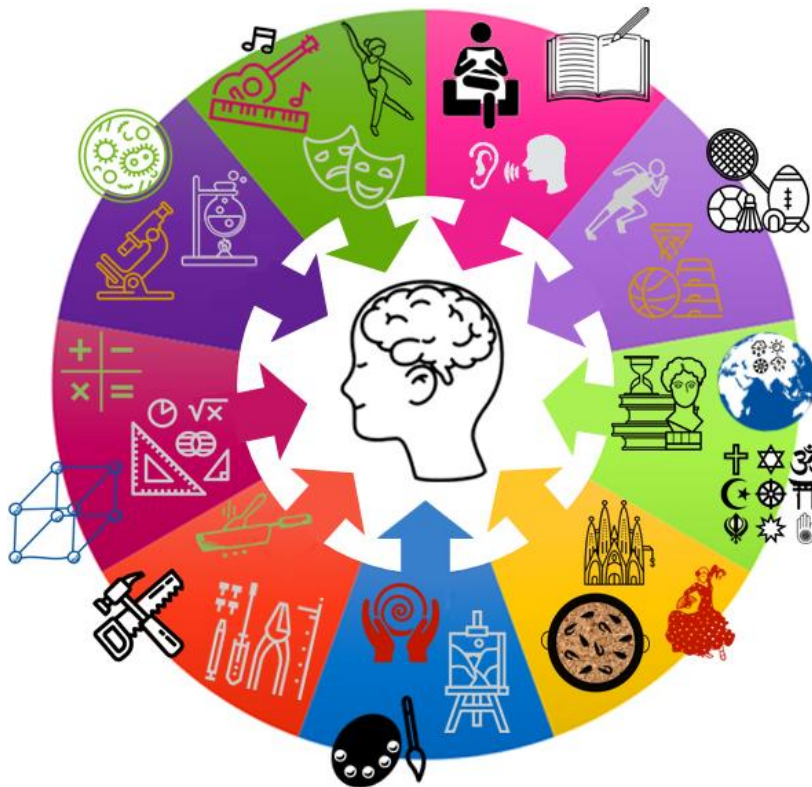


# 100% book –Grammar Stream

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



## Term 6

### 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 several 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 are the differences between the states of matter?'. Each section includes text and diagrams of particle arrangements for solid, liquid, and gas states.

## Step 2

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

This image shows a printed page from a knowledge organiser with handwritten notes. At the top, the date '29th May 2020' and the title 'Particle theory' are written. The page includes sections for 'What is particle theory?', 'What is the law of conservation of mass?', and 'What are the different changes of state?'. A diagram shows the transitions between solid, liquid, and gas states, with arrows indicating 'Gaining energy' (melting, evaporation, sublimation) and 'Losing energy' (freezing, condensation, deposition). The text describes the arrangement and movement of particles in each state.

## Step 3

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

Handwritten notes on lined paper. At the top, the date '29th May 2020' is written. Below it, the title 'Properties of the states of matter' is underlined. The notes define 'Particle theory = all matter is made of particles'. It then describes the three states: '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.', and '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 the definitions of the three states of matter. Each definition is written three times: '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.', and 'Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy'.

## Step 5

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

This image shows a 'quizzable' version of the knowledge organiser. It has a similar layout to the previous one but with some sections highlighted for a quiz. The handwritten answers are: 'Self quizzing' for the title, 'Arrangement/movement of matter' for the definition of particle theory, 'Solid = regular pattern pa' for the solid state, 'Liquid = ' for the liquid state, and 'Gas = ' for the gas state.

## 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, similar to Step 3, but with corrections and checkmarks. The definitions are: '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', and 'Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy'. There are checkmarks next to the solid and gas definitions, and an 'X' next to the liquid definition.

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

# KS4 MACBETH

## 1. Context

**Playwright:** Shakespeare (April 23<sup>rd</sup> 1564-April 23<sup>rd</sup>1616)  
**Dates:** written around 1606  
**Published:** in 'the First Folio, 1623  
**Era:** Jacobean  
**Genre:** Tragedy = *A play ending with the suffering and death of the main character.*  
**Set:** Scotland,  
**Structure:** Five Act Play

**Macbeth.** The plot is partly based on fact. Macbeth was a real 11<sup>th</sup> Century king who reigned Scotland from 1040-1057. Shakespeare's version of the story originates from the Chronicles of Holinshed (a well known historian). The play was most likely written in 1606 – the year after the Gunpowder Plot of 1605 – and reflects the insecurities of Jacobean politics.

**The Divine Right of Kings** says that a monarch is not subject to earthly authority and that they have the right to rule directly from the will of God. It implies that only God can judge an unjust king and that any attempt to depose, dethrone or restrict his powers runs contrary to the will of God and may constitute a sacrilegious act. The action of killing a king is called regicide and is considered a terrible crime.

**King James I of England (and VI of Scotland)** came to the throne in 1603 following the death of Queen Elizabeth I. The play pays homage to the king's Scottish lineage. The witches' prophecy that Banquo will found a line of kings is a clear nod to James' family's claim to have descended from the historical Banquo. James was convinced about the reality of witchcraft and its great danger to him leading to witch trials. The play is probably not written simply to please James, but certainly looks at relevant ideas.

**Shakespearean Tragedy.** Macbeth is one of Shakespeare's tragedies and follows specific conventions. The climax must end in a tremendous catastrophe involving the death of the main character; the character's death is caused by their own flaw(s) (hamartia) yet the character has something the audience can identify with.

**The Great Chain of Being** was a belief in a strict religious hierarchy (see key vocabulary) of all things which was believed to have been decreed by God. This idea was important in Elizabethan and Jacobean beliefs. The chain starts from God and progresses downward to angels, demons (fallen/renegeade angels), stars, moon, kings, princes, nobles, commoners, wild animals, domesticated animals, trees, other plants, precious stones, precious metals, and other minerals.

### Conventions of a Shakespearean Tragedy

A <b>tragic hero</b> who falls from greatness through a flaw of their own character.	<b>Hamartia</b> – the flaw in the tragic hero that destroys them.	A <b>hero of status</b> – the central characters are people of importance, with power and status to lose.
<b>External conflict</b> – his tragedies feature conflict between characters, and always lead to death.	<b>Internal conflict</b> – there are frequent moments of self-doubt or internal torment.	<b>Supernatural elements</b> – Many of Shakespeare's tragedies feature supernatural influences.

## 2. Key Characters

**Macbeth:** The eponymous protagonist is the tragic hero of this play. He is both ambitious and ruthless. He falls from loyal and respected warrior to a paranoid, tyrannical king, before dying in battle in Act V.

**Lady Macbeth:** A strong, ambitious and manipulative woman who exerts pressure on Macbeth to pursue his ambition of becoming king by murdering Duncan. Unable to deal with the guilt of these actions and is driven to madness and suicide.

**The Witches / Weird Sisters:** Supernatural and manipulative beings who seem to be able to predict the future. They are unearthly and omniscient.

**Banquo:** Macbeth's close friend and ally is astute and loyal. Macbeth sees him as a threat. He is virtuous, admired by audiences, and mistrustful of the supernatural witches.

**Duncan:** King of Scotland at the beginning of the play. He is a virtuous, strong and respected leader, held up as the model of good kingship by others in the play. He is murdered by Macbeth in Act 2.

**Macduff:** A soldier who is loyal to Duncan and is suspicious of Macbeth. His family is murdered by Macbeth's soldiers, and he eventually exacts revenge by killing Macbeth. He was born by caesarian section and therefore was "not of woman born".

**Malcolm:** Duncan's son and next in line to the throne. He is described as a good man in the play.

## 3. Central Themes

<b>Ambition</b>	The play is about the corrupting power of ambition. Both Lady Macbeth and Macbeth are urged to action by the prophecies of the witches, but they still commit their crimes themselves because they want greater power. Their ambition leads them to violence and death.
<b>Kingship and Tyranny</b>	The play contrasts the kind and wise rule of Duncan, who is described as a virtuous (good) king, with the brutal rule of Macbeth, who quickly becomes called a tyrant. The play shows how Macbeth has no divine right to rule and upsets the natural order by killing Duncan.
<b>Order and Disorder</b>	The play subverts the natural order of the world. Macbeth's actions are based on a supernatural belief in a prophecy. It depicts an anarchic world: Macbeth inverts the order of royal succession; his wife inverts the patriarchal hierarchy; the unnatural world disrupts the natural. The disruption underpins the conflict that is not only external and violent but internal as Macbeth and his wife come to terms with what they've done.
<b>Appearance and Reality</b>	Characters in the play are often not what they seem. Lady Macbeth and Macbeth are duplicitous towards Duncan, the witches equivocate (not say what they really mean) and cannot be trusted, Lady Macbeth seeks to manipulate Macbeth.

## 4. Key Vocabulary

<b>Ambition</b>	A desire to achieve something e.g. Macbeth and kingship
<b>Hubris</b>	Having excessive pride or self-confidence
<b>Tyrant</b>	A ruler who rules through fear and violence
<b>Corrupt</b>	Acting dishonestly <i>OR</i> being in a state of decay
<b>Patriarchal</b>	A society where power is in the hands of men
<b>Duplicitous</b>	Lying and being false. Two-faced. Deceitful
<b>Façade</b>	A false front, mask or illusion. Hiding one's true feelings
<b>Prescient</b>	Having knowledge of things before they happen – the witches
<b>Nihilistic</b>	The belief that everything is meaningless
<b>Courageous</b>	Being very brave
<b>Supernatural</b>	Things that are not a part of the natural world
<b>Fate</b>	Events being already decided and out of a person's control
<b>Treachery</b>	Betraying someone's trust
<b>Regicide</b>	The killing of a king

## 5. Key Terminology, Symbols and Devices

<b>Motif</b>	A recurring image or idea that has symbolic importance. The best example in Macbeth would be blood.
<b>Soliloquy</b>	When a character is alone on stage and speaks their thoughts aloud to themselves.
<b>Iambic Pentameter</b>	A line of a play or poem that has ten syllables organised into five pairs of syllables, where the second in each pair is emphasised. e.g. "When you durst <i>do it then you were a man</i> "
<b>Foreshadowing</b>	When a hint or warning is given about a later event.
<b>Dramatic Irony</b>	When a character is unaware of something that the audience is aware of, so they don't know the full significance of their words.
<b>Symbolism</b>	When something symbolises a set of ideas e.g. "The raven himself is hoarse" – raven symbolic of death, supernatural.
<b>Aside</b>	When a character pauses in a conversation to speak only to the audience or another character, unheard by the rest.

The Big Ideas	Notes	The Methods	Notes
<p>1. Shakespeare uses the play to demonstrate the terrible consequences of disrupting the <b>natural order</b>. His rule is unnatural and brings only disorder and sickness. His death restores balance.</p>		<p>1. Shakespeare uses <b>blood as a metaphor for guilt</b> through the play. As the guilt increases, the volume of blood increases.</p>	
<p>2. Shakespeare uses the play to demonstrate the consequences of engaging with <b>the supernatural</b>.</p>		<p>2. Shakespeare uses <b>apparitions</b> to present the consequences of ungodly behaviour and is ambiguous about whether they are real or imagined.</p>	
<p>3. Shakespeare uses Macbeth's role as a tragic hero to highlight how vulnerable people are to the destructive <b>temptation of power</b>.</p>		<p>3. Shakespeare's <b>characterisation of Macbeth and Lady Macbeth</b> establishes the idea that ungodly deeds do not go unpunished.</p>	



# Science Topic B1.1 Cell biology



What we are learning this term:	A	What are the names and functions of animal and plant sub-cellular structures?	
A. Animal & plant cells B. Eukaryotes & prokaryotes C. Cell specialisation D. Cell differentiation E. Microscopy F. Culturing microorganisms	<b>Structure</b>	<b>Function</b>	<b>Found in...</b>
	<b>Nucleus</b>	Controls the cell & contains genetic information	Animal & plant
	<b>Cell membrane</b>	Controls movement in & out of the cell	Animal & plant
	<b>Cell wall</b>	Supports the cell. Made of cellulose	Plant
	<b>Cytoplasm</b>	Jelly-like substance where chemical reactions take place	Animal & plant
	<b>Mitochondria</b>	Respiration, to release energy	Animal & plant
<b>5 Key Words for this term</b>			
1. Eukaryotic 2. Prokaryotic 3. Differentiation 4. Magnification 5. Resolution	<b>Chloroplast</b>	Photosynthesis, to produce glucose	Plant
	<b>Vacuole</b>	Filled with cell sap, keeps cell turgid	Plant
	<b>Ribosome</b>	Protein synthesis	Animal & plant

B Compare eukaryotic and prokaryotic cells			C How are these cells specialised?		
Feature	Eukaryotic	Prokaryotic	Cell	Animal or plant	Specialised features
<b>DNA</b>	In nucleus	Single loop DNA & plasmids	<b>Sperm cell</b>	Animal	Tail to swim. Pointed head, containing acrosome. Lots of mitochondria.
<b>Cytoplasm</b>	Yes	Yes	<b>Nerve cell</b>	Animal	Long. Branched ends (dendrites). Fatty sheath to insulate axon.
<b>Cell membrane</b>	Yes	Yes	<b>Muscle cell</b>	Animal	Layers of protein filaments for contraction. Lots of mitochondria.
<b>Cell wall</b>	No	Yes	<b>Root hair cell</b>	Plant	Large surface area. Thin walls.
<b>Size</b>	Larger	Smaller	<b>Xylem cells</b>	Plant	Continuous. Thickened & woody.
			<b>Phloem cells</b>	Plant	Companion cells have lots of mitochondria.



# Science Topic B1.1 Cell biology



**What we are learning this term:**

- A. Animal & plant cells
- B. Eukaryotes & prokaryotes
- C. Cell specialisation
- D. Cell differentiation
- E. Microscopy
- F. Culturing microorganisms

**5 Key Words for this term**

1. Eukaryotic
2. Prokaryotic
3. Differentiation
4. Magnification
5. Resolution

**A**

**What are the names and functions of animal and plant sub-cellular structures?**

Structure	Function	Found in...
<b>Nucleus</b>		
<b>Cell membrane</b>		
<b>Cell wall</b>		
<b>Cytoplasm</b>		
<b>Mitochondria</b>		
<b>Chloroplast</b>		
<b>Vacuole</b>		
<b>Ribosome</b>		

**B Compare eukaryotic and prokaryotic cells**

Feature	Eukaryotic	Prokaryotic
<b>DNA</b>		
<b>Cytoplasm</b>		
<b>Cell membrane</b>		
<b>Cell wall</b>		
<b>Size</b>		

**C**

**How are these cells specialised?**

Cell	Animal or plant	Specialised features
<b>Sperm cell</b>		
<b>Nerve cell</b>		
<b>Muscle cell</b>		
<b>Root hair cell</b>		
<b>Xylem cells</b>		
<b>Phloem cells</b>		

# Science Topic B1.1 Cell biology

**What we are learning this term:**

- A. Animal & plant cells
- B. Eukaryotes & prokaryotes
- C. Cell specialisation
- D. Cell differentiation
- E. Microscopy
- F. Culturing microorganisms

**E Define magnification**

The number of times larger an image is than the original specimen.

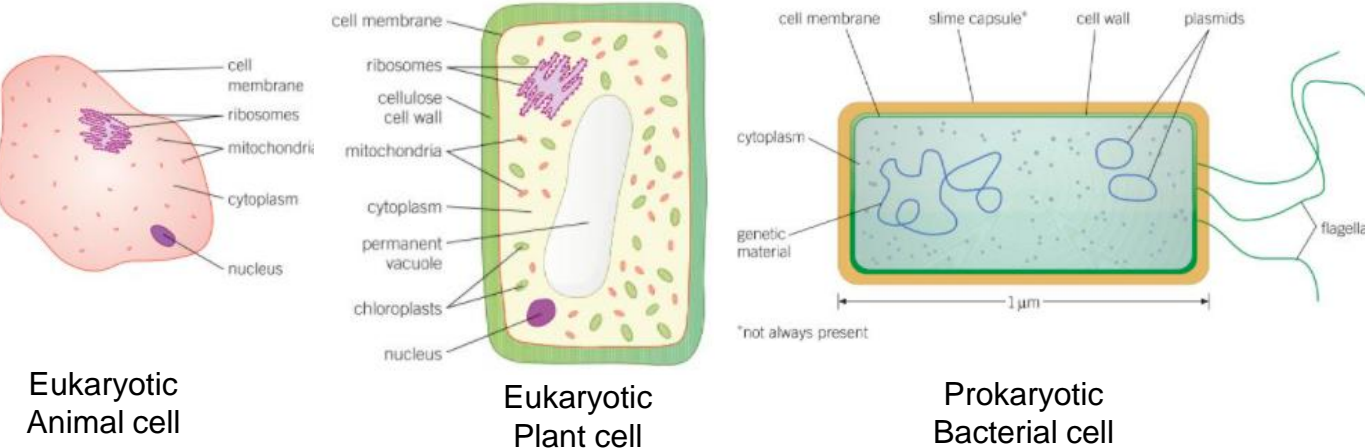
**E Define resolution**

The minimum distance at which two distinct points of a specimen can still be seen.

**E**

**What is the formula for magnification?**

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



**D**

**When does differentiation occur for most types of animal cells?**

At early development

**D**

**When does differentiation occur for most types of plant cells?**

Throughout the lifetime of the plant

**D**

**In multicellular animals, what is cell division required for?**

- Growth or repair
- To replace cells

**E**

**Compare light and electron microscopes**

Feature	Light	Electron
<b>Radiation used</b>	Light waves (visible light)	Electron beams
<b>Magnification</b>	Lower magnification (~ 1500 times)	Greater magnification (~ 2 000 000 times)
<b>Resolution</b>	Larger resolution (200nm)	Smaller resolution (0.2nm)
<b>Size &amp; cost</b>	Smaller & portable. Cheaper.	Very large & not portable. Very expensive.



# Science Topic B1.1 Cell biology

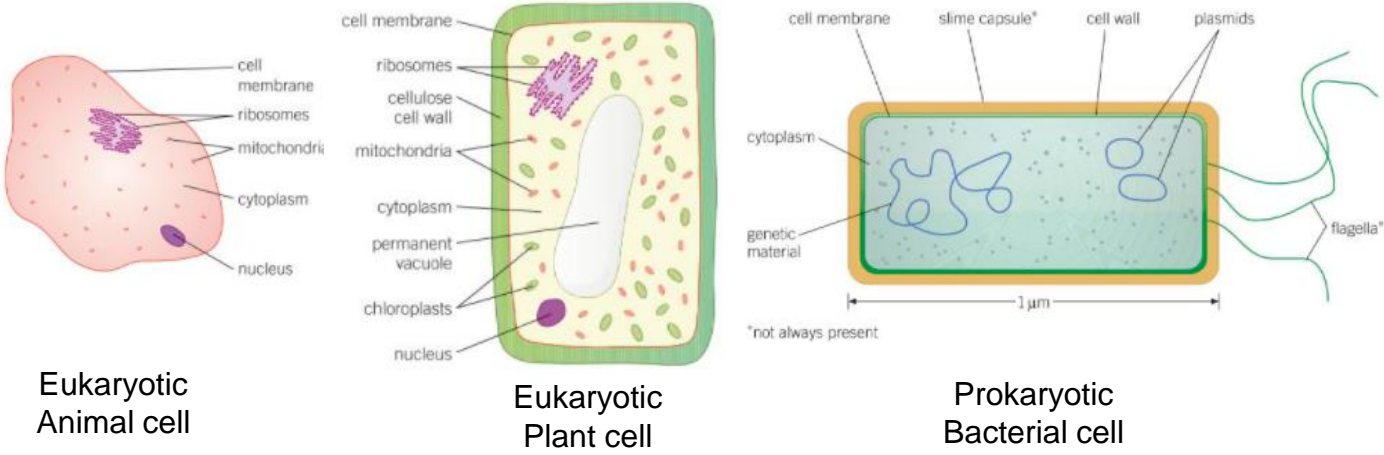
**What we are learning this term:**

- A. Animal & plant cells
- B. Eukaryotes & prokaryotes
- C. Cell specialisation
- D. Cell differentiation
- E. Microscopy
- F. Culturing microorganisms

**E Define magnification**

**E Define resolution**

**E What is the formula for magnification?**



**D When does differentiation occur for most types of animal cells?**

**D When does differentiation occur for most types of plant cells?**

**D In multicellular animals, what is cell division required for?**

- 
- 

**E Compare light and electron microscopes**

Feature	Light	Electron
Radiation used		
Magnification		
Resolution		
Size & cost		



# Science Topic C1.1 Atomic Structure



<b>What we are learning this term:</b>
<ul style="list-style-type: none"> <li>A. Atoms, elements and compounds</li> <li>B. Mixtures and separation</li> <li>C. Development of the atomic model</li> <li>D. Structure of the atom</li> <li>E. Electronic structure</li> </ul>

<b>6 Key Words for this term</b>
<ul style="list-style-type: none"> <li>1. Isotopes</li> <li>2. Protons</li> <li>3. Ionisation</li> <li>4. Aqueous</li> <li>5. Residue</li> </ul>

<b>B.</b>	<b>What is a mixture?</b>
-----------	---------------------------

A mixture consists of two or more elements or compounds not chemically combined.

<b>What properties do mixtures have?</b>
--

Each substance in the mixture will have the same chemical properties

<b>How are mixtures separated?</b>
------------------------------------

By physical methods:	Filtration
----------------------	------------

Crystallisation	Simple Distillation
-----------------	---------------------

Fractional Distillation	Chromatography
-------------------------	----------------

<b>Are new substances made?</b>
---------------------------------

No new substances are made

<b>A.</b>	<b>What is Conservation of Mass</b>
-----------	-------------------------------------

Atoms are not created or destroyed in a reaction

<b>A.</b>	<b>What are atoms?</b>
-----------	------------------------

All substances are made of atoms. An atom is the smallest part of an element that can exist

<b>What are elements?</b>	<b>What are compounds?</b>
An element is a substance made of one type of atom	Compounds contain two or more elements chemically combined

<b>How are elements represented?</b>	<b>How are compounds represented?</b>
--------------------------------------	---------------------------------------

By a chemical symbol.	By the symbols of the atoms that formed them
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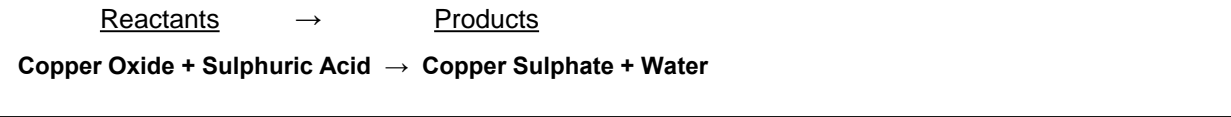
<b>Example: Sodium</b>	Na	<b>Example: Sodium Chloride</b>	NaCl
------------------------	----	---------------------------------	------

<b>How many elements are there?</b>	<b>How can compounds be separated?</b>
-------------------------------------	--

There are about 100, all shown on the periodic table	By chemical reactions only
--	----------------------------

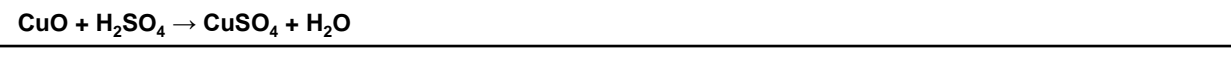
<b>A.</b>	<b>What are word equations?</b>
-----------	---------------------------------

These show the names of each substance that is involved in a chemical reaction. The reactants are shown on the left. The products are shown on the right.



<b>What are symbol equations?</b>
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The chemical formulae (symbols) of the reactants and products show what happens in a chemical reaction

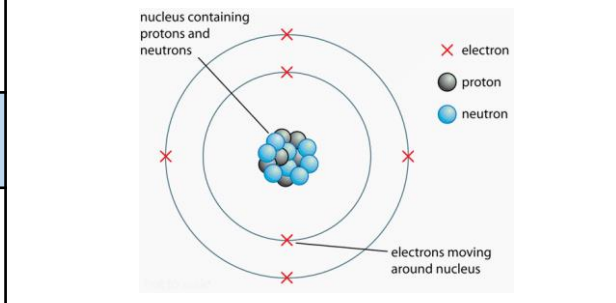


<b>D.</b>	<b>What are subatomic particles?</b>	<b>Where are each subatomic particles found?</b>
-----------	--------------------------------------	--

The particles that make up atoms

<b>Name the 3 subatomic particles</b>
---------------------------------------

Protons, neutrons and electrons





# Science Topic C1.1 Atomic Structure



C. Development of the Atomic Model – How was our current atomic model developed?					
Person/Time	Demicritus (400BC) Dalton (1803)	JJ Thomson (1898)	Ernest Rutherford (1909)	Niels Bohr (1913)	James Chadwick (1932)
Ideas/model	<ul style="list-style-type: none"> <li>Small indivisible matter</li> <li>Tiny hard spheres.</li> </ul>	Plum Pudding model <ul style="list-style-type: none"> <li>Sphere of positive charge with negative charged particles spread throughout (like plums in a pudding)</li> </ul>	<ul style="list-style-type: none"> <li>Alpha particle scattering experiment</li> <li>Proved that mass of atoms found in the centre – nucleus</li> <li>Negative electrons surround the positive nucleus</li> </ul>	<ul style="list-style-type: none"> <li>Electrons are restricted to certain orbits like planets round the sun</li> </ul>	<ul style="list-style-type: none"> <li>Discovered the neutron</li> </ul>
Diagram					
Contribution to current model:	Everything is made of atoms	Negative electrons	Positive mass in the centre surrounded by negative electrons	Electrons orbit in shells/orbitals at specific distances	Neutrons found in nucleus along with protons

D.	How big are atoms?
	0.1nm (1 x 10 <sup>-10</sup> m)
	How big is the radius of an atom?
	1/10000 the size of the atom – 1x10 <sup>-14</sup> m

D.	What is relative mass and charges of the subatomic particles?	
Subatomic particle	Relative Mass	Relative Charge
Proton	1	+1
Neutron	1	0
Electron	1/2000	-1

D.	What is the overall charge of an atom?
	Atoms have no charge
	No of protons = no of electrons

D.	How do we know how many subatomic particles are in each element?	
$\text{C}^{12}_{6}$	← Mass Number	<b>What is Mass number?</b>
		Number of protons and neutrons
	← Atomic Number	<b>What is atomic number?</b>
		Number of protons – same for each individual element

D.	How can we know what element we have?
	Each element has a unique number of protons
	What is an isotope?
	An isotope is a substance with the same number of protons but different number of neutrons

D.	What is relative atomic mass of an element?
	An average value that takes account of the abundance of the isotopes of an element

E.	Which energy level do electrons fill first?	
	Electrons in an atom occupy lowest energy level first	
	How many electrons does each orbital hold?	
First	Up to 2	
Second	Up to 8	
Third	Up to 8	

Electronic structure of Sodium:	
	<b>2,8,1</b>



# Science Topic C1.1 Atomic Structure



## What we are learning this term:

- A. Atoms, elements and compounds
- B. Mixtures and separation
- C. Development of the atomic model
- D. Structure of the atom
- E. Electronic structure

## 6 Key Words for this term

- 1. Isotopes
- 2. Protons
- 3. Ionisation
- 4. Aqueous
- 5. Residue

## B. What is a mixture?

### What properties do mixtures have?

### How are mixtures separated?

### Are new substances made?

## A. What is Conservation of Mass

## A. What are atoms?

### What are elements?

### What are compounds?

### How are elements represented?

### How are compounds represented?

### Example: Sodium

### Example: Sodium Chloride

### How many elements are there?

### How can compounds be separated?

## A. What are word equations?



## What are symbol equations?

## D. What are subatomic particles?




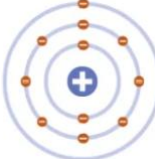
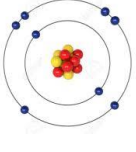
## Where are each subatomic particles found?

### Name the 3 subatomic particles



# Science Topic C1.1 Atomic Structure



C. Development of the Atomic Model – How was our current atomic model developed?					
Person/Time	Democritus (400BC) Dalton (1803)	JJ Thomson (1898)	Ernest Rutherford (1909)	Niels Bohr (1913)	James Chadwick (1932)
Ideas/model					
Diagram					
Contribution to current model:					

D.	How big are atoms?
How big is the radius of an atom?	

D.	What is relative mass and charges of the subatomic particles?	
Subatomic particle	Relative Mass	Relative Charge
Proton		
Neutron		
Electron		

D.	What is the overall charge of an atom?

D.	How do we know how many subatomic particles are in each element?	
C	12 ← Mass Number	What is Mass number?
	6 ← Atomic Number	What is atomic number?

D.	How can we know what element we have?
What is an isotope?	

D.	What is relative atomic mass of an element?

E.	Which energy level do electrons fill first?	
How many electrons does each orbital hold?		
First		
Second		
Third		

Electronic structure of Sodium:

# Science Topic P2.6 Particles and matter

## What we are learning this term:

- A. Density of solids
- B. Density of liquids
- C. States of matter
- D. Changes of state
- E. Internal energy
- F. Specific latent heat
- G. Gas pressure and temperature

## 6. Key Words for this term

### A. How is density calculated?

$$\text{density} = \frac{\text{mass}}{\text{volume}} \quad \rho = \frac{m}{V}$$

What is the density of a piece of aluminium with a volume  $5.6 \times 10^{-6} \text{ m}^3$  and 15.1 g mass?

2700 kg m<sup>-3</sup>

### How do you find the density of regular solids?

Use the above equation  $\rho = \frac{m}{V}$ .  
 To find the mass of the solid: use a balance.  
 To find the volume: measure the dimensions with a micrometre/callipers and calculate the volume.  
 E.g. for a rectangular cuboid length x width x height.

### How would you find the density of irregular shapes?

Use the above equation  $\rho = \frac{m}{V}$ . Find the mass of the solid using a balance.  
 To find the volume immerse the solid completely in a measuring cylinder of liquid. The rise in volume is the volume of the solid.

### B. How do you find the density of liquids?

Use the above equation  
 To find the mass: find the  $\rho = \frac{m}{V}$  of an empty measuring cylinder, then add some of the liquid. Find the mass of the cylinder with the liquid in and subtract the cylinder mass.  
 To find the volume: read the volume directly

If there was 1 litre of each of the following liquids, would they all have the same mass and why?

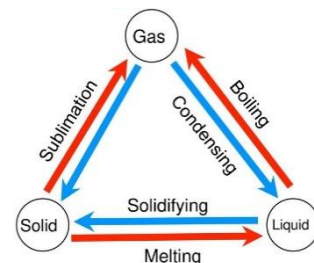
Liquid	Density in g/cm <sup>3</sup>
water	1.00
alcohol	0.79
mercury	13.55
sea water	1.03
olive oil	0.92

No because they have different densities, so the higher the density the higher the mass.

If there was 500 ml of water and 500 ml of mercury, which one would have a higher mass and why?

Mercury as it has a higher density.

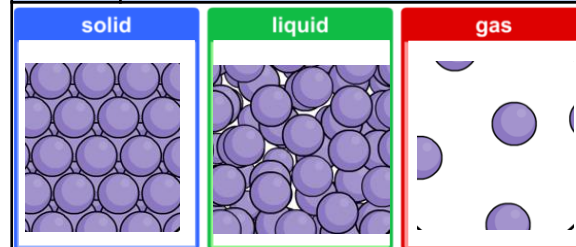
### C. What are the changes in state?



### Why is ice less dense than water?

The water molecules align themselves in a regular lattice in ice (not random like water). The molecules are more spread out in ice than in water, so less dense. So, ice floats.

### C. What do the particles look like in solids, liquids and gases?



### What are the properties of a solid?

A high density, the particles are packed very closely together.  
 Cannot be compressed because there is very little empty space between particles.  
 A fixed shape because the particles are held tightly together by strong bonds.  
 Cannot diffuse because the particles are not able to move but can vibrate.

### What are the properties of a liquid?

A fairly high density because the particles are close together.  
 Cannot be compressed because there is very little empty space between particles.  
 Takes the shape of its container because the particles can move  
 Can diffuse because the particles are able to change places.

### What are the properties of gas?

A low density because the particles are spaced far apart.  
 Can be compressed because there is space between particles.  
 No fixed shape because the particles move about rapidly in all directions.  
 Can diffuse because the particles are able to move

### What does the particle model tell us?

All substances consist of particles, either tightly packed/spaced. They can move around (have kinetic energy). Kinetic energy increases with temperature. They can be strongly or weakly attracted.



# Science Topic P2.6 Particles and matter



## What we are learning this term:

- A. Density of solids
- B. Density of liquids
- C. States of matter
- D. Changes of state
- E. Internal energy
- F. Specific latent heat
- G. Gas pressure and temperature

## 6. Key Words for this term

### A. How is density calculated?

What is the density of a piece of aluminium with a volume  $5.6 \times 10^{-6} \text{ m}^3$  and 15.1 g mass?

### How do you find the density of regular solids?

### How would you find the density of irregular shapes?

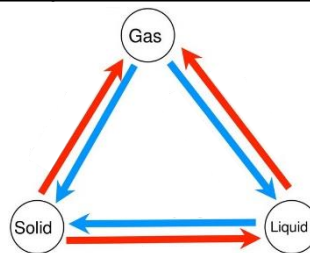
### B. How do you find the density of liquids?

If there was 1 litre of each of the following liquids, would they all have the same mass and why?

Liquid	Density in g/cm <sup>3</sup>
water	1.00
alcohol	0.79
mercury	13.55
sea water	1.03
olive oil	0.92

If there was 500 ml of water and 500 ml of mercury, which on would have a higher mass and why?

### C. What are the changes in state?



Why is ice less dense than water?

### C. What do the particles look like in solids, liquids and gases?

solid	liquid	gas

### What are the properties of a solid?

### What are the properties of a liquid?

### What are the properties of gas?

### What does the particle model tell us?

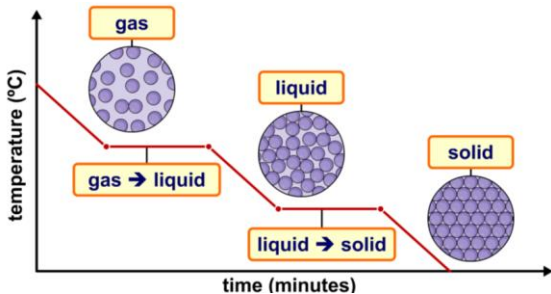
# Science Topic P2.6 Particles and matter



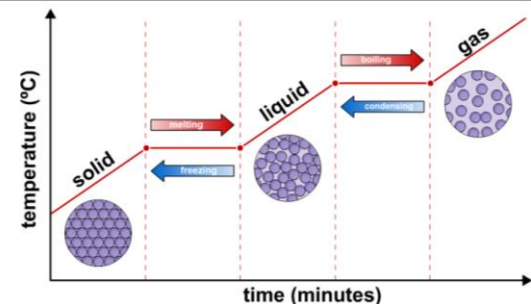
## C. What happens if a solid is heated?

Its temperature rises until it reaches its melting point, at this point the temperature stops rising and the solid melts. Once it has all melted, the temperature continues to rise until its boiling point.

## What are the labels for this cooling curve for a gas?



## What are the labels for this heating curve of a solid?



## C. What is evaporation and what happens to the energy of the remaining particles?

When the particles in a liquid escape to form a vapour. The particles that escape take some energy from the remaining particles, so the temperature of the liquid falls.

## At what temperature does evaporation occur?

Evaporation can take place at any temperature, but it occurs most rapidly at a liquid's boiling point

## D. What's the difference between boiling point and evaporation?

Evaporation happens at the surface of the liquid and below the boiling point of the liquid. Boiling happens when the liquid reaches its boiling point, bubbles form inside the liquid and rise to the surface to release gas.

## E. What is kinetic energy of molecules?

The molecules within a body all possess kinetic energy ( $E_k$ ). This is the energy due to their random motion. The faster they move the more kinetic energy they have.

## Which has the most kinetic energy out of the three states of matter?

Gas

## What is the relationship between energy and breaking/making bonds?

Energy is needed to break bonds. Energy is released when bonds form.

## What is a potential energy, in terms of molecules?

The potential energy of molecules due to their potential to make bonds holding them together and the bonds within their nuclei.

## What is internal energy, and what is the equation?

It is the sum of all these molecular kinetic and potential energies.

$$U = E_k (\text{molecules}) + E_p (\text{bonds})$$

## If gas particles are moving very fast, how would the kinetic energy, internal energy and temperature be described?

They have a high kinetic energy, a high internal energy and a high temperature.

## F. What is latent heat?

The energy transferred to a substance when it changes state.

## What is specific latent heat?

The amount of energy required to convert 1 kg of a substance into a liquid or gas without change in the temperature of the surroundings.

## What is the equation for specific latent heat?

Energy absorbed (J) = mass (kg) x specific latent heat  
 $Q = ml$

## What are the different types of specific latent heat?

Specific latent heat of fusion  
 Specific latent heat of vaporisation

## G. How could you increase gas pressure?

Increase the temperature or decrease the volume.

## What is the relationship between pressure and volume?

They are inversely proportional

## What is the relationship between pressure and temperature?

They are directly proportional

## What would happen to the internal energy of a tyre if it was inflated?

Even if the volume was constant, the pressure would increase. There would be temperature increase which means a higher kinetic energy of molecules.

## G. What is Brownian motion and why was it discovered?

It was discovered as a botanist, Robert Brown, noticed that pollen grains suspended in water, when viewed through a microscope, displayed a very rapid, highly irregular, zigzag motion.

This motion was not caused by the convection currents in the liquid, but instead is a result of continuous bombardment from molecules in the surrounding medium.



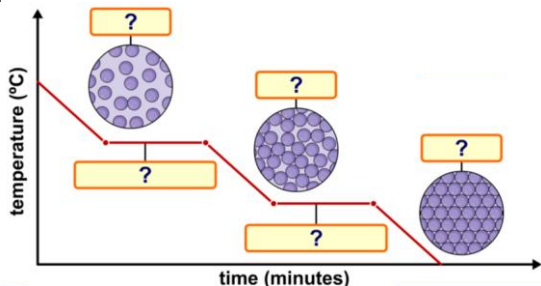


# Science Topic P2.6 Particles and matter

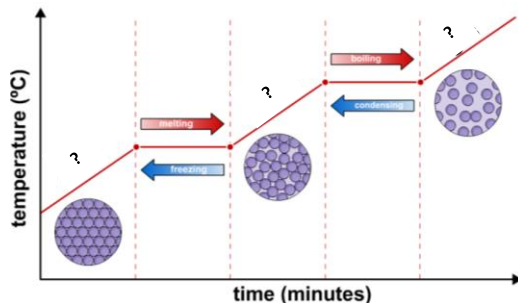


C. What happens if a solid is heated?

What are the labels for this cooling curve for a gas?



What are the labels for this heating curve of a solid?



C. What is evaporation and what happens to the energy of the remaining particles?

At what temperature does evaporation occur?

D. What's the difference between boiling point and evaporation?

E. What is kinetic energy of molecules?

Which has the most kinetic energy out of the three states of matter?

What is the relationship between energy and breaking/making bonds?

What is a potential energy, in terms of molecules?

What is internal energy, and what is the equation?

If gas particles are moving very fast, how would the kinetic energy, internal energy and temperature be described?

F. What is latent heat?

What is specific latent heat?

What is the equation for specific latent heat?

What are the different types of specific latent heat?

G. How could you increase gas pressure?

What is the relationship between pressure and volume?

What is the relationship between pressure and temperature?

What would happen to the internal energy of a tyre if it was inflated?

G. What is Brownian motion and why was it discovered?

### 1. The UK's diverse landscapes

Term	Definition
Relief	Shape of the land.
Upland areas	Land over 200m. Highlands. Steep.
Lowland areas	Land below 100m. Flat or rolling hills

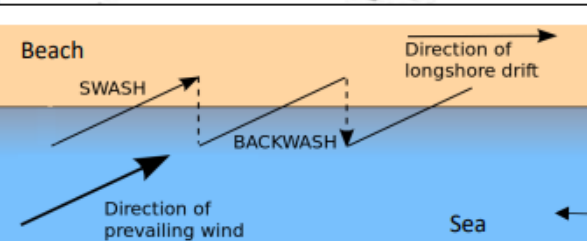
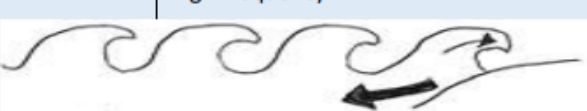


### 2. Waves

Term	Definition
Swash	Movement of the water UP the beach in the direction of the prevailing wind.
Backwash	Movement of water DOWN the beach at right angles (90°) due to gravity.
Constructive waves	Build up the beach. Strong swash. Weak backwash. Low height, long wave length. Low frequency.



Destructive waves	Erode the coast. Weak swash. Strong backwash. Tall height, short wave length. High frequency.
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### 3. Processes

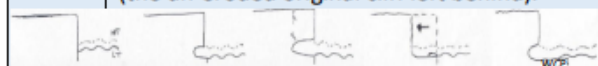
Sub-aerial processes (above the sea)	
Weathering	
Wearing away of rocks in situ. Material not removed.	
Mechanical weathering	The breaking down of rock without changing its composition. Freeze thaw.
Chemical weathering	The breaking down of rock caused by chemicals. (e.g. weak acid rain).
Mass movement	
The downhill movement of material under the force of gravity.	
FALL	
SLIDE	
SLUMP	
Rockfall	Free fall of rocks under force of gravity.
Sliding	Material collapsing in a straight line.
Slumping	Downward rotation of sections of cliff along a slip plane. Worse when saturated.

Marine processes	
Erosion	
The wearing away and removal of material by a moving force such as a breaking wave.	
Hydraulic power	The sheer force of the water compressing air into cracks causes bits to break off.
Abrasion	Sediment scraping against the cliff (like sandpaper) removing small pieces.
Attrition	The 'smashing' of sediment against each other to become more rounded.
Solution	Chemical erosion caused by the dissolving of rocks by sea water.
Deposition	
Dropping of material	Occurs when there is a loss of energy. e.g.. Sheltered bays, when the wind drops.
Transportation	
Longshore drift	Zig zag movement of sediment along the coastline.

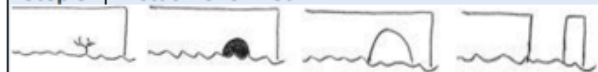
### 4. Erosional landforms

Headlands and bays	
Step 1	Discordant coastlines have alternating bands of more resistant (chalk) and less resistant rock (clay).
Step 2	The less resistant rock is <b>eroded</b> faster through <b>abrasion</b> , creating bays.
Step 3	The more resistant rock <b>erodes</b> slower and is left jutting out to sea forming a headland.

Wave cut platforms	
Step 1	Waves <b>erode</b> cliff base between high+ low tide
Step 2	<b>Abrasion</b> create a wave cut notch which enlarges over time.
Step 3	The rock above the notch is unsupported so will collapse due to <b>gravity (mass movement)</b> .
Step 4	Cliff <b>retreats</b> , leaving a wave cut platform (the un-eroded original cliff left behind).



Cave, arch, stack	
Step 1	<b>Hydraulic power</b> enlarges cracks in headland
Step 2	Over time they turn into a cave.
Step 3	Back of cave is deepened by <b>abrasion</b> until it <b>erodes</b> through the headland > arch.
Step 4	<b>Weathering</b> and <b>erosion</b> wear away at the arch until it eventually collapses (gravity).
Step 5	A stack is formed.



Example of a UK coastline. Dorset coastline.	
Headlands and bays	Swanage Bay, Durlston Head
Wave cut platform	Kimmeridge
Arch	Durdle Door (concordant)
Stack	Old Harry

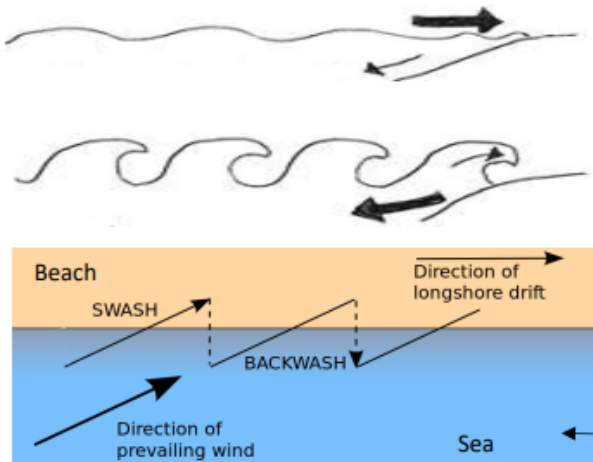
### 1. The UK's diverse landscapes

Term	Definition
Relief	
Upland areas	
Lowland areas	



### 2. Waves

Term	Definition
Swash ↗	
Backwash ↘	
Constructive waves	
Destructive waves	



### 3. Processes

Sub-aerial processes (above the sea)	
<b>Weathering</b>	
Mechanical weathering	
Chemical weathering	
<b>Mass movement</b>	
Rockfall	
Sliding	
Slumping	
Marine processes	
<b>Erosion</b>	
Hydraulic power	
Abrasion	
Attrition	
Solution	
<b>Deposition</b>	
Dropping of material	
<b>Transportation</b>	
Longshore drift	

### 4. Erosional landforms

Headlands and bays	
Step 1	
Step 2	
Step 3	
Wave cut platforms	
Step 1	
Step 2	
Step 3	
Step 4	
Cave, arch, stack	
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	
Example of a UK coastline. Dorset coastline.	

**5. Depositional landforms**

**Beaches Swanage**

Step 1	Beaches form when <b>deposition</b> occurs.
Step 2	There needs to be a source of sediment nearby like soft cliffs.
Step 3	Constructive waves <b>deposit</b> material in sheltered areas like bays.

**Sand dunes Studland**

Step 1	Wind blows sand up the beach ( <b>saltation</b> ).
Step 2	Obstacles such as seaweed cause the wind speed to decrease resulting in <b>deposition</b> .
Step 3	Over time sand dunes build up and are colonised by marram and lyme grass.
Step 4	This vegetation stabilises the sand dunes.

**Spits Sandbanks**

Step 1	Longshore drift transports sediment along the coast in the direction of the prevailing wind ( <b>swash and backwash</b> ).
Step 2	Where the coastline changes direction...
Step 3	Sediment is <b>deposited</b> in calm weather out to sea.
Step 4	Can form a hooked end and a salt marsh behind the spit where it is sheltered.



**Bar**

Step 1	When a spit joins two headlands.
Step 2	A lagoon forms behind the bar.



**6. Coastal management**

**Hard engineering**

Man made structures built to control the sea. Reduces flooding and erosion.

Strategy	Explanation	Costs	Benefits
Sea walls	A hard wall made out of concrete that reflects waves back out to sea	Expensive (£2000 per/m). Life span 75 years.	Prevents erosion / flooding. Often protects tourist resorts.
Rock armour	Boulders piled up along the coast. These erode rather than the coast.	Boulders can be moved by waves and need replacing.	Gaps allow water through, reducing wave energy. Cheap
Gabions	Wire cages filled with rocks at the base of cliffs. Absorb wave energy.	Ugly to look at. £100 per/m Metal corrodes over time.	Cheap and easy to build. Reduce erosion.
Groynes	Wooden fences at right angles to the coast, preventing sand moving by longshore drift = wider beach.	Starve beaches further along the coast = more erosion there. Life span only 25 years	Stops longshore drift removing beaches. Fairly cheap.

**Soft engineering**

Schemes set up using a natural approach to managing the coast.

Strategy	Explanation	Costs	Benefits
Beach nourishment	Sand and shingle from elsewhere is added to beaches. Wider beaches stop erosion and flooding	Needs redoing every 5 years. Sand has to be brought from elsewhere. Expensive.	Blends with existing beach. Larger beaches = tourists.
Reprofiling	Sediment is redistributed from the lower part to the upper part of the beach. Increases gradient.	Only works if wave energy is low. Needs to be redone lots.	Cheap and simple. Reduces energy of the waves.
Dune regeneration	Creating or restoring sand dunes by nourishment or planting marram grass to stabilise the sand	Protects only a small area. Areas zoned off from public which is unpopular.	Sand dunes create a barrier between the sea and land. Stabilisation is cheap.

Managed retreat <small>Coastal realignment</small>	Remove current defences, allow sea to flood the land behind. Over time land becomes a marshland.	Land is lost = conflict (farmers) Salt water can negatively impact existing ecosystems.	Cheap and easy. Doesn't need maintenance. New habitats created.
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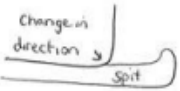
**7. An example of a coastal management scheme**


What?	Reasons for management	Management strategy	Effects and conflicts
Bournemouth Beach Management Scheme. Aim: Hold the line and protect tourism.	Coastline would erode at a metre a year. Beach important for tourism (£413million). 3114 homes at risk from collapsing cliffs.	3 phases costing £50 million. HARD: Replaced or added 53 groynes. SOFT: 3 lots of replenishment, every 5 yrs	✓ Beaches = More tourists = 9000 jobs ✗ Barton on Sea at risk from erosion. ✗ Conflict: locals vs construction.

**5. Depositional landforms**

Beaches Swanage	
Step 1	
Step 2	
Step 3	

Sand dunes Studland	
Step 1	
Step 2	
Step 3	
Step 4	

Spits Sandbanks	
Step 1	
Step 2	
Step 3	
Step 4	

Bar	
Step 1	
Step 2	

**6. Coastal management**

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Dune regeneration			

Managed retreat Coastal realignment			
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**7. An example of a coastal management scheme**

What?	Reasons for management	Management strategy	Effects and conflicts

# Year 10 Term 6 History Knowledge Organiser. Topic = Nazi Dictatorship, 1933-39

What we are learning this term:	
A.	Why was Hitler able to increase his control over Germany from 1933?
B.	What was the Night of the Long Knives?
C.	How did Hitler create a Nazi police state?
D.	How did Hitler control the church and the people of Germany?
E.	What opposition was there to the Nazis?

A.	Why was Hitler able to increase his control over Germany after 1933?
Reichstag Fire	On the 27 <sup>th</sup> February 1933, the Reichstag building was set on fire and was completely destroyed
Van der Lubbe	Dutch communist was found at the scene of the fire and was arrested. He confessed and executed for the crime
Communists	The Nazis blamed the communists for the fire and used this as a chance to arrest 4,000 communists (the enemy)
Enabling Act	Hitler used the Reichstag fire as an opportunity to take more control of Germany by passing the Enabling Act. This meant that he could pass laws without the Reichstag
Trade Unions	Hitler saw the trade unions as a threat as there could be communists amongst the working men who could challenge the government so he banned them
Political Parties	Next Hitler got rid of all other political parties so that the NSDAP were the only party that people could vote for
Local Government	The last step was to make sure that Hitler had full control of the government which he did by getting rid of local government

B.	What was the Night of the Long Knives?
Ernst Rohm	Rohm was the leader of the SA and also a threat to Hitler. The men in the SA were loyal to him and not to Hitler and Rohm also disagreed with some of Hitler's policies
The SA	By 1933 there were 3 million members in the SA, which meant that there were more men in this group than in the SS which was not good for Hitler if they challenged him
Himmler and Heydrich	Heydrich and Himmler were the leaders of the SS and they did not like Rohm and the power that the SA had so they wanted to get rid of this group
Night of the Long Knives	On the night of the 30 <sup>th</sup> June, Hitler arranged a meeting with Rohm and other officers of the SA. When they arrived they were arrested, imprisoned and shot

C.	How did the Nazis create a police state in Germany?
1.	<b>Police State</b> – This is a country where the government controls people's freedom using the police
2.	<b>The SS</b> – This group was the Nazi's own private police who were loyal to Hitler. They helped to run the concentration camps
3.	<b>The SD</b> – This group kept a record of anyone who was against the Nazis
4.	<b>Gestapo</b> – Germany state secret police who were known for their violent actions. People did not know who the Gestapo were as they wore ordinary clothes
5.	<b>Law courts</b> – Hitler controlled the law courts by making sure that people who were tried there did not get a fair trial and were usually sent to prison if they were against the Nazis
6.	<b>Concentration camps</b> – This is a place where people were held as prisoners for political reasons. People sent there were groups such as Jews and communists

D.	How did the Nazis control the church and the people?
Reich Church	This was a protestant church in German that was set up by those who worked for and supported the Nazis which helped Hitler control the Protestant church
Concordat	Hitler signed a concordat (agreement) with the Pope in 1933. He promised that Catholics would have freedom of religion if they did not get involved with politics. However, Hitler went against the agreement as he did not trust Catholics
Propaganda	This means to create ideas and opinions in people about certain groups. The Nazis used propaganda to make people hate the Jews and support the Nazis
Censorship	This means to hide information from people to create opinions and thoughts about certain groups. The Nazis censored the information people heard in the news
Media	The Nazis controlled the media such as newspapers and radio stations by telling them what to write and say
Rallies	Rallies were a good form of propaganda as they were bright and showed that the Nazis were strong enough to save Germany

E.	What opposition was there to the Nazis?
Opposition	This means to actively work against something to try and remove it. There was some opposition in Germany against the Nazis from certain groups
Opposition from the church	Some members of clergy spoke out against the actions of the Nazis. Martin Niemoller set up the Pastors Emergency League which was a group of protestant pastors who were against the Nazis
Opposition from the youth	There were a few youth opposition groups, made up of teenagers who did not like the strict control of the Nazis. There was the White Rose Group, Edelweiss Pirates and the Swing Youth
Support for Nazis	Overall the Nazis had a lot of support in Germany due to propaganda, people not wanting to lose their jobs and people also being scared of the Nazis

# Year 10 Term 6 History Knowledge Organiser. Topic = Nazi Dictatorship, 1933-39

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Van der Lubbe	
Communists	
Enabling Act	
Trade Unions	
Political Parties	
Local Government	

B.	What was the Night of the Long Knives?
Ernst Rohm	
The SA	
Himmler and Heydrich	
Night of the Long Knives	

C.	How did the Nazis create a police state in Germany?
1.	_____ – This is a country where the government controls people's freedom using the police
2.	_____ – This group was the Nazi's own private police who were loyal to Hitler. They helped to run the concentration camps
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Reich Church	
Concordat	
Propaganda	
Censorship	
Media	
Rallies	

E.	What opposition was there to the Nazis?
Opposition	
Opposition from the church	
Opposition from the youth	
Support for Nazis	

# Year 10 GCSE Religious Education KO - Christianity Practices

Keywords		What we are learning in this unit		C.	Sacraments
Worship	Act of religious honour or devotion	A. Worship	G. Christmas	What is it	<ul style="list-style-type: none"> <li>A specific rite or practice which is given to Christians as a symbol of God's grace</li> <li>The Catholic Church recognises 7 sacraments: <b>baptism, confession, the Eucharist, confirmation, marriage, holy orders, anointing of the sick</b></li> <li><b>More on baptism and eucharist in box D and E</b></li> </ul>
Liturgical worship	Service which follows a set pattern	B. Prayer	H. Easter		
Non-liturgical worship	Service which does not follow a fixed or set pattern	C. The Sacraments	I Role of the church		
Sacrament	Rites and rituals through which the believer receives a special gift of grace	D. Eucharist	J. Mission and evangelism		
Holy communion	A service of thanks giving where bread and wine are consumed to remember Jesus' death and resurrection	E. Baptism	K. Persecution		
Festival	Celebration of Jesus' death and resurrection	F. Pilgrimage	L. Reconciliation		
Christmas	Celebration of Jesus' birth				
Church	The holy people of God, the body of Christ or a building where Christians worship				
Agape	Unconditional, unselfish love				
Mission	A calling where an individual or group go out and spread the word of God				
Missionary	A person sent on a religious mission to promote Christianity in a different country through preaching or charity work				
Alpha course	An example of evangelism – trying to tell others about Christianity				
Persecution	Hostility or ill-treatment, because of race or religious or political beliefs				
Poverty	Restoring of harmony after relationships have broken down				
		<b>A.</b>		<i>Worship</i>	
		What is it	<ul style="list-style-type: none"> <li>A way for Christians to show love and respect for God</li> <li>It shows Christians how important God is to them</li> <li>They worship in different ways</li> </ul>		
		Liturgical worship	<ul style="list-style-type: none"> <li>Worship with a set order or pattern</li> <li>E.g. Roman Catholic Mass</li> <li>Often takes place in a Church but can be elsewhere</li> </ul>		
		Non-liturgical worship	<ul style="list-style-type: none"> <li>Tends to be Bible-based</li> <li>Often follows a structure but there is free choice in the structure</li> <li>May choose a relevant theme for the community</li> <li>Prayer is often in a personal style</li> </ul>		
		Informal worship	<i>Charismatic worship</i> <ul style="list-style-type: none"> <li>Service has characteristics such as hymns, sermon and prayer but is free-flowing</li> <li>Can be anywhere, not just the Church</li> <li>Resembles worship practiced by early Christians</li> <li>Focus on the Holy Spirit</li> </ul>		
		Private worship	<ul style="list-style-type: none"> <li>Takes place individually</li> <li>Forms a personal relationship with God</li> </ul>		
		<b>B.</b>		<i>Prayer</i>	
		What is it / Significance of prayer	<ul style="list-style-type: none"> <li>A means of communicating with God</li> <li>Purpose is to praise God, confess sins, give thanks to God</li> </ul>		
		The Lord's Prayer	<ul style="list-style-type: none"> <li><b>"Our Father, who art in Heaven"</b></li> <li>Gives a model for how to pray</li> <li>Involves adoration of God, confession of sins, and petition (asking God for something)</li> <li>Asking God for food <b>"give us this day our daily bread"</b></li> <li>Asking for forgiveness <b>"forgive us our trespasses as we forgive those who trespass against us"</b></li> </ul>		
		Set prayers	<ul style="list-style-type: none"> <li>Written down and said more than once/regularly</li> <li>Allows collective nature e.g. Lord's Prayer</li> </ul>		
		Informal prayer	<ul style="list-style-type: none"> <li>Use day-to-day language</li> <li>Often private and focus on reflection</li> <li>Pentecostal Church are moved by the Holy Spirit so speak in tongues</li> </ul>		



# Year 10 GCSE Religious Education KO - Christianity Practices

	Keywords
Worship	
Liturgical worship	
Non-liturgical worship	
Sacrament	
Holy communion	
Festival	
Christmas	
Church	
Agape	
Mission	
Missionary	
Alpha course	
Persecution	
Poverty	

What we are learning in this unit	
A. Worship	G. Christmas
B. Prayer	H. Easter
C. The Sacraments	I Role of the church
D. Eucharist	J. Mission and evangelism
E. Baptism	K. Persecution
F. Pilgrimage	L. Reconciliation

C.	Sacraments
What is it	

A.	Worship
What is it	
Liturgical worship	
Non-liturgical worship	
Informal worship	
Private worship	

B.	Prayer
What is it / Significance of prayer	
The Lord's Prayer	
Set prayers	
Informal prayer	

# Year 10 GCSE Religious Education KO - Christianity Practices

D.	<i>Eucharist/Holy Communion</i>
What is it	<ul style="list-style-type: none"> <li>Based on the words and actions of Jesus at the Last Supper</li> <li><b>"Jesus took bread, and when he had given thanks, he broke it and gave it to his disciples, saying, "Take and eat; this is my body".</b></li> <li>Commemoration of the sacrifice Jesus made on the cross</li> <li>Deepens faith in Jesus</li> <li>Christians share bread and wine in Church which represents the body and blood of Christ</li> </ul>
Significance	<ul style="list-style-type: none"> <li>Some celebrate it weekly</li> <li>Gives them strength to live every day to God's glory</li> </ul>
How is it celebrated	<ul style="list-style-type: none"> <li>Sharing bread and wine during a service at the church</li> <li>Some use grape juice instead of wine</li> </ul>
Different interpretations	<ul style="list-style-type: none"> <li>Roman Catholics believe in transubstantiation – the bread and wine is actually the body and blood of Christ transformed</li> <li>Protestants – expression of faith and obedience</li> <li>Catholic, Orthodox, Anglican– a way to receive God's grace</li> </ul>

E.	<i>Baptism</i>
What is it	<ul style="list-style-type: none"> <li>Involves the candidate being immersed in water or having water poured on them</li> <li>Symbolises cleansing of sin and initiation into the Church</li> <li>Lots regard it as necessary to being saved</li> <li>Jesus told his disciples to <b>"go and make disciples of all nations, baptising them in the name of the Father, the Son and The Holy Spirit"</b></li> </ul>
Significance	<ul style="list-style-type: none"> <li>Initiation into the Christian community</li> <li>Cleansed from sin</li> <li>Reborn into eternal life</li> <li>United with Christ as a child of God</li> <li>Receive the gift of the Holy Spirit</li> </ul>
Infant baptism	<ul style="list-style-type: none"> <li>When a child/baby is baptised</li> <li>Holy water is poured over their heads x3</li> <li>Washes away original sin, starts life on the right track with God, shows commitment, welcomes to the Church</li> </ul>
Believer's baptism	<ul style="list-style-type: none"> <li>When an adult is baptised</li> <li>Whole body is immersed in the water</li> <li>Follows Jesus' example, start a new life with God, wash away sin, making their <b>own</b> decision to be baptised</li> </ul>

F.	<i>Pilgrimage</i>
What is it	<ul style="list-style-type: none"> <li>A visit to a place regarded as holy for the believer</li> <li>Places of pilgrimage have a special meaning and can make people feel closer to God</li> </ul>
Importance	<ul style="list-style-type: none"> <li>Lets people take time out from their every day lives</li> <li>Offers an opportunity for spiritual growth</li> <li>Encourage them to lead lives that reflect the values of God</li> <li>Physical or spiritual healing</li> <li>Deepens their faith – meeting people from different cultures</li> </ul>
Lourdes	<ul style="list-style-type: none"> <li>Virgin Mary appeared to Bernadette in the 19<sup>th</sup> century</li> <li>Believed that the spring water can cleanse pilgrims of sin and cure illnesses</li> <li>People walk in processions, touch the walls of the grotto, take home Lourdes water</li> <li>There is a focus on helping and supporting the sick and disabled</li> <li>People feel healed spiritually, if not physically</li> </ul>
Iona	<ul style="list-style-type: none"> <li>Island off the west coast of Scotland</li> <li>Services and tours for pilgrims</li> <li><b>MONASTIC experience</b> = a simple way of living, i.e. like a monk</li> <li>Share practical tasks e.g., washing up, discussions, studying the Bible</li> <li>People do not go here for miracles</li> </ul>

G.	<i>Christmas</i>
What is it	<ul style="list-style-type: none"> <li>Celebrated to commemorate the birth of Jesus</li> <li>Churches are decorated with the scene of the nativity</li> <li>Carols are sung about the events of Jesus' birth</li> <li>Communion takes place at midnight on Christmas Eve</li> </ul>
Importance	<ul style="list-style-type: none"> <li>Remembering the incarnation</li> <li>Celebrates the birth of a saviour – his birth lead to people being saved from their sins</li> </ul>
In GB today	<ul style="list-style-type: none"> <li>Christians thank God for the incarnation</li> <li>A time of giving and receiving from loved ones</li> <li>Time to remember those in difficult circumstances – should give and support those in need</li> <li>Highlights meaning of Christmas to non-believers</li> </ul>

H.	<i>Easter</i>
What is it	<ul style="list-style-type: none"> <li>Remembering Jesus' death and resurrection</li> </ul>
Importance	<ul style="list-style-type: none"> <li>Remembers the resurrection of Jesus</li> <li>Power of good over evil</li> <li>Reminds Christians of the omnipotence of God</li> <li>Shows Christians there is an afterlife</li> </ul>
Lent	<ul style="list-style-type: none"> <li>Time of preparation for Easter – reminds Christians of the temptations of Jesus</li> </ul>
Maundy Thursday	<ul style="list-style-type: none"> <li>Last Supper</li> <li>Observed today by Eucharist</li> </ul>
Good Friday	<ul style="list-style-type: none"> <li>Remembering crucifixion of Jesus</li> <li>Observed today by worshipping together</li> </ul>
Easter Sunday	<ul style="list-style-type: none"> <li>Celebrates Jesus rising from the dead</li> <li>Shows there is an afterlife and death is not the end</li> </ul>

# Year 10 GCSE Religious Education KO - Christianity Practices

D.	<i>Eucharist/Holy Communion</i>
What is it	
Significance	
How is it celebrated	
Different interpretations	

F.	<i>Pilgrimage</i>
What is it	
Importance	
Lourdes	
Iona	

E.	<i>Baptism</i>
What is it	
Significance	
Infant baptism	
Believer's baptism	

G.	<i>Christmas</i>
What is it	
Importance	
In GB today	

H.	<i>Easter</i>
What is it	
Importance	
Lent	
Maundy Thursday	
Good Friday	
Easter Sunday	

# Year 10 GCSE Religious Education KO - Christianity Practices

I.	<i>Role of the Church: Local community</i>
Local community	<ul style="list-style-type: none"> <li>Churches help in the local community in a number of ways: food banks, day centres for the elderly, helping refugees, food banks, soup kitchens, helping people with taxes</li> <li><b>Parable of the sheep and the goats:</b> Jesus told his disciples that they should help others</li> <li><b>"If anyone has material possessions and sees his brother in need but has no pity on him, how can the love of God be in him?"</b></li> <li>Jesus deliberately sought out people in society who needed help</li> </ul>
Food banks	<ul style="list-style-type: none"> <li>People volunteer to collect, sort and distribute food</li> <li>People in need are identified and are provided with vouchers to exchange</li> <li>The salvation army - soup kitchens and hostels, give emergency assistance, provide community vegetable gardens</li> </ul>
Street pastors	<ul style="list-style-type: none"> <li>Christians who go out on the streets of cities to help care for the needs of young people</li> <li>NOT there to spread Christianity, just to help</li> <li>E.g. St. Vincent de Paul Society – help anybody who needs it – give training to get jobs, run community shops, run hostels, soup kitchens</li> </ul>

I.	<i>Role of the Church: Worldwide</i>
Working for reconciliation	<ul style="list-style-type: none"> <li>Christians need to be reconciled with God but also with one another</li> <li>Christians believe that Jesus' death was an act of reconciliation</li> <li>Worldwide church has a role to restore people's relationship with God and with one another</li> <li>Working for reconciliation is necessary for all Christians</li> </ul>
Persecution	<ul style="list-style-type: none"> <li>Hostility and ill-treatment, especially because of race, or political or religious beliefs</li> <li>Jesus told Christians to expect persecution because if they persecuted Jesus, they would also persecute his followers</li> <li>Those who suffer for their beliefs share in the suffering of Jesus <b>"to know the power of his resurrection and participation in his sufferings"</b></li> <li>Persecution helps the church grow because people witness the hope that Christians have</li> <li><b>"if one part suffers, every part suffers with it"</b> – all Christians suffer together so need to be supported</li> <li>Church supports people by <b>smuggling in Bibles, giving legal and financial support, provide spiritual support, raise awareness of those being persecuted</b></li> </ul>
CAFOD	<ul style="list-style-type: none"> <li>Catholic agency for Overseas Development (CAFOD)</li> <li>Works to bring hope and compassion to people of all faiths and in poor communities</li> <li>Action needs to be taken to remedy the injustice of people suffering</li> <li>Helps to increase access to clean water, education and healthcare, lobbies employers to adopt fair working conditions.</li> </ul>

J.	<i>Mission and evangelism</i>
Mission	<ul style="list-style-type: none"> <li>Vocation or calling of a religious organisation or individual to go out into the world and spread their faith</li> <li><b>"go and make disciples of all nations... teaching them to obey everything I have commanded you"</b></li> <li>Christians have the responsibility, according to the <b>Great Commission</b>, to tell others of their faith</li> <li>Spreading the word to people in everyday life, organised events, preaching, becoming missionaries, humanitarian work</li> </ul>
Evangelism	<ul style="list-style-type: none"> <li>Spreading the message of Christianity and teachings of Jesus in order to make <b>disciples of all nations</b></li> <li>Bring reconciliation between people and God</li> <li>Show the love of God through their own actions</li> <li>Preaching, teaching, performing missions and good works openly, move to foreign lands to spread the word, set up churches and church communities</li> </ul>
The Alpha Course	<ul style="list-style-type: none"> <li>Aims to help church members understand the basics of the Christian faith</li> <li>Many major Christian organisations use it</li> <li>Take place in church premises but also in homes, universities, workplaces, prisons and other venues</li> <li>Courses include topics such as relationship and marriage for adults and study programmes for young people</li> </ul>

K	<i>Persecution</i>
	<ul style="list-style-type: none"> <li>Hostility and ill-treatment of a group of people</li> <li>Jesus told Christians to spread the word of Christianity – may put them in danger – <b>"he who endures to the end will be saved"</b></li> <li>Open Doors and Christian Freedom Internation help persecuted Christians</li> <li>Support them through trauma, provide advice and support, speak on behalf of persecuted Christians to raise awareness, send/smuggle in Bibles, lobby the governments for political power, organise the offer of aid to persecuted, offer rooms to asylum seekers, ask god to forgive the persecuters</li> <li>Turn the other cheek</li> </ul>
L	<i>Reconciliation</i>
How the church works for reconciliation	<ul style="list-style-type: none"> <li>Set up initiatives to bring people together, working in prisons to lead people back to God and bring the victim and perpetrator back together, leading sermons, asking congregation to forgive each other</li> </ul>
WHY they work for reconciliation	<ul style="list-style-type: none"> <li>Jesus' sacrifice, parable of the forgiving father, <b>"love thy neighbour"</b>, he who sees his brother in need and does nothing, how can the love of God be in him?</li> </ul>

# Year 10 GCSE Religious Education KO - Christianity Practices

I.	<i>Role of the Church: Local community</i>
Local community	
Food banks	
Street pastors	

I.	<i>Role of the Church: Worldwide</i>
Working for reconciliation	
Persecution	
CAFOD	

J.	<i>Mission and evangelism</i>
Mission	
Evangelism	
The Alpha Course	

K	<i>Persecution</i>

L	<i>Reconciliation</i>
How the church works for reconciliation	
WHY they work for reconciliation	

# GCSE Unit 3 SPANISH Knowledge organiser. Topic Free Time Activities

What we are learning this term:	
A.	Talking about free time
B.	Talking about your plans for the weekend
C.	Talking about eating out
D.	Talking about special occasion meals
E.	Extending what you can say about sport
F.	Talking about sport in the world

6 Key Words for this term	
1. disfrutar	4. campeones
2. jugar	5. formentar
3. los deportes	6. a selección

### 3.1G ¿Qué te gusta hacer?

aburrido/a	boring
bailar	to dance
cantar	to sing
el cine	cinema
de vez en cuando	from time to time, occasionally
entretenido/a	entertaining
estimulante	challenging
jugar	to play (game, sport)
leer	to read
libre	free
odiar	to hate
la película	film
practicar	to practise
salir	to go out
la tarde	afternoon, evening
el teclado	keyboard
tocar	to touch, to play (an instrument)
ver	to see, watch

### 3.3G ¿Haces deporte?

activo/a	active
al aire libre	in the open air, outdoors
ayudar	to help
el baloncesto	basketball
el campo	countryside, playing field
la cancha	court
los deberes	homework
la equitación	horse riding
el estadio	stadium
montar a caballo	to ride a horse
montar en bicicleta	to ride a bike

### 3.1F ¿Qué haces en tu tiempo libre?

a veces	sometimes
bastante	quite
cada	each, every
cenar	to have an evening meal
charlar	to chat
el coro	choir
descansar	to rest
los dibujos animados	cartoons
el documental	documentary
el fin de semana	weekend
genial	great
las noticias	news
nunca	never
ocupado/a	occupied, busy
policia/o/a (adj.)	police, detective, crime
poner	to put
por lo general	in general
siempre	always
el teatro	theatre
la telenovela	soap opera
terminar	to finish
el tiempo	time
todo/a/os/as	all, every
tonto/a	silly, stupid
la vez	time, occasion

### 3.2G Comer y Beber

el (fem.) agua (mineral)	(mineral) water
beber	to drink
el bocadillo	sandwich
la carne	meat
la cena	evening meal
cenar	to have supper / to have an evening meal
comer	to eat
la comida	lunch, food, meal
desayunar	to have breakfast
el desayuno	breakfast
después	afterwards
el helado	ice cream
el huevo	egg
el jamón	ham
la leche	milk
las legumbres	pulses
la mantequilla	butter
la manzana	apple
la mermelada	jam, marmalade
las patatas fritas	chips, fries

### Key Verbs

Salir To go out	Ir To go	Jugar To play	Hacer – to do/make	Tocar To play (ins)
Salgo I go out	Voy I go	Juego I play	Hago I do	Toco I play
Sales You go out	Vas You go	Juegas You play	Haces You do	Tocas You play
Sale He/she goes out	Va s/he goes	Juega He/she plays	Hace s/he does	Toca He/she plays
Salimos We go out	Vamos They go	Jugamos We play	Hacemos We do	Tocamos We play
Salen They go out	Van They go	Juegan They play	Hacen They do	Tocan They play

### 3.2G Comer y Beber

el perrito caliente	hot dog
el pescado	fish
el pollo	chicken
el postre	dessert, pudding
el queso	cheese
la sopa	soup
el té	tea
tomar (drink)	to take, to have (food,
la tortilla	omelette
la tostada	toast
el vaso	glass
las verduras	vegetables

### 3.2F Vamos a comer fuera

el atún	tuna
el bacalao	cod
la barra	loaf
el bistec	steak
los calamares	squid
la cebolla	onion
el cerdo	pork
la cerveza	beer
los champiñones	mushrooms
el chorizo	chorizo
la chuleta	chop
el cordero	lamb
el filete	fillet
la fresa	strawberry
las gambas	prawns
el gazpacho	chilled tomato soup
los guisantes	peas
el jamón serrano	cured ham
las judías verdes	green beans

### 3.1H Hablando del tiempo libre y de los planes

aburrido/a	boring
agradable	pleasant
al aire libre	in the open air, outdoors
la batería	drums
la canción	song
dar un paseo	to go for a walk
de vez en cuando	from time to time, occasionally
desafiante	challenging
divertido/a	fun
emocionante	exciting

### 3.3F ¿Qué deportes harás?

el alpinismo	rock climbing
cansado/a	tired
la carrera	race
el concurso (contest)	competition
contestar	to answer
durante	during
el ejercicio	exercise
el entrenamiento	training
entrenar	to train
el equipo	team
el esquí	skiing
este, esta	this
ganar	to win
el jugador	player
mañana	tomorrow
el miembro	member
el partido	match
probar	to try, to test

# GCSE Unit 3 SPANISH Knowledge organiser. Topic Free Time Activities

**What we are learning this term:**

A. Talking about free time  
 B. Talking about your plans for the weekend  
 C. Talking about eating out  
 D. Talking about special occasion meals  
 E. Extending what you can say about sport  
 F. Talking about sport in the world

- 6 Key Words for this term**
- |                 |                |
|-----------------|----------------|
| 1. disfrutar    | 4. campeones   |
| 2. jugar        | 5. formentar   |
| 3. los deportes | 6. a selección |

**3.1F ¿Qué haces en tu tiempo libre?**

a veces \_\_\_\_\_  
 bastante \_\_\_\_\_  
 cada \_\_\_\_\_  
 \_\_\_\_\_ to have an evening meal  
 \_\_\_\_\_ to chat  
 \_\_\_\_\_ choir

descansar \_\_\_\_\_  
 los dibujos animados \_\_\_\_\_  
 el documental \_\_\_\_\_  
 \_\_\_\_\_ weekend  
 \_\_\_\_\_ great

las noticias \_\_\_\_\_  
 nunca \_\_\_\_\_  
 ocupado/a \_\_\_\_\_  
 policia/a \_\_\_\_\_  
 \_\_\_\_\_ to put  
 \_\_\_\_\_ in general  
 \_\_\_\_\_ always

el teatro \_\_\_\_\_  
 la telenovela \_\_\_\_\_  
 \_\_\_\_\_ to finish

el tiempo \_\_\_\_\_  
 todo/a/os/as \_\_\_\_\_  
 \_\_\_\_\_ silly, stupid  
 \_\_\_\_\_ time, occasion

**3.2G Comer y Beber**

el (fem.) agua (mineral) \_\_\_\_\_  
 beber \_\_\_\_\_  
 \_\_\_\_\_ sandwich  
 la carne \_\_\_\_\_  
 \_\_\_\_\_ evening meal  
 \_\_\_\_\_ to have supper / to have

an evening meal \_\_\_\_\_  
 comer \_\_\_\_\_  
 la comida \_\_\_\_\_  
 desayunar \_\_\_\_\_  
 \_\_\_\_\_ breakfast  
 \_\_\_\_\_ afterwards  
 \_\_\_\_\_ ice cream

el huevo \_\_\_\_\_  
 el jamón \_\_\_\_\_  
 la leche \_\_\_\_\_  
 las legumbres \_\_\_\_\_  
 \_\_\_\_\_ butter  
 \_\_\_\_\_ apple  
 la mermelada \_\_\_\_\_  
 \_\_\_\_\_ chips, fries

Key Verbs				
Salir _____	Ir _____	_____ To play	Hacer – to do/make	Tocar _____
_____ I go out	Voy _____	Juego I play	Hago _____	_____ I play
_____ You go out	_____ You go	Juegas _____	Haces You do	Tocas You play
Sale He/she goes out	Va s/he goes	Juega He/she plays	_____ s/he does	_____ He/she plays
Salimos _____	_____ They go	Jugamos We play	Hacemos _____	Tocamos _____
Salen _____	Van They go	_____ They play	Hacen They do	_____ They play

**3.2G Comer y Beber**

el perrito caliente \_\_\_\_\_  
 el pescado \_\_\_\_\_  
 el pollo \_\_\_\_\_  
 \_\_\_\_\_ dessert, pudding  
 \_\_\_\_\_ cheese  
 \_\_\_\_\_ soup

el té \_\_\_\_\_  
 \_\_\_\_\_ to take, to have (food,

drink) \_\_\_\_\_  
 la tortilla \_\_\_\_\_  
 la tostada \_\_\_\_\_  
 el vaso \_\_\_\_\_  
 \_\_\_\_\_ vegetables

**3.2F Vamos a comer fuera**

el atún \_\_\_\_\_  
 el bacalao \_\_\_\_\_  
 \_\_\_\_\_ loaf  
 \_\_\_\_\_ steak

los calamares \_\_\_\_\_  
 la cebolla \_\_\_\_\_  
 el cerdo \_\_\_\_\_  
 \_\_\_\_\_ beer  
 \_\_\_\_\_ mushrooms

el chorizo \_\_\_\_\_  
 la chuleta \_\_\_\_\_  
 \_\_\_\_\_ lamb

el filete \_\_\_\_\_  
 \_\_\_\_\_ strawberry  
 \_\_\_\_\_ prawns

el gazpacho \_\_\_\_\_  
 los guisantes \_\_\_\_\_  
 \_\_\_\_\_ cured ham  
 \_\_\_\_\_ green beans

**3.1H Hablando del tiempo libre y de los planes**

aburrido/a \_\_\_\_\_  
 agradable \_\_\_\_\_  
 al aire libre \_\_\_\_\_ in the open air,  
 outdoors \_\_\_\_\_  
 la batería \_\_\_\_\_  
 la canción \_\_\_\_\_  
 \_\_\_\_\_ to go for a walk  
 de vez en cuando \_\_\_\_\_ from time to time,  
 occasionally \_\_\_\_\_  
 desafiante \_\_\_\_\_  
 divertido/a \_\_\_\_\_  
 \_\_\_\_\_ exciting

**3.3F ¿Qué deportes harás?**

el alpinismo \_\_\_\_\_  
 cansado/a \_\_\_\_\_  
 la carrera \_\_\_\_\_  
 el concurso \_\_\_\_\_ (contest)  
 contestar \_\_\_\_\_  
 \_\_\_\_\_ during  
 \_\_\_\_\_ exercise  
 \_\_\_\_\_ training

entrenar \_\_\_\_\_  
 el equipo \_\_\_\_\_  
 el esquí \_\_\_\_\_  
 este, esta \_\_\_\_\_  
 \_\_\_\_\_ to win  
 \_\_\_\_\_ player  
 \_\_\_\_\_ tomorrow

el miembro \_\_\_\_\_  
 el partido \_\_\_\_\_  
 \_\_\_\_\_ to try, to test

**3.1G ¿Qué te gusta hacer?**

aburrido/a \_\_\_\_\_  
 bailar \_\_\_\_\_  
 \_\_\_\_\_ to sing  
 \_\_\_\_\_ cinema

de vez en cuando \_\_\_\_\_  
 entretenido/a \_\_\_\_\_  
 \_\_\_\_\_ challenging  
 \_\_\_\_\_ to play (game, sport)

leer \_\_\_\_\_  
 libre \_\_\_\_\_  
 odiar \_\_\_\_\_  
 la película \_\_\_\_\_  
 \_\_\_\_\_ to practise

salir \_\_\_\_\_  
 \_\_\_\_\_ afternoon, evening

el teclado \_\_\_\_\_  
 \_\_\_\_\_ to touch, to play(an instrument)

ver \_\_\_\_\_

**3.3G ¿Haces deporte?**

activo/a \_\_\_\_\_  
 \_\_\_\_\_ in the open air,  
 outdoors \_\_\_\_\_  
 ayudar \_\_\_\_\_  
 el baloncesto \_\_\_\_\_  
 \_\_\_\_\_ countryside, playing

field \_\_\_\_\_  
 la cancha \_\_\_\_\_  
 \_\_\_\_\_ homework

la equitación \_\_\_\_\_  
 el estadio \_\_\_\_\_  
 \_\_\_\_\_ to ride a horse  
 \_\_\_\_\_ to ride a bike

**39. Stakeholder**

Stakeholders are the people or groups with an interest in the success or failure of an organisation.

**Types of stakeholders & their typical objectives:****Business owners & shareholders**

Interested in the business being successful and making a profit.

**Staff/managers**

Interested in having job security, career development, fair wages etc.

**Customers**

Interested in getting an honest and fair deal from a business.

**Local Community**

Interested in honest and fair dealing/co-operation with the organisation with regards to local employment and environment.

**Local Government**

Interested in employment plans, location plans and business ability to pay tax.

**Pressure Groups**

Interested in fair and ethically correct business practices.

**40. Types of technology used in business**

Technology is used in different aspects of business:

**E-commerce:** Allows businesses to sell their products online and reach a wider audience of potential customers with lower costs.

**Social Media:** Allows a business to communicate and interact directly with customers.

**Digital Communication:** E-mail allows customers to contact a business personally and directly.

**Payment Systems:** Online payment systems (eg, Paypal) allow all types of businesses to access their payments fast and easily.

**41. How does technology influence business activity?**

Sales can increase as a result of e-commerce because customers can access products or services 24 hours a day, 7 days a week. New technology drives innovation to create new products or services and this can increase sales of new products.

Costs can be reduced through advertising online through websites, e-mail newsletters, and via social media. Costs can also be reduced through manufacturing efficiency and being able to find the best deal on raw materials online.

The 4 P's are affected by different types of technology.

Product = New technologically advanced product or a new method of production.

Promotion = Digital marketing can improve the effectiveness of marketing and is cheap.

Place = Products can be sold online and can be accessed by customers worldwide.

**42. Retail Legislation**

Legislation	Law's passed by acts of parliament. Too many rules that impact on a business from operating as the owner would like are known as " <b>Red Tape</b> ".
<b>Consumer Rights Act 2015</b>	<ul style="list-style-type: none"> <li>• Goods must be fit for purpose and free from defects.</li> <li>• The buyer has the right to get their money back or have their product repaired at the seller's expense.</li> <li>• Any issues are to be dealt with by the seller and not the manufacturer.</li> </ul>
<b>Trade Descriptions Act</b>	<ul style="list-style-type: none"> <li>• Trader's can not use false or misleading statements.</li> <li>• Labels must not be misleading.</li> </ul>
<b>Other acts of legislation:</b>	Consumer credit act 1974, The weights and measures act 1985, The food safety act 1990.

**43. Recruitment Legislation**

**Employees are protected from being exploited in the work place.**

**Equality Act 2010** Organisations must consider all job applicants equally in regards to gender, age, skin colour etc.

**Equal Pay Act 1970** Organisations must pay workers fairly and can not discriminate in regards to gender, age or skin colour etc.

**44. The Economy**

**The economy is the collection of business transactions that take place throughout the country, throughout the year.**

**Interest rates.** The amount that a lender charges per year to someone who has borrowed money. This is measured as a percentage.

**Exchange rates** The value of the pound (£) measured by how much foreign currency can be bought per pound (£).

**Recession** A downturn in sales and output throughout the economy, often leading to rising unemployment.

**Inflation** The rate in which prices are rising from the same time last year.



39. Stakeholder	
Types of stakeholders & their typical objectives:	
Business owners & shareholders	
Staff/managers	
Customers	
Local Community	
Local Government	
Pressure Groups	

40. Types of technology used in business	
Technology is used in different aspects of business:	
E-commerce:	
Social Media:	
Digital Communication:	
Payment Systems:	
41. How does technology influence business activity?	

42. Retail Legislation	
Legislation	
Consumer Rights Act 2015	
Trade Descriptions Act	
Other acts of legislation:	

43. Recruitment Legislation	
Employees are protected from being exploited in the <u>work place</u> .	
Equality Act 2010	
Equal Pay Act 1970	

44. The Economy	
The economy is the collection of business transactions that take place throughout the country, throughout the year.	
Interest rates.	
Exchange rates	
Recession	
Inflation	

**Hardware and Software**

**Hardware:**

The physical, electrical/mechanical parts of a computer. This consists of internal components such as the CPU and graphics card, and additional hardware which allows the users to communicate with the system through input and output devices, such as a monitor and a keyboard.

Externally attached hardware are known as peripherals.

**Software:**

The programs, data and applications in a computer system. Any parts of a computer system that aren't physical.

Software can be classified as either application or system software.

Application – Programs which perform specific end-user tasks. E.g. web browser, spreadsheet, games.

System – Programs which help to run or maintain the computer system.

**System Software:**

**Operating Systems -**

- Manages processes.
- Manages memory.
- Manages I/O (input/output) devices.
- Manages applications.
- Manages security (access levels, user accounts)
- Controls hardware components.
- Provides a platform for software to run on.
- Provides a user interface.

**Utility Programs -**

Programs which help to maintain or manage the computer system. E.g. Disk Defragmenters, Antivirus, Compression, Encryption, Registry Cleaners, Driver Updaters,

**Translators -**

Translate source code from a high-level language or assembly code into machine code (binary). There are three types, Compilers, Interpreters and Assemblers.

Compilers – Does the translation all at once and creates an exe file containing the machine code.

Interpreters – Does the translation line by line.

Assembler – Converts assembly code.

**Boolean Logic Gates**

**AND Gate.**

Both inputs need to be true for the output to be true.



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

**OR Gate.**

Either of the two inputs needs to be true for the output to be true.



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

**NOT Gate.**

Inverts the input.



Input A	Output Q
1	0
0	1

## CPU Components

**Control Unit (CU)** – fetches, decodes and executes instructions. Sends control signals to the system and peripherals. Moves data around the system.

**Arithmetic Logic Unit (ALU)** – performs arithmetic and logical operations. Acts as a gateway between primary memory and secondary storage.

**Cache** – Small amount of high-speed memory to store frequently used data and instructions.

**Clock** – Synchronises all computer's components by sending out regular electrical pulses. The more pulses per second, the more calculations and operations can be performed. This is measured in Hz.

**Buses** – Collections of parallel wires for high speed internal communication within the CPU.

Address Bus – Carries memory addresses.

Data Bus – Carries data between components.

Control Bus – Carries control signals.

**Registers** – Small amounts of high-speed memory within the CPU. Special purpose ones listed below.

Program Counter – Holds the memory address of the next instruction.

Memory Address Register – Holds the address of the current instruction.

Memory Buffer/Data Register – Holds the data that is either being retrieved or stored.

Current Instruction Register – Holds the current instruction which needs to be decoded and executed.

Accumulator – Holds the result of calculations from the ALU.

## Fetch-Decode-Execute Cycle

1. The memory address held in the program counter is copied into the MAR.
2. The address in the program counter is then incremented (increased by 1) so it now holds the address of the next instruction to be fetched.
3. The processor sends a signal along the address bus to the memory address held in the MAR.
4. The instruction/data in that memory address is carried by the data bus to the MBR/MDR.
5. The instruction/data in the MBR/MDR is copied to the CIR.
6. The instruction/data in the CIR is decoded and executed. Results of processing are stored in the ACC.
7. The cycle then returns to step one.

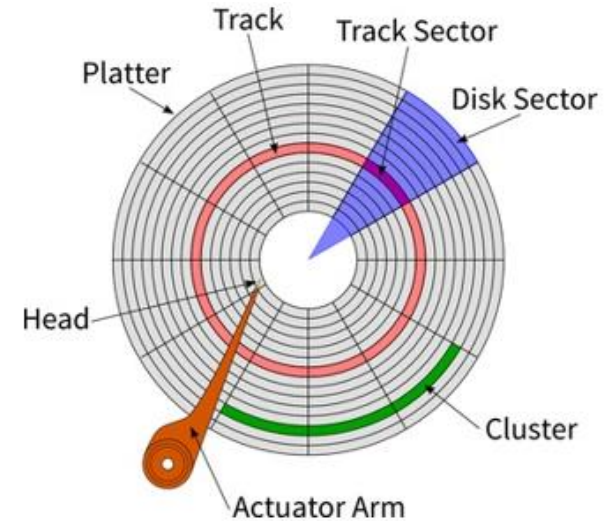
## Secondary Storage

Secondary Storage is long-term, non-volatile storage. Without secondary storage, all programs and data would be lost when the computer is turned off.

### **Magnetic**

Hard disks spin.

Actuator arm moves a read/write head over the disk to access parts of it. The head can detect the magnetisation of the disk and either magnetise (1's) or demagnetise (0's) parts of it.



### **Optical**

Optical disk spins and has a spiral track.

Laser head is moved over the disk and shines the laser down onto it.

Disk has pits (scatters light 0's) and lands (reflects light 1's).

Writeable disks have photosensitive dye which is burned to represent 1's and 0's.

### **Solid State**

A collection of semiconductor chips which can be accessed and written to extremely quickly.

No moving parts, so they are more reliable than disks.

# Macronutrients, fibre and water- Term 6

## Alcohol

Alcohol is not considered a nutrient, but is a source of energy in the diet.  
The government recommends no more than 14 units of alcohol per week for both men and women.

## Macronutrients

Macronutrients provide energy. The macronutrients are:

- carbohydrate;
- protein;
- fat.

Macronutrients are measured in grams (g).

## Energy from food

- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with Calories (kcal).
- Different macronutrients, and alcohol, provide different amounts of energy.

## Protein complementation

Different food contains different amounts and combinations of amino acids.

Vegans and vegetarians can get all the amino acids they need by combining different protein types at the same meal. This is known as protein complementation.

Examples are:

- rice and peas;
- beans on toast;
- hummus and pitta bread;
- bean chilli served with rice.

## Fibre

- Dietary fibre is a type of carbohydrate found in plant foods.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; and, seeds.

Dietary fibre helps to:

- reduce the risk of heart disease, diabetes and some cancers;
- help weight control;
- bulk up stools;
- prevent constipation;
- improve gut health.

## Protein

- Made up of building blocks called amino acids.
- There are 20 amino acids found in protein.
- Eight amino acids have to be provided by the diet (called essential amino acids).

The essential amino acids (EAAs) are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. In young children, additional amino acids, e.g. histidine and tyrosine, are sometimes considered to be essential (or 'conditionally essential') because they may be unable to make enough to meet their needs.

## Recommendations

- 0.75g/kg bodyweight/day in adults.

Sources:

**Animal sources:** meat; poultry; fish; eggs; milk; dairy food.

**Plant sources:** soya; nuts; seeds; pulses, e.g. beans, lentils; mycoprotein.

In young children, additional amino acids, e.g. histidine and tyrosine, are sometimes considered to be essential (or 'conditionally essential') because they may be unable to make enough to meet their needs.

## Carbohydrate

All types of carbohydrate are compounds of carbon, hydrogen and oxygen. They can be divided into three main groups according to the size of the molecule.

These three types are:

- monosaccharides (e.g. glucose);
- disaccharides (e.g. lactose);
- polysaccharide (e.g. sucrose).

The two types main of carbohydrate that provide dietary energy are starch and sugars. Dietary fibre is also a type of carbohydrate.

Starchy carbohydrate is an important source of energy.

Starchy foods - we should be choosing wholegrain versions of starchy foods where possible.

## Recommendations

- Total carbohydrate - around 50% of daily food energy.
- Free sugars include all sugars added to foods plus sugars naturally present in honey, syrups and unsweetened fruit juice (<5% daily food energy).
- Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine (30g/day for adults).

## Key terms

### Dietary reference values:

Estimated dietary requirements for particular groups of the population.

**Essential amino acids:** 8 of the different amino acids found in proteins from plants and animals that have to be provided by the diet.

**Macronutrients:** Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.

**Protein complementation:** Combining different protein types at the same meal to ensure all EAAs are ingested.

**Reference Intakes:** Guidelines for the maximum amount of nutrients consumed.

## Dietary reference values (DRVs) are a series

of estimates of the energy and nutritional requirements of different groups of healthy people in the UK population. They are not recommendations or goals for individuals.

**Reference Intakes** are guidelines for the maximum amount of energy (calories), fat, saturated fat, sugars and salt consumed in a day (based on a healthy adult female).

## Fat

Sources of fat include:

- saturated fat;
- monounsaturated fat;
- polyunsaturated fat.

Fats can be saturated, when they have no double bonds, monounsaturated, when they have one double bond, or polyunsaturated, when they have more than one double bond.

## Recommendations

- <35% energy, Saturated fat <11% energy.

A high saturated fat intake is linked with high blood cholesterol levels.

## Sources:

**Saturated fat:** fatty cuts of meat; skin of poultry; butter; hard cheese; biscuits, cakes and pastries; chocolate.

**Monounsaturated fat:** edible oils especially olive oil; avocados; nuts.

**Polyunsaturated fatty acids:** edible oils especially sunflower oil; seeds; margarine; spreadable fats made from vegetable oils and oily fish.

## Hydration

- Aim to drink 6-8 glasses of fluid every day.
  - Water, lower fat milk and sugar-free drinks including tea and coffee all count.
  - Fruit juice and smoothies also count but should be limited to no more than a combined total of 150ml per day. 20% of water is provided by food such as soups, yogurts, fruit and vegetables. The other 80% is provided by drinks such as water, milk and juice.
- Drinking too much water can lead to 'water intoxication' with potentially life threatening hyponatraemia. This is caused when the concentration of sodium in the blood gets too low.



# Macronutrients, fibre and water- Term 6

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# Year 10 Cambridge National- Leadership- Term 6



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

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.	



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

Key sections	
Different leadership roles and opportunities	

Captain	Manager
Coach	Teacher
Expedition leader	Role model

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



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

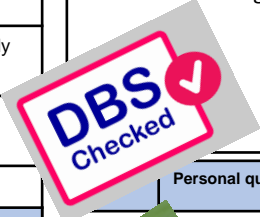
A. Role related responsibilities	
Knowledge of activity Enthusiasm for activity Knowledge of safety Knowledge of child protection issues Knowledge of basic first aid	

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

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

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

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



Reliability Punctuality Confidence Communication 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
---

# Year 10 Cambridge National- Leadership- Term 6



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- Role-related responsibilities
- Personal qualities
- Leadership styles
- Key considerations when planning sports activity

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Be able to plan sports activity sessions.

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**Role models**

Positive Mo Farah Nicole Adams	Negative Luis Suarez Nick Kyrgios
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**A. The different leadership roles within sport**

Role	Definition
Coach	
Manager	
Captain	
Teacher	
Expedition leader	
Role model	

**A. Role related responsibilities**

--	--

**G. Considerations when planning sports activities**

<i>Session content</i>	
<i>Safety</i>	

**Key sections**

**Different leadership roles and opportunities**

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

**Role related responsibilities**

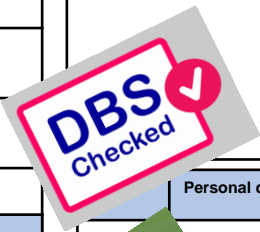
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--	-------------------------

**Personal qualities**

	Reliability Punctuality Communication Confidence Creativity
--	---

**Leadership styles**

Autocratic Democratic Laissez-faire
---



Reliability  
Punctuality  
Confidence  
Communicator  
Creativity



# Year 10 ENGINEERING Term 6

A.	Physical & Working Properties
Physical properties are the traits a material has before it is used.	
<b>Absorbency</b>	Ability to soak up moisture, light or heat
<b>Density</b>	How solid a material is
<b>Fusibility</b>	Ability of a material to be heated and joined to another material when cooled
<b>Electrical Conductivity</b>	Ability to conduct electricity
<b>Thermal Conductivity</b>	Ability to conduct heat
Working properties are how a material behaves when it is manipulated.	
<b>Strength</b>	Ability of a material to withstand compression, tension and shear
<b>Hardness</b>	The ability to withstand impact with damage
<b>Toughness</b>	Materials that are hard to break or snap are tough & can absorb shock
<b>Malleability</b>	Being able to bend or shape easily would make a material easily malleable
<b>Ductility</b>	Materials that can be stretched are ductile
<b>Elasticity</b>	Ability to be stretched and then return to its original shape

What we are learning this term:		
A. Physical & Working Properties	C. Metals & Alloys	E. Forces & Stressors
B. Natural & Manufactured Timbers	D. Iterative Design	F. Product Requirements
B.	Natural & Manufactured Timbers	
Natural timber comes from trees.		
<b>Hardwood</b>	<b>Softwood</b>	
Ash	Larch	
Beech	Pine	
Mahogany	Spruce	
Oak	Softwoods are faster growing & cheaper to buy.	
Balsa		
Manufactured Boards		
Manufactured boards are usually made from natural timber waste and adhesive.		
Medium-density fibreboard (MDF)		
Plywood		
Chipboard		
C.	Metals & Alloys	
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.	
Alloys		
Alloys are mixtures of two or more metals to improve its properties or aesthetic.		
Brass	Stainless Steel	High-speed steel
D.	Iterative Design / Identify -> Design -> Optimise -> Validate	
<b>Design Brief</b>	Statement of how you are going solve the design problem	
<b>Research</b>	Research findings and client feedback help inspire ideas	
<b>Specification</b>	List of requirements your product has to meet to be successful	
<b>Design</b>	Plan for the construction of your product – how is it going to look?	
<b>Prototype</b>	Creating a mock-up of the product to check design and function	
<b>Error Proofing</b>	Ensuring that the product cannot be assembled or used in an incorrect way.	
<b>Testing</b>	Done to ensure that the product is successful before it is released into the competitive marker.	

E.	Forces and Stressors	
Forces apply stress to objects, causing them to break or change shape. Different materials can withstand different forces.		
<b>Tension</b>	Is a stretching or pulling force. E.g. the ropes of a suspension bridge	
<b>Compression</b>	Is a pushing or squashing force, e.g. the weight of a building on its foundation	
<b>Bending</b>	Is a combination of tension and compression. It exerts tension on one side and compression on the other, e.g. bending anything	
<b>Shear</b>	Is a cutting force. The opposing forces are not directly opposite each other, e.g. cutting paper with scissors.	
<b>Torsion</b>	Is a twisting force that attempts to rotate two ends of a material in opposite directions, e.g. wringing out a wet cloth.	
F.	Product Requirements	
These are what a product has to meet / must do. Common requirements are:		
<b>Features</b>	<b>Performance</b>	
<b>Target Market</b>	<b>Working Environment</b>	
<b>Constraints</b>	<b>Ergonomics</b>	
<b>Lifecycle</b>	<b>Aerodynamics</b>	





# Year 10 ENGINEERING Term 6

A.	Physical & Working Properties
Physical properties are the traits a material has _____	
Absorbency	
Density	
Fusibility	
Electrical Conductivity	
Thermal Conductivity	
Working properties are how a material _____	
Strength	
Hardness	
Toughness	
Malleability	
Ductility	
Elasticity	

**What we are learning this term:**  
 A. Physical & Working Properties    C. Metals & Alloys    E. Forces & Stressors  
 B. Natural & Manufactured Timbers    D. Iterative Design    F. Product Requirements

B.	Natural & Manufactured Timbers
Natural timber comes from trees.	
Hardwood	Softwood
	Softwoods are faster growing & cheaper to buy.
Manufactured Boards	
Manufactured boards are usually made from natural timber waste and adhesive.	

C.	Metals & Alloys
Metals are extracted from natural ore.	
Ferrous	Non-ferrous
Contain iron and are magnetic, prone to rust.	Do not contain iron, not magnetic. Do not rust.
Alloys	
Alloys are mixtures of two or more metals to improve its properties or aesthetic.	

D.	Iterative Design / Identify -> Design -> Optimise -> Validate
Design Brief	
Research	
Specification	
Design	
Prototype	
Error Proofing	
Testing	

E.	Forces and Stressors
Forces apply stress to objects, causing them to break or change shape. Different materials can withstand different forces.	
Tension	
Compression	
Bending	
Shear	
Torsion	

F.	Product Requirements
These are what a product has to meet / must do. Common requirements are:	



## Year 10 PRODUCT DESIGN Term 6



### What we are learning this term:

- A. Modern Materials      C. Polymers      E. Technical Textiles  
 B. Smart Materials      D. Composite Materials      F. Textiles

#### A. Modern Materials

A modern material is a material that has been engineered to have improved properties.

Type	Properties	Common Uses
Graphene	Transparent. Very strong and light	Protective equipment and clothing
Metal Foams	Lightweight. Strong under compression. Absorbs energy well.	Prosthetics. Soundproofing and crash protection.
Titanium	High strength-to-weight ratio. Corrosion resistant.	Prosthetics. Aircraft and spacecraft.

#### B. Smart Materials

Materials that exhibit a physical change in response to some external stimuli and change back once that stimuli has been removed.

Shape-memory alloys (SMA) – spectacle frames	Thermochromic pigments – colour changing spoons
Photochromic pigments - colour changing lenses and windows	Self-healing materials – metals that resist corrosion, concrete that can heal cracks
Ferrofluids formed by magnetic field – hydraulic suspension pistons	Polymorph – modelling and ergonomic handles

#### C. Polymers – come from crude oil

Thermoforming can be heated and formed repeatedly, thermosetting can only be formed once

Thermoforming (pliable, recyclable)	Thermosetting (good insulators)
Acrylic (PMMA)	Epoxy resin (ER)
High impact polystyrene (HIPS)	Melamine formaldehyde (MF)
High density polythene (HDPE)	Phenol formaldehyde (PF)
Polypropylene (PP)	Polyester resin (PR)
Polyvinyl chloride (PVC)	Urea formaldehyde (UF)
Polyethylene terephthalate (PET)	These are resistant to heat and chemicals

#### D. Composite Materials

A composite material is a mixture of two or more materials to enhance properties.

Fibre-based	Materials	Common Uses
Glass-reinforced plastic (GRP)	Glass fibres and resin	Boats, instrument cases
Carbon-reinforced plastic (CRP)	Carbon fibres and resin	Formula 1 car bodies, crash helmets, sports equipment
Glass-reinforced concrete (GRC)	Glass fibres and concrete	Street furniture, urban features.
Particle-based	Materials	Common Uses
Concrete	Cement, sand and aggregate	Buildings, street furniture
Cement	Ceramic and metal	Electronic components

#### Sheet-based composite materials – look back to Term 4 – Manufactured Boards

Medium Density Fibreboard (MDF)	Plywood	Chipboard
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#### E. Technical Textiles

Modern textiles can be engineered to have numerous properties.

Conductive Fabrics – touch screen gloves	Fire-retardant fabrics – furniture, furnishings, firefighter clothing.	
Kevlar – racing tyres and bullet proof vests	Microfibres – winter clothes and cleaning cloths	Microencapsulation – sports clothing and scratch and sniff perfume samples

#### F. Textiles

Textile materials can be found natural or can be formed synthetically

Natural – come from plants or animals	Synthetic – come from coal or oil
Cotton (plant)	Polyester
Wool (animal)	Polyamide (nylon)
Silk (animal)	Elastane

#### Blended – a mixture of fibres that combines and improves properties

Polycotton	Kevlar	Sympatex
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## Year 10 PRODUCT DESIGN Term 6



### What we are learning this term:

- A. Modern Materials      C. Polymers      E. Technical Textiles  
 B. Smart Materials      D. Composite Materials      F. Textiles

#### A. Modern Materials

A modern material is a material that has been engineered to have improved properties.

Type	Properties	Common Uses
Graphene		
Metal Foams		
Titanium		

#### B. Smart Materials

Materials that exhibit a physical change in response to some external stimuli and change back once that stimuli has been removed.


#### C. Polymers – come from crude oil

Thermoforming can be heated and formed repeatedly, thermosetting can only be formed once

Thermoforming (pliable, recyclable)	Thermosetting (good insulators)

#### D. Composite Materials

A composite material is a mixture of two or more materials to enhance properties.

Fibre-based	Materials	Common Uses
Particle-based	Materials	Common Uses
Sheet-based composite materials – look back to Term 4 – Manufactured Boards		

#### E. Technical Textiles

Modern textiles can be engineered to have numerous properties.






#### F. Textiles

Textile materials can be found natural or can be formed synthetically

Natural – come from plants or animals	Synthetic – come from coal or oil
Blended – a mixture of fibres that combines and improves properties	





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			Intellectual Development (I) 	
9-18 years			Emotional Development (E) 	
19-45 years			Social Development (S) 	
46-65 years				
65+ years				

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>Adolescence and adulthood</u></b>  <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. How do humans develop socially (S)?	
		Life Stage	Types of relationships and social development
Adolescence  		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>
Early and Middle Adulthood  		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 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>
Later adulthood  		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	<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
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	
Genetic disorders	
Lifestyle Choices	
Appearance	
Factor	
Gender role	
Culture	
Role models	
Social Isolation	
Material possessions	
Economic	

I.	How do physical factors affect development?	
	<u>Genetic Disorders</u>	<u>Disease and Illness</u>
Physical Development		
Intellectual Development		
Emotional Development		
Social Development		

J.	How does lifestyle affect development?	
Lifestyle choices include; diet, exercise, alcohol, smoking, sexual relationships and illegal drugs, appearance.		
<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>
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		
<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.



**What we are learning this term:**

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

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

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

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

<u>Positive affects of a persons culture/religion:</u>	<u>Negative affects of a persons culture/religion:</u>
•	•
•	•

**Community** refers to:

<u>Belonging to a community:</u>	<u>Not belonging to a community:</u>
•	•
•	•
•	•
•	•
•	•

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

What happens when people face discrimination because of gender:

- 
- 
- 
- 

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

1	
2	
3	
4	
5	
6	
7	

**M How do economic factors affect development**

Having enough money....	Not having enough money .....
•	•
•	•
→	
Having enough money means that....	Not having enough money can mean that...
•	•
•	•
→	
Elderly people rely on state pension to live which is not enough and have to cut down on travel, shopping, bills, therefore it speeds their aging process and lead to health decline.	
<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 that 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 an 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>	
N. What are life events? O. How do people deal with life events? P. How is dealing with life events supported?	
<b>N.</b>	<b>What are life events?</b>
Life Events	
Expected Life Events	
Unexpected Life Events	
Physical Events	
Relationship Changes	
Life Circumstances	

<b>O.</b>	<b>How do people deal with life events?</b>
Individual	
Factors	
Adapting	
Resilience	
Time	

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