

# 100% book - Year 11 Mainstream

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



## Term 3

### Swindon Academy 2022-23

Name:	
Tutor Group:	
Tutor & Room:	

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

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

# 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. The main area displays a 'New 7 Year 1 Science Lessons: Year 7 CP Pack' with various lesson cards for topics like 'What is particle theory?', 'What is the law of conservation of mass?', and 'What are the different states of matter?'. Each card includes a brief description and a small diagram.

## Step 2

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

This image shows a printed knowledge organiser for 'Particle theory'. It includes sections for 'What is particle theory?', 'What is the law of conservation of mass?', and 'What are the different changes of state?'. A handwritten date '29th May 2020' and the title 'Particle theory' are written at the top. Below the text, there are diagrams for 'Solid', 'Liquid', and 'Gas' showing particle arrangements, and a phase change diagram with arrows indicating 'Gaining energy' (melting, evaporation, boiling) and 'Losing energy' (freezing, condensation, cooling).

## 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 showing the definition of 'Solid' repeated three times: 'Solid = regular pattern particles vibrate in fixed position'.

## Step 5

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

This image shows a 'quizzable' version of the knowledge organiser. It has a similar layout to the previous one but with some text boxes for answers. Handwritten answers include 'Self quizzing' for the title, 'Arrangement/movement of matter' for the definition, and 'Solid = regular pattern pa' for the solid state description. There are also empty boxes for 'Liquid = ' and 'Gas = '.

## Step 6

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

Handwritten notes on lined paper, similar to Step 3, but with corrections and checkmarks. The definition of 'Particle theory' is checked. The solid state definition is checked. The liquid state definition is corrected from 'are still touching each other' to 'are still touching each other' (with a checkmark). The gas state definition is corrected from 'are arranged randomly' to 'are far apart and are arranged randomly' (with a checkmark).

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

# ENGLISH –Poetry cluster 2: Conflict – Sets 2-5

Key Vocabulary		Poem	Context	Message	Form/ structure
<b>Patriotism</b>	Being devoted to your country	<b>Charge of the Light Brigade</b>  <b>Alfred Lord Tennyson.</b>	<ul style="list-style-type: none"> <li>Alfred Tennyson, 1st Baron Tennyson 1809-1892. He was the Poet Laureate during much of Queen Victoria's reign</li> <li>The Charge of the Light Brigade was a charge of British cavalry led by Lord Cardigan against Russian forces during the Battle of Balaclava on 25th October 1854 in the Crimean War</li> </ul>	<ul style="list-style-type: none"> <li>Tennyson glorifies war. He focuses on the heroism of the soldiers as opposed to the tragedy of their death. Instead of mourning the soldiers, Tennyson celebrates the soldier's loss of life as an act of patriotism but ignores the true horror of war.</li> <li>Tennyson's poem may also be a tribute to the Light Brigades heroism because he celebrates the selflessness and courage of the soldiers who gave their lives in the war. He focuses on the heroism, bravery and loyalty of the British soldiers and how they should be honoured.</li> </ul>	<ul style="list-style-type: none"> <li>Written in ballad form - sung to help people remember it.</li> <li>It is written in dactylic dimeter - one stressed syllable followed by two unstressed syllables.</li> <li>The DUM-de-de DUM-de-de meter mirrors the galloping hoof beats of the horses.</li> <li>Tennyson recorded himself reading the poem in 1890 and he increased the pace of his reading as he progressed through the poem. This adds energy and pace to the poem.</li> </ul>
<b>Glorify</b>	To present something as admirable and great	<b>Exposure</b>  <b>Wilfred Owen</b>	<ul style="list-style-type: none"> <li>Wilfred Owen (1893–1918) is widely regarded as one of Britain's greatest war poets.</li> <li>The First World War was a conflict that took place between 1914 and 1918, costing the lives of over nine million soldiers and seven million civilians.</li> <li>Fighting on the Western Front in World War One was typically from systems of trenches than ran for hundreds of miles.</li> <li>Large attacks were uncommon and cost thousands of lives, so there was a lot of waiting for the soldiers. Conditions in the trenches were often very poor, with little shelter.</li> </ul>	<ul style="list-style-type: none"> <li>Instead of describing the horrors of battle, Owen describes the eerie calm of a night in the trenches. The true enemy of the poem is the weather that causes endless suffering. The soldiers in the trenches are exposed to the relentless elements.</li> <li>Owen's message is that the soldiers are suffering in the trenches as a result of the brutal conditions. They are being bombarded by relentless weather which causes them pain and suffering. Owen presents this consistent struggle as the overlooked danger of trench warfare. This suffering is unescapable and futile as the soldiers are forced to stay awake in the cold and wait for a battle that never comes.</li> </ul>	<ul style="list-style-type: none"> <li>On a surface level, it seems to have order – 8 stanzas with 4 long lines and 1 short one. This may represent the same slow, unending pattern of the lives of the soldiers.</li> <li>There is irregular rhythm and laboured rhyme scheme – no set pattern to syllables in lines. This may represent the war effort – on the outside, it appeared coordinated and assembled, but to the soldiers on the inside, it was directionless and disjointed.</li> </ul>
<b>Disillusionment</b>	A feeling of disappointment when discovering that something is not as good as one believed it to be	<b>Bayonet Charge</b>  <b>Ted Hughes</b>	<ul style="list-style-type: none"> <li>Ted Hughes was born in 1930 and died in 1998. He grew up in the countryside in Yorkshire. He was passionate about animals and nature. He was the poet laureate between 1994-1998</li> <li>His father served in WW1 and came back emotionally traumatised. Hughes respected Wilfred Owen. Hughes writes about a war that he did not experience to mirror Owen. Bayonet Charge has many similarities to Owen's poem Spring Offensive.</li> <li>Hughes said that Owen's poetry made him feel closer to his father and his father's experiences</li> </ul>	<ul style="list-style-type: none"> <li>Hughes suggests war is horrific. It is physically and mentally devastating and is so awful it can't be described. War has the power to destroy empathy and our sense of self. The issue of propaganda is highlighted by Hughes as cruel and misleading.</li> <li>Conflict is presented as pointless and repetitive; we do not learn from previous conflicts or avoid making the same mistakes.</li> <li>He also suggests that conflict, and the actions of humans, destroys nature. Our actions are selfish, and we do not consider the damage we are causing.</li> </ul>	<ul style="list-style-type: none"> <li>Starts in media res – we sense the soldier's confusion and disorientation as he is sent in to action.</li> <li>Enjambment and caesura used to create those same feelings for the reader.</li> <li>Repetition of 'raw' - several connotations such as raw meat hanging in a butchers (like the soldiers' bodies dead on the battlefield) / a painful wound (a result of violence/an injury) can feel raw / new and lacking in experience (like the soldiers)</li> </ul>
<b>Exposure</b>	Being unprotected against risk or danger	<b>Poppies</b>  <b>Jane Weir</b>	<ul style="list-style-type: none"> <li>Jane Weir was born in Manchester in 1963 and lived on a council estate. She is textile designer, writer and poet.</li> <li>She wrote the poem Poppies as she was commissioned to write a contemporary war poem as part of a collection in 2009. The collection was published in The Guardian as a response to the escalating conflict in Afghanistan and the Iraq Enquiry.</li> </ul>	<ul style="list-style-type: none"> <li>In Weir's poem, Poppies, conflict is presented as causing trauma. The poem deals with a mother's loss of her son to war and the void that this leaves. Weir compares the mundane of the domestic sphere to going to war in order to highlight how the loss of the son effects the family unit, especially the mother.</li> <li>Throughout the poem, the speaker deals with the realities of war. The speaker highlights a parent's worst fear; the death of their child. The speaker addresses both the death of her child in war, as well as the inner conflict of holding onto your child or letting them become more independent.</li> </ul>	<ul style="list-style-type: none"> <li>No regular rhyme/ free verse – lack of this creates lack of rhythm and therefore makes this sounds like a stream of consciousness or monologue.</li> <li>Enjambement – joins two stanzas together, but there is a break in the middle, reflective of the broken mother when her son leaves.</li> <li>Caesura – makes the reader pause, highlighting the fractured mind of the mother in the poem.</li> </ul>
<b>Relentless</b>	When something harsh and severe will not stop	<b>War Photographer</b>  <b>Carol Ann Duffy</b>	<ul style="list-style-type: none"> <li>Carol Ann Duffy was born December 23, 1955, in Glasgow, Scotland. She is a British poet whose well-known and well-liked poetry engages in topics such as gender and oppression. From 2009–19, she served as the first woman poet laureate of Great Britain.</li> <li>Duffy was inspired to write this poem by her friendship with a war photographer: Don McCullin. She was especially intrigued by the peculiar challenge faced by these people whose job requires them to record terrible, horrific events without being able to directly help their subjects.</li> </ul>	<ul style="list-style-type: none"> <li>Duffy wants to show how our sympathy is short-lived. She highlights the consequences of regularly seeing war images: we become desensitised. Humans are presented as lacking empathy and being selfish: if they are not directly affected by a conflict, they don't care about it.</li> <li>Duffy presents warzones as horrific places to live and reminds us that it is not only soldiers who die in conflicts, but civilians also suffer. She makes a point of showing that the most vulnerable people are at risk – children should be protected and safe, but she shows the terrors they can face when caught up in war and reminds us that people lose loved ones and can do nothing to save them.</li> </ul>	<ul style="list-style-type: none"> <li>The poem is laid out in four regular six-line stanzas, with each stanza ending in a rhyming couplet.</li> <li>This structure is interesting since its very rigid order contrasts with the chaotic, disturbing images described in the poem. This organisation mirrors the actions of the photographer, who lays out his films in ordered rows, as though in doing so he can in some way help to restore order to this chaotic world.</li> <li>The poem moves through a series of observations in the first three stanzas to a conclusion of sorts in the fourth.</li> </ul>
<b>Apathetic</b>	Feeling no interest, enthusiasm or concern				
<b>Nostalgia</b>	A warm feeling for the past, particularly a very happy time				
<b>Obedience</b>	Doing as you are told				

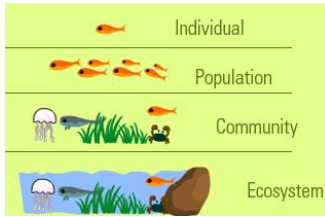
# ENGLISH –Poetry cluster 2: Conflict- Sets 2-5

Key Vocabulary	
Patriotism	
Glorify	
Disillusionment	
Exposure	
Relentless	
Apathetic	
Nostalgia	
Obedience	

Poem	Context	Message	Form/ structure
Charge of the Light Brigade Alfred Lord Tennyson.			
Exposure Wilfred Owen			
Bayonet Charge Ted Hughes			
Poppies Jane Weir			
War Photographer Carol Ann Duffy			

## Ecosystems

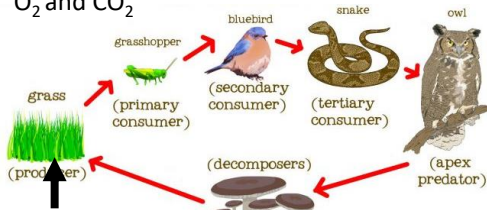
An ecosystem is all the living organisms within an area (community) plus the physical habitat



## Interdependence

Organisms rely on each other for...

- Food
- Shelter / nesting sites
- Seed dispersal
- O<sub>2</sub> and CO<sub>2</sub>



photosynthesis

## Competition

Competition between organism occurs when resources within an ecosystem are limited.

Animals and plants compete for different resources.

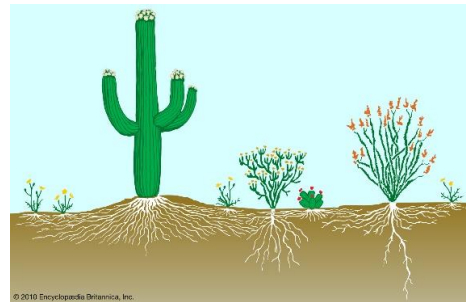
Plants	Animals
Light	Food
Space	Mates
Minerals ions	Territory
Water	

## Biotic and Abiotic Factors

Factors that affect the number of organisms

Biotic – living	Abiotic – non-living
<ul style="list-style-type: none"> <li>• availability of food</li> <li>• new predators arriving</li> <li>• new pathogens</li> <li>• one species outcompeting another so the numbers are no longer sufficient to breed.</li> </ul>	<ul style="list-style-type: none"> <li>• light intensity</li> <li>• temperature</li> <li>• moisture levels</li> <li>• soil pH and mineral content</li> <li>• wind intensity and direction</li> <li>• carbon dioxide levels for plants</li> <li>• oxygen levels for aquatic animals.</li> </ul>

## Plant adaptations



Plants in desert areas have :

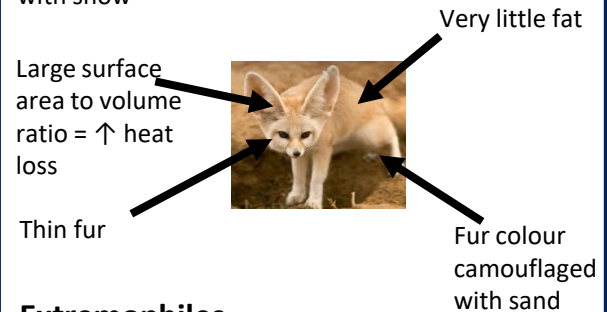
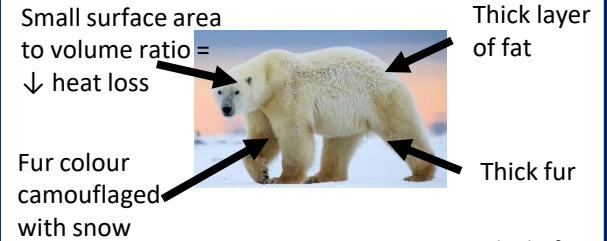
- deep roots to maximise water uptake
- thin/no leaves to minimise water loss
- Spines to stop them being eaten

## Animal Adaptations



Can be:

- Structural – a feature of the organism's body (e.g. thick fur, bright colours, camouflage)
- Behavioural – responses from the organism (e.g. hibernation, migration, huddling together)
- Functional – a body process (e.g. camel breaking down hump of fat into water, producing little urine)



## Extremophiles

Extremophiles are organisms that live in extreme environments.

Extreme environments = high temperatures, high pressure or high salt concentration.

E.g. bacteria living in deep sea vents = extremophiles.

## Science T3 Y11 B5.16 Mainstream Adaptations, interdependence, and competition

1. What is a community?

2. What is an ecosystem?

3. Give two things that animals rely on plants for

4. Give two things that plants rely on animals for

5. What is the term given to the predator at the very top of a food chain?

6. Why are green plants known as producers?

7. Name two resources plants compete for

8. Name two resources animals compete for

1. Name two biotic factors that can affect organisms within a habitat

2. What does the term 'abiotic' mean?

3. Name two abiotic factors

4. Why do some plants have spines instead of leaves?

5. Name two ways plants are adapted for living in desert climates.

1. Name the three types of adaptations

2. Name one behavioural adaptation

3. How are animals adapted to live in cold climates?

4. What are extremophiles?

5. What is the surface area : volume ratio like on desert animals?

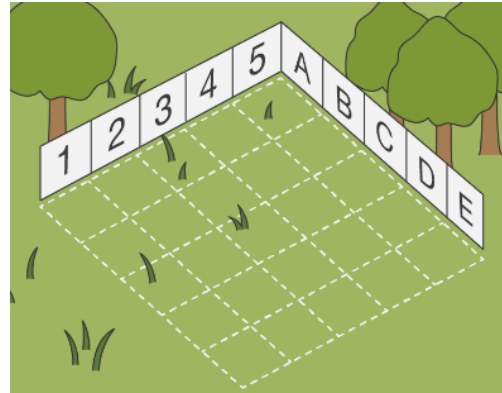
6. Give an example of an extremophile

# Science T3 Y11 B5.16 Mainstream Adaptations, interdependence, and competition

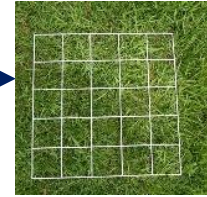
## Required practical – Estimating Populations (Measuring abundance)

1. Calculate area of site.
2. Divide site up into a numbered grid
3. Use a random number generator to pick coordinates.
4. Randomly throw the 0.25m<sup>2</sup> quadrat at those coordinates.
5. Count the number of particular organism in the quadrat.
6. Repeat steps 3-5 **ten times (minimum)**.
7. Calculate mean number of organism.
8. Calculate estimated number organism in site using the following equation:

$$\frac{\text{area of site}}{\text{area of quadrat}} \times \text{mean}$$

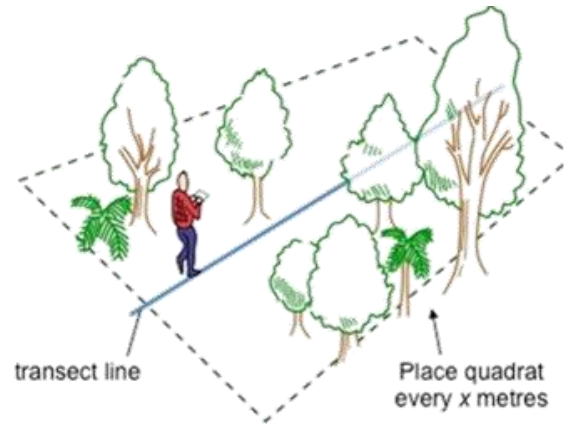
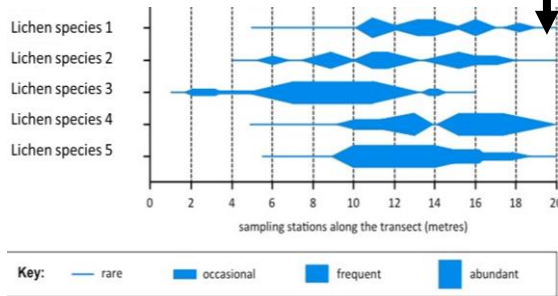


a quadrat →



## Required Practical – How populations may change over a distance (Measuring distribution)

1. Place tape measure (a transect line) through ecosystem being investigated.
2. Place quadrat at regular, random intervals along the transect line and count the number of particular organisms.
3. Draw a distribution graph of your results. (They might look like this.)

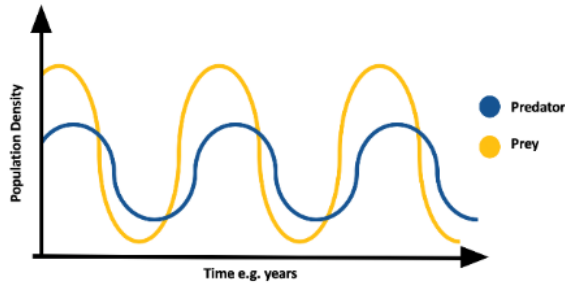


1. What is the minimum number of times the organism should be counted when estimating population size?
2. What is a quadrat?
3. What is the equation used to estimate population size?
4. How can you ensure the quadrat is randomly placed throughout the site?

1. What is a transect line?
2. What is a transect line used to investigate?
3. How is the quadrat placed?



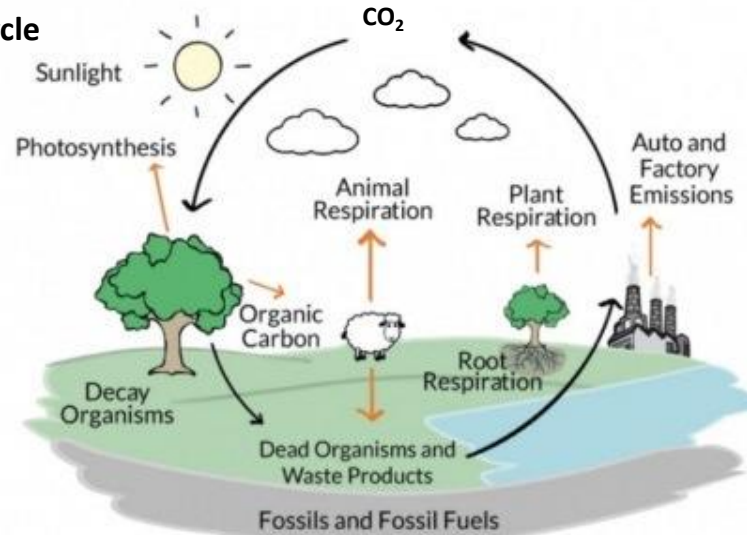
### Predator-Prey Relationships



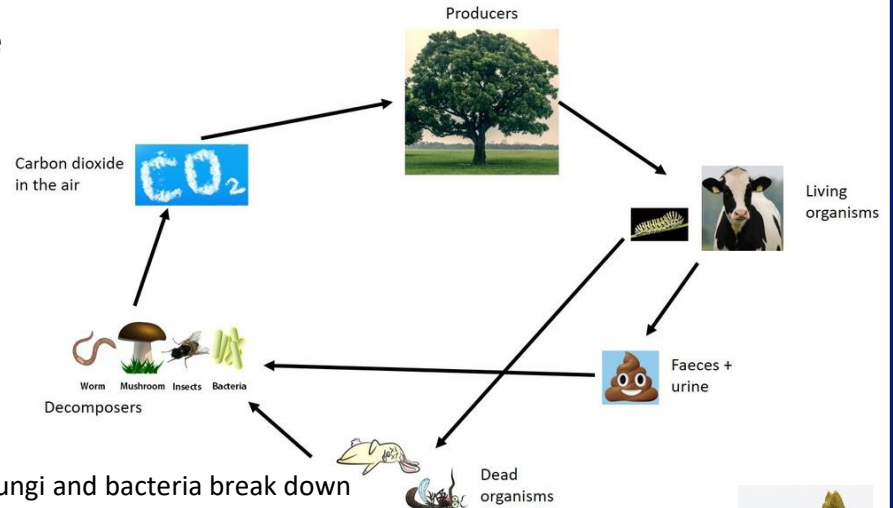
Population increases and decreases follow similar pattern in a cycle because they affect each other – more prey = more food for predator.

However predator and prey not 'in phase', e.g. predator population changes are delayed as it takes time for the predator population to grow.

### The Carbon Cycle

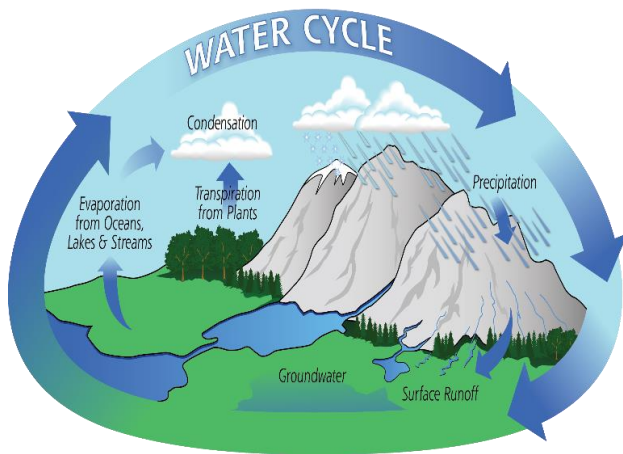


### The Decay Cycle



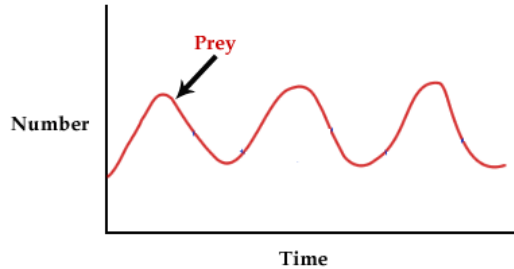
Microbes such as fungi and bacteria break down dead or dying material. This returns carbon to the atmosphere as carbon dioxide and mineral ions to the soil.

### The Water Cycle



## Science T3 Y11 B5.17 Mainstream – Organising an ecosystem

1. Sketch the line to show how the predator population would change on the graph below



1. Which process takes carbon into plants?
2. What do plants make with the carbon (and water)
3. Name 2 process that releases carbon into the atmosphere as carbon dioxide.
4. What happens to carbon that gets trapped deep underground for millions of years?

1. What are the main stages in the water cycle?

1. Which types of microbes cause decay?
2. What can decay release into the environment?

# Science T3 Y11 B5.18 Mainstream Biodiversity and ecosystems

## Biodiversity

Biodiversity is a measure of the variety of different organisms living in an area/ecosystem.

## Human Impact on Biodiversity

Waste management	Rapid growth in the human population = more resources are used and more waste is produced – this contributes to pollution. Can occur in water, in air and on land.
Land Use	Humans reduce the amount of land available for other animals and plants by building, quarrying, farming, dumping waste and the destruction of peat bogs.
Deforestation	In tropical areas it has occurred to provide land for cattle and rice fields or grow crops for biofuels.
Global Warming	Levels of carbon dioxide, methane and water vapour in the atmosphere are increasing, and contribute to 'global warming'. This can cause sea level rises, flooding, changes in species distribution, changes in migration patterns.

## Maintaining Biodiversity

- breeding programmes for endangered species
- protection of rare habitats
- reintroduction of hedgerows
- reduction of deforestation and CO<sub>2</sub> emissions
- increased recycling to avoid landfill

## Water pollution

- Fertilisers: nitrates from fertilisers are easily washed from the soil into stream, lakes and river.
- Untreated sewage: contains high levels of nitrates and can be washed into rivers or pumped into the sea.
- Toxic chemicals: from landfill sites can also be washed into waterways.

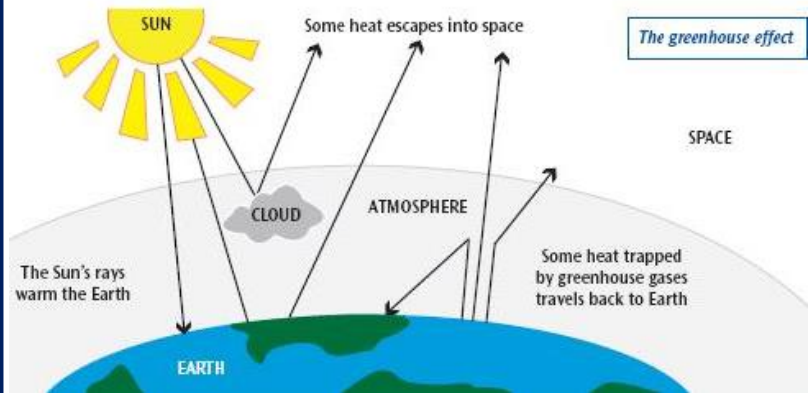
## Land pollution

- Household waste: toxic chemicals from landfill sites can leak into the soil.
- Industrial waste: toxic chemicals from industrial process can poison large areas.
- Agricultural waste: pesticides and herbicides get into the soil and can be washed into streams and rivers. They can also become part of the food chain and be passed up the food chain causing dangerous levels in the top predators (bioaccumulation).

## Air pollution

- Acid rain: sulphur dioxide and nitrogen dioxides dissolve in rain turning it acidic.
- Smog: a haze caused by smoke particles and acidic gases.
- Smoke pollution: particulates (tiny solid particles) reflect the sunlight causing global dimming.

## The greenhouse effect



1. What is biodiversity ?

1. What is the impact of waste management on biodiversity?
2. What is the impact land use on biodiversity?
3. What is the impact of deforestation biodiversity?
4. What is the impact of global warming on biodiversity?

1. How is biodiversity maintained?

1. Give three causes of water pollution?

1. Give three causes of land pollution?

1. Give three examples of air pollution?

1. What is the greenhouse effect?

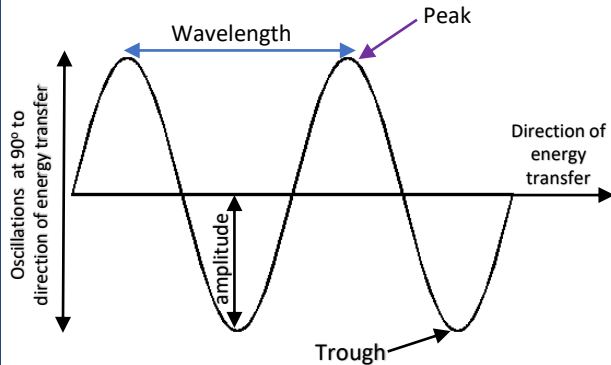
# Science T3 Y11 P4.12 Mainstream Wave Properties

## Transverse Waves

- Oscillations (vibrations) **perpendicular** to direction of energy transfer.

### Examples:

- Electromagnetic waves
- Ripples on water.

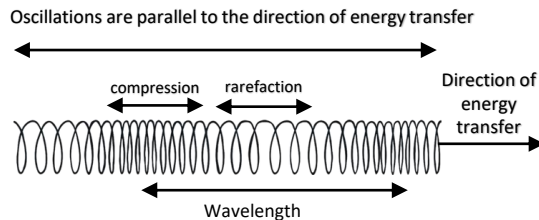


## Longitudinal Waves

- Oscillations (vibrations) are **parallel** to direction of energy transfer.

### Examples:

- Sound waves



Sound waves have areas of compression and rarefaction.

Compression = particles pushed closer together

Rarefaction = particles are further apart

## Properties of Waves

**Amplitude** – maximum displacement from undisturbed position.

**Wavelength** – distance from a point on one wave to the equivalent point on the next wave.

**Frequency** – number of waves passing a point each second.  
Frequency is measured in Hertz (Hz)  
1Hz = 1 wave per second.

**Wave speed** – the speed at which energy is transferred through a medium.

$$v = f \times \lambda$$

You need to memorise

↑                      ↑                      ↑

wave speed      frequency      wavelength

(m/s)              (Hz)              (m)

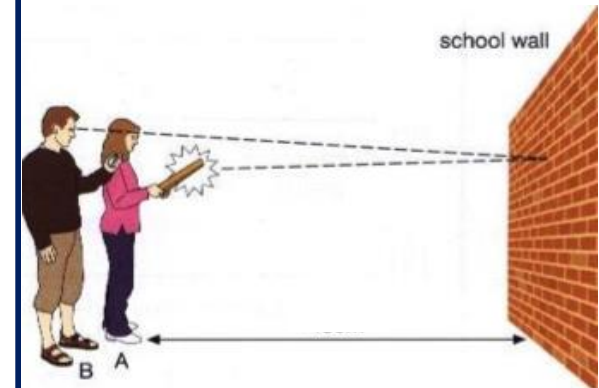
## Measuring speed of sound waves in air

- Stand 50m from a large flat wall.
- One person claps/bangs bricks
- Measure time taken to hear the echo.
- Calculate speed of sound using:

$$\text{Speed} = \text{distance} \times \text{time}$$

- Remember distance is double (in this case, 100m) as it travels to the wall and back.
- Take several measurements and calculate the mean to reduce error.

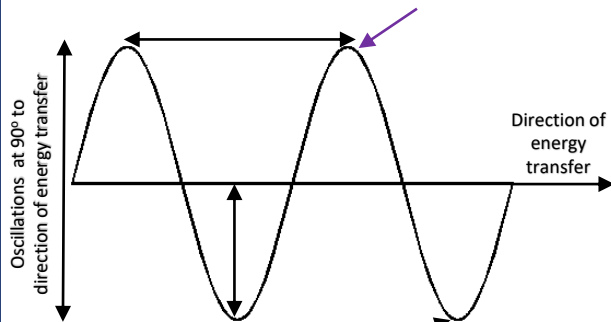
This is unlikely to produce an accurate value for sound in air (330 m/s) as the reaction time of the person operating the stopwatch is likely to be a significant proportion of the time measurement.



## Science T3 Y11 P4.12 Mainstream Wave Properties

1. How are transverse waves produced?

2. Label the wave features below.



1. Describe a longitudinal wave

2. Give an example of a longitudinal wave.

3. Label an area of compression and rarefaction in the diagram below



1. Define the following:

Amplitude

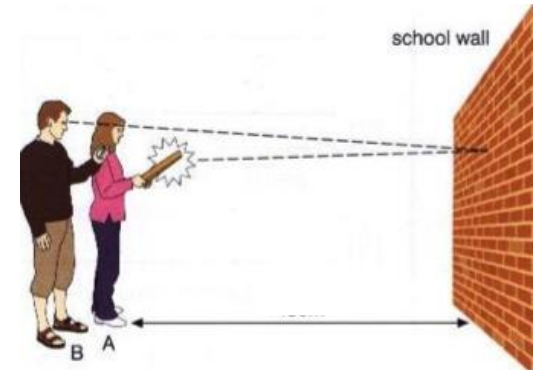
Wavelength

Frequency

2. What are the units for frequency?

3. What is the equation linking frequency, speed and wavelength?

1. Describe a method to investigate the speed of sound waves in air.



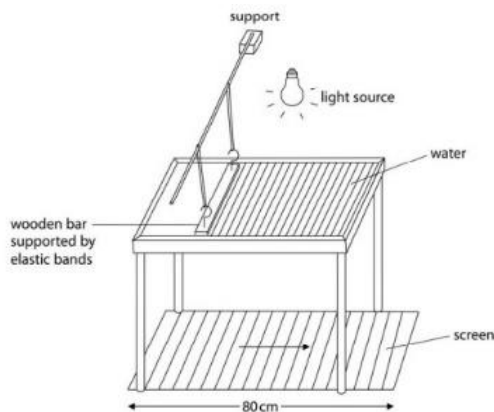
2. What is the biggest source of error in this investigation?

3. What is the speed of sound in air?

## Measuring waves in a liquid

### Equipment

- Ripple tank
- Measuring ruler
- Stop watch



### Method

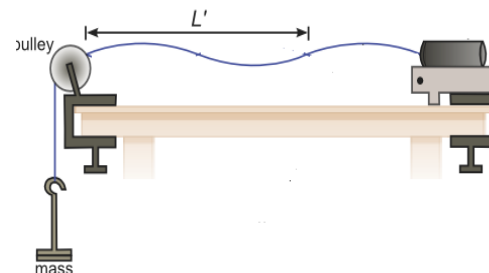
1. Set up the equipment as shown and turn on the motor to produce low frequency waves so that they are able to be counted.
2. Adjust the lamp until pattern is seen clearly on white screen underneath
3. Use a ruler to measure the length of a number of waves (e.g 10) and divide the length by the number of waves to give wavelength. This improves the accuracy of the measurement.
4. Record the waves using a camera or mobile phone. Count the number of waves passing a point in 10 seconds using a stopwatch and slowing the recording down.
5. Divide the number of waves counted by the time to give frequency.
6. Use  $v = f \times \lambda$  to calculate the wave speed. Repeat for different frequencies of the motor.

Exp	Length of 10 waves (cm)	Wavelength of 1 wave (cm)	Number of waves in 10 s	Frequency (Hz)	Speed (cm/s)
1	65	0.65	121	12.1	7.9
2	50	0.5	155	15.5	7.9
3	42	0.42	187	18.7	7.9

## Measuring waves in a solid

### Equipment

- string, vibration generator, hanging mass set and pulley



### Method

1. Set up the equipment as shown.
2. Turn on the vibration generator
3. Adjust the length of the string until a standing wave is achieved
4. The frequency can be read from the vibration generator
5. Measure as many complete waves as possible using a ruler
6. Divide the length by the number of waves to give wavelength
7. Calculate speed using  $v = f \times \lambda$

### Conclusion:

In both experiments, when you increase the frequency, the wavelength decreases – the speed remains the same in the same medium

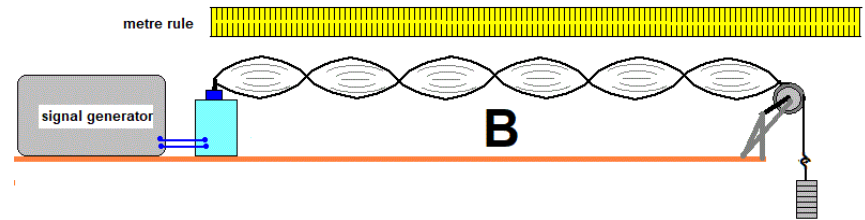
**Science T3 Y11 P4.12 Mainstream Wave Properties Required Practical – investigating wave in a solid and a ripple tank**

1. Complete the table below to explain the method in calculating the speed of waves in a ripple tank.

Step	Reason
Fill the ripple tank with water, switch on a lamp and place white card underneath the tank.	
Switch on the motor and adjust it to give low frequency waves	
Place a stopwatch next to the card and record the waves, with the stopwatch in view for 10 seconds	
Play the recording in slow motion, count the number of waves passing a certain point and divide this by 10	
Measure the length of 10 waves by taking a picture of the card with a ruler on it.	
Divide the length by 10	

2. If the length of 10 waves is 55cm, what is the wavelength of 1 wave?
3. If there are 210 waves in 10 seconds, what is the frequency?

1. When investigating waves produced by a vibration generator on a string, how do we know the frequency?

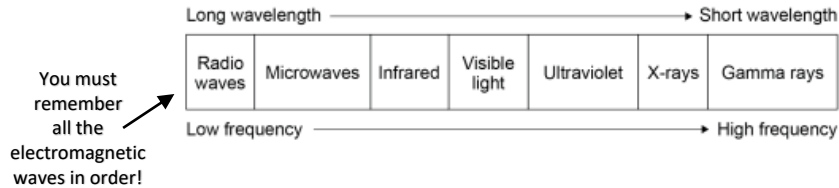


2. How many complete waves are shown in the image above?
3. If the length from the generator to the pulley was measured at 66 cm, what is the wavelength?
4. Why is it better to measure multiple waves and divide to find wavelength rather than measure one single wave?
5. What happens to wavelength when frequency increases?
6. What happens to wavelength when frequency decreases?

# Science T3 Y11 P4.13 Mainstream Electromagnetic waves

## The Electromagnetic Spectrum

- All **transverse waves**
- Transfer energy from the source of waves to an absorber.
- All travel at the same **velocity** through a vacuum or air – **speed of light**.
- Speed of light = 300,000,000 m/s

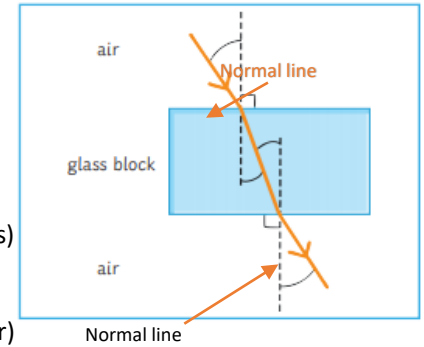


Wave	Use	Other information
Radio waves	Television and radio	Easily transmitted through the air. Harmless if absorbed by the body.
Microwaves	Satellite communications and cooking food	Can be harmful when internal body cells become heated by over exposure.
Infrared	Electrical heaters, cooking food and infrared cameras	Can cause burns to skin
Visible light	Fibre optic communications	Only EM wave detectable by human eye.
Ultraviolet	Energy efficient lamps, sun tanning	Causes skin tanning and can lead to burns or <b>skin cancer</b> .
X-rays	Medical imaging and airport security scanners.	Very little energy is absorbed by body tissues. Passes through the body.
Gamma rays	Sterilising medical equipment or food and treatment for some cancers.	They can lead to gene mutation and cancer.

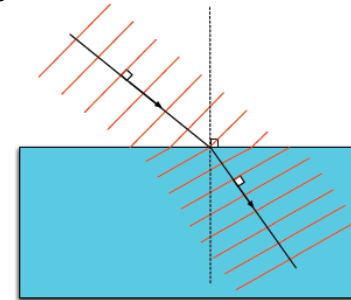
1. State two properties of electromagnetic waves.
2. Write the EM spectrum in order of **increasing** wavelength
3. Write the EM spectrum in order of **increasing** frequency
4. How fast do electromagnetic waves travel?
5. State the uses of:
  - a) radio waves
  - b) microwaves
  - c) infrared
  - d) visible light
  - e) ultraviolet
  - f) x-rays
  - g) gamma rays

## Ray diagrams

- You need to construct **ray diagrams** to show how a wave is **refracted** at the boundary of a different medium.
- Less dense → More dense (e.g. air to glass)
- Ray **slows down** and bends **towards the normal line**.
- More dense → Less dense (e.g. glass to air)
- Ray **speeds up** and bends **away from the normal line**.



The ray bends because different parts of the wavefront cross the boundary at slightly different times –



If wave hits medium at an angle of 90° then the ray will slow down but will not be refracted.

1. What happens when a ray goes from a less dense → more dense medium?
2. What happens when a ray moves from a more dense → less dense medium?
3. What is the line at 90° to a surface called?
4. What happens if a ray hits a medium at 90°?

1. What type of current do radio waves create when absorbed?
2. What is the frequency of the current produced by a radio wave of frequency 250Hz?



### Aim

Investigate how the amount of infrared radiation **emitted** (given out) by a surface depends on the nature of that surface.

In this investigation you are finding out which type of surface emits the most infrared radiation:

- **Dark and matt**
- **Dark and shiny**
- **Light and matt**
- **Light and shiny**

### Method

1. Place **Leslie cube** on a heat proof mat.
2. Once the kettle has boiled, fill the Leslie cube with water.
3. Hold the infrared thermometer 5cm from the first surface
4. Record the temperature
5. Repeat the experiment three times on each surface and calculate mean for each surface.

**Independent variable:** surface

**Dependent variable:** temperature of the air (infrared radiation emitted)

**Control variables:** Temperature of the water inside, the distance between the cube surface and the infrared thermometer



In this investigation you are finding out which type of surface absorbs the most infrared radiation:



### Method

1. Fill a black and a silver can with water from the tap.
2. Take the temperature of the water in each can
3. Place the infrared thermometer 5cm from the cans
4. Leave for at least 10 minutes
5. Record the temperature of the water in each can and calculate the rise in temperature

**Independent variable:** surface of the can

**Dependent variable:** Temperature increase of the water (infrared radiation absorbed)

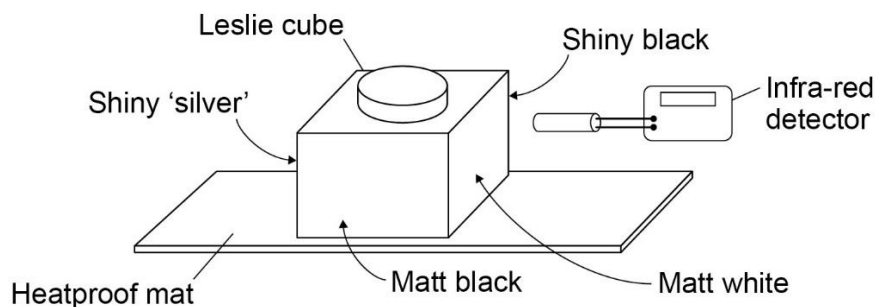
**Control variables:** Temperature of the water inside, the distance between the cube surface and the infrared thermometer

### Conclusion

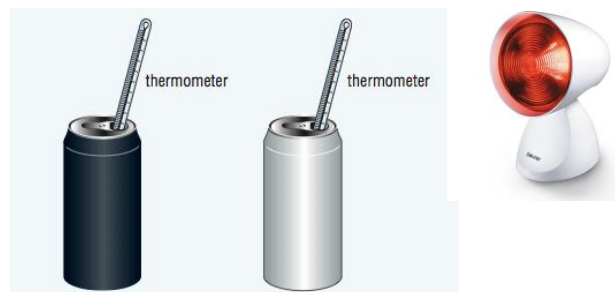
Black matt surfaces absorb and emit the most infrared radiation.

White/silver and shiny surfaces are poor emitters and poor absorbers of infrared radiation

1. Describe how you could use the equipment below to investigate the emission of infrared by different surfaces.



1. A student was investigating the amount of infrared radiation absorbed by water in cans with different surfaces.



Name the...

Independent variable:

Dependent variable :

Control variables :

2. What kind of surfaces are the best emitters of infrared radiation?

3. Why does the water in the silver can heat up less than the black can?

## Magnets

- Have two poles - **north** and **south**.



- **Like poles** will **repel** each other (e.g. N-N or S-S)
- **Opposite poles** will **attract** (e.g. N-S)
- Magnetism is a **non-contact** force – magnets do not need to be touching for effect to be observed.

**Magnetic materials:** only **iron/steel, cobalt** and **nickel** are magnetic.

## Types of magnets

### Permanent magnet

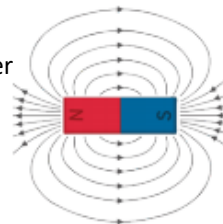
- Produces its own magnetic field.
- Magnetism cannot be turned on or off.

### Induced magnet

- Induced magnet = a material which becomes magnetic when placed in a magnetic field.
- Induced magnets only attract other materials and lose magnetism when removed from the magnetic field.

## Magnetic Fields

**Magnetic field** = the area surrounding a magnet where the force will act on another magnet or magnetic material.



- Magnet field is strongest at the **poles** where the field lines are **closest together**.

- Field lines always go away from **magnetic north** and towards **magnetic south**.

## Earth's Magnetic Field

- Earth produces a magnetic field.
- Magnetic compasses use this to help navigation.
- The core of the Earth is made of **iron** (magnetic).

## Types of magnets

### Permanent magnet

- Produces its own magnetic field.
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### Induced magnet

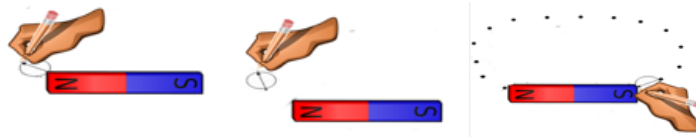
- Induced magnet = a material which becomes magnetic when placed in a magnetic field.
- Induced magnets only attract other materials and lose magnetism when removed from the magnetic field.

## Plotting Magnetic Field Lines

A magnetic compass can be used to plot and draw the magnetic field lines around a magnet.

**You need to be able to describe this method!**

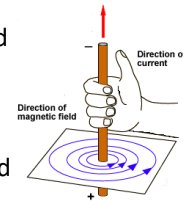
1. Place the bar magnetic in centre of paper.
2. Place a plotting compass at one end of the magnet.
3. Put a pencil dot at the place the compass arrow is pointing to
4. Move the compass to line up the tail of the compass needle to the dot you just made.
5. Repeat until you reach the other end of the magnet



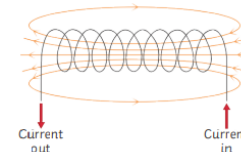
6. Join the dots using a line – this is the magnetic field line. Mark on the direction the arrow pointed – it should run **N→S**

## Electromagnetism

- When a current passes through a wire, a **magnetic field** is produced
- The direction of the field can be found by the right hand thumb rule
- curl the fingers of the right hand around the wire and point the thumb in the direction of the current (+ to -)
- The direction of the circular field is shown by the fingers
- Strength of magnet can be increased by increasing the current
- When the current is switched off, the magnetic field is lost



Coiling the wire will form a **solenoid**.



To increase strength of magnetic field around a solenoid you can:

- Add an **iron core**
- **Increase number of turns** in coil
- **Increase the current** passing through wire

## Electromagnets

- Electromagnet is a solenoid with an iron core.
- Are **induced magnets** (can be turned on and off)

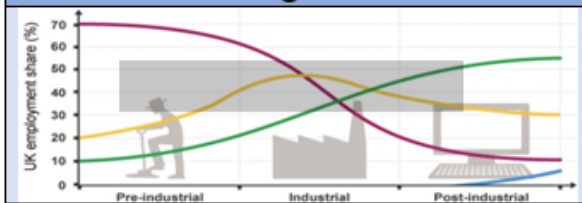
Uses = electric motors, loudspeakers, electric bells, scrapyards.

## Science T3 Y11 P4.15 Mainstream Electromagnetism

<ol style="list-style-type: none"><li>1. Name the two poles on a magnet.</li><li>2. What will like poles do?</li><li>3. What will opposite poles do?</li><li>4. Why is magnetism a 'non-contact' force?</li><li>5. Which metals are magnetic?</li></ol>	<ol style="list-style-type: none"><li>1. What is a magnetic field?</li><li>2. Where is the magnetic field the strongest?</li><li>3. Which direction do the field lines go?</li><li>4. Draw the magnetic field around a bar magnet.</li><li>5. What is the Earth's core made of?</li><li>6. What can the Earth's magnetic field be used for?</li></ol>	<ol style="list-style-type: none"><li>1. What is produced when a current flows through a wire?</li><li>2. How can you increase the strength of a magnetic field of a straight wire?</li><li>3. What is produced when you coil the wire?</li><li>4. How can you increase the magnetic field around a solenoid? (3 ways)</li></ol>
<ol style="list-style-type: none"><li>1. What are the two types of magnets?</li><li>2. Name two differences between these two types of magnets.</li></ol>	<ol style="list-style-type: none"><li>1. Describe a method to plot the magnetic field of a bar magnet.</li></ol>	<ol style="list-style-type: none"><li>5. What is an electromagnet?</li><li>6. What is meant by induced magnet?</li><li>7. State 2 uses of electromagnets.</li></ol>



### 1. Economic change in the UK



Primary	↘ due to mechanisation.
Secondary	↗ due to industrial revolution then ↘ due to de-industrialisation.
Tertiary	↗ due to wealth (↗ disposable income)
Quaternary	High-tech jobs including research and IT. ↗ due to government policies and the increase in technology.

#### Why has our economy changed?

De-industrialisation	The decline of a country's traditional manufacturing industry due to exhaustion of raw materials, loss of markets and competition from NEEs.
Government policies	A plan decided by a government to manage issues in a country.
Globalisation	The process which has created a more connected world; with increases in the movement of goods/people worldwide

### 2. Post industrial economy

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

### 3. Environmental impact of industry

Air and water pollution. Soil degradation.	
Releases CO <sub>2</sub> increasing the rate of global warming.	
Transport of materials is by road ↗ air pollution.	
<b>Example of modern industry being environmentally sustainable</b>	
Google	London Landscaper started 2018.
686 bikes spaces	Encourages cycling to work.
4 car spaces	< congestion/CO <sub>2</sub> emissions.
Solar panels.	Reduces fossil fuel consumption and reduces carbon footprint.
19,800 kWh	
Rooftop gardens	Urban greening. < CO <sub>2</sub> . Collects rainwater. Encourages wildlife.

### 4. Changes in the rural landscape

Population decline	Outer Hebrides (away from cities, limited opportunities).
Social changes	<ul style="list-style-type: none"> <li>↓ Declined by &gt;50% since 1901.</li> <li>↑ aging population = care issues.</li> <li>↓ Less children &gt; schools shut.</li> </ul>
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### 5. Improvements in infrastructure

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

### 6.. North-South divide

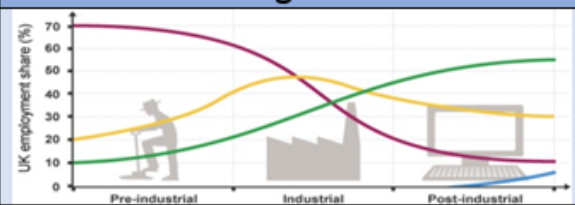
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Impacts in north	Higher unemployment / lower wages (40%) Poor health, lower life expectancy (10 yrs) Poor education. There are SOME exceptions

#### Strategies attempting to resolve regional differences

Devolving more powers	Give more power to local councils and Welsh and Scottish governments. Plan best how to use their money.
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#### Example of modern industry being environmentally sustainable

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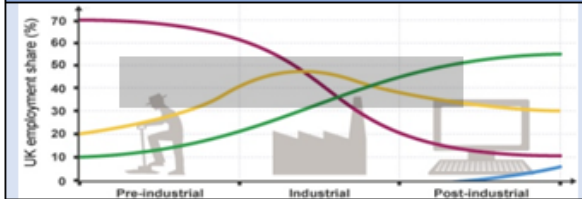
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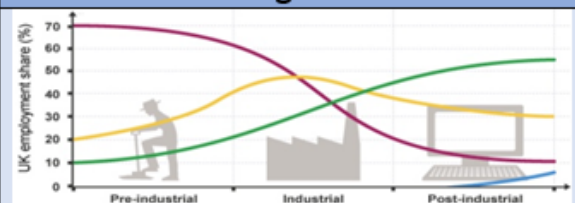
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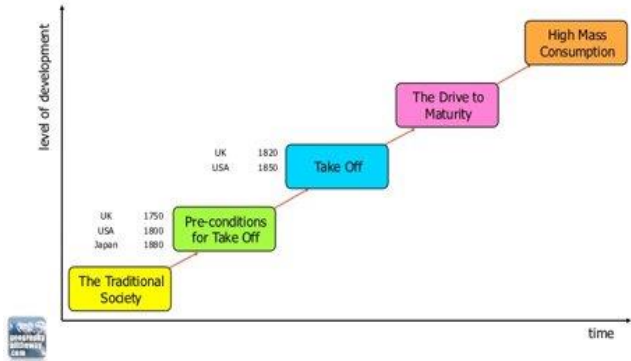
Devolving more powers	
Northern Powerhouse	
Enterprise Zones	



**Where is Rio?**

Rio de Janeiro is located in South America. It is located in south Brazil. It borders the Atlantic Ocean.

- G. Why is Rio de Janeiro a global city?**
- Until 1960 Rio was the capital of Brazil however this has not changed to Brasilia. Rio is still very important.
  - Brazil is in an Emerging Developing Country. This means that it is experiencing rapid economic growth
  - Rio is a mega-city. This means it has a population of over 10 million people.
  - The exact population of Rio is unknown however it is over 18 million.
  - Rio is the cultural capital of Brazil with an annual carnival and over 50 museums. It is also a UNESCO World Heritage Site.
  - In 2014 the world cup took place in Rio
  - In 2016 Rio hosted the Olympics.



- F. What is Rostow's model?**
- Human Influence**
- Currently Nigeria is in stage 3. This is where secondary industries dominate.
  - In the future Nigeria may develop to stage 4
  - They will do this by becoming more self-reliant by improving education.
  - This will lead to increase in tertiary employment such as nursing and IT support.

**Positive impacts of urbanisation**

- Employment opportunities in banking, finance and insurance.
- Good infrastructure (roads) which link different areas together.
- Better quality of life
- More jobs in secondary and tertiary sectors

**Year 11 OCR A Term 1 – People of the world**

- H. Where do people in Rio come from?**
- Migration accounts for 65% of urban growth in Rio de Janeiro. Largely people come from Europe, in particular Portugal because they speak Portuguese in Rio.
  - However, large numbers of people come from other parts of Brazil including the Amazon Basin because there are better jobs, higher income, improved medical care and education.
  - People also travel from other countries in South America- Argentina/ Bolivia due to the cultural opportunities in Rio.
  - Many people come from the USA and UK. These are largely people who are highly skilled and are attracted due to the growing secondary and tertiary industry (specifically in oil exploration).
  - Many people come from China and Japan, this is because Rio de Janeiro has a growing finance and banking industry which is well paid.

**I. How has migration influenced the character and way of life within Brazil?**

**Copacabana Beach:** The beaches in Brazil are stunning and so are the natural surroundings. Rio is one of the most visited cities in the southern hemisphere. It is a UNESCO world Heritage Site which means that it should be protected from environmental harm.

**Crime and government:** Due to over population, there are not many jobs which means that many people must resort to crime. As a result, gangs often rule over the favelas. Police have been sent in to pacify these slum areas (make peaceful) with the aim to improve quality of life for people living there.

**Negative impacts of urbanisation**

- 40% of people living in favelas do not have a job.
- Due to unemployment there's not much tax being paid by a large proportion of the population.
- Not enough houses – 40% of population live in favelas (illegal squatter settlements).
- Only 50% of people have access to healthcare.
- Air pollution – 5,000 deaths/year

K.	
Sustainable Management in Rio- Transport	Due population growth, means that the use of cars has grown by 40% in the last 10 years.  They have expanded the public transport system which is a metro that runs under the bay and connects various parts of Rio. More and more people are using the metro system and buses; however, they are no extremely busy as there aren't enough services to go around. They have also put tolls into the city centre, this means that traffic is reduced because people don't want to pay. Lastly, they have made busy roads one way in rush hour. Car use has reduced slightly, however many still use cars for their own safety.
Sustainable Management in Rio- Housing	Hillside were secured and new health and education facilities were built in these areas, however the budget of US\$1Billion is probably not going to be enough to do this in every Favela. It has also led to rent rising and many people can't afford to live in their old homes.

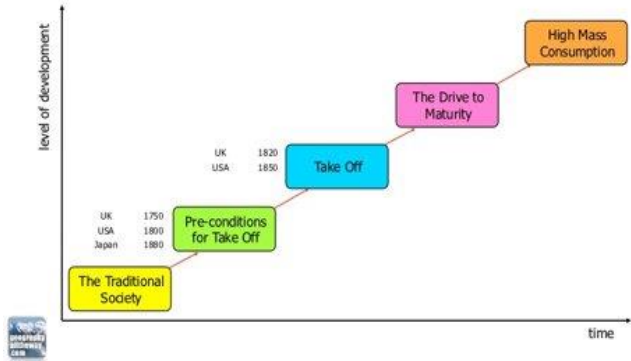
Sustainable Management in Rio- Waste

As we saw before, the largest problems concerning waste disposal are in the Favelas. Many are built on steep slopes and have few proper roads meaning that it is difficult for waste collection lorries to get through. Imagine if rubbish in Swindon wasn't collected every week – it would pile up outside our houses, attracting rats and foxes. It would also really smell. The waste in Rio does the same, it builds up and pollutes the water system spreading diseases like Cholera. To reduce this, a power plant has been set up near the University or Rio which uses methane gas from rotting rubbish to produce energy. This is more environmentally friendly than a lot of electricity production, however it does release some methane which is a greenhouse gas. It consumes 30 tonnes of rubbish a day (that's 2 busses) and produces electricity for 1000 homes. However, because of the methane gas it can be a stinky business.

**Where is Rio?**

Rio de Janeiro is located in South America. It is located in south Brazil. It borders the Atlantic Ocean.

- G. Why is Rio de Janeiro a global city?**
- Until 1960 Rio was the capital of Brazil however this has not changed to Brasília. Rio is still very important.
  - Brazil is in an Emerging Developing Country. This means that it is experiencing rapid economic growth
  - Rio is a mega-city. This means it has a population of over 10 million people.
  - The exact population of Rio is unknown however it is over 18 million.
  - Rio is the cultural capital of Brazil with an annual carnival and over 50 museums. It is also a UNESCO World Heritage Site.
  - In 2014 the world cup took place in Rio
  - In 2016 Rio hosted the Olympics.



- F. What is Rostow's model?**
- Human Influence**
- Currently Nigeria is in \_\_\_\_\_. This is where secondary industries \_\_\_\_\_
  - In the future Nigeria may develop to \_\_\_\_\_
  - They will do this by becoming \_\_\_\_\_
  - This will lead to increase in \_\_\_\_\_ such as nursing and IT support.

**Positive impacts of urbanisation**

- Employment opportunities in \_\_\_\_\_.
- Good infrastructure (\_\_\_\_\_).
- Better \_\_\_\_\_
- More jobs in \_\_\_\_\_ sectors

**Year 11 OCR A Term 1 – People of the world**

- H. Where do people in Rio come from?**
- Migration accounts for 65% of \_\_\_\_\_ growth in Rio de Janeiro. Largely people come from E\_\_\_\_\_e, in particular Portugal because they speak P\_\_\_\_\_e in Rio.
  - However, large numbers of people come from other parts of Brazil including the \_\_\_\_\_ because there are \_\_\_\_\_, \_\_\_\_\_, improved \_\_\_\_\_ and education.
  - People also travel from other countries in South America- \_\_\_\_\_
  - Many people come from the USA and UK. These are largely people who are \_\_\_\_\_ and are attracted due to the \_\_\_\_\_ industry (specifically in oil exploration).
  - Many people come from \_\_\_\_\_, this is because Rio de Janeiro has a growing \_\_\_\_\_ industry which is well paid.

**I. How has migration influenced the character and way of life within Brazil?**

**Copacabana Beach:** The beaches in Brazil are stunning and so are the natural surroundings. Rio is one of the most visited cities in the southern hemisphere. It is a UNESCO world Heritage Site which means that it should be protected from environmental harm.

**Crime and government:** Due to \_\_\_\_\_, there are not many \_\_\_\_\_ which means that many people must resort to \_\_\_\_\_. As a result, \_\_\_\_\_ often rule over the \_\_\_\_\_. Police have been sent in to pacify these slum areas (make \_\_\_\_\_) with the aim to improve quality of life for people living there.

**Negative impacts of urbanisation**

- 40% of people living in f\_\_\_\_\_s do not \_\_\_\_\_
- Due to un\_\_\_\_\_t there's not much \_\_\_\_\_ being paid by a large proportion of the population.
- Not enough \_\_\_\_\_s – 40% of population live in \_\_\_\_\_s (illegal squatter settlements).
- Only 50% of people have access to h\_\_\_\_\_e.
- Air p\_\_\_\_\_ion – 5,000 deaths/year

K.	
Sustainable Management in Rio- Transport	<p>Due population growth, means that the use of c_____ has grown by _____ in the last _____ years.</p> <p>They have expanded the _____ system which is a m_____ that runs under the bay and connects various parts of Rio. More and more people are using the _____ and buses; however, they are now extremely busy as there _____. They have also put tolls into the city centre, this means that traffic is _____. Lastly, they have made _____ one way in rush hour. Car use has reduced slightly, however many still use cars for their own safety.</p>
Sustainable Management in Rio- Housing	<p>Hillsides were secured and new _____s were built in these areas, however the budget of US\$1Billion is probably not going to be enough to do this in every Favela. It has also led to _____ and many people can't afford to live in their old homes.</p>
Sustainable Management in Rio- Waste	<p>As we saw before, the largest problems concerning _____ are in the Favelas. Many are built on _____ and have few _____ meaning that it is difficult for _____ lorries to get through. Imagine if rubbish in Swindon wasn't collected every week – it would pile up outside our houses, attracting _____. It would also _____. The waste in Rio does the same, it builds up and pollutes the water system spreading _____. To reduce this, a _____ has been set up near the _____ which uses _____ from _____ environmentally friendly than a lot of electricity production, however it does release some methane which is a greenhouse gas. It consumes _____ of rubbish a day (that's 2 busses) and produces electricity for 1000 homes. However, because of the _____ it can be a stinky business.</p>



### 3. The Spanish Empire 1528-1555

#### Pizarro – First Expedition

Pizarro was with Balboa when they reached the Pacific. Pizarro was impressed by Cortes and his success in Mexico.

Tales of vast wealth in Peru encouraged Pizarro to find his own success.

#### November 1524 – First expedition

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

#### Impact of Gold and Silver on Spain

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

The Crown took 25% of bullion coming into Spain .

75% of wealth went to Spanish merchants and conquistadors.

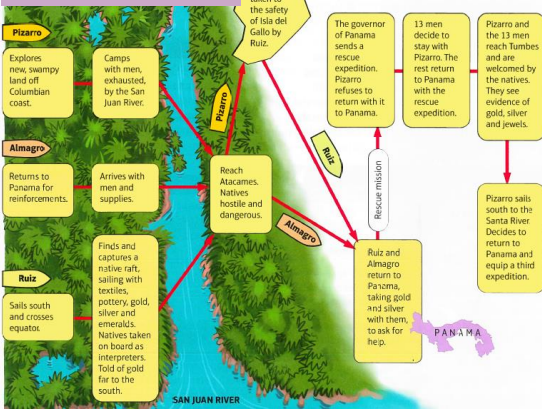
European traders put up prices for the wealthy Spanish merchants.

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

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

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

#### Pizarro's Second Expedition



#### Pizarro's appeal to the Spanish King Charles I

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

#### Governing the Empire

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

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

#### The New Laws:

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

#### The role of the Viceroy:

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

#### The role of the **encomienda system**:

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

#### Significance of the New Laws 1542:

Laws introduced to improve the rights of native people, but encomenderos opposed them and the viceroy of Peru refused to implement them. Revolts in Peru: the most serious in 1544 had to be put down by the Spanish government and led to a temporary halt in the Spanish conquest of the New World in 1550.

Although forced to suspend the laws, Charles I insisted encomiendas be passed back to the crown on the death of an encomendero. Natives continued to be exploited in the New World.

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

Revolt of the Incas 1536
The Spanish saw Manco as a puppet king who would rule on their behalf. When Manco escaped from the Spanish he assembled an army and attacked the base at Cuzco.
<b>The Siege of Cuzco 1536-1537</b> -10,000 Inca warriors faced 150 Spanish and 1000 native allies. -The Inca warriors broke into town, burning buildings to try to drive out the Spanish, but the Spanish were able to put the fires out. -The Spanish used their cavalry to attack the Inca warriors. -The Spanish captured the fortress of Sacsahuaman from the Incas, which the Inca army then besieged. -The siege ended when Spanish forces exploring Chile returned. -Manco withdrew and established a separate kingdom which lasted until 1572.

#### Founding of La Paz, 1548

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

#### Discovery of silver in Bolivia and Mexico

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

#### Conquistador Revolt in Peru 1544

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

#### Pirates and Privateers

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



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

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

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

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

#### Growth of Seville

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

#### The Slave Trade

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

#### Casa de Contratacion (House of Trade)

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

#### Council of the Indies

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

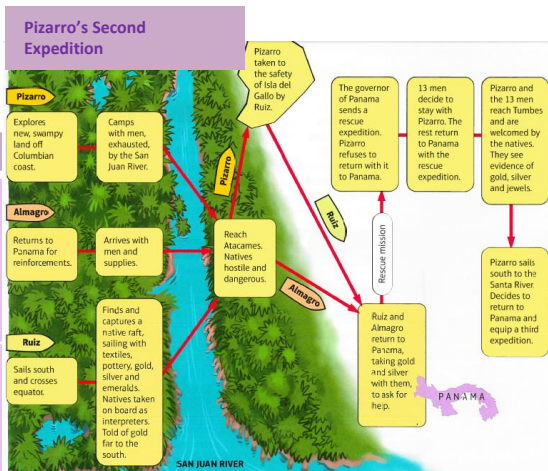


### 3. The Spanish Empire 1528-1555

#### Pizarro – First Expedition

#### Pizarro

#### November 1524 – First expedition



#### Pizarro's appeal to the Spanish King Charles I

#### Pizarro and the Conquest of the Inca Empire

Date	Event
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Sept 1520	
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1527	
1529	
April 1532	
Nov 1532	
July 1533	
1533	

#### Revolt of the Incas 1536

#### The Seige of Cuzco 1536-1537

#### Governing the Empire

The Spanish needed to

Bartolome de las Casas –

The New Laws:

The role of the Viceroy:

(courts), with judges who were independent of the viceroys.

The role of the **encomienda system**:

Significance of the New Laws 1542:



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#### Founding of La Paz, 1548

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#### The Slave Trade

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#### Discovery of silver in Bolivia and Mexico

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#### Council of the Indies



Keywords	
Tawhid	The belief in Islam that there is only one God who created everything
Omnipotent	God is all powerful and "has power over everything"
Immanent	God is active in the world and involved in its' creation.
Transcendent	God is outside of time and space. God cannot age or die or be located in one place.
Beneficent	Allah is compassionate, caring and good
Sunnah	The traditions and practices of the Prophet Muhammad
Qur'an	The Islamic sacred book
Hadith	A collection of traditions and sayings of the Prophet Muhammad
6 Articles of Faith	6 basic beliefs that shape the Islamic way of life
5 Roots of Usul Ad-Din	5 rules which explain how Muslims should act in daily life
Akhirah	Belief in the afterlife
Al Qadr	Supremacy of God's will and The belief in predestination which is slightly different for Sunni and Shi'a Muslims

What we are learning in this unit		
A. 6 Articles of Faith B. 5 Roots of Usul Ad-Din C. Sunnah and Hadith D. Risalah E. Torah, Psalms and Gospels F. Nature of Allah G. Qu'ran H. Torah, Psalms and Gospels I. Angels J. Al Qadir K. Day of Judgement, Paradise and Hell		

B. 5 Roots of Usul Ad-Din		
The 5 roots of Usul ad-Din are central to the Shi'a Muslim faith.		
Root	What is it?	Quote
1: Tawhid	The belief in the oneness of Allah	"He is <b>God the One, God the eternal</b> " Surah 112
2: Nubuwwah	Belief in prophethood: the chain of messengers from Adam to Muhammad	"We sent <b>messengers</b> to every community" Surah 16
3: Adl	Allah is just (fair) and will bring Divine Justice	"I advise you to being <b>just towards both friend and foe</b> " Imam Ali
4: Imamah	A term for God-given leadership	"obey God and the Messenger, and <b>those in authority among you</b> "
5: Mi'ad	The day of judgement and resurrection	"His is the <b>judgement</b> ; and to Hjm you shall be returned"

A. 6 Articles of Faith	
Article of faith	What is it?
1: Belief in one God	Allah is the creator and sustainer of life. There is no God but Allah
2: Belief in Angels	Angels do the work of Allah and do not have free will like humans. They obey Allah
3: Belief in God's revealed books	The Torah, the Psalms, the Gospels, the Scrolls of Abraham and the Qur'an.
4: Belief in the messengers of God	Prophets and messengers are chosen by Allah to deliver His message to humankind
5: Belief in the Day of Judgement	There will be a day when all people stand in front of Allah and are sent to Heaven or Hell
6: Belief in pre-destination	Allah knows everything. Everything is ordered by Allah – nothing is random or by chance

C. Sunnah and Hadith	
Sunnah	<ul style="list-style-type: none"> <li>The practices, customs and traditions of Prophet Muhammad</li> <li>They give an example for Muslims to follow</li> <li>The Sunnah and Hadith are sources of Wisdom and authority alongside the Qur'an</li> </ul>
Hadith	<ul style="list-style-type: none"> <li>Reading the Hadith helps a Muslim to learn how Muhammad explained the teachings from the Qur'an</li> <li>The Hadith makes the Qur'an easier to understand</li> </ul>
What does the Sunnah tell Muslims?	<ul style="list-style-type: none"> <li>The Sunnah covers many areas of life</li> <li>It provides a guideline for Muslim life</li> <li>There is a Sunnah for everything</li> </ul>



Keywords	
Tawhid	
Omnipotent	
Immanent	
Transcendent	
Beneficent	
Sunnah	
Qur'an	
Hadith	
6 Articles of Faith	
5 Roots of Usul Ad-Din	
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What we are learning in this unit		
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B.	5 Roots of Usul Ad-Din	

Root	What is it?	Quote
1:		
2:		
3:		
4:		
5:		

A.	6 Articles of Faith	
Article of faith	What is it?	
1:		
2:		
3:		
4:		
5:		
6:		

C.	Sunnah and Hadith	



D.	<i>Risalah (Prophethood)</i>	E	<i>Torah, Psalms and Gospels</i>
What is it	<ul style="list-style-type: none"> <li>Muslims believe there has been 124,000 prophets</li> <li>Every Islamic prophet preached Islam and key beliefs</li> <li>The first was <b>Adam</b>, the last was Muhammad (Box E)</li> </ul>	Psalms (Zabur)	<ul style="list-style-type: none"> <li>The Psalms of Dawud are a collection of prayers to Allah</li> <li>They contain lessons of guidance for the people</li> </ul>
Why are prophets important?	<ul style="list-style-type: none"> <li>Prophets are guided by Allah</li> <li>Their love of Allah stops them from sinning</li> <li>Some prophets are messengers who have been given revelation of news</li> </ul>	Gospel (Injil)	<ul style="list-style-type: none"> <li>This is the good news about Isa (Jesus)</li> <li>Muslims highly respect Isa because there are revelations in the Qur'an about him</li> <li>Muslims believe he was the Masih, he was not the son of Allah, he was not crucified, he did not die to save sins</li> <li>The gospels contain some mistakes because they were written many years after Isa died</li> </ul>
Adam	<ul style="list-style-type: none"> <li>The first prophet</li> <li>The father of all humankind</li> <li>He taught about the work of Iblis and how to protect themselves</li> <li>He taught life on Earth was temporary, eternal life is in the next life</li> <li>He built the Ka'aba as the first place of worship</li> </ul>	Torah (Tawrat)	<ul style="list-style-type: none"> <li>The Tawrat is the Arabic word for the Torah</li> <li>These are the revelations given to Moses by Allah on Mt Sinai</li> <li>The Qur'an refers to the Tawrat as <b>"guidance and light"</b></li> </ul>
Ibrahim	<ul style="list-style-type: none"> <li>Ibrahim was told in a dream to sacrifice Isma'il as a test of faith – remembered at Hajj every year</li> <li>His son <b>Isma'il</b> is the ancestor of the prophet Muhammad</li> </ul>	Scrolls of Ibrahim	<ul style="list-style-type: none"> <li>Revelations received by Ibrahim on the first day of Ramadan</li> <li>Contained stories about worship and reflection</li> <li>Not a book, individual revelations</li> </ul>

F.	<i>The Nature of Allah</i>
Tawhid	<ul style="list-style-type: none"> <li>There is only one God and this God has no equal.</li> <li>He created everything.</li> <li>Only He should be worshipped: worshipping other Gods is a sin called <b>shirk</b>.</li> <li><b>"There is no God but Allah, and Muhammad is his messenger".</b></li> <li><b>"Allah witnesses that there is no deity except Him"</b></li> <li><b>"Do they not see that Allah, who created the heavens and the Earth and was not wearied by their creation, has the power to raise the dead to life?"</b></li> </ul>
2: Omnipotent	Allah is all powerful and has power over everything
3: Immanence	Allah is active in the world and able to control events
4: Transcendent	<ul style="list-style-type: none"> <li>Allah is outside of the universe</li> <li>Not limited by time or space</li> </ul>
5: Beneficence	God has love and good will
6: Mercy	<ul style="list-style-type: none"> <li><b>"In the name of Allah, the most compassionate, the most merciful"</b></li> <li>God is forgiving and caring</li> </ul>
7: Fairness and justice	<ul style="list-style-type: none"> <li>Allah is fair to all people</li> <li><b>Allah has sent the same message to all prophets to allow humans numerous opportunities to submit to the will of Allah</b></li> <li>Allah will ensure that judgement is fair and punishments are suitable</li> </ul>



D.	<i>Risalah (Prophethood)</i>	E	<i>Torah, Psalms and Gospels</i>
What is it		Psalms (Zabur)	
Why are prophets important?		Gospel (Injil)	
Adam		Torah (Tawrat)	
Ibrahim		Scrolls of Ibrahim	

F.	<i>The Nature of Allah</i>
Tawhid	
2: Omnipotent	
3: Immanence	
4: Transcendent	
5: Beneficence	
6: Mercy	
7: Fairness and justice	





<b>G.</b>	<i>Qur'an</i>	<b>I.</b>	<i>Angels</i>
Revelation	<ul style="list-style-type: none"> <li>Chapters of the Qur'an were revealed to Prophet Muhammad over 13 years in Makkah</li> <li>While Muhammad received the revelations, he was not able to change them because it was the will of Allah</li> <li>After Muhammad received them, he recited them, and somebody wrote them down.</li> </ul>	What are they?	<ul style="list-style-type: none"> <li>Angels are made from light and have wings which can move at the speed of light</li> <li>They have no gender and are in the unseen world</li> <li>They always complete what Allah asks and they always obey Allah as they have no free will</li> </ul>
Authority	<ul style="list-style-type: none"> <li>It is the direct word of Allah so it has His authority</li> <li>It is without error and remains in its' original form</li> <li>A written book was needed to formalise the religion</li> </ul>	What do they do?	<ul style="list-style-type: none"> <li>Watch over humans</li> <li>Bring peace to believers and instill fear in non-believers</li> <li>Angel of Death takes the soul at death</li> <li>Greet people entering paradise or throw people into the pits of hell</li> <li>Signify the end of the world by blowing a horn</li> </ul>
What does it contain?	<ul style="list-style-type: none"> <li>It covered every aspect of life</li> <li>It influences a person throughout their lives</li> <li>The basics of worship which Muhammad developed</li> <li>Shari'ah law and social systems</li> <li>It explains creations and other ultimate questions</li> </ul>	Jibril	<ul style="list-style-type: none"> <li>Most important angel in Islam</li> <li>Always brings good news</li> <li>Helped Ibrahim when he was thrown in to a fire, opened up the Zamzam well for Hajar</li> <li>Told Maryam she would have a son (Isa)</li> <li>Dictated the Qur'an directly from Allah</li> </ul>
Supreme authority	<ul style="list-style-type: none"> <li>The Qur'an is believed to have supreme authority</li> <li>It is a timeless book – it is only the word of Allah if it is not translated from Arabic</li> </ul>	Mika'il	<ul style="list-style-type: none"> <li>Assisted Muhammad with his spiritual mission</li> <li>Giver of rain and sustenance – in charge of plants and rain</li> <li>Helped Muhammad to fight for Makkah</li> <li>Will help to weigh peoples' actions on Judgement Day</li> <li>Mika'il prepared Muhammad by providing Jibril with purifying water</li> </ul>

<b>K.</b>	<i>Day of Judgement, paradise and Hell</i>		<b>J.</b>	<i>Al Qadir</i>	
What will happen?	<ul style="list-style-type: none"> <li>Muslims believe Judgement day will come on a Friday (Adam was created on a Friday)</li> <li>It will be announced by Israfil's trumpet</li> <li>Allah will refer us to the book of deeds to justify damnation or salvation</li> <li>Humans will go to paradise or Hell</li> </ul>		<ul style="list-style-type: none"> <li>Everything happens as a result of Allah's will and nothing is ever random or without reason</li> <li>Allah is in charge of everything</li> <li>Everything is a part of Allah's plan</li> <li><b>"never will we be struck except by what Allah has decreed for us"</b></li> </ul>		
Jannah	<ul style="list-style-type: none"> <li>Paradise</li> <li>No growing ill, old or dying – it is a reward and gift from Allah</li> <li>A person must live religiously and ask Allah for forgiveness</li> <li>Good beliefs and actions</li> <li>It is beyond human imagination</li> </ul>		<b>E.</b>	<i>Muhammad</i>	
Entry to Jannah	<ul style="list-style-type: none"> <li><b>"enter among my servants! Enter my paradise!"</b></li> <li>People will arrive over the As-Sirat bridge</li> <li>There are 8 gates and you go through the one which represents your best action</li> <li>Two angels welcome people saying <b>"peace be upon you"</b></li> </ul>		Why was he chosen?	<ul style="list-style-type: none"> <li>Muhammad had characteristics such as responsibility, determination, patience, courage and honesty</li> <li>He was highly respected in his community</li> <li>He was extremely devoted to Allah – he prayed and fasted for long periods of time</li> </ul>	
Jahannam	<ul style="list-style-type: none"> <li>Hell</li> <li>People wail in misery, 70x hotter than any flame on earth, boiling water poured on their heads, pain, dragged in chains</li> <li>Punishment for a life full of evil or rejecting the teachings of the Qur'an</li> </ul>		What did he do as a prophet?	<ul style="list-style-type: none"> <li>He became the ruler of Madinah and set up the first Islamic community</li> <li>He converted the people of Makkah to Islam</li> </ul>	
			Why is Muhammad important?	<ul style="list-style-type: none"> <li>He is seen as the perfect role model as he is trustworthy and obedient to Allah</li> <li>His influence can still be seen in the Hadith and Sunnah</li> <li>The night of power in Ramadan is to remember Muhammad's first revelation from the angel Jibril</li> </ul>	



G. Qur'an		I. Angels	
Revelation		What are they?	
Authority		What do they do?	
What does it contain?		Jibril	
Supreme authority		Mika'il	

K. Day of Judgement, paradise and Hell		J. Al Qadir	
What will happen?			
Jannah		E. Muhammad	
Entry to Jannah		Why was he chosen?	
Jahannam		What did he do as a prophet?	
		Why is Muhammad important?	

What we are learning this term:	
A. Talking about your family	
B. Describing your family and friends	
C. Explaining family relationships	
D. Describing relationships	
E. Describing future plans	
F. Translation practice	
6 Key Words for this term	
1. Me llevo bien	4. El año próximo
2. No soporto	5. Por otro lado
3. discuto	6. Voy a...

1.1F Hablando de los amigos	
a menudo	often
alegrarse de	to be happy about
comprensivo/a	understanding
conocer	to know a person
el consejo	advice
la cosa	thing
cuidar	to look after
la discusión	argument
divertido/a	good fun
egoísta	selfish
el equipo	team
escribir	to write
fastidiar	to annoy, to bother
fuerte	strong
hablador/a	talkative
honrado/a	honest
maduro/a	mature
mismo/a	same
peligroso/a	dangerous
reirse	to laugh
seguro/a	certain, sure
el sentido del humor	sense of humour
travieso/a	naughty
triste	sad
el verano	summer
la vida	life

Llevarse to get on	Ir To go	Soportar To stand	Hacer – to do/make	Discutir to argue
Me llevo I get on	Voy I go	Soporto I can stand	Hago I do	Discuto I argue
Te llevas You (s) get on	Vas You go	Soportas You can stand	Haces You do	Discutes You argue
Se lleva He/se gets on	Va s/he goes	Soporta He/she can stand	Hace s/he does	Discute He/she argues
Nos llevamos They get on	Vamos They go	Soportamos W can stand	Hacemos We do	Discutios We argue
Se llevan They get on	Van They go	Soportan They can stand	Hacen They do	Discuten They argue

**1.1G ¿Cómo es tu familia?**

1.1G ¿Cómo es tu familia?	
El/la abuelo/a	grandfather/grandmother
los abuelos	grandparents
alegre	happy
alto/a	tall
amable	kind
anciano/a	old
la barba	beard
calvo/a	bald
cariñoso/a	affectionate, tender
casi nearly,	almost
castaño/a	brown hair colour
corto/a	short
delgado/a	thin
las gafas	glasses
gracioso/a	funny
guapo/a	good looking, handsome
El/la hermano/a	brother/sister
El/la hijo/a	son/daughter
joven	young
largo/a	long
liso/a	straight
la madrastra	stepmother
los ojos	eyes
el padrastro	stepfather
las pecas	freckles
pelirrojo/a	red-haired
el pelo	hair
rizado/a	curly
la tía	aunt
el tío	uncle
viejo/a	old
sensible	sensitive

**1.1H Relaciones con la familia**

1.1H Relaciones con la familia	
abierto/a	open
aconsejar	to advise
actualmente	nowadays
aguantar	to bear, to put up with
arreglar	to tidy
la barrera generacional	generation gap
el cariño	affection
celoso/a	jealous
la culpa	blame, fault
los demás	others
harto/a	fed up
el hogar	home
hoy en día	nowadays
incluso	even
injustamente	unfairly
juntos	together
la libertad	freedom
manera	way
molestar	to bother
oír hablar de	to hear about
olvidar	to forget
orgullosa/a	proud

**1.1H Relaciones con la familia**

parecido/a	similar
la pelea	fight
perezoso/a	lazy
provocar	to cause
el sobrino / la sobrina	nephew, niece
tender a	to tend to
todavía	still
tratar	to treat
triste	sad

**1.2F Planes para el futuro**

así que	so, therefore
la boda	wedding
buscar	to look for
cambiar	to change
el casamiento	wedding
casarse	to get married
el compañero/a	colleague, friend
decepcionado/a	disappointed
encontrar	to find
la felicidad	happiness
la fiesta	party, festival
por eso	therefore
próximo/a	next
el sitio	place
solo/a	alone, only
soltero/a	single
tener suerte	to be lucky
las vacaciones	holidays
ya no	no longer

**1.2G Hablando de parejas**

el beso	kiss
cada vez más	more and more
cocinar	to cook
comprar	to buy
echar de menos	to miss someone
enamorado/a	in love
los familiares	relatives
feliz	happy
la gente	people
el invitado/a	guest
maleducado/a	rude
el marido	husband
el matrimonio	marriage
la mujer	wife, woman
la novia	girlfriend, fiancée
el novio	boyfriend, fiancé
parecer	to seem
la pareja	partner
los parientes	relatives
pelear(se)	to fight
el piso	flat, apartment
serio/a	serious, responsible
sonreír	to smile

**1.2H Las relaciones de hoy en día**

ahora	now
alguien	someone
cara a cara	face to face
distinto/a	different
en contra	against
en primer lugar	in the first place,
la edad	age
estar de acuerdo	to agree
el/la jubilado/a	retired person,
pagar	to pay
la pareja	partner
la piel	skin
por otro lado	on the other hand

What we are learning this term:	
<p>A. Saying how you keep in touch via the internet                  B. Picking out key words when reading                  C. Giving opinions about online messaging                  D. Talking about using a mobile                  E. Give opinions about mobile technology</p>	
6 Key Words for this term	
1. chateo	4. sala de chat
2. redes sociales	5. descargar
3. en línea	6. subir

2.1F ¿Cómo prefieres mantenerte en contacto?	
comunicarse	to communicate
desafortunadamente	unfortunately
empezar	to start
escoger	to choose
genial	brilliant / great
gratis	free of charge
el hecho	fact
el inconveniente	disadvantage
interactivo/a	interactive
el jefe / la jefa	boss
la letra	letter of the alphabet
mandar	to send
los medios sociales	social media
el móvil	mobile phone
ofrecer	to offer
el ordenador	computer
la pantalla	screen
poder	to be able to
por desgracia	unfortunately
por mi parte	as far as I'm concerned
la revista digital	digital magazine
sencillo/a	simple
tampoco	neither / nor

Descargar To download	Subir To upload	Mandar To send	Hacer – to do/make	Chatear To chat
Descargo I download	Subo I upload	Mando I send	Hago I do	Chateo I chat
Descargas You download	Subes You upload	Mandas You send	Haces You do	Chateas You chat
descarga He/she download	sube He/she uploads	Manda He/she sends	Hace s/he does	Chatea He/she chats
Descargamos We download	Subimos We upload	Mandamos We send	Hacemos We do	Chateamos We chat
Descargan They download	suben They upload	Mandan They send	Hacen They do	Chatean They chat

2.1G Comunicarse por internet	
a veces	sometimes
allí	there
chatear	to chat online
colgar fotos	to post photos
el correo electrónico	email
demasiado/a	too much
hablar	to speak / talk
increíble	incredible
justo/a	fair
el país	country
un poco	a little
propio/a	own
la razón	reason
la red	internet / network
la red social	social network
la sala de chat	chat room
la salida	outing
todos los días	every day
usar	to use
utilizar	to use
la vez	time

2.2G ¡El móvil para todo!	
aunque	although
dar	to give
dar las gracias	to thank
enviar	to send
el juego	game
lento/a	slow
el mensaje de texto	text message
el móvil	mobile phone
navegar la red	to surf the internet
la norma	rule
prohibido	forbidden
el regalo	present, gift
la regla	rule
ridículo/a	ridiculous
roto/a	broken
único/a	only

2.2F La tecnología portátil	
andar	to walk
archivo	file
borrar	to delete, erase
la canción	song
cargar	to load
contestar	to answer
el correo basura	spam, junk mail
cualquier	any
de vez en cuando	from time to time
el disco duro	hard drive
el espacio	space
igual	same
el ordenador portátil	laptop
sacar fotos	to take photos
sentir	to feel
la tableta	tablet
la tecnología	technology

2.1H Las redes sociales	
a mi juicio	in my opinion
acosar	to bully
el acoso	bullying
apasionar	to excite
aun	even
bajo	low
compartir	to share
el comportamiento	behaviour
el desarrollo	development
la desventaja	disadvantage
divertirse	to have a good time
gratuito/a	free of charge
mejorar	to improve
el riesgo	risk
el/la seguidor/a	follower
tener éxito	to be successful
el/la usuario/a	user

2.2H ¿Podrías vivir sin el móvil y la tableta?	
raras veces	rarely
la sala de chat	chat room
la señal	signal
la tarjeta de crédito	credit card
todo lo contrario	the exact opposite

2.2H ¿Podrías vivir sin el móvil y la tableta?	
la conexión inalámbrica	wireless connection
chatear	to chat online
correr	to run
darse cuenta de	to realise
en vez de	instead of
las felicidades	best wishes,
congratulations	
felicitar	to send best wishes/to
congratulate	
hasta	until
imprescindible	essential
preocupar	to worry

**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

**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
policíaco/a	police, detective, crime (adj.)
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

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

**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

**3.2G 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

**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	to take, to have (food, drink)
la tortilla	omelette
la tostada	toast
el vaso	glass
las verduras	vegetables

**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

**3.3G ¿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

**3.2F 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

**3.3F ¿Qué deportes harás?**

el alpinismo	rock climbing
cansado/a	tired
la carrera	race
el concurso	competition
(contest)	
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

**What we are learning this term:**

A. Learning about Spanish life and routines  
 B. Learning about local customs  
 C. Talking about a Spanish festival  
 D. Learning about Latin American culture  
 E. Skim reading for key information  
 F. Using past expressions of time

**4.1F Algunas costumbres regionales**

la actuación	performance
agradable	pleasant
el ambiente	atmosphere
antiguo/a	old
la batalla	battle
el caballo	horse
la camisa	shirt
el concurso	competition
conmemorar	to commemorate
correr	to run
la costumbre	custom
demasiado	too much, too many
el desfile	parade, procession
el diablo	devil
divertirse	to enjoy oneself
emocionante	exciting
el encierro	bull run
encontrar	to find
enorme	enormous
entender	to understand
entrenarse	to train
el espectáculo	show, display
extraño/a	strange
fatal	awful
formar	to form
histórico	historic
humano	human
impresionante	impressive
incómodo/a	uncomfortable
llevar	to wear, take, carry
el Mediterráneo	Mediterranean
el/la moro/a	Moor (historically a person from North Africa)
nadie	no one
natural	natural
el origen	origin
pasarlo bien	to have a good time
el peligro	danger
peligroso/a	dangerous
por encima de	over
precioso/a	beautiful
el producto	product
saltar	to jump
la seguridad	safety, security
la suerte	luck
el toro	bull
la torre	tower
el traje	suit, costume
único/a	only, unique
varios/as	several
vestirse (de)	to dress (in)

Celebrar To celebrate	Ir To go	Disfrutar To enjoy	Hacer – to do/make	Disfrazar To dress up
Celebro I celebrate	Voy I go	Disfruto I enjoy	Hago I do	Disfrazo I dress up
Celebras You celebrate	Vas You go	Disfrutas You enjoy	Haces You do	Disfrazas You dress up
Celebra – he/she celebrates	Va s/he goes	Disfruta He/she enjoys	Hace s/he does	Disfraza He/she dresses up
Celebramos We celebrate	Vamos They go	Disfrutamos We enjoy	Hacemos We do	Disfrazamos We dress up
Celebran They celebrate	Van They go	Disfrutan They enjoy	Hacen They do	Disfrazan They dress up

**6 Key Words for this term**

1. divertirse	4. el desfile
2. hispánico	5. celebrarse
3. el turismo	6. los antepasados

**4.1G La vida en familia**

a media mañana	at mid-morning
acostarse	to go to bed
el bollo	bun
la cena	evening meal
coger	to catch
la comida	food, meal, lunch
el desayuno	breakfast
la dieta	diet
la leche	milk
levantarse	to get up
ligero/a	light
participar	to participate, to take part
probar	to try, to try out
el recreo	break
saludable	healthy
la sobremesa	sitting chatting at the table
after a meal	
el trabajador	worker
la tradición	tradition
traer	to bring
tranquilamente	calmly
el vaso	glass

**4.1H ¿Cambian las costumbres?**

acostarse	to go to bed
cerrarse	to close
coger	to catch
corto/a	short
empezar	to start
hace calor	it is hot
levantarse	to get up
el marido	husband
la mayoría	majority
el ordenador	computer

**4.2G Las fiestas de España – la Tomatina**

al final	at the end
americano/a	American
australiano/a	Australian
británico/a	British
el camión	lorry
la camiseta	T-shirt
el carnaval	carnival
divertirse	to enjoy oneself
duchar	to shower
empezar	to start
la entrada	(entry) ticket
la foto	photo
la gente	people
hace (+ tiempo)	(time) ago
japonés/esa	Japanese
limitar	to limit
limpiar	to clean
llegar	to arrive
la manguera	hose, hosepipe
mojado/a	wet, soaked
el montón	heap, pile
la plaza mayor	the main square
primero/a	first
pronto	soon
rojo/a	red
sucio/a	dirty
típico/a	typical
tirar	to throw
todo el mundo	everyone, everybody
el tomate	tomato
el turismo	tourism
varios/as	several
el/la visitante	visitor
el/la voluntario/a	volunteer
volver	to return, to go back

**4.2F Las fiestas del mundo hispano**

el altar	altar, shrine
los antepasados	ancestors
aparecer	to appear
el azúcar	sugar
la calavera	skull
celebrarse	to be held
el cementerio	cemetery
cerca de	close to, near to
la ciudad	city, town
comenzar	to start
completamente	completely
describir	to describe
el desfile	parade
el diablo	devil
disfrazado	dressed up, disguised
en honor a	in honour of
encendido/a	lit
el esqueleto	skeleton
el estaño	tin
los familiares	family members
famoso/a	famous
la flor	flower
hispánico	Hispanic (i.e. of the Spanish speaking world)
la mina	mine
el/la minera/a	miner
el mole	'mole' sauce / Mexican chocolate sauce
la montaña	mountain
muerto	dead
la normalidad	normality
el número	number
la plata	silver
proteger	to protect
el pueblo	village, (small) town

**GCSE Unit 5 SPANISH Knowledge organiser.**  
**Topic Home, Town, Neighbourhood and Region**

Key Verbs				
Vivir To live	alquilar To rent	Comprar To buy	Hacer – to do/make	Mudarse To move
Vivo I live	Alquilo I rent	Compro I buy	Hago I do	Me mudo I move
Vives You live	Alquilas You rent	Compras You buy	Haces You do	Te mudas You move
Vive He/she lives	Alquila He/she rents	Compra He/she buys	Hace s/he does	Se muda He/she moves
Vivimos We live	Alquilamos We rent	Compramos We buy	Hacemos We do	Nos mudamos We move
Viven They live	Alquilan They rent	Compran They buy	Hacen They do	Se mudan They move

What we are learning this term:	
A. Saying what your house is like B. Describing your house and where it is C. Talking about the amenities in your area D. Discussing the advantages and disadvantages of living in the town and country	
6 Key Words for this term	
1. vivir	4. el hogar
2. alojamiento	5. la casa
3. alquilar	6. las afueras

**5.1G Mi casa**

la alfombra	carpet, rug
el armario	cupboard, wardrobe
el ascensor	lift
la butaca	armchair
la cocina	kitchen, cooker, cuisine
cómodo	comfortable, convenient, handy
compartir	to share
el cuarto de baño	bathroom
el dormitorio	bedroom
los electrodomésticos (electrical)	appliances
la escalera	stairs
el espejo	mirror
la estantería	shelves, shelving unit
el fregadero	kitchen sink
la habitación	room
el lavabo	washbasin
la lavadora	washing machine
el lavaplatos	dishwasher
el microondas	microwave oven
la nevera	fridge
la pared	wall
el salón	lounge, living room
el sillón	armchair
el suelo	ground, floor
la terraza	terrace

**5.2G ¿Qué se puede hacer donde vives?**

el barrio	neighbourhood, area
la biblioteca	library
la bolera	bowling alley
el bolso	handbag
la carnicería	butcher's
el césped	lawn
el collar	necklace
descansar	to rest
el dinero	money
divertirse	to enjoy oneself, to
have a good time	
el estanco	tobacconist's (also sells stamps)
los grandes almacenes	department stores
la joyería	jeweller's
la juguetería	toy shop
el mercado	market
la muñeca	doll
el museo	museum
la panadería	baker's
el parque	infantil park, playground
la pastelería	cake shop
los pendientes	earrings
la plaza de toros	bull ring
la ropa (de marca)	(designer) clothes
la tienda de comestibles	grocery store, food

**5.2F Mi ciudad**

la avenida	avenue
el ayuntamiento	Town Hall
bienvenido/a	welcome
el centro comercial	shopping centre
la ciudad	city, large town
el club de jóvenes	youth club
Correos	Post Office
construir	to build
convertirse en (+ noun)	to become
los espacios verdes	open spaces
la fábrica	factory
fundar	to found
el/la habitante	inhabitant
la iglesia	church
ir de compras	to go shopping
el país	country
la plaza	square (in a town)
el polideportivo	sports centre
el pueblo (small)	town, village, people
el puente	bridge
el puerto	port, harbour
el siglo	century

**5.1H Mi casa y mi barrio**

abajo	under, downstairs
amplio/a	spacious, roomy
arriba	above, upstairs, up
el balcón	balcony
la calefacción	heating
la cocina amueblada	fitted kitchen
el comedor	dining room
el comercio	business, shop
imprescindible	essential, indispensable
inferior	lower
el jardín	garden
lujoso/a	luxurious
la mascota	pet
la piscina	swimming pool
la planta	floor (of a building), plant
la planta baja	ground floor
superior	upper, higher
la tienda	shop
la torre	tower, tower block
la vista	view, sight

**5.1F ¿Cómo es tu casa?**

las afueras	outskirts
antiguo	old
el árbol	tree
el campo	countryside,
field,sports ground	
el chalet / chalé	bungalow, detached house, villa
la costa	coast
el estante	shelf
encontrar	to find
encontrarse	to be situated
encontrarse con	to meet up with
la granja	farm
guardar	to keep, to put
away,to save	
la librería	bookcase, bookshop
la montaña	mountain
el mueble	piece of furniture
los muebles	furniture
peor	worse

**GCSE Unit 6 SPANISH Knowledge organiser.**  
**Topic Social Issues**

**Key Verbs**

What we are learning this term:	
A. Talking about different ways of volunteering	
B. Talking about charities and voluntary work	
C. Talking about healthy eating	
D. Talking about healthy and unhealthy lifestyles	
E. Listening for different tenses	
6 Key Words for this term	
1. un voluntario/a	4. comedor social
2. ecologista	5. banco de alimentos
3. los sin techo	6. quiero

6.1F Me gustaría ayudar	
agradecer	to thank
aprender	to learn
el asombro	amazement, surprise
contar (que)	to tell, to relate
el curso	school year, course
los/las demás	the others, the rest
esperar	to wait for, to hope, to expect
formar parte	to be part (of)
hacer la cama	to make the bed
el centro de menores tutelados	children's home
el idioma	language
inútil	useless
propósito	aim, purpose, objective
repartir	to deliver, to hand out
tener sueño	to be sleepy
la tienda solidaria	charity shop
útil	useful

Ayudar To help	Ir To go	Soportar To stand	Hacer – to do/make	Limpia To clean
Ayudo I help	Voy I go	Soporto I can stand	Hago I do	Limpio I clean
Ayudas You help	Vas You go	Soportas You can stand	Haces You do	Limpias You clean
Ayuda He/she helps	Va s/he goes	Soporta He/she can stand	Hace s/he does	Limpia He/she cleans
Ayudamos We help	Vamos They go	Soportamos W can stand	Hacemos We do	Limpiamos We clean
Ayudan They help	Van They go	Soportan They can stand	Hacen They do	Limpian They clean

6.1G ¿Quieres ser voluntario/a?	
arreglar	to tidy, to fix, to arrange
ayudar (a)	to help (to)
el banco de alimentos	food bank
charlar	to chat
el comedor social	soup kitchen
el concurso	competition
cultivar	to grow, cultivate
disfrutar	to enjoy
ecologista	environmental
la gente mayor	old people
hogar	home
limpiar	to clean
marcar (un gol)	to score (a goal)
necesitado	needed, required
los necesitados	the needy
la organización benéfica	charitable organisation, charity
participar (en)	to take part (in)
pasarlo bien	to have a good time
proteger	to protect
la residencia de ancianos	old people's home
los "sin techo"	the homeless
el Tercer Mundo	the Third World
la tienda con fines benéficos	charity shop
/tienda solidaria	
el/la voluntario/a	volunteer

6.2G ¿Comes bien?	
acostarse	to go to bed
las bebidas alcohólicas	alcoholic drinks
las bebidas azucaradas	sugary drinks
borracho/a	drunk
el dolor	pain, ache
emborracharse	to get drunk
evitar	to avoid
glotón	greedy
la grasa	fat
grasiento/a	fatty, greasy
intentar (+ infinitive)	to try to
el ladrón	thief, robber
malsano	unhealthy
musulmán	Muslim
poco sano	not healthy
la ración	portion
saludable	healthy
sano	healthy

6.1H La importancia de hacer obras benéficas	
andar	to walk
el bolsillo	pocket
contribuir	to contribute
dar asco	to nauseate
el dibujo	drawing
donar	to donate
en vías de extinción	threatened (threatened with extinction)
escaso/a	scarce
la exposición	exhibition
el ganador	winner
ganar	to win
gastar	to spend
las instalaciones	facilities
el medio ambiente	environment
las obras benéficas	charity, charitable works
la pérdida	loss
perteneciente a	belonging to
el/la político/a	politician
los recursos	resources
seropositivo/a	HIV positive
el sida	AIDS
temer	to fear

6.2H ¿Qué opinas?	
aguantar	to put up with, to bear
asqueroso/a	disgusting
ataque cardíaco	heart attack
aumentar	to increase
el botellón	drinking party in the street
cada vez más	more and more
el cerebro	brain
el consumo	consumption
el corazón	heart
cuanto antes	as soon as possible
el/la drogadicto/a	drug addict
la edad	age
la encuesta	survey
enfrentar	to face
grave	serious
hacer daño a	to injure, to harm
el hígado	liver
nocivo/a	harmful
participar (en)	to take part (in)
pedir	to ask (for), to ask (someone to do something)
los primeros auxilios	first aid
prohibir	to prohibit, to forbid
provocar	to cause, to provoke
el pulmón	lung
reducir	to reduce
síndrome de abstinencia	withdrawal symptoms
el sobrepeso	excess weight, obesity
subir	to go up
el tabaquismo	addiction to tobacco
la venta	sale



**GCSE Unit 7 SPANISH Knowledge organiser.**  
**Topic Global Issues**

Key Verbs				
Reciclar To recycle	Ir To go	Apagar To turn off	Hacer – to do/make	Encender To turn on
Reciclo I recycle	Voy I go	Apago I turn off	Hago I do	Enciendo I turn on
Reciclas You recycle	Vas You go	Apagas You turn off	Haces You do	Enciendas You turn on
Recicla Sh/e recycles	Va s/he goes	Apaga He/she turns off	Hace s/he does	Enciende He/she turns on
Reciclamos We recycle	Vamos They go	Apagamos We turn off	Hacemos We do	Encendemos We turn on
Reciclan They recycle	Van They go	Apagan They turn off	Hacen They do	Enciendan They turn on

What we are learning this term:	
A. Talking about reusing things, reducing waste and recycling	
B. Talking about ways of protecting the environment	
C. Talking about poverty	
D. Talking about homelessness	
6 Key Words for this term	
1. la libertad	4. el destrozo
2. pensamientos	5. violento/a
3. asistir a	6. la culpa

7.1F Protegiendo el medio ambiente	
la basura	rubbish
la bombilla (de bajo consumo)(low-energy)	light bulb
el combustible	fuel
combatir	to fight, to combat
la contaminación atmosférica	air pollution
desaparecer	to disappear
el desastre	disaster
desconectar	to disconnect, to unplug,
switch off	
deshacer	to undo
los desperdicios	rubbish, refuse, waste
la especie	species
incluso	even
inquietante	worrying
luchar	to struggle, fight
la medida	measure, means
medioambiental	environmental
el motor	engine
los residuos	refuse, waste, rubbish
salvar	to save

7.2F Los “sin techo”	
el destrozo	damage, destruction
escoger	to choose
la falta	lack
formar parte de	to be part of
el/la gamberro/a	hooligan, lout,
troublemaker	
maltratar	to mistreat, to ill-treat
los niños de la calle	street children
la ONG (organización NGO (non-governmental organisation) no gubernamental)	
la pobreza	poverty
recoger	to pick up
robar	to steal, rob
el vertedero	rubbish dump, tip
la violencia	violence
violento/a	violent

7.1H Problemas ecológicos	
acercarse a	to approach
el agujero	hole
la aldea	(small) village
alejarse	to move (something)
further away	
alejarse de	to move further away
from	
amenazar	to threaten
arruinar	to ruin
el atasco	traffic jam, hold-up
el ave (marina) (fem.) (sea) bird	
el calentamiento global	global warming
la capa de ozono	ozone layer
el casco	helmet, hull (of ship)
el centenar	about a hundred
la central eléctrica	power station
la circulación	traffic
constituir	to constitute
cortar	to cut, to cut off
el efecto invernadero	greenhouse effect
extender	to spread, to stretch
frenar	to brake, to put a stop
to	
el humo	smoke
el huracán	hurricane
el incendio	fire
la lluvia	rain
la mancha	stain
la marea negra	oil slick
la muerte	death
el nivel	level
el petrolero	oil tanker
el/la pescador/a	fisherman/fisherwoman

7.1G Reutilizar, reducir, reciclar	
ahorrar	to save
la basura	rubbish
la bolsa de plástico	plastic bag
el cartón	cardboard
cerrar	to shut, to close, to turn off (tap)
el contenedor	container
en vez de	instead of
intentar	to try to
la lata	tin, can
el malgasto	waste
el papel (reciclado)	(recycled) paper
la papelera	wastepaper basket
la pila	battery
el plástico	plastic
ponerse	to put on (clothes)
los productos químicos	chemicals, chemical
products	
el proyecto	project
recargable	rechargeable
reciclar	to recycle
reutilizar	to reuse
la Tierra	Earth
tirar	to pull, to throw away
tratar de	to try to
el vidrio	glass

7.2G Los necesitados	
a favor (de)	in favour (of)
la alimentación	feeding,
nourishment, food	
la asistencia médica	medical care
asistir a	to attend
buscar	to look for
contribuir	to contribute
la creencia	belief
la culpa	blame, fault
la enfermedad	illness
en contra	against
estar dispuesto/a a	to be prepared to, to be
ready to	
faltar	to be lacking, to be
missing	
fresco	fresh
hace(n) falta	to be necessary, to need
la libertad (de pensamiento)	freedom (of thought)
merecer	to deserve
necesitar	to need
perder	to lose
perezoso/a	lazy
querer	to love

7.2H Es importante ayudar a los demás	
el agua corriente (fem.)	running water
bastar	to be enough
la comisaría	police station
consumir	to consume
la corriente	(electric) current,
electricity supply	
crear	to create
la criminalidad	crime
cualquier(a)	any
el empleo	job
el/la encargado/a	person in charge
el éxito	success

**GCSE Unit 8 SPANISH Knowledge organiser.**  
**Topic Holidays and Travel**



**What we are learning this term:**

- A. Talking about travelling to holiday destinations
- B. Talking about the weather
- C. Talking about holiday accommodation
- D. Talking about the regions of Spain
- E. Understanding tourist leaflets and websites

**6 Key Words for this term**

- |               |               |
|---------------|---------------|
| 1. alojarse   | 4. vacaciones |
| 2. veranear   | 5. un folleto |
| 3. la pensión | 6. el AVE     |

**8.1F ¿Dónde te alojas?**

el abrebotellas bottle-opener  
 el abrelatas tin-opener  
 el aeropuerto airport  
 a la derecha on the right  
 a la izquierda on the left  
 el albergue juvenil youth hostel  
 Alojarse to stay (in a hotel)  
 el bañador swimming costume  
 la cama de matrimonio double bed  
 camping campsite, camping  
 la estación de servicio petrol station  
 la estrella star  
 fatal awful, terrible  
 el folleto leaflet  
 la gasolina (sin plomo) (unleaded) petrol  
 el guía / la guía guide (person)  
 la guía guidebook  
 la habitación (doble/ (double/single) room individual)  
 la llave key  
 mojarse to get wet  
 la oficina de turismo tourist office  
 el papel higiénico toilet paper  
 el parador state-owned hotel (in Spain)  
 el pasaporte passport  
 la pensión boarding house, B & B  
 ponerse en camino to set off  
 por desgracia unfortunately  
 la recepción reception  
 la reserva reservation  
 el saco de dormir sleeping bag  
 los servicios toilets  
 la tarjeta de embarque boarding card  
 la tienda (de campaña) tent  
 la taquilla ticket office

**8.2G ¿En qué región vives?**

el desempleo unemployment  
 la diversión entertainment  
 muy poblado crowded  
 nacer to be born  
 Nací I was born  
 nació he/she was born  
 el país country  
 Pescar to fish  
 el río river  
 la sierra mountain range  
 tanto so much, so many

**8.1G ¡Me voy de vacaciones!**

el aire acondicionado air conditioning  
 el andén platform  
 el asiento seat  
 el autocar coach  
 el AVE (tren de alta velocidad) high-speed train  
 el avión plane  
 barato/a cheap  
 el barco boat  
 la bici(cleta) bike, bicycle  
 el coche car  
 la consigna left-luggage office  
 el crucero cruise  
 desde luego of course  
 echar de menos to miss  
 Escocia Scotland  
 estrecho/a narrow  
 el equipaje luggage  
 el ferrocarril railway  
 el invierno winter  
 la maleta suitcase  
 el metro underground  
 no fumador non smoking  
 el otoño autumn  
 la primavera spring  
 la sala de espera waiting room  
 Sudamérica South America  
 el tranvía tram  
 las vacaciones holidays  
 el verano summer  
 viajar to travel  
 el viaje journey

**Key Verbs**

Quedarse To stay	Ir To go	Veranear To summer holiday	Hacer – to do/make	Volar To fly
Me quedo I stay	Voy I go	Veraneo I summer holiday	Hago I do	Vuelo I fly
Te quedas You stay	Vas You go	Veraneas You summer hol	Haces You do	Vuelas You fly
Se queda He/she/it stays	Va s/he goes	Veranea He/she summer hol	Hace s/he does	Vuela He/she/ it flies
Nos quedamos We stay	Vamos They go	Veraneamos We summer hol	Hacemos We do	Volamos We fly
Se quedan They stay	Van They go	Veranean They summer hol	Hacen They do	Vuelan They fly

**8.2F Un folleto turístico**

abrir to open  
 abierto/a open  
 callado/a quiet, reserved  
 cargar to load  
 cerrar to close, shut  
 la cocina cuisine, cooking  
 conocer to know (a person /a place)  
 el cultivo crop  
 entero/a entire, whole  
 gruñón/oña grumpy  
 ir de paseo to go for a walk  
 la mina mine  
 el monasterio monastery  
 el monte hill, mountain  
 la oveja sheep  
 Pintoresco picturesque  
 recomendar to recommend  
 el recuerdo memory, reminder, souvenir  
 la refinera (de petróleo) (oil) refinery  
 la sombrilla sunshade, parasol  
 el taller workshop  
 tranquilo/a peaceful  
 la vaca cow  
 el valle valley  
 el/la visitante visitor

**8.2H Describiendo tu región**

acostumbrado/a accustomed to, used (adj) to  
 la barca pesquera fishing boat  
 casero/a home-made  
 la cita amorosa date (with someone)  
 el clima climate

**8.1H ¿Qué hiciste y qué te gustaría hacer durante las vacaciones?**

aburrirse to get bored  
 acabar de (+ infinitive) to have just (done something)  
 broncearse to get a tan  
 coger to catch, to take  
 el crucero cruise  
 descansar to rest  
 el esquí acuático water skiing  
 extranjero/a foreign  
 el extranjero (en el \_\_, abroad al\_\_)  
 Francia France  
 genial brilliant, great  
 Grecia Greece  
 la insolación sunstroke  
 la isla island  
 las Islas Canarias Canary Islands  
 a mediados de in the middle of (time)  
 el Mediterráneo Mediterranean  
 ocupado/a busy, engaged  
 el oro gold  
 la plata silver  
 regresar to return  
 relajarse to relax  
 la sombrilla sunshade, parasol  
 el vestuario changing room, cloakroom  
 la vida nocturna night life  
 volver to return  
 el vuelo flight  
 colocar to place, to put  
 la empresa company, firm  
 la época era, age, time

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



**What we are learning this term:**

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

**6 Key Words for this term**

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

**9.1G El instituto y las asignaturas**

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

**9.1F ¿Cómo ser buen estudiante?**

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

**Key Verbs**

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

**9.1F ¿Cómo ser buen estudiante?**

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

**9.1H ¿Qué tal el instituto?**

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

**9.1H ¿Qué tal el instituto?**

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

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

**What we are learning this term:**

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

**6 Key Words for this term**

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

**10.1F Las reglas y el uniforme**

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

**10.1G El día en el instituto**

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

**Key Verbs**

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

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

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

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

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



**GCSE Unit 11 SPANISH Knowledge organiser.**  
**Topic Education Post - 16**



What we are learning this term:	
A. Talking about options at 16 B. Discussing choices at 18: work or university? C. Talking about different jobs D. Looking for and applying for jobs E. Using a variety of tenses F. Using 'quisiera'	
6 Key Words for this term	
1. porcentaje	4. la empresa
2. por ciento	5. el/la jefe/a
3. la ama de casa	6. cuidar a

**11.1G ¿Qué voy a hacer?**

a tiempo completo	full time
a tiempo parcial	part time
el/la alumno/a	pupil
aprender	to learn
el aprendizaje	apprenticeship
aprobar	to pass
la asignatura	subject
avanzado/a	advanced
el beneficio	benefit
buscar	to look for
la carrera (universitaria),(university) course, career	carrera profesional
conseguir	to get, to manage, to achieve
el consejo	advice
continuar	to continue
dejar	to leave
el dinero	money
encontrar	to find
esperar	to wait for, to hope, expect
los estudios	studies
el examen	exam
la experiencia	experience
la experiencia laboral	work experience
feo/a	ugly
la informática	information technology, IT
mejor	better, best
mientras	while
la nota	grade, mark, result
la opción	option
la oportunidad	opportunity
quedar	to stay
el resultado	result
sacar buenas / malasto	get good / to get bad
grades	
notas	
seguir + gerund	to carry on ...ing

**11.1F ¿Trabajar o estudiar?**

considerar	to consider
demonstrar	to show, demonstrate
la desventaja	disadvantage
estar harto/a de	to be fed up with
estar obsesionado/a con	to be obsessed with
furioso/a	furious
ganar	to earn, to win, to gain
la habilidad	skill, ability
horroroso/a	dreadful
imaginar	to imagine
inútil	useless
mundo	world
necesitar	to need
pedir	to ask for
peor	worse, worst
por otra parte	on the other hand
la promoción	promotion
relacionarse con	to relate to, to get on with
repasar	to revise
el repaso	revision
seguro/a	sure
la sociedad	society
todavía	still
vale la pena	it's worth it, it's worthwhile

Key Verbs				
Aprender To learn	Ir To go	Querer To want	Preparar To prepare	Dar To give
Aprendo I learn	Voy I go	Quiero I want	Preparo I prepare	Doy I give
Aprendes You learn	Vas You go	Quieres You want	Preparas You prepare	Das You give
Aprende He/she/it learns	Va s/he goes	Quiere He/she/ it wants	Prepara He/she/it prepares	Da He/she/it gives
Aprendemos We learn	Vamos They go	Queremos We want	Preparamos We prepare	Damos We give
Aprenden They learn	Van They go	Quieren They want	Preparan They prepare	Dan They give

**11.1H ¿Vale la pena ir a la universidad?**

a solas	on one's own
acabar de + infinitive	to have just
adecuado/a	adequate, decent
aislado/a	isolated
al final de	at the end of
apelar	to appeal
aprender	to learn
así que	so
avanzado/a	advanced
el beneficio	benefit
bien pagado/a	well paid
la calidad	quality
la carrera (universitaria)	university course, career
claro	of course
conseguir	to get, to manage, to achieve
consejo	advice
deber	to owe
devolver	to give back, to pay back
disfrutar	to enjoy
la edad	age
escoger	to choose
esperar	to wait for, to hope, to expect
estar a punto de	to be about to
la experiencia laboral	work experience
feo/a	ugly
el folleto	leaflet
el/la graduado/a	graduate
hacerse miembro	to become a member
inquietar	to worry, to concern
lejos de	far from
mejor	better, best

**11.1H ¿Vale la pena ir a la universidad?**

el mundo laboral	world of work
ofrecer	to offer
olvidarse	to forget
pedir prestado	to borrow
poco a poco	bit by bit
preocupar	to worry, to be concerned
recoger	to pick up, to collect
la residencia de estudiantes	student residence
el resultado	result
seguir	to follow
seguir + gerund	to carry on ...ing
tan pronto como	as soon as
el título (university)	degree
tomar un año libre	to take a year out
la ventaja	advantage

**GCSE Unit 12 SPANISH Knowledge organiser**  
**Topic Jobs, Career choices and Ambitions**

**What we are learning this term:**

- A. Talking about different jobs
- B. Looking for and applying for jobs
- C. Recognising percentages and fractions
- D. Learning useful phrases
- E. Using a variety of tenses

**6 Key Words for this term**

- |                   |               |
|-------------------|---------------|
| 1. buscar         | 4. empezar    |
| 2. una entrevista | 5. ganar      |
| 3. anuncios       | 6. desafiante |

**12.1G Los trabajos**

el ama de casa (fem.)	housewife
el banco	bank
el/la cajero/a	cashier
el/la cliente/a	customer
el cocinero/a	cook
estar en paro	to be unemployed
el ingeniero/a	engineer
el jardinero/a	gardener
limpiar	to clean
la mitad	half
la oficina	office
la peluquería	hairdresser's
el peluquero/a	hairdresser
el/la policía	police officer
por ciento	per cent
el/la porcentaje	percentage
quisiera	I would like
resolver	to solve, resolve
salvar	to save
temporal	temporary
el/la veterinario/a	vet
la vida	life

**12.1F Buscar trabajo**

a principios de	at the beginning of
el/la administrativo/a	clerk, office worker
ambicioso/a	ambitious
anciano/a	elderly
animado/a	lively
arreglar	to sort, fix, arrange
el aspecto	appearance, aspect
atender a	to attend to
la caja	till, check-out
el camping	campsite
el carnicero/a	butcher
el carpintero/a	carpenter
la carta	letter
los conocimientos	knowledge
el correo electrónico	email
cortés	polite, courteous
cuidar a	to care for, look after
el/la dependiente/a	shop assistant
el detalle	detail
dominar + language	to be fluent in
el/la electricista	electrician
el empleado/a	employee
la empresa	company, firm
en seguida	straightaway
la energía	energy
fiable	reliable
la gente	people
el/la hombre / mujer	de businessman /
business woman	
negocios	
el juego	game
el/la maestro/a	primary school teacher
mayor	older
organizado/a	organised
paciente	
la panadería	bakery
el panadero/a	baker
práctico/a	practical
el problema	problem
el/la recepcionista	receptionist
servir	to serve
sincero/a	honest
el sitio web	website
el sobre	envelope
sueldo	wage
trabajador/a	hard-working
el traductor/a	translator
el trimestre	term
la variedad	variety

**Key Verbs**

Tener To have	Ir To go	Buscar To look for	Hacer – to do/make	Encontrar To find
Tengo I have	Voy I go	Busco I'm looking for	Hago I do	Encuentro I find
Tienes You have	Vas You go	Buscas You're looking for	Haces You do	Encuentras You find
Tiene He/she/it has	Va s/he goes	Busca He/she/it is looking	Hace s/he does	Encuentra He/she/it finds
Tenemos We have	Vamos They go	Buscamos We're looking for	Hacemos We do	Encontramos We find
Tienen They have	Van They go	Buscan They're looking	Hacen They do	Encuentran They find

**12.1H El trabajo ideal**

el/la abogado/a	lawyer
el/la albañil	builder, bricklayer
el/la amo/a de casa	house
husband/housewife	
ascender	to move up
el/la azafato/a	flight attendant
el/la cajero/a	cashier
el/la camionero/a	lorry driver
la capacidad	ability, capacity
el/la cartero/a	postal worker
el/la cliente/a	customer
la compañía aérea	airline
compartir	to share
el/la contable	accountant
la cuenta	account
diseñar	to design
fijo/a	fixed, permanent
físico/a	physical
la formación	training
funcionar	to function
el/la gerente	manager
el/la granjero/a	farmer
las horas de trabajo	flexitime, flexible
working hours	
flexibles	
el/la jardinero/a	gardener
el/la jefe/jefa	boss
limpiar	to clean
la lluvia	rain
mejorar	to improve
la peluquería	hairdresser's
el/la peluquero/a	hairdresser
la perspectiva	prospect
el proyecto	project
el rincón	corner

**12.1H El trabajo ideal**

temporal	temporary
utilizar	to use
el viento	wind
ya que	as, since

1. Gross Profit Margin	
	Explanation
Gross profit	Gross profit is the difference between a product's selling price and what it costs the business to manufacture/purchase.
Gross profit margin	The percentage of gross profit made from the sales revenue for a product.
Gross profit margin calculation.	Gross profit margin = $\frac{\text{Gross Profit}}{\text{Sales revenue}} \times 100$

2. Net Profit Margin	
There are three main types of production:	
Type of Production	Advantages and Disadvantages
Job Production	Advantages: Highly flexible; gives the customer exactly what they want. Disadvantages: High production costs. Skills may be in short supply, making it hard for the business to grow
Batch Production	Advantages: Gain some cost advantages from producing several items at once...yet still able to offer customers the colour/size they want Disadvantages: May be limited scope for automation, making production costs far higher than with flow production. Not as flexible as job production.
Flow Production	Advantages: Can automate production fully, making it highly cost effective (which should be good for customers as well as suppliers). Many customers value consistency, and flow will provide an identical product each time. Disadvantages: Likely to be expensive to set up and inflexible to use; could be a disaster if a product life cycle proves much shorter than expected. Lacks flexibility in terms of meeting individual customer needs.

2. Procurement – Working with Suppliers	
There are five main factors at the heart of a relationship between a company and its suppliers:	
Quality	Suppliers must supply high quality products to businesses, suppliers will struggle to maintain a good relationship with a company if they are not supplying good durable products. First and fore most suppliers must supply high quality materials to businesses.
Delivery	Suppliers must deliver on time to clients, there is little point supplying at the right price and with the right product, if the product doesn't arrive on time. Failing to deliver supplies on time can bring manufacturing to a halt or leave shops with empty shelves.
Availability	Suppliers must be available and able to cope with varying orders in a timely fashion and sometimes within a short timeframe. Suppliers must be flexible and aware of the needs of their customers.
Cost	Cheaper supplies mean lower variable costs and higher profit margins. Therefore, the price charged by a supplier will be a key factor in the relationship between a firm and its suppliers. Price to highly and firms may look to alternative suppliers, price to low and firms may question the quality of merchandise. Pricing is key to the relationship between supplier and firm.
Trust	Trust is key for the relationship between firm and supplier. Most business transactions are on credit and not cash – therefore suppliers have to be able to trust that a firm will make a profit and be able to pay them back in cash.
8. Placing Strategy – Managing Quality within a Business	
Type of Quality Control	Explanation:
Quality Control	Quality control is a system of inspection to try to make sure that customers don't experience a poor-quality product or service. Such controls may include Factory Inspectors at the end of a production line checking the quality of a product
Quality Assurance	Quality Assurance describes the system put into place by a company to assure quality within the production system. Every member of staff will have responsibilities to quality assure products. Over time this should lead to quality products as people become better at their roles.
Quality Culture	Quality culture means the general attitudes and behaviours among staff within a workplace is focussed on high quality production. Quality culture describes motivated, punctual, diligent and invested employees who care about the business and strive to improve it.

## 9. The Sales Process

Term	Definition
Customer Engagement	The attempt to make a customer feel part of something rather than an outsider.
Customer Feedback	Comments, praise or criticisms given to the company by its customers
Post-Sales Service	Service received after the purchase is completed because something has gone wrong or as a way of promoting customer engagement
Product Knowledge	How well staff know all the features of the products and service issues surrounding the products.


## 9. Customer Service

Great Customer Service is pivotal to any successful business, but there is far more than that to the sales process. To succeed in sales, a business must make sure it provides:

Component of Customer Service	Term
Product Knowledge	<p>Customers expect that staff will be sufficiently well trained and well-motivated to have good knowledge of the products and services being offered. In order to ensure staff, have good product knowledge, certain things are essential:</p> <p>Good Training – if businesses provide good training to staff, then staff will be knowledgeable about products and therefore will be able to improve the customer experience</p> <p>Loyal Staff – The longer staff stay working in a job the better they become. If staff only stay three to six months, they will never develop a rich understanding of the products and services that the business provides. Well managed businesses pay fairly and treat staff with respect.</p> <p>Committed Staff – Committed and enthusiastic staff are crucial to the smooth running of any business. This is affected by the quality of recruitment, the standard of training and the overall culture that exists within the company's workforce.</p>
Speedy and Efficient Service	<p>Good customer service is designed for the customer not the company.</p> <p>Efficient service:</p> <p>Gets products to customers exactly when you want them</p> <p>Gets products to customers in good condition</p> <p>If there is anything wrong - it will be sorted out as soon as possible and considerately</p>
Customer Engagement	<p>In the world of social media, it becomes possible to try to keep customers engaged with the business on a regular basis.</p> <p>Companies engage customers in a variety of ways:</p> <p>E-Mail</p> <p>Social Media (Facebook and Instagram)</p> <p>Post</p> <p>Text</p> <p>Television/Web advertisements.</p> <p>It is vital that customers feel up to date and informed about any product innovations</p>
Responses to Customer Feedback	<p>How companies respond to customer feedback is vital, providing great customers service where people feel listened too ensures customers continue to come back and buy products from the business.</p> <p>It can cost a lot of money to persuade new customers to come advertising is expensive and it's affects are hard to judge. Building up a reputation for responding to customer feedback can travel by word of mouth and this is much cheaper.</p>



# Y11 Computer Science Term 3

Law	Content	Details										
Computer Misuse Act of 1990.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Offence</th> <th style="width: 50%;">Penalty</th> </tr> </thead> <tbody> <tr> <td>Unauthorised access to computer material</td> <td>Up to six months in prison and/or an up to a £5,000 fine</td> </tr> <tr> <td>Unauthorised access to computer materials with intent to commit a further crime</td> <td>Up to a five-year prison sentence and/or an unlimited fine</td> </tr> <tr> <td>Unauthorised modification of data</td> <td>Up to a five-year prison sentence and/or an unlimited fine</td> </tr> <tr> <td>Making, supplying or obtaining anything which can be used in computer misuse offences</td> <td>Up to a ten-year prison sentence and/or an unlimited fine</td> </tr> </tbody> </table>	Offence	Penalty	Unauthorised access to computer material	Up to six months in prison and/or an up to a £5,000 fine	Unauthorised access to computer materials with intent to commit a further crime	Up to a five-year prison sentence and/or an unlimited fine	Unauthorised modification of data	Up to a five-year prison sentence and/or an unlimited fine	Making, supplying or obtaining anything which can be used in computer misuse offences	Up to a ten-year prison sentence and/or an unlimited fine	<p>Last updated in 2018.</p> <p>Intent has an impact on the penalty received.</p>
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Making, supplying or obtaining anything which can be used in computer misuse offences	Up to a ten-year prison sentence and/or an unlimited fine											
Data Protection Act 1998.	<p>Controls how your personal information is used by organisations, businesses or the government. Under the Data Protection Act 2018, you have the right to find out what information the government and other organisations store about you. These include the right to: be informed about how your data is being used, access personal data, have incorrect data updated, have data erased, stop or restrict the processing of your data, data portability (allowing you to get and reuse your data for different services), object to how your data is processed in certain circumstances.</p>	<p>Last updated in 2018.</p>										
GDPR General Data Protection Regulation.	 <p>The infographic lists seven key principles of GDPR:</p> <ul style="list-style-type: none"> <li><b>Be Transparent With Data:</b> Implied consent is a big no-no under the GDPR.</li> <li><b>Limit Data to What You Need:</b> No scooping up data just because you can.</li> <li><b>Limiting Kept Data:</b> Do we need all this data? If the answer is no, delete it.</li> <li><b>Data Must be Accurate:</b> Make sure that data is accurate and up-to-date.</li> <li><b>Limit Storage of Personal Data:</b> Don't keep it longer than you need it.</li> <li><b>Integrity and Confidentiality:</b> Use encryption, 2FA, and tamper-evident logging.</li> <li><b>Accountability:</b> Keep a paper trail to demonstrate compliance.</li> </ul>	<p>Applies to all EU citizens and companies wishing to sell products to or have data on EU citizens.</p> <p>Has become the international standard</p>										
Investigatory Powers Bill 2016	<p>Requires companies and internet service providers to store records on emails and browsing histories. It also gives the authority for police and security services to access computers and phones to search for data.</p>	<p>Requires a warrant for police to search through or utilise the data.</p>										
Copyright, Designs and Patents Act	<p>As soon as something is created, it becomes intellectual property and is protected by copyright. In the case of software, the copyright holder can choose to sell and license it (proprietary) or give that right away (open-source).</p>	<p>Does not apply to algorithms (flowcharts/pseudocode) but real code.</p>										

## Y11 Computer Science Term 3

Term	Definition
E-Waste	Electronic Waste consisting of digital products.
Planned Obsolescence	Producing goods which are designed to become rapidly obsolete and require replacement. This can be achieved by frequent changes in design, termination of the supply of spare parts and the use of non-durable materials.
Ethical Concerns	Cover two categories, ensuring public safety and the security of data.












Database Terms	Meaning
Big Data	Extremely large sets of data. Often gathered from many different sources for analysis. Used to make predictions based on the patterns identified in the data.
Data Mining	Analysing large amounts of data to predict future events and trends. With so much data available, people and companies who are able to analyse and understand it all are in high demand.
Open Data	Large sets of data which are shared freely. Often comes from organisations like the government, allowing anyone to look at and analyse their data
Data Security	Companies and organisations storing a user's personal data are legally obliged to ensure it is secure. To achieve this, encryption is commonly used in databases.
Flat-File Database	A flat-file database is a database that only has one table. Often saved as a CSV file (Comma Separated Values). It is useful because it is highly compatible between databases and other applications.
Relational Database	A database consisting of multiple tables, each of which holds data about one entity type, which are linked together through relationships.
Attributes / Fields	The characteristics of an entity, used as column headings in a table. Often different data types.
Record	A row in the table which contains the full collection of data for one entity.
Entity	An object, e.g. a person or item. They are the subject whose attributes are stored as records.
Primary Key	Unique identifier for each record. Normally just a unique number or mix of number and letters which means a record cannot be duplicated.
Foreign Key	An attribute/field used in a table which is the primary key from another table.
Normalisation	The process of analysing a database to find how redundancy can be reduced, making the database more efficient by breaking down the data into separate tables and using relationships to link them.

**SELECT** – Defines which fields we are looking for.  
**FROM** – Defines which table we are looking in.  
**WHERE** – Defines the parameters we're looking for.  
**ORDER BY** – Defines how we're sorting our results. |






```
CREATE TABLE tblExample(  
    fieldName DATATYPE,  
    fieldName2 DATATYPE,  
    PRIMARY KEY (fieldName));
```





**Example:**  
**SELECT** GameName, DeveloperID  
**FROM** GameTable  
**WHERE** DeveloperID = "Bethesda"  
**ORDER BY** GameName **DESC**;










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

B. Forces and Stressors	
Forces apply stress to objects, causing them to break or change shape.	
Different materials can withstand different forces.	
<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.

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

D. Paper & Card/Boards	
Paper and cards/boards both come from wood pulp.	
Paper	Board
Cartridge Paper	Corrugated Card
Grid Paper	Duplex Board
Layout Paper	Foil-Lined Board
Tracing Paper	Foam Core Board
Corrugated Card	Inkjet Card
	Solid White Board

E. 6 R's 	
You can use the 6R's when designing to help reduce the impact that new products have on the environment.	
<b>Repair</b> 	It's better to fix things instead of throwing them away.
<b>Reuse</b> 	You can extend a products life by passing it on or using it again.
<b>Recycle</b> 	The uses less energy than obtaining new materials.
<b>Rethink</b> 	You should think about your design carefully. Is it needed?
<b>Reduce</b> 	Making long-lasting durable products. Think rechargeable!
<b>Refuse</b> 	You can refuse to buy a product if you think it is wasteful. Such as plastic bags.

F. Natural & Manufactured Timbers	
Natural timber comes from trees.	
Hardwood	Softwood
Ash	Larch
Beech	Pine
Mahogany	Spruce
Oak	Softwoods are faster growing and cheaper to buy.
Balsa	
Manufactured Boards	
Manufactured boards are usually made from natural timber waste and adhesive.	
Medium-density fibreboard (MDF)	
Plywood	
Chipboard	



## Year 11 PRODUCT DESIGN Term 3



<p><b>A. Physical &amp; Working Properties</b></p> <p>Physical properties are _____.</p> <p>_____.</p> <p><b>Absorbency</b> </p> <p> How solid a material is</p> <p><b>Fusibility</b> </p> <p> Ability to conduct electricity</p> <p><b>Thermal Conductivity</b>  Ability to conduct heat</p> <p>Working properties are _____.</p> <p>_____.</p> <p><b>Strength</b> </p> <p> The ability to withstand impact with damage</p> <p><b>Toughness</b> </p> <p> Being able to bend or shape easily would make a material easily malleable</p> <p><b>Ductility</b> </p> <p><b>Elasticity</b>  Ability to be stretched and then return to its original shape</p>	<p><b>What we are learning this term:</b></p> <p>A. Physical &amp; Working Properties B. Forces &amp; Stressors C. Types of Motion D. Paper &amp; Card/Boards E. 6 R's F. Natural &amp; Manufactured Timbers</p> <p><b>B. Forces and Stressors</b></p> <p>Forces apply _____ to objects, causing them to _____ or _____.</p> <p>Different materials can withstand different forces.</p> <p><b>Tension</b></p> <p></p> <p> Is a pushing or squashing force, e.g. _____</p> <p>_____</p> <p><b>Bending</b></p> <p></p> <p> Is a cutting force. The opposing forces are not directly opposite each other, e.g. _____</p> <p>_____</p> <p><b>Torsion</b></p> <p></p>	<p><b>E. 6 R's</b> </p> <p>You can use the 6R's when designing to help reduce the impact that new products have on the environment.</p> <p><b>Repair</b> </p> <p> You can extend a products life by passing it on or using it again.</p> <p><b>Recycle</b> </p> <p> You should think about your design carefully. Is it needed?</p> <p><b>Reduce</b> </p> <p> You can refuse to buy a product if you think it is wasteful. Such as plastic bags.</p>																										
	<p><b>C. Types of Motions</b></p> <p><b>Linear</b></p> <p></p> <p> Has a repeated up and down motion or back-and-forth motion. E.g _____</p> <p>_____</p> <p><b>Rotary</b></p> <p></p> <p> Has a curved backwards and forwards movement that wings on an axis or pivot point. E.g _____</p> <p>_____</p>																											
	<p><b>D. Paper &amp; Card/Boards</b></p> <p>Paper and cards/boards both come from _____.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Paper</th> <th style="width: 50%;">Board</th> </tr> </thead> <tbody> <tr> <td>Cartridge Paper</td> <td></td> </tr> <tr> <td></td> <td>Duplex Board</td> </tr> <tr> <td>Layout Paper</td> <td></td> </tr> <tr> <td></td> <td>Foam Core Board</td> </tr> <tr> <td>Corrugated Card</td> <td></td> </tr> <tr> <td></td> <td>Solid White Board</td> </tr> </tbody> </table>	Paper	Board	Cartridge Paper			Duplex Board	Layout Paper			Foam Core Board	Corrugated Card			Solid White Board	<p><b>F. Natural &amp; Manufactured Timbers</b></p> <p>Natural timber comes from _____.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Hardwood</th> <th style="width: 50%;">Softwood</th> </tr> </thead> <tbody> <tr> <td>Ash</td> <td></td> </tr> <tr> <td></td> <td>Pine</td> </tr> <tr> <td>Mahogany</td> <td></td> </tr> <tr> <td></td> <td>Softwoods are _____</td> </tr> <tr> <td>Balsa</td> <td>_____</td> </tr> </tbody> </table> <p><b>Manufactured Boards</b></p> <p>Manufactured boards are usually made from _____.</p> <p>_____</p> <p>Plywood</p> <p>_____</p>	Hardwood	Softwood	Ash			Pine	Mahogany			Softwoods are _____	Balsa	_____
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# Food spoilage, contamination and food poisoning

## Food spoilage

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

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

## Food spoilage: Autolysis – enzymes

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

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

## Food spoilage: Microbial spoilage

Spoilage can be caused by the growth of:

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

## Food contamination

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

## Chemical contamination

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

## Physical contamination

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

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

## Bacterial contamination

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

Bacteria can be transferred onto food through cross-contamination, via equipment, people or pests, or can be naturally present in the food. Some bacteria can produce toxins which can cause food poisoning.

## Micro-organisms

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

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

## Temperature

Bacteria need warm conditions to grow and multiply.

- The ideal temperature for bacterial growth is 30°C – 37°C.
  - Some bacteria can still grow at 10°C and 60°C.
  - Most bacteria are destroyed at temperatures above 63 °C.
  - Bacterial growth danger zone is 5°C - 63°C.
- At very cold temperatures, bacteria become dormant – they do not die, but they cannot grow or multiply.

## Moisture

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

## Food

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

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

## Time

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

## People at high risk of food poisoning

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

## Symptoms of food poisoning

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

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

## Campylobacter

### Sources

Raw and undercooked poultry, unpasteurized milk, contaminated water.

### Signs and symptoms

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

## E Coli 0157

### Sources

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

### Signs and symptoms

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

## Listeria

### Sources

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

### Signs and symptoms

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

## Salmonella

### Sources

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

### Signs and symptoms

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

## Staphylococcus aureus

### Sources

Humans: nose, mouth and skin. Untreated milk.

### Signs and symptoms

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

## Key terms

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

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

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

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

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

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

## Allergens

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

## Desirable food changes

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

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

# Food spoilage, contamination and food poisoning

**Food spoilage**  
 As soon as food is harvested, slaughtered or processed it starts to change. This happens for two main reasons:  
 •autolysis –  
 •microbial spoilage –

**Physical contamination**  
 This can occur in a variety of ways at different stages of food processing and production. Some examples are:  
 -  
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**Food**  
 Bacteria need a source of food to grow and multiply, these food are usually high in moisture, fat and protein, and may be ready to eat. Food where bacteria rapidly multiply in is called a **high risk food**. For example:  
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**E Coli 0157 Sources**  
 Signs and symptoms

**Food spoilage: Autolysis – enzymes**  
 Enzymes are chemicals which can cause food to deteriorate in three main ways:  
 •ripening  
 •browning  
 •oxidation

**Bacterial contamination**  
 Most bacteria are harmless but a small number can cause illness. These are known as pathogenic bacteria. Food which is contaminated with pathogenic bacteria can look, taste and smell normal. Bacteria can be transferred onto food through cross-contamination, via equipment, people or pests, or can be naturally present in the food. Some bacteria can produce toxins which can cause food poisoning.

**Time**  
 Given the right conditions, one bacterium can divide into two every 10-20 minutes through a process called \_\_\_\_\_.

**Listeria Sources**  
 Signs and symptoms

**Food spoilage: Microbial spoilage**  
 Spoilage can be caused by the growth of:  
 •bacteria  
 •yeasts  
 •moulds

**Micro-organisms**  
 Micro-organisms need conditions to survive and reproduce these can include:  
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**People at high risk of food poisoning**

**Salmonella Sources**  
 Signs and symptoms

**Food contamination**  
 Food contamination can lead to \_\_\_\_\_. There are three ways which food can be contaminated:

**Temperature**  
 Bacteria need warm conditions to grow and multiply.  
 •The ideal temperature for bacterial growth is \_\_\_\_\_. Some bacteria can still grow at 10°C and 60°C.  
 •Most bacteria are destroyed at temperatures above \_\_\_\_\_.  
 •Bacterial growth danger zone is \_\_\_\_\_.  
 •At very cold temperatures, bacteria become \_\_\_\_\_- they do not die, but they cannot grow or multiply.

**Symptoms of food poisoning**  
 Food poisoning can be mild or severe. The most common symptoms are:  
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**Campylobacter Sources**  
 Signs and symptoms

**Staphylococcus aureus Sources**  
 Signs and symptoms

**Chemical contamination**  
 Chemical contamination can occur in a variety of ways at different stages of food processing and production. For example:

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

**Key terms**  
**Bacteria:**  
 Binary fission:  
 Cross-contamination:  
 Food spoilage:  
 Food poisoning:  
 Toxin:



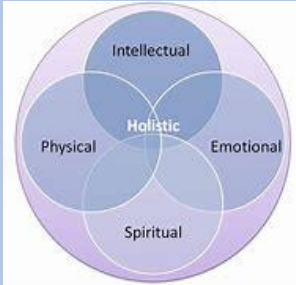
**Allergens**  
 Allergenic ingredients can cause adverse reactions in some people. Care must be taken at each stage of food processing to prevent contamination.

**Desirable food changes**  
 Desirable changes that can be caused by micro-organisms include:  
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 -  
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**What we are learning in LAA:**

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

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

B. Definitions of health and well-being	
Positive Definition 	Looks at how physically fit and mentally stable a person is. You have a positive attitude towards health and wellbeing if you realise that there is something you can do to improve your health and wellbeing and do it.
Negative definition 	Looks at the absence of physical illness, disease, and mental distress. You have a negative attitude towards your health and wellbeing if you: <ul style="list-style-type: none"> <li>• Base your attitude on not having anything wrong with you.</li> <li>• Continues as you are- Inc. keeping bad habits like smoking.</li> <li>• Assume that because you currently feel fine you will stay healthy in the future.</li> </ul>
Holistic definition 	It is a combination of physical health and social and emotional wellbeing. It is not just the absence of disease or illness; it looks at all aspects of a person's health and wellbeing. You have a holistic attitude towards health and wellbeing if you look after your: <ul style="list-style-type: none"> <li>• <b>Physical Health:</b> Be meeting the needs we have to keep our bodies working as well as they can, e.g. Food, water, shelter, warmth, clothing, rest, exercise and good personal hygiene.</li> <li>• <b>Intellectual health:</b> By meeting the needs we have to develop and keep our brains working as well as possible; these include mental stimulation to keep us motivated and interested.</li> <li>• <b>Emotional aspects of wellbeing:</b> By meeting the needs we have that make us feel happy and relaxed, e.g. being loved, respected and secure. Knowing how to deal with negative emotions, having positive self-concept and being respected by others.</li> <li>• <b>Social aspects of wellbeing:</b> By meeting the needs we have to help us develop and enjoy good relationships with others, including mixing with others in appropriate environments and having access to leisure facilities/ activities.</li> </ul>

C. Genetic inheritance				
Inherited physical Characteristics	Genes and environment			
<ul style="list-style-type: none"> <li>• Children inherit their physical; characteristics from their parents e.g. height, skin and eye colour and hair type and colour.</li> <li>• These characteristics can affect social and emotional wellbeing because they influence a person's self-concept (self-image and esteem).</li> </ul>	<ul style="list-style-type: none"> <li>• Chromosomes carry genes that determine aspects of persons physical makeup.</li> <li>• Gene is a section of DNA that carries a code. Different versions of a gene are called <b>alleles</b> (they can be faulty).</li> <li>• Environmental factors such as diet, also influence physical appearance. For example, a person may not grow to their full, genetically determined height if they do not have enough food.</li> </ul>			
Allele type <table border="1" style="width: 100%;"> <tr> <td>Dominant: If a gene is dominant a child inheriting it from only one birth parent will have the condition, e.g Huntington's disease.</td> <td rowspan="2">Effects of inherited disorders</td> </tr> <tr> <td>Recessive: If the gene is recessive a child would only develop the condition if it was inherited from both birth parents, e.g. Cystic fibrosis.</td> </tr> </table>	Dominant: If a gene is dominant a child inheriting it from only one birth parent will have the condition, e.g Huntington's disease.	Effects of inherited disorders	Recessive: If the gene is recessive a child would only develop the condition if it was inherited from both birth parents, e.g. Cystic fibrosis.	<ul style="list-style-type: none"> <li>• Physical health: Body systems, growth and mobility</li> <li>• Intellectual wellbeing: learning, thinking, problem solving and decision making.</li> <li>• Emotional wellbeing: how people feel about themselves.</li> <li>• Social wellbeing: the ability to build relationships and maintaining them.</li> </ul>
Dominant: If a gene is dominant a child inheriting it from only one birth parent will have the condition, e.g Huntington's disease.	Effects of inherited disorders			
Recessive: If the gene is recessive a child would only develop the condition if it was inherited from both birth parents, e.g. Cystic fibrosis.				



**What we are learning in LAA:**

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

D.	Balanced diet
<b>What is a balanced diet?</b>	<ul style="list-style-type: none"> <li>• Diet that contains the correct nutrients in the right proportions to keep out bodies and minds healthy.</li> <li>• It is also a lifestyle choice</li> <li>• Choosing to eat too much or too little might make us less able to take all the opportunities that life offers.</li> </ul>
<b>Overweight or underweight may:</b>	<p>A person over weight or under weight may:</p> <ul style="list-style-type: none"> <li>• Be prone to illness and conditions</li> <li>• Have their life expectancy reduced</li> <li>• Be less able to exercise effectively</li> <li>• Miss out on learning experiences</li> <li>• Miss out on some sporting activities</li> <li>• Be less successful in job interviews</li> <li>• Feel embarrassed and self-conscious about their appearance in social situations.</li> </ul>
<b>Essential parts of a healthy diet:</b>	<ul style="list-style-type: none"> <li>• Fats (saturated and unsaturated)</li> <li>• Carbohydrates (sugars and starches)</li> <li>• Minerals</li> <li>• Vitamins</li> <li>• Proteins</li> </ul>
<b>Est well guide says you should eat:</b>	<ul style="list-style-type: none"> <li>• Eat at least 5 portions of a variety of fruit and vegetables every day.</li> <li>• Base meals on potatoes, bread, rice, pasta or other starchy carbohydrates; choosing wholegrain versions where possible.</li> <li>• Have some dairy or dairy alternatives (such as soya drinks); choosing lower fat and lower sugar options.</li> <li>• Eat some beans, pulses, fish, eggs, meat and other proteins (including 2 portions of fish every week, one of which should be oily).</li> <li>• Choose unsaturated oils and spreads and eat in small amounts.</li> <li>• Drink 6-8 cups/glasses of fluid a day.</li> </ul>
<b>If you eat more than you need:</b>	<ul style="list-style-type: none"> <li>• The body will store food as fat and this can lead to:</li> <li>• Obesity, heart disease, high blood pressure, Strokes, Tooth decay or cancer</li> </ul>
<b>If you eat less than you need</b>	<ul style="list-style-type: none"> <li>• The body does not get enough nutrients to grow and develop properly and this can lead to:</li> <li>• Eating disorders, stunted growth, anaemia, heart failure, depression, tiredness, cancer or rickets.</li> </ul>

E	Chronic or Acute Illness	
	<p><b>Chronic illness-</b> Illness comes on gradually, is long term (more than 3 months) and generally can be treated but not cured. E.g Asthma, Diabetes, epilepsy, bipolar disease, Alzheimer’s disease</p>	<p><b>Acute illness-</b> Illness comes on quickly, is short term and can be cured. E.g. Cold, flue, broken bones, heartburn, appendicitis or Diarrhoea.</p>
<p>Some chronic conditions are acute but may develop because of chronic conditions. For example: osteoporosis (a chronic condition that weakness bones) masking their bones fragile and more likely to break. Broken bones are then an acute condition.</p>		
Possible negative effects of chronic illness		
Physical:	<ul style="list-style-type: none"> <li>• poor rate of growth</li> <li>• Unusual physiological change during puberty</li> <li>• Restricted movement</li> </ul>	Emotional: <ul style="list-style-type: none"> <li>• Negative self-concept</li> <li>• Stress</li> <li>• Decision making</li> </ul>
Intellectual:	<ul style="list-style-type: none"> <li>• Disturbed learning because of missing school</li> <li>• Difficulties in thinking and problem solving</li> <li>• Memory problems.</li> </ul>	Social <ul style="list-style-type: none"> <li>• Isolation</li> <li>• Loss of independence</li> <li>• Difficulties developing relationships</li> </ul>

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

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



**What we are learning in LAA:**

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

**H. The effects of social interactions on wellbeing**

Social integration	When people feel they belong to a group and can interact with others. Social interactions can happen between family members and friends, work colleagues, school learners, members of a community or interest groups.
Social isolation	Occurs when people do not have regular contact with others. This may be because they don't go out much because of physical illness, reduced mobility or unemployment. They might have a difficulty in communicating if they have a mental illness, depression or learning difficulties. Lastly, a person might be discriminated against because of culture, religion or disability.

**Positive effects of relationships**



**Physical:** physical support and day to day care and practical assistance.  
**Intellectual:** shared experiences, supported learning and thinking  
**Emotional:** unconditional love, security and encouragement, positive self-concept, feeling content, ability to build relationships with people outside the family, independence and confidence.  
**Social:** Companionship, social circle increases.

**Negative effects of social isolation**

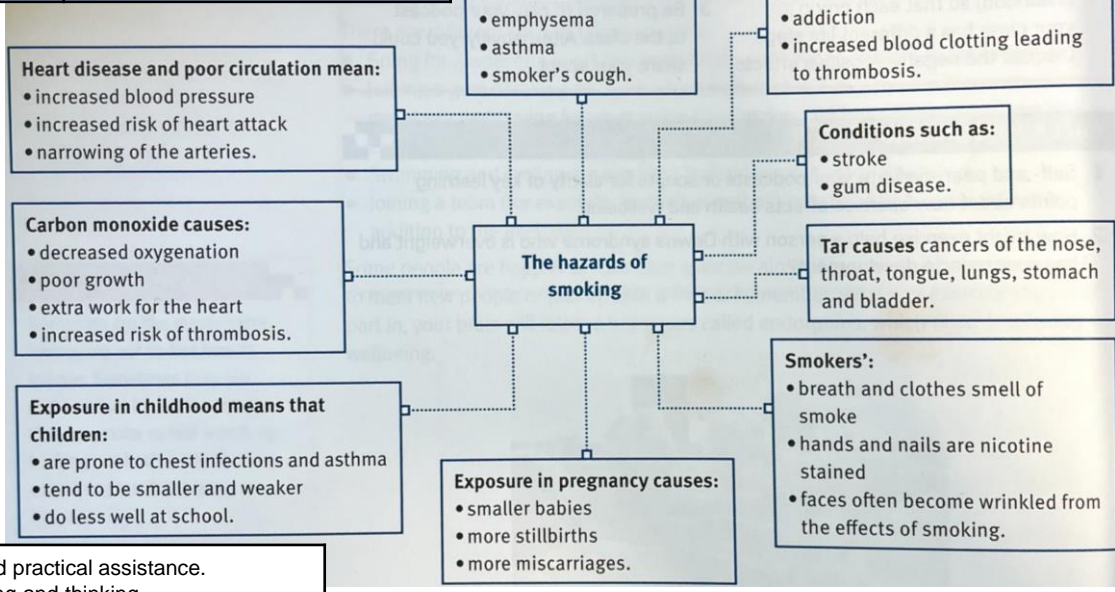


**Physical:** poor lifestyle choices like smoking and drinking, poor diet that can cause eating disorders.  
**Intellectual:** reduced ability to use thinking skills, missing school/work  
**Emotional:** feelings insecure, depression, anxiety, negative self-concept, feeling of hurt, loneliness and distrust, lack of independence, difficulty in controlling emotions.  
**Social:** difficulties in building relationships as lack skills.

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

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

**J. What are the hazards of Smoking**



**K. What are the effects of Personal Hygiene?**

Positive effects of good personal hygiene



- Helps prevent the spread of infection
  - Improves self-concept
  - Reduces number of bacteria that lives on us.
- You must:**
- Brush you teeth
  - Shower daily or bath
  - Wash your hair regularly
  - Keep fingernails and toenails clean and trimmed

Negative effects of poor personal hygiene

**Physical:** catching and spreading disease like food poisoning, sore throat, meningitis and athlete's foot. Bad body odour, bad breath and tooth decay.  
**Emotional:** loss of friendships and social isolation. Might be bullied and poor self-concept.  
**Social:** low social interactions as people don't want to be friends with someone that neglects their hygiene. Social isolation.

When caring for others:

- Bad hygiene can stop effective communication.
- Negative effect on the person being cared for and their health and wellbeing- pass on infection
- Discomfort for the person being cared for because of the odour or visible dirt under fingernails.

What we are learning in LAA:	
L.	What are the barriers to seeking help.
M.	What are the effects of unexpected life events on health and wellbeing
N.	What are the effects of economic factors (e.g, income) on health and wellbeing
O.	What are the effects of expected life events on health and wellbeing
<b>L.</b>	<b>What are the barriers to seeking help.</b>
<b>Culture</b>	Accessing HSC services can be influenced by values, traditions, way of life and beliefs of the society or group. <ul style="list-style-type: none"> <li>Some may have received discrimination when accessing other services.</li> <li>Some may not speak English well enough.</li> <li>Values and traditions not understood e.g. eye contact means respect in some cultures but not others.</li> <li>Some cultures a woman must be treated only by a female professional.</li> <li>Alternative therapies are used in some cultures</li> </ul>
<b>Gender</b>	Research shows that men are less likely to talk about their health and wellbeing than woman. This is because men are: <ul style="list-style-type: none"> <li>Often less open about their feelings</li> <li>Sometimes reluctant to appear vulnerable by asking for help</li> <li>Not aware of poor health signs as health campaigns target women's health more</li> <li>Unhappy to be examined by a female health worker.</li> </ul>
<b>Education</b>	Research shows that people who are better educated are more likely to seek help. This is because: <ul style="list-style-type: none"> <li>They like to research symptoms and know when help is needed</li> <li>Understand the importance of early diagnosis and treatment</li> <li>Know how and where to access services.</li> </ul>
<b>Stigma</b>	In some cultural groups there is a stigma attached to certain condition like depression. Stigma is a word used to describe something that people feel embarrassed about. Therefore, they wouldn't seek help.

M. What are the effects of unexpected life events on health and wellbeing		
Life event	Positive Effects:	Negative Effects:
<b>Imprisonment</b>	<ul style="list-style-type: none"> <li>Depression</li> <li>Loss of contact with family and friends</li> <li>Social isolation</li> <li>Restrictions on physical activity</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to study</li> <li>Improvement in health through balanced diet, lack of alcohol, reduced use of nicotine</li> </ul>
<b>Redundancy</b>	<ul style="list-style-type: none"> <li>Poor self-concept</li> <li>Anxiety about finances</li> <li>Fewer opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities to study or train for a new job</li> <li>More time to spend with family and friends</li> </ul>
<b>Exclusion or dropping out of education</b>	<ul style="list-style-type: none"> <li>Loss of contact with friends</li> <li>Social isolation</li> <li>Poor self-concept</li> <li>Lack of learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Catalyst for change of behaviour</li> <li>Opportunities for more suitable study or work situation</li> </ul>




N.	What are the effects of economic factors (e.g, income) on health and wellbeing	
	Positive Effects:	Negative Effects:
<b>Physical</b>	<ul style="list-style-type: none"> <li>Better financial resources can result in good housing conditions and healthy diet</li> <li>Manual jobs may improve muscle tone and stamina.</li> </ul>	<ul style="list-style-type: none"> <li>Low wages can affect diet and housing, leading to poor health.</li> <li>Manual jobs can cause muscular and skeletal problems</li> <li>Desk jobs lead to less activity and weight gain.</li> </ul>
<b>Intellectual</b>	<ul style="list-style-type: none"> <li>Better financial resources can result in more leisure time for intellectual activities</li> <li>Work, education or training helps to develop problem solving and thinking skills</li> </ul>	<ul style="list-style-type: none"> <li>Some people work very long hours to improve their financial position, leading to less leisure time and reduced learning opportunities.</li> <li>Being unemployed can result in poor mental health.</li> </ul>
<b>Emotional</b>	<ul style="list-style-type: none"> <li>A well-paid job gives a feeling of security.</li> <li>Being financially secure promotes positive self-concept</li> </ul>	<ul style="list-style-type: none"> <li>Financially worried can result in stress and breakdown of relationships.</li> <li>Unemployment or low-status work can lead to low self-concept</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>Better financial resources provide opportunities for socialising.</li> <li>Work gives opportunities for socialising with colleagues.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of financial resources reduces opportunities for socialising.</li> <li>Unemployment reduces opportunities for relationships, leading to social isolation.</li> </ul>

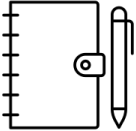
O.	What are the effects of expected life events on health and wellbeing	
Life event	Positive Effects:	Negative Effects:
<b>Starting school, college or uni</b>	<ul style="list-style-type: none"> <li>Build new relationships</li> <li>Extend knowledge and learning</li> <li>Develop new skills</li> <li>Improve confidence</li> </ul>	<ul style="list-style-type: none"> <li>Anxiety about new routines and meeting new people</li> <li>Insecurity about leaving parents and other families</li> </ul>
<b>Start a new job or career</b>	<ul style="list-style-type: none"> <li>Develop independence</li> <li>Improve thought processes</li> <li>Improve self-concept</li> </ul>	<ul style="list-style-type: none"> <li>Stress about learning new skills and routines</li> <li>Anxiety about meeting new people</li> </ul>
<b>Moving to a new house or area</b>	<ul style="list-style-type: none"> <li>Excitement</li> <li>Develop new friendships and relationships</li> </ul>	<ul style="list-style-type: none"> <li>Unhappiness at loss of old life</li> <li>Stress of moving</li> <li>Social isolation</li> </ul>
<b>Retirement</b>	<ul style="list-style-type: none"> <li>Reduced stress</li> <li>Time to socialise with family and friends</li> <li>Opportunities for leisure of physical activities</li> </ul>	<ul style="list-style-type: none"> <li>Loss of relationships with colleagues</li> <li>Possible loss of fitness and mobility</li> <li>Loss of intellectual stimulation and status</li> </ul>

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

<b>A.</b>	<b>Physiological health indicators</b>
<b>Pulse</b>	<p><b>Resting pulse rate</b> is measured when a person has been still for about 5 minutes. Health reading for an adult is 60-100 bpm.</p> <p><b>Pulse rate during exercise:</b> 220bpm minus the person's age.</p>
<b>Blood pressure</b>	<ul style="list-style-type: none"> <li>This is the pressure exerted by blood against the artery walls.</li> <li>It is measured in millimetres of mercury (mm Hg) and is shown in two numbers:                             <ul style="list-style-type: none"> <li>Systolic pressure: (the top number) is the maximum pressure in the blood vessels as the heart pushes out blood.</li> <li>Diastolic pressure: (the bottom number) as the minimum pressure in the vessels when the heart relaxes between the beats.</li> </ul> </li> </ul>
<b>Peak flow</b>	<ul style="list-style-type: none"> <li>Measured how quickly you can blow air out of your lungs.</li> <li>it is measured in liters per min (L/min).</li> </ul>
<b>BMI</b>	<ul style="list-style-type: none"> <li>Measures the amount of fat on your body in relation to your height to tell you if your weight is healthy.</li> </ul>

<b>B.</b>	<ul style="list-style-type: none"> <li><b>What are health indicators?</b></li> </ul>
<b>Importance of understanding indicators</b>	<ul style="list-style-type: none"> <li>Detect health problems at an early stage</li> <li>Track improvements or deterioration in health</li> <li>Make recommendations about health and treatments</li> <li>Give advice about future health risks</li> <li>Support individuals to make different lifestyle choices.</li> </ul>
<b>What are lifestyle indicators?</b>	<ul style="list-style-type: none"> <li>These indicators can be used to assess risks to an individual's health and wellbeing now and in the future.</li> <li>Professionals collect information about lifestyle choices by asking about a person's:                             <ul style="list-style-type: none"> <li>Weekly alcohol consumption</li> <li>Smoking habits</li> <li>Levels of physical activity and exercise.</li> </ul> </li> </ul>
<b>What are physiological indicators?</b>	<ul style="list-style-type: none"> <li>They show how well the body's systems are functioning.</li> <li>Health professionals check a person's health by taking measurements.</li> <li>They compare the results with published guidance.</li> </ul>

<b>C.</b>	<b>Interpreting lifestyle data</b>
<p><b>Interpreting data on smoking</b></p> 	<ul style="list-style-type: none"> <li>Smoking causes around 96,000 deaths in the UK annually.</li> <li>Smoker under the age of 40 are 5 times more likely to have a heart attack than non-smoker.</li> <li>Smoking causes 80% of deaths from lung cancer, 80% of bronchitis and 14% of deaths from heart disease.</li> <li>More than 25% of all cancer deaths are caused by smoking.</li> <li>On average a smoker will die 10 years earlier than a non-smoker.</li> <li>Smokers are more likely to develop facial wrinkles.</li> <li>Smoking is a cause of impotence and can lead to sperm abnormalities.</li> </ul>
<p><b>Interpreting data on alcohol</b></p> 	<ul style="list-style-type: none"> <li>Strongly linked to at least 7 types of cancer</li> <li>Alcohol-related liver disease accounts for 37% of liver disease and deaths.</li> <li>2/3s of cases of chronic pancreatitis are caused by heavy drinking</li> <li>You are between 2 and 5 times more likely to have an accident or injury</li> <li>Each drink per day increases the risk of breast cancer in woman between 7-13%</li> <li>Men and woman should not drink more than 14 units a week and not all in one go.</li> </ul>
<p><b>Interpreting data on inactivity</b></p> 	<ul style="list-style-type: none"> <li>Increased risk of breast cancer by 17.8% and colon cancer by 18.7%</li> <li>Increased risk of type 2 diabetes by 13%.</li> <li>Increased risk of coronary heart disease by 10.5%</li> <li>Leads to obesity and joint pain</li> <li>16.9% of all premature deaths are caused by inactive lifestyle.</li> <li>Active people have a lower risk of premature death.</li> <li>People who are inactive visit their GP more often and they spend 38% more time in hospital.</li> </ul>

<b>What we are learning in LAC:</b>		<b>C.</b>	<b>Recommended action to meet health and wellbeing improvement goals</b>	
A. What is a person-centred approach B. Health improvement plan C. Recommended action to meet health and wellbeing improvement goals D. SMART targets for health improvement plan E. Sources of support		<b>To lower blood pressure:</b> <ul style="list-style-type: none"> <li>• Eat five or more portions of fruit and veg a day</li> <li>• Cut out salt</li> <li>• Use relaxation techniques to reduce stress</li> <li>• Join a gym</li> <li>• Drink water alongside alcohol to reduce consumption</li> </ul>	<b>To reduce BMI:</b> <ul style="list-style-type: none"> <li>• Reduce fat and sugar intake</li> <li>• Do not exceed the recommended daily calories intake</li> <li>• Get off the bus a stop early and walk the rest of the way</li> <li>• Drink water instead of sugary drinks.</li> </ul>	
<b>A.</b>	<b>What is a person-centred approach.</b>		<b>To increase peak flow reading:</b> <ul style="list-style-type: none"> <li>• Half the number of cigarettes smoked each day</li> <li>• Use nicotine replacement therapies</li> <li>• Join an exercise or dance class.</li> </ul>	<b>To reduce pulse rate and improve recovery time after exercise:</b> <ul style="list-style-type: none"> <li>• Walk for half an hour at lunchtime</li> <li>• Drink decaffeinated drinks</li> <li>• Take up a physically active hobby</li> <li>• Join a yoga group.</li> </ul>
<b>Person-centred approach</b>	A holistic approach that puts the individual at the heart of health care planning, so that the whole range of physical, intellectual, emotional and social health needs are met.			
<b>When planning for health improvements include:</b>	<ul style="list-style-type: none"> <li>• The needs: physical, intellectual, emotional and social.</li> <li>• The wishes: likes, dislikes, choices and desired health goals.</li> <li>• Circumstances: illness or disability, access to facilities, previous experiences, family and relationships, responsibilities.</li> </ul>			
<b>Benefits of person-centred approach:</b>	<ul style="list-style-type: none"> <li>• Will feel involved</li> <li>• Is more likely to trust a health professional who listen to them</li> <li>• Will feel more secure</li> <li>• Is more likely to follow the plan and achieve the targets</li> <li>• Will take responsibility for their own health.</li> </ul>			
<b>B.</b>	<b>Health improvement plan</b>	<b>D. SMART targets for health improvement plan</b>		
<b>What is it?</b>	Health and wellbeing improvement plans are often based on an individual's physiological and lifestyle indicators. Plans should be person-centred and include goals, actions and targets and possible sources of support.	<b>Specific</b>	The target must be clearly stated. It should say exactly what you mean, such as to 'lose 2 kg in weight in a week'. The target should be clear and not open to any misunderstanding.	
<b>The plan will identify:</b>	<ul style="list-style-type: none"> <li>• The health issues and goal</li> <li>• The recommended actions to take</li> <li>• A set of targets for health improvement</li> <li>• The supports that are needed</li> <li>• Possible obstacles to progress and way to overcome them.</li> </ul>	<b>Measurable</b>	A target of to 'lose weight' is too vague. A specific amount must be stated so you can prove you have met your target.	
<b>Positive effects of a health improvement plan</b>	<ul style="list-style-type: none"> <li>• Be fitter</li> <li>• Loose weight</li> <li>• Have improved self-concept</li> <li>• Lower blood pressure, healthier heart</li> <li>• Reduced risk of cancer</li> <li>• Taking control of their health outcomes and reaching health goals</li> </ul>	<b>Achievable/attainable</b>	If you are following a health and wellbeing improvement plan you must feel it is possible to achieve it. If you do not, you will probably give up before you have even started. An achievable target is to 'lose 1kg this week'. An unachievable target would be to 'lose 20kg this week'.	
		<b>Realistic</b>	The target set must be realistic in that you must be able to physically do it. It is not realistic to expect a person who is older and not very fit to run for 30 minutes a day to help weight loss, but it is realistic to ask the same of a fitter, younger person.	
		<b>Time-related</b>	The target must have a deadline, so that you know when you need to achieve the target by, and progress can be assessed.	
		<b>E.</b>	<b>Sources of support</b>	
		<b>Informal support</b>	Informal support is the support an individual receives from partners, family and friends. It is usually the first form of support an individual experiences after and expected or unexpected life event. Informal support can provide reassurance, encouragement, advice, a sense of security, someone to talk through options with and practical help.	
		<b>Professions (formal) support</b>	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.	
		<b>Voluntary support</b>	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.	

F.	What are the potential obstacle to implementing plans?	G.	What are the possible obstacles to accessing services?	
Emotional/psychological-Lack of motivation	<ul style="list-style-type: none"> <li>• A conflict between choices such as worrying that giving up smoking could result in weight gain</li> <li>• Other priorities in a person's life- such as getting married or bereavement.</li> <li>• Having negative attitude- believing change will be too difficult</li> <li>• Lack of progress for example losing eight quickly in the first weeks but then slowing down.</li> <li>• Having a blip- thinking there is no point in continuing the plan after briefly returning to an old lifestyle.</li> </ul>	Type of obstacle	Possible obstacles	Suggestions to overcome obstacles
Emotional/psychological-Low Self-concept	<ul style="list-style-type: none"> <li>• People with low self-concept don't value themselves,</li> <li>• Feel powerless to change their lifestyle or that there's no point in starting because the task seems too big.</li> <li>• Some thin that because they were unsuccessful in other aspects of their life, they won't achieve their health goals.</li> <li>• They may not feel they have support and approval from family and friends even if they really do.</li> </ul>	Geographical	<ul style="list-style-type: none"> <li>• Service is difficult to get to because of poor bus or train services.</li> </ul>	<ul style="list-style-type: none"> <li>• Arrange hospital transport</li> <li>• Suggest telephone helplines or internet support groups.</li> </ul>
Emotional/psychological-Acceptance of the current state	<ul style="list-style-type: none"> <li>• People my accept their present health problems or lifestyle choices, as it is easier to stay the same than to make changes.</li> <li>• Have no incentive to make a change because they do not understand the health risks.</li> <li>• Have no desire to change, for example, if they are happy with their weight or don't want to give up smoking.</li> </ul>	Financial	<ul style="list-style-type: none"> <li>• Charges to use the services</li> <li>• Time off from work would mean loss of pay</li> </ul>	<ul style="list-style-type: none"> <li>• Check for entitlements, such as medicines and treatments</li> <li>• Direct the person to advice on benefits and employee rights.</li> </ul>
Time constraints	<p>People find that they do not have the time to achieve their health improvements targets because of:</p> <ul style="list-style-type: none"> <li>• Care of young children, family members that are not well.</li> <li>• Regular and additional work and study commitments</li> <li>• Domestic chores</li> <li>• Medical appointments</li> </ul>	Psychological	<ul style="list-style-type: none"> <li>• Fear of being judged because there is stigma around a health problem (mental health, obesity)</li> </ul>	<ul style="list-style-type: none"> <li>• Talk about concerns and reassure</li> <li>• Direct the person to a charity that supports people with a particular health problem.</li> </ul>
Availability of resources	<p>Financial obstacles:</p> <ul style="list-style-type: none"> <li>• Gym memberships, entry fee for a swimming pool</li> <li>• Cost of attending exercise classes</li> <li>• Cost of travel to the gym. pool or to attend health appointments</li> <li>• Higher costs of some healthy foods.</li> <li>• Lack of and the cost of exercise equipment</li> </ul>	Physical	<ul style="list-style-type: none"> <li>• Difficulty getting into the buildings where the service is provided (no wheelchair access).</li> <li>• No where to park near the service</li> </ul>	<ul style="list-style-type: none"> <li>• Be aware of services that are adapted for easy access</li> <li>• Ask a friend or family member to drop the person off at the service</li> </ul>
Unachievable targets	<ul style="list-style-type: none"> <li>• Expectations too high</li> <li>• Targets are not clear</li> <li>• There are too many targets</li> <li>• Timing is wrong/poor</li> <li>• Targets are not suitable for the individual</li> <li>• Fear of not being able to meet targets</li> <li>• Not being in the right frame of mind to commit to the plan, e.g. due to depression.</li> </ul>	Personal needs	<ul style="list-style-type: none"> <li>• Communication difficulties because of poor language skills, sensory or learning disability .</li> <li>• Concern that cultural needs are not understood</li> </ul>	<ul style="list-style-type: none"> <li>• Provide support services that meet the person's needs, such as a BSL signer, interpreter, advocate</li> <li>• Use anti-discriminatory practice and encourage others to do so</li> </ul>
Lack of support	<ul style="list-style-type: none"> <li>• Diet- find it difficult if a person on a healthy eating plan is surrounded by others that eat junk food or tempted by the chocolate and biscuits in the cupboard, Family and friends go out for meals instead of doing other activities.</li> <li>• Smoking- friends and family smoking and offering them cigarettes. Lacking will power to quit.</li> <li>• Alcohol consumption- someone that is used to drinking with family and friends will find it difficult to stop without their support. It would be hard to quit if the family and friends drink wine with their meals, friends centre a night out around heavy drinking at pubs and clubs.</li> </ul>	Resources	<ul style="list-style-type: none"> <li>• Limits on services, such as support aids and equipment</li> <li>• Staff shortages, leading to long waits for appointments and support.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggest sources of second-hand equipment</li> <li>• Look for alternative strategies, for example an exercise DVD if there are no places at an exercise class.</li> </ul>
Ability, disability and addiction	<ul style="list-style-type: none"> <li>• Understand what they need to do</li> <li>• Learn how to make the required changes in their lives.</li> <li>• Any places the person uses are wheelchair accessible</li> <li>• Any exercise advised is wheelchair friendly.</li> <li>• If stop smoking, then can put on weight- put people off.</li> <li>• Like the way alcohol makes them feel but cant admit that they have a problem</li> </ul>			