Year 11 Art and Design Summer Term Knowledge Organiser

Key Vocabulary:

1	**The Formal Elements of Art**	The formal elements of art are used to make a piece of artwork. The art elements are line, tone, texture, shape, pattern and colour. They are often used together, and how they are organised in a piece of art determines what the finished piece will look like.
2	**A01**	Development of ideas and understanding of different artists. This could include artist research, and analysis work, moodboards, reproductions of artists' work or use of these ideas in their own work.
3	**A02**	Refinement of skills and experimentation using materials and media. This could include drawing, painting, mixed media work, 3D work, edited photography and combination of materials together.
4	**A03**	Recording of skills using drawing, photography and annotation. This could include observational drawings, realistic photography and mind maps.
5	**A04**	Present a personal or final response/s. This is usually a final piece. This could include a final piece or concluded pieces of work in their preparatory work. The work must link to artists researched or on a chosen starting point.
6	**Artist Research**	Showing your understanding of an artist/s work or style and how they have influenced you.
7	**Critical Understanding**	Ability to analyse others artwork. Engaging with ideas, images and identifying how values and meanings are conveyed.
8	**Annotation**	Writing notes and descriptions besides work in order to understand what has been created, why and how work has progressed.
9	**Artist Response**	Showing your understanding of an artists work or style and how they have influenced you.
10	**scale**	The scale of something is its size. To scale something is to enlarge it. To scale down is to do a smaller version or reduction.
11	**balance**	If a picture or piece of art work has balance then each part of it works well together in a whole piece.
12	**composition**	The arrangement of elements in a piece of art.
14	**media**	Different materials.
15	**contrast**	Created by using opposites near or beside one another, such as a light object next to a dark object or a rough texture next to a smooth texture.
16	**perspective**	Creates the feeling of depth using lines that make your image appear to be three dimensional. The closer the image is, the more detailed it will appear, and the larger it will be.
17	**reflect**	Looking back at your work and deciding how you could improve something.

AQA Biology (Combined Science) Unit 7: Ecology Knowledge Organiser

Keywords

Biodiversity - the variety of living organisms.

Carrion - decaying flesh and tissue of dead animals.

Community - made up of the populations of different species living in a habitat.

Competition - the negative interaction between two or more organisms which require the same limited resource.

Consumers - feed on other organisms for their energy. Can be primary, secondary or tertiary.

Decomposers - organisms which feed on dead and decaying organisms. They break down the biomass and release nutrients into the soil.

Deforestation - the removal and destruction of trees in forest and woodland.

Ecosystem - the interaction between the living organisms and the different factors of the environment.

Global warming - the increase of the average global temperature.

Habitat - where a living organism lives.

Interdependence - the interaction between two or more organisms, where it is mutually beneficial.

Population - the number of individual organisms of a single species living in a habitat.

Predators - organisms which kill for food.

Prey - the animals which are eaten by the predators.

Producers - convert the sun's energy into useful compounds through photosynthesis. They are green plants or algae.

Scavengers - organisms which feed on dead animals (carrion).

Species - organisms of similar morphology which can interbreed to produce fertile offspring.

Abiotic and Biotic Factors

Abiotic factors are the non-living factors of an environment. E.g. moisture, light, temperature, CO_2, wind, O_2 or pH.

Biotic factors are the living factors of an environment. E.g. predators, competition, pathogens, availability of food.

Adaptations

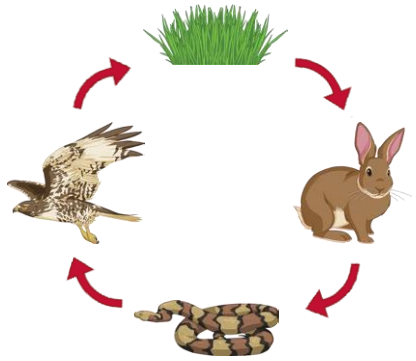
Adaptations are specific features of an organism which enable them to survive in the conditions of their habitat.
Adaptations can be structural, behavioural or functional:

- **Structural adaptations** are features of the organism's body e.g. colour for camouflage.
- **Behavioural adaptations** are how the organism behaves e.g. migration to a warmer climate during colder seasons.
- **Functional adaptations** are the ways the physiological processes work in the organism e.g. lower metabolism during hibernation to preserve energy.

A plant or animal will not physically change to adapt to its environment in its lifetime. Instead, there is natural variation within the species and only organisms whose features are more advantageous in the environment survive. The survivors then go on to reproduce and pass on their features to some of their offspring. The offspring who inherit these advantageous features are better equipped to survive. Charles Darwin described this process as 'survival of the fittest'.

Food Chains

The source of all energy in a food chain is the sun's radiation. It is made useful by plants and algae which produce organic compounds through photosynthesis.

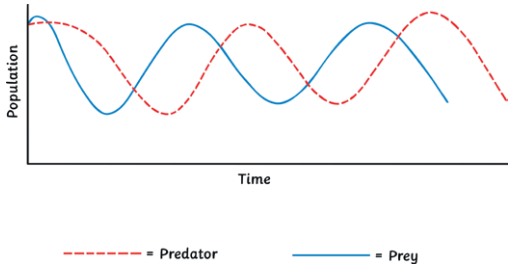


The living organisms use the energy to produce biomass and grow.

When a living organism is consumed, some of the biomass and energy is transferred. Some of the energy is lost.

Remember: the arrow in a food chain indicates the direction of the flow of energy.

Populations of predators and prey increase and decrease in cycles. The size of the predator population depends on the size of the prey population and vice versa. Overall, there is a stable community.



Competition

Species will compete with one another and also within their own species to survive and to reproduce.

Mutualism occurs when both species benefit from a relationship.

Parasitism occurs when a parasite only benefits from living on the host.

Animals compete for resources such as food, water and space/shelter. They may also compete within their own species for mates.

Plants compete for resources including light, water, space and minerals. All these resources are needed for photosynthesis so the plant can make its own food. Plants do not need to compete for food.

Deforestation and Land Use

Humans use land for buildings, quarrying, mining, agriculture and landfill. As the human population increases and we take more land, there is less space for other organisms to live.

Deforestation (to use wood as a fuel/material or to clear space for other uses) destroys habitats where other organisms live.

Peat bogs are produced when decomposition occurs over a very long time. Peat stores a lot of carbon and can be extracted for use by gardeners or as an energy source. Burning peat releases a lot of carbon dioxide into the atmosphere which contributes to the greenhouse effect.

Trees absorb carbon dioxide for photosynthesis, so as they are cut down and removed, less carbon dioxide is taken from the atmosphere. Furthermore, when the trees are burned, they release carbon dioxide back into the atmosphere. The excess carbon dioxide can lead to global warming and the changes to the ecosystem cause reduced biodiversity.

AQA Biology (Combined Science) Unit 7: Ecology Knowledge Organiser

Water Cycle

Convection is the movement caused within a fluid as the hotter, less dense material rises and colder, denser material sinks under the influence of gravity. This results in the transfer of heat.

Evaporation occurs when heat energy from the surroundings (or a heat source) is transferred to water particles as kinetic energy. The particles begin to move more rapidly and can turn from a liquid into a gas.

Condensation occurs when moving particles transfer kinetic energy to the surroundings. The particles begin to move even more slowly and can turn from a gas into a liquid.

Precipitation occurs when rain, snow, sleet, or hail falls to (or **condenses** on) the ground.

Transpiration is the process by which water is carried through plants from roots to the stomata on the underside of leaves and it evaporates into the surroundings.

Global Warming

The **greenhouse effect** is the natural process where some of the Sun's radiation is trapped within the insulating layer of the atmosphere. This maintains a temperature suitable to support life on Earth.

Most of the radiation from the Sun is absorbed by the Earth when it reaches the surface. The rest of the infrared radiation is reflected from the surface and absorbed by the greenhouse gases and clouds in the atmosphere. This is then re-emitted in all directions.

However, due to many contributing factors, the global temperature is gradually increasing. Several gases, called greenhouse gases, trap the heat around the Earth; the most concerning is carbon dioxide. Human activities contribute to the excess amount of carbon dioxide in the atmosphere and so are a cause of global warming.

Global warming leads to the melting of ice caps, rising sea levels, flooding, changes to climate, changes in migration patterns, changes in species distribution and reduction in biodiversity.

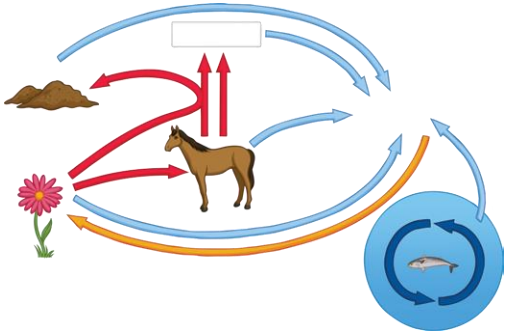
RPI: Field Techniques Quadrats and Transects

The distribution of an organism is affected by the environment and abiotic factors.
Quadrats can be used to measure the frequency of an organism in a given area e.g. the school field. You could count the individual organisms or estimate the percentage cover. You must collect data from at least two areas to make a comparison. Quadrats should always be placed randomly.

Transects are used to measure the change of distribution across an area e.g. from the edge of a river and moving further from the water's edge. You could either count the number of organisms touching the transect at regular intervals or use a quadrat placed at regular intervals along the transect.

$$\text{mean} = \frac{\text{total number of organisms}}{\text{number of quadrats}}$$

Carbon Cycle

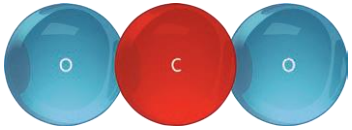


The main focus on the carbon cycle is its transfer to and from the atmosphere. When carbon is in the atmosphere, it combines with oxygen to form carbon dioxide, a greenhouse gas.

Carbon is transferred from the atmosphere when plants absorb carbon dioxide for photosynthesis and when the gas is dissolved into oceans.

Carbon is transferred to the atmosphere through respiration by animals, plants and bacteria and by combustion of fossil fuels (coal, oil and natural gas).

Dead animals and plants are decomposed and their matter is broken down by microbes and fungi. These organisms are collectively called decomposers. When the organisms are broken down, the microbes and fungi release carbon dioxide into the atmosphere through respiration.



AQA Biology (Combined Science) Unit 7: Ecology Knowledge Organiser

Biodiversity and Waste Management

Biodiversity is the variety of living organisms on the earth or in an ecosystem. It is important in helping to maintain stable ecosystems. Organisms are often interdependent, relying on others as food sources, or to create suitable environmental conditions to survive. Human survival is also dependent on this biodiversity.

The global human population has exceeded 7 billion.
Human population has increased due to modern medicine and farming methods, reducing famine and death from disease.
This means a greater demand for food, resources and water.
It also means more waste and emissions are created.

Sewage, toxic chemicals, household waste and gas emissions pollute the water, land and air, killing plants and animals and reducing biodiversity.

Maintaining Ecosystems and Biodiversity

There are many ways that biodiversity and ecosystems are maintained:

- Breeding programmes can help to protect endangered species from extinction.
- Conservation programmes can help to protect and preserve specialised ecosystems and habitats such as peat bogs and coral reefs.
- Reintroduction of hedgerows and field margins on agricultural land can help improve biodiversity by breaking up the monoculture crops.
- Sustainable forestry programmes help to manage the woodlands and reduce the deforestation to a sustainable rate.
- Societies actively encourage recycling and reusing of products and packaging to reduce the household waste going to landfill sites.

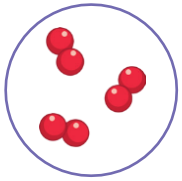
Unfortunately these programmes can be difficult to manage. They are often expensive and are difficult to regulate. People who are employed in certain areas, e.g. tree felling, cannot always transfer their skills to an environmentally friendly role and so become unemployed. It is difficult to maintain biodiversity whilst preventing crops being overrun with pests and weeds, which would affect food security for the human population.

AQA GCSE Chemistry (Combined Science) Unit 8: Chemical Analysis

Pure Substances

Pure substances, in chemistry, only contain **one type of element** or **one type of compound**. For example, pure water will just contain water (a compound).

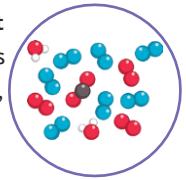
In our everyday language, we use the word 'pure' differently to how it is used in chemistry. Pure can mean a **substance** that has had **nothing else added to it** and is in its natural state. An example of this is pure orange juice. This means that the bottle will just contain orange juice and no other substances.



Elements are made up of **one type of atom**. For example, oxygen is made up of oxygen atoms. Carbon is made up of carbon atoms.

Compounds are **two or more elements** that are **chemically joined** together. For example, NaCl which is sodium chloride.

Mixtures are **two or more elements or compounds** that are **not chemically joined** together. An example of this is a standard cup of coffee. Coffee contains water, milk, coffee and possibly sugar. The components of the cup of coffee are not bonded together.



Pure Substances have a **sharp melting point** compared to **impure** substances which **melt over a range** of temperatures.

Formulations

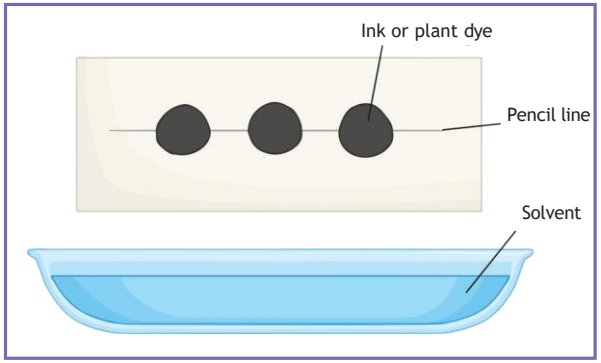
Formulations are **mixtures of compounds or substances** that **do not react together**. They do **produce a useful product** with desirable characteristics or properties to suit a particular function.

There are examples of formulations all around us such as medicines, cleaning products, deodorants, hair colouring, cosmetics and sun cream.

Chromatography

Paper chromatography is a separation technique that is used to **separate** mixtures of **soluble substances**. How soluble a substance is determines how far it will travel across the paper.

In chromatography, there are **two phases**: the mobile and **stationary** phase.

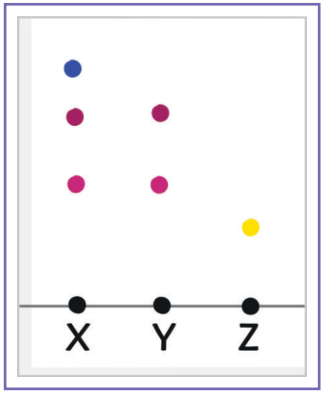


The **mobile phase moves** through the stationary phase. The **solvent** is the **mobile phase**. It moves through the paper carrying the different substances with it.

The **stationary phase** in paper chromatography is the **absorbent paper**.

Separation of the dissolved substances produces what is called a **chromatogram**. In paper chromatography, this can be used to **distinguish** between those substances that are **pure** and those that are **impure**.
Pure substances have **one spot** on a chromatogram as they are made from a single substance. **Impure substances** produce **two or more spots** as they contain multiple substances.

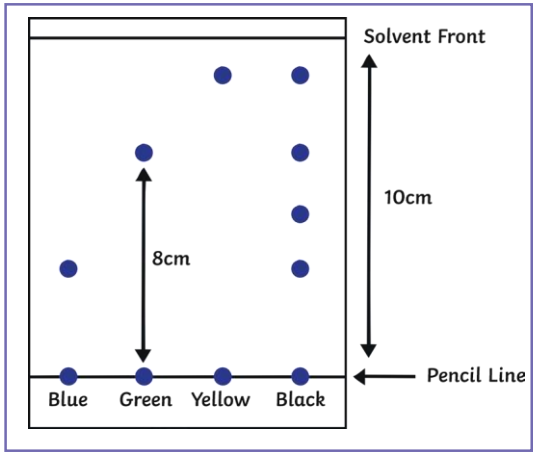
By calculating the **R_f values** for each of the spots, it is possible to identify the unknown substances. Similarly, if an unknown substance produces the **same number** and **colour of spots**, it is possible to match it to a known substance.



R Value

$$R_f = \frac{\text{distance travelled by substance}}{\text{distance travelled by solvent}}$$

Different compounds have different R_f values in different solvents. The R_f values of known compounds can be used to help identify unknown compounds.



Required Practical - Paper Chromatography

Investigate how paper chromatography can be used to separate and distinguish between coloured substances.

Step 1 - Using a ruler, measure 1cm from the bottom of the chromatography paper and mark with a small dot using a pencil. Rule a line across the bottom of the chromatography paper with a pencil, going through the dot you have just made.

Step 2 - Using a pipette, drop small spots of each of the inks onto the pencil line. Leave a sufficient gap between each ink spot so that they do not merge.

Step 3 - Pour a suitable solvent into the bottom of a container such as a beaker. The solvent should just touch the chromatography paper. The solvent line must not go over the ink spots as this will cause the inks to run into each other.

Step 4 - Place the chromatography paper into the container and allow the solvent to move up through the paper.

Step 5 - Just before the solvent line reaches the top of the paper, remove the chromatogram from the container and allow to dry.

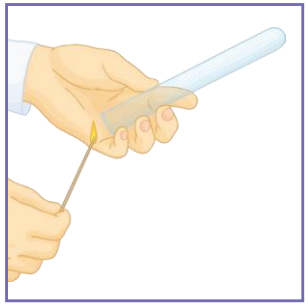
Step 6 - Once the chromatogram has dried, measure the distance travelled by the solvent.

Step 7 - Measure the distance travelled by each ink spot.

Step 8 - Calculate the R_f value. Compare the R_f values for each of the spots of ink.

$$R_f = \frac{\text{distance travelled by substance}}{\text{distance travelled by solvent}}$$

Identification of the Common Gases

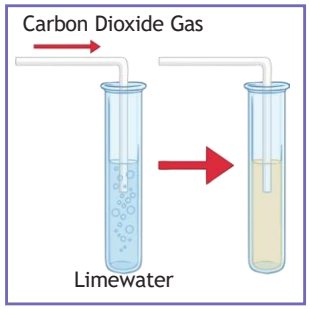


The Test for Hydrogen

Place a burning splint at the opening of a test tube. If hydrogen gas is present, it will burn rapidly with a **squeaky-pop sound**.

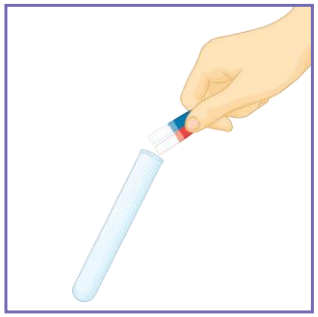
The Test for Oxygen

Place a glowing splint inside a test tube. The **splint will relight** in the presence of oxygen.



The Test for Carbon Dioxide

Calcium hydroxide (lime water) is used to test for the presence of carbon dioxide. When carbon dioxide is bubbled through or shaken with limewater, the limewater turns **cloudy**.



The Test for Chlorine

Damp litmus paper is used to test for chlorine gas. The litmus paper becomes **bleached and turns white**.

AQA GCSE Chemistry (Combined Science) Unit 9: Chemistry of the Atmosphere

The Early Atmosphere

Approximately **4.6 billion years ago** the Earth was formed. Scientists have lots of ideas and **theories** about how the atmosphere was produced and the gases within it, but due to the lack of evidence, they cannot be sure.

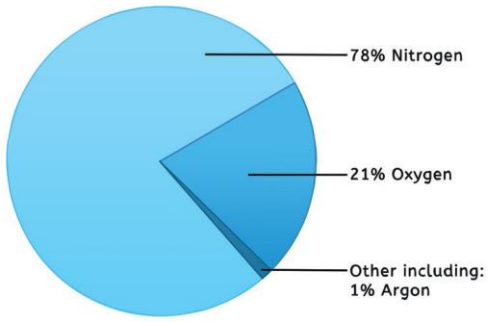
One theory suggested that **intense volcanic activity** released gases that made **Earth's early atmosphere** very similar to that of Mars and Venus. These planet's atmospheres mainly consist of carbon dioxide with little oxygen.

Nitrogen gas would have also been released from volcanoes and would have built up in the atmosphere.

Water vapour in Earth's early atmosphere would have **condensed** to create the **seas and oceans**. Carbon dioxide would have dissolved into the water, decreasing the level in the atmosphere.

Percentage of Gases in the Atmosphere

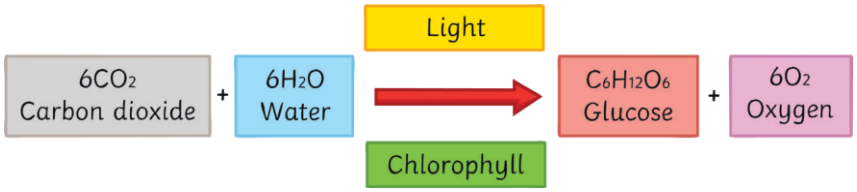
The pie chart below shows the abundance of each gas in our atmosphere.



How Did the Levels of Oxygen Increase?

2.7 billion years ago, algae first produced oxygen. Gradually over time, the levels of oxygen in our atmosphere increased as plants evolved. This was followed by animals as the levels of oxygen increased to a level that would sustain more complex life.

Oxygen is produced by plants in the process of **photosynthesis**.



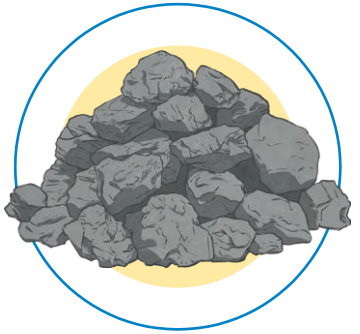
How Did the Levels of Carbon Dioxide Decrease?

Carbon dioxide **dissolves** in water. As water vapour condensed and the oceans and seas formed, the carbon dioxide gas dissolved producing **carbonate compounds**. This process reduced the amount of carbon dioxide in the atmosphere. Carbonate compounds were then **precipitated**: limestone is an example of a sedimentary rock; it has the chemical name calcium carbonate.

Plants in the oceans absorbed **carbon dioxide** gas for **photosynthesis**. The organisms from the food chains that the plants supported were turned into fossil fuels. **Fossil fuels** are **non-renewable** and consist of **coal, crude oil, and gas**, all of which contain carbon.

Crude oil was formed millions of years ago. When aquatic plants and animals died, they fell to the bottom of the sea and got trapped under layers of sand and mud. Over time, the organisms got buried deeper below the surface. The **heat and pressure** rose, turning the remains of the organisms into crude oil or natural gas. Oxidation did not occur due to the lack of oxygen.

Coal is a fossil fuel formed from **giant plants** that lived hundreds of millions of years ago in swamp-like forests. When these plants died, they sank to the bottom of the swamp where dirt and water began to pile on top of them. Over time, pressure and heat increased and the plant remains underwent chemical and physical changes. The oxygen was pushed out and all that remained was coal.



The Human Impact and the Greenhouse Effect

Scientists believe that human activities have resulted in the **increased** amount of greenhouse gases in the atmosphere. Activities such as **farming cattle** and **farming rice** release huge amounts of **methane** into the atmosphere.

Burning **fossil fuels** in cars and power stations releases large amounts of **carbon dioxide**. With large areas of the rainforest being cut down through **deforestation**, the excess carbon dioxide is not being absorbed by photosynthesis.

However, not everyone believes that humans are causing the rise in greenhouse gases. Some believe that the rise in global temperatures is associated with cycles of climate change and natural factors.

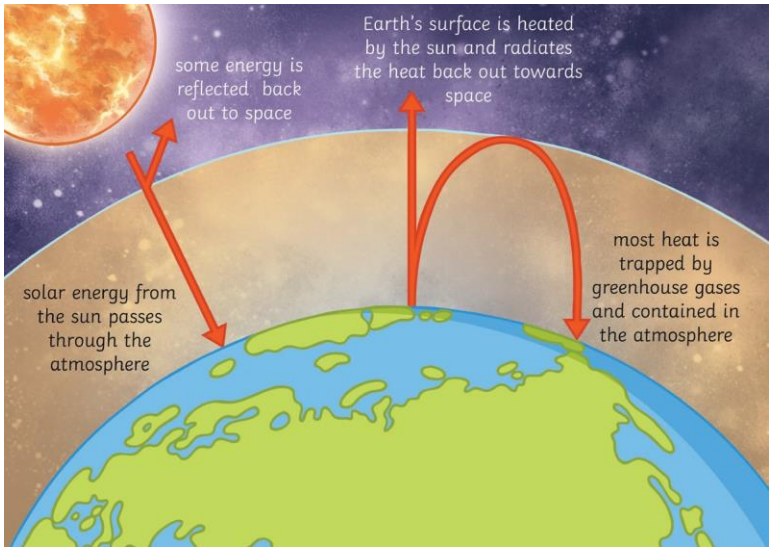
Climate science is often complicated as there are **difficulties** associated with **predicting future global temperatures**. The media present information that can be biased, inaccurate or lacks substantial evidence.

After reading an article on global warming, consider the trustworthiness of the source by considering these factors:

- Is the research done by an expert in that field and do they have the right skills and qualifications to report on the issue?
- Which organisation is reporting the evidence? If it is a newspaper, some stories are sensationalised in order to sell papers.
- Was the research funded by a legitimate organisation and was it conducted in a non-biased way? Think about the methods that were used to obtain the data and the impact the collection and analysis of this data had on the overall result.

AQA GCSE Chemistry (Combined Science) Unit 9: Chemistry of the Atmosphere

The Greenhouse Effect



A greenhouse is a house made of glass and is commonly used by gardeners to help grow plants and keep them warm. As the sun shines through the greenhouse, the air is heated up and becomes trapped by the glass and is prevented from escaping. During daylight, a greenhouse stays quite warm and this lasts into the night.

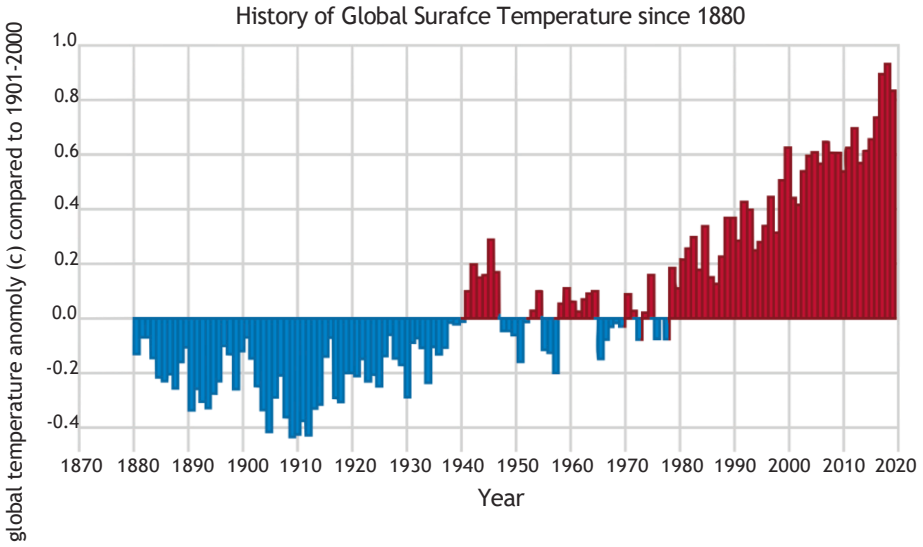
The earth and its atmosphere are very similar to that of a greenhouse. The greenhouse gases in the atmosphere trap the heat and keep the earth warm. The main greenhouse gases are **carbon dioxide**, **water vapour and methane**. During the daylight, the sun warms up the earth's surface. During the night, as the earth begins to cool and release the heat back into the atmosphere, some of the heat is trapped by the greenhouse gases in the atmosphere.

If the **greenhouse effect** becomes too **strong**, the earth will get too warm and melt the Arctic ice. As we burn more fossil fuels, the levels of **carbon dioxide** and the other greenhouse gases **increase** in our atmosphere which makes the greenhouse effect stronger.

What is the Difference Between Climate Change and Global Warming?

Since the Earth was formed over 4.6 billion years ago, its climate has constantly been changing with several ice ages followed by warmer temperatures. Changes in the Sun's energy reaching the Earth and volcanic eruptions were responsible for the changes until about 200 years ago.

Global warming is different to climate change and is used to explain how the earth's climate has warmed up over the past 200 years. Scientists believe that the warming of the climate is due to the activities of humans.



Carbon Footprint

The carbon footprint is the total amount of **carbon dioxide** and other greenhouse gases emitted over the full life cycle of a product, service or event.

An individual's carbon footprint is a calculation of all the activities that that person has taken part in throughout the year.

These activities might involve flying abroad or **travelling** by bus or rail. Each of which might be powered by petrol or diesel. **Heating a home** in winter by using a gas-powered boiler and using electricity to power lights and electronic devices. **Food** also has a **carbon footprint**, for example, beef and rice produces huge amounts of methane when farmed.

Nitrogen

Nitrogen and oxygen react together to make oxides of nitrogen. This occurs inside a **car engine** where there is a high temperature and pressure. Many compounds can be formed when nitrogen reacts with oxygen. The two that are formed inside a car engine are NO and NO_2.

Nitrogen compounds are grouped together with the general formula NO_x. Nitrogen compounds, along with sulfur dioxide, are also responsible for acid rain.

Compounds of nitrogen oxides react in the atmosphere with ultraviolet light from the sun to produce **photochemical smog**. The smog is most noticeable during the morning and afternoon and occurs mainly in densely populated cities.

The presence of smog can have a **major impact on human health**, particularly to those who suffer with **asthma**.

Combustion

Complete combustion occurs when there is **enough oxygen** for a fuel to burn. A hydrocarbon will react with oxygen to produce carbon dioxide and water.

propane + oxygen → carbon dioxide + water

$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$

Incomplete combustion occurs when there **isn't enough oxygen** for a fuel to burn. The products in this reaction are water and poisonous **carbon monoxide**. Carbon particles (soot) may also be seen.

ethane + oxygen → carbon monoxide + water

$2C_2H_6 + 5O_2 \rightarrow 4CO + 6H_2O$

Carbon monoxide is a poisonous gas. It is often called the **silent killer** due to it being colourless and odourless. Carbon monoxide works by binding to the **haemoglobin** in your red blood cells. This prevents them from carrying oxygen to the cells around your body. Carbon monoxide detectors are used to detect levels of the gas in the surrounding air and are often placed near gas-powered boilers to detect gas leaks.

Particulate carbon irritates the lining of the lungs making asthma worse and could cause cancer. **Global dimming** is caused by particulates of carbon blocking out the Sun's rays and may reduce rainfall.

Sulfur Dioxide

Sulfur dioxide is an **atmospheric pollutant**. It is a gas that is produced from the burning of **fossil fuels**. Sulfur dioxide is able to dissolve in rainwater and produces **acid rain**. Acid rain causes damage to forests, kills plants and animals that live in aquatic environments, and damages buildings and statues as the acid rain erodes the stone that they are made from.

sulfur + oxygen → sulfur dioxide

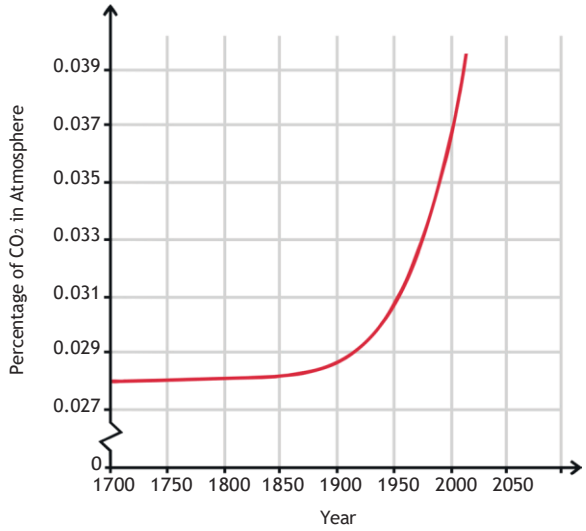
$S + O_2 \rightarrow SO_2$

Sulfur dioxide can be further oxidised to form sulfur trioxide.

What is the Link Between Carbon Dioxide and Global Warming?

There is a strong correlation between the percentage concentration of carbon dioxide in the atmosphere and increased global temperatures.

The impact of this is that the polar ice caps are melting, sea levels are rising and habitats and rainfall patterns are changing. The impact of which is already being felt around the globe. The consequences of human activity will affect us all.



AQA GCSE Chemistry (Combined Science) Unit 10: Using Resources

Sustaining Human Life on Earth

The human **population** is **increasing** rapidly and our use of earth's finite resources has increased. If humans continue to use these resources at the rate at which we are, then we will reach a point where the human population cannot be sustained on earth.

Humans use the **earth's natural resources** for warmth, shelter, food, clothing and transport. Scientists are making **technological advances** in **agricultural** and **industrial processes** to provide food and other products that meet the growing needs of the human population but it is of major importance that this is done in a sustainable way so that our finite resources are not used up.

Earth's Resources

Finite resources are those of which there is a **limited supply**, for example coal, oil and gas. These resources can be used to provide energy but, one day, their supply will run out.

Crude oil is processed through **fractional distillation** and **cracking** to produce many useful materials such as petrol, diesel and kerosene.

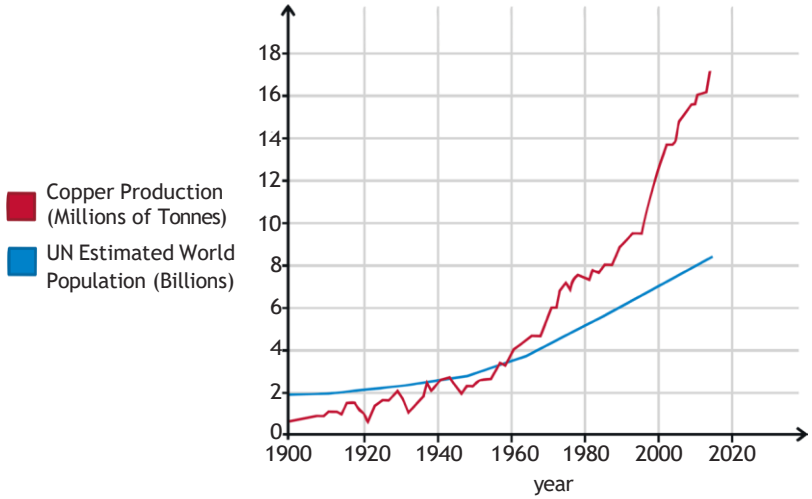
Renewable resources will not run out in the near future because the reserves of these resources are high. Examples of renewable resources include solar energy, wind power, hydropower and geothermal energy.

Haber Process and Copper

Scientists often discover new ways to produce a product; **synthetic methods** of production replace **natural methods**. For example, fertilisers were obtained from manure (a natural resource).

The **Haber process** allowed the synthetic production of **fertilisers** and this enabled **intensive farming** methods to spread across the globe. In turn, this supported the growing human population.

Copper is another resource that has been exploited over time. As the human population has increased since 1900, the demand for copper has also increased. Copper is a finite resource which means that there is a limited supply.



Water

Potable water is water that is **safe to drink**. Potable water is **not pure; dissolved impurities** still **remain** in the water. Pure water is odourless, tasteless and colourless compared to rainfall or water from streams and wells as these **harbour chemicals** such as acid.

Pure - the **definition** of a pure substance is one that contains only a single type of material that has not been contaminated by another substance.

Potable water must contain **low levels** of microbes and salts for it to be deemed safe to consume. This is because **high levels** of microbes and salts can be harmful to human health.

The methods of making water safe vary depending on where you live. Starting with sea water is harder than starting with fresh water. This is because the **energy cost** of removing large amounts of sodium chloride from seawater is greater.

In the UK, our populations' water needs are met through **rainfall**. During the **summer, water levels** in reservoirs **decrease** and local areas are encouraged to reduce their water usage by swapping baths for showers and they are asked to avoid using hosepipes.

In the UK, **insoluble particles** are **removed** from naturally occurring fresh water by passing it through **filter beds**. **Microbes** are **killed** by **sterilising the water**. Several different sterilising agents are used for potable water. These are chlorine, ozone or ultraviolet light. The right amount of chlorine and ozone gas (O_3) must be used as both are harmful to human health.

AQA GCSE Chemistry (Combined Science) Unit 10: Using Resources

Desalination of Sea Water

If fresh water supplies are limited, sea water can undergo a process called **desalination**. This process requires **large amounts of energy**, but can be done by distillation or the use of membranes such as **reverse osmosis**.

Distillation involves **heating** the sea water until it reaches **boiling point**. Once the water is boiling, it will begin to **evaporate**. The steam then rises up where it cools and condenses in a condensing tube. The salt is left behind. The **downside** to this process is the **energy cost** of boiling the water and cooling down the steam sufficiently in the condensing tube. Not all of the water evaporates which leaves behind a **salty wastewater** that can be **difficult to sustainably dispose of** without harming aquatic organisms.

Reverse Osmosis of Salt Water

Osmosis, as you will have learnt in biology, is the **movement of particles** from an area of **high** concentration **to** an area of **low** concentration through a **semi-permeable membrane**.

Reverse osmosis involves **forcing water** through a **membrane** at **high pressure**. Each membrane has tiny holes within it that only allow water molecules to pass through. Ions and other molecules are prevented from passing through the membrane as they are too large to fit through the holes.

The **disadvantage** of this method is that it produces **large amounts of wastewater** and requires the use of **expensive membranes**. Due to a large amount of wastewater produced, the efficiency of this method is very small.

Water Treatment

Before the **wastewater** from industry, agriculture and peoples' homes can be released back into the environment, it must be **treated**.

Pollutants such as human waste contain **high levels of harmful bacteria** and **nitrogen compounds** which can be a **danger to aquatic organisms**.

Industrial and agricultural waste may contain **high levels** of **toxic metal compounds** and **fertilisers and pesticides** which may also damage the ecosystem.

Cleaning sewage requires several steps:

Step 1 - The water must be **screened**. This is where material such as branches, twigs and grit is removed.

Step 2 - The water undergoes **sedimentation**; wastewater is placed in a settlement tank. The heavier solids sink to the bottom and form a sludge whilst the lighter effluent floats on the surface above the sludge.

Step 3 - The effluent is then transferred to another tank where the organic matter undergoes **aerobic digestion**. Although not pure, this water can be safely released back into the environment. The sludge is placed in another tank where the organic matter undergoes **anaerobic digestion**. It is broken down to produce fertiliser and methane gas which can be used as an energy resource (fuel).

Required Practical 8 - Analysis and Purification of Water Samples from Different Sources

Analysing the pH of Water Samples

Test the pH of each water sample using a pH meter or universal indicator. If using universal indicator, use a pH colour chart so that you are able to identify the pH of the sample against the colour produced by the indicator.

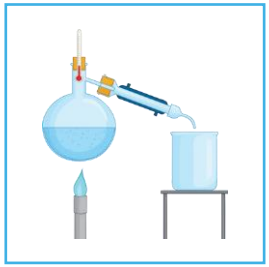
Analysing the Mass of Dissolved Solids

To measure the mass of dissolved solids in a water sample, measure out 50cm^3 of the sample using a measuring cylinder. Take the mass of an evaporating basin before heating and record the mass in a table. Place the measured amount of water into an evaporating basin and gently heat over a Bunsen burner until all the liquid has evaporated. Once the evaporating basin has cooled, place it on a top pan balance and record its mass. Calculate the mass of the solid left behind.

Distillation of the Water Sample

To distil a water sample, set up your equipment as per the diagram.

Heat the water sample gently using a Bunsen burner. After a short period of time, distilled water should be produced.



Life-Cycle Assessment (LCA)

Life-Cycle Assessments follow the four main stages of the life cycle of a product.

Stage 1 - Extracting the raw materials needed to make the products and then processing them.

At this stage, the energy and environmental costs need to be considered. For example, if the raw material being used is a finite or renewable resource, the energy to extract and transport the raw material should be considered. Environmental factors also play a large part in stage 1 as the extraction of the raw material can leave scars on the landscape and waste products may be produced that could damage local ecosystems.

Life-Cycle Assessment (LCA) (continued)

Stage 2 - Manufacturing and packaging of the product.

The main consideration is how much energy and resources are needed to manufacture the product. Energy may be used in the form of fuel, electricity or chemicals used in the production of the product. In the manufacturing process, there may be pollution and waste products that need to be considered. Transportation of the goods from the factory to the user will have an environmental impact.

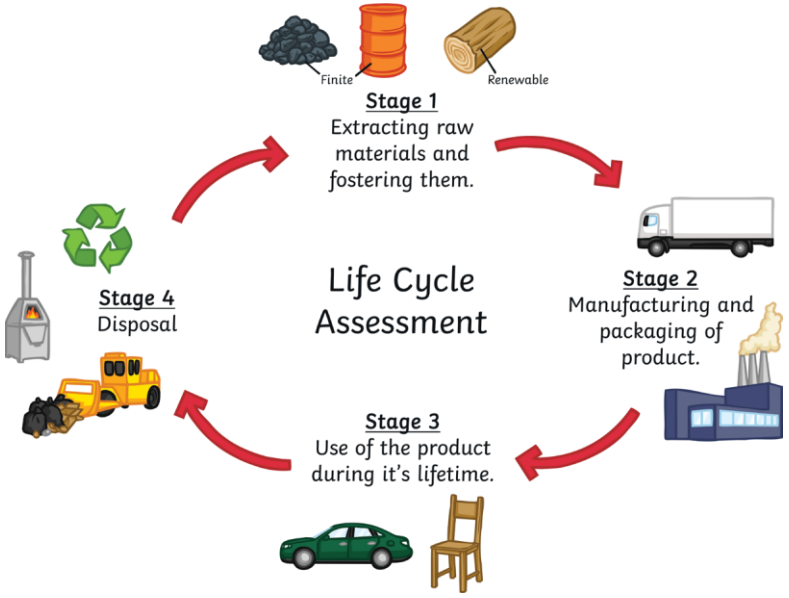
Stage 3 - Use of the product during its lifetime.

The environmental impact of a product during its life depends on the type of product. For example, a car will have a significant impact i.e. it needs to be filled with petrol or diesel, a finite resource, to get to where you are going. A car's engine releases harmful emissions into the atmosphere. On the other hand, a wooden chair may only need minor repairs and is made from a renewable resource.

Stage 4 - Disposal at the end of a product's life.

There are different methods of disposal:

1. Landfill - the product is put in a hole in the ground - high environmental impact.
2. Incineration (organic matter) - burning of the product - low environmental impact.
3. Recycling - for example, batteries contain metal compounds that are not good for the environment. By recycling, it means that no new compounds have to be taken out of the ground.



Comparative LCAs

Comparative LCAs are used to evaluate products and to find which one will have a lower environmental impact.

Stage 1 - raw material	Uses a finite resource (crude oil). The processes of fractional distillation, cracking and polymerisation all require energy to make crude oil useful.	Made from trees/recycled paper. Making paper from trees requires more energy than recycled paper because trees have to be chopped down. Still uses less energy than making plastics from crude oil.
Stage 2 - manufacture	Cheap to make.	More expensive to make.
Stage 3 - use	Plastic bags have a low environmental impact as they can be used a number of times. In comparison to paper bags, they are much stronger.	Paper bags can only be reused a limited number of times and so have a short lifetime.
Stage 4 - disposal	The downside to plastic bags is that they do not biodegrade easily in landfill. Recycling options are available. If they are not disposed of correctly, plastic bags can have a detrimental impact on the environment and animal habitats.	Paper bags biodegrade easily in landfill sites.

Disadvantages of Comparative LCAs

The disadvantage of **comparative LCAs** is that some parts of it require certain judgements to be made.

Different people have different opinions and this is dependent on who completes the LCA and whether a certain level of bias is added. For example, if the LCA is completed by a company that is manufacturing a specific product, they may only discuss **some** of the environmental impact of their product in the LCA. Accurate numerical values, for example, show a company how much energy has been used in the **manufacturing process** or how much **carbon dioxide** was produced when the goods were transported.

Recycling

Many materials are made from **natural resources** that have **limited supplies**. Reusing items such as glass bottles that only need washing and sterilising saves energy and reduces the environmental impact. Not all products can be reused, some need to be recycled before reuse.

There are both advantages and disadvantages to recycling materials.

Advantages

- Fewer resources such as **mines** and **quarries** are needed to remove raw, finite materials from the ground. For example, copper.
- Crude oil, the raw material used in the production of plastics, does not need to be extracted. This, in turn, **avoids** high energy cost processes such as fractional distillation and cracking. If more items are recycled, less would end up in landfill sites.
- The amount of greenhouse gases would reduce as the energy cost of recycling is a lot **less** than making a new product.

Disadvantages

- Recycling items require collection and transport of the goods to the organisation. This involves using staff, vehicles and the use of fuel.
- Some materials, such as **metals**, can be **difficult to sort**; the amount of sorting is dependent on the purity of the materials or metals and the level of purity required for the final product. For example, copper used in electrical appliances must have a high purity. To achieve this, the copper needs to be processed and then melted down again to make copper wiring.
- Steel that is used in the construction industry does not require such high purity. Often scrap iron is added to the furnace when steel is made. This reduces the need for as

Biological Extraction Methods (Higher Tier Only)

Biological methods of extraction are needed as the resources of **metal ores** on earth are in **short supply**. Large scale **copper mining** leaves **scars on the landscape** and produces significant amounts of waste rock that must be disposed of. Biological methods have a lower impact on the environment and make use of waste containing small amounts of copper. The disadvantages of **biological extraction methods** are that they are **slow**, but they do reduce the need to obtain new ore through mining and conserve limited supplies of high-grade ore.

Phytomining

Phytomining involves the use of **plants**. Plants absorb the metal compounds found in the soil. The plants cannot get rid of the copper ions and it builds up in the leaves. The plants are then **harvested, dried** and then placed in a furnace. The ash that is produced from the burning process contains soluble metal compounds that can be extracted. The ash is dissolved in an acid such as hydrochloric or sulfuric and the copper is then extracted by electrolysis or through a **displacement reaction** with iron.

Bioleaching

Bioleaching uses **bacteria** to produce an acidic solution called **leachate** which contains **copper ions**. The disadvantage of bioleaching is that it produces **toxic substances** that are **harmful to the environment**. To process the copper, the copper undergoes a displacement reaction with iron. Iron is cheaper and a **more cost-effective** way of producing copper from the leachate.

Inheritance, Variation and Evolution Knowledge Organiser

Keywords

allele - An alternative form of a gene.

asexual reproduction - The production of offspring from a single parent by mitosis. The offspring are clones of the parent.

chromosome - Structures that contain the DNA of an organism and are found in the nucleus.

cystic fibrosis - A disorder of cell membranes that is caused by a recessive allele.

DNA - A polymer that is made up of two strands that form a double helix.

dominant - An allele that is always expressed, even if only one copy is present.

fertilisation - The fusion of male and female gametes.

gamete - Sperm cell and egg cell in animals; pollen and egg cell in plants.

gene - A small section of DNA that codes for a specific protein.

genome - The entire genetic material of an organism.

genotype - The combination of alleles.

heterozygous - A genotype that has two different alleles, one dominant and one recessive.

homozygous - A genotype that has two of the same alleles. Either two dominant alleles or two recessive alleles.

meiosis - The two-stage process of cell division that reduces the chromosome number of the daughter cells. It makes gametes for sexual reproduction.

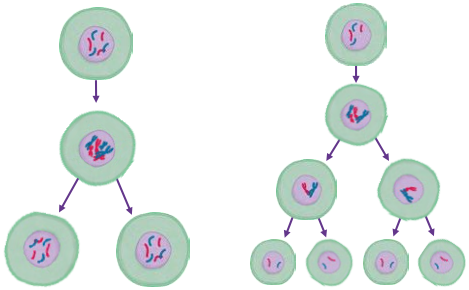
mutation - A change in DNA.

phenotype - The characteristic expressed because of the combination of alleles.

polydactyly - Having extra fingers or toes. It is caused by a dominant allele.

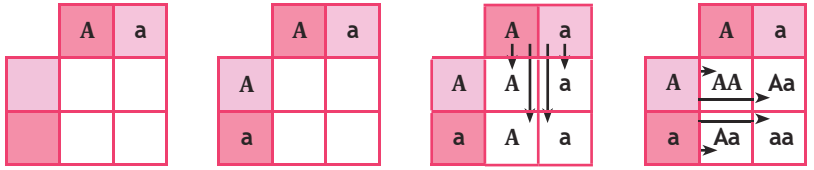
recessive - An allele that is only expressed if two copies of it are present.

sexual reproduction - The production of offspring by combining genetic information from the gametes of two parents. Leads to variation in the offspring.



Mitosis	Meiosis
Produces two daughter cells.	Produces four daughter cells.
Daughter cells are genetically identical.	Daughter cells are not genetically identical.
The cell divides once.	The cell divides twice.
The chromosome number of the daughter cells is the same as the parent cells. In humans, this is 46 chromosomes.	The chromosome number is reduced by half. In humans, this is 23 chromosomes.
Used for growth and repair, and asexual reproduction.	Produces gametes for sexual reproduction.

How to Complete a Punnet Square



Step 1:

Put the two alleles from one parent into the boxes at the top. This parent is a heterozygote. This means they have one dominant and one recessive allele.

Step 2:

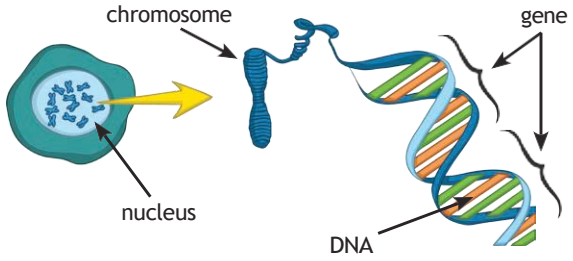
Put the two alleles from the second parent into the boxes on the left. This parent is also a heterozygote.

Step 3:

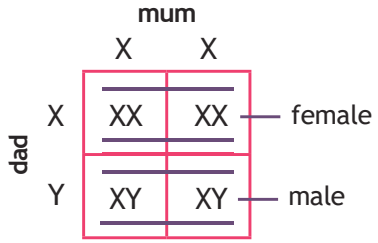
Put the alleles from the first parent into the two boxes underneath them.

Step 4:

Put the alleles from the second parent into the two boxes to the right of them.



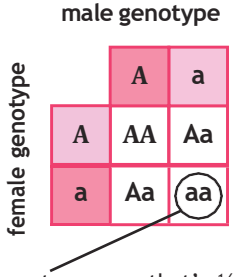
Sex Determination



Females carry two X chromosomes.
Males carry one X and one Y chromosome.

Probability

There are four possible combinations of gametes that offspring can inherit.



One of these four has the genotype aa - that's ¼, 25% or 0.25.

The recessive phenotype has a ratio of 1:3 because only one combination will show the phenotype while the other three will not.

Inheritance, Variation and Evolution Knowledge Organiser

Keywords

embryo screening – Genetic tests carried out on an embryo to see whether it carries a faulty allele.

evolution – A change in the inherited characteristics of a population over time through a process of natural selection.

evolutionary tree – A method used to show how scientists believe organisms are related.

extinction – The permanent loss of all members of a species.

fossils – The remains of organisms from millions of years ago which are found in rocks.

genetic engineering – The process by which scientists manipulate and change the genotype of an organism.

natural selection – The process by which organisms that are better suited to an environment are more likely to survive and reproduce.

selective breeding – Humans selecting animals or plants, that have a required characteristic, for breeding.

speciation – The process by which two species evolve from a single original species by natural selection. The two populations have become so different that they can no longer interbreed to produce fertile offspring.

variation - Differences in characteristics of individuals in a population.

Variation

Variation maybe be due to differences in:

- the genes that have been inherited (genetic causes);
- the conditions in which they have developed (environmental causes);
- a combination of genes and the environment.

Evolution

All species of living things have evolved from simple life forms by natural selection.

- If a variant/characteristic is advantageous in an environment, then the individual will be better able to compete.
- This means they are more likely to survive and reproduce.
- Their offspring will inherit the advantageous allele.

Fossils

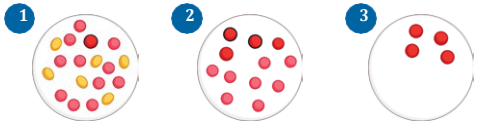
Fossils could be:

- the actual remains of an organism that has not decayed;
- mineralised forms of the harder parts of an organism, such as bones;
- traces of organisms such as footprints or burrows.

Many early life forms were soft-bodied so have left few traces behind.

Fossils help us understand how much or little organisms have changed as life developed on earth.

Resistant Bacteria



There is variation in the bacterial population. One bacterium develops a mutation by chance that means it is resistant to an antibiotic.

The antibiotic kills some of the bacteria, the resistant bacterium survives and reproduces.

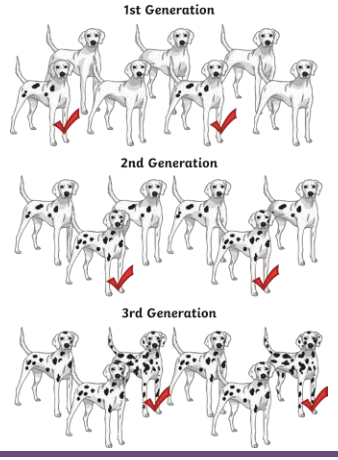
The antibiotic kills the rest of the non-resistant bacteria so the person may start to feel a little better. The resistant bacterium has survived the antibiotic and continues to multiply.

To reduce the rate at which antibiotic-resistant strains appear:

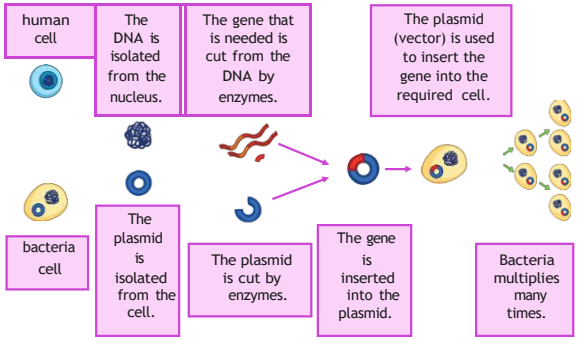
- Antibiotics should only be used when they are really needed, not for treating non-serious or viral infections.
- Patients should complete their courses of antibiotics, even if they start to feel better.
- The agricultural use of antibiotics should be restricted.

Selective Breeding

1. Choose parents who have the desired characteristic.
2. Select the best offspring and breed these to make the next generation.
3. These offspring are then bred again and again, over many generations, until a desired result is achieved.



Genetic Engineering



Classification

Linnaeus classified living things into kingdom, phylum, class, order, family, genus and species.

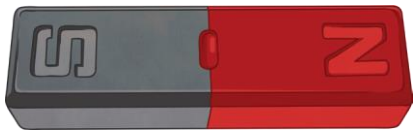
Organisms are named by the binomial system of genus and species.

Due to evidence from chemical analysis, there is now a 'three-domain system' developed by Carl Woese.

AQA Combined Science: Physics Topic 7 Magnetism and Electromagnetism

Poles of a Magnet

A magnet has two ends called **poles**: the **north pole** and the **south pole**. The magnetic forces of the magnet are strongest at the poles.



When two magnets are brought close together, they will **attract** or **repel**, depending on which poles are brought together:

- **Like poles** will **repel** one another e.g. N-N or S-S.
- **Opposite poles** will **attract** e.g. N-S.

The forces exerted between the poles of two magnets are a type of **non-contact force**: the magnets do not have to be touching for the effect to be observed.

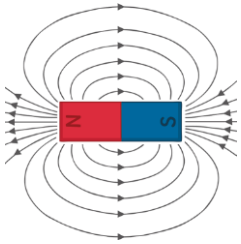
Remember that only **iron**, **cobalt** and **nickel** (or alloys containing these metals) are magnetic.

A **permanent magnet** is one with its own magnetic field. The magnetism cannot be turned on or off e.g. a bar magnet or a horseshoe magnet.

An **induced magnet** is a material which becomes magnetic only when placed within a magnetic field. Induced magnets only attract other materials and lose most (if not all) of their magnetism when removed from the magnetic field e.g. iron filings.

Magnetic Fields

The **magnetic field** is the area surrounding a magnet where the force is acting on another magnet or magnetic material. It can be observed using a compass placed at different points around a bar magnet. The field lines can be drawn by using the compass to mark the direction at a range of points.



A magnet always causes a magnetic material to be **attracted**. The strength of the magnetic field is determined by the proximity to the magnet.

When looking at a diagram of magnetic field lines, the force is strongest where the lines are closest together. The magnetic field of the magnet is strongest at the poles. The direction of the magnetic field shows the direction the force would act on another north pole. As a result, magnetic field lines always come away from the north pole (like poles repel) and towards the south pole (unlike poles attract).

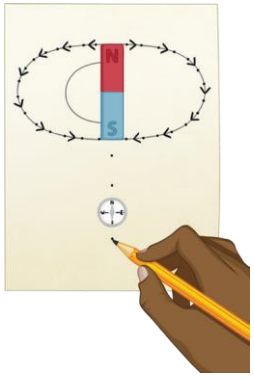
The earth produces a magnetic field and a magnetic compass uses this to help aid navigation. The core of the earth is made of iron (a magnetic material). A compass contains a small bar magnet shaped as a needle, which points in the direction of the earth's magnetic field.

Plotting Magnetic Field Lines

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

You should be able to describe this method for a bar magnet.

1. Place the bar magnet in the centre of a sheet of plain paper.
2. Using a magnetic compass, position it on the paper somewhere around the magnet.
3. Observe the direction of the needle and carefully draw a dot at the circumference of the magnet, in line with each end of the needle. Make sure you include an arrow to indicate the direction of north.
4. Repeat steps 2 and 3 for several positions around the magnet.
5. Join the arrows to complete the magnetic field lines and whole pattern.



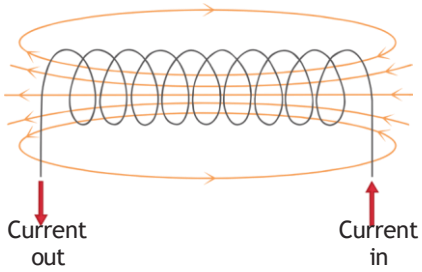
Electromagnetism

A circular **magnetic field** is produced when a current is passed through a conducting wire. This produces an **induced magnet**.

Switching off the current causes the magnetism to be lost.

The strength of the magnetic field can be increased by increasing the current flowing through the wire. The strength of the magnetic field is stronger closer to the wire.

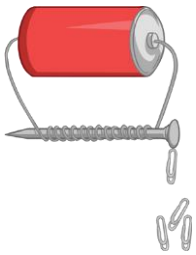
Coiling the wire to form a **solenoid** will also increase the strength of the magnetic field. The strength of the magnetic field created by a solenoid is strong and uniform throughout.



To increase the strength of the magnetic field around a solenoid you can...

- add an iron core;
- increase the number of turns in the coil;
- increase the current passing through the wire.

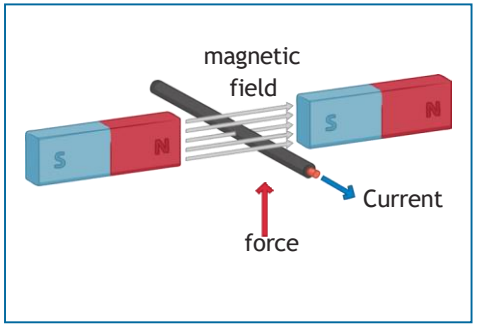
An **electromagnet** is a solenoid with an iron core. Electromagnets are **induced magnets** and can be turned on and off.



Electric motors, loudspeakers, electric bells and remotely controlled door locks all use **electromagnets**.

The Motor Effect and Flemings Left-Hand Rule

When a wire carrying a current is exposed to the magnetic field of another magnet, then a **force** is produced on the wire at a **right angle** to the direction of the magnetic field produced.



This is called the **motor effect**.

The force produced by the motor effect can be calculated using this equation:

force (N) = magnetic flux density (T) × current (A) × length (m)

For example:
A current of 8A is flowing through a wire that is 75cm long. The magnetic field acting at a right angle on the wire is 0.5T. Calculate the force.

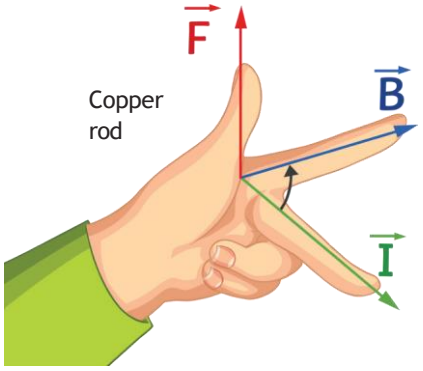
$F = B \times I \times l$

Remember: the equation uses length measured in m. The question gives you the length in cm so you need to convert it before you calculate your answer.

$F = 0.5 \times 8 \times 0.75$

$F = 3N$

From the equation we can see that the force acting on a given length of wire (e.g. 1m) will be increased if the current increases or the magnetic flux density increases. If the current flowing through a wire is **parallel** to the magnetic field, then **no force** is produced – there is no motor effect.



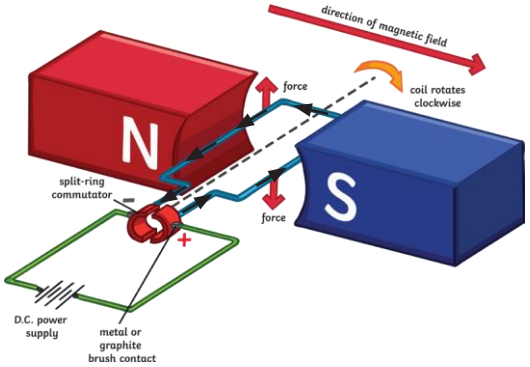
You might be shown a diagram and asked to indicate the direction of the force produced. **Fleming's left-hand rule** can help you do this because it represents the **relative orientation** of the force produced by the motor effect.

Remember:

- Use your **left hand!**
- The angle between your index finger and middle finger should be a **right angle** on the horizontal plane.
- The angle between your index finger and thumb should be a **right angle** on the vertical plane.
- Your **thumb** represents the direction of the **force**.
- Your **index finger** represents the direction of the **magnetic field**.
- Your **middle finger** represents the direction of the **current** flowing through the wire.

Electric Motors

When the wire carrying the current is **coiled**, the motor effect acting on it causes the wire to **rotate**. This is how an **electric motor** works.



As the **current** flows (from negative to positive), the force produced in each side of the coil acts in **opposite directions**, causing the coil to **rotate** overall.

When the coil reaches a **vertical position**, the force produced is now **parallel** to the magnetic field line and so would be **zero**. This would cause the motor to stop rotating.

To maintain the rotation of the coiled wire, a **split ring commutator** is used to supply the current to the wire. The DC supply reaches the split ring via graphite or metal **brushes** which maintain the connection while allowing it to rotate freely on the **axle**.

The two halves of the split ring commutator ensure that the **current supplied** to the wire **changes direction** each half-turn (or that the current supplied is the same direction on each side of the motor) and as a result, the force produced maintains a **constant rotation** in one direction overall.

BTEC Tech Award Health and Social Care Component 2—Learning Aim A

Knowledge Organiser

Understand the different types of Health and Social Care services and barriers to accessing them.

This knowledge organiser will help you to understand key words and concepts, as well as how to spell them and define what they mean.

A1: Health and Social Care Services

Health Care Services

Primary Care Services

Usually the service which an individual would access first if they had a health issue. For example: GP, dentist, optometry.

Secondary and Tertiary Care Services

Secondary/tertiary care refers to services provided by medical specialists who generally do not have the first contact with a patient but they have been passed on by the primary service. For example: cardiologists (heart disease) and neurologists (for problems with the nervous system).

Allied Health Professionals

AHPs provide treatment and support for adults and children who are ill, have disabilities or additional needs. They work across a wide range of different settings including the community and people's homes, as well as hospitals. For example: dieticians and physiotherapists.

Social Care Services—includes informal support offered by friends and family

Services for children and young people, e.g. foster care, residential care, youth work

Services for adults or children with specific needs (learning disabilities, long-term health issues), e.g. residential care, respite care

Services for older adults, e.g. residential care, home care services.

A2: Barriers to accessing Services

Some individuals cannot access services due to barriers which prevent (stop) them from doing so.

Physical barriers, e.g. issues getting into and around the facilities.

Sensory barriers, e.g. hearing and visual difficulties

Social, Cultural and Psychological barriers, e.g. lack of awareness, differing cultural beliefs

Language barriers, e.g. differing first language, language impairments

Geographical barriers, e.g. distance of service provider, poor transport links

Intellectual barriers, e.g. learning difficulties

Resource barriers for service provider, e.g. staff shortages, lack of local funding

Financial barriers, e.g. charging for services, cost of transport, loss of income while accessing services.

Key Words: Primary, Secondary, AHPs, Barriers

BTEC Tech Award Health and Social Care Component 2—Learning Aim B

Knowledge Organiser

Demonstrate care values and review own practice

This knowledge organiser will help you to understand key words and concepts, as well as how to spell them and define what they mean.

B1 Care Values

Care Values are a range of standards within Health and Social Care settings, that help to guide professionals in giving the most appropriate care to each individual.

1. Empowering and promoting **independence** by involving individuals, where possible, in making choices, e.g. about treatments they receive or about how care is delivered.
2. **Respect** for the individual by respecting service users' needs, beliefs and identity.
3. Maintaining **confidentiality** (when dealing with records, avoiding sharing information inappropriately, e.g. gossip)
4. Preserving the **dignity** of individuals to help them maintain privacy and self-respect
5. Effective **communication** that displays empathy and warmth
6. **Safeguarding and duty of care**, e.g. maintaining a healthy and safe environment, keeping individuals safe from physical harm
7. Promoting **anti-discriminatory** practice by being aware of types of unfair discrimination.

B2 Reviewing own application of care values

Using teacher feedback from your demonstration, you will be expected to: Identify your own strengths (what was good about your demonstration of the care values) and areas for improvement (what didn't go so well) against the care values.

Definitions

Independence

Free to make own choices.

Respect

Understanding the feelings and wishes of others.

Dignity

Keeping respect and for a person.

Anti-Discriminatory

Prevents discrimination on gender, age, race, disability etc.

Confidentiality

Keeping information private and secure.

Knowledge Organiser | A1. Factors affecting Health & Wellbeing | Physical & Lifestyle factors

Health & Social Care
BTEC Technical Award - Component 3

Health & wellbeing

What you need to know: - definition, factors

Not just the absence of disease but a holistic attitude/the whole person:
Physical (healthy body, regular exercise, a healthy diet, sleep, shelter & warmth, personal hygiene)
Intellectual (keeping the brain healthy, concentrate, learn new knowledge/skills, communicate & solve problems)
Emotional (feeling safe & secure, express emotions, deal with negative emotions, self-concept)
Social (friendships, relationships with friends and family)

Genetic inheritance

What you need to know:
- inherited conditions - predispositions

Genetic inheritance is a physical factor that can have positive and negative effects
Genes are inherited from both birth parents

Inherited characteristics
- height, eye colour, hair colour
- This can effect self image (how you see yourself) & self esteem, (how you feel about yourself)

Inherited conditions
Different versions of genes are called alleles.
Some alleles can be faulty and pass on conditions
Dominant condition
(one parent passes faulty allele on)
i.e. Huntington's – involuntary movements and loss of intellectual ability
Recessive condition
(both parents pass faulty allele on)
i.e. Cystic fibrosis – sticky mucus on the lungs

Genetic predisposition
Some people are predisposed (more likely) to develop a condition due to genetic makeup
i.e. heart disease, cancer, diabetes.
Whether they end up developing the conditions depends on their lifestyle & environmental factors
(.e. Diet, exercise)

Ill Health

Ill health -a physical factor which can have a negative effect on health & wellbeing

What you need to know:
- Effects on a persons PIES, difference between acute & chronic

Chronic
Comes on more slowly, lasts a long time
Usually treated, not cured
i.e. diabetes, arthritis, asthma, heart disease

Management:
Address the negative impacts on the person and try to control the symptoms (i.e. use of medication, counselling, schooling in hospital, support groups)

Effect on PIES –
P – growth rates, restricted movements
I – disrupted learning, difficulties in thinking./problem solving, memory problems
E – negative self-concept, stress
S – isolation, loss of independence, difficulties forming relationships

Acute
Starts quickly, lasts for a short period of time. Usually cured
i.e. bacterial/viral infection, flu, broken bones, pneumonia
Management - Usually with medication

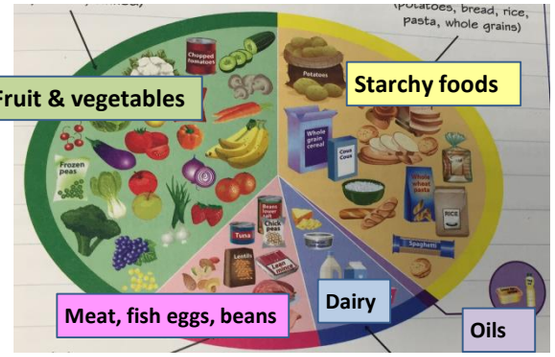
Diet

What you need to know: - amounts, quality, effects of poor diet
Diet - lifestyle choice. Diet = The balance of foods a person eats (diet doesn't mean weight loss!)

Foods to avoid
Salt – raises blood pressure –> heart disease

Saturated fat – raises blood cholesterol –> heart disease
*found in animal fats such as meat, butter

Sugar – rots teeth, high in kcals (energy) -> tooth decay & weight gain



Section	Nutrient	Needed for
Starchy	Carbohydrates (& fibre if wholemeal)	Carbohydrates - Provides energy Fibre – Digestive system/prevents constipation
Fruit & vegetables	Vitamins Fibre	Vitamins - Keep the body healthy Fibre – Digestive system/prevents constipation
Meat, fish, eggs, beans	Protein	Growth and repair of cells and muscles
Dairy	Calcium	Strong bones and teeth
Oils	Unsaturated fats	Reduces cholesterol, Keeps the body warm, Protects organs

Other points:
Water is important to stay hydrated
Control calorie intake to manage weight.
More energy in (food) than expended in exercise causes weight gain
Less energy in (food) than expended in exercise causes weight loss

Physical activity

What you need to know:
- recommendations
– benefits at each life stage

Exercise is a lifestyle choice
- gentle – walking, housework
- moderate – light jog, steady swim
- vigorous – spinning, football

How much?
Changes depending on age. Adult: approx. 150 mins moderate per week

Lack of exercise:
Stiff joints
Poor stamina/strength
Obesity
Stroke
Heart disease
Osteoporosis
Poorly formed muscle

Why?
P – lower BMI, energy, stamina, strengthen bones & muscle
I – links to better memory and thinking skills
E – increases confidence, Relieve stress, concentrate, relax
S – social interaction, communication, teamwork

Substance misuse

Alcohol - a lifestyle choice
Men & women should drink <14 units/week
1 unit = 1 single spirit
1.5 units = 1 pint, 1 small glass of wine
Avoid saving units for 'binge'
Can increase risk of addiction & cancers.

Effect on PIES
P – dependence (alcoholism) damage to organs (mouth, liver, breast), infertility, weight gain
I – difficulty in decision making, depression, anxiety, stroke & brain damage
E – poor judgement leading to risky behaviour
S – relationship breakdown, domestic violence

Smoking & Nicotine – a lifestyle choice.
Nicotine is an addictive drug found in tobacco products.
Cigarette smoke contains nicotine, tar, carbon dioxide & soot which are all harmful.
People smoke to relieve stress, peer pressure, or are unable to quit. Passive smoking also carries risk to others

Effect on PIES
P – increases risk of disease (cancer, stroke, coronary heart disease and others)
I – addiction leads to irritation, distraction & stress when unable to smoke. Increase chance of anxiety and depression.
E – poor self concept. May worry about negative impacts on health and costs.
S – may feel socially excluded when smoking, people may avoid smokers due to smell.

Drugs – including legal and illegal.
Prescription misuse - when people take for non medical (recreational use), become addicted to them, take excess, or take someone else's.
Stimulants - alertness, excitability (i.e. Cocaine, nicotine)
Depressants –calm, relax (i.e. cannabis, alcohol, heroine)
Hallucinogens – cause hallucinations i.e. LSD, ketamine)

Effect of drug misuses
Addictive drugs are taken to change the mental state, to give an immediate feeling of wellbeing or happiness but they have long term effects. i.e. Paranoia,, sleep problems, anxiety, depression, suicidal feelings,

Personal hygiene

Good personal hygiene
Prevents spread of infection
Improves self concept
-Hand washing
- Washing
- Nails clean
-Tissue for cough/sneeze
-Brushing and washing hair
-Brushing teeth
-Clean clothes
-Flushing the toilet

The cleanliness of a persons body. Essential for health & wellbeing

Effect on PIES of poor personal hygiene
P - Catching & spreading disease
Poor body odour, bad breath & tooth decay
Illness such as food poisoning, sore throat, athletes foot.
I – may reduce chance of job
E – poor self – concept, bullied
S – social isolation, loss of friendship.

Key Words

Health & Wellbeing – how physically fit and mentally stable a person is (not just absence of disease)
Genetic Predisposition – more likely to inherit a condition based on genes
Chronic illness – gradual, long term illness, treated not cured. i.e. asthma
Acute illness – illness comes on quickly, short term & curable i.e. cold
Balanced diet - variety of different types of food and providing adequate amounts of the nutrients necessary for good health.
Substance misuse - continued misuse of any mind-altering substance that affects a person's health & wellbeing (drugs, alcohol, smoking)
Hygiene - cleanliness of body and clothing to maintain health & wellbeing.

Knowledge Organiser

A1. Factors affecting Health & Wellbeing

Social, emotional, cultural, economical & environmental factors

Health & Social Care BTEC Technical Award - Component 3

Social interaction

Between family–friends–work colleagues–school friends.

Reacting to people through communication & relationships

Integration – when people feel they belong to a group
Isolation - when people do not have contact with others.
Due to: staying in, physical illness, reduced mobility or unemployment, mental illness, a condition such as autism

	Positive relationships	Negative relationships
P	Day to day care & practical assistance	Peer pressure/Poor lifestyle choices (drinking)
I	Shared experiences, supported learning & thinking	Less support with learning, conversation
E	Unconditional love, security, contentment , self concept, independence & confidence	Loneliness,, insecurity, anxiety, depression,
S	Companionship, social interactions	Relationship difficulties

Relationship breakdown Can lead to:
Anxiety, stress, depression insecurity, loss of confidence, poor lifestyle choices, more pressure on finances, new home etc

Topics
-Social interaction
-Stress
-Economic/financial
-Life events
-Environment & Living Conditions
- Willingness to seek help or access services

Stress

Feelings of mental & emotional tension.

Occurs when the body responds to demand
The hormone adrenaline is released
Trigger 'fight or flight' response
– *so you respond instantly in life or death situations*
BUT an overreact ion to non life threatening situation can cause negative stress.

Causes of stress
Pressures at work
Exams
Financial difficulties
Life events
(illness, relationship changes, moving home, bereavement)

Effect on health & wellbeing

Physical
Short Term:
-Tense muscles
-Fast breathing
-Dry mouth
-Faster heartbeat
-Butterflies
-Urge to pass water (urine)
-Diarrhoea
-Sweaty hands

Physical:
Long term:
-Sleeplessness
-High blood pressure
-Irritability
-Loss of appetite
-Heart disease
-Headaches
-Poor sex life
-Anxiety
-Mood swings

Intellectual
Forgetfulness
Poor concentration
Difficulty in making decisions

Emotional
Difficulty controlling emotions – crying, angry
Feeling insecure
Negative self concept
Feeling anxious

Social
Difficulty making friends/building relationships
Breakdown of close relationships
Loss of confidence
Social isolation

Willingness to seek help or access services

Asking for help
People need to seek help from health & social services at various stages. Being reluctant can lead to negative effects

Barrier 1: Gender
Men are less likely to access as they are often less open & avoid looking vulnerable

Barrier 2: Education
More educated are more likely to seek help
They are more likely to:
Research symptoms and know when help is needed
Understand importance of early diagnosis & treatment
Know how and where to access services

Barrier 3: Culture
Social behaviour, value, transition, customs and beliefs of communities. E.g.
- discriminated against when accessing services
- not speaking English well enough to discuss issues
- some cultures require women to see women
- Some cultures use 'alternative therapy'
- stigma (feel ashamed)of conditions e.g., depression

Environmental & Living conditions

Air – water – noise – light – housing - area

Environmental – Air, water and land around us.
Pollution - Contamination of the environment & living organisms by harmful chemicals.

Examples
Outdoor air – Chemicals from factories, exhausts
Indoor air – Aerosols, mould, cigarette smoke, carbon monoxide from heating
Water– Farm fertilisers/pesticides, waste, sewage
Food pollutants – chemicals in food production
Noise – Machinery and traffic music, loud neighbours
Light – Excess lighting, street lights

Impact of pollutants
• Lung problems *(Bronchitis, asthma, lung cancer)*
• Heart damage *(disease, stroke)*
• Reduction of brain function *(thinking and memory)*
• Low birth weight or premature births

Housing
Good living conditions
Less polluted areas, quiet, safe, spacious, warm, dry, safe outdoor space
Poor living conditions
- Overcrowding – anxiety & depression, sleeplessness, difficulty concentrating & studying
- Lack of open space – less exercise & physical play
- Pests - Rats carry disease, bugs carry disease
- Damp & mould - Respiratory problems (asthma)
- Poor heating – poor health (cold, flu) heart disease

City
Better transport links
Close to facilities i.e. Shops, gym, entertainment, health services
Easy assess to social events
BUT pollution problems

Rural
Sense of community
Access to outdoors & less polluted
BUT commute, difficult to access services, isolation

Economic

Relate to a persons employment situation & financial resources. Effects lifestyle, health & wellbeing

Factors

2) Occupation - Job role & status (i.e. level of responsibility, salary)

3) Employment/ unemployment
- Part time
- Self employed
- Not being able to find work (due to being disabled, made redundant, or being reliant on state benefits)

1) Wealth
-Level of income
- Amount of personal wealth, including non-essential, valuable material possessions (jewellery, cars & property)

Adequate income:
Pay for rent/mortgage – Pay bills (heating etc.)
- Afford luxuries, clothing, holidays, car, house with a garden – Eat a balanced diet – Socialise with friends - Afford travel to leisure/health services – Live in suburbs /countryside

Relative Poverty - Can only afford the essentials. (reduced financial resources)
Life choices will be limited -more likely to:
- suffer ill health
- lack personal development *(i.e. school trips, warm clothes, doing well at school)*

Absolute Poverty -Not enough money to meet basic needs (food, clothing, housing) even with benefits.

	Positive	Negative
P	Good housing conditions Healthy diet Manual jobs can improve muscle tone & stamina	Poor housing conditions Poor diet Manual jobs - muscular/skeletal problems Desk jobs - less activity and weight gain
I	Opportunity to access intellectual activities Work, education & training helps to develop problem-solving & thinking skills	Long hours -less leisure time & reduced learning opportunities Being unemployed can result in poor mental health
E	A well paid job gives a feeling of security and less stress/worry over housing etc. Affording to socialise =positive self concept	Financial worries - stress & breakdown of relationships Not affording to go out and socialise =depression Unemployment of a low status job =low self concept
S	Better financial resources =opportunities to socialise Socialise with colleagues	ask of financial resources reduces opportunities for socialising Reduced opportunities for relationships = social isolation Financial worries = stress & breakdown of relationships

Life events

Events can change life circumstances in positive & negative ways

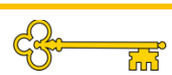
Expected
These can be predicted. They are easier to plan for & manage the effects
-Leaving school
-Starting school
-Moving house
-Starting work
-Living with a partner
-Marriage/civil partnership
-Retirement

Effects on health & wellbeing:
Positives:
New friends, learning, skills, independence, excitement, confidence
Negatives:
Anxiety, insecurity, stress, unhappiness about loss of 'old' life, change in lifestyle

Unexpected
Cannot be predicted and cannot prepare.– has a greater impact
e.g. Redundancy, imprisonment, exclusion, sudden death of someone close (bereavement) and ill health, accident or injury

Effects on health & wellbeing:
P – High blood pressure
I – Depression, difficulty thinking & decision making, memory
E – Difficulty sleeping, grief, insecurity, stress and anxiety
S – Isolation, loss of friends
Some positives – catalyst for change of behaviours, opportunities for new study or training, support for emotional, diet etc

Key Words



Health & Wellbeing – how physically fit and mentally stable a person is (not just absence of disease) Linked to PIES.

Social integration – When people feel they belong to a group

Social Isolation - When people do not have contact with others.

Social interaction Acting/reacting to people through communication & relationships

Stress - Feelings of mental & emotional tension.

Adrenaline – a hormone released when the body responds to a demand which can lead to stress.

Economic - Relate to a persons employment situation & financial resources

Income – money people receive from work, savings pensions or benefits.

Expected life events – can be predicted e.g. Leaving school

Unexpected life event – cannot be predicted i.e. Bereavement

Environmental – The air, water and land around us.

Pollution - contamination of environment & living organisms by harmful chemicals.

Knowledge Organiser

B/C. INTERPRETING HEALTH AND LIFESTYLE DATA and DESIGNING AN IMPROVEMENT PLAN

Health & Social Care
BTEC Technical Award - Component 3

Health Indicators

B1 Physiological indicators

Physiological indicators that are used to measure health:

- **Pulse** (resting and recovery rate after exercise) (you will be given this data, compare theirs against recommended healthy data.)
- **Blood Pressure** (you will be given this data, interpret and compare theirs against recommended healthy data.)
- **Peak flow** (you will be given this data, interpret and compare theirs against recommended healthy data.)
- **Body mass index (BMI)** (you will be given this data, interpret and compare theirs against recommended healthy data.)

Using published guidance to interpret data relating to these physiological indicators
The potential significance of abnormal readings: risks to physical health

LIFESTYLE DATA

B1: Lifestyle indicators

Lifestyle indicators that are used to measure health:
You will be given this information if it's relevant. You only have to answer questions on information you are given

Smoking- Do they smoke to excess and what are the current and future risks to health?
Drinking alcohol – Do they drink too much and what are the potential current and risks to future health?
Do they have an inactive lifestyle (lack of exercise) ? and what are the potential current and risks to future health?
Do they have a poor diet? (lack of nutrition or overeating or eating the wrong thing) and what are the potential current and risks to future health?

Topics

-Health and lifestyle indicators
-Current and future health risks
-Recommended actions, short and long term targets.
-Sources of Support
-Person centred care (meeting needs)
-Obstacles

Final question asks for suggestions: Make them sensible and realistic. Use general knowledge and ask: would I be able to do this ?
YOU HAVE 2 HOURS- GOOD LUCK!

HEALTH DATA		Current risks to health	Future risks to health
BMI	HIGH BMI	High blood pressure – fat restricting blood flow Harder to do exercise, so it becomes a vicious cycle	**Cardiovascular disease – fat restricting blood flow to the heart** **Diabetes – too much sugar** **Arthritis – pressure on the joints due to excess weight** **Stroke – fat builds up in the arteries and causes a blood clot, this stops blood from getting to the brain**
	LOW BMI	The body is not getting enough nutrients which can lead to; • Depression • Tiredness due to a lack of iron • Infections such as colds and flu because of a lack of vitamin c	Undiagnosed illness such as an 'underactive thyroid' – not enough of a certain hormone is produced An eating disorder such as anorexia or bulimia Anaemia Rickets Stunted bone growth or weaker bones due to lack of vitamin d
Pulse rate	High pulse rate	Blood is being pumped around the body too quickly – sweating, shortness of breath, feeling weak	Heart attack – the heart cannot pump the blood quickly enough through the heart
Blood Pressure	High blood pressure	Dizziness, fainting or falls – Blood cannot move easily through the brain	**Heart disease – arteries are narrowed so blood has to pump harder to get through the heart** **Kidney disease – damaged kidney arteries will not filter the blood** **Strokes – arteries are narrowed causing blood clots in the brain** Blindness – caused by blood clots affecting the nerves behind the eyes
	Low blood pressure	**Dizziness, fainting or falls - Blood is not pumped enough to the brain**	
Peak flow	Low peak flow reading	-Airway is narrowed – lungs are not working as well as they should be. -Harder to take part in exercise which means the lungs are not as strong or elastic – easily get out of breath and feel dizzy when walking upstairs etc	Airway is narrowed – lungs are not working as well as they should be If exercise is not done due to reduced lung capacity it can mean fat could build up and lead to heart disease or stroke

LIFESTYLE DATA	Current risks to health	Future risks to health
Poor Diet	Too much salt – can cause high blood pressure Too much sugar – can cause raised blood glucose levels Increased thirst Blurred vision Too much fat – Blocks arteries causing tiredness Not enough vitamins (usually found in fruit and veg) – Tiredness due to a lack of iron Infections such as colds and flu because of a lack of vitamin c	Obesity Heart disease (see in bold causes) High blood pressure (see in bold causes) Strokes (see in bold causes) Tooth decay (see in bold causes)
Lack of Exercise	Stiffening of the joints – muscles and ligaments become stiff and will not stretch Poor strength Obesity (see in bold causes)	Stroke (see in bold causes) Heart disease (see in bold causes) Slow blood flow (see in bold causes) Osteoporosis (weak bones)
Drinking alcohol	Addiction – alcohol Significant weight change – lack of appetite or much more of an appetite	Liver cancer Jaundice - yellowing of the skin and eyes as the liver fails
Drug misuse	Addiction Significant weight change – lack of appetite or much more of an appetite	Damage to organs such as brain, liver and kidneys
Smoking	Addiction - nicotine Gum disease – pollutants in cigarettes Smelly breath Prone to chest infections – weakens the immune system Smokers cough –build up of tar on the lungs	Illness such as asthma or bronchitis Increased blood clotting – tar blocks the arteries Stroke Lung cancer – pollutants in the cigarettes cause this and build up of tar Hands and nails stained of nicotine Wrinkled faces

TARGETS

Recommended actions – THREE- What do we know that we want to change? – Broad target, in detail.

Short term target- MAKE IT SMART- What will help straight away and can be done over a short period of time 0-6 months. (CAN YOU MEASURE IT?)

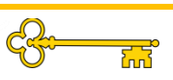
Long term target- MAKE IT SMART- What will help them achieve your recommendation over a longer period of time. Something they are going to need to do for longer and/or be able to keep doing for longer.

SOURCES OF SUPPORT

Formal Support
GP, Pharmacist, Dentist (Primary services)
Help groups such as quit smoking, weight watchers, alcohol anonymous.
Hospital departments (Secondary services).
Hospice care.
Physiotherapist, dietician.
Voluntary groups **And how will they help?**

Informal Support
Family
Friends
Neighbours

OBSTACLES



emotional/psychological – lack of motivation, low self-esteem, acceptance of current state
time constraints – work and family commitments
availability of resources – financial, physical, e.g. equipment
unachievable targets – unachievable for the individual or unrealistic timescale
lack of support, e.g. from family and friends
other factors specific to individual – ability/disability, addiction
Other barriers to accessing identified services.- geographical, financial, physical, culture, language, psychological

Key Words

Needs = Health and lifestyle needs
Wishes= wants and doesn't want
Circumstances= Other relevant info from case study

BMI- Body mass index (how much fat you have)
PEAK FLOW- Lung capacity (how much air you can use)
BLOOD PRESSURE- Amount of blood in one beat – lower is better = more blood. Higher is bad.
RESTING PULSE- Beats per minute not during exercise- lower is better.

Year 11 Design and Technology Summer Term Knowledge Organiser

Key Vocabulary:

1	Mechanical Engineering	In 1900 the average person travelled about 1200 miles in an entire lifetime, mostly on foot, and mostly within his or her own village or town. Today the average person in the developed world travels some 10,000 miles a year by automobile alone, and there are half a billion cars in the world.
2	Structural Engineering - Bridges	A bridge is a structure built to span physical obstacles without closing the way underneath such as a body of water, valley, or road, for the purpose of providing passage over the obstacle.
3	Electronic Engineering	In 2005, Apple CEO Steve Jobs conceived an idea of using a multi-touch touchscreen to interact with a computer in a way in which he could type directly onto the display, essentially removing the physical keyboard and mouse, the same as a tablet computer.
4	The Product Lifecycle	When created, every product has a lifecycle. It is important for designers to understand this lifecycle and design responsibly to ensure there is minimal damage to the environment.
5	Materials	Materials are the fundamental make-up of the world we live in. It is an Engineers job to be able to manipulate, shape the materials. Therefore, are able to shape the world by engineering solutions to everyday problems.
6	Smart Materials	Smart Materials are materials that change their Properties and Characteristics according to changes in the environment (e.g. temperature, light, force etc.).

Energy, Material, System and Devices

7	Properties of Materials	Materials are mainly chosen to perform a task based on their PROPERTIES. The property of a material dictates how it will perform and react to the environment it is in and how it will react to the job you have asked it to do.
8	Finishes	Quite often, materials that have been used need to be finished. This means that the materials need to undergo another manufacturing process to give it a finish. Reasons for finishing a material can differ: aesthetics, functional, corrosion or resistance
9	Soldering	Soldering is a process in which two or more items (usually metal) are joined together by melting and putting a filler metal (solder) into the joint, the filler metal having a lower melting point than the adjoining metal.
10	Applied Finishing	Applied finishes are those finishes that need an extra process in the manufacture of a product to ADD a finish to improve the look of the chosen material, improve its performance and to protect it from the environment.
11	Composite Materials and Technical Textiles	Materials can be processed to create alternative outcomes and their uses.
12	Isometric Projection	Isometric Projection is an ideal drawing technique for producing formal drawings and freehand sketches.
13	Orthographic Projection	An 'Orthographic Projection' is a collection of 2D drawings which work together to provide an accurate overall representation of an object.

Sustainability

14 What is sustainability/sustainable design?

- Creating products that are made from sustainable resources.
- Creating products using minimal resources during manufacture and transport.
- Creating products that can be recycled fully.

It is the designers responsibility to ensure that any new product that is creating does the minimal damage to the environment as possible. This is one of the reasons why using metals throughout the world is environmentally acceptable.

Sustainability is the ability to keep things as they are for the future. Sustainable design is a product that causes least damage to the environment.

Most plastics can now be recycled. However, the recycling process for plastic is more difficult and uses more energy. Plastic can only be recycled a limited number of times. By Law, all plastic products now have to be stamped so it is easier to recycle. Recycling is an expensive process so any design that makes it easier to recycle will reduce the cost to society and the environment.

15 Health and safety

Before you can use equipment and machines or attempt practical work in a workshop you must understand basic safety rules. These rules will help keep you and others safe in the workshop:

1. Always listen carefully and follow instructions.
2. Do not run in the workshop, you could cause an accident.
3. Know where the emergency stop buttons are.
4. Always wear an apron as it will protect your clothes and hold loose clothing such as ties in place.
5. Checking all the equipment to be in good working order.

16 Evaluation

Designers evaluate their finished products to test whether they work well and if design can be corrected or improved. It is important to evaluate your work constantly during the project to see if it is on track and so that improvements can be built-in throughout the design process, not just at the end.

Year 11 Drama Summer Term Knowledge Organiser

Key Vocabulary:

1	Stage Levels	To show power, status or just different locations for the scenes.
2	Genre	Comedy, Thriller, Melo drama
3	Creative Intentions	What was the director/ writer/ creator thinking about? Themes / issues / response to stimulus / style/genre / contextual influences / collaboration with other practitioners / influences by other practitioners.
4	Purpose	Why was it made? to educate / to inform / to entertain to provoke/ to challenge viewpoints / to raise awareness / to celebrate…
5	Theme	The topic of the performance e.g. Conflict, Family
6	Stylistic Qualities	How a performance is structured – Musical, Inclusivity, Epic theatre - storytelling
7	Processes used in development, rehearsal and performance	Responding to stimulus to generate ideas for performance material / exploring and developing ideas to develop material / discussion with performers / setting tasks for performers / sharing ideas and intentions / teaching material to performers / developing performance material / organising and running rehearsals / refining and adjusting material to make improvements / providing notes and/or feedback on improvements.

Component 3- Learning Aim A
Developing ideas in response to a brief

8	**A1**

Target Audience: What age and gender are you aiming your work?

Performance Space: Configuration-End on, Traverse, Thrust or in the round?

Planning and managing resources: What do we need? Props? Sound? Lighting? Research?

Running Time: Must be in the timeline – 10-15minutes

Style of work: Naturalistic – Stanislavski? **Epic-**Brecht?

Starting points: Using the given theme, issue, social background.

Props/Costume: Influence the work?

Individual and group contribution: What did you suggest?

Period of time: past, present or future?

9	**Learning Aim B1** **Selecting and developing skills and techniques in response to a brief**

Skills and techniques of the individual performer e.g. vocal, physical.
•Skills and techniques of the performers as a group e.g. comedy, improvisation.
•Skills and techniques of the designer e.g. understanding implications of selected performance skills and techniques in relation to design, research, shaping and refining ideas.
•The style and/or genre of the work being created e.g. street dance, physical theatre.
•The influence of selected practitioners e.g. Brecht and Stanislavski
• Appropriate skills for the target audience e.g. young children, the elderly.
•Taking part in skills development classes or workshops.
•Taking part in the rehearsal process, including individual preparation and group rehearsals.

Component 3 – Learning Aim C
Contributing to a workshop performance

10	**C1 - Skills and Techniques**

Skills may include:
- Vocal skills
- Physical skills
- Interpretative skills: showing time and place, presenting a character, creating humour or emotion.
- If performing, demonstrating and sustaining in performance the following skills:
- energy o focus o concentration o commitment.
- Responding to a stimulus
- Exploring and developing ideas
- Sharing ideas and intentions
- Teaching material to performers
- Refining and adjusting material

11	**C2 Working effectively with others**
	•Communicating effectively with other performers: in preparation for performance (if performing) during performance. •Taking part in final group preparations, which may include: o setting up/get in o get out/strike taking part in/contributing to a workshop performance.
12	**C3 Communicating ideas through performance**
	•Taking part in/contributing towards a performance for an audience. •Communicating ideas and intentions effectively to an audience. •An explanation of creative intentions and processes
13	**D1 Evaluating the development process and performance;** •Contributing to initial ideas and exploring activities in response to: o the brief o the stimulus o contributions from other members of the group. •Contributing to the development process. • development and/or adaptation o application o individual strengths and areas for improvement o overall individual contribution to the group. **D2 Reflect on the outcome** o effectiveness of the response to the brief o individual strengths and areas for improvement o overall impact of the work of the group.

Y11 Knowledge Organiser Enterprise LO1

1. What is Market Segmentation?

Market segmentation is the process of grouping potential customers together based on different factors. It is basically the method used by businesses to identify their target customer/market. Markets can be segmented in different ways and some businesses choose to use more than one characteristic to specifically segment their market.

2. How can markets be segmented?

 Age – This is basically how old the customer is. Businesses tend to segment their market into age brackets. Toys, for example, are aimed at younger audiences, potentially between ages 3 and 13.

 Gender – This is whether the target customers are typically going to be male or female. Make-up, for example, is targeted at females – this doesn't mean that males cannot buy it, it is just who the business is targeting!

 Occupation – Occupation means the job or career that the people within the target market may have. This could be a specific job, for example Screwfix™ aiming their products and marketing at people who work in manual trades such as plumbers, electricians etc.

 Income – Some businesses segment their market based on how much money their potential customers make. Luxury branded items, for example, will be targeted at customers with more disposable (spare) income.

 Geographic – This is when businesses segment their market by their location. A local newspaper, for example, will segment their market to include only those in the area in which the newspaper reports.

 Lifestyle – Businesses could segment their market based on what their customers' lifestyle is like; this is basically their hobbies, their routines and their habits. Some people enjoy going on holiday abroad each year, this is their lifestyle.

3. What are the benefits of Market Segmentation?

By segmenting their market, businesses are:

- Able to focus on the wants and needs of specific customers and more likely to meet these wants and needs.
- More likely to make sales because they've focused on specific groups of people (if they segment successfully).
- More able to focus their advertising and other marketing at the right groups of customers – if their market is segmented to include female customers, then the business could choose to advertise in magazines aimed at females, for example.
- Able to tailor their products and services to suit their customers; they will know what people in their segment typically prefer.

4. How do customers vary (how are they different)?

Customers' needs vary because of:

- The amount of money they are **able** to spend
- The amount of money they are **willing** to spend (some customers have more money, but may not be willing to spend this money)
- The **quantity** of products or services they require
- The **quality** of products or services they require
- The **location** in which they want to or can purchase items
- The **time** at which they want to or can purchase items.

5. What Customer Feedback Techniques are available for business start-ups?

Customer Feedback Techniques are the methods a business uses to allow customers to tell them what they think about their products or services and can include:

- Social Media / Online Communities
- Websites with reviews
- Online surveys
- Customer comment cards
- Comments made to staff members
- Telephone/email surveys
- Email contact forms

6. Why are Customer Feedback Techniques useful for new business start-ups?

If things aren't going well for a business, customer feedback will give them the reasons why. Taking action could improve sales and help businesses meet customer requirements better. Customer feedback also makes customers feel they are being listened to.

7. What is Market Research?

Market research is the process of finding out what customers want and what they need. Businesses typically carry out market research before developing a new product as well as during the testing of the product to get the opinions of their potential customers.

8. What is the purpose of Market Research?

The purpose of market research is to find out what customers want and need – this helps businesses develop products that are more likely to be successful. Research also helps understand customers' tastes and opinions and can change the design or specification of products.
Finally, market research can also be used to gauge what products are already on the market and what competitors are doing.

9. What is Primary (Field) Market Research?

Primary research, also known as field research, is when businesses gather their own data and information. This can be done through surveys, questionnaires, focus groups, observations and consumer trails. The data gathered is unique to the business and does not already exist.

10. What are the benefits of Primary (Field) Research?

Carrying out primary research means that the results are exactly what the business wants to find out, because this research has been tailor made for their own specific needs. Data generated from primary research will also be up-to-date.

11. What are the drawbacks of Primary (Field) Research?

Primary research is usually more expensive to carry out than secondary research because the business is creating and analysing everything from scratch. This also means that primary research is more time consuming to carry out.

12. What is Secondary (Desk) Market Research?

Secondary research, sometimes called desk research, is when the business uses data or information that already exists. This is not tailor made for the business. Methods of secondary research include internal data, books, newspapers and data already collected by competitors, the Government or other sources of statistics.

13. What are the benefits of Secondary (Desk) Market Research?

Secondary research is quicker to complete, because the data has already been collected and, in some cases, analysed.
Secondary Research is also cheaper to carry out – looking in newspapers for information on competitors is clearly cheaper than preparing, carrying out and analysing a questionnaire, for example.

14. What are the drawbacks of Secondary (Desk) Market Research?

The data that is collected from secondary research is not unique and not specific to the business's needs, unlike when primary research is carried out. Data from secondary research is also widely available, which means competitors will also have access to it.

Y11 Knowledge Organiser Enterprise LO2

1. What are Costs?
Costs are the things businesses have to pay for in order to produce a product or provide a service.

2. What are Fixed Costs?
Fixed costs are things a business pays for that do not change depending on the amount of a product a business makes – so these costs stay the same no matter how many products a business produces.

3. Examples of Fixed Costs for a Cake Shop…
Rent for the shop would be a fixed cost because the cost will stay the same no matter how many cupcakes are produced and sold. The shop's insurance, staff salaries and phone bill will also be examples of fixed costs.

4. What are Variable Costs?
Variable costs are the costs a business pays that change depending on how many products a business produces – these costs increase when more products are made.

5. Examples of Variable Costs for a Cake Shop…
The ingredients used in the cakes would be an example of a variable cost because this cost will increase if more cakes are made. The packaging for the cakes will also be a variable cost, if more cakes are made and sold then more packaging will be required.

6. How are Total Costs calculated?
Total cost is just the fixed costs plus the variable costs. You will, however, need to account for the number of products made when including variable costs.

For example, if the cake shop's fixed costs are £1,000 and their variable costs are £0.20 per cupcake, their total costs when they produce 500 cupcakes will be:

Fixed Costs + (Variable Cost Per Unit x Units Produced)

£1,000 + (£0.20 x 500)

£1,000 + £100 = **£1,100 Total Costs**

7. How to calculate Total Costs for 400 cupcakes when Fixed Costs are £2000 and Variable Costs are £0.45 per unit…

£2,000 + (£0.45 x 400)

£2,000 + £180 = **£2,180 Total Costs**

8. What is Revenue?
Revenue is the money generated from selling products or services. **It is not profit**, but the money coming into a business from sales.

9. How is Total Revenue calculated?
Total Revenue is calculated by:

Selling Price x Number of Products Sold

10. What is Profit?
Profit is the money left over from revenue once costs have been paid – it's the money a business makes once all costs have been covered.

11. How is Total Profit calculated?
Total Profit is calculated by:

Total Revenue – Total Costs

12. What is Profit per Unit? How is it calculated?
Profit per Unit is the amount of profit a business makes on just one item sold.

Profit per Unit is calculated by:

Selling Price per Unit – Total Costs per Unit

13. Example calculations…

Selling Price = £1.20 per cake
Fixed Costs = £350
Variable Costs = £0.20 per cake

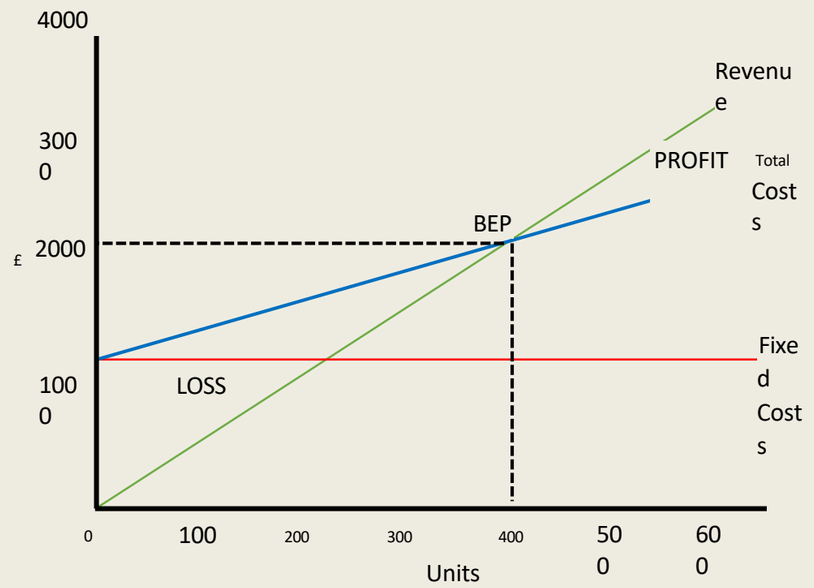
- Total Costs for 500 cakes = 350 + (0.20 x 500) = £450
- Revenue for 500 cakes = 500 x 1.20 = £600
- Profit per Unit = 1.20 – (450 ÷ 500) = £0.30

14. What is Break-even?
Break-even is the point at which a business does not make a profit or a loss; its revenue from sales and its total costs are equal. **The number of products** that must be produced/sold to reach this point is called the Break-even Point.

15. How is Break-even calculated?
The formula for Break-even is:

$$\frac{\text{Fixed Costs}}{\text{Selling Price per Unit} - \text{Variable Cost per Unit}}$$

16 A labelled Break-even graph…



This business's Break-even Point is 400 Units.

17. Why is Break-even information useful for a business?
Businesses who calculate their Break-even point know what output they need in order to be profitable; so, they know how many products to produce to break-even and can generate a sales target in order for them to make a profit.

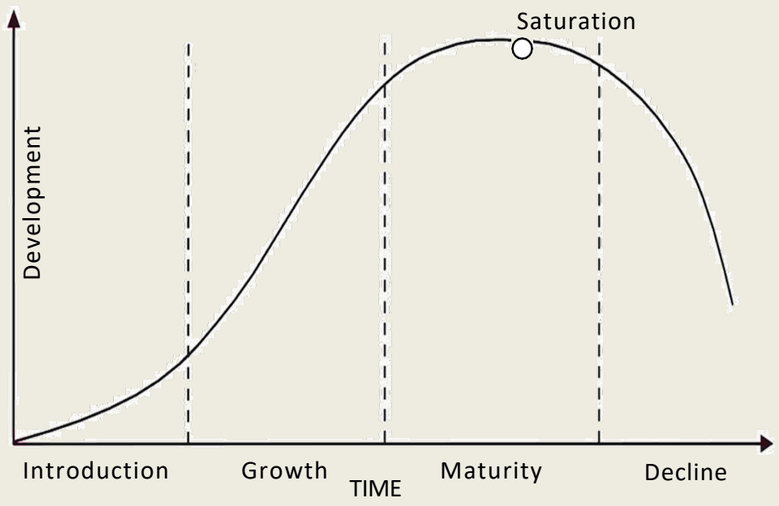
18. What does increasing selling prices do to the Break-even Point?
Increasing selling prices will lower a business's Break-even Point, they will need to produce/sell less in order to Break-even.

19. What impact does increased costs have on the Break-even Point?
An increase in either Fixed or Variable Costs (or both) will result in a higher Break-even Point for a business; they will need to produce/sell more in order to Break-even.

Y11 Knowledge Organiser Enterprise LO3

1. What is the Product Lifecycle?
All products have a life span – this is short for some products or, in the cases of popular products, can be quite long. The Product Lifecycle is a set of stages that a product will go through in its lifetime. It is important to note that not all products go through all stages of the lifecycle.

2. The Product Lifecycle…



- **Development** – This is the stage before the product is released. At this stage, the business will be designing and testing the product as well as completing their market research.
- **Introduction** – At this stage, the product is launched onto the market. Businesses might be advertising the new product a lot at this stage to increase awareness and might include introductory offers. Sales will increase steadily in the introduction stage (if successful).
- **Growth** – If the launch of the product is a success, it will enter the growth stage (remember not all products go through all stages of the lifecycle, some may decline and never grow). At the growth stage, sales of the product will increase rapidly.
- **Maturity** – At this stage, most customers have tried or bought the product. New competitors might be on the scene. Sales are at their highest, but the rate of sales growth will slow down.
- **Decline** – In this final stage, sales decline. If sales decline continues then the product will be withdrawn from the market. If businesses are aware of the Product Lifecycle though, they will be able to extend the life of a product before it enters the decline stage.

4. What is an Extension Strategy?
An Extension Strategy is the name given to the action a business takes when it identifies a product is close to entering the decline stage of the Product Lifecycle. These actions aim to extend the life of a product, by keeping the product within the maturity stage, and should improve sales.

5. What Extension Strategies can businesses use?
Businesses could **advertise** their product to remind customers that it exists and to encourage them to purchase it. The **price** of the product could be **reduced**, or the product could be **updated** to encourage new sales. Businesses might choose to explore **other markets** – like targeting a **different audience** or selling in another country, this would expose the product to new customers. The **packaging** of the product could be updated to get customers' attention.

6. What is Product Differentiation?
As the name suggests, Product Differentiation refers to what is DIFFERENT or what STANDS OUT about the product or service a business is launching. Businesses usually identify what is different about their product in the development stage of the product lifecycle.

7. How can Product Differentiation be achieved?

- Businesses should try to build a strong brand image for their goods or services.
- Businesses should focus on the **function**, **cost** and **appearance** of their products (these are variables of the Design Mix Model).

To stand out, business could offer improved/better:

- Design mix (see above)
- Location
- Product Features
- Product Functions
- Better services (delivery etc.)
- After sales services (extended guarantees etc.)
- Design/Appearance of their products

Differentiation is about the **product** itself, not the price etc.

…or they could identify a product's **USP**

8. What is a USP?
USP stands for **Unique Selling Point**.

This is a specific thing that a business identifies about their product or service that is different (unique). Businesses identify a USP for their products or services to help them DIFFERENTIATE from others on the market.

9. How can identifying a USP for a product help sales?

If a business identifies a USP for a product or service, they can use this within their advertising. If the market already has existing products or services being sold, having a USP will help a new product stand out and will give customers a reason to change their habits and purchase the new product.

10. What are the three categories of External Factors that could affect Product Development?

- **Technological Developments** – technology is changing and updating at a fast pace. Businesses must keep up to date with these developments or they'll be left behind by competitors. Technology could speed up the manufacturing of products, speed up the design process for new products or impact on customers' preferences.
- **Economic issues** – the state of the country's economy can have an impact on whether businesses are likely to develop new products or not. In a **recession**, for example, people are generally struggling to make ends meet and businesses will struggle with sales/survival – they're unlikely to invest in new product development.

If there is an economic **boom**, then more people are employed and have money to spend; businesses will make more sales but may struggle to keep up with production of existing products to meet increased demand, so they may not be able to focus as much on developing new products.

- **Legal Issues** – businesses need to make sure they understand different laws when developing new products and ensure they do not break any of these laws. Laws could have an impact on the way a product is manufactured or could change the designs of some products to ensure they meet **safety standards** within a particular country. Businesses must ensure they do not break **Copyright** law; so they can't copy other people's work that already exists. They must also ensure they do not copy anyone else's product ideas that are covered by a **Patent** (the business might choose to patent their new ideas to stop others copying them too). Meeting legal obligations could cost the business more to produce a product but will ensure the business is less likely to break laws and therefore should avoid having legal cases brought against them.

Y11 Knowledge Organiser Enterprise LO4

1. What factors do businesses consider when setting a price for a new product?

- Income levels of target customers (how much they're able to pay)
- How much target customers are willing to pay for products
- The prices competitors are charging for similar products
- The amount products cost to produce

2. Why is it important for businesses to consider these factors before setting a price?

If businesses didn't consider what customers are able/willing to spend, then the price set could be too high – this would mean the business loses out on sales. If the product was priced a lot higher than that of the business's competitors, then it would struggle to compete. If the cost of production is not considered, businesses could end up selling a product at a loss.

3. Methods of Advertising to attract and retain customers…

Leaflets – these are small handouts given to customers in the street or posted to people (not specifically addressed to anyone). Businesses use these because they're cheap to make and can be kept by customers if needed (so they can be referred to for the business's phone number, for example). They are, however, often thrown away before being looked at.

Social Media – websites/apps such as Facebook, Twitter and Instagram. These are used because they're cheap to advertise and accounts are usually free to create. It is possible to target adverts and specific people. Social Media is not, however, guaranteed to be used by all target customers, particularly older age groups.

Websites – placing adverts on websites can reach a wide audience (worldwide, even). They can distract or annoy web users though, particularly ones in pop-up style.

Newspapers – these can be either local (in one area) or national (all around the country). Advertising in newspapers can be expensive but can reach a large audience. Newspapers are less effective when targeting younger customers though and adverts are easily lost with the amount of information on any single page.

Magazines – magazine advertising can also be expensive but often magazines are based on specific topics or aimed at a specific age group/ gender, so this means it's easy for a business to target their advertising.

Radio – Radio is likely the most expensive method of advertising out of the six methods. Adverts can grab people's attention with sound/ music, but customers can't keep any information or might miss parts.

4. What is a Pricing Strategy?

A pricing strategy is a specific system used to set prices. There are lots of different pricing strategies that businesses can use, and some businesses use more than one on the same product. There are four you need to know for your exam (below). REVISE THEM!

Pricing Strategies…

5. Competitive Pricing is…

When a business looks at what competitors are charging when considering what price they are going to charge for their products or services. It doesn't necessarily mean they charge a lower price (though they could in order to be competitive).

6. Psychological Pricing is…

When businesses avoid using round numbers for their prices, instead choosing to end prices with figures like 99p. This gives the psychological impression that the products are not as expensive - £2,999 instead of £3,000, for example, is only £1 off but appears cheaper!

7. Price Skimming is…

When businesses charge a HIGH price for a new product or service because people will be willing to pay for it as it's new and sought after. This price is then lowered over time as competitors release similar products and the product is less in demand. This strategy means businesses earn high revenue initially.

8. Price Penetration is…

When businesses charge a LOW price when a product or service is first launched and then increase the price over time. This encourages people to give the product or service a chance, with the hope that they'll buy it again. Increasing the product's price may, however, put some customers off buying it in future.

9. Methods of Promotion…

Discounts – these are appropriate for all products or services. They help businesses attract customers, who will buy because of a discounted price, and can encourage repeat custom if the price is discounted again at a later date.

Competitions – competitions are often used by businesses that advertise on social media. They encourage people to interact with the brand, which can attract new customers.

Buy one get one free (BOGOF) – these are suited more to businesses that sell products, rather than services, and to businesses that sell products that people consume (use a lot of) – like groceries. These offers can be expensive for a business as they have to give away an additional product with each sale of a specific product.

Free gifts/product trials – where a free gift is given with every purchase or a small 'test' product is offered to encourage customers to try a new product out.

Point of Sale Advertising – point of sale refers to the place a product is sold; these are usually adverts within stores or at checkouts.

Loyalty Schemes – this promotion method is used for products that people consume a lot of or buy regularly, like coffee. These schemes are mainly used to retain customers, as their loyalty will be rewarded with discounts/freebies.

10. What is customer service?

Customer service is when a business provides assistance, support or advice to the people that are buying their products or services. Good customer service will mean people are happy to return and can also lead to a good reputation, which can help to attract new customers.

11. Customer Service Techniques…

Good Product Knowledge – customers expect businesses to have staff that know the products they're selling inside out! As more and more people buy online, businesses that offer expert knowledge can compete more with online retailers. This can attract customers.

Customer Engagement – this means that the business's employees interact with customers in a polite way and make them feel special. This can help retain customers – if they're happy with the service, they'll likely return.

After Sales Service – businesses can offer guarantees on purchases, maintenance and servicing. All of these additional services will help attract customers but will also mean that customers return to the business.

Y11 Knowledge Organiser Enterprise LO5

Forms of Ownership for Business Start-ups…

1. Sole Trader

- **Number of Owners**: 1 (one owner, but can have employees working there)
- **Legal Requirements to Start**: Register as self-employed with HMRC; (HMRC is the Government department in charge of collecting tax).
- **Liability**: Unlimited Liability – the debts are the responsibility of the owner (disadvantage).
- **Decision Making**: The owner is responsible for all the business's decisions (advantage).
- **Distribution of Profits**: The owner chooses what to do with any profits made (advantage).

2. Partnership

- **Number of Owners**: 2 minimum
- **Legal Requirements to Start**: Register with HMRC. A Deed of Partnership is also usually drawn up to state how the business will operate.
- **Liability**: All partners will have Unlimited Liability. They will all be responsible for any debt the business may have (disadvantage).
- **Decision Making**: Decision making is shared between partners; this is usually included in the Deed of Partnership. This can be a disadvantage if owners fall out over decisions.
- **Distribution of Profits**: % share will be agreed within the Deed of Partnership (shared profit is a disadvantage of this type of ownership).

3. Limited Liability Partnership (LLP)

- **Number of Owners**: 2 minimum
- **Legal Requirements to Start**: Register with HMRC and complete an LLP Agreement that outlines how the LLP will be run.
- **Liability**: Partners have Limited Liability. They only stand to lose what they have invested if the business gets into financial difficulty (an advantage of this type of ownership).
- **Decision Making**: This will be decided when the business is formed and written in the LLP Agreement.
- **Distribution of Profits**: Again, this will be in the LLP Agreement.

4. What is liability (in terms of Business Ownership)?

Liability means responsibility and it refers to whether owners will be responsible for the debt of a business, should it get into financial difficulty.

5. Limited Liability…

If an owner has limited liability, they will only lose what they have invested in a business. Shareholders in companies have limited liability – if they invested £500, and the business failed and owed money, they would only lose their £500 – they wouldn't have to cover any more of the debt, even if the business owed millions.

6. Unlimited Liability…

This is a risk for a business owner as, if they have unlimited liability, they are responsible for all the debts of a business. This means that if their business fails and owes people money, they will have to cover this debt, even if it means losing their personal possessions.

7. What is a franchise?

A franchise is when someone buys the rights to an existing business's name to run as their own business. Basically, they're setting up their own business but using the name and ideas of an existing business.

8. Benefits of owning a franchise…

The franchisee (who buys the franchise) will benefit from guidance and help from the franchisor (who sells the rights to their business name). The business idea is already a success, so they could be more likely to succeed than if setting up a new idea. They will also benefit from any advertising the franchisor does.

9. Drawbacks of owning a franchise…

Franchisees have to pay the franchisor for the rights to their name – this is more expensive than setting up a new business. Franchisees must also pay royalties to the franchisor on a regular basis. It is also unlikely the franchisee can make changes to the business format.

10. What is Capital?

Capital is the name given to the money that is used to start-up a new business or to launch a new product.

11. Sources of Capital…

- **Own Savings** – This is the owners' own money. This method doesn't involve interest but is limited to how much savings they have.
- **Friends & Family** – Borrowing from friends or family may not include interest or paperwork but can lead to friction if not paid back.
- **Loans** – Loans from banks or other organisations can help raise capital quickly but will have interest added to the amount paid back.
- **Crowdfunding** – This is where lots of a people (**sponsors**) pledge small amounts of money, usually online. This can be slow to raise the amount of capital needed but doesn't involve interest payments.
- **Small Business Grant** – Sometimes Governments give grants to encourage businesses to set up. Grants often don't need repaying but strict criteria needs to be met and funds may be limited.
- **Business Angels** – Investors on the TV show 'Dragons Den' would be considered Business Angels. They invest in a business idea in exchange for a share of profits and part ownership of the business.

12. What is a Business Plan?

A Business Plan is a document that is drawn up before a business is launched to describe the new business idea.

13. What should a Business Plan contain?

- Business Aims and Objectives (what it wants to achieve/when)
- Business Strategies
- Business Operations (how will the business be run on a daily basis. Who owns the business? Who will make decisions?)
- Sales Plan
- Marketing Plan (marketing, promotions and advertising)
- Financial Forecasts (cash flow forecasts – how much money is predicted to come in and go out each month? How much profit does the business predict it will make in the first year and over a longer period?)

14. Why is it important for new start-ups to have a Business Plan?

New businesses can be difficult to set up and, unfortunately, most will fail. Having a Business Plan *should* reduce the risk of failure, especially if the plan is detailed and realistic, as all eventualities will be planned for. A Business Plan is also used to share the business's ideas with third parties – it is unlikely, for example, that a bank will lend money to a new start-up without a detailed plan that includes financial forecasts.

Y11 Knowledge Organiser Enterprise LO6

What is a Functional Area?

A Functional Area is a 'department' within a business. Each department has its own specialisms and responsibilities, known as their functional activities. Functional Areas will often work together, communicating to ensure the business runs smoothly.

What limitations are there if one person does everything?

If one person carries out all functional activities in a business, then they're likely to be overwhelmed with tasks; this can cause stress. They're also not likely to be skilled in everything, so somethings won't get done as well as others.

Functional Areas / Activities

Human Resources

Description…
The Human Resources Functional Area deals with the business's employees.

If you think that this function deals with the PEOPLE, then it should be easy to remember by relating the word HUMAN to PEOPLE within the business.

Main Activities/Responsibilities…

- Recruiting employees
- Ensuring the right number of people are working within the business (no shortages, not too many employees)
- Training employees
- Performance management (giving employees targets and checking on how well they're working)
- Health and Safety within the workplace
- Ensuring the business keeps to all laws relating to employment and employees

Marketing

Description…
The Marketing Functional Area is responsible for identifying what customers' wants and needs are.

This Functional Area is then responsible for developing products that meet these wants and needs.

Main Activities/Responsibilities…

- Carrying out Market Research
- Finding out customers' opinions
- Gathering feedback from customers
- Developing a marketing mix for the products the business offers.
- The Marketing Mix involves the 4 P's… PRODUCT, PRICE, PLACE and PROMOTION. The marketing function focuses on getting this mix right so the product has more chance of success.

Operations

Description…

Sometimes referred to as the 'Production Department', this Functional Area is responsible for the process that turns inputs (raw materials) into outputs (finish goods) that can be sold to customers.

Main Activities/Responsibilities…

- Planning how products will be manufactured
- Producing the product or service
- Quality control
- Stock control
- Ordering stock
- Logistics (delivery of stock / finished products)

Finance

Description…

This Functional Area is responsible for everything to do with money in the business. They also organise the business's financial performance reports on an annual basis.

Main Activities/Responsibilities…

- Budgets
- Organising resources
- Ordering
- Preparing financial statements which will be submitted to HMRC (HMRC is the Government department that deals with tax).
- Reporting on financial performance; if it's a company, these reports will be available for all to see.

What is the difference between function activities in a small start-up business and a large company?

In a small business start-up, all of the above functional activities are likely to be carried out by the same person (if it's a sole trader business) or a handful of people (in a partnership). There won't be dedicated teams of people to do all of the different activities required.

In larger firms, Functional Areas will have big teams of people all working together on specific tasks within the same department. The departments will still communicate with one another, but there is less likely to be shared responsibilities.

Summary of some main activities…

Checking Quality of Products	Operations	Manufacturing Products	Operations
Organising delivery of parts	Operations	Advertising Products	Marketing
Carrying out Market Research	Marketing	Paying employees' wages	Finance
Health and Safety	Human Resources	Posting adverts for a job	Human Resources

Edexcel English Language Paper Two (Reading Section) Knowledge Organiser Year 11

Exam Paper

What's it on?	Two non fiction extracts that are linked by the same theme or idea.
How long?	2 Hours 5 Minutes.
Questions and timings (approx.) **Reading section**	Read both extracts: 10 mins. **Q 1-3 on Text 1** Q1- Retrieve two quotes – 1 min. Q2- Retrieve one quote giving one sentence explanation - 2 mins. Q3- Analyse language & structure - 20 mins. **Q 4-6 on Text 2** Q4- Retrieve quote - 1 mins. Q5- Explain effect of quote in one sentence - 2 mins. Q6- Evaluate how successful the writer has been – 20 mins. **Q 7a & 7b on Text 1 & Text 2** 7a- Spot the similarities – 5 mins 7b- Compare and contrast ideas and perspectives of both writers - 20 mins.
Reading	Read the exam questions first. As you are reading the texts, highlight AND annotate your extracts with ideas that you will use in your answers. Read both extracts before beginning to answer questions.

How to approach the questions

Q3

You must discuss language and structure.

Language devices include:

- Tone/ Simile/ Metaphor/ Personification/ Alliteration/ Verbs/ Adverbs/ Adjectives/ Sibilance/ Pronouns/ Hyperbole.

Structural devices include:

- Sentence types/ Repetition/ Juxtaposition/ Punctuation/ Paragraphing.

Key thing to remember:

This is the same skill as all other analysis questions so you need to explain the effect of the technique used. Always zoom in on single words and explore why the writer has chosen to use this specific word.

Q6

When reading focus on:

- The key word in the question, what is it asking you to evaluate?
- How SITE (Setting/ Ideas/ Themes/ Events) have been used in the extract to help create this effect,
- Identify key evidence from the text that helps the writer to create this effect.

When writing make sure to include:

- Evaluative adverbs (Successfully/ Subtly/ Continuously/ Deftly/ Consciously/ Carefully/ Deliberately)
- Evaluative verbs (Develops/ Creates/ Enhances/ Amplifies/ Denotes/ Demonstrates/ Emphasises/ Foreshadows/ Implies)

Q7

For Q7a follow this structure:

In text 1 the writer shows … through the description … (quote), similarly in text 2 the writer highlights … through the description … (quote). Complete three of these short comparison paragraphs.

For 7b focus on:

- Similarities AND differences (find evidence in the texts)
- Analyse the evidence for what it shows about the writer's attitudes/ perspectives/ ideas.
- Single word analysis.
- Using comparative connectives (similarly/ contrastingly/ on the other hand)

Edexcel English Language Paper Two (Writing Section) Knowledge Organiser

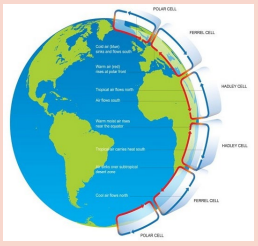
Section B Writing	
What's it on?	You will have to produce a piece of non fiction writing in one of the following formats: newspaper article/ review/ speech/ guide/ letter. Your task will be to achieve one of the following aims in your writing: inform, explain, describe, argue, persuade, advise.
How long?	45 Mins
What does the question look like?	You will be give a choice where you pick ONE question, either 8 OR 9. Typical question: **EITHER** **8)** Your school or college is writing an information guide for students who are new to the school/college. Write the section for the guide with the title 'Stress-free Settling In'. **OR** **9**) Your local newspaper has published a report with the title 'Discrimination still exists today; nothing can be done about it'. Write a letter to the newspaper giving your views.
Key vocab	**Vocabulary and tone need to be precisely match to task:** Style of the question will require a blended approach: inform, explain, describe, argue, persuade, advise. **Modal verbs are used for advice**: *Can, could, may, might, must, ought to, should, shall, will, would.* **Informative/explanatory**: *After all; as can be expected; generally; namely; naturally; obviously.* **Opinionated vocabulary**: *Without a doubt; the fact is; clearly; it is vital that.* **Anecdotal vocabulary**: *As a matter of fact; one incident that can be recalled; a great illustration of this was.* **Persuasive techniques**: Anecdotes, Facts, Opinions, Rhetoric, Emotive language, Sarcasm, Triple Emphasis, Direct Pronouns, Repetition, Imperatives, Punctuation for effect.
Sentence Stems	**Sentence stems to learn:** Research, funded by _____, has revealed that…. / Consequently, many people have found that… / Differing variables must be considered… / Perhaps it might be fair to…. / Every year hundreds… / Over recent decades many experts have… / A reasonable conclusion might be… / Critically important is… / Despite definitions varying, it is possible to consider… / Anecdotally, those who have experienced this have found… / It is rather alarming that research, published by….

Topic 1
Global Hazards

Global pattern of air circulation

Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

Hadley cell	Largest cell which extends from the Equator to 30° north & south of the equator
Ferrel cell	Middle cell where air flows poleward between 30° & 60° latitude.
Polar cell	Smallest & weakest cell that occurs from the poles (90° north and south) to the Ferrell cell.



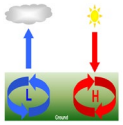
Climate Zones

The global circulation system controls temperatures by influencing precipitation and the prevailing winds. This creates distinctive climate zones.

Temperate Climate	Mid-latitude, 50° - 60° north &south of the Equator. Here air rises and cools to form clouds and therefore frequent rainfall. e.g. UK.
Tropical Climate	Found along the Equatorial belt, this zones experiences heavy rainfall and thunderstorms. E.g. Brazil.
Polar Climate	Within the polar zones cold air sinks causing dry, icy and strong winds. E.g. Antarctica.
Desert Climate	30° north and south of the equator, sinking dry airs leads to high temperatures without conditions for rainfall. E.g. Libya.

High and Low Pressure

High Pressure	Low Pressure
Caused by cold air sinking. Causes clear and calm weather	Caused by hot air rising. Causes stormy, cloudy weather.



What is wind?

Wind is the movement of air from an area of high pressure to one of low pressure.

Types of wind

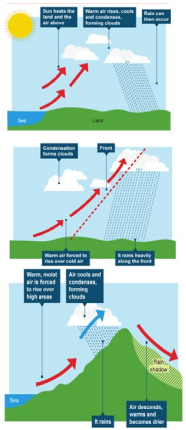
Katabatic Winds	Winds that carry air from the high ground down a slope due to gravity. e.g. Antarctic.
Trade Winds	Wind that blow from high pressure belts to low pressure belts.
Jet Streams	These are winds that are high in the atmosphere travelling at speeds of 225km/h.

What is precipitation?

This is when water vapour is carried by warm air that rises. As it gets higher, the air cools and the water vapour condenses to form a cloud. As water molecule collide and become heavier, the water will fall to Earth as precipitation.

Types of precipitation

Convectional Rainfall	When the land warms up, it heats the air enough to expand and rise. As the air rises it cools and condenses. If this process continues then rain will fall.
Frontal Rainfall	When warm air meets cool air an front is formed. As the warm air rises over the cool air, clouds are produced. Eventually steady rain is produced.
Relief Rainfall	When wind meets mountains, the warm air is forced to rise quickly and cool. This leads condensation and eventually rainfall. When the air descend however, little very rainfall falls, creating a rain shadow.

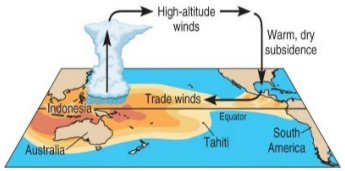


Distribution of Droughts

Drought can occur anywhere throughout the world but they are more frequent between the tropics of Cancer and Capricorn. Many countries in Africa suffer from severe drought, such as Ethiopia but Australia also suffer.

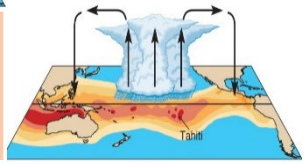
Causes of Drought: El Nino effect

The El Nino effect is also associated with creating dry conditions.



Normally, warm ocean currents off the coast of Australia cause moist warm air to rise and condense causing storms and rain over Australia.

In an El Niño year (every 2-7 years) the cycle reverses. Cooler water off the coast of Australia reverses the wind direction leading to dry, sinking air over Australia causing hot weather and a lack of rainfall.



Extremes in weather conditions

Wellington, New Zealand
Very high wind speeds (248mkm/h) due to the surrounding mountains funnelling wind.

Puerto Lopez
Found along the equator, high temperatures lead to rapid condensation and heavy rainfall.

The Atacama, Chile
The Andes mountains block moist warm travelling any further west. This causes rainfall to the east, but a rain shallow to the west.

Mawsynram, India
This village see a lot of rain each year (11m per yr). This is due to the reversal of air conditions/directions from sea to land. In the summer, this contributes to monsoons.

Changing pattern of these Hazards

Tropical Storms	Scientist believe that global warming is having an impact on the frequency and strength of tropical storms. This may be due to an increase in ocean temperatures.
Droughts	The severity of droughts have increase since the 1940s. This may be due to changing rainfall and evaporation patterns related to gradual climate change.

Distribution of Tropical Storms.

They are known by many names, including hurricanes (North America), cyclones (India) and typhoons (Japan and East Asia). They all occur in a band that lies roughly between the tropics of Cancer and Capricorn and despite varying wind speeds are ferocious storms. Some storms can form just outside of the tropics, but generally the distribution of these storms is controlled by the places where sea temperatures rise above 27°C.

Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27°, the rising warm moist air leads to a low pressure. This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin.
4	When the storm begins to spin faster than 74mph, a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm.
6	When the tropical storm hit land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Case Study: UK Heat Wave 2003

Causes

The heat wave was caused by an anticyclone (areas of high pressure) that stayed in the area for most of August. This blocked any low pressure systems that normally brings cooler and rainier conditions.,

Effects	Management
• People suffered from heat strokes and dehydration. • 2000 people died from causes linked to heatwave. • Rail network disrupted and crop yields were low.	• The NHS and media gave guidance to the public. • Limitations placed on water use (hose pipe ban). • Speed limits imposed on trains and government created 'heatwave plan'.

Case Study: Typhoon Haiyan 2013

Causes

Started as a tropical depression on 2rd November 2013 and gained strength. Became a Category 5 "super typhoon".

Effects	Management
• Almost 4,000 deaths. • 130,000 homes destroyed • Water and sewerage systems destroyed caused diseases. • Emotional grief for lost ones.	• The UN raised £190m in aid. • USA & UK sent helicopter carrier ships deliver aid remote areas. • Education on typhoon preparedness.

The structure of the Earth

The Crust	Varies in thickness (5-10km beneath the ocean. Made up of serval large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

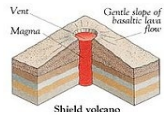
Convection Currents

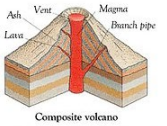
The Lithosphere is divided into tectonic plates which are moving due to convection currents in the asthenosphere.

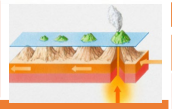
1. Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2. When lower parts asthenosphere heat up they become **less dense** and **slowly rise**.
3. As they move towards the top they cool down, become **more dense** and **slowly sink**.
4. These **circular movements** of semi-molten rock are **convection currents**
5. Convection currents create **drag** on the base of the tectonic plates and this causes them to move.

Types of volcanoes

Shield	Made of basaltic rock and form gently sloping cones from layers of runny lava. Location: hot spots and constructive margins. Eruptions: gentle and predictable
Composite	Most common type found on land. Created by layers of ash and lava. Location: Destructive margins Eruptions: explosive and unpredictable due to the build of pressure within the magma chamber.
Hotspots	These happen away from any plate boundaries. They occur because a **plume of magma rises** to eat into the plate above. Where lava breaks through to the surface, **active volcanoes** can occur above the hot spot. E.g. Hawaii.

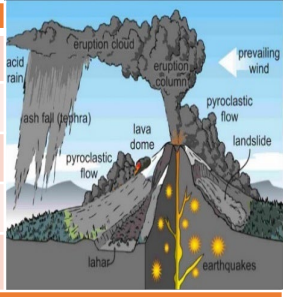






Volcanic Hazards

Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.



Managing Volcanic Eruptions

Warning signs	Monitoring techniques
Small earthquakes are caused as magma rises up.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases.	Gas samples may be taken and chemical sensors used to measure sulphur levels.

Preparation	
Creating an exclusion zone around the volcano.	Being ready and able to evacuate residents.
Having an emergency supply of basic provisions, such as food	Trained emergency services and a good communication system.

CASE STUDY: HAITI EARTHQUAKE 2010 (LIDC)

Causes

- Haiti is on the conservative plate boundary of the Caribbean and North American plate.
- Magnitude 7 earthquake hit Haiti at 16:53 local time.
- Epicentre was 25km west of the capital Port-au-Prince

Effects

Social: Over 220,000 deaths, 300,000 injured. 1.3 million made homeless. Several hospitals destroyed
Economic: 30,000 business buildings collapsed. Total cost was $8.5 billion Airport and port damaged – trade affected.
Environmental: Cholera spread. Drinking water became contaminated.

Responses

IMMEDIATE – Dominican republic provide water and medical supplies. ACs such as Iceland sent emergency rescue teams. UN troops were sent to distribute aid and stop looting. 500 makeshift camps were put up.
LONG TERM –US ship docked to make 1.5 million litres of drinking water a day. $330 million given by the world bank. Debt repayments waived for 5 years

Earthquake Management

PREDICTING

Methods include:

- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.

PROTECTION

You can't stop earthquakes, so earthquake-prone regions follow these three methods to reduce potential damage:

- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

Types of Plate Margins

Destructive Plate Margin

When the **denser plate subducts** beneath the other, **friction** causes it to melt and become molten magma. The magma **forces its ways up** to the surface to form a volcano. This margin is also responsible for **devastating earthquakes.**

Constructive Plate Margin

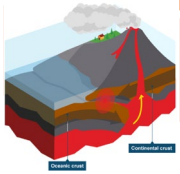
Here **two plates are moving** apart causing **new magma** to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic Ridge**.

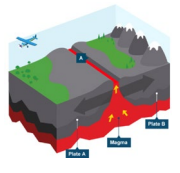
Conservative Plate Margin

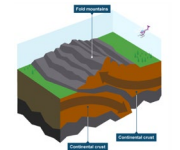
A conservative plate boundary occurs where **plates slide past each other in opposite directions**, or in **the same direction** but at **different speeds**. This is responsible for **earthquakes** such as the ones happening along the **San Andreas Fault, USA.**

Collision Zones

Collision zones form when **two continental plates collide**. Neither plate is forced under the other, and so **both are forced up** and form **fold mountains**. These zones are responsible for **shallow earthquakes** in the **Himalayas**.







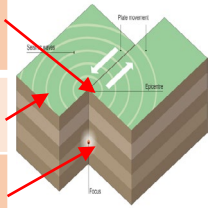
Causes of Earthquakes

Earthquakes are caused when two plates become locked causing friction to build up. From this stress, the pressure will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of seismic waves, to travel from the focus towards the epicentre. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



Depth of Earthquake

Shallow Focus	Deep Focus
-Usually small and common. -Seismic waves spread and damage wide area.	-Occur on destructive margins. -Damage is localised as seismic waves travel vertically.

How do we measure earthquakes?

Mercalli Scale

- Measures how much damage is caused, based on observations, not scientific instruments.
- Base from 'Instrument' and 'Weak' to 'Extreme' and 'Cataclysmic'.
- Limitations is that its subjective due to it being based on perception.

Richter Scale

- Is a scientific measurement based on the energy released.
- Measured by seismometers using measurement from 1 – 10
- Logarithmic – each point up the scale is 10 times greater than the one before.

Earthquake proof buildings ideas

1. Counter-weights (tuned mass damper) to the roof to help balance any swaying.	2. Roof made from reinforced cement concrete.
3. Foundations made from reinforced steel pillars, bail-bearings or rubber.	4. Windows fitted with shatter-proof glass to reduce breakage.
5. Lightweight materials that cause minimal damage if fallen during an earthquake.	6. Ensure gas pipes have an automatic shut off to prevent risk of fire.

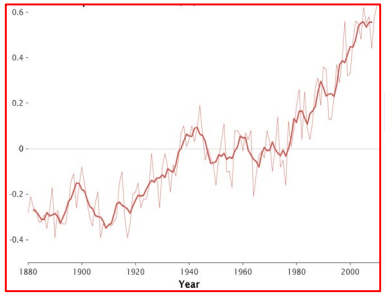
What is Climate Change?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Quaternary geological period

The quaternary period is the last 2.6 million years. During this period temperatures have always fluctuated. The cold 'spikes' are the glacial periods, whereas the warm points are the interglacial periods.

Today's temperature is higher than the rest of the period. Despite alternate cold and warm moments within this period, global temperatures have increased above average in the past 100 years. This current trend is what's become know as global warming.

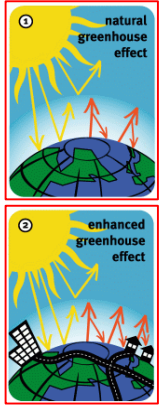


Natural Greenhouse Effect

The Earth is kept warm by a natural process called the Greenhouse Effect. As solar radiation hits the Earth, some is reflected back into space. However, greenhouse gases help trap the sun's radiation. Without this process, the Earth would be too cold to support life as temperature would average as -18°C instead of +15°C.

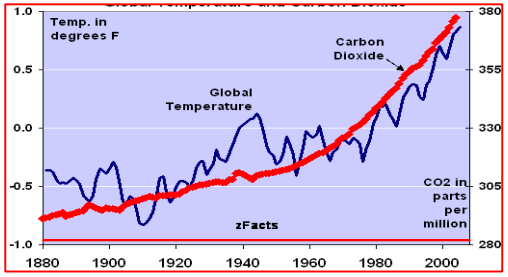
Enhanced Greenhouse Effect

Recently, there has been an increase in humans burning fossil fuels for energy. These fuels (gas, coal and oil) emit extra greenhouse gases. This is making the Earth's atmosphere thicker, therefore trapping more solar radiation but causing less to be reflected. As a result, our Earth is becoming warmer.



Linking CO_2 and Global temperatures

The rate of carbon dioxide and increase in global temperatures is strong. Scientist agree that this increase is cause by human activity.



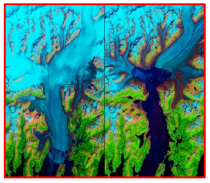
Evidence for climate change

Earth's temperature has changed over the last 2.6 million years. Scientist know this by collecting a range of evidence that is trapped or stored in the environment around us.

Geological fossil evidence	Plants and animals fossils/remains which favour certain environmental conditions have been found in contractionary conditions, thus suggesting periods of a warmer and colder time. E.g. Mastodon in USA.
Ocean Sediment	Layers of sediment that has built up over time have provided scientist trapped oxygen isotopes. Scientist have used them to calculate and understand that atmospheric temperature have indeed changed.
Ice Cores	Ice cores are made up from different layers that each represents a different historical time. By exploring the water molecules of these cores, scientist have calculated fluctuating temperatures of the atmosphere.
Historical records	Historical records from ancient cave paintings, diaries and written observations have provide evidence of climate change through personal accounts from the people through them.

Retreat of the Columbia Glacier, Alaska, USA

Located in southern Alaska, it flows 50km to the sea. The glaciers has been retreated by 16km and has lost half of its thickness in the last 30 years. Scientist believed this is due to global warming, which if continued will contribute towards continued sea level rises.



Topic 2
CHANGING CLIMATE

Past Evidence: The Little Ice Age (1300-1870)

The Little Ice Age was a period of cooling that occurred after the Medieval Warm Period in parts of Europe and North America. Impacts included…

1. Price of grain increased and vineyards become unproductive.
2. Sea ice engulfed Iceland and the sea force around parts f the UK. Frost Fairs were held on rivers such as the River Thames.
3. People suffered from the intense cold winters as food stock were limited.

Greenhouse Gases

Most greenhouse gases occur naturally. Some greenhouse gases have greater potential to increase global warming than occurs as different gases trap and absorb different amounts of radiation.

Carbon dioxide	Accounts for 60% of the enhanced greenhouse gases. It is produced by burning fossil fuels through producing electricity, industry, cars and deforestation.
Methane	Accounts for 15% of the enhanced greenhouse gases. 25x more efficient than Carbon dioxide. Produce from landfills, rice and farm animals.
Halocarbons	Human made and makes a tidy proportion of all greenhouse gases. 15000x more efficient at trapping radiation than Carbon dioxide. Produced from air-conditioning, refrigerators and aerosols.
Nitrous Oxide	Accounts for 6% of the enhanced greenhouse effect. 250x more efficient than Carbon dioxide. Produced from fertilisers and car exhausts.

Recent Evidence for climate change.

In the past 100 years, scientists have become pretty good at collecting accurate measurements from around the world. These measurements have suggested a trend that the climate is yet again changing.

Global temperature data	Evidence collected by NASA suggests average global temperatures have increased by more than 0.6°C since 1950.
Ice sheets and glaciers	Evidence from maps and photos have shown many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by 10% in 30 years.
Sea Level Change	Evidence from the IPCC has shown that the average global sea level has risen by 10-20cms in the past 100 years. This is due to the additional water from fresh water ice and thermal expansion of the ocean due to higher temperatures.

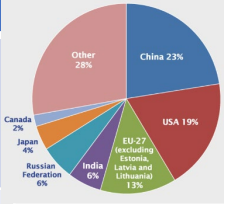
Evidence of natural change

Climate change has occurred in the past without human ever being present. This suggests that there are natural reasons for the climate to change.

Milankovitch cycle	Milutin Milankovitch argued that climate change was linked to the way the Earth orbits the Sun, and how it wobbles and tilts as it does it. There are three ideas that are thought to change climate. 1. **Eccentricity**: Changes in the shape of Earth's orbit. 2. **Obliquity**: Changes in how the Earth tilts on its axis. 3. **Precession**: The amount the Earth wobbles on its axis.
Sun Spots	Dark spots on the Sun are called Sun spots. They increase the amount of energy Earth receives from the Sun.
Volcanic Eruptions	Volcanoes release large amounts of dust containing gases. These can block out sunlight and results in cooler global temperatures.

Whose responsible?

LIDCs	Countries in Africa, such as Kenya, emit low levels of carbon dioxide. This is due to these countries not being industrialised or having a population wealthy enough to consume lots of energy
EDCs	Countries such as China and India are increasingly more industrialised and therefore are emitting more carbon dioxide. These increasing population sizes and steadily increasing wealth mean more energy is being consumed.
ACs	Countries such as the USA and UK are industrialised with a wealthier population that enjoy lifestyles which required a large consumption of energy.



Not what is seems

Although China is responsible for the highest amount of carbon emission, 1.4 billion people do live there. However, per person, the USA (320 million) actually contributes far more CO_2 emissions.

Global impacts of climate change

The impact of rising temperatures is affecting the world socially, economically and environmentally in several potential problematic ways.

Extreme Weather	Climate is causing more unpredictable and severe weather events. This includes more frequent and powerful tropical storms; more extreme heatwaves and lasting droughts. E.g. Typhoon Haiyan 2013
Rising sea levels	Sea levels have risen by 20 cm since 1901. due to thermal expansion, melting glaciers and ice caps. Some coastal countries are now disappearing such as the Maldives in the Indian Ocean.
Food supply	Warmer temperatures and changing rainfall will make it harder to produce a reliable source of food to sustain a rising global population. E.g. In 2011, Russia banned crop exports after a incline in yield.
Plants and Animals	About a quarter of animals and plants on Earth could become extinct. With warmer temperatures and changing rainfall environments will no longer be able to provide for the world's fragile ecosystems.
Disease and Health	Warmer temperatures will increase the spread of infectious diseases like malaria. In addition, more frequent floods could cause more waterborne disease such as dysentery.
Water Supply	People need freshwater to drink but with 1 billion people predicted to not have excess to enough water by 2025 due to climate change, this might cause several social, economic and environmental problems. E.g. fishing, irrigation and sanitation.
Climate refugees	Climate refugees are people who are forced to leave their home due to the impact of climate change. This can be due to sea level rises or extreme weather conditions such as drought.

Rising Sea Levels: Tuvalu

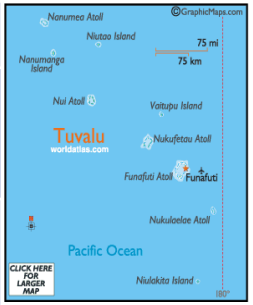
Tuvalu is a group of tiny islands in the South Pacific. Most islands are low-lying with the highest point being 4.5m above sea level. Population is 11,000 people and the economy relies mainly from exporting copra.

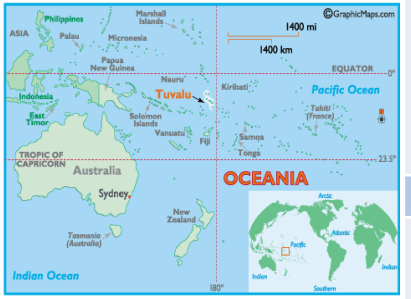
Impacts from climate change

Social	Economic	Environmental
- Water supply due to droughts becoming more common. - Wells are becoming polluted by seawater. - High tides are starting to threaten homes and roads.	- Increased levels of salinization affecting soil for agriculture. - Coastal erosion is destroying productive farmland. - Main runway threaten by flooding.	- Ocean acidification is reducing fish stocks around the island. - Warmer temperatures are destroying fragile ecosystems such as coral reefs.

Management

- Campaigning internationally for a reduction in carbon emissions.
- Migration to safer islands off the coast of New Zealand.
- Low sea walls have been constructed to prevent erosion and flooding.
- Japan supporting coral reef restoration by introducing new species to damaged reefs.





Climate change management: Paris Agreement 2015

Paris climate conference involved 195 countries making a legally binding global climate deal. This agreement objective is to limit global warming to below 2°C. The aims of this objective are…

- Limit emissions to pre-industrial levels.
- Meet every 5 years to set new targets.
- Communicate plans to the public.
- Provide support to developing countries at reducing emissions.

Extreme Weather: Australian Drought 2010

By 2010 areas in South-East Australia had suffered through 8 year of drought. These years of drought, where people were asked to shower for only a minute, were caused by El Nino's n 2003 and 2007.

Impacts from climate change

Social	Economic	Environmental
- Major water restrictions were enforced. - In 2009, 180 people died in bush fires. - Suicide rates among farmers rockets.	- Food is imported and prices rise. - Farmers move to towns to find work. - The tourist industry suffers.	- Water quality declines and poisonous algae forms. - Animals die of thirst and starvation.

Management

- Drought tolerant cops introduced.
- People are encouraged to recycle water in homes.
- Large dams are planned for Brisbane.

Impacts of climate change on the UK.

The UK's climate is also changing. It is expected to…

- **Increase in average temperature.**
- **Have warmer, but wetter winters.**
- **Have warmer and drier summers.**

However, not all the impacts to the UK will be negative, there are clear benefits for a changing climate.

Negative impacts of climate change for the UK

Coastal Flooding

- Vulnerable low lying areas could flood homes and infrastructure.
- Increase of coastal erosion.
- Damage to the economy.

Extreme Rainfall

- Increase in extreme flash floods.
- Flood damage to homes and businesses.
- Soil contaminations on farmland.

Water Shortages

- Farmers will find it difficult to irrigate land.
- Water restrictions, with London being worst affected.

Extreme Heat

- Warmer weather can increase health problems.
- Infectious diseases such as malaria might spread.

Positive impacts of climate change for the UK

Tourism

- More people likely to take holidays within the UK.
- The economy could be boosted: helping to create new jobs.
- More outdoor events could become common.

Environment

- New wetlands from coastal flooding could become established.
- New wildlife and plants could be drawn to the UK'.

Farming

- Agriculture productivity may increase under warmer conditions.
- Farmers could potentially grow new foods used to warmer climates.

Industry

- Heating cost will fall.
- Construction industry will be boosted by the need to build sea defences.
- New designs produced to cope with conditions.

Topic 3
Distinctive Landscapes

What is a landscape?

A landscape has visible features that make up the surface of the land. Landscapes can be broken down into four 'elements'.

Landscape Elements

Physical
- Mountains
- Coastlines
- Rivers

Biological
- Vegetation
- Habitats
- Wildlife

Human
- Buildings
- Infrastructure
- Structures

Variable
- Weather
- Smells
- Sounds/Sights

Relief of the UK

Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.

Key

Lowlands

Uplands

Areas +600m: Peaks and ridges cold, misty and snow common. i.e. Scotland

Areas -200m: Flat or rolling hills. Warmer weather. i.e. Fens

Erosion

The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolved rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Transportation

A natural process by which eroded material is carried/transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

Glaciation in the UK

Over many thousands of years, glaciation has made an impression on the UK's landscape. Today, much of upland Britain is covered in u-shaped valleys and eroded steep mountain peaks.

During the ice age

Ice covered areas eroded and weathered landscapes to create dramatic mountain scenery.

After the ice age

Deep valleys and deposition of sediment revealed

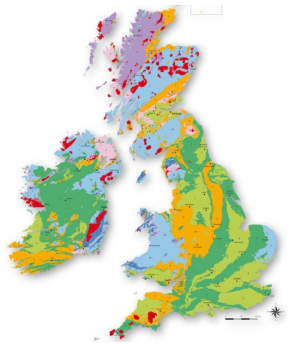
Geology of the UK

The UK is made from a variation of different rock types. The varied resistance of these rocks influences the landscape above.

Igneous Rock
Volcanic/molten rock brought up to the Earth's surface and cooled into solid rock.

Sedimentary Rock
Made from broken fragments of rock worn down by weathering on Earth's surface.

Metamorphic Rock
Rock that is folded and distorted by heat and pressure.



Soil & Landscape

- Soils are created from weathered rocks, organic material and water. Rock types have influence over fertility of soil.
- Low-laying areas such as the Cambridgeshire Fens have deep soil whereas uplands have thin soil.
- Deep soil is more often associated with deciduous woodland rather than coniferous woodlands.

Human activity on Landscape

Farming has changed the vegetation which grows there.	**Much of the rural landscape has been replaced by urban sprawls.**	**Infrastructure such as roads and pylons cover most of the UK.**
Over thousands of years, much of the UK's woodlands have gone.	**Increasing population of the UK means more houses are needed.**	**UK's marshes and moorlands are heavily managed by people.**

Climate and Weather in the UK

The variations of climate and weather means there are different influences on the UK's landscape.

Climate

The rainfall map of the UK shows variations in average rain.
- **Less** precipitation occurs in low land areas. East England
- **Most** precipitation occurs in upland areas. Scotland.

These differences mean…
Uplands experience more weathering, erosion and mass movement.

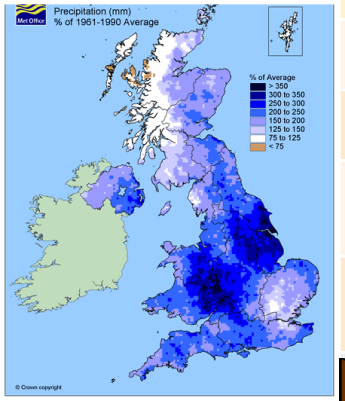
Weathering

Mechanical
Caused by the physical action of rain, frost and wind.

Chemical
Action of chemicals within rain dissolving the rock.

Biological
Rocks that have been broken down by living organisms.

Average rainfall in the UK

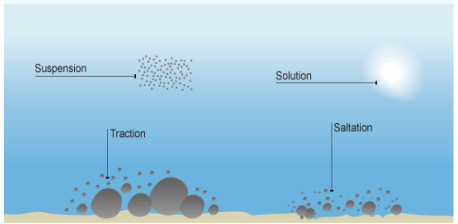


Freeze-thaw weathering

Stage One
Water seeps into cracks and fractures in the rock.

Stage Two
When the water freezes, it expands about 9%. This wedges apart the rock.

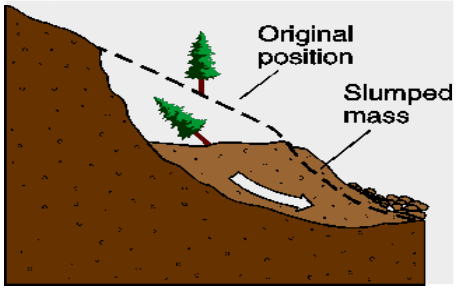
Stage Three
With repeated freeze-thaw cycles, the rock breaks off.



Mass Movement

A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.

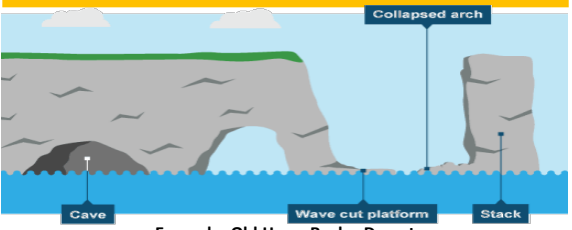
1	Rain saturates the permeable rock above the impermeable rock making it heavy.
2	Waves or a river will erode the base of the slope making it unstable.
3	Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
4	The debris at the base of the cliff is then removed and transported by waves or river.



Deposition

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

Formation of Coastal Stack



Example: Old Harry Rocks, Dorset

1) Hydraulic action widens cracks in the cliff face over time.
2) Abrasion forms a wave cut notch between HT and LT.
3) Further abrasion widens the wave cut notch to from a cave.
4) Caves from both sides of the headland break through to form an arch.
5) Weather above/erosion below –arch collapses leaving stack.
6) Further weathering and erosion eaves a stump.

Coastal Defences

Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave . Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.

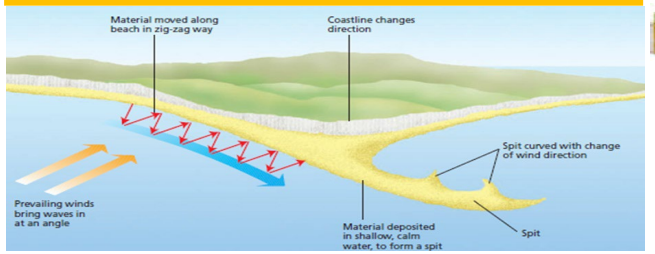
Soft Engineering Defences

Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Managed Retreat	Low value areas of the coast are left to flood and erode naturally.	✓ Reduce flood risk ✓ Creates wildlife habitats. ✗ Compensation for land.

Formation of Bays and Headlands

1) Waves attack the coastline.
2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

Formation of Coastal Spits - Deposition



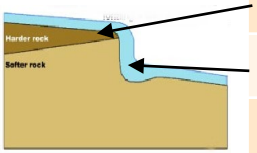
Example: Spurn Head, Holderness Coast

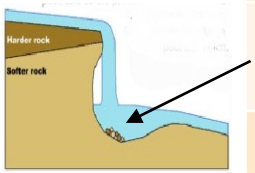
1) Swash moves up the beach at the angle of the prevailing wind.
2) Backwash moves down the beach at 90° to coastline, due to gravity.
3) Zigzag movement (Longshore Drift) transports material along beach.
4) Deposition causes beach to extend, until reaching a river estuary.
5) Change in prevailing wind direction forms a hook.
6) Sheltered area behind spit encourages deposition, salt marsh forms.

Upper Course of a River

Near the source, the river is flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

Formation of a Waterfall



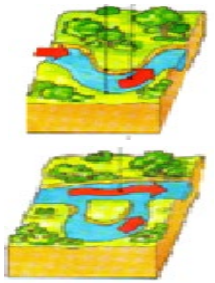


1) River flows over alternative types of rocks.
2) River erodes soft rock faster creating a step.
3) Further hydraulic action and abrasion form a plunge pool beneath.
4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.
5) Waterfall retreats leaving steep sided gorge.

Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

Formation of Ox-bow Lakes



Step 1

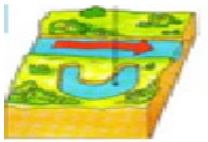
Erosion of outer bank forms river cliff. Deposition inner bank forms slip off slope.

Step 2

Further hydraulic action and abrasion of outer banks, neck gets smaller.

Step 3

Erosion breaks through neck, so river takes the fastest route, redirecting flow



Step 4

Evaporation and deposition cuts off main channel leaving an oxbow lake.

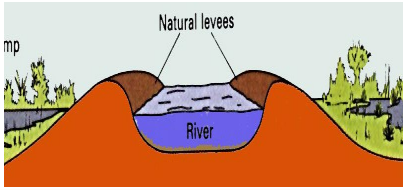
Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

Formation of Floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

✓ Nutrient rich soil makes it ideal for farming.
✓ Flat land for building houses.



River Management Schemes

Soft Engineering	Hard Engineering
Afforestation – plant trees to soak up rainwater, reduces flood risk. **Demountable Flood Barriers** put in place when warning raised. **Managed Flooding** – naturally let areas flood, protect settlements.	**Straightening Channel** – increases velocity to remove flood water. **Artificial Levees** – heightens river so flood water is contained. **Deepening or widening river** to increase capacity for a flood.

Case Study: The Holderness Coast

Location and Background
Located along the North-East coast in the county of Yorkshire. The coast extends 50km from Flamborough Head to Spurn Head.

Geomorphic Processes
-Flamborough Head is made from more resistant chalk. Features: wave-cut platforms, caves and stacks
-South from Flamborough Head the less resistant boulder clay is dominate. This coasts erodes 1.8m per year and is the fastest in Europe. Cliff slumping can be evident.
-Further south, Spurn Head is a coastal spit created by continual deposition from LSD that extents out to sea.

Management
-Rapid erosion means there are a number of different management schemes from soft to hard engineering.
-High population centres such as Withersea and Horsea are protected by 'hold the line' defence measures such as sea walls, groynes & heavy beach nourishment.
-Underpopulated & economic centres, such as farmland, are under 'managed retreat' schemes.

Case Study: The River Tees

Location and Background
Located in the North of England flows 137km from the Pennines to the North Sea at Red Car.

Geomorphic Processes
Upper – Features include V-Shaped valley, rapids and waterfalls. Highforce Waterfall drops 21m and is made from harder Whinstone and softer limestone rocks. Gradually a gorge has been formed.
Middle – Features include meanders and ox-bow lakes. The meander near Yarm encloses the town.
Lower – Greater lateral erosion creates features such as floodplains & levees. Mudflats at the river's estuary.

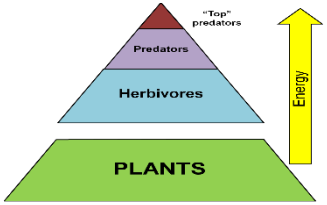
Management
-Towns such as Yarm and Middleborough are economically and socially important due to houses and jobs that are located there.
-Dams and reservoirs in the upper course, controls river's flow during high & low rainfall.
- Better flood warning systems, more flood zoning and river dredging reduce impact from flooding.

What is an Ecosystem?

An ecosystem is a system in which organisms interact with each other and with their environment.

Ecosystem's Components

Abiotic	These are non-living, such as air, water, heat, rock.
Biotic	These are living, such as plants, insects, and animals.
Flora	**Plant life** occurring in a particular region or time.
Fauna	**Animal life** of any particular region or time.



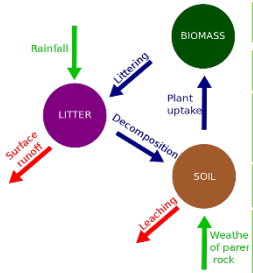
Food Chains

Food chains are useful in explaining the basic principles behind ecosystems. They show only one species at a particular level from where energy is transferred up to the next.

Nutrient cycle

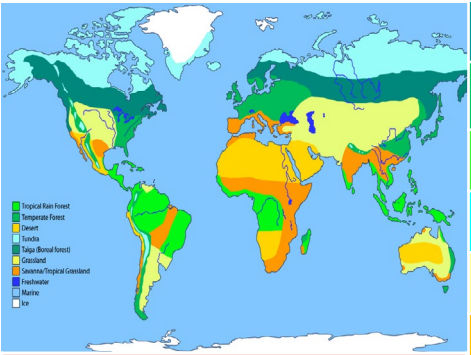
Plants take in those nutrients where they are built into new organic matter. Nutrients are taken up when animals eat plants and then returned to the soil when animals die and the body is broken down by decomposers.

Litter	This is the surface layer of vegetation, which over time breaks down to become humus.
Biomass	The total mass of living organisms per unit area.



Biomes

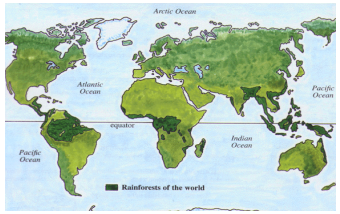
A biome is a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment. The climate and geography of a region determines what type of biome can exist in that region.



- Coniferous forest
- Deciduous forest
- Tropical rainforests
- Tundra
- Temperate grasslands
- Tropical grasslands
- Hot deserts.

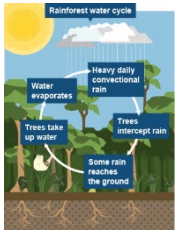
The most productive biomes – which have the greatest biomass- grow in climates that are hot and wet.

Tropical Rainforest Biome



Distribution of Tropical Rainforests

Tropical rainforests are centred along the Equator between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, central Africa and South-East Asia. The Amazon is the world's largest rainforest and takes up the majority of northern South America, encompassing countries such as Brazil and Peru.



Convectional rainfall

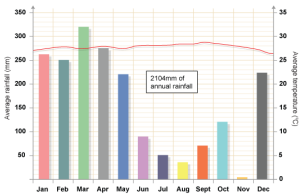
1	The roots of plants take up water from the ground and the rain is **intercepted** as it falls.
2	As the rainforest heats up, the water evaporates into the atmosphere.
3	Finally, the water condenses and forms clouds to make the next day's rain.

Rainforest nutrient cycle

The hot, damp conditions on the forest floor allow for the rapid decomposition of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots. However, as these nutrients are in high demand from the many fast-growing plants, they do not remain in the soil for long and stay close to the surface. If vegetation is removed, the soils quickly become infertile

Climate of Tropical Rainforests

- Evening temperatures rarely fall below 22°C
- Due to the presence of clouds, temperatures rarely rise above 32°C
- Most afternoons have heavy showers
- At night with no clouds insulating, temperature drops



Topic 4

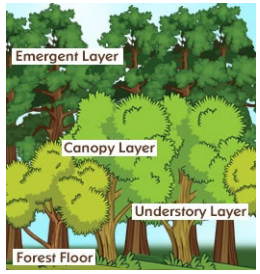
Sustaining Ecosystems

Interdependence in the rainforest

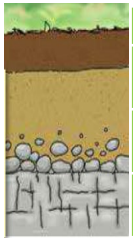
A rainforest works through interdependence. This is where the plants and animals depend on each other for survival.

Layers of the Rainforest

Emergent	Highest layer with tree reaching 50 metres.
Canopy	Most life is found here as It receives 70% of the sunlight and 80% of the light.
U-Canopy	Consists of trees that reach 20 metres high.
Shrub Layer	Lowest layer with small trees that have adapted to living in the shade.



Rainforest soil profile



Leaf Litter	Thin litter layer rapidly decomposes in heat.
Top Soil	Shallow topsoil is a mixture of decomposed organic matter and minerals.
Sub Soil	The sub-soil is deep due to weathering of rocks below.
Rock	Underlying rock weathers quickly at high temperatures to form sub-soil.

Biome's climate and plants

Biome	Location	Temperature	Rainfall	Flora	Fauna
Tropical rainforest	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
Tropical grasslands	Between latitudes 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/year)	Grasslands with widely spaced trees.	Large hoofed herbivores and carnivores dominate.
Hot desert	Found along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
Temperate forest	Between latitudes 40°-60° north of Equator.	Warm summers + mild winters (5-20°C)	Variable rainfall (500-1500m /year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
Tundra	Far Latitudes of 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/ year)	Small plants grow close to the ground and only in summer.	Low number of species. Most animals found along coast.
Coral Reefs	Found within 30° north – south of Equator in tropical waters.	Warm water all year round with temperatures of 18°C	Wet + dry seasons. Rainfall varies greatly due to location.	Small range of plant life which includes algae and sea grasses that shelters reef animals.	Dominated by polyps and a diverse range of fish species.

Tropical Rainforest Biome

Adaptations to the rainforest

Sloths	Are camouflaged to forest environment.
Buttress Roots	Support tall trees & absorb nutrients.
Drip Tips	Allows heavy rain to run off leaves easily
Lianas & Vines	Climbs trees to reach sunlight at canopy.

Rainforest inhabitants

Many tribes have developed sustainable ways of survival, such as shifting cultivation.
The forest provides inhabitants with…

- Food through hunting and gathering.
- Natural medicines from forest plants.
- Homes and boats from forest wood.

Effects of Human Activity on the Rainforest

Logging

- Most widely reported cause of destructions to biodiversity.
- Timber is harvested to create commercial items such as furniture and paper.
- Has lead to violent confrontation between indigenous tribes and logging companies.

Agriculture

- Large scale 'slash and burn' of land for ranches and palm oil.
- Increases carbon emission.
- River saltation and soil erosion increasing due to the large areas of exposed land
- Increase in palm oil is making the soil infertile.

Mineral Extraction

- Precious metals are found in the rainforest.
- Areas mined can experience soil and water contamination.
- Indigenous people are becoming displaced from their land due to roads being built to transport products.

Tourism

- Mass tourism is resulting in the building of hotels in extremely vulnerable areas.
- Has caused negative relationships between the government and tribes
- Tourism has affected wildlife (apes) by exposing them to human diseases.

Benefits of the rainforest

Raw Materials	Commonly used materials such as timber and rubber are found here.
Water	Controls the flow of water to prevent floods/droughts regions..
Food	Important foods such as bananas, pineapples and coffee are grown there.
Health	25% of modern medicines are sourced from rainforest ingredients.
Energy	Large dams generate 2/3 of Brazil's energy needs.
Climate	Acts as carbon sinks by storing 15% of carbon emissions.

Case Study: Sustainable Rainforest Management in Costa Rica

Location & Background

Costa Rica is a small country in Central America.
It is home to 6% of the world's biodiversity.
The country attracts 6 million tourists a year.

Ecotourism

Ecotourism is tourism that is directed towards the natural environments & conservation. Pacuare Lodge is a popular ecotourism destination in the country.

Advantages

- Local employment rates have increased.
- No trees were cut down to create accommodation
- Parts of the rainforest are strictly protected

Disadvantages

- More and more tourists visit the area each year – creates more waste needing to be disposed of.
- Wild animals may be disrupted by human activity.

Threats to the Costa Rican Rainforest

- Cattle Ranching and agricultural development by clearing land through slash & burn methods.
- Gold and other metal mining meant large scale soil and rock removing. This meant areas were deforested and chemicals entered water systems.
- By 1990, 32,000 hectares of forest were cut down each year – devastating the fragile ecosystem.

Rainforest Management – Pacuare Lodge

- 95% of staff are from local areas.
- Water is heated by solar panels and HEP
- Shampoo and conditioner are biodegradable
- Building materials from afforested areas.
- Guests are encouraged to plant trees
- Guests are given recyclable glass bottles
- Waste water is stored in septic tanks to avoid river contamination.
- Food is sourced from local farmers
- Important Jaguar conservation work is carried out.

Polar/Tundra Regions Biome

Distribution of Polar Regions

Arctic	Antarctic
Is the region north of latitude 60°N around the North Pole.	**A continent south of latitude 60°S around the South Pole.**
	

Climate

Polar areas are very cold with temperatures rarely reaching above 0 °C. Winters average below -40 °C with summers a maximum of only 10 °C. Rainfall is low throughout the year.

Land & Sea Features

Arctic	Antarctic
Large areas are permafrost. At sea, most of the region is frozen over.	Large and thick ice sheets. A mountain range crosses the continent.

Flora (Plants)	Fauna (Animals)
There are very few plants in polar areas – some lichens, mosses and grasses along the coastal areas.	Relatively few species of animals. Polar Bears, Penguins and marine mammals like whales, seals and walrus are examples.

Case Study: Small Scale Sustainable Management: Union Glacier, Antarctica

Location & Background

Located in the southern Ellsworth Mountains and is a key logistic hub for expeditions and research.

Features and Activities

- The locations has good faculties such as a dining room, electricity supply and transport.
- Tourists and can enjoy several activities such as ski tours, wildlife viewing and mountaineering.

Sustainable Management

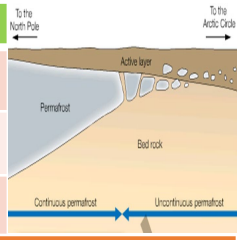
- Strict guidelines on how tourists should behave are enforced to respect the natural environment.
- Solar panels used to reduce carbon emissions.
- All waste is carefully contained and removed.

Climate Change on Polar Regions

Scientific reports outline the effect global warming is having on these regions. Ice sheets and glaciers are melting at an alarming rate leading to fears of rising sea levels. Thawing of permafrost is increasing methane emissions and the decline of Arctic ice is creating waves that are capable of causing unseen coastal erosion.

Arctic soil profile

Active Layer	Thaws in the summer. Becomes deeper towards pole.
Permafrost	Permanently frozen all year. Layer Increases further north.
Bed Rock	Low temperatures weathers rock slowly = less nutrients.



Effects of Human Activity in Polar Regions

Oil & Gas exploration

- Arctic holds a large amount of untapped oil and gas.
- Oil spills would threaten ecosystems as clean up operations would be slow.

Whaling

- Hunting of whales is a major industry – this led to a rapid decline in whale populations.
- Many countries have banned whaling, but some still continue

Fishing

- Has made area possible to fish large untapped stocks.
- The polar areas are difficult to police due to harsh conditions.
- Collapse of the fish stocks might damage ecosystems.

Tourism

- The tourism industry is steadily growing within polar regions.
- Travel by tourists have increase emissions further.
- Wildlife may become disturbed by tourists getting up close.

Case Study: Global Scale Sustainable Management: The Antarctic Treaty System

Background

Signed by 50 nations in 1961, the Treaty sets aside Antarctica as a scientific reserve, establishes freedom of scientific investigation and bans military activity.

Basic Principles of the Antarctic Treaty

- Bans mining and resource extraction.
- No territorial claim of the continent.
- Promotes scientific research and co-operation.
- Protects the fragile environments and its wildlife by preventing and managing nuclear waste/pollution.

Successful?

In place for 50 years. More countries have signed up to enforce strict controls and improve its stability. The treaty does not protect the ocean surrounding Antarctica.

Topic 5
Urban Futures

What is Urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities. In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.

Settlement Hierarchies

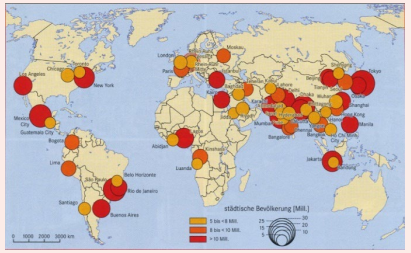
If we group and classify a number of settlements according to their size and shape, the result is settlement hierarchy.

Key Characteristics of Settlement Hierarchy.

- The number of services that a settlement provides increases with settlement size.
- Small settlements will only provide low-order services such as a post offices.
- Larger settlements and conurbations have a much larger sphere of influence than smaller ones.
- The range of a service or product is the maximum distance people are prepared to travel to purchase it.

Types of Cities

Megacity — An urban area with over 10 million people living there.



More than two thirds of current megacities are located in either EDCs and LIDCs. The amount of megacities are predicted to increase from 28 to 41 by 2030.

World City — Cities that are centres for trade and business. They hold global influence.

Key 'world cities' include London, New York, Tokyo and Paris. Most are located within ACs but are now gradually expanding into EDCs, for example Moscow.

Causes of Urbanisation

The movement of people from rural to urban areas.

Push	Pull
• Natural disasters • War and Conflict • Mechanisation • Drought	• More Jobs • Better education & healthcare • Increased quality of life. • Following family members.

Consequences of Rapid Urbanisation in LIDCs

Although there are lots of opportunities in urban areas, the rapid growth can place many pressures that causes various problems.

Social Consequences

- Little official housing available.
- Infrastructure struggles to support growing population.
- Increase in crime rates.

Environmental Consequences

- Rubbish may not be collected.
- Sewage and toxic waste pollutes river environments.
- Increased congestion produces more pollution.

Economic Consequences

- May not be enough jobs – increased unemployment.
- Informal sector increases Little access to education and healthcare.

Counter-Urbanisation in ACs

This is the movement of people from city centres to the outskirts.

Push	Pull
• Overcrowding and pollution. • Unemployment increases. • Deindustrialisation of centre. • Traffic congestion increases CO^2.	• Green spaces & family friendly. • New modern housing estates. • Improved public transport. • Rents cheaper on outskirts.

Suburbanisation

This is the movement of people from city centres to the outskirts.

Push	Pull
• Overcrowding and pollution. • Unemployment increases. • Deindustrialisation of centre. • Traffic congestion.	• Green spaces & family friendly. • New modern housing estates. • Improved public transport. • Rents cheaper on outskirts.

Consequences of Suburbanisation

Environmental Consequences

- New housing damages countryside and habitats.
- Increase of cars adds air pollution.

Economic Consequences

- People leaves centres and they become deserted.
- Unemployment increases, which leads to poverty.

Social Consequences

- Offices and businesses are abandoned.
- Economic and ethnic segregation.

Informal Housing

This is housing that is built on land which does not belong to those who are building it. This may be on land that is unsuitable due to its surroundings. Many slum settlements are classed as informal housing

Greenbelt Area

This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast.

Internal Growth

Internal growth occurs when urban areas experience rapid rates of population growth. This comes as a result of a large amount of arrival of people in cities who, after finding a job, house and partner, will then go on to have children. This occurs mostly in LIDCs.

Conurbation

A conurbation is a region comprising a number of cities, large towns, and other urban areas that, through population growth have merged to form one continuous urban or industrially developed area.

For example: Greater Manchester includes Manchester, Bolton, Oldham, Bury and Rochdale.

Re-urbanisation in ACs

This is the movement of people back into urban areas.

Push	Pull
• Lack of jobs in rural and suburban areas. • Less leisure and entertainment in rural areas. • Counter-urbanisation may have increased house prices.	• Redevelopment of brownfield sites with improved housing. • Young people are attracted to the Universities. • People are attracted to entertainment facilities available.

Consequences of Re-urbanisation

Social Consequences

- Shops and services benefit from the additional residents.
- Increase in tension between new and older residents.
- House prices in redeveloped areas increase.
- Schools benefit from the increase of students.
- More jobs and less employment within the area.

Environmental Consequences

- Redevelopment of brownfield sites improves old industrial and polluted areas
- Decreases pressures on greenfield areas.
- Could destroy urban wildlife.

Economic Consequences

- New shops and services will improve local economy.
- Jobs available may not be accessible to original residents.
- Urban tourism may increase.

AC: Challenges & Opportunities for Cities: LONDON Case Study

Location and Background

London is the capital city of the United Kingdom. It is located in the South East of England and has a population of roughly 9 million people. It Is one of the world's oldest cities and is the largest city in Western Europe. London can be split into two areas – inner and Outer London.

Global and regional importance

- London used to be linked to the rest of the world for trade through the River Tames.
- In recent years, London has become a major economic hub, being able to trade with countries in different time zones - China, India and Australia in the morning and the USA in the evening.
- London is home to 271 global headquarters of TNCs
- London has 5 international airports – Heathrow being the largest and busiest with around 650 arrivals per day

Migration and culture

- Migration to London has been happening for 100's of years, however, the main reason for migration today is for jobs and education. 1.6 million Europeans live in the city.
- London had over 190,000 economic migrants in 2011, all seeking both skilled and unskilled jobs.
- London has some of the world's top universities which attracts 18–25-year-olds to stay in the country.
- Migration has brought new culture to London – Nottingham carnival was set up to celebrate Caribbean heritage in the area.

London Employment

- Most people who work in London work in the following 5 sectors – Financial, Admin/health/education, Business, Transport and communication
- Many unskilled workers move to London for jobs too, these include delivery drivers, retail and hospitality workers, cleaners, rubbish disposal and construction
- 60% of Britain's illegal immigrants live in London and create the informal sector (cash in hand jobs) where no tax is paid – around 10% of economically active people work in this sector.

City Challenges

- Housing costs in London has risen exponentially in inner and outer London. This is due to international investors buying property in the city centre.
- Air quality in London is dangerously poor in London – a congestion charge was implemented in 2003 to deter people from driving into the city centre at peak times

Sustainable transport

- Pedestrian only zones created in the city centre
- Healthy streets - £2.1 billion were invested in cycling and public transport use to improve road safety and air quality.
- £300m invested in London's bus fleet to phase out diesel buses. TfL will introduce 3,000 ultra low emission buses by 2019.
- 12 low emission bus zones in the city.
- 300 fully functioning rapid charging points for electric vehicles will be installed in the city by 2020

LIDC: Challenges & Opportunities for Cities: Lagos, Nigeria

Location and Background

Lagos is located on the south Coast of Nigeria in Africa. It is Africa's biggest cities and one of the fastest growing cities in the world, with a population of 14.8 million people. Lagos used to be a small Portuguese fishing village., which is where it got its name from.

Global and regional importance

- Lagos is Nigeria's largest city and is classed as the country's economic capital.
- 80% of Nigeria's industry Is located in Lagos as it is the centre of trade and coerce.
- Lagos is the main financial centre of West Africa.
- Lagos has the fourth highest GDP in Africa
- The city has an international airport which links it to the rest of the world and a very important seaport.
- When Nigeria gained independence from the British in the 20th century, it was then that the city began to grow economically

Migration and culture

- Rapid migration has occurred in Lagos. From 1990-2004, over 7 million people moved from rural areas of Nigeria to live in the economic capital.
- Terrorist groups such as Boko Haram were a threat in Northern Nigeria so many people sought refuge in Lagos.
- Many people move to Lagos for better job opportunities, however, many people work in the informal sector
- Over half of the population in Lagos is under the age of 25! As a result of this, there are more schools and entertainment facilities in Lagos than anywhere else in Nigeria

Lagos's employment

- Over 2,000 people come to Lagos each day in search for a job as the wages are higher and there are more jobs in the city.
- Many of these are in the informal sector where people do not have any job security, sick or holiday pay or pensions.
- The literacy rate of Lagos is around 20%.in Lagos you have to pay for school. Many girls are married and become mothers by the time they are 13.
- Tertiary jobs such as lawyers, computing and finance are n demand but not many people coming from rural areas fill these jobs

City Challenges

- Social - Many people live without electricity High diseases rate and low life expectancy due to overcrowding in slums.
- Economic - High rate of corruption to government officials or people in power. Business is limited due to poor infrastructure and very little investment into independent shops etc.
- Environmental - Large scale traffic issues – it takes many people 2+ hours to get to work. Due to poor sanitation and raw sewage, slums are heavily polluted

Slum settlement: Makoko

- Home to over 100,000 people, Makoko is the biggest slum in Nigeria.
- Most of the houses in Makoko are floating on top of a lagoon near to the east coast of Lagos – many people use boats as a mode of transport.
- Many of the people who live in Makoko today were born in the slum and generations have lived there before them, creating a strong sense of community
- The people of Makoko have received many threats of eviction from the government citing safety, sanitation and security concerns

Topic 6

Dynamic Development

What is development?

Development is an improvement in living standards through better use of resources.

Economic	This is progress in economic growth through levels of industrialisation and use of technology.
Social	This is an improvement in people's standard of living. For example, clean water and electricity.
Environmental	This is advances in the management and protection of the environment.

Measuring development

There are used to compare and understand a country's level of development.

Economic indictors examples

Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product (GDP) per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income (GNI) per capita	An average of gross national income per person, per year in US dollars.

Social indicators examples

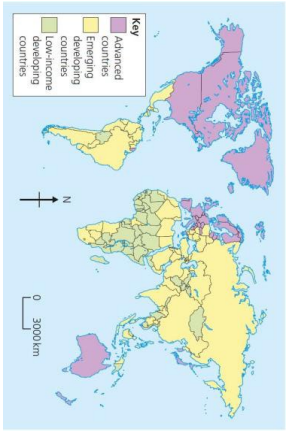
Infant mortality	The number of children who die before reaching 1, per 1000 babies born.
Literacy rate	The percentage of population over the age of 15 who can read and write.
Life expectancy	The average lifespan of someone born in that country.

Mixed indicators

Human Development Index (HDI)	A number that uses life expectancy, education level and income per person.

Variations in the level of development

LIDCs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
EDCs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
ACs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.



Uneven development

Development is globally uneven with most ACs located in Europe, North America and Oceania. Most EDCs are in Asia and South America, whilst most LIDCs are in Africa. Remember, development can also vary within countries too.

Physical factors affecting development

Natural Resources

- Fuel sources such as oil.
- Minerals and metals for fuel.
- Availability for timber.
- Access to safe water.

Natural Hazards

- Risk of tectonic hazards.
- Benefits from volcanic material and floodwater.
- Frequent hazards undermines redevelopment.

Climate

- Reliability of rainfall to benefit farming.
- Extreme climates limit industry and affects health.
- Climate can attract tourists.

Location/Terrain

- Landlocked countries may find trade difficult.
- Mountainous terrain makes farming difficult.
- Attractive scenery attracts tourists.

Human factors affecting development

Politics

- Aid can help some countries develop key services and infrastructure faster.
- Aid can improve projects such as schools, hospitals and roads.
- Too much reliance on aid might stop other trade links becoming established.

Trade

- Countries that export more than they import have a trade surplus. This can improve the national economy.
- Having good trade relationships.
- Trading goods and services is more profitable than raw materials.

Education

- Education creates a skilled workforce meaning more goods and services are produced.
- Educated people earn more money, meaning they also pay more taxes. This money can help develop the country in the future.

Health

- Lack of clean water and poor healthcare means a large number of people suffer from diseases.
- People who are ill cannot work so there is little contribution to the economy.
- More money on healthcare means less spent on development.

Aid

- Corruption in local and national governments.
- The stability of the government can effects the country's ability to trade.
- Ability of the country to invest into services and infrastructure.

History

- Colonialism has helped Europe develop, but slowed down development in many other countries.
- Countries that went through industrialisation a while ago, have now develop further.

Five stages of economic development.

1. Traditional society	2. Preconditions for take-off	3. Take-off	4. Drive to maturity	5. Mass Consumptions
Rostow's model predicts how a country's level of economic development changes over time. The model also shows how people's standard of living improves.	Subsistence based. i.e. farming, fishing and little trade.	Manufacturing starts to develop with better infrastructure.	Rapid growth with large-scale industrialisation.	Economy grows so people get wealthier & have higher standards of living	Lots of trade with a high level of consumption.

Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and education.

Wealth	People in more developed countries have higher incomes than less developed countries.
Health	Better healthcare means that people in more developed countries live longer than those in less developed countries.
Education	More developed countries have better standards of education available than those in less developed countries.

Barriers to ending Poverty

Debt	Many LIDCs have huge national debts from burrowing from wealthy countries and organisations. With high interest rates, these debts are difficult to wipe out and can lead to a spiral of decline. This situation makes it difficult for these countries to invest in services and infrastructure.
Trade	Countries with a negative balance of trade, import more than they export make development difficult. Also ACs have TNCs that operate in LIDCs. These companies take profits away from LIDCs to ACs where their headquarters are.
Political unrest	Widespread dissatisfaction with the government can be caused by political unrest, corruption and a lack of investment and attention into services (i.e. education and healthcare).

Breaking out of Poverty

Countries can try various ways to reduce poverty and increase development. These often involve different types of aid that can either be short term or long term strategies.

Top Down	These are large scaled, government led and expensive schemes involving money borrowed from wealthier countries. Their is little community involvement but instead large scale projects.
Bottom Up	These are small scaled, local led and less expensive schemes. They involve communities and charities developing local businesses and housing.
Short term	This aid is sent to help countries cope with emergencies such as natural disasters.
Long term	This is aid given over a long period to help countries develop through investing in projects such as education and healthcare.
Trade	Fair trade can allow for fair wages. Also grouping with other countries in the form of trading blocs can increase links and increase the economy.
Debt Relief	Wealthier countries can cut or partly cut debt to countries that have burrowed money. This allows for money to be reinvested in development.

Positives and Negatives of Aid

Positives	Negatives
Allows for immediate or long-term investment into projects that can develop a countries prospects.	Local people might not always get a say. Some aid can be tied under condition from donor country.

Are LIDCs likely to stay poor?
Case Study: Zambia

Location & Background

Zambia is a LIDC in southern Africa. A **landlocked** country surrounded by 8 countries. the population of Zambia is **17.9 million**. The capital is **Lusaka** with a population of 3.36 million.

Current level of development

- GNI per capita is **$1,430** compared to a world average of **$10,858**
- Level of wealth per person is **significantly less** than other LIDCs across the world.
- Became independent from the British Empire in 1964
- A long history of **disease, poverty** and **political unrest**.
- HDI of **0.584 with low life expectancy** at **64 years**.
- Country is **reliant on agriculture** with **75% of people working in labour based jobs (primary sector)**.

Influences upon Zambia's development

Political

- Gained independence from the UK in 1964
- Government couldn't afford to subsidise food prices so people rioted.
- Wages are extremely low for all labour workers

Social

- HIV epidemic in Zambia in the 1980's meant a lot of the economically active population could not work.
- Growing population is causing a food deficient.

Physical

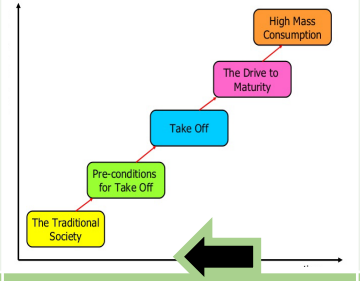
- Rainfall in the country is unpredictable, the country has suffered from droughts. Zambia has large natural copper resources – Zambia has one of the largest metal ore mines in Africa.
- Kariba dam generates power to help with mining of copper

Economic

- Reliant on the copper industries and TNC investment.
- Copper prices were low in 1970's and stayed low for 30 years .
- Zambia's debt was cleared in 2006 by the IMF to help development

Ethiopia & Rostow's Model

- Despite the large primary industry (copper) Zambia has improved education and healthcare due to investments from TNCs. As a result, Zambia is at stage 2.
- Better technologies & quality of life is allowing for pre Take off to emerge.



Millennium Development Goals

Set by the UN to set targets to reduce poverty.

+ Zambia is on track with primary education and reducing HIV/AIDS, malaria and other diseases
- Poverty is high in Zambia, leading to malnutrition, gender equality, disease, child mortality, global partnership and low environmental sustainability

Investment from TNC

Associated British Foods (ABF) provides primary and secondary jobs
+ Investment in infrastructure is aiding tourism.
+ Increase employment levels and people receive fair wages.
-Some TNC pay low salaries and working conditions are poor.
-TNCs don't pay full taxes in the country they operate in .

Aid & Debt relief

- **Bi-lateral aid** from **ACs** such as **USA and UK**
- **Multilateral – ACs** donate to **World Bank** which **distributes money to LIDCs**
- Wiped debt of $6.5 million in 2006 so more reinvestment n the country could happen

Development strategy for Zambia

Bottom-up

This is led by local people and are known as 'grassroot' project.

+ Education for girls so that they can work in the future
+ tailored for local communities
- **Depend on volunteers.**
- **Usually stop when AC volunteers leave**
- **Stops when money runs out**

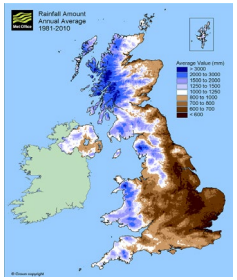
Top-down strategies

This is large scale investment at a national level.

+ Kariba dam creates HEP for the country
+ Creates jobs when building the dam
- **57,00 Local farmers have been evicted.**
- **Crops downstream affected as no water to that area.**

UK Physical Characteristics

- Most mountains are located in the **north** and **west**, such as Wales and Scotland.
- These areas have **few roads** and **settlements** but beautiful scenery. – Sparsely populated.
- **South** and **east** of the UK is **flat** with a few hilly areas.
- These areas are suited for **settlements**, **roads** and **railways** – Densely populated.
- Rivers flow from mountainous areas down to the sea.



UK Rainfall Patterns

- **Highest rainfall is in the north** and **west** where average rainfall is **2500mm**.
- **Lowest rainfall** is in the **south** and **east** with average rainfall of **500 – 625mm**.

UK Relief Rainfall

Most UK rainfall is caused by **prevailing wind** blowing from the southwest.

When air carrying moisture reaches upland areas, it is **forced up** to produce **relief rainfall**.

The other side of the upland area has **little moisture**, this is called the **rain shallow**.

Water stress in the UK

Water stress is when areas have limited water supply.

Problems	Solutions
• Most rainfall occurs in **North & West** but least rainfall in **South & East**. • South & East UK therefore have **High demands**. • Demands involve domestic, industrial & agricultural uses.	• Water can be **transferred** from the wetter west to drier east by **pipelines** or rivers. • Construct **new reservoirs** in the east to capture/store more water. • Greater **water conservation**.

Land use in the UK

Land use varies throughout the UK. However our land is always changing. Nonetheless, the vast majority of the UK is farmland.

Arable farmland dominates because of the warm, sunny and dry climate. Crops such as cereals and vegetables are found in the South and East.

UK mountain areas (Scotland) have rough pastures and moorlands. The climate is harsh and soil is poor for crops

Coniferous woodland are found in northern England, Wales and Scotland. There areas have poor soils and are remote.

Grasslands are found in the west. It is ideal for cattle and sheep because of the mild and wet climate.

Grasses	52%
Arable	20%
Urban	14%
Forest	12%
Water	1%
Other	1%

Urban areas are growing. This outward growth or sprawling urban developments is cased by population growth.

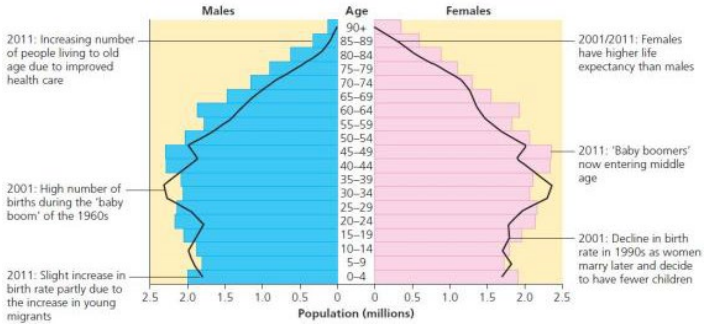
Topic 7

UK in the 21st Century

Population in the UK

The UK population is 65 million and still rising. It is predicted to reach 70 million by 2030.

Reasons for growth	Future of growth
Natural increase – the difference between deaths and births. **Net migration** – the difference between immigration to the UK and emigration from the UK. **Life expectancy** – the average age someone will live up to.	The UK's **population pyramid** shows that the country's birth rate is fairly low and death rate is also low meaning there are more elderly people. **Population pyramids** are useful to help plan for the future.



UK Population Distribution

Low

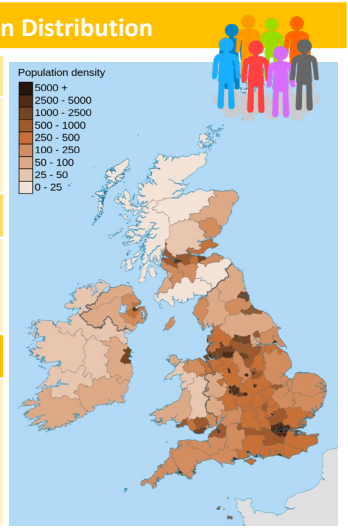
Much of Northern Scotland is **sparse** due to a **mountainous landscape** and **difficult climate**.

High

Rest of the UK because of the **gentle hills**, **moderate climate** and **good transport** routes.

Very High

Population is **concentrated** around the South East of England, in cities such as London, due to attractions of **employment**, **shops** and **entertainment**.



Factors affecting population density

Moderate climate.	**Remote and poor communications.**	**Opportunities for work**
A presence of raw materials.	**Steep and mountainous.**	**Fertile and suitable for farming.**
Poor quality of soil.	**Plentiful supplies of water.**	**Flat land for farming.**

UK Housing Shortage

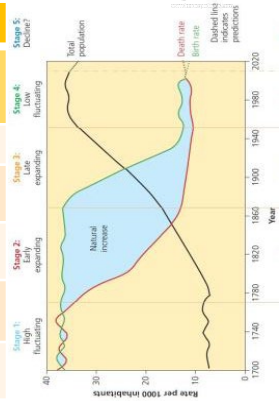
Problem and Reasons

- The UK **population is rising** and therefore **more houses are needed**.
- UK needs to build **240,000 homes a year**, but only half that are built.
- As a result, **house prices are rising** and becoming too expensive.
- Planning permission for new houses leads to **local opposition**.
- **Green belt areas** prevents urban areas becoming bigger.
- The **price of lands keeps rising** due to demand.

Demographic Transition Model (DTM)

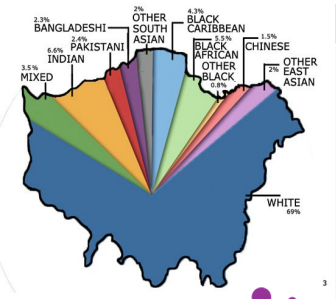
As countries experience economic development they also go through stages of population transition. The DTM describes this change and shows the UK in stage 4.

1	Birth rates high and death rates fluctuates.
2	Birth rate high but death rate is falling rapidly. Natural change increases.
3	Birth rate and death rate falling rapidly. Natural change is rapid.
4	Birth rate and death rate is low and fluctuating. Little Natural changes.
5	Birth rate is falling and death rate is rising slightly. Natural change falls.



Ethnic Diversity in the UK

- **13%** of the population in the UK where **born in another country**.
- In **London**, this value is about **37%**. This has increased between 2001 and the present day.
- The change was driven by an increase in **white non-British**, **Black African** and **Asian** people.



UK Ageing Population

Distribution of Ageing Population

Around 18% of the population are over 65. The distribution of older people is high in coastal areas, especially in east and south-west England. However, it is lower in Northern Ireland and Scotland and generally in big cities.

Causes

- Large number of people were born after the WW2 and are now moving into old age – **Baby boomers.**
- **Improved healthcare** and new treatments to prolong life.
- Greater awareness of the benefits of a **good diet and exercise**.

Effects

- **Healthcare cost are very high** and will increase with an increasing ageing population.
- **Shortage of places in care homes**, many of which are becoming **increasingly expensive**.
- Many older people join clubs and spend on travel therefore helping to boast the economy – **the grey pound**.

Response

- **Government pension bonds** to encourage older people to save money for the future.
- Pensioners receive **support in care, transport and heating** allowance to make life more comfortable.
- **Allowing more immigration** will provide the demand needed of a younger workforce needed for the economy.

UK's Changing Economy

- **UK has one of the largest economies in the world.**
- **The last few decades, heavy manufacturing industries have declined due to competition from aboard.**
- **Now the UK is moving into the service industry such as finances, technology and media.**

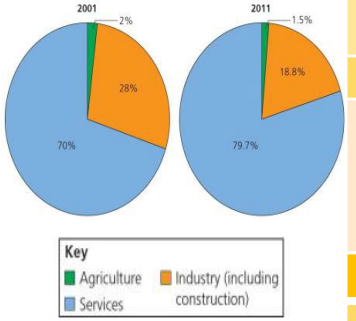
Political Changes

- Between **1997-2007**, the **UK economy grew strongly** & **unemployment decreased**. This was due to increase investment in **education & technology**.
- In **2008** the UK entered a **recession** and **unemployment increased**. Recession ended in **2009**, creating a strong focus for **decreasing the national debt** occurred in **2010 elections**.

UK Employment Sector

Key changes since 2001

- The **quaternary industry** has **increased**, whilst **secondary** has **decreased**.
- Number of people employed in **primary** and **tertiary industry** has **stayed the steady**.
- Big increase in **professional** and **technical jobs**.
- Employment in **manufacturing** has **decreased** the most due to **cheap labour abroad**.



UK Working Hours

- In **2011** the **average number of hours** worked in the UK was **42.7**.
- This figure is **the 3rd highest figure** within the **EU.**
- **Fathers now work fewer hours** to look after children.
- Number of **mothers in fulltime work has increased**.

UK's Core Economic Hubs

An economic hub is a central point or area associated with economic success and innovation. Many of these economic hubs are located near universities. Below is a selection of economic hubs throughout the UK.

Belfast Titanic Quarter
Film studio, offices and education based on the old shipyard.

Salford
Media industry including BBC and ITV. Manufacturing of chemicals.

Bristol
Creative and digital industries. Key services such as law and finance.

Aberdeen
Centre for the North Sea oil and gas industry, now developing as a research and development hub.

Silicon Glen
High-tech industries based in key Scottish cities. They focus on electronics and software.

Silicon Fen
High tech research hubs associated with Cambridge University.

Case Study: UK Economic Hub – Salford Quays

Salford grew during the industrial revolution and produced cotton for international trade. It is now a hub for media and television.

Change Over Time

- Started producing cotton for international trade during the industrial revolution.
- In the 1982 the docks were closed as modern ships could not access the canal.
- In the mid 1980s the Urban Programme for Regeneration began.

Impacts

- Media City UK attracted 10,000 jobs to the area
- Investment has added £1billion to the local economy since 2013
- New jobs for local people and opportunities for young people
- New homes – not affordable homes
- New schools, colleges and University buildings

The UK's Role in the World

The UK may be a small island state, but it does play a significant role in the wider world. It is also part of several key international organisations.

NATO
A group of **28 countries** who **work militarily and politically** to resolve conflict as a last resort.

UN
Is made up of **193 member states** with the aim of **maintaining peace** and **resolving issues**. UK is part of the **Security Council**.

G7
Involves **seven** of the **wealthiest western countries** to discuss relevant **issues** and come to **economic agreements**.

Case Study: The UK in Resolving Conflict in Ukraine

Basic Background

- Ukraine is in **Eastern Europe**, **bordering Russia**.
- In **2013**, many Ukrainians were **displeased** with their government becoming **closer to Russia**.
- In **2014**, the Russian president took control of **Crimea** and **supported Russian separatists**.

UK Involvement

- The UK, as part of NATO, **sent troops and the RAF to neighbouring countries**.
- In 2015, the UK **gave £15 million in aid to Ukraine** as well as military support.
- The UK, as part of the G7, **imposed sanctions** on Russian banks and trade.

UK Media Exports

- The UK exports many different types of media products such as **films, TV and music and books**.
- Exporting media is key to the UK economy as it **employs 1.7 million** people and **generates £17 billion**.
- ***Example: Harry Potter sold 400 million copies to 200 territories.***

UK's Media's influences

- Most exports are in English, meaning it **develops** other's **understanding of our language**.
- Many people around the world **copy fashion** & **styles** seen in UK media.
- Can **attract people to visit** the UK.

Multicultural UK

The UK is a multicultural country due to many ethic minorities moving here from India, Pakistan, Caribbean and parts of Africa. These groups have shared there culture and have influenced the UK in many ways.

Fashion

- Many shops sell **traditional clothing**.
- As these traditional clothing become **more common**, other cultures have started to wear them too. i.e. Saris
- **Hair styles** from other cultures such as dreadlocks from the Jamaica.

Media

- Many ethnic minorities have **influenced music** (i.e. dubstep) and **television** (i.e. Bollywood).
- With greater influence, **greater understanding** from other ethnic groups have been established.

Food

- Food that has originated from other countries have **become very established** (i.e. Curry and Pizza).
- Many mainstream **supermarkets sell** a great range of **ingredients** and ready made **foods** from **other cultures**.

Topic 8
Resource Reliance

What is Resource Reliance?

Resources are things that humans require for life or to make our lives easier. Humans are becoming increasingly dependent on exploiting these resources, and as a result they are in high demand.

Resource Required

Resources such as food, energy and water are what is needed for basic human development.

FOOD	WATER	ENERGY
Without enough nutritious food, people can become **malnourished**. This can make them ill . This can prevent people working or receiving education.	People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products.	A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for industry.

Demand outstripping supply

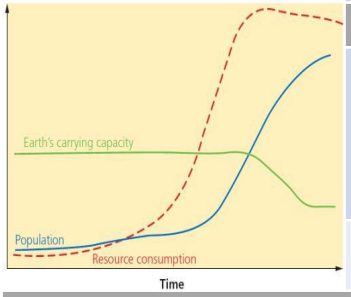
The demand for resources like food, water and energy is rising so quickly that supply cannot always keep up. Importantly, access to these resources vary dramatically in different locations

1. Population Growth

- Currently the global population **is 7.3 billion**.
- Global population has risen **exponentially** this century.
- Global population is expected to reach **9 billion by 2050**.
- With more people, the **demand** for food, water, energy, jobs and space **will increase**.

2. Economic Development

- As **LIDCs** and **EDCs** develop further, they require **more energy** for industry.
- **LIDCs** and **EDCs** want similar lifestyles to **ACs**, therefore they will need to **consume more resources**.
- Development means **more water is required** for food production as diets improve.



Resource Reliance Graph

Consumption – The act of using up resources or purchasing goods and produce.
Carry Capacity – A maximum number of species that can be supported.

Resource consumption exceeds Earth's ability to provide!

3. Changing Technology and Employment

- The demand for resources has driven **the need for new technology** to reach or gain more resources.
- More people in the **secondary and tertiary industry** has increased the **demand for resources** required for electronics and robotics.

Reasons for NOT Meeting Modern Resource Demands.

Climate	• **Global warming** effects cycles and seasons and therefore farming. • **Rainfall patterns** are changing and are becoming unpredictable. This is a problem for farming.
Geology	• Not all countries have **access to fossil fuels** or suitable landscape for renewables. • Many **minerals are finite** and therefore once used will reduce the resources available. • **Rock types** might limit the availability to store water.
Conflict	• **War** can disrupt transport of resources by damaging roads and water pipes.
Poverty	• LIDCs are unable to **afford technology** to effectively exploit the natural resources available.
Natural Hazards	• **Increase in hazard events** due to climate change. • Prime agricultural regions in Asia and Africa and are also in **hazard zones**. • Has the ability to **destroy infrastructure** needed to transport resources.

Environment and Food: Fishing and Farming

	Methods	Environmental and Ecosystems
Fishing	**Bigger nets and fishing boats** have allowed for greater catches. **GPS and sonar** has also find the fish easily.	• **Overfishing** of certain fish has caused their decline. • **Dredging** can damage seafloor habitats. • Decline of one species has a **knock on** effect on other marine species.
Farming	**Tractors, computer programming** and **GPS** technology is producing food more effectively and at a larger scale.	• Field sizes have caused **hedgerows to decline** in biodiversity. • **Fertilisers and pesticides** enter water courses and harm or kill organisms. • Heavy machinery can cause **soil erosion**.

Environment and Energy: Deforestation and Mining

	Methods	Environmental and Ecosystems
Deforestation	Logging using **modern machinery** and **transportation** has made deforestation more productive & convenient.	• **2 billion people depend on wood** for fuel, which therefore creates high **CO2 emissions** • Forests provide for **important habitats**. • Clearing of forests leads to **soil erosion**. • Tree intercepts rain and **prevents flooding**.
Mining	Large machines and drill technology can remove and reach through material effectively.	• Mining waste **can pollute soil and contaminate water** supplies. • **Habitats are destroyed** in mining zones. • Fossil fuels burnt **release greenhouse gases**

Environment and Water: Reservoirs and Water Transfer

	Methods	Environmental and Ecosystems
Reservoirs	Increasing **storage to hold more water** and constructing more dams to **control river flow** can provide a reliable source of water.	• Can **flood** a large area of land and damage **habitats** and **natural landscapes**. • Dams can be **a barrier for certain species** to migrate upstream. • Natural flow of sediment is disrupted, which then **reduces fertility of land** further down.
Water Transfer	Constructing pipes and canals to divert water surplus to areas in need of a water supply.	• Large-scale engineering works can **damage ecosystems** along the route. • **Lots of energy** is required to pump water over long distances.

Food Security

'Food Security' is when people at all times need to have physical & economic access to food to meet their dietary needs for an active & healthy life. This is the opposite to **'Food Insecurity'** which is when someone is unsure when they might next eat.

Human

- **Poverty** prevents people affording food and farmers buying modern equipment.
- **Poor infrastructure** makes food difficult to transport fresh food.
- **Conflict** disrupts farming and prevents supplies.
- **Food waste** due to poor transport and storage.
- **Climate Change** is affecting rainfall patterns making food production difficult.

Physical

- **Temperature** needs to be ideal for certain crops to grow.
- The **quality of soil** is important to ensure crops have the necessary nutrients.
- **Water supply** needs to be reliable to allow food to grow.
- **Pest, diseases and parasites** can destroy vast amounts of crops that are necessary to feed large populations.
- **Extreme weather** events can damage crops (i.e. floods).

Malthus and Boserup's Theories about Food Supply

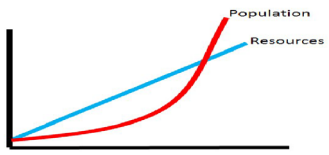
With the population growing very quickly, there are different ideas about whether or not this will lead to a food crisis.

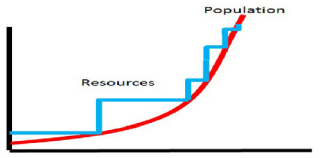
Malthus Theory

- Believed that **population would increase faster than food supply**.
- This would lead to a lack of food being available.
- Malthus believed this would cause **large scale famine, illness** and **war**
- This would occur until population returned to level that can be supported.

Boserup Theory

- Believed that however big the population grew, **people would find ways to manage**.
- If food supplies became limited, **people would find new ways** to increase production.
- These solutions would often involve **creating new technologies**.

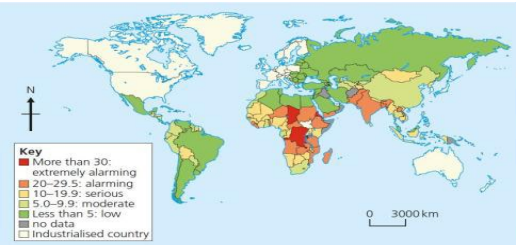




Measuring Food Security

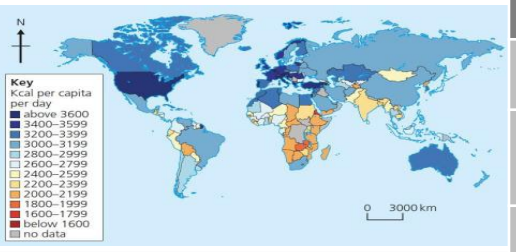
Food security varies around the world. Some people and places are more food secure than others. This can often depend on how much a country can grow and is able to afford.

The Global Hunger Index



- This shows how many people are suffering from **hunger or illness** caused by lack of food.
- The index gives a value for each country from **0** (no hunger) to **100** (extreme hunger).

Daily Calorie Intake



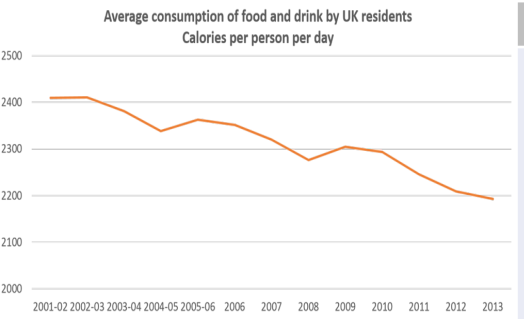
- This shows how many **calories per person** that are consumed on average for each country.
- This can indicate the global distribution of **available food** and **food inequality**,

Case Study: UK Food Security

Food Availability in the UK

The UK population is around **65 millio**n and enjoys a **high level of food security**.

- The UK **produces 68% of its own food** but this is steadily decreasing.
- The **UK has to import** the rest, especially seasonal food such as fruit and vegetables.
- Food production in the UK has increased by **intensifying agriculture**.



Food consumption in the UK

Average daily calorie intake in the UK has **decreased** from **2600** in **1960** to **2150** by **2000**.
Reasons for this decrease includes:

- More people being **more active in the past** and having physical jobs.
- More **awareness of having a good diet** and problems surrounding obesity.
- The price of food has increased.

Success in securing local food security

Food Banks

- This is food that is **donated** by the public.
- They help people with **a sudden loss of income**.
- It is estimated that **1 million people** rely on food banks for their own food security.

Urban Gardens

- These **are large projects** where groups work together to grow food and **promote healthy living**.
- This can involve planting crops in urban environments such as roundabouts.

Effectiveness of pasts attempt at food security

Intensification of farming from **1940s** to the **1980s** attempted to increase production by;

- **Higher yields** of crops and animals
- **Monoculture** by growing one crop in a large area.
- **Irrigation** with better groundwater pumping.
- **Chemicals** with improved fertilisers and pesticides.
- **Mechanisation** for sowing and harvesting.

Effectiveness of present attempts at food security

Recently the UK has been promoting sustainable intensification, involving food security and supporting the environment.

- **New technology** such as **hydroponics** help a range of foods to be grown all year round.
- However, this method is **expensive** for producer and consumer.

Attempts to Achieve Food Security

There are various measures to maintain or even improve our food security. These measures are often taken to be socially, economically, environmentally viable for the longer term.

Social	Economic	Environmental

Ethical Consumerism

This involves buying products that have a positive social, economic and environmental impact today, without compromising future generations.

Fairtrade	• This is a global movement to give farmers a **fairer price for their products**. • The profits benefit the community **with schools and medical facilities**. • Involves using farming methods that **protects rather than destroys environments**.
Food Waste	• One-third of all food gets lost or wasted. • Aim to **eat locally sourced food** to reduce waste through transport. • Eating 'ugly' food despite it not being 'ideal' can prevent waste and **save money**. • Prevents wasted energy for producing food and therefore **reduces CO2 emissions**.

Food Production

This involves producing as much food as possible in as small a space as possible. They often involve using machines and chemicals to gain as much produce as they can.

Intensive Farming	• Makes the most of the land and allows for higher yields. This can make growing food more **productive and therefore cheaper** to produce. • Chemical fertilisers, pesticides and herbicides can **pollute the environment** and **harm people**, animals and insects.
Organic Methods	• This involves the banned use of chemicals and **ensuring animals are raised naturally**. • This can lead to **lower yields of 20%** and products being **more expensive**.

Technological Developments

Through better understanding of science and improved technology, it is now possible to change the food we grow and protect and harvest the crops more effectively.

Genetically modified (GM)	• Involves changing the DNA of foods to enhance their productivity and properties. • Crops can be **better protected from disease and drought**, but also made larger or include more **health benefits**.
Hydroponics	• This is a method of growing plants without soil. Instead they use nutrient solution. • Less water is needed and a **reduced need for pesticides** to be used. • However, this method is **very expensive** so only used for high value crops.

Small Scale 'Bottom Up' Approaches

This involves a small scale production of food and relies on individuals and communities, rather than government or large organisations.

Allotments	• This is an area of land that is divided into plots and rented to **individuals to grow their own fruit and vegetables**. • Allows people in urban areas to produce their **own cheap** & **healthily food** close to home.
Permaculture	• This involves **people growing their own food** and **changing their eating habits**. • This can create **more natural ecosystems** and fewer resources are required.

Year 11 GCSE History Summer Term Knowledge Organiser The Origins of the Cold War 1941-58

Key Vocabulary:

1	Grand Alliance	The alliance between the US, USSR and UK that defeated Nazi Germany in WW2
2	D-Day	The Allied invasion of north-western France in June 1944
3	UN	An international organisation set up to preserve world peace
4	Reparations	Compensation for damage caused during the war
5	Red Army	The army of the Soviet Union
6	Buffer Zone	Stalin wanted to control Eastern Europe so it would protect the USSR from future invasion
7	Salami Tactics	The methods used by Stalin to establish communist control in Eastern Europe (eg: rigged elections, crushing opposition)
8	Iron Curtain	A metaphor for the line that divided Europe between the democratic west and communist east
9	Containment	The US policy which aimed to stop the spread of communism
10	Deutsche Mark & Ostmark	The German currencies that replaced the Reichsmark in 1948
11	NATO	The North Atlantic Treaty Organisation is an alliance of democratic countries who agree to defend each other against attack
12	De-Stalinisation	Elimination of the influence of Stalin.
13	Nuclear weapon:	Highly destructive explosive device that gets it power from nuclear reactions.
14	H-bomb	Hydrogen bomb- an even more powerful type of nuclear weapon
15	Arms Race	A competition between two countries to have the most powerful weapons

The situation at the end of WW2

16 The conferences:

The Tehran Conference- Nov 1943

- GB and USA agree to open up a second front by invading France in summer 1944 and USSR to attack Japan once Germany defeated
- UN to be set up after war

The Yalta Conference- Feb 1945

- Germany and Berlin would be divided into four zones
- Eastern Europe would be a Soviet 'sphere of influence'.
- BUT – disagreement on amount of reparations

The Potsdam Conference- Aug 1945

- Confirmed decision to divide Germany and Berlin Germany to be demilitarised, democratised, de-Nazified and Germany to pay reparations to Allies – most of which to go to USSR.
- BUT – disagreement on how harshly Germany would be punished, and on free elections in Eastern Europe.

17 Reasons for tension after WW2:

- **1944-48 Creation of satellite states** (e.g. Poland and Hungary) as Stalin wants a buffer zone in Eastern Europe. Use of salami tactics to take over 'slice by slice'
- **1946 Long and Novikov Telegrams-** US diplomat Kennan recommended firm action against USSR and Novikov accused the USA of seeking world domination.
- **1946 Iron Curtain Speech-** Church gave a speech saying a iron curtain now divided Europe
- **Arms Race**

18 Truman Doctrine and consequences:

- **1947 Truman Doctrine-** Began the policy of containment (stopping the spread of communism) by using US influences and resources. Now means that US will continue to be active in Europe after WW", increases tensions.
- **1948 Marshall Aid-** to achieve the policy of containment gave economic aid ($12 billion) to help European countries.
- **1947 Cominform-** Communist Information Bureau- response to Truman Doctrine, gave Stalin greater control over communist countries.
- **1949 Comecon-** Allows Stalin to control Eastern European economies and take their resources- a response to Marshall Aid.

Tension in Germany and Hungary

19 The Berlin Crisis 1947-9

1945 Division of Germany and Berlin: At Potsdam the Allies agreed to divide Germany and its capital, Berlin, into four zones – American, British, French and Soviet. Differences quickly emerged over how to run Germany.
1947 Creation of Bizonia: In January 1947 the British and American zones were merged together to create the 'Bizone' – the French zone joined the following year (Trizonia) and in 1948 they introduced a new currency the Deutsche Mark
1948 The Berlin Blockade: In response the USSR introduced its own currency – the Ostmark – to the Soviet Zone and cut off road, rail and canal traffic in an attempt to starve West Berlin.
1948-9 The Berlin Airlift: The Allies used the three air corridors to airlift supplies (4600 tons of supplies a day on average) to West Berlin over the following ten months. In May 1949 Stalin backed down.
Consequences/Importance:

- First direct confrontation between the USA and USSR Confirmed impossible to cooperate over Germany
- West Germany formed in late May 1949, East Germany formed in Oct
- Formation of NATO – US commitment to defence of western Europe

20 Hungarian Uprising 1956

1953- Death of Stalin- People were unhappy with the leader of Hungary (Rakosi) who was a Stalinist. Economic failure and terror in Hungary
1956- Imre Nagy becomes leader of Hungary Nagy proposes reforms to economy, freedom of press, freedom of speech and withdrawal from Warsaw pact. Student anti-communist protests.
Nov 1956- Soviet invasion restores control- Khrushchev orders 200,000 Warsaw Pact troops to retake control of Hungary. USSR appoints Kadar to replace Nagy who is imprisoned and executed.
Consequences/Importance

- Khrushchev appears strong and fully gains control of the satellite states
- While the US government publicly criticizes the USSR and raises aid money for refugees there is no military intervention despite it's declaration to roll back communism
- 20,000 Hungarians killed

Year 11 GCSE History Summer Term Knowledge Organiser Cold War Crises 1958-1970

Key Vocabulary:

1	Ultimatum	A final demand attached to a threat.
2	Migrate	To move from one place to another
3	Brain Drain	The departure of highly skilled people from a country
4	Summit	A meeting between people who are interested in the same subject.
5	La Brigada 2506	The 1500 Cuban exiles trained by the CIA to invade Cuba.
6	Bay of Pigs	An inlet on the southern coast of Cuba
7	CIA	Central Intelligence Agency – the US agency responsible for intelligence-gathering
8	Sphere of influence	A region over which one country largely has control or influence
9	Quarantine	US navy ships to prevent Soviet ships carrying military equipment to Cuba.
10	Brinkman-ship	To push a situation to the point of disaster without quite going over the edge.
11	ICBM/IRBM	Missiles
12	ExCom:	A group of 12 expert advisers created by JFK and led by his brother Robert.

Berlin Crisis 1958-1963

13 Berlin Ultimatum 1958

Refugee problem escalated to 20,000 a month leaving East Berlin for the West. Between 1949 and 1961 an estimated 2.7 million East Germans left for West Germany. Khrushchev demands Western allies leave Berlin within 6 months.

14 Summit Meetings:

Geneva Conference - May 1959 Although no solution to the ultimatum was found, relations between Khrushchev and Eisenhower improved

Camp David Summit - September 1959 the ultimatum on Berlin was withdrawn by Khrushchev.

Paris Summit May 1960 13 days before an American U2 spy plane shot down- US embarrassed and shown to have lied, tension increases.

Vienna Summit June 1961- Khrushchev thinks he can bully new American president Kennedy so reissues ultimatum but Kennedy refuses and increases defence spending.

15 Berlin Wall 1961:

On 13 August 1961, the Soviet authorities in East Germany sealed off East Berlin – their zone of occupation - by constructing a huge barbed wire barrier. This was soon replaced by a concrete wall, complete with lookout towers and armed guards who had orders to shoot anyone trying to cross into the Western sector.

In response there is an 18 hour stand off between US and Soviet tanks at Checkpoint Charlie and in 1963 JFK visits Berlin and made a famous speech to 200,000 West Berliners in which he stated that Berlin was a symbol of freedom and the struggle against communism. (Ich bin ein Berliner speech) However in private it did decrease tension as JFK says 'a wall is better than a war'

Cuban Missile Crisis

13 Cuban Revolution 1959:

Batista overthrown by Fidel Castro. USA banned the import of Cuban sugar in response to Castro's nationalisation of American companies in Cuba. Khrushchev offered to buy the Cuban sugar and promised to send military assistance.

14 Bay of Pigs 1961:

1500 CIA-trained Cuban exiles (La Brigada 2506) landed at the Bay of Pigs with the aim of toppling Castro. Castro's army fought back and defeated La Brigada. Castro declared he is now communist. USSR begins to install ballistic missiles in Cuba which U2 spy plane photographs

15 13 Days 16th-28th October 1962:

- 16th-21st Oct US spy plane photographs reveal Soviet IRBM missiles on Cuba. JFK convenes ExCom to discuss response options including invasion and airstrikes.
- 22nd Oct JFK imposes naval blockade around Cuba to stop Soviet ships carrying nuclear missiles from reaching Cuba.
- 23rd Oct- Khrushchev says he Soviet ships will force their way through the blockade
- 24th Oct- despite the tough talk 20 Soviet ships turn back
- 26th Oct Khrushchev sends telegram promising to remove launch sites if US agrees to lift blockade and promises not to invade Cuba.
- 28th Khrushchev publicly agrees to remove missiles on Cuba while JFK secretly agrees to remove Turkey missiles
- Consequences- JFK looked strong as he's stood up to Khrushchev, eventually led to downfall of Khrushchev. New co-operation between US and USSR with 1963 Test Ban Treaty and SALT talks and hotline between White House and Kremlin.

Czechoslovakia

16 Causes of the Prague Spring:

The hard-line communist leader Novotny was unpopular, there was censorship of the press, lack of personal freedom, a weak economy. Some Czechs thought the USA would help the if they stood up to Moscow.

17 Prague Spring:

1967 Czech students began protesting so Brezhnev (USSR leader) replaces Novotny with Alexander Dubcek. In April 1968 Dubcek announced an action plan to deliver 'Socialism with a Human Face' which meant removing state control of the economy and allowing freedom of speech.

18 Brezhnev's reaction:

Dubcek's closer relations with West Germany and the anti-communist protests concerned USSR. Also, fellow Eastern bloc leaders feared possible withdrawal from Warsaw pact and how it could encourage unrest in their own countries.

Warsaw Pact agrees to Soviet-led invasion with 500,00 troops to regain control.

Brezhnev announces the 'Brezhnev Doctrine' which is a policy which stated the USSR had the right to intervene in places where communism was threatened.

In Czechoslovakia USSR appoint Husak to replace Dubcek. Dubcek resigned and made ambassador to Turkey.

Other consequences

The USA publicly criticizes the events but no military assistance due to Vietnam war.

Brezhnev gains greater control of the satellite states with his 'Brezhnev Doctrine'.

Communist parties in Western Europe showed disapproval by distancing themselves from Communist Party of USSR.

Yugoslav and Romanian governments protested and began to foster closer links with China.

Year 11 GCSE History Summer Term Knowledge Organiser The end of the Cold War 1970-1991

Key Vocabulary:

1	Detente	Lessening of tension and hostilities from 1970
2	**Arms control**	a limitation on the size and armament of the armed forces of a country.
3	**Helsinki Agreements:**	an agreement signed by 35 nations that committed states to fulfill obligations on security, cooperation and human rights.
4	**Mujahideen**	Islamic rebels who fought against the Afghan communist government
5	**Carter Doctrine**	It stated that the USA would use military force if necessary to defend its national interests in the Persian Gulf
6	**Boycott**	Abstaining from something in order to protest
7	**Solidarity**	Plays based on the Bible and saints' stories.
8	**Reagan Doctrine**	
9	**Nuclear Utilisation Target Selection**	**(NUTS)** A strategy of bombing the enemy's missiles, rather than their cities, to destroy their nuclear weapons capabilities
10	**Glasnost**	'Openness' – this meant allowing free speech, some elections, and removing some censorship
11	**Perestroika**	'Restructuring' – this meant making changes to the Communist Party and the Soviet economy
12	**Sinatra Doctrine**	The nickname given to Gorbachev's policy that the USSR would not interfere in the affairs of Eastern Bloc countries anymore.
13	**Union of Soviet Socialist Republics (USSR)**	The USSR was literally a union of 15 Soviet Socialist Republics – many of which were nations who came to demand independence.

Detente

14 Reasons for Detente

1. **Public pressure within the USA-** both with ending the Vietnam War and not risking further US soldiers lives
2. Arms Race was expensive and both countries wanted to spend this money on social problems at home
3. Threat of MAD (Mutually Assured Destruction) e.g. such Cuban missile crisis
4. Pressure from West Germany- Willy Brandt

15 Examples of Detente

1. SALT 1 1972 restricted the number of ICBMs (Intercontinental Ballistic Missiles), but was criticised for not limiting the production of new nuclear weapons.
2. Space mission 1975 American **astronauts** and Soviet **cosmonauts** symbolically shook hands in space.
3. Helsinki Agreement 1975 signed by 35 countries incl. USA and the USSR. It recognised the European borders established after WW2 and basic **human rights** e.g. **freedom of speech**.
4. President Nixon improved US-Chinese relations

16 Why Détente failed

1. New President- Carter wanted to be tougher on USSR
2. Suspicions of USSR intentions as they replaced older missiles in Eastern Europe with new SS-20 missiles
3. Soviet invasion of Afghanistan 1979

17. Afghanistan 1979

Causes:- Afghanistan borders the USSR . A communist government seized power in April 1978. However they introduced anti-Muslim policies which led to the formation of the mujahideen. In September Amin arranged for the murder of communist Prime Minister Taraki. He then seized control and entered into discussions with the US. The USSR invaded on 24th Dec 1979 and replaced Amin with Babrak Karmal.
Consequences:- The US refuses to sign SALT 2, the Carter Doctrine is created (The US would use force to stop any country from gaining control over the oil rich states of the Middle East). The CIA provided funs for the Mujahideen and the US imposed economic sanctions. In 1984 the USA boycotted the Moscow Olympics in protest and in return the USSR boycotted the 1984 Los Angles Olympics. The war in Afghanistan lasted 10 years and became an expensive, embarrassing war with little hope of victory.

The Second Cold War and the collapse of the USSR

20 Reagan and his policies

Reagan was elected president in 1980, he was a committed anti-communist and referred to the USSR as 'that evil empire'. He increased US defence spending by $32.6 billion and planned to spend it on weapons such as: SDI (strategic Defence Initiative) nicknamed 'Star Wars'- a system using satellites and lasers to shoot down missiles

21 Gorbachev and the resulting summits

Gorbachev knew he needed to fix the problems in the USSR.

1. Bad leadership (a series of old and frail leaders
2. Poor Living conditions and economy in the USSR
3. USSR could never out spend or the US in the arms race.

Gorbachev came up with the policies of glasnost and perestroika..
In the first two Summit meetings (Geneva 1985 and Reykjavik 1986) no agreements were reached but both sides were willing to work together. At the Washington Summit 1987 the USSR and USA signed the Intermediate Range Nuclear Force Treaty (INF). AT the Moscow Summit 1988 Gorbachev announced a reduction in the number of Warsaw Pact troops. The Malta Summit 1989 marked the end of the Cold War

22 Dissolution of USSR and fall of the Berlin Wall

Perestroika and Glasnost in the USSR encouraged similar changes in Eastern European countries. E.g.:

1. Hungary replaced their leader Janos Kadar and opened their border with Austria
2. 1989 Poland's first free elections brings the leader of the Solidarity Trade Union Lech Walesa to power
3. The Hungarian reforms encouraged East Germans to go to Hungary, and from there to West Germany. East German authorities were forced to allow people to travel more freely to cope with this flow of migrants. Than on 9 November 1989, East Germans were told they could cross the border into West Berlin. In dramatic scenes, the **Berlin Wall** was torn down by demonstrators. Germany was reunited in 1990. The fall of the Wall was massively symbolic of the end of the Cold War
4. **Soviet Republics:** In 1990 and 1991, one by one the former Soviet Republics of the USSR (Lithuania, Latvia, Estonia, Georgia) declared themselves independent.
5. By the end of 1991 the USSR had been dissolved and Russia declared itself a republic in 1991 and elected Boris Yeltsin as its leader.

Year 11 GCSE History Summer Term Knowledge Organiser Queen, government and religion, 1558-69

Key Vocabulary:

1	Nobility	Belonging to the aristocracy. E.g. a Lord or Lady
2	Gentry	People of a high social class.
3	Yeomen	Men who held a small amount of land or an estate.
4	Tennant farmers	Farmed rented land usually owned by yeomen or gentry.
5	Merchants	Traders.
6	Craftsmen	Skilled employees.
7	Militia	A military force of ordinary people, rather than soldiers, raised in an emergency.
8	Privy Council	Advisors to Elizabeth.
9	Justices of the Peace	Large landowners who kept law and order.
10	Secretary of State	Elizabeth's most important Privy Counsellor.
11	Divine Right	Belief that the monarchs right to rule came from God
12	Succession	The issue of who was going to succeed the throne after the existing monarch died.
13	Legitimate	Being born in wedlock when the existing king and queen were married.
14	Auld Alliance	A Friendship between France and Scotland
15	Puritans	Radical/extreme protestants
16	Papacy	The system of church government ruled by the Pope.
17	heretics	People who refused to follow the religion of the monarch.
18	Excommunicated	Expulsion from the Catholic Church.

The situation on Elizabeth's accession

8 Society and Government:

90% of English population lived in the countryside
Social hierarchy: monarch at the top, then the nobility (Lords and Ladies), gentry , Yeomen, tenant farmers, labouring poor and the homeless and vagrants at the bottom
The Court was made up of the nobility and were the monarch's key advisors and friends.
The Privy Council advised the monarch on government policy and oversaw law and order and security in England
Parliament was made up of the House of Lords and the House of Commons and could only be called and dismissed by the monarch. It passed laws and advised the monarch

9 The Virgin Queen:

Elizabeth's accession caused controversy as her gender; legitimacy religion were questioned. Women were seen as weak, and the property of their husband's and Christian religion taught that women should be under the authority of men. Elizabeth's legitimacy was in doubt because of how her father (Henry VIII) divorced his first wife, Catherine of Aragon, in order to marry Elizabeth's mother, Anne Boleyn.

10 Challenges at home and abroad:

England had financial weakness: England had fought costly wars before Elizabeth came to the throne (and lost) and was £300,000 in debt. There had been a series of bad harvests which increased poverty.
The French threat: France was wealthier and had a larger population. They were an ally of Scotland another enemy of England (The Auld Alliance). The French port of Calais had been in English control since 1347 but was lost when England went to war with France during Mary I's reign
Mary Queen of Scots was Elizabeth's cousin (granddaughter of Henry VIII's sister), had a strong claim to the throne, was half French and married to Francis, the heir to the French throne and declared herself the legitimate Catholic claimant to the English throne. She also had a son, James.
Religious problems: The reformation began in 1532 and since then it had flip flopped between Protestant (Edward VI) and Catholic (Mary I).
Spain was a powerful catholic country who's king, Phillip II had been married to Mary I and wanted to marry Elizabeth.

How settled is religion?

13 The Religious Settlement

Catholic Church: The Pope in Rome is the head of the church, the bible and church services should be in Latin, priests are special and should wear special vestments and not marry. Transubstantiation happens (a miracle when the bread and wine becomes the body and blood of Christ)
Protestantism: there should be no pope, the bible and church services should be in English, sins can only be forgiven by God (not priests), priests are not special and should not wear special clothing and can get married, churches should be plain and simple so not to distract people from worshipping god.
The Elizabethan Settlement happened in 1559 and was Elizabeth's attempt to solve the religious problems and establish a form of Protestantism that Catholics could accept.
The Act of Supremacy: Elizabeth supreme governor and all clergy had to swear an oath of loyalty to her
The Act of Uniformity introduced a protestant Common Prayer Book that all churches had to use, the services and bible had to be in English but the meaning of the bread and wine taken in church was left open.
The settlement was largely successful 8,000 priests took the oath of supremacy, she replaced the catholic bishops that refused to take the oath, the majority of the public accepted it as the new Prayer Book kept the interpretation of beliefs open.

14 Catholic challenge

1/3 of English nobility were Catholic especially those in the north of England. They disliked Elizabeth's favourites such as Robert Dudley ad Sir William Cecil.
In 1566 the pope issued an instruction to English Catholics should not attend Church of England services. However although there were punishments for those that didn't follow the settlement these were generally not enforced as Elizabeth didn't want to create martyrs and the majority of Catholics stayed loyal to Elizabeth.

15 Puritan challenge:

The Puritans had two issues 1.) crucifixes (Puritans thought they were idols and wanted to get rid of them) 2.) vestments (Puritans thought priests did not need any special clothing at all.) Although they had support in London and several powerful and influential supporters at court (Robert Dudley, the Earl of Leicester and Sir Francis Walsingham) they did not enjoy widespread support amongst the country.

Year 11 GCSE History Summer Term Knowledge Organiser Challenges to Elizabeth at home and abroad: 1569-88

Key Vocabulary:

1	New World	North and South America
2	Thomas Howard, Duke of Norfolk	One of England's most senior nobles and had strong catholic sympathies despite being a protestant.
3	Council of the North	Used to implement Elizabeth's laws and authority in the North of England.
4	Sir Francis Walsingham	Elizabeth's Secretary of State and chief spymaster
5	Privateers/ sea dogs	Individuals with their own armed ships that capture other ships for their cargo, often with the support and authorisation of the government
6	Francis Drake	Elizabeth hired him as a privateer.
7	Circumnavigate	To travel all the way around the world.
8	Spanish Fury	The Spanish rampaged through Dutch provinces as they left
9	Pacification of Ghent 1576	Spanish troops expelled from Netherlands, political autonomy to be returned and end of religious persecution.
10	Treaty of Joinville 1584	The King of France and the King of Spain became allies against Protestantism.
11	Treaty of Nonsuch 1585	Effectively put England and Spain at war as Elizabeth agrees to help the Dutch with money and soldiers.
12	Singeing of the King of Spain's beard 1587	Drake sailed into Cadiz harbour, Spain's most important Atlantic port, and over 3 days destroyed 30 ships.

Plots and revolts at home

13 Revolt of the Northern Earls (1569):

The aim with the support of the Spanish, replace Elizabeth with MQS and marry her to the Duke of Norfolk.
The Earls marched to Durham and celebrated a catholic mass in the cathedral. Headed south but Spanish troops never arrived and Elizabeth raised an army of 14000 men. 450 rebels executed. The Earl of Westmoreland escaped and the Earl of Northumberland executed.
Political/power reasons for the plot: under Mary I, the Earls had been very influential but not as influential under Elizabeth. Job of looking after the borders with Scotland given to Sir John Foster. Lost the rights to a valuable, copper mine found on his land to the queen in 1567. The northern earls resented the influence favourites like William Cecil and Robert Dudley had over the queen. Religious reasons for the plot: The Earls were catholic, the bishop of Durham (James Pilkington) was a committed and unpopular protestant.
The revolt was significant as 1.) it was the most serious rebellion by English Catholics 2.) It prompted harsher treatment of Catholics and widened the definition of treason to include calling Elizabeth a heretic 3.) It encouraged the pope to excommunicate Elizabeth in 1570.

14 Other Catholic Plots:

Ridolfi Plot (1571) Plan to murder Elizabeth, launch a Spanish attack and put Mary Queen of Scots on the throne.
Throckmorton Plot (1583) Planned for the French Duke of Guise to invade England, free Mary , overthrow Elizabeth and restore Catholicism in England.
Babington Plot (1586) The Duke of Guise would invade England and put Mary on the throne.

15 Why Mary, Queen of Scots was executed:

Plots at home: fours plots planned to overthrow Elizabeth
Foreign Threats: Phillip II of Spain was a devout Catholic and disliked Elizabeth supporting the Dutch rebels
Mary Queen of Scots herself: She had been involved in all plots, was a legitimate Catholic heir to the throne, had links to France and claimed to be the rightful queen of England
Elizabeth's parliament and advisers: Act for the Preservation of the Queen's Safety (1585) stated that Mary could be killed if she had been involved in a plot, Sir Francis Walsingham had a network of spies and gathered evidence against Mary, her advisers were Protestant.

Spain and the Spanish Armada

16 Why was there tension between England and Spain?

Commercial rivalry: England wanted new markets to trade with and make money but Spain controlled the Netherlands (England's main route into the European markets and the wool trade) and Spain controlled much of the New World
Piracy- in 1572 Elizabeth hired Francis Drake as a privateer- he went to Panama and captured £40,000 of Spanish silver and in 1577 Elizabeth gave Drake secret instructions to attack Spain's colonies in the New World.
Marriage:- Elizabeth rejected Philip's marriage proposal
Religious reasons- Phillip II was a strict Catholic and opposed Elizabeth's religious settlement and in 1571 the Pope had excommunicated Elizabeth and Elizabeth had executed MQS in 1587.
The Netherlands:- In the 1570s Elizabeth increasingly supported the Dutch rebels. Sent a loan of £100,000 to the Dutch rebels and a future promise of an armed force to enforce the Pacification of Ghent.

17 Spanish Armada 1588

After being delayed by the Singeing of the King of Spain's Beard the Armada set sail in 1588. With 130 ships and 30,000 men under the command of the Duke of Medina-Sidonia was to sail along the English Channel to the Netherlands, pick up the Duke of Parma and his army of 27,000 men before invading England and impose a Catholic government in England.

18 Why the Armada failed:

1.) English strengths: the English ships were Galleons and were faster and more manoeuvrable, they could also fire more cannon balls than the Spanish ships but they only had 24 when the armada invaded. 2.) English tactics- Elizabeth left key decisions to her commanders (including Sir Francis Drake) and they used fire ships on 6th August which did little damage but panicked and scattered the Spanish ships. 3.) Spanish weaknesses- their supplies (the food was rotting and they didn't have enough cannon balls) and Phillip II didn't listen to the advice of his commanders. They also had communication problems which meant that Medina-Sidonia couldn't collect the Duke of Parma before the English attacked 4.) Chance- after the Battle of Gravelines the Armada headed north and thousands of them lost their lives in shipwrecks caused by storms.

Year 11 GCSE History Summer Term Knowledge Organiser Elizabethan society in the Age of Exploration, 1558-88

Key Vocabulary:

1	Social mobility	Being able to change your position in society.
2	Grammar schools	Private schools set up for boys considered bright who largely came from well off families in towns.
3	Corporal punishment	Punishment which causes physical pain.
4	Apprentice	Someone learning a trade or a skill.
5	Petty and dame schools	Set up in a teacher's home, for boys (Petty) ad girls (dame)
6	galleons	Ships that were much larger than traditional trading ships.
7	Mystery plays	Plays based on the Bible and saints' stories.
8	The Globe	Shakespeare's theatre.
9	Poor relief	Financial help for those in poverty paid for with taxes.
10	Vagabonds	Homeless people without jobs who roamed the countryside begging for money or perhaps committing crimes in order to survive.
11	Enclosure	The process of replacing large, open fields that were farmed by villages with individual fields belonging to one person.
12	Deserving poor	People unable to work because of illness or old age.
13	Idle poor/ sturdy beggars	People who were fit to work but didn't.
14	Astrolabe	Used by sailors to help with navigation at sea
15	Colonies	Land under the control or influence of another country.

Elizabethan society

16 Education:

Education expanded during Elizabeth's reign, but this expansion was limited. Of those that got education, most were boys. Literacy rates improved by 10% for men but not at all for women. Education was not based on social mobility but on preparing you for the life you were expected to live. The large majority of people were illiterate (70% of men and 90% of women). There was not a lot of difference in the academic education of noble girls and boys. They learnt foreign languages, Latin and Greek, History, Philosophy and Government.. **Every town in England had a grammar school by 1577.** This was the greatest change in Elizabethan education- there were more schools than ever before. Boys went to grammar school at 8yrs-14 yrs and the focus of the curriculum was on Latin and there was a great emphasis on memorising huge quantities of text.

17 Leisure:

Wrestling, tennis, football, music and dancing, but sport was much more violent e.g. it was known for men to be killed during matches and bear baiting and cock-fighting were popular. Theatre thrived in Elizabethan times: there were many new plays and purpose built theatres (the Red Lion in 1567 and the Rose in 1587) and was popular with all classes in Elizabethan England.

18 Why poverty increased:

1.) Population growth -it grew as much as 35% 2.) rising prices- food especially 3.) enclosure sheep farming was very profitable in this era as the demand for woollen cloth had grown 4.) rack renting Landowners were charging farmers more to rent land. 5.) closure of monasteries the Church used to help the poor. 6.) bad series of harvest especially in the 1560s and 1570s 7.) wages increasing slowly

19 How the Elizabethans dealt with poverty:

1572 Vagabonds Act : aim: to deter vagrancy (old thinking) so vagrants should be whipped and have a hold drilled in their ear (old) and it established the national poor rate which was a tax to help the deserving poor (new thinking).
1576 Poor Relief Act aimed to distinguish between abled bodied and deserving poor (old) and to help the able bodied poor to find work (new thinking). So JPs provided the able-bodied with wool and raw materials to make things to sell and those who refused to work were sent to a special prison known as the house of correction.

Spain and the Spanish Armada

20 Why was there more and more exploration

1.) Expanding trade- the conflict with Spain and the Netherlands hit the traditional wool and cloth trade hard, reports from the Americas suggested there were many valuable crops, animal skins and gold and silver. The triangular trade was beginning and was making huge profits already. 2.) New technology- navigation became easier due to the use of astrolabes and quadrants and more accurate maps such as the Mercator map. 3.) Improved ship design- Galleons were much larger than traditional trading ships and more stable in heavy seas, they were also more manoeuvrable due to improved sail design

21 Significance of Sir Francis Drake's circumnavigation

Why ? 1.) Wanted to be the first Englishman to do so. 2.) Wanted revenge on the Spanish 3.)Economic reasons- he returned to England with an estimate treasure haul of £500,000,000 in today's money!
Why so significant? 1.) It's a boost to English morale and established the reputation of English ships and sailors. 2.) Encouraged explorations: They may have gone as far north as Vancouver and their logs of their journeys were written up and shared. 3.) established Nova Albion: 1579 Drake landed in California and declared an area of it for England. 4.) Encouraged colonies in America. 5.) Damaged Anglo-Spanish Relations: Drake had attacked Spanish colonies in America and Elizabeth had knighted him- made Phillip II angry.

22 The Virginia colonies:

Why the 1st attempt to colonise Virginia failed. 1.) The voyage they left to late in the year to plant crops in Virginia, the biggest ship *The Tiger*, got damaged and all the food and seeds were ruined. 2.) the Colonists were unsuitable Not enough farmers and the others were not prepared for the hard work of surviving in an inhospitable place. The soldiers were undisciplined. 3.) Bad relations with the Native Americans- The chief, WIngina, got tired of the English asking for food, they carried new diseases that killed many native Americans The colonists left in July 1586. Another attempt was made to colonise in 1587. There were attempts to improve on the first expedition by bringing colonists who were prepared to work hard, the leader of the expedition (John White) was experienced, having gone on the 1st attempt. When John White returned to the colony in 1590 after going back to England the colony had disappeared and no trace of them has been found.

Year 11 GCSE History Knowledge Organiser Medieval Medicine in Britain c.1250-1500

Key Vocabulary:

1	**Diagnosis**	Identify illness based on symptoms.
2	Miasma	Bad air that believed to cause diseases.
3	Physician	Qualified person to practice medicine.
4	Rational	Idea based on logic and evidence.
5	Supernatural	Ideas not explained by science/nature.
6	Bloodletting	Drawing blood from the sick in order to rebalance the humours.
7	Herbal remedy	Medicine made from plants/herbs.
8	Pilgrimage	Journey to sacred place.
9	Purging	Removing humours from the body by bring sick.
10	Regimen sanitatis	Instructions created by Hippocrates on how to keep healthy
11	Flagellants	People who whipped themselves to ask for God's forgiveness to avoid plague.
13	Purifying the air	Removing foul smells from the air.
14	Quarantine	Separating sick to stop spread of disease.

What were the causes treatments, preventions and healers of the time period?

15. Causes

Religious: Belief that **God** caused illnesses.
Supernatural: **Astrology** also used to help diagnose illnesses.
Rational: **Four Humours** Theory: Body made of four liquids (blood, phlegm, black and yellow bile). Imbalance of these humours can cause illness and disease. Hippocrates
Miasma: Belief that **bad air** was harmful and cause illnesses.

16. Diagnosis/Treatments:

Diagnosis was either based on urine analysis
Religious/supernatural treatments: praying, fasting, using star charts to determine treatment.
Rational treatments: herbal remedies, bloodletting, leeches and purging.

17 Preventions:

Religious/supernatural treatments: praying, fasting, lighting a candle in a Church,, pilgrimage
Rational preventions: Lighting a fire, smelling sweet herbs, ringing bells

18 Healers

Physician: Diagnosed illnesses and suggested treatments. Studied patients' blood and urine. Trained at university for 7 years, approximately 100 in the country
Apothecary: Mixed herbal remedies.
Barber Surgeon: Performed simple surgery.
Hospitals: Owned and run by the Church. Monks and nuns provided shelter and food for the sick and poor elderly and prayed for them
Home: Majority of sick cared for at home (women).

19 Case Study: Black Death (1348)

The Black Death caused the death of between 1/3 to ½ of the entire population. While it was caused by bacteria fleas, it was spread to humans by fleas jumping from rats onto humans.
Causes: Sent by God as punishment, bad air that corrupted the body's four humours.
Treatment: Prayer, charms, bleeding and purging, sniffing strong herbs, and fires lit to remove bad air.
Prevention: Pray to God, Flagellants + streets cleaned, newcomers to a town were quarantined for 40 days, run away from the disease.

Who were the key individuals and key themes?

20 Individuals

Hippocrates: Four Humours Theory.
+ = Observed patients/recorded symptoms + Hippocratic Oath.
- = Ideas on causes of disease were wrong.
Galen: Theory of Opposites.
+ = Wrote over 250 books on medicine.
- = Made mistakes – Jaw bone made of 1 bone not 2.

21 Did the Church help or hinder medicine?

+= Safeguarded all valuable Ancient Greek and Roman texts in monastery libraries
+= Monasteries were hygienically designed
+=The Church funded universities and provided hospitals
-= Banned dissections
-=promoted respect of Galen's ideas
-= Taught that everything in the Bible was true

22 Why did medicine not progress in the Medieval period?

The Church: The was the most powerful institution in Medieval society, there was a priest in every village, funded education in universities promoted the Bible and Galen had all of the answers, imprisoned those who went against their teachings such as Roger Bacon in 1270.
Attitudes: Everyone was taught to respect tradition, taught that Galen had discovered everything there was to know about medicine and had written it down in his books. Not taught to experiment and improve
Government: The government was weak in Medieval society and it's job was to keep law and order and defend against invasion, it's job was not to invest in medical research
Education: Doctors trained for 7years at university and were taught to respect tradition, read books produced by monks copying by hand, read the books of Galen and watched dissections with the aim of proving Galen correct

Year 11 GCSE History Knowledge Organiser Renaissance Medicine in Britain 1500-1750

Key Vocabulary:

1	**Epidemic**	Disease that spreads quickly e.g the plague in 1665
2	Printing press 	Created by Johannes Gutenberg in the 1440s- a machine for printing text/pictures
3	Renaissance	Means Re-birth- a time period of renewed interest in revival of ideas
4	Royal Society	Set up in 1660 with Charles II as it's patron. An organisation to discuss and share new ideas in medicine and sciences. Sponsored scientists and published it's findings.
5	Human anatomy	Knowledge of the working of the body
6	Pomander	Ball containing perfumed substances 
7	Transference	Belief that an illness can be transferred (or passed) to something else by touch e.g. rub an object n a boil it would transfer the disease from the person to the object
8	Pest House	A hospital that specialised in one disease (the plague)
9	Dissection	The scientific internal study of a corpse.

What were the causes treatments, preventions and healers of the time period?

10 Causes

Continuities: Miasma Theory, influence of Church during epidemics and that supernatural beliefs.
Changes: Most accepted that illnesses were not sent by God, decline of importance regarding the Four Humours Theory and analysis of urine. A new idea developed that little animals (animalcules) could be the causes of disease
There was a move away from old ideas about the causes of illness but they had not been replaced!

11 Diagnosis/Treatments:

Diagnosis: Thomas Sydenham emphasised the need to observe a patients symptoms, decline of analysis of urine
Religious/supernatural treatments: praying, fasting, Rational treatments: herbal remedies (with new ingredients), bloodletting, leeches and purging. People were also starting to look for chemical cures for diseases

17 Preventions:

Religious/supernatural treatments: praying, fasting, lighting a candle in a Church
Rational preventions: Lighting a fire, smelling sweet herbs by carrying a pomander all removing bad air

18 Healers

Physician: Diagnosed illnesses and suggested treatments. Trained at university for 7 years, could now do dissections although difficult to get supply of fresh corpses. Would now visit hospitals
Apothecary: Mixed herbal remedies with new ingredients- would now also visit hospitals.
Surgeon: Performed surgery- better educated as wars were fought with new technology which led to new wounds.
Hospitals: now funded by the wealthy or charities
Home: Majority of sick cared for at home (women).

19 Case Study: Great Plague (1665)

Causes: Unusual alignment of the plants, sent by God as punishment, imbalance of Four Humours + Miasma.
Treatment: Prayer, fasting, + Plague Doctors, go to a Pest Hospital
Prevention: quarantine, smoking tobacco to ward off miasma Local governments tried the following: banning public meetings, closing theatres, sweeping the streets, burring barrels of tar and sweet smelling herbs to ward off miasma, killing cats and dogs, quarantining victims in their own homes for 28 days with a red cross and 'Lord have mercy upon us' painted on the door, watchmen outside to stop victims leaving.

Who were the key individuals and key themes?

20 Individuals

Thomas Sydenham: '*English Hippocrates*'.
+ = Placed importance on observing a patient, wrote the book *Observationes Medicae* which was used by doctors for two centuries.
- = Doctors/physicians still reliant on Galen's work.
Andreas Vesalius: *'On the Fabric of the Human Body'* (1543).
+ = Corrected 300 mistakes by Galen on anatomy, lower jaw has one bone, not two, breastbone has three parts, not seven
- = Caused controversy by challenging Galen's work.
William Harvey: Circulation of the blood.
+ = Proved that arteries and vein were linked together, heart is a pump (1628).
- = Considered to be mad as challenged Galen's work and did not have a powerful enough microscope to prove capillaries existed.

21 What factors encouraged change?

Technology: The printing press and improved microscopes.
The Royal Society: helped develop new ideas as scientists and physicians could read each other's work.
Reformation: Loss of control of education by the Church, legalisation of dissection.
Individuals: Improved knowledge of anatomy, published books for others to learn from, encouraged others to carry out dissections themselves

22 What factors encouraged continuity?

Individuals: Traditional physicians continued to reply on Galen, Vesalius and Harvey's discoveries had little practical use in medical treatment.
Attitudes: While doctors were being encouraged by the work of Vesalius, Harvey and Sydenham to experiment and not rely on Galen, it was very difficult to change this attitude and ordinary people continued to believe in and use the theory of opposites long after Galen had been discredited.
Technology: While there was new technology such as the printing press and microscopes, the microscopes were not powerful enough to prove certain things about the body- e.g. that capillaries exist or germs cause disease
Lack of knowledge: None of the discoveries made during the Renaissance were about the causes of disease therefore little could change in treatments and preventions.

Year 11 GCSE History Knowledge Organiser Industrial Revolution Medicine in Britain 1750-1900

Key Vocabulary:

1	**Enlightenment**	A period between the 18th and 19th centuries where the main attitude was one of the use and celebration of reason, the power by which humans understand the universe and improve their own condition.
2	**Microbes**	Living organism that can only be seen under a microscope.
3	**Spontaneous Generation Theory**	Belief that microbes are released when things decay, rather than being the cause and that they are spread by miasma.
4	**Anaesthetic**	Used to make someone unconscious.
5	**Antiseptic**	Killing bacteria before operations or treatment.
6	**Aseptic**	Operation that takes place in a strictly controlled germ-free environment.
7	**Inoculation**	Deliberately infecting a patient with a disease in order to become immune to it.
8	**Vaccination**	Injection of weakened organisms to give body resistance against disease.
9	**Laissez-Faire**	Government's attitude that it should not interfere with matters relating to Public Health.

What were the causes treatments, preventions and healers of the time period?

10. Causes

Continuities: Miasma Theory, influence of Church during epidemics and that supernatural beliefs.
Changes: Germ Theory (1861) disproved Spontaneous Generation Theory and believed that germs cause disease in human body. Pasteur/Koch.

11. Diagnosis/Treatments:

There were no new treatments in this time period as most people by 1900 accepted that germs caused disease but there was not a lot of understanding about the best was to remove germs so old herbal remedies continued to be popular. Anaesthetics were used for the first time in surgery.

12 Preventions:

The biggest changes were to prevention with both the willingness of the government and population to take steps to prevent diseases from spreading. Widespread use of the smallpox vaccination, Public Health Act 1875 and the building of sewers by Bazalgette

13 Healers and Hospitals

Only the rich or the 'deserving poor' who went to hospitals would see a doctor. Most people continued to be treated at home.
Hospital Care: c18 Hospitals were dirty, overcrowded and in poor conditions. Florence Nightingale changed this and Lister/Simpson improved surgery.

14 Case Study: Cholera (1854)

Epidemics in 1831, 1848-9 and 1854. John Snow
+ = Concluded it caused by dirty drinking water by using population statistics, removed the handle from the Broad Street pump and saved lives.
- = Government unwilling to pay for improvements at the time, Snow couldn't prove why dirty water cause cholera.

15. Case Study: Smallpox Vaccination (1798)

Edward Jenner: Vaccination.
+ = Discovered vaccination for Smallpox, by observing milkmaids who caught the mild cowpox but not the deadly smallpox, tested his vaccination on James Phipps. Smallpox practically eradicated by 1900
- = Vaccination not compulsory until 1852 by state and vaccination was opposed by inoculators.

Who were the key individuals and key themes?

16 Individuals

Louis Pasteur: Germ Theory (1861).
+ = Identified that germs cause disease and illnesses.
MISHAPS VET to remember impacts
- = Unable to identify specific germs.
Robert Koch: Microbes (1867).
+ = Discovered microbes cause specific illnesses.
- = Took time for his work to be widely accepted.
Florence Nightingale: *'Notes on Nursing' (1859)*.
+ = Improved conditions in hospitals and professionalised nursing.
James Simpson: Chloroform as an anaesthetic (1847).
+ = Provided safer alternative to Laughing Gas + Ether.
- = Difficultly in gauging correct dose to be used.
Joseph Lister: Carbolic Acid as an antiseptic (1865).
+ = Antiseptic surgery – killing germs from wounds.
- = Opposed because of poor knowledge Germ Theory.
Joseph Bazalgette: Introduced Sewer system (1865).
+ = Built over 1300 sewers in London.
- = Size of project took time until completed in 1875

17 Why did the government's attitude to public health change?

Public Health Act - 1848: Not compulsory + no change.
Public Health Act: 1875: Compulsory and forced authorities to provide clean drinking water, build public toilets and dispose of sewage to avoid pollution.
Changes due to: Germ theory (1861), Great Stink-1858, John Snow (1854), changes in voting (most working class men could now vote)

18 Why were there so many breakthroughs?

Change in attitudes: This was the period of the Enlightenment and the government changed its laissez faire attitude to public health
War: The Crimean war gave Florence Nightingale the opportunity to car for sic soldiers- she reduced the death rate in the hospital in Scutari from 40% to 2%
Individuals: Pasteur, Koch, Jenner, Snow, Nightingale, Simpson, Lister.
Technology: improvements in technology such as better microscopes to be able to see germs.
Germ Theory: First scientifically proven cause of disease.

Year 11 GCSE History Knowledge Organiser Modern Medicine in Britain 1900-present

Key Vocabulary:

1	**DNA**	Carries genetic information about a living organism.
2	**Genome**	Each human being has a unique DNA.
3	**Human Genome Project**	Scientists worked to decode and map out the human genome.
4	**Hereditary diseases**	Diseases that are passed down from one generation to another.
5	**Magic Bullet**	Chemical that kills specific bacteria in the body.
6	**Antibiotic**	Medicine that destroys the growth of bacteria inside the body.
7	**D-Day**	Allied forces in WW2 invade northern France.
8	**General Practitioner**	Community-based doctor who treats minor illnesses.

What were the causes treatments, preventions and healers of the time period?

10. Causes

By 1900, scientists realised not all diseases were caused by microbes. Discovery of **DNA** (1953) meant scientists understood how hereditary diseases were caused. E.g. Down's Syndrome. **Crick and Watson.**
Lifestyle choices impact on health: smoking, poor diet, alcohol, sharing of bodily fluids and exposure to excessive amounts of sun.

11. Diagnosis/Treatments:

Improvements in diagnosis which was not based on observing symptoms now but on medical testing: X-ray, CT/MRI scans, ultrasound, Blood testing and pressure monitor.
Magic Bullets: Salvarson 606. Paul Ehrlich.
Antibiotics: Penicillin discovered in 1928 by Alexander Fleming developed by Florey and Chain. Mass produced for D-Day in 1944.
High-tech medical/surgical treatment: Dialysis, Prosthetic limbs, Keyhole surgery, ECG, Endoscope.

12 Preventions:

Government lifestyle campaigns: *Change4life* + campaigns warning of dangers of drug/binge drinking.
Genetic screening and gene therapy: women who have the gene for breast cancer can prevent the disease by getting a mastectomy

13 Doctors and Hospitals

NHS created in 1948- before this 8 million people had never seen a doctor before. People can now visit a **GP** and stay in hospital for free with universal healthcare. Also other healthcare professionals such as **dentists, ambulance services + health visitors.**

14 Case Study: Penicillin

Alexander Fleming started his search for a treatment for infection due to the number of soldiers dying in WW1 . He discovered penicillin in 1928 when he noticed a 'white mould' which killed bacteria. He was unable to fund any further research and went no further. Florey and Chain went on to test penicillin on humans (Albert Alexander) and gained funding to mass produce it

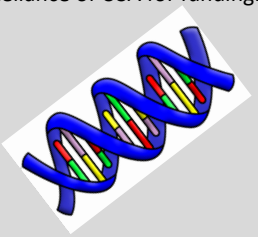
15. Case Study: Fight against Lung Cancer

Diagnosis: Difficult to diagnose early on.
Treatment: Transplants, radio/chemotherapy.
Prevention: Smoking banned in public places, raising age of buying cigarettes and stop smoking campaigns.

Who were the key individuals and key themes?

16 Individuals

Crick and Watson: Discovered DNA (1953).
+ = Scientists explore causes of hereditary diseases.
- = Doctors still unable to treat genetic conditions.
Paul Ehrlich: Created first Magic Bullet (1909).
+ = Discovered Salvarson 606 to treat Syphilis.
- = Magic Bullet can only treat one specific disease.
Alex Fleming: Discovered Penicillin (1928).
+ = Noticed 'white mould' killed bacteria - Penicillin.
- = Unable to fund further research + went no further.
Florey and Chain: Mass produced Penicillin (1944).
+ = Developed Penicillin and mass produced it.
- = Reliance of USA for funding.



17 Why were there so much rapid change?

Change in attitudes: The government was taking much more responsibility for health with the creation of the NHS
War: WW1 causes thousands of soldiers to die of infection which started Fleming's research and WW2 gave governments motivation to fund mass production and research into penicillin to treat infection. In WW2 people were shocked by the health and hygiene of some refugees and was one of the reasons for the creation of the NHS
Individuals: See above
Technology: advances in microscopes and the ability to produce higher powered images enabled scientists to identify DNA. Better technology has improved diagnosis, technology has enabled the mass production of drugs, development of capsules (easier way to take drugs), hypodermic needles for injections and insulin pumps.
Teamwork: The Human Genome Project involved thousands of scientists from around the world. Hata retested Ehrlich's work to find Salvarson 606

Year 11 GCSE History Knowledge Organiser The British Sector of the Western Front 1914-1918

Key Vocabulary:

1	**No Man's Land**	Land between Allied and German trenches in WW1 where fighting took place.
2	**Trenches**	A system of long, narrow ditches dug in a zig-zag pattern during WW1, easier to defend than attack.
3	**Ypres Salient**	Area around the town of Ypres where many battles took place in WW1.
4	**Gangrene**	When a body decomposes due to a loss of bloody supply.
5	**Shrapnel:**	A hollow shell filled with steel balls or lead, with gunpowder and a time fuse.
6	**FANY**	First Aid Nursing Yeomanry. Volunteer nurses, who helped the wounded and also drove ambulances.
7	**RAMC**	Royal Army Medical Corps. This organisation organised and provided medical care. It consisted of all ranks from doctors to ambulance drivers and stretcher bearers.
8	**Triage**	A system of splitting the wounded into groups according to who needed the most urgent attention.
9	**Compound Fracture**	Broken bones pierces the skin + increases risk of infection in wound.
10	**Debridement:**	Cutting away of dead and infected tissue from around the wound.
11	**Gas Gangrene**	Infection that produced gas in gangrenous wounds
12	**Radiology department**	Hospital department where X-rays are carried out.

What was the Western Front like?

13 Battles

The Ypres Salient: Germans had the advantage with being on the higher ground. Tunnelling and mines were used by the British at Hill 60. Germans used Chlorine gas for the first time

The Battle of the Somme: July-November 1917. 1st day of battle, 60,000 casualties and 20,000 died. In total, 400,000 Allied casualties and this put pressure on medical services on the Western Front.

Battle of Arras - 1917. Allied soldiers dug tunnels below Arras which led to an underground hospital with electricity, water, 700 beds and operating theatres.

Battle of Cambrai: 1917. 450 tanks used to advance on the German position, however, plan didn't work because there was not enough infantry to support.

14. Impact of the terrain on helping the wounded:

Difficult to move around, + night, communication was difficult. Collecting wounded from No Man's Land was dangerous- shell craters, waterlogged conditions and the danger of enemy snipers so was often done at night. Stretcher bearers found it difficult to move around corners in trenches and transport of the wounded was difficult because of this. If wounded soldier left for long they had the risk of infection from the muddy ground the was used as farm land before the war and contained bacteria and fertilisers

15 Who helped the wounded on the Western Front

Evacuation route: Survival depended on speed of treatment. Care improved as war progressed. 1914 0 motor ambulances but by 1915, 250. Ambulance trains were introduced, as well as, ambulance barges used along River Somme.
Stretcher bearers: Collect wounded, 16 in each battalion + 4 for each stretcher.
Regimental Aid Post: Always close to the front line and staffed by a Medical officer selected those who were lightly wounded/needed more attention.
Field Ambulance and Dressing Station: Emergency treatment for wounded. Could treat 150 soldier for up to a week
Casualty Clearing Station: Large, well equipped station, 10 miles from trenches in schools or factories, injured triaged.
Base Hospitals: On French/Belgian coast, CCS started to do more operations so Base Hospitals used for experimenting with new techniques which could then be used in CCS

What were the diseases and injured and how were they treated?

16 Conditions requiring treatment:

Ill health: Trench fever: caused by body lice and included flu-like symptoms including high temperature. Treatment: Passing electric current through infected area was effective. Prevention: Clothes disinfected and delousing stations were set up. Affected 0.5 million.
Trench foot: caused by soldiers standing in mud/waterlogged trenches. Treatment: soldiers advised to keep clean but worst cases, amputation. Prevention: Changing socks + keeping feet dry and rubbing whale oil into feet. Affected 20,000 in winter of 1914-1915.
Shell-shock: caused by stressful conditions of war and symptoms included tiredness, nightmares, headaches and uncontrollable shacking. Treatment: Not well understood. Prevention: rest and some received treatment in UK. **Weapons of war: Rifles**: fired one at a time/loaded from cartridge case creating rapid fire. **Machine guns**: Fired 500 rounds a minutes. Pierced organs and fracture bones.
Artillery: Bombardments were continuous, Artillery fire caused half of all causalities. **Shrapnel:** Caused maximum damage exploded mid-air above enemy. Killed/injured.
Chlorine and Phosgene Gas: Led to death by suffocation. 1915, gas masks given to all British soldiers.. **Mustard Gas:** Odourless gas, worked in 12 hours. Caused blisters, burn the skin easily

17 Impact of Western Front on medicine

The Thomas Splint: Stopped joints moving and increased survival rates from 20 to 82%. Reduced infection from compound fractures.
X-rays: Developed in 1895, used to diagnose issues before operations. Problems: could not detect all problems, were fragile and overheat. Mobile X-rays: 6 operated on the front line, pictures of a poorer quality. Enabled soldiers to be treated more quickly.
Blood Transfusions: Blood loss = major problem. Blood transfusions used at Base Hospitals by a syringe and tube to transfer blood from patient to donor. Extended to CCS from 1917. **Blood bank at Cambrai:** Adding Sodium Citrate allowed blood to be stored for longer. Stored in glass bottles.
Brain surgery: Harvey Cushing used magnets used to remove metal fragments from the brain and local anaesthetic- 71% survival rate. **Plastic surgery:** Harold Gillies developed new techniques, skin drafts developed for grafts.

Who discovered that Penicillin kills bacteria – and when?	**Which two scientists were responsible for the discovery of DNA?**	**When did Pasteur announce his Germ Theory?**	**Put in order: Aid Post Hospital, Clearing Station and Dressing Station.**
What were the Four Humours?	**What was so important about the 1875 Public Health Act? (Mention two details to support your answer.)**	**What is shrapnel?**	**What did John Snow do to stop Cholera spreading in Soho, London, 1854?**
Name two types of gas used as weapons.	**Give two methods used to reduce deaths from Lung Cancer.**	**Give two ways people used to keep towns clean and healthy in Medieval England.**	**Give two reasons why changes were taking place in medicine by 1700.**
List three ideas people had about the cause of disease in Medieval England.	**Name three different kinds of medieval healers.**	**List three ways in which governments have tried to improve health since 1900.**	**List three kinds of treatments used in the Renaissance England.**
Which three factors were most important in advancing in medicine in Modern Britain?	**Why was Thomas Sydenham's work important?**	**Why were there so many infected wounds on the Western Front?**	**Which three factors were most important in inhibiting change in medicine in Medieval England?**

Year 11 Music Summer Term Knowledge Organiser

Key Vocabulary:

1	Repetition	Repeating chord patterns/melody lines
2	Sequence	A melody that moves up and down in pitch but the pattern of the notes stays the same – for example, CDEFG – DEF#GA
3	Decoration	A melody that is played in higher pitch over the top of the original melody with faster rhythmic notes
4	Variation	Where you take an original melody and repeat it but each time you change the rhythm, key, speed, instrument etc.
5	Modulation	Changing key during the second section of your piece – major to minor, C major to G major etc
6	Use of contrast	Changing the overall musical effects by using speed, dynamics, pitch etc
7	Processes	Use of canon – one instrument starts – another joins in with the same melody and they play following each other
8	Instrumentation	Choice of instruments and the way they are played to create effects and change the timbre of the music
9	Texture	The layers of the sound – homophonic – 1 layer of music or all instruments playing the same thing, polyphonic – los of layers of music, contrapuntal
10	Chords	Use of broken chords, triads, arpeggios, major, minor, diminished chords

Music Theory

11 Composing

Use different starting points, for example:

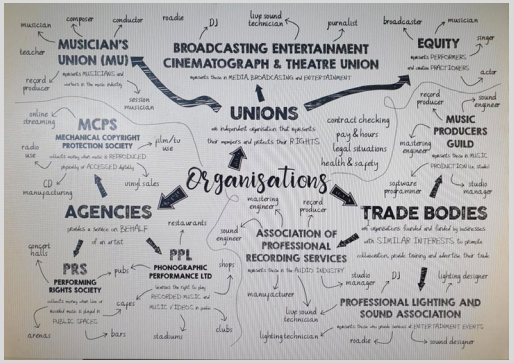
- melodic ideas and fragments
- rhythmic patterns
- chords and chord progressions
- harmonic systems
- textures
- riffs and hooks
- sound palettes
- improvisation and experimentation
- non-musical starting points such as themes

, texts and images

12 Reviewing your composition – every lesson

1. What ideas have you composed?
2. What techniques did you use to develop your composition?
3. What sections of music have you added to your composition?
4. What do you need to improve next time?
5. Are there any techniques you need to add to develop your compositions further?

13 Unions and how they work in the music industry

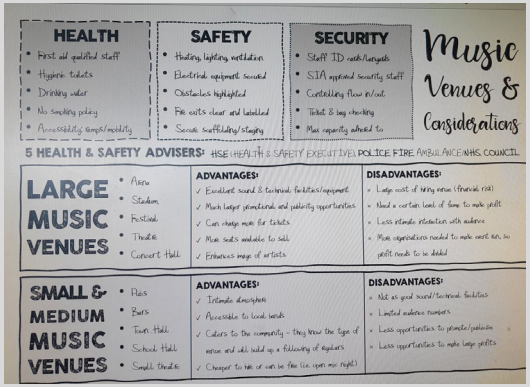


Music Theory

14 Record labels – unit 1

What are record labels – who do they work with? Why?

15 Venues – unit 1



Music venues – what is their role in the music industry?

Year 11 GCSE History Summer Term Knowledge Organiser The Weimar Republic 1918-29

Key Vocabulary:

1	Abdication	When a monarch leaves the throne
2	Republic	A country without a King or a Queen
3	Armistice	An agreement to end war
4	Treaty of Versailles	The peace agreement that Germany was forced to sign at the end of WW1
5	Diktat	An enforced peace
6	Reparations	Money Germany was forced to pay to the Allies as compensation for WW1
7	Ebert	The first President of the Republic
8	Stresemann	The Chancellor of Germany from the Summer of 1923 and Foreign Minister
9	Constitution	This is an agreement about how the country would be ruled
10	Reichstag	German parliament
11	Article 48	A rule in the new constitution that allowed the president to rule on his own without the Reichstag in times of emergency
12	coalition	A government of two or more political parties.
13	Freikorps	Ex military soldiers who wanted to overthrow the Republic
14	Rentenmark	The currency of Germany after November 1923
14	Hyperinflation	When money becomes worthless

Origins and challenges of the Weimar Republic

16 End of the War

Losing the war was a shock for Germany and the Kaiser abdicated. Germany was humiliated, faced psychological problems, political problems, anarchy and poor conditions in Germany due to lack of food. The Weimar Republic was set up but faced much opposition, It was disliked by the left wing who wanted Germany to be like Communist Russia and it was disliked by the right wing who wanted the monarchy back.

17 Stabbed in the Back by the Treaty of Versailles

Germans felt they should have won the war and felt they had been stabbed in the back by their politicians who signed the humiliating Treaty of Versailles. In the Treaty Germany was blamed for WW1 (Article 231), forced to pay reparations of £6.6 billion, reduced their army to 100,000 & lost 13% of land.

18 Weimar Constitution:

Advantages:

- All people over 18 can vote
- 75% of the Reichstag must agree for the constitution to be changed
- Article 48 allows quick actions in a crisis

Disadvantages:

- most governments were formed with a coalition which caused arguments
- Article 48 could be used to make a dictatorship
- Laws were not easily passed as a number of parties had to agree for it to be voted through

19 Challenges to the Republic:

Spartacist Rising 1919: Communist try to take over the country led by Rosa Luxemburg. The army and Freikorps stop it and over 100 workers were killed.

Kapp Putsch 1920: Freikorps try to take over after they are disbanded after the ToV, people go on strike to stop them, they are forced to give up.

20 The Year of Crisis: 1923

Invasion of the Ruhr: France invades as Germany stops paying reparations. In the Ruhr are Germany's iron and coal resources. The German workers strike in protest. German industry is devastated.

Hyperinflation: Germany continues to pay the striking workers which causes hyperinflation, a loaf of bread costs 200,000 billion marks.

Recovery and changes in society

21 Stresemann and the economy

Stresemann solves hyperinflation by destroying the old money and printing the Rentenmark, helps rebuild the economy by getting loans from the US (Dawes Plan 1924) and decreasing the amount of reparations by 20% (Young Plan 1929). However these were short term solutions e.g. Germany became dependant on the USA, unemployment never fell below 1 million people, middle class never recovered their savings

22 Stresemann and international relations:

Stresemann improves relations with other countries by signing the Locarno Pact (1925 agreement to keep borders) and joining the League of Nations (1926) and the Kellogg Briand Pact. (1928 agreement to solve problems peacefully)

23 Changes for workers:

Hourly wages rose every year from 1924 to 1929 and by 10 per cent in 1928 alone. Generous pension, health and unemployment insurance schemes which covered 17 million workers were introduced from 1927. However, some workers, such as farmers missed out on these changes and suffered declining incomes.

24 Changes for women:

Women could vote and become politicians, they increasingly taking white collar jobs such as teachers, lawyers and doctors. The classic image of German women in the 1920s was as the 'New Woman' who was short-haired, wore make up, liberated and having fun. However life for a lot of women, especially outside of Berlin did not change and most women voted conservatively.

25 Change in culture:

Weimar experienced a flourishing of culture, in Berlin especially, that saw developments in architecture, art and the cinema. This expression of culture was greatly helped by the ending of **censorship** in the new republic.

Architecture changed with the **Bauhaus** School founded by Walter Gropius in 1919

Art: Dada and New Objectivity were two new art movements, artists included **Otto Dix and George Grosz.**

Cinema boomed in this time period and one of the most famous directors of the time was **Fritz Lang.**

Not everyone appreciated these cultural changes.

Year 11 GCSE History Summer Term Knowledge Organiser Hitler's Rise to Power 1919-1933

Key Vocabulary:

1	NSDAP	Nazi Party
2	25 Point Programme	The political manifesto of the Nazi Party
3	Swastika	Emblem of the Nazi Party
4	SA or Sturmabteilung	Private army of the Nazi Party headed by Himmler
5	Aryan	Pure German people
6	Anti-Semitism	Hatred of the Jewish people
7	Mein Kampf	Hitler's autobiography
8	Putsch	An attempt to get power illegally
9	Blood Martyrs	16 Nazis who died at the Munich Putsch
10	SS or Schutzstaffel	Hitler's bodyguards
11	KPD	German Communist Party
12	coalition	A government of two or more political parties.
13	Propaganda	Goebbels attempted to make people think in a certain way
14	Hindenburg	The currency of Germany after November 1923
14	Hyperinflation	The President of the Republic from 1925 to 1934

Early development of the Nazi Party and the Lean Years

16 German Workers' Party

1919 – Hitler joined the German Worker's Party (DAP), a right-wing group led by Anton Drexler.
1920: Hitler the leading public speaker/ propagandist.
1920 – Changes name to National Socialist German Workers Party (NSDAP) – or Nazis for short.
1921 – Hitler was elected leader of the Nazis
1923- Nazi Party had 55,000 members

17 Features of the Nazi Party

Key Nazi beliefs contained in the **25 Point Programme:**
A strong Germany - the **Treaty of Versailles** should be **abolished** and all German-speaking people united in one country. **Führer** - the idea that there should be a single leader with complete power rather than a **democracy**. Social Darwinism - the idea that the **Aryan** race was superior and Jews were 'subhuman'. **Autarky** - the idea that Germany should be economically self-sufficient. That Germany was in danger - from **communists** and Jews, who had to be destroyed. **Lebensraum** - the need for 'living space' for the German nation to expand.
SA also very important Their nickname was the **Brownshirts** and their role was to protect party meetings and intimidate political opponents by breaking up their meetings

18 Munich Putsch (1923):

During the Hyperinflation crisis Hitler saw an opportunity to seize power and he also wanted to copy Mussolini. Even though a failure and the Nazi Party banned, Hitler was given a lenient prison sentence, he gained publicity, he wrote Mein Kampf and he realised that if he was to win power, he needed to do this by votes and not by force.

19 The Lean Years (1923-29):

The Nazis lacked working class support (they tended to vote for the communists), it was a time of peace and prosperity (Stresemann had solved many of Germany's problems) and the Nazis ideas were too extreme (SA were very violent). Hitler did take the time to strengthen his authority, he also began building a national party structure to attract members and develop policies and campaign

Growth in Support and how Hitler becomes chancellor

20 The growth in support for the Nazis 1929-32

The Wall Street stock market in America crashed so the US could no longer prop up the German economy and recalled their loans. So the German economy collapsed and Germany entered the **Great Depression** so by Feb 1932 6 million people were unemployed.
Weak opposition: The government's response to the economic crisis was not popular with Germans. For example, unemployment benefits and wages were cut while taxes increased. Everyday life became hard. The government starting using article 48 and became less democratic.
Appeal of the Nazis: Promised to solve the problems of the depression (e.g. create jobs, get rid of ToV), used communists and Jews as scapegoats for all of Germany's problems.
Hitler was a powerful public speaker and was charismatic.
The SA were strong and intimidated the communists which appealed to those who feared the increase in support for the Communists after the Wall Street Crash.
Nazi Propaganda: used new technology such as radio and planes and Joseph Goebbels was the chief of propaganda, used clear simple appealing messaging on their propaganda posters

21 How Hitler becomes Chancellor 1932-33:

1932
April – Presidential election. Hitler (37%) came second to Hindenburg (53%),
May – Brüning resigned as Chancellor. Hindenburg appointed Franz Von Papen, a conservative, as his replacement.
July – Reichstag elections. The Nazis became the largest party with 230 seats. Hitler demanded to be made Chancellor but Papen remained.
November – Reichstag elections called by Von Papen to try to win a majority in parliament. Nazis lost 34 seats but remained the largest party with 196 seats.
December – Von Papen resigned. Hindenburg appointed Kurt Von Schleicher as Chancellor. Von Schleicher tried to split the Nazis by asking a leading Nazi called Gregor Strasser to be his Vice Chancellor. Hitler forced Strasser to decline.
1933
January – Von Papen and Hindenburg turned to Hitler, appointing him as Chancellor with Von Papen as Vice Chancellor. They believed they could control Hitler and get him to do what they wanted

Year 11 GCSE History Summer Term Knowledge Organiser Nazi Control and dictatorship, 1933-39

Key Vocabulary:

1	Marinus van der Lubbe	The Reichstag Fire was blamed on this Dutch Communist
2	Reichstag	German parliament
3	Emergency Decree	Hindenberg is persuaded to pass this after the Reichstag Fire, it restricted civil liberties.
4	Enabling Act	Gave the Nazis full power for the next 4 years
5	Gleichschaltung	Hitler's attempt to bring German society into line with Nazi philosophy
6	German Labour Front (DAF)	Set up to replace Trade Unions
7	Lander	State Parliaments
8	Dachau	First concentration camp
9	Purge	To get rid of opposition
10	Night of the Long Knives	Removal of internal and external opposition to the Nazi Party and Hitler
11	Sicherheitsdienst (SD)	The intelligence body of the Nazi Party
12	Concordat	In July 1933 the Pope agreed to stay out of political matters if the Nazis did not interfere with Catholic affairs
13	Confessional Church	Followed traditional German Protestantism and refused to allow the Nazification of religion. Led by Pastor Martin Niemoller
14	Edelweiss Pirates and Swing Youth	Groups who apposed the Hitler Youth
14	Mit Brennender Sorge (With Burning Concern)	The Pope wrote to priests in Germany about his concerns over the Nazi attempts to control religion

Creation of a dictatorship and the police state

16 Creation of a dictatorship 1933-34

Reichstag Fire Feb 1933: Hitler had become chancellor but needed more power in order to pass the laws he wanted to. He used the Fire to whip up anti-communist feelings and gain emergency powers to round up 4000 communist members and intimidate communist voters

Enabling Act March 1933: In the March 1933 elections, the Nazis gained more seats in the Reichstag but still didn't have an overall majority. He banned the Communist Party so he had enough votes to pass the Enabling Act. With this act he is able to: pass any laws without needing the support of the Reichstag, he banned all trade unions and all political parties apart from the Nazi Party.

Night of the Long Knives 1934: Hitler used the SS to kill Ernst Rohm, the leader of the SA (the Nazis private army) and several hundred other SA members and politicians. This stamped out any opposition to Hitler in the Nazi Party.

Death of Hindenburg: Hindenburg was the President of Germany. When he died, Hitler made himself both Chancellor and President of Germany. He called himself the Fuhrer and reorganised the government so he was in absolute control and made the army swear an oath of loyalty to himself.

17 The police state

Germany became a police state and the Nazis used terror and violence. Himmler was in charge of the Gestapo and the SS who listened into telephone calls, interrogated and arrested people.

Judges had to swear an oath of loyalty to Hitler and make sure their judgements were in line with Nazi ideas. In 1933 the first concentration camp was opened in Germany at Dachau.

18 Nazi Propaganda

The Ministry of Enlightenment and Propaganda, headed by Dr Joseph Goebbels. It aimed to brainwash people into obeying the Nazis and idolising Hitler. It did this by censoring the press, controlling radio broadcasts, holding mass rallies (the biggest one was at Nuremberg each year in August) and using sporting events such as Berlin Olympics of 1936 to showcase the success of the regime and the superiority of the Aryan Race

Opposition, resistance and conformity

19 Extent of support for the Nazis

Exact figures for those who opposed the Nazis are difficult to obtain. However, it is clear that the Nazis were incredibly popular when they came to power and many Germans welcomed the stability and economic growth an **authoritarian** regime brought – something missing with the Weimar democracy. The Nazi regime restored Germany's international prestige through **rearmament** and the dismantling of the **Treaty of Versailles**.

20 Opposition from the Churches

There were approximately 45 million Protestants and 22 million Catholic Christians in Germany in 1933. Hitler saw Christianity as a threat and a potential source of opposition to Nazism because it emphasised peace. The Protestant church was re-organised and fell under Nazi control, in 1936 all Protestant churches merged into the Reich Church and it made a National Socialist version of Christianity. The Pope signed an agreement (the Concordat) with Hitler agreeing to stay out of German politics. There was Little opposition overall but some Church members such as Martin Niemoller (Protestant) and von Galen (Catholic) preached against the Nazis. Niemoller was sent to a concentration camp, but von Galen forced the Nazis to keep their killing of the disabled a secret.

21 Opposition from the young

The main youth opposition group was the Edelweiss Pirates, based in the Rhineland. They reacted to the discipline of the Hitler Youth by daubing anti-Nazi slogans and singing pre-1933 folk songs. In 1942 over 700 of them were arrested and in 1944, the Pirates in Cologne killed the Gestapo chief, so the Nazis publicly hanged 12 of them.

During the war, 'Swing Youth' and 'Jazz Youth' groups were formed. These were young people who rejected Nazi values, drank alcohol and danced to jazz. The Nazis rejected jazz music as **degenerate** and called it Negro music, using their racial ideas against this cultural development. These youths were closely monitored by the Gestapo, who regularly raided illegal jazz clubs.

Year 11 GCSE History Summer Term Knowledge Organiser Life in Nazi Germany 1933-39

Key Vocabulary:

1	Kinder, Kuche, Kirche	Children, Kitchen, Church. This summed up the Nazi ideal of womanhood
2	The Motherhood Cross Award	Given to women for large families. E.g a bronze award for a woman with 4 children.
3	Lebensborn	Where unmarried women were impregnated by SS men.
4	Napola	Schools intended to train the future leaders of Germany
5	Nazi Teachers League	All teachers had to swear an oath of loyalty to the Nazis
6	Reich Labour Service	A scheme to provide young men with manual labour jobs
7	Invisible unemployment	The Nazi unemployment figures did not include women, Jews, opponent and unmarried men under 25
8	Autobahn	Motorway
9	Rearmament	Building up the armed forces in readiness for war
10	Volksgemeinshaft	The Nazi community
11	Strength Through Joy	An attempt to improve the leisure time of German workers
12	Beauty of Labour	Tried to improve working conditions of German workers.
13	Volkswagon	People's car
14	Nuremberg Laws	Jews were stripped of their citizenship rights and marriage between Jews and no Jews was forbidden
14	Kristallnacht (Night of the Broken Glass)	A Nazi sponsored event against the Jewish community

Nazi policies towards Women and the young

16 Nazi policies towards women

The Nazis didn't allow women much freedom. They believed that women should stay at home and look after the family. They were banned from being lawyers in 1936 and they were expected to dress plainly and not wear make-up or smoke. Nazis gave awards to women who had lots of children and encouraged women to marry with marriage loans

17 Successes and failures of these policies

Failure: female labour was cheap and between 1933 and 1939 the number of women in employment actually rose by 2.4 million. Some Nazi policies reversed e.g. women with marriage loans allowed to work (1937)
Success: German Women's Enterprise had 6 million members; birth rate increased to 20 per 1,000 in 1939

18 Nazi Policies towards the young:

Youth groups such as the Hitler Youth taught children Nazi ideas so they would be loyal to the Nazi Party when they grew up. By 1936 boys had to join the Hitler Youth, they went on camping trips and had sports competitions. Girls joined the League of German Maidens where they were trained in domestic skills like cooking.
Schools also indoctrinated young people. All teachers had to join the Nazi Teachers' Association and the curriculum altered: History lesson included the rise of the Nazi Party, a new subject called Race study was introduced and PE was taught 5 times a week

19 Successes and failures of these policies:

Failure: Attendance at Hitler Youth meeting by 1938 was only 25% so by 1939 the authorities made attendance compulsory.
Success: 1939 90 per cent of German boys aged 14 and over were members.

Employment, living standards and persecution of minorities

21 How the Nazis reduced unemployment:

Public Works: Hitler created jobs with the building of autobahns, hospitals, schools and public buildings such as the 1936 Olympic Stadium.
National Service: making any man between 18-24 join the National Labour Service.
Rearmament: Hitler also created more jobs with building tanks and weapons and joining the army.
Invisible unemployment: Not counted by Hitler in his unemployment figures: 1.4 million men in the army and men working on public works schemes, Jews who were sacked and women who had to give up their jobs for men.

22 Did the Nazis improve living standards?

Yes: By 1937, agricultural prices had increased by 20 per cent. Beauty of Labour encouraged factory owners to improve conditions for workers and Strength through Joy gave rewards to workers for their work such as very cheap holidays.
No: Workers couldn't join trade unions or go on strike for campaign for better conditions and the Nazi Labour Front (which had replaced trade unions) nearly always sided with the employers. Wages remained low and the cost of living rose by 25%.

23 Nazi racial beliefs and policies:

Nazis believed certain groups, such as Slavs, gypsies, homosexuals, the disabled and Jews were inferior to and a threat to the Aryan race. Mentally and physically disabled were first sterilized and then between 1939-1941 over 100,000 were euthanatized. Other such as homosexuals, prostitutes, Jehovah's Witnesses and gypsies sent to concentration camps.

24 Jewish persecution:

1933- Boycott of Jewish shops, books by Jewish authors publicly burnt, Jewish teachers, lawyers and civil servants sacked.
1935- Nuremberg Laws- stripped Jews of German citizenship, outlawed marriage between Jews and Germans, took away all civil and political rights
1938,- Jews had to have the name Israel (men) or Sarah (women), Jewish children forbidden to go to school.
Kristallnacht - 9 Nov. The SS organised attacks on Jewish homes, businesses and synagogues in retaliation for the assassination of the German ambassador to France by a Jew.

BTEC Sport Unit 1 Knowledge Organiser

Components of Fitness

Physical Fitness

1. Body Composition
2. Aerobic Endurance
3. Strength (Muscular)
4. Speed
5. Flexibility
6. Muscular Endurance

Skill Related Fitness

1. Co-ordination
2. Reaction time
3. Agility
4. Balance
5. Power

Principles of Training

FITT

Frequency – How often do you train? (How many times a week)

Intensity – How hard do you train? (Heart rate/pyramid, BPM, BORG scale RPE)

Time – How long you train for? (min. 30mins)

Type – What type of training method (e.g. weight, circuit, interval...?)

Additional Principles of Training

Adaptation - how the body reacts to training loads. For example improved muscle size and strength to be able to lift heavier weights

Specificity- specifically matching training to the sport or fitness you want to improve.

Progressive Overload- gradually increasing the intensity of your training to improve and avoid injury.

Variation- changing your training frequently to avoid boredom.

Reversibility - if training stops, or the intensity of training is not sufficient to cause adaptation, training effects are reversed (fitness levels decrease).

Individual Needs- matching the training to suit your sport and your level of fitness / age / ability.

Training Methods

Strength, muscular endurance, power training

1. Free weights -Sets, reps, barbell, dumbbell
2. Circuit Training - Lots of stations
3. Plyometric - Bouncing, throwing, jumping, bounding

Aerobic Endurance Training

1. Continuous training - Non-stop 30 mins
2. Fartlek Training - 'Speed play', slow, medium, fast/different terrain
3. Interval Training - Work, rest, work, rest

Speed Training

1. Hollow Sprint - Broken up by 'hollow' lower intensity
2. Acceleration Sprints - Jogging to striding and finally to sprinting at maximum speed.
3. Interval Training - Work, rest, work, rest (high/low)

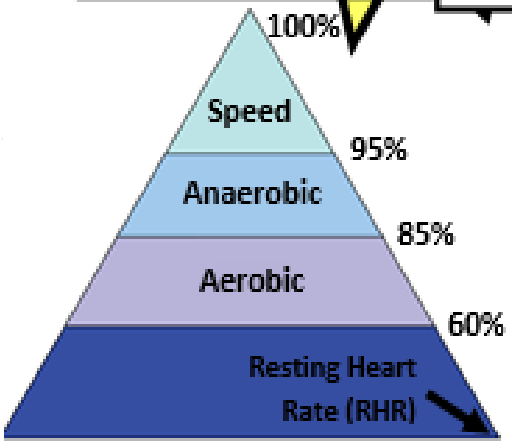
Flexibility training

1. Static Stretching (Still) Active (you), Passive (someone/thing else)
2. Ballistic Stretching - Movement (bouncing / swinging actions)
3. PNF Stretching – Stretching assisted beyond normal range

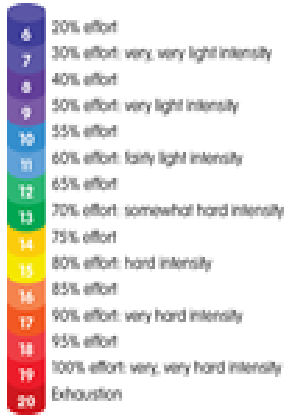
Exercise Intensity

220-Age=Max HR

Training Pyramid



BORG Scale – Rating of Perceived Exertion (RPE)



Fitness Tests

Vertical Jump (cms / watts)
Measures power (elastic strength)

Sit and Reach (cm)
Measures flexibility (static)

Grip Dynamometer (Kg)
Measures Strength (hand grip)

35m Sprint (secs)
Measures Speed

Illinois Agility Run (secs)
Measures agility (+ speed)

One minute Sit up / Press up (reps)
Muscular Endurance

MSFT (Bleep) / Step Test
Aerobic Endurance

Body Composition Tests
Measure of % body fat

BMI
Weight divided by height x height

Skinfold
3 x skinfold measurements

BIA
Electrical current passed through body

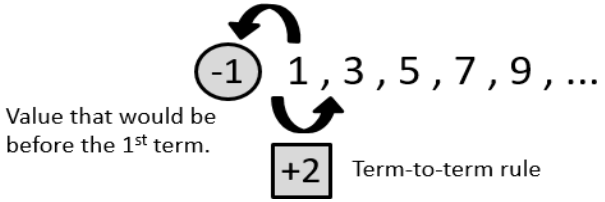
Year 11 Summer Term Knowledge Organiser for Maths

Remember to use your Revision Guides and Workbooks to prepare for your GCSE examinations

Sequences – Revision

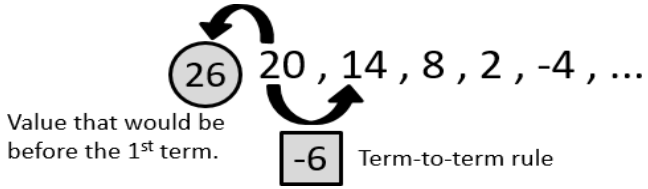
Nth Term

Expression for the general rule for a sequence to be able to calculate any term when given the position. Also known as a position to term rule:



+2 n -1

So, the nth term rule is 2n - 1.



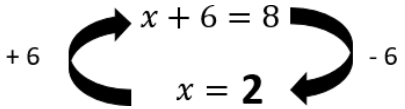
-6 n +26

So, the nth term rule is -6n +26.

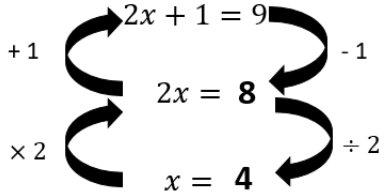
Solving Equations – Revision

Solving One Step Equations

Finding the value of an unknown by identifying operations performed and doing the inverse operation:

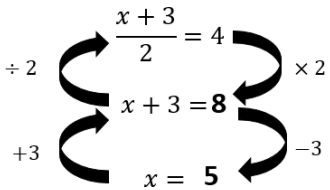


Solving Two Step Equations Finding the value of an unknown by identifying operations performed and doing the inverse operation:



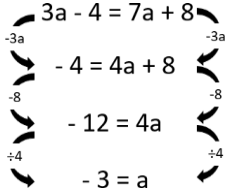
Solving Equations involving Fractions

Finding the value of an unknown. To eliminate a denominator, multiply every term by the denominator:



Solving Equations with Unknowns on Both Sides

Add/subtract the smallest algebraic term from both sides:



Forming and Solving Equations – Revision

Forming Equations

Many of the situations where an equation is formed uses other areas of maths such as area, perimeter, money, angle facts etc.

Create an expression first using the information in the question and then solve the equation using the balance method.

Forming Equations Example:

James thinks of a number. Kate's number is 14 less than James' number. The sum of their numbers is 212. What is Kate's number?

Let James' number be *n*, this means Kate number $n - 14$.

$n + n - 14 = 212$

$2n - 14 = 212$

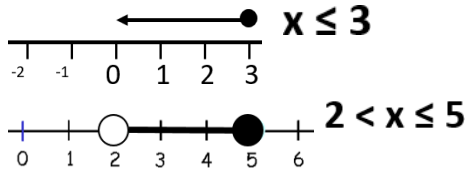
Then solve to find the value of *n*.

$n = 113$, so Kate's number is 99.

Inequalities – Revision

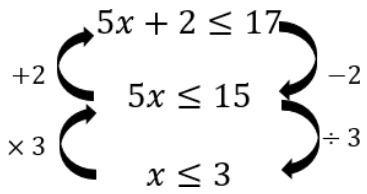
Inequalities on a Number Line

If the inequality is 'or equal to' (≤, ≥), the circle is filled in. If it is not (<, >), the circle is not filled in:



Solving Linear Inequalities

Solve like an equation, but replace the = sign with the inequality:



Year 11 Summer Term Knowledge Organiser for Maths

Index Numbers – Revision

Laws of Indices

$a^m \times a^n = a^{m+n}$ $\quad 2^7 \times 2^3 = 2^{7+3} = 2^{10}$

$a^m \div a^n = a^{m-n}$ $\quad 2^7 \div 2^3 = 2^{7-3} = 2^4$

$(a^m)^n = a^{m \times n}$ $\quad (2^7)^3 = 2^{7 \times 3} = 2^{21}$

$a^0 = 1$ $\quad 2^0 = 1$

Negative Indices

$$a^{-n} = \frac{1}{a^n}$$

For example…

$$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$$

Fractional Indices

$$a^{\frac{1}{n}} = \sqrt[n]{a}$$

For example…

$$125^{\frac{1}{3}} = \sqrt[3]{125} = 5$$

Standard Form – Revision

Standard Form is used to write large and small numbers concisely.

In standard form, numbers are written as $a \times 10^n$

where $1 \leq a < 10$ and

n is an integer.

Large Numbers

Large numbers are written like this…

$$473\,000 = 4.73 \times 100\,000 = 4.73 \times 10^5$$

Small Numbers

Small numbers are written like this…

$$0.000621 = \frac{6.21}{10000} = \frac{6.21}{10^4} = 6.21 \times 10^{-4}$$

Fractions – Revision

Adding/ Subtracting (different denominator)

Remember to find the common denominator first.

$$\frac{1}{4} + \frac{2}{5} = \frac{5}{20} + \frac{8}{20} = \frac{5+8}{20} = \frac{13}{20}$$

Multiplying

Multiply numerators and denominators.

$$\frac{1}{4} \times \frac{2}{5} = \frac{1 \times 2}{4 \times 5} = \frac{2}{20} = \frac{1}{10}$$

Dividing

Multiply the first fraction by the by the reciprocal of the second fraction. (To find the reciprocal - flip the fraction).

$$\frac{1}{4} \div \frac{2}{5} = \frac{1}{4} \times \frac{5}{2} = \frac{5}{8}$$

Recurring Decimals to Fractions (Higher Tier) – Revision

Recurring Decimals

In a recurring decimal, the dots tell you which digit or group of digits repeats forever.

Recurring Decimals to Fractions

To convert a recurring decimal to a fraction, you multiply by 10, 100 or 1000. Then subtract to remove the recurring part and simplify the fraction.

Convert $0.1\dot{3}$ to a fraction.

$x = 0.13333333\ldots$

$\therefore 10x = 1.33333333\ldots$

$\therefore 100x = 13.3333333\ldots$

$100x = 13.3333333\ldots$

$-10x = 1.3333333\ldots$

$90x = 12$

$$x = \frac{12}{90} = \frac{2}{15}$$

Ratio and Proportion – Revision

Simplifying

Simplify the following ratio: 18 : 27

Divide by 9 (biggest number that goes into both numbers.)

18 : 27 → ÷9 → 2 : 3

Answer = 2 : 3

Sharing in a Given Ratio

Share £320 between Ed and Fred in the ratio 3 : 5

Sharing in the ratio 3 : 5 means splitting it into 8 parts altogether. So it is shared like this:

Ed	Fred
3	5
40	40
40	40
40	40
	40
	40

Share the amount equally between the parts of the ratio and then total to see how much each person receives.

Answer Ed £120 and Fred £200

Proportion - The Unitary Method

You can solve some proportion question by using the unitary method – finding 'one' first.

Example: If 15 calculators cost £180, how much do 8 cost?

15 calculators = £180 → ÷15 → 1 calculator = £12 → ×8 → 8 calculators = £96

Conversions

These ideas can be used to convert currencies or units of measure.

Example: If £1 is worth 1.17 Euros, convert…

i) £14 to Euros ii) 110 Euros to Pounds

£1	1.17€
£14	16.38€

(×1.17)

£1	1.17€
£94	110.00€

(÷1.17)

Year 11 Summer Term Knowledge Organiser for Maths

Percentages – Revision

Increase/Decrease
Non calculator method

Increase/decrease £150 by 11%

10% of £150 = £15.00
1% of £150 = £ 1.50
11% of £150 = £16.50
Increase = £150 + £16.50
Decrease = £150 - £16.50

Repeated Percentage Change - Increase

Alan invests £3000 in a bank that pays 1.5% compound interest. How much will he have after 4 years?

Multiplier:
100% + 1.05% = 101.5% = 1.015
Value:
3000 x 1.015^4 = 3184.09 Answer £3184.09

Repeated Percentage Change – Decrease

Betty buys a car for £17000. It depreciates in value every year by 8%. What will it be worth after 5 years?

Multiplier:
100% - 8% = 92% = 0.92
Value:
17000 x 0.92^5 = 11204.39 Answer = £11204.39

Reverse Percentage

Carter buys a pair of trousers in a sale for £68 after they were reduced by 15%. What was the original cost of the trousers?

Trousers now worth 85% of original price.

÷ 85	85%	= 68		÷ 85
	1%	= 0.8		
x 100	100%	= 80		x 100

Answer = £80

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$$= 6.21 \times 10^{-4}$$

Simplifying, Expanding and Factorising – Revision

Simplifying by Collecting Like Terms

Collect terms which are 'alike'. Remember the sign before a term belongs to that term:

4a + 7b − 2a + 4b = 2a + 11b

Expanding Single Brackets

Every term inside the bracket is multiplied by the term outside the bracket:

$$3(x+5) = 3x + 15$$

Expanding Double Brackets

Every term in one bracket is multiplied by every term in another bracket:

$(x+5)(x+3)$

$x^2 + 3x + 5x + 15$

$x^2 + 8x + 15$

	$(x+5)$	
	$+x$	$+5$
$(x+3)$ $+x$	$+x^2$	$+5x$
$+3$	$+3x$	$+15$

Factorising

Taking the highest common factor of terms outside of the bracket:

$6x^2 + 15x$

HCF: $3x$

$3x(2x + 5)$

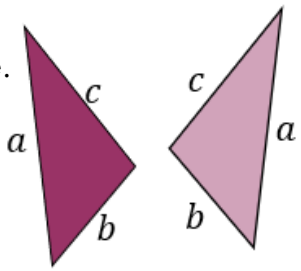
$6x^2 \div 3x$ $15x \div 3x$

Year 11 Summer Term Knowledge Organiser for Maths

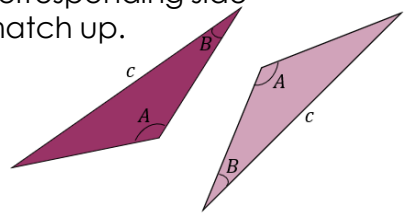
Congruent Triangles - Revision

Congruent Shapes
Congruent – same shape and same size. Shapes are congruent under translation, rotation and reflection. There are four conditions for congruent shapes.

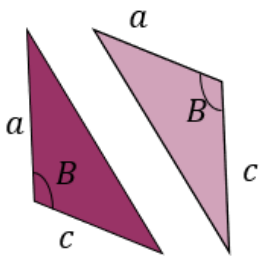
SSS
Three sides are the same.



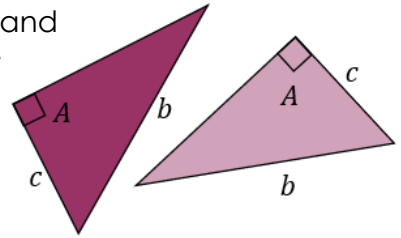
ASA
Two angles and corresponding side match up.



SAS
Two sides and angle between them match up.



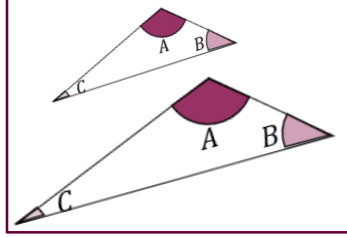
RHS
Right angle, hypotenuse and another side match up.



Similar Shapes - Revision

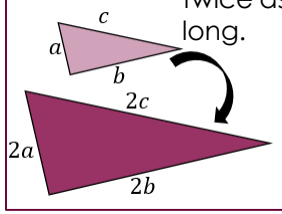
Similar Shapes
Similar – same shape, different size. Shapes are similar under enlargement. There are three conditions for similar shapes.

All angles match up.

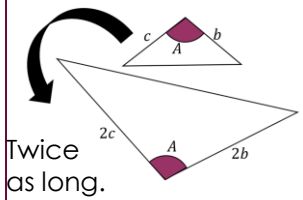


All sides are proportional.

All sides twice as long.



Two sides proportional and angle between is the same.



Twice as long.

Direct/Indirect Proportion - Revision

Direct Proportion
Y is directly proportional to x
When $x = 500 \quad y = 10$
Calculate the value of y when $x = 150$

$$y = kx$$

$10 = 500k$ therefore $k = \frac{10}{500} = \frac{1}{50}$

$y = \frac{1}{50}x \qquad y = \frac{1}{50} \times 150 \qquad y = 3$

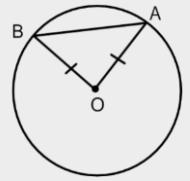
Indirect Proportion
P is inversely proportional to V
When $P = 6 \; V = 8$
Calculate the value of P when $V = 2$

$P = \frac{k}{V} \quad 6 = \frac{k}{8}$ Therefore $k = 48$

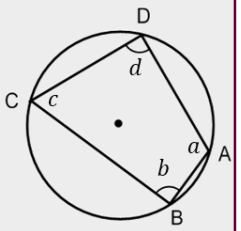
$P = \frac{48}{V} \quad P = \frac{48}{2} \quad P = 24$

Circle Theorems (Higher Tier) - Revision

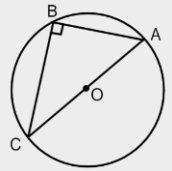
Circle Theorems
Two radii form an isosceles triangle.
The radii are always the same.



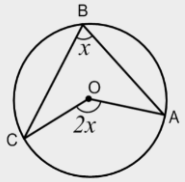
Opposite angles in a cyclic quadrilateral add up to 180°.
$a + c = 180°$
$b + d = 180°$



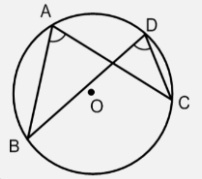
Angle in a semi-circle is 90°.



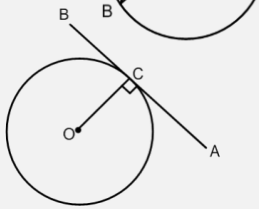
Angle at the centre is twice the angle at the circumference.



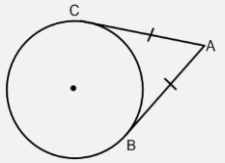
Angles in the same segment are equal.



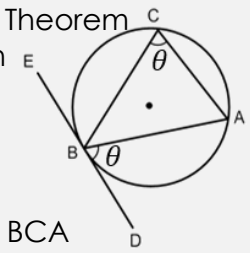
A tangent and a radius meet at 90°.



Tangents from the same point are the same length.
$AC = AB$



Alternate Segment Theorem
The angle between a tangent and a chord is equal to the angle in the opposite segment.
Angle ABD = Angle BCA



Year 11 Spanish Summer Term Knowledge Organiser –Problemas sociales

Me preocupa(n) mucho – I'm really worried about

Lo que más me preocupa es (que) – the thing I'm most worried about is (that)

El problema más grave es (que) – the most serious problem is (that)

el paro/el desempleo – unemployment
el hambre/la pobreza – hunger/poverty
la obesidad – obesity
la drogadicción – drug addiction
la diferencia entre ricos y pobres – the rich/poor divide
la crisis económica – the economic crisis
los sin hogar/los sin techo – the homeless
el estrés – stress
la soledad – loneliness
el prejuicio – prejudice
el racism – racism
la igualdad – equality
el crimen - crime

Es necesario que – it's necessary that

recaudamos dinero/fondos – we raise money/funds
hagamos campañas publicitarias – we carry out publicity campaigns
construyamos más casas – we build more houses
creemos oportunidades de trabajo – we create job opportunities
compremos productos de comercio justo – we buy fair trade products
apoyemos proyectos de ayuda – we support help projects

organización benéfica – a charity
el sida – aids
una residencia de ancianos – old people's home
una tienda solidaria/con fines benéficos – charity shop
el trabajo voluntario – voluntary work
una campana – a campaign

borracho - drunk
el humo – the smoke
el olor – the smell
muerto - dead
un fumador – a smoker
un ladrón – a thief

Beber alcohol – drinking
Fumar cigarillos – smoking cigarettes
Fumar porros – smoking joints
Tomar drogas duras/blandas – taking hard/soft drugs
El fumo pasivo – passive smoking
Emborracharse – getting drunk
El tabaquismo – tobacco addiciton

es - is

ilegal – illegal
peligroso – dangerous
un malgasto de dinero – a waste of money
una tontería – stupid
un problema serio – a serious problem
un vicio muy caro – a very expensive habit
tan malo como… – as bad as…
muy perjudicial para la salud – very damaging to your health

provoca mal aliento – causes bad breath
daña los pulmones – damages your lungs
mancha los dientes de amarillo – makes your teeth yellow
causa el fracaso escolar – causes failure at school
causa la depresión – causes depression
produce una fuerte dependencia física – causes a stong, physical dependence
tiene muchos riesgos – has many risks
afecta a tu capacidad para tomar decisiones – affects your ability to make decisions
te relaja – relaxes you

Parallel Text:

1	**No es justo que <u>haya tanto desigualdad social</u>** en el mundo.	**It's not fair that <u>there's so much social inequality</u>** in the world.
2.	**Me preocupa más <u>la pobreza</u>** y por eso	**I'm most worried about <u>poverty</u>** and therefore
3.	Recaudo dinero para una obra benéfica que ayuda a los **<u>sin techo</u>**	I raise money for a charity which helps the **<u>homeless</u>**
4.	y **he organizado** un evento para recaudar fondos	and **I have organised** an event to raise funds.
5.	En mi opinión, **es necesario que <u>construyamos más casas</u>**	In my opinion, **it's necessary that <u>we build more houses</u>**
6.	y **<u>creemos oportunidades de trabajo</u>**.	And **<u>create job opportunities</u>**.
7.	Además, **es terrible que** haya **<u>tanta gente obesa</u>** y tantos **<u>drogadictos</u>** en mi ciudad.	In addition, **it's terrible that** there are **<u>so many obese people</u>** and so many **<u>drug addicts</u>** in my town.
8.	Nunca **<u>bebo alcohol</u>** porque es **<u>un malgasto de dinero</u>**	I never **<u>drink alcohol</u>** because **<u>it's a waste of money</u>**
9.	pero mis amigos **lo beben <u>cada fin de semana</u>**.	but my friends **drink it <u>every weekend</u>**.
10.	**Dicen que <u>te quita el estrés</u>**	**They say that <u>it relieves stress</u>**
11.	y **<u>te hace sentir más adulto</u>**.	and **<u>makes you feel like an adult</u>**.

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Year 11 Hospitality and Catering Summer Term Knowledge Organiser The Environmental Health Officer

Key Vocabulary:

1	**Environmental Health Officer (EHO)**	A council official responsible for inspecting premises involved in food production to ensure that health and safety hazards are minimised.
2	**Hygiene ratings**	A ratings system in place for Hospitality and Catering establishments to show their hygiene levels.
3	**Condemned food**	Food that is unfit for human consumption.
4	**Breach of legislation**	Breaking the law.
5	**Enforcement action**	Action required by law following an inspection by an EHO.

6 Complaints by the public

The EHO will immediately investigate any complaints of suspected food poisoning linked to a particular premise.

7 Role of the EHO

The role of the Environmental Health Officer (EHO) is to protect the health and safety of the public. They are appointed by local authorities throughout the UK. In the hospitality and catering industry, they are responsible for enforcing the laws linked to food safety. They inspect all businesses where food is prepared and served to members of the public, advise on safer ways of working and can act as enforcers if food safety laws are broken.

8 EHO Inspections

The EHO can carry out an inspection of any hospitality and catering premise at any time during business hours – they do not need to make an appointment. During an inspection, the EHO will check to make sure that:

The premises are clean
Equipment is safe to use
Pest control measures are in place
Waste is disposed properly
All food handlers have had food hygiene and safety training
All food is stored and cooked correctly
All food has best-before and use-by dates
There is a HACCP plan to control food hazards and risks.

The EHO is allowed to:

Take photographs of the premises
Take food samples for analysis
Check all record books, including fridge and freezer temperatures, cleaning schedules and staff training
Offer advice on improving food hygiene and safety in the business.

9 EHO and the law

If the EHO discovers problems with the food safety and hygiene in the premise, they are allowed by law to:

Remove any food that may be hazardous so it can't be sold
Tell the owners to improve hygiene and safety within a set time and then come back and re-inspect.
Close the premises if there is a risk to health of the public.
Give evidence in a court of law if the owners are prosecuted for breaking food hygiene and safety laws.

10 Hygiene Ratings

When an inspection has been carried out, the EHO will give the business a food hygiene rating. The ratings are published on the Food Standards Agency website as well as on stickers displayed at the business. A rating of 5, or very good, represents the highest standard of food hygiene.

Year 11 ~~Summer~~ term Knowledge Organiser for BTEC Sport Unit 3 Training for Personal Fitness

Training Diary

•Date, time and location for training undertaken.

•Aims and objectives for each session
What are you working on in the session and why?

•Session duration – How long did your session last?

•Type of training undertaken–selected method/ activity.

•Programme details (FITT).

•Log of personal performance and achievements
What weight did you lift? What was your time/ HR during?

•Resources required,
e.g. equipment, cones, ladders, chest press machine.

•The principles of progressive overload and details of how
progressive overload has been achieved over the course of the programme.

•Details of programme intensity using % HR max and RPE.

Measures of Success

•Types of motivation (intrinsic and extrinsic) – How motivated were you during every session? Why was this?

•Benefits of motivation and self-confidence to successfully complete a fitness training programme – Why would motivation have an impact on your session?

•Motivation for training ,including details in the diary of personal feelings before, during and after each training session – Looking at your training diary was your training designed perfectly for you? Did you enjoy it the whole time?

•Details of how the programme has been adapted to ensure continued commitment to training, for example using a variation of activities/training methods – How did you keep yourself interested in the training?

•Achievement against personal aims, goals and objectives ,for example how performance has been taken to a higher level – Have you achieved your goals? If so why, if not why?

Review of Training Programme

•Short term physiological effects, improvements as a result of the programme to meet the activity/ sport goal – Has it improved your component of fitness?

•After each training session – How did you feel after each session/

•Evidence of modifying the programme to achieve planned personal goals – Along the way you may change your programme because of lack of equipment, boredom or a change of goal. This must be included.

•Strengths:
Areas of the programme where and how personal aims and objectives have been achieved with reference to measures of success – What worked really well? What did you enjoy doing the most?

•Improvement:

•When did you not achieve your goal and why?

•Recommendations for improving future training and performance,
For example personal training needs, use of different training methods/activities or strategies, use of psychological training techniques to improve performance.