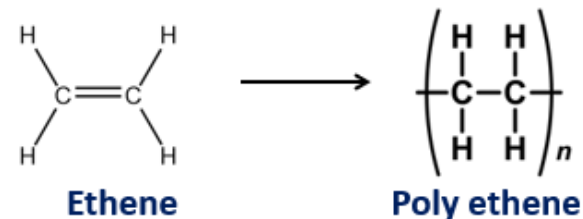
Describe addition polymerisation

### Drawing and naming polymers

1. Redraw the **monomer given**, but without the double bond. Make sure to copy all other elements exactly.
2. Put brackets around the monomer and extend joining bonds out through the brackets on both sides
3. Add an 'n' at the bottom right of the bracket
4. To name the polymer, you put **poly** in front of the monomer name

E.g.:

Draw and name the polymer made from the monomer ethene:



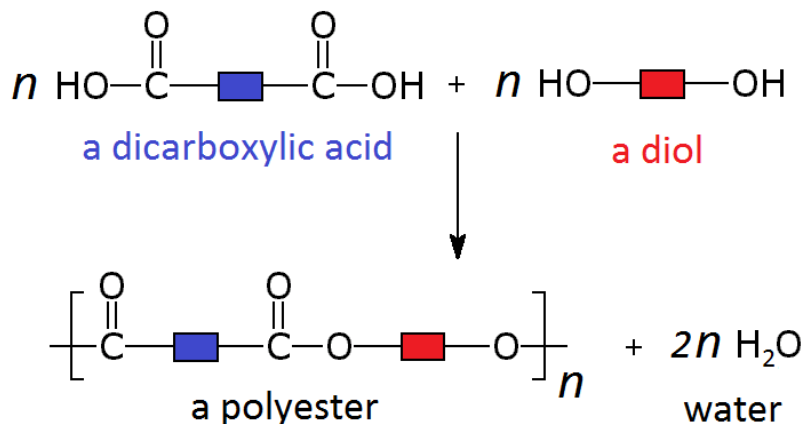
## T4 Y10 C3.11 – Grammar Polymers

### Condensation polymerisation

Condensation polymerisation involves monomers with two functional groups. When these types of monomers react, they join together, usually losing small molecules such as water, and so the reactions are called condensation reactions.

The simplest polymers are produced from two different monomers with two of the same functional groups on each monomer.

For example: ethanediol and hexanedioic acid polymerise to produce a polyester



What is a condensation polymer?

What is lost with condensation polymerisation?

What 2 things form a polyester?

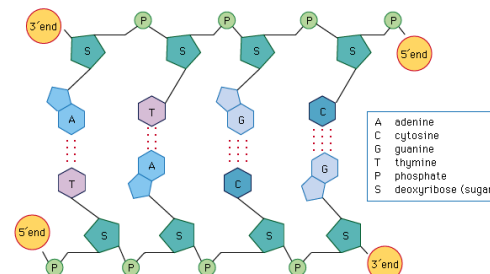
What is a DNA?

What is DNA made of?

Name some other naturally occurring polymers.

### DNA

DNA (deoxyribonucleic acid) is a large molecule essential for life. DNA encodes genetic instructions for the development and functioning of living organisms and viruses. Most DNA molecules are two polymer chains, made from four different monomers called nucleotides, in the form of a double helix. Other naturally occurring polymers important for life include proteins, starch and cellulose.





## T4 Y10 C3.11 – Grammar Polymers

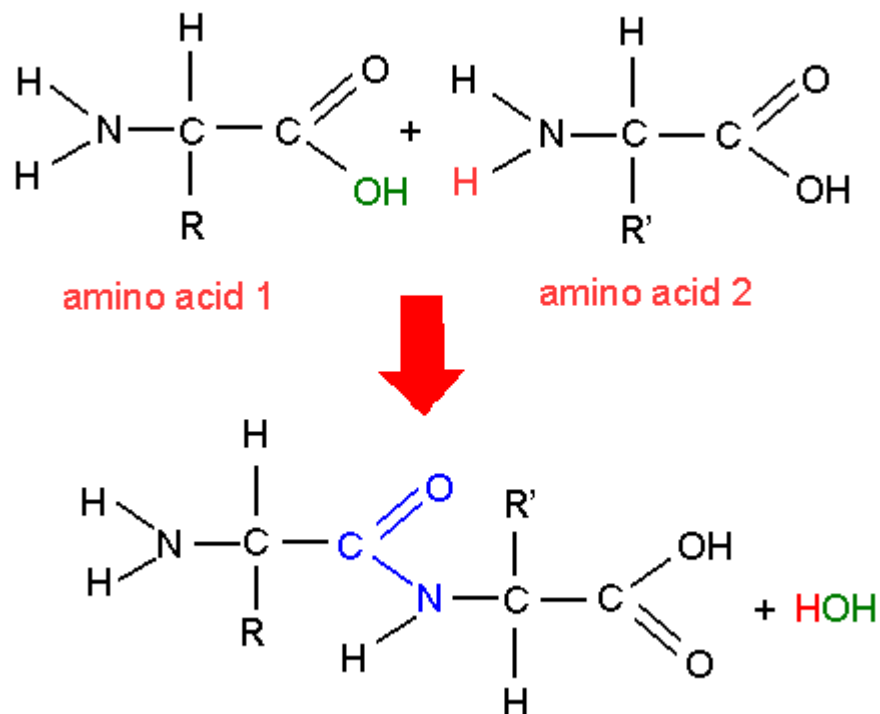
Amino acids

Amino acids have two different functional groups in a molecule.

Amino acids react by condensation polymerisation to produce polypeptides.

For example: glycine is  $\text{H}_2\text{NCH}_2\text{COOH}$  and polymerises to produce the polypeptide

Different amino acids can be combined in the same chain to produce proteins.



# T4 Y10 P3.10 Grammar Forces and motion

## Work done and Energy Transfer

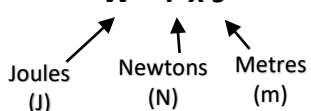
- When a force acts on an object and makes it move – **work is done**.

Work done = energy transferred

Work done is calculated by:

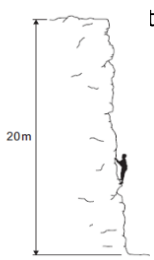
**work done = force x distance**

$$W = F \times s$$



- 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.



## Gravity

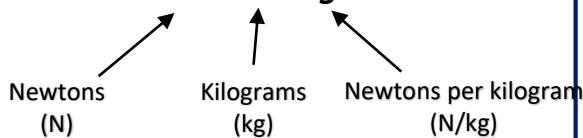
Weight = the **force** acting on an object due to gravity.

- 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**

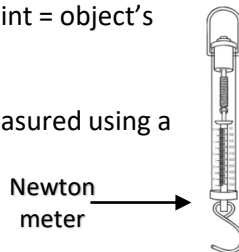
$$W = m \times g$$



- 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**.



## 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.

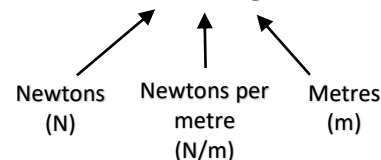
### Elastic deformation:

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

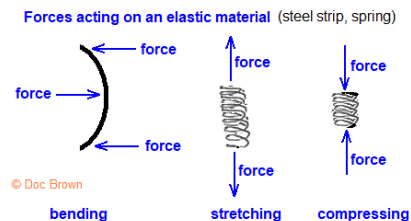
**Inelastic deformation** = stretched beyond limit – will not return to original shape and size.

Force = spring constant x extension

$$F = k \times e$$



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)<sup>2</sup>

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

# T4 Y10 P3.10 Grammar Forces and motion

## 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:

$$\text{momentum} = \text{mass} \times \text{velocity}$$

$$p = m \times v$$

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:

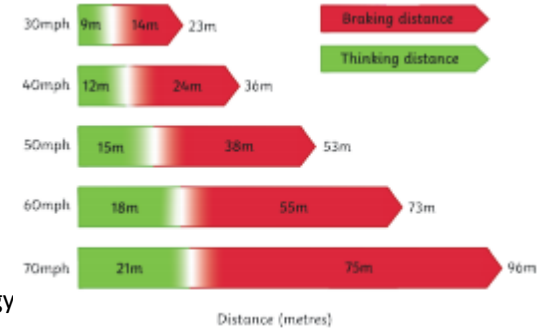
- wet/icy roads
- poor vehicle conditions (brakes/tyres)

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.

100N resistance (friction and air)      100N thrust



**(HT only) Inertia** = tendency of an object to continue in a state of rest or 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

$$\text{Resultant force} = \text{mass} \times \text{acceleration}$$

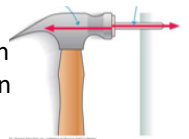
$$F = m \times a$$

**(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.



### T4 Y10 P3.10 Grammar Forces and motion

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?

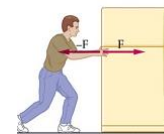
1. State Newton's second law.

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



**T4 Y10 P3.10 Grammar Forces and motion****Using conservation of momentum**

As long as no external forces are acting on the objects involved, the total momentum stays the same in explosions and collisions. We say that momentum is conserved.

**Example:**

Two railway carriages collide and move off together. Carriage A has a mass of 12,000 kg and moves at 5 m/s before the collision. Carriage B has a mass of 8,000 kg and is stationary before the collision. What is the velocity of the two carriages after the collision?

**Step 1**

Work out the total momentum before the event (before the collision):

$$p = m \times v$$

$$\text{Momentum of carriage A before} = 12,000 \times 5 = 60,000 \text{ kg m/s}$$

$$\text{Momentum of carriage B before} = 8,000 \times 0 = 0 \text{ kg m/s}$$

$$\text{Total momentum before} = 60,000 + 0 = 60,000 \text{ kg m/s}$$

**Step 2**

Work out the total momentum after the event (after the collision):

$$\text{Because momentum is conserved, total momentum afterwards} = 60,000 \text{ kg m/s}$$

**Step 3**

Work out the total mass after the event (after the collision):

$$\text{Total mass} = \text{mass of carriage A} + \text{mass of carriage B} = 12,000 + 8,000 = 20,000 \text{ kg}$$

**Step 4**

Work out the new velocity:

$$p = m \times v, \text{ but we can rearrange this equation so that } v = p \div m$$

$$\text{Velocity (after the collision)} = 60,000 \div 20,000 = 3 \text{ m/s}$$

1. What is momentum conservation?

2. Two bikes carriages collide and move off together. Bike 1 has a mass of 300 kg and moves at 3 m/s before the collision. Bike 2 has a mass of 200 kg and is stationary before the collision. What is the velocity of the two carriages after the collision?

# T4 Y 10 P3.11 Grammar Forces and pressure

## Pressure

- Pressure is the force per unit area. The force is normal to the surface.
- The unit of pressure is Pascal (Pa), 1 Pa = N/m<sup>2</sup>

Pressure can be calculated using:

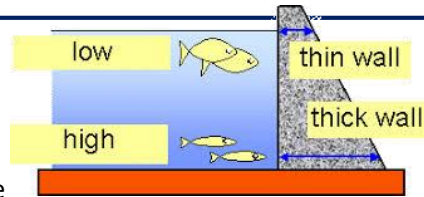
$$P = F / A$$

Pressure = Force ÷ area

Pascal (Pa) ← Newtons (N) ← Metre<sup>2</sup> (m<sup>2</sup>)

## Pressure in liquids

- The pressure in a liquid increase with depth.
- A liquid flows until the pressure along the same horizontal level is constant.



- The pressure in a liquid depends on the density of the liquid. The greater the density the greater the pressure in the liquid.

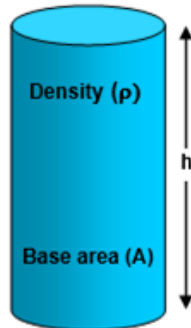
- Pressure in a liquid also depends on the height of the column of liquid and the gravitational field strength the liquid is in.

Pressure on a liquid can be calculated using:

$$P = h \times \rho \times g$$

Pressure = height x density x gravitational field strength

Pascal (Pa) ← metres (m) ← Kilograms per metre<sup>3</sup> (m<sup>3</sup>) ← Newtons per kilogram (N/kg)



## Atmospheric Pressure

- Atmospheric pressure is caused by air molecules colliding with surfaces.
- Atmospheric pressure decreases with altitude because there is less air at higher altitudes.
- The density of the atmosphere decreases with increasing altitude.

Particles will move from areas of high pressure to areas of low pressure. An object between different pressure will experience a force e.g. the pressure inside the cabin of an aircraft is higher than the atmospheric pressure outside, therefore the aeroplane window experiences a force due to this pressure difference.



The force on a flat object due to pressure difference can be calculated using:

$$F = P \times A$$

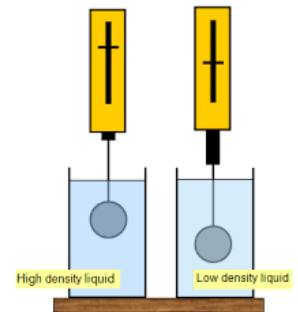
Force = pressure difference x area of the surface

Newtons (N) ← Pascal (Pa) ← Metre<sup>2</sup> (m<sup>2</sup>)

## Upthrust and Flotation

- Upthrust is an upward force on an object due to the fluid it is in, it is caused by the pressure of the fluid.

- The pressure at any point in a fluid depends on the density of the fluid and the depth of the fluid at that point.
- An object sinks if its weight is greater than the upthrust on it when its fully immersed.



**T4 Y10 C3.10 Grammar – Organic Chemistry reactions**

1. What an alkene?
2. What kind of bond is there in an alkene?
3. What is the general formula for an alkene?
4. List the first four members of the homologous series
5. Show the two ways which ethene can be represented
6. What type of combustion do alkenes generally do?
7. What do alkenes also react with?
8. What happens when an alkene reacts with hydrogen, water or the halogens?

**T4 Y10 B3.11– Grammar 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
9. Which organ monitors blood glucose?
10. Which hormone is released when blood glucose increases?
11. What causes blood glucose to increase?
12. Which hormone is released when blood glucose falls?
13. Which organ releases the hormones involved in blood glucose control?
14. What are the two types of diabetes?
15. Why are type 1 diabetics unable to control their blood glucose?
16. What is the treatment for type 1 diabetes?
17. What is the problem in type 2 diabetes?
18. What is the treatment for type 2 diabetes?

**T4 Y10 B3.11– Grammar Homeostasis and Response**

1. Where is adrenaline released from?
2. What effects does adrenaline have?
3. What does thyroxine do?
4. What is the male hormone?
5. What is ovulation?
6. Which organ produces oestrogen?
7. Which organ releases FSH and LH?
8. What are the two other menstrual cycle hormones?
9. Approximately how long is one cycle?
10. Around which day of the cycle does ovulation occur?
11. What is the role of oestrogen and progesterone?
12. Which hormones are contained in the contraceptive pill?
13. Name a 'barrier' method of contraception
14. How does the contraceptive pill prevent pregnancy?
15. Give one advantage and one disadvantage of taking the contraceptive pill.
16. Give one disadvantage of surgical sterilisation

**T4 Y10 B3.11– Grammar Homeostasis and Response**

1. Name a plant hormones
2. What is phototropism?
3. What is geotropism?
4. Where does auxin collect?
5. Why are gibberellins important?
6. What is ethene used for?
7. In agriculture, what is auxin used for?
8. In agriculture, what is ethene used for?
9. In agriculture, what is gibberellins used for?

**T4 Y10 C3.10 Grammar – Organic Chemistry reactions**

1. What is a carboxylic acid?
2. What is the functional group in a carboxylic acid?
3. What is the general formula for a carboxylic acid?
4. List the first four members of the homologous series of carboxylic acids
5. Show the two ways which ethanoic acid can be represented
6. What happens when carboxylic acid react with carbonates?
7. What happens when carboxylic acid dissolve in water?
8. What happens when carboxylic acids react with alcohol?
9. Why are carboxylic acids weak acids?

**T4 Y10 C3.11 – Grammar Polymers**

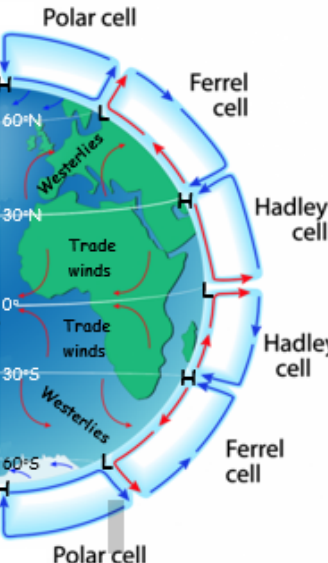
1. When 2 amino acids react, they form a...
2. By which process do amino acids form polypeptides?
3. A long chain of different amino acids combined forms a...
4. What are the 2 functional groups which combine to form a polypeptide?

**T4 Y10 P3.11 Grammar Forces and pressure**

1. What is the unit for pressure?
2. What is the equation that links area, force and pressure?
3. What happens to the pressure in a liquid as the depth increase?
4. How does the density of a liquid affect the pressure in the liquid?
5. What factors affect the pressure in a liquid?
6. What causes atmospheric pressure?
7. What is the relationship between atmospheric pressure and altitude?
8. What is the relationship between the density of the atmosphere and altitude?
9. How do calculate the force on a flat surface due to a difference in pressure?
10. What is upthrust?



### 9. Global atmospheric circulation

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

### 10. Weather hazards in the UK

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

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

Name	Somerset Floods, 2014
Causes	350mm rain fell in Jan and Feb High tides, rivers not dredged for 20 yrs
Impacts	<ol style="list-style-type: none"> <li>£10 million damage</li> <li>14,000 ha of farmland flooded</li> <li>600 homes flooded</li> <li>Moorland and <u>Muchelney</u> cut-off</li> <li>Floodwaters contaminated</li> <li>Soil damaged for 2 years after</li> </ol>
Management strategies	<b>Immediate responses</b> <ul style="list-style-type: none"> <li>Army helped with rescue boats</li> <li>Volunteers and community groups</li> <li>Locals used boats to go shopping/school</li> </ul> <b>Long term responses</b> <ul style="list-style-type: none"> <li>£20 million flood action plan</li> <li>Rivers dredged</li> <li>Road levels raised</li> <li>Tidal barrage by 2024</li> </ul>

### 11. Evidence that weather is becoming more extreme...

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

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





9. Global atmospheric circulation	
Factor	Explanation
Global atmospheric circulation	
Key information	
<p>The diagram illustrates the three-cell model of global atmospheric circulation. It shows the Polar cell at the top and bottom poles, the Ferrel cell in the mid-latitudes, and the Hadley cell in the tropics. High pressure (H) is located at the poles and 30°N and 30°S, while low pressure (L) is at the equator and 60°N and 60°S. Wind patterns include Westerlies between 30° and 60° in both hemispheres, and Trade winds between the equator and 30° in both hemispheres. Arrows indicate the direction of air flow in the atmosphere and at the surface.</p>	

10. Weather hazards in the UK	
Hazard	Example
Extreme weather	
Strong winds	
Heavy rain	
Snow	
Drought	
Heatwaves	

11. Evidence that weather is becoming more extreme...	
Temperature	

12. An example of a recent extreme weather event in the UK	
Name	
Causes	
Impacts	
Management strategies	



**13. Tropical storms**

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

Factor	Explanation
Global distribution	5° – 30° north and south of equator (sea temp warm, wind shear low). More in the northern hemisphere. Move towards the west.
Relationship with ACM	Trade winds (from high to low pressure) send tropical storms to west.
Structure	Circular, can be 100s of km wide. Eye- calm in centre (air ↓, LOW). Eyewall- strong winds, torrential rain. Edges- Wind speed falls, rain reduces.



**How will climate change affect them?**

Distribution	Increase to higher latitudes (warmer sea temperatures).
Frequency	Number could increase. (Longer season)
Intensity	Stronger? More evaporation.

**14. Formation of tropical storms**

Include processes and ensure correct sequence.

Conditions	5-30° latitude. Ocean depth > 60m deep. Sea temperature > 27°C. Form summer and autumn.
	<ol style="list-style-type: none"> <li>1. Sun heats the ocean (27°C) &gt; <b>rapid evaporation</b>.</li> <li>2. <b>Condensation</b> occurs quickly leading to a large amount of cloud forming (<b>tropical depression</b>).</li> <li>3. Due to the earth's rotation, this cloud mass starts to spin. An eye is formed in the centre.</li> <li>4. Due to rising air, a <b>low pressure</b> area forms below. Air rushes into this creating high wind speeds. (&gt;74mph = <b>tropical storm</b>)</li> <li>5. The <b>low pressure</b> results in the ocean being uplifted forming a <b>storm surge</b>.</li> </ol>

**15. How can we reduce the impacts?**


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

**16. Tropical storms affect people and environments.**

	Generic	Typhoon Haiyan 2013 Philippines
Primary effects	Direct results of strong winds, high rainfall, storm surges. Flooding, buildings destroyed, death.	<ul style="list-style-type: none"> <li>† 6,201 deaths. (Most drowned in storm surge.)</li> <li>† 1.1 million houses damaged.</li> <li>💰 90% of Tacloban city destroyed.</li> </ul>
Secondary effects	Homelessness > lead to poor health. Lack of sanitation > diseases (cholera) Food shortages, price increase.	<ul style="list-style-type: none"> <li>† 4.1 million homeless.</li> <li>💰 Damage cost US\$12 billion.</li> <li>💰 1.1 million tonnes of crops destroyed (rice).</li> </ul>
Immediate responses	Evacuate before the storm. Rescue those affected. Provide food, water, blankets. Aid workers arrive from abroad. Recover dead bodies (prevent disease).	<ul style="list-style-type: none"> <li>➢ Over 1200 evacuation shelters set up.</li> <li>➢ Philippines Red Cross delivered basic food aid.</li> <li>➢ UK sent shelter kits.</li> <li>➢ 800,000 evacuated (warnings given 2 days early).</li> </ul>
Long term responses	Repair homes and infrastructure. Promote economic recovery.	<ul style="list-style-type: none"> <li>➢ More cyclone shelters built.</li> <li>➢ No build zones.</li> <li>➢ 'Cash for work' programmes.</li> </ul>



**13. Tropical storms**

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

**14. Formation of tropical storms**

14. Formation of tropical storms	
Conditions	

**15. How can we reduce the impacts?**

Strategy	Explanation
Prediction / monitoring	
Planning	
Protection	

**16. Tropical storms affect people and environments.**

	Generic	Typhoon Haiyan 2013 Philippines
Primary effects		<ul style="list-style-type: none"> <li>↓</li> <li>⊖</li> </ul>
Secondary effects		<ul style="list-style-type: none"> <li>↓</li> <li>⊖</li> </ul>
Immediate responses		<ul style="list-style-type: none"> <li>➤</li> <li>➤</li> <li>➤</li> <li>➤</li> </ul>
Long term responses		<ul style="list-style-type: none"> <li>➤</li> <li>➤</li> <li>➤</li> </ul>



# History Knowledge Organiser. Topic = Hitler's rise to power, 1919-33



<b>What we are learning this term:</b>		<b>B.</b>	<b>Why did the Munich Putsch fail?</b>
A.	How did the Nazi Party appeal to people in the early 1920s	1 – Bavarian Leaders	Hitler had captured the 3 Bavarian leaders in a Beer Hall on the 8 <sup>th</sup> November 1923. He forced them to say that they would support his plan to overthrow the Weimar Republic. However, they were let go by Ludendorff (army general) and so took away their support and warned the army
B.	Why did the Munich Putsch fail	2 – Army	Hitler wrongly believed that the army in Bavaria would stand with him and would support his uprising against the government. This was not the case and instead the army stood against Hitler and his SA which was only 1,000 men.
C.	Why was there little support for the Nazis between 1923-29	3 – Bavarian People	Again Hitler had wrongly assumed that the people of Bavaria would be angry enough with the Weimar Republic to want to stand with him against the government. He did have 2,000 volunteers but they were most likely paid to support Hitler so were not loyal
D.	How did the Nazis appeal to people between 1929-33	4 – Hitler	Hitler himself was a factor in why the Putsch failed. Instead of giving up when he had lost the support of the Bavarian leaders he continued with the revolt and as a result he ended being arrested and the NSDAP was banned.
E.	Why did Hitler come to power in 1933		
<b>6 Key Words for this term</b>		<b>C.</b>	<b>What is the main difference between two interpretations about the Nazi Party during the Lean Years (1923-29)?</b>
1	<b>Nationalism</b> – A political outlook which aims to make the nation stronger and more independent	1.	<b>Party Reorganisation</b> – By the time Hitler was released from prison he had come to realise that the best way for the Nazis to get into power would be to do it democratically and to be voted into the Reichstag. This led to Hitler reorganizing the Nazi Party to make it more of a focused political party
2	<b>Socialism</b> – A political outlook which states that country's land, industries and wealth should all belong to the workers of that country	2.	<b>Mein Kampf</b> – During his time in prison Hitler had the chance to write Mein Kampf which set out his key political beliefs. This book sets out his extreme racist views and ideas on Nationalism, Socialism, totalitarianism and traditional German values
3	<b>Lebensraum</b> – This a German word which means living space	3.	<b>Party Headquarters</b> – The Nazi Party was mainly based in Munich and it was organised into a mini state with Hitler as the leader and different departments for all aspects of government. Hitler also managed to get big industrialists to invest in the Nazi party
4	<b>Putsch</b> – German word for uprising, usually violent	4.	<b>Bamberg Conference</b> – This conference took place in early 1926 and its aim was to address the split between the Nationalist and Socialist sections of the Nazi party. This conference confirmed that the Nazi Party was mainly nationalist, and Hitler's control of the party was now clear
5	<b>Fuhrer</b> – A leader who exercises power cruelly	5.	<b>Limited Support</b> – In the years 1923-29, the Nazi party struggled to gain strong support due to Stresemann's economic and international recovery for the Weimar Republic and the appointment of ex Field-Marshal of the army Paul von Hindenburg as President.
6	<b>Autarky</b> – The act of a country being self-sufficient and not relying on other countries		
		<b>D.</b>	<b>How did the Nazis appeal to the people between 1929 and 1933?</b>
<b>A.</b>	<b>What is the main difference between two interpretations about the appeal of the Nazi Party in the early 1920s?</b>	1 Wall Street Crash	In October 1929, the stock market in Wall Street (New York) started to crash which meant that the price of stocks and shares fell dramatically.
Hitler in the Army	During WWI Hitler had fought for Germany and had even received two Iron Crosses for bravery. He was disappointed when the war ended and Germany had lost	2 Depression	Following the Wall Street Crash, American banks were running out of money and so they ask Germany to pay back the money they had loaned them in 1923
Spy	Hitler was employed by the army to spy on political groups. He came across the DAP which was a right-wing group. He liked the party's message and decided to join	3. Unemployment	Unemployment rose once again as Germany was running low on money as so businesses had to close and imports and exports slowed down as other countries had also been hit by the Wall Street Crash
25 Point Programme	Hitler become second in command of the DAP and along with Anton Drexler wrote the 25 Point Programme which outlined the groups beliefs	4. Chancellor Brüning	Brüning tried to sort the problem of unemployment by increasing taxes to pay for unemployment benefit and reducing the time limit for how long people could claim it for. This pleased no one and he lost support and control of the Reichstag and began to rule using Article 48 instead.
Speeches	Hitler begins to give speeches for the DAP from June 1920 and he was a very passionate speaker and he helped to increase the party's membership to 1,100 members	5 Communists	The failure of the government meant that people began to turn to extremist parties such as the communists. The working class believed that the communists would support them and would defend their jobs
Leader	In July 1921 Hitler pushed Drexler out and became the head of the DAP. He changed the name to the Nationalist Socialist German Workers Party (NSDAP or NAZIS)	6 Nazis	More people began to turn towards the Nazi party as Hitler was seen as the middle and upper classes defence against communism and the Hitler also seemed to be a strong leader who would restore law and order and get rid of the Treaty of Versailles.
		<b>E.</b>	<b>How useful are two sources for an enquiry into the way Hitler became chancellor in 1933?</b>
		1 Hindenburg	President of the Weimar Republic who never really supported the democratic republic. Did not trust Hitler and refused to make him Chancellor even when the Nazis were the majority party. Was persuaded by von Papen that he could control Hitler
		2 Franz von Papen	Became Chancellor in May 1932 but he was not a strong leader and Hitler tried to persuade Hindenburg to make him Chancellor but he refused and instead Kurt von Schleicher was made Chancellor out of desperation
		3 Kurt von Schleicher	Originally suggested that Hindenburg made von Papen Chancellor and then turned his back on him. Tried to rule but he lacked support and tried to create a military dictatorship which Hindenburg refused to support
		4 Hitler	Hitler had managed to grow the Nazis support between 1929 and 1932 to the point where they were the largest political party in the Reichstag and therefore believed he should be Chancellor and constantly told Hindenburg this. Did not become Chancellor until January 1933, after Hindenburg had been assured by von Papen that he could control him. Both underestimated Hitler.



<b>What we are learning this term:</b>		<b>B.</b>	<b>Why did the Munich Putsch fail?</b>
A.	How did the Nazi Party appeal to people in the early 1920s	1 – Bavarian Leaders	
B.	Why did the Munich Putsch fail	2 – Army	
C.	Why was there little support for the Nazis between 1923-29	3 – Bavarian People	
D.	How did the Nazis appeal to people between 1929-33	4 – Hitler	
E.	Why did Hitler come to power in 1933		
<b>6 Key Words for this term</b>			
<b>1</b>	<b>Nationalism –</b>	<b>C.</b>	<b>What is the main difference between two interpretations about the Nazi Party during the Lean Years (1923-29)?</b>
<b>2</b>	<b>Socialism –</b>	<b>1. Party Reorganisation –</b> <b>2. Mein Kampf –</b> <b>3. Party Headquarters –</b> <b>4. Bamberg Conference –</b> <b>5. Limited Support –</b>	
<b>3</b>	<b>Lebensraum –</b>		
<b>4</b>	<b>Putsch –</b>		
<b>5</b>	<b>Fuhrer –</b>		
<b>6</b>	<b>Autarky –</b>	<b>D.</b>	<b>How did the Nazis appeal to the people between 1929 and 1933?</b>
<b>A.</b>	<b>What is the main difference between two interpretations about the appeal of the Nazi Party in the early 1920s?</b>	1 Wall Street Crash	
Hitler in the Army		2 Depression	
Spy		3. Unemployment	
25 Point Programme		4. Chancellor Brüning	
Speeches		5 Communists	
Leader		6 Nazis	
		<b>E.</b>	<b>How useful are two sources for an enquiry into the way Hitler became chancellor in 1933?</b>
		<b>1 Hindenburg</b>	
		<b>2 Franz von Papen</b>	
		<b>3 Kurt von Schleicher</b>	
		<b>4 Hitler</b>	



Keywords		What we are learning in this unit		B.	The 5 Pillars - Salah		
Tawalla	Showing love for God and for those who follow Him	A. The 5 Pillars and 10 Obligatory Acts B. Salah C. Sawm D. Zakah E. Hajj F. Jihad G. Id-ul-Adha H. Id-ul-Fitr		What is it?	<ul style="list-style-type: none"> <li>“Salah is a prescribed duty that has to be performed at the given time by the Qur’an”</li> <li>Muslims pray 5 times per day and this allows them to communicate with Allah.</li> <li>The prayers are done at dawn (fajr), afternoon (zuhr), late afternoon (asr), dusk (maghrib) and night (isha)</li> <li>Muslims face the holy city of Makkah when paying.</li> </ul>		
Tabarra	Disassociation with God’s enemies			A.	5 Pillars of Islam and 10 obligatory acts	Wuzu	<ul style="list-style-type: none"> <li>The washing process to purify the mind and body for prayer</li> <li>Muhammad said the key to Salah is cleanliness</li> <li>Hands, arms, nose, mouth, head, neck and ears are cleaned as well as both feet up to the ankle.</li> </ul>
Khums	The obligation to pay one-fifth of acquired wealth			What are the 5 pillars	<ul style="list-style-type: none"> <li>5 key practices or duties for Muslims</li> <li>Both Sunni and Shi’a keep these (Shi’a have them as part of the 10 obligations)</li> <li>They are seen as pillars “holding up the religion” and are all of equal importance</li> </ul>	Rak’ahs and recitations	<ul style="list-style-type: none"> <li>These are the movements that Muslims make during prayer</li> <li>Takbir – raise hands to ears and say ‘Allahu Akbar’</li> <li>Qiyam – Standing, Muslims recite Surah</li> <li>Then bow to the waist saying “Glory be to my Great Lord and praise be to Him”</li> <li>Then sink to their knees saying “Glory be to my Lord, The Most Supreme...”</li> </ul>
Lesser jihad	The physical struggle or holy war in defence of Islam			What are the 10 obligatory acts	<ul style="list-style-type: none"> <li>There are 10 obligations for a Muslim according to the Shi’a branch of Islam.</li> <li>These include prayer, fasting, almsgiving, pilgrimage, jihad, khums, directing others towards good, forbidding evil, tawalla and tabarra</li> </ul>	Salah at home	<ul style="list-style-type: none"> <li>Salah is a big part of family life</li> <li>Meals and other activities are usually scheduled to fit around prayer times</li> <li>Families pray all together and might have a room set aside for prayer</li> </ul>
Greater jihad	The daily struggle and inner spiritual striving to live as a Muslim			Shahadah	<ul style="list-style-type: none"> <li>Shahadah is the first of the 5 pillars</li> <li>It is the Muslim declaration of faith</li> <li>“there is no God but Allah, and Muhammad is His messenger”</li> <li>This is a statement that Muslims reject anything but Allah as their focus of belief</li> <li>It also recognises that Muhammad has an important role and his life is an example to follow</li> </ul>	Salah in the mosque	<ul style="list-style-type: none"> <li>All mosques have a qiblah wall which is to show where to face Makkah</li> <li>Men and women pray in separate rooms at the Mosque</li> </ul>
Sunni	Muslims who believe in the successorship of Abu Bakr, Umar, Uthman and Ali as leaders after the Prophet Muhammad			Jumma	<ul style="list-style-type: none"> <li>Jumma is congregational prayer held on a Friday at the mosque where the imam leads the prayer</li> <li>Praying together as a community develops the feeling of unity amongst Muslims</li> <li>Men are obliged to attend unless they are sick or too old</li> <li>Women do not have to go – they may pray at home instead</li> </ul>		
Shi’a	Muslims who believe in the Imamah, leadership of Ali and his descendants			Differences between Sunni and Shi’a	<ul style="list-style-type: none"> <li>Shi’a Muslims combine some prayers so they may only pray 3x a day</li> <li>Shi’a use natural elements e.g. clay where their head rests</li> </ul>		
Niyah	Intention during prayer - having the right intention to worship God						
Du’a	A personal prayer that is done in addition to Salah e.g. asking Allah for help						
		<i>Jihad</i>					
Lesser Jihad		<ul style="list-style-type: none"> <li>Originated when Prophet Muhammad and early Muslims were being attacked and oppressed by the Meccans and had no choice but to engage</li> <li>“Fight in the way of God those who fight against you but do not transgress”</li> <li>Conditions for declaration                             <ul style="list-style-type: none"> <li>self-defense</li> <li>proportionate</li> <li>legitimate authority</li> <li>no harm to civilians</li> </ul> </li> </ul>					
Greater Jihad		<ul style="list-style-type: none"> <li>A struggle within oneself to follow the teachings of Islam and be a better person</li> <li>e.g. perform the Five Pillars, follow Sunnah and avoid temptation</li> <li>“encourage what is right and forbid what is wrong”</li> </ul>					



Keywords		What we are learning in this unit		B.	The 5 Pillars - Salah		
Tawalla		A. The 5 Pillars and 10 Obligatory Acts B. Salah C. Sawm D. Zakah E. Hajj F. Jihad G. Id-ul-Adha H. Id-ul-Fitr		What is it?			
Tabarra				A.	5 Pillars of Islam and 10 obligatory acts	Wuzu	
Khums				What are the 5 pillars		Rak'ahs and recitations	
Lesser jihad				What are the 10 obligatory acts		Salah at home	
Greater jihad				Shahadah		Salah in the mosque	
Sunni				<i>Jihad</i>		Jummah	
Shi'a						Lesser Jihad	
Niyah						Greater Jihad	
Du'a			Differences between Sunni and Shi'a				



The 5 Pillars - Zakah	
The role of giving alms	<ul style="list-style-type: none"> <li>• <b>Muslims believe it is their duty to ensure Allah's wealth has been distributed equally as everyone is the same</b></li> <li>• The Qur'an commands to give to those in need</li> </ul>
The significance of giving alms	<ul style="list-style-type: none"> <li>• Giving 2.5% of savings/wealth to charity</li> <li>• Wealth can cause greed which is evil, so Zakah purifies wealth – wealth is given by God and must be shared</li> <li>• The Prophet Muhammad practiced Zakah as a practice in Medina</li> <li>• Given to the poor, needy and travellers</li> <li>• <b>Sadaqah</b> is giving from the heart out of generosity and compassion</li> </ul>
Khums	<ul style="list-style-type: none"> <li>• Shi'a Islam – one of the 10 obligatory acts</li> <li>• 20% of any profit earned by Shi'a Muslims paid as a tax</li> <li>• Split between charities that support Islamic education and anyone who is in need</li> <li>• <b>"know that whatever of a thing you acquire, a fifth of it is for Allah, for the Messenger, for the near relative, and the orphans, the needy, and the wayfarer"</b></li> </ul>

The 5 Pillars - Sawm	
The role of fasting	<ul style="list-style-type: none"> <li>• Fasting during Ramadan (9<sup>th</sup> month in Muslim calendar)</li> <li>• Muslims give up food, drink, smoking and sexual activity in daylight hours</li> <li>• Pregnant people, children under 12, travellers and elderly people are exempt from fasting.</li> </ul>
The significance of fasting	<ul style="list-style-type: none"> <li>• Ramadan is believed to be the month that Prophet Muhammad began to receive revelations of the Qur'an</li> <li>• Helps Muslims to become spiritually stronger</li> </ul>
Reasons for fasting	<ul style="list-style-type: none"> <li>• Obeying God and exercising self-discipline</li> <li>• Develops empathy for the poor</li> <li>• Appreciation of God's gifts</li> <li>• Giving thanks for the Qur'an</li> <li>• Sharing fellowship and community with other Muslims</li> </ul>
Night of power	<ul style="list-style-type: none"> <li>• The night when the Angel Jibril first appeared to Muhammad and began revealing the Qur'an.</li> <li>• The most important event in history – <b>"better than a thousand months"</b> <b>[Surah 97:3]</b></li> <li>• Laylat Al-Qadr is the holiest night of the year. Muslims try to stay awake for the whole night to pray and study for the Qur'an</li> </ul>

The 5 Pillars - Hajj	
The role of pilgrimage	<ul style="list-style-type: none"> <li>• A pilgrimage to Makkah which is compulsory for Muslims to take at least once as long as they can afford it and are healthy</li> </ul>
The significance of pilgrimage	<ul style="list-style-type: none"> <li>• God told Ibrahim to take his wife and son on a journey and leave them without food or water</li> <li>• Hajira ran up and down two hills in search of water, could not find any and prayed to God. Then water sprung from the ground. This is the Zamzam well</li> <li>• When Ibrahim returned he was commanded to build the Ka'ba as a shrine dedicated to Allah</li> <li>• Hajj is performed in the month of Dhu'l-Hijja</li> </ul>
Actions	<ul style="list-style-type: none"> <li>• Ihram – dressing in two pieces of white cloth</li> <li>• Circling the Ka'aba 7 times (tawaf)</li> <li>• Drinking water from the Zamzam well like Hajar</li> <li>• walking between Al-Safa and Al-Marwa hills seven times</li> <li>• Throwing stones at 3 pillars (jamarat) to represent casting out the devil and remembering Ibrahim throwing stones at the devil to drive him away</li> <li>• Asking Allah for forgiveness at Mt Arafat</li> <li>• Collecting pebbles at Muzdalifah</li> </ul>

Id-ul-Adha, Id-ul-Fitr, Ashura	
Id-ul-Adha  Not an official holiday in UK	<ul style="list-style-type: none"> <li>• <b>Festival of sacrifice</b></li> <li>• Marks the end of Hajj and is a chance for whole Ummah to celebrate</li> <li>• <b>Origins</b> – Ibrahim's commitment to God in being willing to sacrifice his son, Ishmael. God was testing Ibrahim</li> <li>• <b>Key events</b> – new clothes, sacrificing an animal, visiting the Mosque.</li> <li>• People ask a butcher to slaughter a sheep for them and share the meat with the community</li> </ul>
Id-ul-Fitr  Public holiday in Muslim majority countries, not UK	<ul style="list-style-type: none"> <li>• <b>Festival of fast-breaking</b></li> <li>• Marks the end of Ramadan</li> <li>• <b>Key events</b> – Decorate homes with colourful light and banners, dress in new clothes, gather in Mosques, give gifts and money, give to the poor</li> <li>• <b>Zakah ul-Fitr</b> – donation to the poor so that everyone can eat a generous meal at the end of Ramadan.</li> </ul>
Ashura	<ul style="list-style-type: none"> <li>• Sunni celebration – many fast on this day which was established by Prophet Muhammad</li> <li>• Shi'a mourning – Husayn was murdered and beheaded. Muslims remember his death and betrayal</li> <li>• <b>Key events</b> – public displays of grief, day of sorrow, wear black, re-enactments of martyrdom, not a public holiday in Britain but Muslims may have day off school</li> </ul>





*The 5 Pillars - Zakah*

The role of giving alms	
The significance of giving alms	
Khums	

*The 5 Pillars - Sawm*

The role of fasting	
The significance of fasting	
Reasons for fasting	
Night of power	

*The 5 Pillars - Hajj*

The role of pilgrimage	
The significance of pilgrimage	
Actions	

*Id-ul-Adha, Id-ul-Fitr, Ashura*

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

**GCSE Unit 9 SPANISH Knowledge organiser.**  
**Topic My Studies**



**What we are learning this term:**

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

**6 Key Words for this term**

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

**9.1G El instituto y las asignaturas**

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

**9.1F ¿Cómo ser buen estudiante?**

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

**Key Verbs**

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

**9.1F ¿Cómo ser buen estudiante?**

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

**9.1H ¿Qué tal el instituto?**

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

**9.1H ¿Qué tal el instituto?**

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

**GCSE Unit 9 SPANISH Knowledge organiser.  
Topic My Studies**

**Key Verbs**

To pass	To choose	Suspender	Estudiar	Pensar
Apruebo	Eligo I choose	I fail	Estudio I study	I think
You pass	Eliges You choose	Suspendes	You study	You think
Aprueba He/she/it passes	Elige	Suspende He/she/it fails	Estudia He/she/it studies	He/she/it thinks
Aprobamos	Elegimos We choose	Suspendemos	We study	We think
Aprueban They pass	They choose	They fail	Estudian They study	They think

**What we are learning this term:**

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

**6 Key Words for this term**

- |                |                 |
|----------------|-----------------|
| 1. asignaturas | 4. suspender    |
| 2. notas       | 5. licenciatura |
| 3. aprobar     | 6. elegir       |

**9.1F ¿Cómo ser buen estudiante?**

\_\_\_\_\_ to open  
 \_\_\_\_\_ to affect  
 el apoyo \_\_\_\_\_  
 aprender \_\_\_\_\_  
 los apuntes \_\_\_\_\_  
 asistir a \_\_\_\_\_  
 la biblioteca \_\_\_\_\_  
 el/la compañero/a \_\_\_\_\_  
 \_\_\_\_\_ to complete  
 \_\_\_\_\_ to consult  
 el \_\_\_\_\_ discussion  
 los \_\_\_\_\_ homework  
 el diccionario \_\_\_\_\_  
 la \_\_\_\_\_ doubt, query  
 el ejercicio \_\_\_\_\_  
 \_\_\_\_\_ to understand  
 la escuela \_\_\_\_\_  
 \_\_\_\_\_ to hope, to wait, to expect  
 el examen, exámenes \_\_\_\_\_  
 la excursión \_\_\_\_\_  
 faltar a clase \_\_\_\_\_  
 la \_\_\_\_\_ sentence  
 \_\_\_\_\_ to try  
 interrumpir \_\_\_\_\_  
 el instituto \_\_\_\_\_  
 \_\_\_\_\_ to raise your hand  
 la literatura \_\_\_\_\_  
 \_\_\_\_\_ to take, to carry, to wear  
 \_\_\_\_\_ to improve  
 mirar \_\_\_\_\_  
 el mundo \_\_\_\_\_  
 \_\_\_\_\_ to need  
 La \_\_\_\_\_ grade  
 ofrecer to \_\_\_\_\_  
 el ordenador \_\_\_\_\_  
 \_\_\_\_\_ to organise  
 la palabra \_\_\_\_\_  
 la pantalla \_\_\_\_\_  
 \_\_\_\_\_ to take part  
 \_\_\_\_\_ to ask for, to request  
 pegado/a \_\_\_\_\_  
 \_\_\_\_\_ to lose, miss  
 la pizarra \_\_\_\_\_  
 la pizarra interactiva \_\_\_\_\_  
 \_\_\_\_\_ to ask  
 el/la profesor(a) \_\_\_\_\_  
 el progreso \_\_\_\_\_  
 \_\_\_\_\_ test  
 \_\_\_\_\_ to revise

**9.1G El instituto y las asignaturas**

el arte dramático \_\_\_\_\_  
 \_\_\_\_\_ subject  
 \_\_\_\_\_ career, university course  
 las ciencias \_\_\_\_\_  
 \_\_\_\_\_ class  
 \_\_\_\_\_ cooking, food technology  
 \_\_\_\_\_ to continue, carry on  
 los deberes \_\_\_\_\_  
 dejar \_\_\_\_\_  
 \_\_\_\_\_ art  
 \_\_\_\_\_ difficult, hard  
 divertido/a \_\_\_\_\_  
 la educación física \_\_\_\_\_  
 \_\_\_\_\_ to choose  
 el español \_\_\_\_\_  
 \_\_\_\_\_ to study  
 fácil \_\_\_\_\_  
 el francés \_\_\_\_\_  
 la \_\_\_\_\_ geography  
 la \_\_\_\_\_ history  
 \_\_\_\_\_ English  
 las matemáticas \_\_\_\_\_  
 práctico/a \_\_\_\_\_  
 \_\_\_\_\_ next  
 la selección \_\_\_\_\_  
 Útil \_\_\_\_\_

**9.1F ¿Cómo ser buen estudiante?**

el repaso \_\_\_\_\_  
 responsable \_\_\_\_\_  
 \_\_\_\_\_ to end up with, to lead to  
 \_\_\_\_\_ to know  
 sacar buenas / to get good / bad grades  
 malas notas  
 serio/a \_\_\_\_\_  
 \_\_\_\_\_ homework  
 \_\_\_\_\_ work, piece of work  
 la tutoría \_\_\_\_\_  
 \_\_\_\_\_ to use  
 \_\_\_\_\_ vocabulary

**9.1H ¿Qué tal el instituto?**

preocupar \_\_\_\_\_  
 la sala de informática \_\_\_\_\_  
 \_\_\_\_\_ simple  
 \_\_\_\_\_ to feel  
 usar to \_\_\_\_\_  
 \_\_\_\_\_ journey  
 \_\_\_\_\_ área

**9.1H ¿Qué tal el instituto?**

el/la alumno/a \_\_\_\_\_  
 antiguo/a \_\_\_\_\_  
 \_\_\_\_\_ frightened  
 \_\_\_\_\_ to frighten  
 \_\_\_\_\_ traffic jam, blockage  
 atento/a \_\_\_\_\_  
 \_\_\_\_\_ (fem.) classroom  
 ayudar \_\_\_\_\_  
 buscar \_\_\_\_\_  
 \_\_\_\_\_ to change  
 \_\_\_\_\_ tired  
 \_\_\_\_\_ to meet, to get to know  
 \_\_\_\_\_ glad, happy  
 \_\_\_\_\_ to answer  
 \_\_\_\_\_ school year, course  
 los \_\_\_\_\_ homework  
 \_\_\_\_\_ dilapidated, shabby  
 distinto/a \_\_\_\_\_  
 la emoción \_\_\_\_\_  
 emocionante \_\_\_\_\_  
 \_\_\_\_\_ on top  
 encontrar \_\_\_\_\_  
 \_\_\_\_\_ to explain  
 feo/a \_\_\_\_\_  
 \_\_\_\_\_ sports hall, gym  
 hambriento/a \_\_\_\_\_  
 \_\_\_\_\_ language  
 inmenso/a \_\_\_\_\_  
 el laboratorio \_\_\_\_\_  
 \_\_\_\_\_ long  
 mejor \_\_\_\_\_  
 \_\_\_\_\_ anxious, nervous  
 el \_\_\_\_\_ the school yard,  
 playground  
 la pregunta \_\_\_\_\_

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

**What we are learning this term:**

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

**6 Key Words for this term**

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

**10.1F Las reglas y el uniforme**

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

**10.1G El día en el instituto**

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

**Key Verbs**

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

**10.1H Lo bueno y lo malo del instituto**

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

**10.1H Lo Bueno y lo malo del instituto**

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

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



**What we are learning this term:**

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

**6 Key Words for this term**

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

**10.1G El día en el instituto**

_____	to have just done something
_____	to perform
el _____	the open air
aislado/a	_____
el/la alumno/a	_____
aprender	to _____
la _____	subject
el _____	A-level equivalent
el bocadillo	_____
bonito	_____
campo de deportes	_____
la _____	class
el/la compañero/a	_____
corto/a	_____
_____	to last
_____	to start, to begin
el equipo	_____
el _____	shelf
la evaluación	_____
_____	to work, to function
ganar	_____
_____	to go to the bathroom
el juego de mesa	_____
la hora de comer	_____
_____	laboratory
la obra de teatro	_____
la _____	option
la oportunidad	_____
_____	to take the register
el producto químico	_____

**10.1F Las reglas y el uniforme**

_____	diary, planner
el apellido	_____
el artículo	_____
la _____	absence
buscar	_____
el _____	chewing gum
El _____	harm
dejar	_____
_____	to show, demonstrate
el _____	building
_____	school (adj.)
firmar	to _____
el _____	individual
las instalaciones	_____
el intercambio	_____
_____	to take, carry, wear
el maquillaje	_____
los materiales	_____
_____	while
el nombre	_____
la _____	word
el pasillo	_____
el pendiente	_____
ponerse en contacto to _____	_____
_____	prohibited, banned
la puntualidad	_____
la _____	rule
el _____	respect
sufrir	to _____
_____	to bring
el trayecto	_____
el uniforme	_____

**Key Verbs**

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

**10.1H Lo bueno y lo malo del instituto**

el _____	bullying
_____	to put up with
aislado/a	_____
_____	to brighten up, to cheer
up	_____
_____	to pass an exam
el aspecto	_____
la _____	heating
el castigo	_____
el comportamiento	_____
la _____	behaviour
_____	to mark, to correct
cumplir con	to _____
en cuanto a	_____
_____	to be turned on
enfadado/a	_____
_____	to teach, show
el equipo	_____
la _____	back
el estante	_____
la _____	explanation

**10.1H Lo Bueno y lo malo del instituto**

_____	naughty, badly
behaved	_____
el trimestre	_____
_____	since, as
el fracaso	_____
_____	to hit
hace falta	_____
_____	uncomfortable
la intimidación	_____
la _____	digital smartboard
_____	to improve
_____	to disturb, to annoy
el ocio	_____
la _____	wall
_____	to remember
el repaso	_____
_____	dirty
_____	to take time, to delay

# GCSE Business. Paper 1. Making the Business Effective

<b>27. A private limited company (Limited Liability)</b>
When a business fails, a company that has limited liability restricts the losses suffered by the business owners (shareholders) to the sum of money that they invested in the business.
<b>Benefits of limited companies.</b>
A company can have share capital, which makes it easier to divide up the ownership between different investors.
If the business needs to raise more capital, it is quite easy to issue more shares for sale to other investors
The business continues to exist even if the founder dies. The company develops a life of its own
Due to limited liability, the owners/shareholders can be bold about investing in the future of the business. If a bold move goes wrong, the business may suffer but individual shareholders are not liable for debts
<b>28. Sole Trader (Unlimited Liability)</b>
Treating the business and the individual owner as the same entity, therefore making the business owner responsible for all the debts in a business.
<b>Why ignore Limited Liability?</b>
The only logical reason for ignoring limited liability is if there is no realistic possibility of debts building up. For example, if the business is a market stall, where goods are bought for cash. In this scenario debts would be hard to build up and firms will be reluctant to pay the related costs and fill out the required paperwork.
<b>33. Business Locations</b>
Location is key to the success of any business
<b>Factors influencing business location:</b>
<b>Proximity to Market:</b> For many businesses this is the most important factor. For a physical service such as a shop, restaurant or hotel, customer convenience will be critical revenue. Shops must be located in areas of high footfall.
<b>Proximity to Materials:</b> For manufacturing businesses, nearness to materials may be more important than nearness to customers. Being close to materials can cut costs for firms in manufacturing.
<b>Proximity to Labour:</b> Labour is key to any business; therefore businesses must be located in areas where the labour force is equipped with the necessary skills to allow the business to thrive.
<b>Proximity to Competitors:</b> Many businesses want at location far away from competitors – effectively being the only supplier to customers in a local area. However, some businesses will want to be closer to their competitors as location is key to their business. For example; location is key for restaurants and more important than proximity to competitors.
<b>34. How has the internet impacted business location:</b>
Due to the impact of e-commerce, business location matters less. Firms can locate their head office anywhere they choose provided the local labour force are equipped with the skills to run the administration effectively. Internet based firms will have a more extensive stock range in all sizes and can cater more extensively for consumers needs than retail outlets.
<b>35. Business Location: Key terms:</b>
<b>Fixed Premises:</b>
Real life buildings such as shops, offices and warehouses.
<b>Proximity:</b>
Nearness: Whether or not a business wants to be closer to a factor such as its customers.

<b>29. Key Words: Making your business effective</b>	
<b>Term</b>	<b>Definition</b>
Bankrupt	When an individual is unable to pay their debts, even after all personal assets have been sold for cash
Private Limited Company	A small family business in which shareholders enjoyed limited liability
Sole Trader	A business run by one person; that person has unlimited liability for any business debts.
<b>30. Franchising</b>	
Paying a franchise owner for the right to use an established business name, branding and business methods	
<b>Why do Businesses expand by selling franchises?</b>	
A firm can expand its sales quickly; this helps fill gaps that other businesses will fill if they don't	
Franchise owners not only sell a franchise but will receive a share of all future sales. Subway receives 8% of the sales revenue of all 45,000 stores.	
The Franchise owner can concentrate on developing new products and services, and on high quality advertising.	
<b>31. What are the benefits of Franchising for a entrepreneur?</b>	
When you franchise you buy the companies images, products and methods. Starting a business requires a wide range of skills, by franchising you are giving your business a stronger starting point.	
An individual outlet/business could never afford image building TV advertising, franchising enables business to benefit from major marketing campaigns.	
<b>32. What are Royalties?</b>	
The percentage of sales revenue to be paid to the overall franchise owners	
<b>36. Marketing Mix</b>	
The four factors that make up the marketing mix, usually referred to as the marketing mix. Usually referred to as the four ps.	
Product	Targeting customers with a product that has the right blend of functional aesthetic benefits without being too expensive to produce
Price	Setting the price that retailers must pay which in turn affects the consumers price
Promotion	Includes all the methods that a business uses to persuade customers to buy, for example branding, packaging, advertising to boost long term image of the product and short-term offers
Place	How and where the supplier is going to get the product or service to the consumer; it includes selling products to retailers and getting the products displayed in prominent positions.
<b>37. What is a business plan?</b>	
A detailed document setting out the marketing and financial thinking behind a proposed new business.	
<b>38. What should a good business plan contain?</b>	
1.	The business idea; Why, who & how?
2.	Business Aims & Objectives; What is business setting out to do?
3.	Target Market; Who will you be your target consumer?
4.	Marketing Plan; How will you market your product to consumers?
5.	Forecast revenue, costs and profits; Working out the break-even point
6.	Cash Flow Forecast; Cash is key to any business
7.	Sources of Finance; How will the business fund itself?
8.	Location; Where should the business be based?
9.	Marketing Mix: How will the company market their product?

# GCSE Business. Paper 1. Making the Business Effective

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Benefits of Limited companies.

<b>28. Sole Trader (Unlimited Liability)</b>
Why ignore Limited Liability?

<b>33. Business Locations</b>

<b>34. How has the internet impacted business location:</b>

<b>29. Key Words: Making your business effective</b>	
Term	Definition
Bankrupt	
Private Limited Company	
Sole Trader	

<b>30. Franchising</b>

<b>31. What are the benefits of Franchising for a entrepreneur?</b>

<b>36. Marketing Mix</b>	
The four factors that make up the marketing mix, usually referred to as the marketing mix. Usually referred to as the four ps.	
Product	
Price	
Promotion	
Place	

<b>37. What is a business plan?</b>
A detailed document setting out the marketing and financial thinking behind a proposed new business.
<b>38. What should a good business plan contain?</b>

## Functions / Procedures / Subroutines

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

#calling the function
greeting_function()

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

### String Manipulation

Using .upper() .lower() methods.

```
userName = input("Enter lowercase name: ")
userName = userName.upper()
print(userName) | Enter lowercase name: mr.weston
MR.WESTON
```

Concatenation (merging strings together).

```
firstName = input("Enter first name")
lastName = input("Enter last name")
fullName = firstName + lastName
print(fullName) | Enter first nameSamuel
Enter last nameWeston
SamuelWeston
```

```
userSentence = input("Enter a sentence")
sentenceList = userSentence.split()
print(sentenceList) | Enter a sentenceSphinx of black quartz, judge my vow
['Sphinx', 'of', 'black', 'quartz,', 'judge', 'my', 'vow']
```

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

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

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

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

## Text Files

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

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

greeting - Notepad

File Edit Format View Help

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

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

Newfile - Notepad

File Edit Format View Help

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

### Validation

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

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

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

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

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

```
An unhandled exception occurred.
```

```
>>> |
```



**Number Bases**

Three common bases in computer science.

Decimal / Denary – Base 10, Our normal number system.

Binary – Base 2, used by Computers.

Hexadecimal – Base 16, easier for humans to understand and work with than binary and relates more to binary than denary does.

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

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

**Units of Memory**

Bits – Binary digits. Either 1 or 0.

Nibble – Four bits.

Byte – Eight bits.

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

**Character Sets**

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

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

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

**Terms**

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

**Run-Length-Encoding**

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



**Huffman Coding**

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

# Food Spoilage, Contamination and Food Poisoning

## Food spoilage

As soon as food is harvested, slaughtered or processed it starts to change. This happens for two main reasons:

- autolysis – self destruction, caused by enzymes present in the food;
- microbial spoilage – caused by the growth of micro-organisms, i.e. bacteria, yeasts and moulds.

## Food spoilage: Autolysis – enzymes

Enzymes are chemicals which can cause food to deteriorate in three main ways:

- ripening – this will continue until the food becomes inedible, e.g. banana ripening;
- browning – enzymes can react with air causing certain foods, e.g. apples, to discolour;
- oxidation – loss of nutrients, such as vitamin C from food, e.g. over boiling of green vegetables.

## Food spoilage: Microbial spoilage

Spoilage can be caused by the growth of:

- bacteria – single celled micro-organisms which are present naturally in the environment;
- yeasts – single celled fungi;
- moulds – fungi which grow as filaments in food.

## Food contamination

Food contamination can lead to food poisoning. There are three ways which food can be contaminated: **bacterial, chemical and physical.**

## Chemical contamination

Chemical contamination can occur in a variety of ways at different stages of food processing and production. For example, chemicals from the farm; cleaning products used in the processing plant and fly spray used in the kitchen.

## Physical contamination

This can occur in a variety of ways at different stages of food processing and production. Some examples are:

- soil from the ground when harvesting;
- a loose bolt from a processing plant when packaging;
- a hair from a chef in the kitchen.**

## Bacterial contamination

Most bacteria are harmless but a small number can cause illness. These are known as pathogenic bacteria. Food which is contaminated with pathogenic bacteria can look, taste and smell normal.

Bacteria can be transferred onto food through cross-contamination, via equipment, people or pests, or can be naturally present in the food.

Some bacteria can produce toxins which can cause food poisoning.

## Micro-organisms

Micro-organisms need conditions to survive and reproduce these can include:

- temperature;
- moisture;
- food;
- time;
- oxygen and pH level.

## Temperature

Bacteria need warm conditions to grow and multiply.

- The ideal temperature for bacterial growth is 30°C – 37°C.
- Some bacteria can still grow at 10°C and 60°C.
- Most bacteria are destroyed at temperatures above 63 °C.
- Bacterial growth danger zone is 5°C - 63°C.

At very cold temperatures, bacteria become dormant – they do not die, but they cannot grow or multiply.

## Moisture

Where there is no moisture bacteria cannot grow. However, bacteria and moulds can both produce spores which can survive until water is added to the food.

## Food

Bacteria need a source of food to grow and multiply, these food are usually high in moisture, fat and protein, and may be ready to eat. Food where bacteria rapidly multiply in is called a **high risk food**. For example:

- meat, meat products and poultry;
- milk and dairy products;
- eggs – uncooked and lightly cooked;
- shellfish and seafood;
- prepared salads and vegetables;
- cooked rice and pasta.

## Time

Given the right conditions, one bacterium can divide into two every 10-20 minutes through a process called binary fission.

## People at high risk of food poisoning

Elderly people, babies and anyone who is ill or pregnant needs to be extra careful about the food they eat.

## Symptoms of food poisoning

Food poisoning can be mild or severe. The most common symptoms are:

- feeling sick;
- being sick;
- diarrhoea;
- abdominal pain.

## Campylobacter

### Sources

Raw and undercooked poultry, unpasteurized milk, contaminated water.

### Signs and symptoms

Onset 2 – 5 days (can be longer). Fever, headache and dizziness for a few hours, followed by abdominal pain.

## E Coli 0157

### Sources

Raw and undercooked meat and poultry. Unwashed vegetables. Contaminated water.

### Signs and symptoms

Onset usually 3-4 days. Diarrhoea, which may contain blood, can lead to kidney failure or death.

## Listeria

### Sources

Unpasteurised milk and dairy products, cook-chill foods, pate, meat, poultry and salad vegetables.

### Signs and symptoms

Onset 1-70 days. Ranges from mild, flu-like illness to meningitis, septicemia, pneumonia. During pregnancy may lead to miscarriage or birth of an infected baby.

## Salmonella

### Sources

Raw meat, poultry and eggs. Flies, people, sewage and contaminated water.

### Signs and symptoms

Onset 6-48 hours. Headache, general aching of limbs, abdominal pain and diarrhoea, vomiting and fever. This usually lasts 1 – 7 days, and rarely is fatal.

## Staphylococcus aureus

### Sources

Humans: nose, mouth and skin. Untreated milk.

### Signs and symptoms

Onset 1 – 6 hours. Severe vomiting, abdominal pain, weakness and lower than normal temperature. This usually lasts 6 – 24 hours.

## Key terms

**Bacteria:** Small living organisms that can reproduce to form colonies. Some bacteria can be harmful (pathogenic) and others are necessary for food production, e.g. to make cheese and yogurt.

**Binary fission:** The process that bacteria uses to divide and multiply.

**Cross-contamination:** The transfer of bacteria from one source to another. Usually raw food to ready to eat food but can also be the transfer of bacteria from unclean hands, equipment, cloths or pests. Can also relate to allergens.

**Food spoilage:** The action of enzymes or microorganisms which make the food unacceptable to consume.

**Food poisoning:** Illness resulting from eating food which contains food poisoning micro-organisms or toxins produced by micro-organisms.

**Toxin:** A poison produced by some bacteria which can cause food poisoning.

## Allergens

Allergenic ingredients can cause adverse reactions in some people. Care must be taken at each stage of food processing to prevent contamination.

## Desirable food changes

Desirable changes that can be caused by micro-organisms include:

- bacteria in yogurt and cheese production;
- mould in some cheeses, e.g. Stilton; blue cheese
- yeast in bread production.

KS4 FOOD AND NUTRITION  
KNOWLEDGE ORGANISER T4

# Food Spoilage, Contamination and Food Poisoning

## KS4 FOOD AND NUTRITION KNOWLEDGE ORGANISER T3 Quiz

**Key terms**  
**Bacteria:**

**Binary fission:**

**Cross-contamination:**

**Food spoilage:**

**Food poisoning:**

**Toxin:**

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 Enzymes are chemicals which can cause food to deteriorate in three main ways:

- ripening
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- oxidation

**Food spoilage: Microbial spoilage**  
 Spoilage can be caused by the growth of:

- bacteria
- yeasts
- moulds

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# Year 10 PRODUCT DESIGN Term 4



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<b>Tidal</b>																																																																																																																													
<b>Advantages</b>	<b>Disadvantages</b>																																																																																																																												
<ul style="list-style-type: none"> <li>Long lasting</li> <li>Clean resource</li> </ul>	<ul style="list-style-type: none"> <li>High start up</li> <li>Unknown impact</li> </ul>																																																																																																																												
<b>Hydro Electricity</b>																																																																																																																													
<b>Advantages</b>	<b>Disadvantages</b>																																																																																																																												
<ul style="list-style-type: none"> <li>No pollution</li> <li>Values can be opened quickly</li> </ul>	<ul style="list-style-type: none"> <li>Affects wildlife through flooding</li> <li>Eyesore</li> </ul>																																																																																																																												
<b>Biomass</b>																																																																																																																													
<b>Advantages</b>	<b>Disadvantages</b>																																																																																																																												
<ul style="list-style-type: none"> <li>CO2 released used by plants</li> <li>Replacements can be grown</li> </ul>	<ul style="list-style-type: none"> <li>Creates pollution when burned</li> <li>Takes up land needed</li> </ul>																																																																																																																												
<b>D. Electronic Systems</b>																																																																																																																													
<b>Input / Sensor</b>																																																																																																																													
Light-dependent resistor (LDR) <i>changes with light</i>																																																																																																																													
Thermistor <i>changes with temperature</i>																																																																																																																													
Piezoelectric Sensor <i>changes with sound / electric energy</i>																																																																																																																													
<b>Process / Control Device</b>																																																																																																																													
Switch <i>turn on and off power</i>																																																																																																																													
Resistor <i>to limit flow of current</i>																																																																																																																													
Microcontroller <i>programmable decisions</i>																																																																																																																													
<b>Output</b>																																																																																																																													
Speaker <i>releases sound</i>																																																																																																																													
Motor <i>releases movement</i>																																																																																																																													
Light-emitting diode (LED) <i>releases light</i>																																																																																																																													
<b>E. Metals &amp; Alloys</b>																																																																																																																													
Metals are extracted from natural ore.																																																																																																																													
<b>Ferrous</b>	<b>Non-ferrous</b>																																																																																																																												
Low-carbon steel (mild steel)	Aluminium																																																																																																																												
Cast Iron	Copper																																																																																																																												
High-carbon steel (tool steel)	Tin																																																																																																																												
	Zinc																																																																																																																												
Contain iron and are magnetic, prone to rust.	Do not contain iron, not magnetic. Do not rust.																																																																																																																												
<b>Alloys</b>																																																																																																																													
Alloys are mixtures of two or more metals to improve its properties or aesthetic.																																																																																																																													
Brass	Stainless steel																																																																																																																												
	High-speed steel																																																																																																																												
<b>F. Surface Treatments of Timber</b>																																																																																																																													
Used to improve their appearance and to enhance certain properties such as durability																																																																																																																													
Paint	Oil or Wax																																																																																																																												
Wood Stain	Varnish																																																																																																																												
<b>Tanalisng / Pressure-treated</b>																																																																																																																													
Preservatives can be added to extend the lifespan of the timber, protecting it from rot, decay and insects.																																																																																																																													
Pressure-treated timber will have no need to paint, s coat it.																																																																																																																													



Year 10 PRODUCT DESIGN Term 4



<b>A. Finite Resources</b>	
Finite resources will _____	
<b>Coal</b>	
<b>Advantages</b>	<b>Disadvantages</b>
• _____	• _____
• _____	• _____
<b>Natural Gas</b>	
<b>Advantages</b>	<b>Disadvantages</b>
• _____	• _____
• _____	• _____
<b>Oil</b>	
<b>Advantages</b>	<b>Disadvantages</b>
• _____	• _____
• _____	• _____
<b>Nuclear</b>	
<b>Advantages</b>	<b>Disadvantages</b>
• _____	• _____
• _____	• _____

<b>B. CAD</b>	
CAD stands for _____	
<b>Advantages</b>	<b>Disadvantages</b>
• _____	• _____
• _____	• _____
• _____	• _____

**What we are learning this term:**  
 A. Finite Resources    B. CAD  
 C. Renewable    D. Electronic Systems    E.  
 Metals & Alloys    F. Surface Treatments

**C. Renewable Resources**

Renewable resources are \_\_\_\_\_

**Wind**

**Advantages**      **Disadvantages**

- |         |         |
|---------|---------|
| • _____ | • _____ |
| • _____ | • _____ |
| • _____ | • _____ |

**Solar**

**Advantages**      **Disadvantages**

- |         |         |
|---------|---------|
| • _____ | • _____ |
| • _____ | • _____ |
| • _____ | • _____ |

**Tidal**

**Advantages**      **Disadvantages**

- |         |         |
|---------|---------|
| • _____ | • _____ |
| • _____ | • _____ |

**Hydro Electricity**

**Advantages**      **Disadvantages**

- |         |         |
|---------|---------|
| • _____ | • _____ |
| • _____ | • _____ |

**Biomass**

**Advantages**      **Disadvantages**

- |         |         |
|---------|---------|
| • _____ | • _____ |
| • _____ | • _____ |
| • _____ | • _____ |

**D. Electronic Systems**

**Input / Sensor**

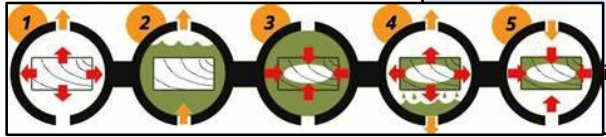
_____	
_____	
_____	
_____	

**Process / Control Device**

_____	
_____	
_____	
_____	

**Output**

_____	
_____	
_____	
_____	



**E. Metals & Alloys**

Metals are extracted from \_\_\_\_\_.

<b>Ferrous</b>	<b>Non-ferrous</b>
Contain iron and are magnetic, prone to rust.	Do not contain iron, not magnetic. Do not rust.

**Alloys**

Alloys are \_\_\_\_\_ to improve its \_\_\_\_\_ or \_\_\_\_\_.

**F. Surface Treatments of Timber**

Used to \_\_\_\_\_ and to \_\_\_\_\_ such as \_\_\_\_\_



**Tanalising / Pressure-treated**

Preservatives can be added to \_\_\_\_\_ of the timber, protecting it from \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

Pressure-treated timber will have no need to \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.



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

6 Key Words for this term	
1 Practitioners	4 Performance material
2 Physical skills	5 Analyse
3 Interpretive skill	6 Intentions

A.	Key question – What is the artistic purpose of a performance work?
<p>When watching a professional performance, the key questions you need to think about are the following...</p> <p>How do we Explore artistic purpose?</p> <p>Explore artistic purpose (across all three disciplines/styles) including:</p> <ul style="list-style-type: none"> <li>to educate</li> <li>to inform</li> <li>to entertain</li> <li>to provoke</li> <li>to challenge viewpoints</li> <li>to raise awareness</li> <li>to celebrate.</li> </ul>	

A.	Component 1 – Key focus
<p>In this component of the qualification students will develop their understanding of drama by examining the work of existing practitioners and the processes used to create performance. Students should experience a range of work across the discipline of drama by viewing recorded and/or live work.</p> <p>While this is primarily a theoretical study of the performing arts practical investigations, students will be working at developing practical skills through workshops and links with Component 2 Developing Skills and Techniques in the Performing Arts, to engage in primary exploration of specific repertoire.</p>	

C.	Key question from Assessment objectives
<ol style="list-style-type: none"> <li>1. What are physical skills</li> <li>2. What are interpretive skills</li> <li>3. How do we use these skills practically?</li> <li>4. How do we IMPROVE on these skills?</li> </ol>	<ol style="list-style-type: none"> <li>1. What is a professional work</li> <li>2. What is a practitioner</li> <li>3. How do we analyse a performance</li> <li>4. What are a practitioners creative intentions</li> </ol>

G.	Key learning aims from Component 1
<p><i>Learning aim A: Examine professional practitioners' performance work</i></p>	<p><b>A1: Professional practitioners' performance material, influences, creative outcomes and purpose</b></p> <p>Examine live and recorded performances in order to develop understanding of practitioners' work with reference to influences, outcomes and purpose.</p> <p>Focus on thematic interpretation of particular issues and how artists communicate their ideas to an audience.</p> <p>Roles and responsibilities in theatre.</p>
	<p><i>Learning aim B: Explore the interrelationships between constituent features of existing performance material</i></p> <p>Processes used in performance</p> <ul style="list-style-type: none"> <li>● Responding to stimuli to generate ideas for performance material.</li> <li>● Exploring and developing ideas to develop material.</li> <li>● Discussion with performers.</li> <li>● Setting tasks for performers.</li> <li>● Sharing ideas and intentions.</li> <li>● Providing notes and/or feedback on improvements.</li> </ul>

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



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

6 Key Words for this term	
1 Practitioners	4 Performance material
2 Physical skills	5 Analyse
3 Interpretive skill	6 Intentions

A.	Key question – What is the artistic purpose of a performance work?
<p>When watching a professional performance, the key questions you need to think about are the following... How do _____? (across all three disciplines/styles) including: to _____ to _____ to _____ to _____ to _____ to _____</p>	

A.	Component 1 – Key focus
<p>In this component of the qualification students will develop their understanding of drama by examining the work of _____s and the _____ used to _____.</p> <p>Students should experience a range of work across the discipline of drama by viewing recorded and/or live work.</p> <p>While this is primarily a theoretical study of the performing arts practical investigations, students will be working at developing practical skills through _____s and links with Component 2 _____ and Te_____s in the Performing Arts, to engage in primary exploration of specific repertoire.</p>	

C.	Key question from Assessment objectives
<p>1. What are physical skills 2. What are interpretive skills 3. How do we use these skills practically? 4. How do we IMPROVE on these skills?</p>	<p>1. What is a professional work 2. What is a practitioner 3. How do we analyse a performance 4. What are a practitioners creative intentions</p>

G.	Key learning aims from Component 1
<p><i>Learning aim A: Examine professional practitioners' performance work</i></p>	<p><b>A1: Professional practitioners' performance material, influences, creative outcomes and purpose</b></p> <p>Examine _____ and _____ performances in order to develop _____ of practitioners' work with reference to _____s, o_____s and p_____se. Focus on _____ i_____ of particular i_____ and how artists c_____te their ideas to an _____e. Roles and responsibilities in theatre.</p>
<p><i>Learning aim B: Explore the interrelationships between constituent features of existing performance material</i></p>	<p>Processes used in performance</p> <ul style="list-style-type: none"> <li>• Responding to _____ to generate id_____s for performance material.</li> <li>• Exploring and developing ideas to develop material.</li> <li>• D_____on with performers.</li> <li>• Setting _____ for performers.</li> <li>• S_____ng ideas and intentions.</li> <li>• Providing _____ and/or fe_____ck on imp_____nts.</li> </ul>

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



Main assessment objectives	
<b>Learning outcome:</b> Know the personal qualities, styles, roles and responsibilities associated with effective sports leadership.	
Be able to plan sports activity sessions.	

What we are learning this term:	
A. Different leadership roles	
B. Role-related responsibilities	
C. Personal qualities	
D. Leadership styles	
E. Key considerations when planning sports activity	

Can you give examples of managers from different sports?	
Gareth Southgate Eddie Jones	

Role models	
Positive Mo Farah Nicole Adams	Negative Luis Suarez Nick Kyrgios

Key sections	
Different leadership roles and opportunities	

Captain Coach Expedition leader	Manager Teacher Role model
---------------------------------------	----------------------------------

Role related responsibilities	
-------------------------------	--

Knowledge of; Activity Safety Child protection Basic first aid	Enthusiasm for activity
--	----------------------------

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

A. Role related responsibilities	
Knowledge of activity Enthusiasm for activity Knowledge of safety Knowledge of child protection issues Knowledge of basic first aid	

G. Considerations when planning sports activities	
Session content	Objectives for the session appropriate venue Equipment needs Supervision needs Timing of activities Introduction/conclusion of session Basic warm up/cool down Skills and technique development Engaging Organisation

Personal qualities	
Reliability Punctuality Confidence Communicator Creativity	

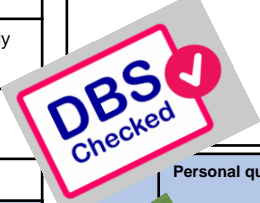
Safety	Risk assessments- facilities, equipment/clothing checks, activity-specific risks  Corrective action- wiping up puddles, removing litter, reporting faulty equipment  Emergency procedures- procedures in the event of an accident, procedures in the event of other emergencies, summoning qualified help, completion of relevant documents
--------	---

Personal qualities	
--------------------	--

Reliability Punctuality Communication Confidence Creativity
---

Leadership styles	
-------------------	--

Autocratic Democratic Laissez-faire
---







**Main assessment objectives**

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



**What we are learning this term:**

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

<b>C.</b>	<b>Can you give examples of managers from different sports?</b>
<b>Role models</b>	
Positive	Negative

<b>A.</b>	<b>Role related responsibilities</b>

<b>G.</b>	<b>Considerations when planning sports activities</b>	
	<i>Session content</i>	
	<i>Safety</i>	

<b>A.</b>	<b>Personal qualities</b>

**Key sections**

**Different leadership roles and opportunities**

--	--

**Role related responsibilities**

--	--

**Personal qualities**

--	--

**Leadership styles**





--	--

<b>A.</b>	<b>The different leadership roles within sport</b>	
	<b>Role</b>	<b>Definition</b>
	Coach	
	Manager	
	Captain	
	Teacher	
	Expedition leader	
	Role model	

<b>A.</b>	<b>Leadership styles</b>	





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

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






B	What are the main life stages?		C	What are the 4 areas of growth and development (PIES)?
Age Group	Life Stage	Developmental Characteristics and Progress	 Physical Development (P)  Intellectual Development (I)  Emotional Development (E)  Social Development (S)	P = growth patterns and changes in the mobility of the large and small muscles in the body that happen throughout life.  I = how people develop their thinking skills, memory and language.  E = how people develop their identity and cope with feelings.  S = describes how people develop friendships and relationships.
0-2 years	Infancy	Sill dependent on parents but growing quickly and developing physical skills.		
3-8 years	Early Childhood	Becoming increasingly independent, improving thought processes and learning how to develop friendships.		
9-18 years	Adolescence	Experiencing puberty, which bring physical and emotional changes.		
19-45 years	Early Adulthood	Leaving home, making own choices about a career and may start a family.		
46-65 years	Middle Adulthood	Having more time to travel and take up hobbies as children may be leaving home; beginning of the aging process.		
65+ years	Later Adulthood	The aging process continues, which may affect memory and mobility.		






D.	How do humans develop physically (P)?
<b>0-2</b>	<ul style="list-style-type: none"> <li>Gross Motor Development (G) = life head, roll over, sit unaided, walk holding onto something, walk unaided, climb stairs, kick and throw, walk upstairs, jump.</li> <li>Fine Motor Development (F) = hold a rattle for short time, reach for an item, pass item from one hand to other, hold between finger and thumb, scribble, build a tower, use a spoon, draw lines and circles, turn page of a book.</li> </ul>
<b>3-8</b>	<ul style="list-style-type: none"> <li>G = ride a tricycle, catch a ball with two hands, walk backwards and step to the side, bounce a ball, run on tiptoes, ride a bike, catch a ball with one hand, balance along a thin line.</li> <li>F = hold a crayon to make circles and lines, thread small beads, copy letters and shapes with a pencil, make detailed models with construction bricks, joined up writing, use a needle to sew.</li> </ul>
<b>9-18</b>	<ul style="list-style-type: none"> <li>Girls = puberty starts at 10-13 years, breasts grow, hips widen, menstruation begins, uterus and vagina grow.</li> <li>Boys = voice deepens, muscles and strength increase, erections, facial hair, produce sperm.</li> <li>Both = pubic and underarm hair, growth spurts.</li> </ul>
<b>19-45</b>	<ul style="list-style-type: none"> <li>Physically mature, sexual characteristics are fully formed, peak of physical fitness, full height, women at most fertile.</li> <li>Later in the life stage people may put on weight, hair turn grey and men may lose hair, women's menstrual cycle was slow down</li> </ul>
<b>46-65</b>	<ul style="list-style-type: none"> <li>People may put on weight, hair turn grey and men may lose hair, women's menstrual cycle was slow down.</li> <li>Women go through the menopause – when menstruation ends and they can no longer become pregnant.</li> <li>Men may continue to be fertile throughout life but decrease in sperm production in this life stage.</li> </ul>
<b>65+</b>	<ul style="list-style-type: none"> <li>Women's hair becomes thinner, men may lose most of their hair, skin loses elasticity and wrinkles appear, nails hard and brittle, bones weaken, higher risk of contracting infections disease and illness.</li> <li>Stamina, reaction time, muscle and senses (hearing, sight, taste) all reduce.</li> </ul>

What we are learning this term:	
A. Key words	
B. What are the main life stages	
C. What are the 4 areas of growth and development (PIES)?	
D. How do Humans develop physically (P)?	
A.	Key words for this Unit
Characteristics	
Life stages	
Growth	
Development	
Gross motor development ( <b>G</b> )	
Fine motor development ( <b>F</b> )	
Language development	
Contentment	
Self-image	
Self-esteem	
Informal relationships	
Friendships	
Formal relationships	
Intimate relationships	

B	What are the main life stages?		C	What are the 4 areas of growth and development (PIES)? Explain them.
Age Group	Life Stage	Developmental Characteristics and Progress		
0-2 years			Physical Development (P) 	
3-8 years				
9-18 years			Intellectual Development (I) 	
19-45 years			Emotional Development (E) 	
46-65 years				
65+ years			Social Development (S) 	

D.	<u>How do humans develop physically (P)?</u>
<b>0-2</b>	
<b>3-8</b>	
<b>9-18</b>	
<b>19-45</b>	
<b>46-65</b>	
<b>65+</b>	





What we are learning this term:		F. How do humans develop emotionally (E)?	
E. How do humans develop intellectually (I)? F. How do humans develop emotionally (E)? G. How do humans develop socially (S)?			
E. <b>How do humans develop intellectually (I)?</b>			
Infancy  	At birth brains are already well developed. Infants use all of their senses to learn about the world around them. Infancy is a time of rapid intellectual development. At 3 months infants can remember routines. At 9-12 months infants are developing their memory. At 12 months to 2 years infants understand processes and how things work. Language begins to develop during this stage.	<b><u>Bonding and Attachment</u></b> Bonding and attachment describe the emotional ties an individual forms with others. It starts in the first year of life between infants and their main carer because that person fulfils the infants needs which makes them feel safe and secure.	<b><u>Self-image and Self-esteem</u></b> Self-image is heightened during adolescence because of the physical changes we experience. Our self-esteem can change from day to day based on a variety of factors including employment and health status.
		<b><u>Security</u></b> For infants and young children, security is mainly the feeling of being cared for, being safe and loved – it is closely linked with attachment.	<b><u>Security</u></b> Adolescence may feel insecure because of puberty. Adults may feel insecure about relationships, job security of income. Later in life adults may feel insecure about staying in their own home or going into a care home. Feeling secure helps us cope better with everyday situations.
		<b><u>Contentment</u></b> Infants and young children are content if they have had enough food, love, are clean and dry and all other needs are met.	<b><u>Contentment</u></b> When people feel discontented with aspects of their life – for example, relationships or work – their emotions can be negatively affected.
Early childhood  	At 3-4 years of age children become more inquisitive and enjoy exploring objects and materials. They ask lots of questions and enjoy solving simple problems.  At 5-6 years old children's memory is becoming well developed. This helps them to talk about the past and anticipate the future.	<b><u>Independence</u></b> Independence is to care for yourself and make your own decisions. Infants are completely dependent on their carer. As children enter early childhood they develop more independence – feed self and get dressed. However, children still need a lot of help from their carer.	<b><u>Independence</u></b> Adolescence are dependent on their parents but are beginning to enjoy more independence and freedom to make their own choices. Adults enjoy living independently and controlling their own lifestyle and environment. Later in adulthood people become more dependent on others again.
G. <b>How do humans develop socially (S)?</b>			
<b>Life Stage</b>		Types of relationships and social development	
Adolescence  	During this time abstract thought is developed – thinking logically and solving complex problems are possible by the end of this life stage. Adolescents may find it difficult to understand the consequences of their actions but they are developing empathy – seeing things from another's point of view.	Infancy	<ul style="list-style-type: none"> <li>• Solitary Play - From birth to 2 years, infants tend to play alone although they like to be close to their parent or carer; they may be aware of other children but not play with them.</li> </ul>
		Early childhood	<ul style="list-style-type: none"> <li>• Parallel Play - From 2 to 3 years, children enjoy playing next to other children but are absorbed in their own game; they are not socialising or playing with other children.</li> <li>• Cooperative or social play – from 3 years upwards, children start to play with other children; they have developed social skills that help them to share and talk together; they often make up games together, such as being a shopkeeper and customer.</li> </ul>
		Adolescence	<ul style="list-style-type: none"> <li>• People become more independent and build more informal and formal relationships.</li> <li>• Social development closely linked to emotions.</li> <li>• Often strongly influenced by peers – 'peer group pressure'.</li> </ul>
Early and Middle Adulthood  	By these life stages most adults have a good range of general knowledge. They use this knowledge and experience to solve problems that they come across in their personal and work lives.	Early adulthood	<ul style="list-style-type: none"> <li>• Increased independence means greater control of decisions about informal relationships.</li> <li>• People may be developing emotional and social ties with partners and their own children.</li> <li>• Social life often centred on the family but social skills are required to build and maintain formal relationships.</li> </ul>
		Middle adulthood	<ul style="list-style-type: none"> <li>• Children have often left home, but there are likely to still be strong family relationships.</li> <li>• Social circles may expand through travel, spending more time on hobbies or joining new groups.</li> </ul>
Later adulthood  	During this life stage people continue to learn and develop intellectually, however, their speed of thinking and memory may decline. This may affect their ability to think through problems and make logical decisions.	Later adulthood	<ul style="list-style-type: none"> <li>• Retired by this stage and so may enjoy more social time with family and friends or join new groups.</li> <li>• However, later in the life stage people may begin to feel isolated if they struggle to get out or if partners and friends pass away.</li> </ul>

<b>What we are learning this term:</b>		<b>F.</b> How do humans develop emotionally (E)? Explain each.	
E. How do humans develop intellectually (I)? F. How do humans develop emotionally (E)? G. How do humans develop socially (S)?		<b>Infancy and Early Childhood</b>	
<b>E.</b> <i>How do humans develop intellectually (I)?</i>		<b>Adolescence and adulthood</b>	
Infancy		<b>Bonding and Attachment</b>	
		<b>Self-image and Self-esteem</b>	
		<b>Security</b>	
		<b>Security</b>	
		<b>Contentment</b>	
		<b>Contentment</b>	
Early childhood		<b>Independence</b>	
		<b>Independence</b>	
		<b>G.</b> How do humans develop socially (S)?	
		<b>Life Stage</b> Types of relationships and social development	
Adolescence		Infancy	
		Early childhood	
		Adolescence	
Early and Middle Adulthood		Early adulthood	
		Middle adulthood	
Later adulthood		Later adulthood	
			

What we are learning this term:	
H.	Key words
I.	How do physical factors affect development?
J.	How does lifestyle affect development?
K.	How do social and cultural factors affect development?
L.	How do relationships and isolation affect development?
M.	How do economic factors affect development?

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



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

J.	How does lifestyle affect development?	
<b>Lifestyle choices</b> include; diet, exercise, alcohol, smoking, sexual relationships and illegal drugs, appearance.		
<b>Positive lifestyle choices lead to:</b> <ul style="list-style-type: none"> <li>• Healthy hair, skin, nails and teeth</li> <li>• Positive self-image</li> <li>• Energy and stamina</li> <li>• Good health</li> <li>• Emotional security</li> </ul> 		<b>Negative lifestyle choices lead to:</b> <ul style="list-style-type: none"> <li>• Being overweight or underweight</li> <li>• Lack of energy</li> <li>• Ill health</li> <li>• Negative self-image</li> <li>• Sexually transmitted diseases (STDs)</li> <li>• Unplanned pregnancy</li> </ul> 
Our <b>appearance</b> includes: body shape, facial features, hair and nails, personal hygiene and our clothing. Our appearance can affect the way we view ourselves- self-image		
<b>Positive self-image:</b> <ul style="list-style-type: none"> <li>• Feel good about yourself.</li> <li>• Healthy hair, skin, nails and teeth</li> <li>• Big social circle.</li> <li>• High self-esteem.</li> <li>• High self-confidence.</li> </ul> 		<b>Negative self-image</b> <ul style="list-style-type: none"> <li>• Low self-esteem</li> <li>• Low self-confidence</li> <li>• Can lead to eating disorders e.g. anorexia</li> <li>• Can lead to anxiety or depression</li> <li>• Can lead to self-harm</li> <li>• Negative impact on building relationships- social circle decreases.</li> </ul> 

What we are learning this term:	
H.	Key words
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J.	How does lifestyle affect development?
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M.	How do economic factors affect development?

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

I.	How do physical factors affect development?	
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Physical Development		
Intellectual Development		
Emotional Development		
Social Development		

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Lifestyle choices include; diet, exercise, alcohol, smoking, sexual relationships and illegal drugs, appearance.		
<u>Positive lifestyle choices lead to:</u>		<u>Negative lifestyle choices lead to:</u>
<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>
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<u>Positive self-image:</u>		<u>Negative self-image</u>
<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>



**K How do social and cultural factors affect development**

Development can be influenced by the persons **culture or religion** because it affected their:

- **Values:** how they behave
- **Lifestyle choices:** diet, appearance

<p><u>Positive affects of a persons culture/religion:</u></p> <ul style="list-style-type: none"> <li>• A sense of security and belonging from sharing the same values and beliefs with others.</li> <li>• Good self-esteem through being accepted and valued by others</li> </ul>	<p><u>Negative affects of a persons culture/religion:</u></p> <ul style="list-style-type: none"> <li>• Feeing discriminated against by people who do not share their religion/culture which leads to low self-image</li> <li>• Feeing excluded and isolated because their needs like diet, are not catered for.</li> </ul>
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**Community** refers to: local area where people live, school, religious group or hobby clubs. They have common values and goals.

<p><u>Belonging to a community:</u></p> <ul style="list-style-type: none"> <li>• Brings sense of belonging essential for emotional development.</li> <li>• Building and maintaining relationships- social development</li> <li>• Feeling of security.</li> <li>• Increases self-image and self-confidence</li> </ul>	<p><u>Not belonging to a community:</u></p> <ul style="list-style-type: none"> <li>• Minimal contact with others- isolation</li> <li>• Anxiety leading to depression</li> <li>• Making negative lifestyle choices</li> <li>• Feeling less secure</li> <li>• Difficulty in building relationships</li> <li>• Slow self-image and self-confidence</li> </ul>
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Traditionally, men and women had distinctive responsibilities and expectations which for their gender called **gender roles**. However, nowadays UK equality legislation stops people being discriminated against because of their gender.

What happens when people face discrimination because of gender:

- They might be excluded from a group
- They may be refused promotion at work
- They may be expected to carry out a particular role
- They may be paid less.

**What we are learning this term:**

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

**L How do relationships and isolation affect development?**

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

**M How do economic factors affect development**

Having enough money gives individuals and their families feeling of content and security	Not having enough money causes stress and anxiety.
Having enough money means that the whole family is eating healthy.	Not having enough money can mean that the family is not about to eat well balanced diet, and this has a negative effect on their physical development
Elderly people rely on state pension to live which is not enough and have to cut down on travel, shopping, bills, therefore it speeds their aging process and lead to health decline.	
<p><u>Living in good housing with open spaces:</u></p> <ul style="list-style-type: none"> <li>• Feeling good about themselves</li> <li>• Be more likely to stay healthy,</li> <li>• Space to take exercise</li> <li>• Feel safe ad secure</li> <li>• Warmth</li> </ul>	<p><u>Living in a poor housing with cramped and damp conditions:</u></p> <ul style="list-style-type: none"> <li>• Have low self-esteem and self-image</li> <li>• Be more likely to experience ill health</li> <li>• Be lesson likely to exercise</li> <li>• Anxious and stressed.</li> </ul>
Material possession like a new phone or coat has a positive effect on the persons development because they might have more friends as they look nicer, high self-image.	Not having a phone or the newest trainers can have a negative affect in the persons self-image and self-esteem. They might feel isolated from others.





**K How do social and cultural factors affect development**

Development can be influenced by the persons **culture or religion** because it affected their:

- **Values:** how they behave
- **Lifestyle choices:** diet, appearance

Positive affects of a persons culture/religion:

- 
- 

Negative affects of a persons culture/religion:

- 
- 

**Community** refers to:

Belonging to a community:

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Not belonging to a community:

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

What happens when people face discrimination because of gender:

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- 
- 
- 

**What we are learning this term:**

- K. How do social and cultural factors affect development?
- L. How do relationships and isolation affect development?
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**L How do relationships and isolation affect development?**

1	
2	
3	
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**M How do economic factors affect development**

Having enough money.... • •	Not having enough money ..... • •
→	→
Having enough money means that.... • •	Not having enough money can mean that... • •
→	→
Elderly people rely on state pension to live which is not enough and have to cut down on travel, shopping, bills, therefore it speeds their aging process and lead to health decline.	
<u>Living in good housing with open spaces:</u> • • • •	<u>Living in a poor housing with cramped and damp conditions:</u> • • • •
Material possession like a new phone or coat has a positive effect on the persons development because.....	Not having a phone or the newest trainers can have a negative affect on.... Because.... • • • •
→	→

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

O.	How do people deal with life events?
Individual	<ul style="list-style-type: none"> <li>The effects of life events vary from person to person based on how they deal with their new situation.</li> <li>Some people react to able to react to life events positively, others find it more difficult due to a range of factors.</li> </ul>
Factors	<ul style="list-style-type: none"> <li>Factors that may affect how people cope with life events: age, other life events happening at the same time, the support they have, their disposition (their mood, attitude and general nature), their self-esteem, their resilience (how quickly they recover).</li> </ul>
Adapting	<ul style="list-style-type: none"> <li>Adapt – to adjust to new conditions or circumstances.</li> <li>Expected on unexpected life events can often force people to make changes to their lives. Individuals must find their own way to adapt to the changes that life throws at them.</li> </ul>
Resilience	<ul style="list-style-type: none"> <li>Resilience – a person's ability to come to terms with, and adapt to, events that happen in life.</li> <li>Resilience is stronger in people who have a positive outlook on life, accept that change happens, has supportive family and friends and plans for expected life events.</li> </ul>
Time	<ul style="list-style-type: none"> <li>Sometimes people need a long time to adapt to unexpected life events.</li> <li>It can take time for people to move on from and accept difficult changes in their life.</li> </ul>

P.	How is dealing with life events supported?
Types of Support	How this helps individuals deal with life events
Emotional Support	Emotional support is needed to help individuals deal with all life events – expected and unexpected. Having someone to talk to helps people feel secure and adapt to change. Sometimes individuals can find this support in family and friends or professionals to process difficult life events – such as bereavement.
Information and Advice	Life events, particularly unexpected ones, can cause people to feel like they do not know what to do. Information and advice can help people to have a better understanding of their situation, which allows them to deal with it more successfully. Information and advice help them know where to go for help, the choices than are available to them and how to make healthy choices.
Practical Help	<ul style="list-style-type: none"> <li>Financial help – an individual may need money to help them adapt to a life change i.e. money to pay for a stair lift if their mobility has been effected.</li> <li>Childcare – an individual may need support looking after their children i.e. a lone parent after a divorce that needs to go to work.</li> <li>Transport – an individual may need support with transport if they have mobility problems i.e. a car could be adapted to support a person who has had an accident and can no longer walk.</li> </ul>
Informal Support	Informal support is the support an individual receives from partners, family and friends. It is usually the first form of support an individual experiences after and expected or unexpected life event. Informal support can provide reassurance, encouragement, advice, a sense of security, someone to talk through options with and practical help.
Professional Support	Formal support may be provided by statutory care services (the state), private care services and charitable organizations. Professional support may include counsellors, teachers, careers advisers, occupational therapists, social workers and health specialists. Professional support may be needed to help people with a health condition, regain mobility, deal with life changes and emotions, get advice and information or change their lifestyle.
Voluntary Support	Organizations offering voluntary support are charities, community groups and religious groups. At voluntary support services, many staff are volunteers ( they work for free), but they also employ qualified people who are paid by donations. Community groups work at a local level to meet the needs of people living in a specific neighbourhood i.e. foodbanks. Religious groups are formed by people who share the same religious or spiritual beliefs but they help all people in need regardless of their beliefs and background i.e. a church run soup kitchen for the homeless.

<b>What we are learning this term:</b>		<b>O.</b>	<b>How do people deal with life events?</b>
N. What are life events? O. How do people deal with life events? P. How is dealing with life events supported?		Individual	
N. <b>What are life events?</b>		Factors	
Life Events		Adapting	
Expected Life Events		Resilience	
Unexpected Life Events		Time	
Physical Events		<b>P.</b>	<b>How is dealing with life events supported?</b>
Relationship Changes		<b>Types of Support</b>	<b>How this helps individuals deal with life events</b>
Life Circumstances		Emotional Support	
		Information and Advice	
		Practical Help	
		Informal Support	
		Professional Support	
		Voluntary Support	

# SWINDON ACADEMY READING CANON

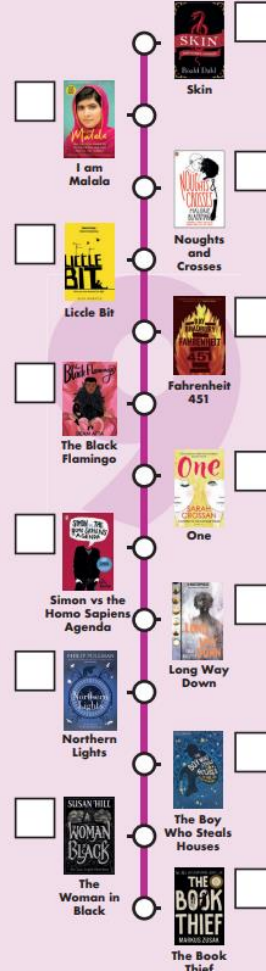
## Year 7



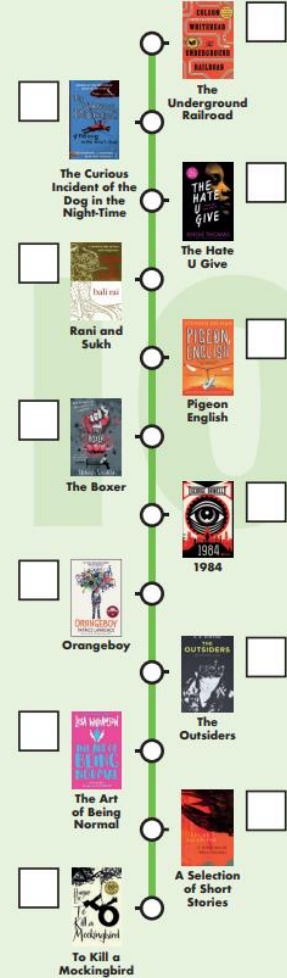
## Year 8



## Year 9



## Year 10



#ReadingisPower