A blue dashed border surrounds the entire page. In the center, there is a solid blue rectangular box containing the text.

Fowey River Academy
Year 11 Knowledge Organiser

Winter Quadmester

L1: 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 involves advances in the management and protection of the environment.





L2: Measuring development	
These are used to compare and understand a country's level of development.	
Economic indicators examples 	
Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income 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.

L3: Variations in the level of development	
LICs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
NEEs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
HICs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.

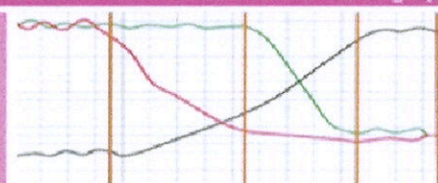


L4: Causes of uneven development
 Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.



Unit 2b The Changing Economic World



L5: Physical factors affecting uneven development			
Natural Resources 		Natural Hazards 	
<ul style="list-style-type: none"> Fuel sources such as oil. Minerals and metals for fuel. Availability for timber. Access to safe water. 	<ul style="list-style-type: none"> Risk of tectonic hazards. Benefits from volcanic material and floodwater. Frequent hazards undermines redevelopment. 		
Climate 		Location/Terrain 	
<ul style="list-style-type: none"> Reliability of rainfall to benefit farming. Extreme climates limit industry and affects health. Climate can attract tourists. 	<ul style="list-style-type: none"> Landlocked countries may find trade difficulties. Mountainous terrain makes farming difficult. Scenery attracts tourists. 		



L6: The Demographic Transition Model
 The demographic transition model (DTM) shows population change over time. It studies how birth rate and death rate affect the total population of a country.



STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
High DR High BR Steady	BR Low Declining DR Very High	Rapidly falling DR Low BR High	Low DR Low BR Zero	Slowly Falling DR Low BR Negative
e.g. Tribes	e.g. Kenya	e.g. India	e.g. UK	e.g. Japan

L7: Human factors affecting uneven development	
Aid 	Trade 
<ul style="list-style-type: none"> Aid can help some countries develop key projects for infrastructure faster. Aid can improve services such as schools, hospitals and roads. Too much reliance on aid might stop other trade links becoming established. 	<ul style="list-style-type: none"> 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 	Health 
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

Politics 	History 
<ul style="list-style-type: none"> Corruption in local and national governments. The stability of the government can affect the country's ability to trade. Ability of the country to invest into services and infrastructure. 	<ul style="list-style-type: none"> 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.

L8: Consequences of Uneven Development
 Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

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.
Migration	If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

L10: Reducing the Global Development Gap

Microfinance Loans

This involves people in LICs receiving small loans from traditional banks.

- + Loans enable people to begin their own businesses
- Its not clear they can reduce poverty at a large scale.

Foreign-direct investment

This is when one country buys property or infrastructure in another country.

- + Leads to better access to finance, technology & expertise.
- Investment can come with strings attached that country's will need to comply with.

Aid

This is given by one country to another as money or resources.

- + Improve literacy rates, building dams, improving agriculture.
- Can be wasted by corrupt governments or they can become too reliant on aid.

Debt Relief

This is when a country's debt is cancelled or interest rates are lowered.

- + Means more money can be spent on development.
- Locals might not always get a say. Some aid can be tied under condition from donor country.

Fair trade

This is a movement where farmers get a fair price for the goods produced.

- + Paid fairly so they can develop schools & health centres.
- Only a tiny proportion of the extra money reaches producers.

Technology


Includes tools, machines and affordable equipment that improve quality of life.

- + Renewable energy is less expensive and polluting.
- Requires initial investment and skills in operating technology

L11: Reducing the Development Gap In Jamaica

Location and Background

Jamaica is a LIC island nation part of the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches



Tourist economy

- In 2015, 2.12 million visited.
- Tourism contributes 27% of GDP and will increase to 38% by 2025.
- 130,000 jobs rely on tourism.
- Global recession 2008 caused a decline in tourism. Now tourism is beginning to recover.

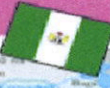
Multiplier effect


- Jobs from tourism have meant more money has been spent in shops and other businesses.
- Government has invested in infrastructure to support tourism.
- New sewage treatment plants have reduced pollution.

Development Problems

- Tourists do not always spend much money outside their resorts.
- Infrastructure improvements have not spread to the whole island.
- Many people in Jamaica still live in poor quality housing and lack basic services such as healthcare.

Case Study: Economic Development in Nigeria





M1: Location & Importance

Nigeria is a NEE in West Africa. Nigeria is just north of the Equator and experiences a range of environments.

Nigeria is the most populous and economically powerful country in Africa. Economic growth has been based on oil exports.

M2: Influences upon Nigeria's development

Political	Social
Suffered instability with a civil war between 1967-1970. From 1999, the country became stable with free and fair elections. Stability has encouraged global investment from China and USA.	Nigeria is a multi-cultural, multi-faith society. Although mostly a strength, diversity has caused regional conflicts from groups such as the Boko Haram terrorists.
Cultural	Industrial Structures
Nigeria's diversity has created rich and varied artistic culture. The country has a rich music, literary and film industry (i.e. Nollywood). A successful national football side.	Once mainly based on agriculture, 50% of its economy is now manufacturing and services. A thriving manufacturing industry is increasing foreign investment and employment opportunities.

M3: The role of TNCs

TNCs such as Shell have played an important role in its economy.

- + Investment has increased employment and income.
- Profits move to HICs.
- Many oil spills have damaged fragile environments.

M4: Changing Relationships

Nigeria plays a leading role with the African Union and UN. Growing links with China with huge investment in infrastructure. Main import includes petrol from the EU, cars from Brazil and phones from China.

M5: Environmental Impacts

The 2008/09 oil spills devastated swamps and its ecosystems. Industry has caused toxic chemicals to be discharged in open sewers - risking human health. 80% of forest have been cut down. This also increases CO₂ emissions.

M6: Aid & Debt relief

- + Receives \$5 billion per year in aid.
- + Aid groups (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV.
- Some aid fails to reach the people who need it due to corruption.

M7: Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

Case Study: Economic Change in the UK





N1: UK in the Wider World

The UK has one of the largest economies in the world. The UK has huge political, economic and cultural influences. The UK is highly regarded for its fairness and tolerance. The UK has global transport links i.e. Heathrow and the Eurostar.

N2: Causes of Economic Change

De-industrialisation and the decline of the UK's industrial base. Globalisation has meant many industries have moved overseas, where labour costs are lower. Government investing in supporting vital businesses.

N3: Cambridge Science Park

A major quaternary industry on the outskirts. Good transport access to the A14 and M11. A good location for sourcing highly educated workers from Cambridge University. Staff benefit from attractive working conditions. Attracts clusters of related high-tech businesses.



N4: Change to a Rural Landscape - South Cambridgeshire

Cambridge is one of the fastest growing cities in the UK. Current population is 155,000 but will increase to 175,000 by 2026.

Social	Economic
Rising house prices have caused tensions in villages. Villages are unpopulated during the day causing loss of identity. Resentment towards poor migrant communities.	Lack of affordable housing for local first time buyers. Sales of farmland has increased rural unemployment. Influx of poor migrants puts pressures on local services.


N5: Improvements to Transport

A £15 billion 'Road Improvement Strategy'. This will involve 10 new roads and 1,600 extra lanes. £50 billion HS2 railway to improve connections between key UK cities. £18 billion on Heathrow's controversial third runway. UK has many large ports for importing and exporting goods.


N6: UK North/South Divide

- Wages are lower in the North.
- Health is better in the South.
- Education is worse in the North.
- + The government is aiming to support a Northern Powerhouse project to resolve regional differences.
- + More devolving of powers to disadvantaged regions.

Knowledge Organiser: Origins of the Cold War 1941-1956

<p>The Cold War refers to the period of tension between the United States of America (USA) and the Soviet Union (USSR). The expression is used to describe the 'frosty tension' between the two superpowers that lasted for nearly 50 years. In this unit you will study how this conflict developed and the early crises.</p>		Chronology: What happened on these dates?		Vocabulary: Define these keywords:	
		1943	Tehran Conference: the 'big three' met to discuss the post-World War Two situation in Europe.	Soviet Union	Short for USSR (Union of Soviet Socialist Republics). Consisted of Russia, Belarus, Ukraine, Poland and others.
February 1945	Yalta Conference: the 'big three' agreed to divide Germany into 4 zones.				
Summarise your learning:		July 1945	Potsdam Conference: Truman's differences with Stalin led to the start of tension.	Ideology	A set of shared beliefs. The USA believed in capitalism, whilst the USSR was ran by communism.
Topic 1: Ideological differences	The conflict grew initially from ideological differences. The Soviet Union was a communist country whose government and economic system was at odds with that of capitalist democratic America.	1947	President Truman issued the ' containment ' policy and agreed to the ' Marshall Plan '.		
		Topic 2: Atomic bomb and the arms race	When the USA dropped the world's first atomic bomb on Japan, it changed the nature of warfare forever. The threat of atomic warfare between the 2 superpowers led to 'mutually assured destruction' (MAD), the threat of mutual annihilation. This led to an arms race between the 2 superpowers, where they competed to have the most nuclear weapons.	1947-49	Cominform was set up by the USSR to create a networking zone for the communist countries. Then, Comecon was created, a financial plan that would also financially aid east Europe.
1948-49	The Berlin Blockade and the Berlin airlift .				
Topic 3: Soviet expansion	Keen to form a buffer zone, the USSR began to expand into eastern Europe, targeting Poland, Hungary and Czechoslovakia. The West became increasingly alarmed at Soviet expansion. Churchill referred to the expansion as an 'Iron Curtain' forming in Europe. The USA followed its containment policy and sent financial aid (\$17billion) through the Marshall Plan.	1949	NATO formed, which stands for the North Atlantic Treaty Organisation. The aim was to create a military alliance between the Western powers.	Communism	Communists believe that all property and businesses should belong to the state and shared equally.
		1949	NATO formed, which stands for the North Atlantic Treaty Organisation. The aim was to create a military alliance between the Western powers.		
Topic 4: Berlin crisis and the Hungarian Uprising	The differences over what to do with Germany led to the first major Cold War crisis in Berlin, when Stalin ordered a blockade into West Germany. The Allies responded with an airlift, which led to Stalin ending the Berlin blockade. Then, in 1956, the Hungarians held an uprising against Rakosi's brutal rule. The USSR responded by sending in tanks, shooting on protestors and reversing Imre Nagy's attempts at reform, which worsened its relations with the West.	1955	The Warsaw Pact formed, which was a defensive military alliance of the USSR and its Soviet satellite states.	Veto	To forbid a decision to pass at the UN's security council.
		1955	The Warsaw Pact formed, which was a defensive military alliance of the USSR and its Soviet satellite states.		
		1956	The Hungarian Uprising .	United Nations	The international organisation that is meant to promote peace between countries.
					
		Do you know these people?		Containment Policy	The USA limiting or preventing the spread of communism across Europe and the world.
		Winston Churchill	Prime Minister of Britain from 1940-45 and then 1951-55.		
		Theodore Roosevelt	US president from 1933-1945.	Superpower	A country which has great power and influence globally.
		Joseph Stalin	The leader of the USSR from 1922-1953.		
		Harry Truman	US president from 1945-1953.	Nuclear Deterrent	Something that discourages someone from doing something e.g. not using nuclear weapons in order to not have nuclear weapons used against you.
				Satellite state	Countries under the control and authority of another state e.g. the USSR.

Knowledge Organiser: Cold War Crises 1958-1970

<p>From 1958 to 1970, the Cold War escalated dramatically. There were three crises: in 1961, the Soviet Union built the Berlin Wall, separating Berlin into east and west. Then, the 2 superpowers almost came to the point of a nuclear war during the Cuban Missile Crisis. Finally, the third crisis was over Czechoslovakia, when the Prague Spring led to a Soviet invasion that angered the West.</p>		Chronology: What happened on these dates?		Vocabulary: Define these keywords:	
		1958	Khrushchev's Berlin Ultimatum was issued.	Sphere of influence	A region over which a powerful country exerts unofficial but significant political, military, and economic domination.
		1959	Fidel Castro successfully took control of Cuba following the Cuban Revolution.		
Summarise the 3 key Cold War crises:		1960-61	Paris and Vienna Summits witnessed the breakdown of US-USSR relations.	Summit	An official meeting between heads of government.
Topic 1: Berlin Crisis 1961	<p>In 1958, Khrushchev issued the 'Berlin Ultimatum' in which he accused the Allies of breaking their agreement at Potsdam about Germany's future. The USA did not want to go to war over Berlin and entered talks with the Soviet at the Paris and Vienna Summits, both of which ended in only increasing tension between the 2 superpowers. In August of 1961, the USSR began constructing a 3.6m high wall dividing Berlin permanently. A standoff ensued at Checkpoint Charlie, in which both sides pointed their tanks at each other. After careful negotiations behind the scenes, the crisis was averted but the wall remained standing. The Berlin Wall remained a symbol of physical and ideological tension until it came down in 1989.</p>	April 1961	Bay of Pigs invasion: US President Kennedy attempted to overthrow Castro by using Cuban exiles. The invasion was a failure and embarrassment for the USA.	Invasion	The hostile takeover of a country using force.
		August - October 1961	Soviet Union began constructing the Berlin Wall, dividing the city into east and west. The crisis at Checkpoint Charlie was narrowly avoided.	Ultimatum	A demand whose fulfilment is requested in a specified period of time and which is backed up by a threat to be followed through.
		22 nd -28 th October 1961	Cuban Missile Crisis: the USA and the USSR stood on the brink of nuclear war over the missile crisis in Cuba. A solution is agreed upon and nuclear war was avoided.	CIA	The USA's Central Intelligence Agency, used for foreign policy events.
		1963	The Limited Test Ban Treaty was signed by the USA and the USSR, agreeing to stop testing atomic weapons in the atmosphere.	La Brigada 2506	CIA-sponsored group of Cuban exiles formed in 1960 to attempt the military overthrow of the Cuban government headed by Fidel Castro.
Topic 2: Cuban Missile Crisis	<p>Following the Cuban Revolution in which Cuba became closely aligned to the Soviet Union, the USA greatly worried that the American sphere of influence was being tested. President Kennedy attempted to overthrow Castro during the Bay of Pigs invasion, using 1,500 Cuban exiles trained by the CIA. The invasion failed and was an embarrassment for the USA. Tension reached a climax in 1962 when the Soviet Union began sending nuclear ballistic missiles to Cuba which had a radius that covered the majority of the east, south and north coast of the USA. Tense negotiations ensued between Kennedy and Khrushchev for 13 days; in the end, the Soviet Union agreed to remove missiles from Cuba if the US removed theirs from Turkey. Lastly, a 'hotline' was set up between Moscow and Washington DC to encourage diplomacy and avoid future disasters.</p>	Jan - Aug 1968	The Prague Spring: a set of reforms in Czechoslovakia that caused concern for the Soviets.	ICBM	<p>Intercontinental ballistic missiles, called ICBMs, were nuclear-armed ballistic missiles with a range of more than 3,500 miles.</p>
		Aug 1968	The Soviet Union invaded Czechoslovakia.		
		Do you know these people?			
		JFK	John Fitzgerald Kennedy: President of the USA from 1961-63		
Topic 3: Czechoslovakia 1968	<p>The Soviet invasion of Czechoslovakia in 1968 occurred as a result of a series of reforms known as the 'Prague Spring' and it led to the Brezhnev Doctrine. The invasion severely tested relations again between the east and west. The hard-line communist Czech leader Novotny was unpopular. Dubcek challenged his leadership and introduced reforms: end of press censorship, reducing secret police, new trade with West Germany and free speech. Worried that these changes would challenge the stability of the Warsaw Pact, Brezhnev sent in thousands of troops and tanks, arresting the reformers and ending the country's moves towards democracy. The USSR justified this using the Brezhnev Doctrine which declared that the USSR had the right to invade one of their satellite states if they were threatening the stability of eastern Europe.</p>	Nikita Khrushchev	Leader of the Soviet Union from 1953-1964.	Brinkmanship	Pushing agreements to the point where there is a strong risk of war. Used to describe Kennedy and Khrushchev during the Cuban Crisis.
		Leonid Brezhnev	Leader of the Soviet Union from 1964-1982.	Doctrine	A belief or philosophy set out by politicians.
		Alexander Dubcek	Instigator of the Prague Spring and wanted Czechoslovakia to have more capitalist-leaning policies.	Berlin Refugees	<p>A person who flees their home country due to political or economic hardship. In 1958, over 3 million east Germans had fled the border to West Germany. Many of them were skilled workers who wanted better pay and quality of life.</p>
					

Knowledge Organiser: End of the Cold War 1979-1991

The Cold War crises of the 60s revealed just how tense relations became between the USA and the USSR. In the 70s, a policy of détente was being pursued. By the end of the decade however, relations had deteriorated again to the point where some described it as a 'Second Cold War'. By 1990 though, the Cold War was coming to an end.

Summarise your learning:

Topic 1: Détente
There was a general move to improve relations and relax tensions which became known as détente. This involved attempts of arms limitations, summit talks and personal visits between the superpowers. For example, the Helsinki Accords were a basket of agreements covering Europe's borders, international cooperation and human rights. At first, it seemed there was good reason for optimism but this was short-lived.

Topic 2: Afghanistan
Détente was overshadowed by the Soviet Union's invasion of Afghanistan. President Carter issued his doctrine which signalled a deterioration in relations. Then, President Reagan wanted to re-establish the USA as the leading superpower. One of his policies was his 'Evil Empire' speech in 1982, where he was accused of fanning the flames of war.

Topic 3: Gorbachev and eastern Europe
Gorbachev's 'new thinking' (glasnost and perestroika) had major effects on eastern Europe and the fall of the Berlin Wall set off a chain of events which brought about the collapse of Soviet control of eastern Europe. In the Soviet Union itself, Gorbachev's reforms encouraged criticism and eventually the downfall of Gorbachev himself. It also brought about the end of the USSR and the collapse of the Warsaw Pact.



Chronology: What happened on these dates?		Vocabulary: Define these keywords:	
1972	SALT I is signed.	Détente	A period of peace between two groups that had previously been at war or were hostile to each other.
1975	Helsinki Accords are signed.		
1979	Soviet invasion of Afghanistan.	Ratification	Formal approval by the US government to make the law an official policy.
1980	Carter Doctrine is announced.		
1983	President Reagan announced Star Wars strategy (SDI).	Economic sanctions	Measures taken to damage a country's economy usually involving a trade ban.
1984	Due to poor relations following Afghanistan, and the US's boycott of the Moscow Olympics back in 1980, the Soviet Union boycotted the LA Olympics.	Glasnost	Russian for 'transparency'. In the 1980s and 90s used to describe Gorbachev's new, more open attitudes to government and foreign relations.
1989	Fall of the Berlin Wall.	Shah	The King or emperor of Iran.
1991	Gorbachev is overthrown and the USSR collapsed.	Coup	A sudden seizure of power from the government.
		NUTS	The idea that in a nuclear war, specific targets could be identified by limiting destruction. It led to the possibility of winning a nuclear war.
Richard Nixon	US President from 1969 to 1974.	Carter Doctrine	US President Jimmy Carter's policy that the USA was prepared to use military force to protect its interests.
Leonid Brezhnev	Leader of the Soviet Union from 1964-1982.	Perestroika	Russian for 'reconstruction'. Used in the Gorbachev era to describe his programme for reorganising and restructuring the Soviet state.
Jimmy Carter	US president from 1977-1981.		
Ronald Reagan	US President from 1981-1989.		
Mikhail Gorbachev	Leader of the Soviet Union from 1985-1991.	Deployment	Distribution of military forces within an area.

Anglo-Saxon Norman England

Case Study 1

Knowledge Organiser

England before 1066

- After the Romans left Britain German tribes named the Angles and the Saxons invaded and settled in England.
- The country was divided into lots of small kingdoms.
- At the end of the 7th century Vikings (from places like Norway) invaded and the Anglo-Saxon kingdoms started to unite to fight these invaders.
- The Vikings controlled many areas in the North. Their capital city was York - they called it Yorbik.
- Trade between England and Norway became more common.
- Most people were peasants. They farmed for food and lived in very small villages.
- Christianity had been introduced by the Romans. Pagan beliefs still existed, especially in Viking communities, but by 1066 Christianity was the main religion in England and most other beliefs had died out.
- The Church was run by the Pope in Rome. Everyone was Catholic and the Church was incredibly important.
- In 1066 Edward the Confessor ruled a united England.

How was a new king chosen in 1066?

- A new king normally came to power because of **primogeniture** - they were the first born son of the old king and inherited the crown. If there was no son, then the next closest male relative would take the crown.
- Or, the old king could choose or nominate a new king. If he did this on his death bed it was called **novissima verba**.
- Or, the leading group of English nobles, the Witan, could name the new king, this was called **post obitum** (after death).

Edward dies, Godwinson prepares:

- Edward died on 5 January 1066.
- The Witan declared Godwinson king and he was crowned very quickly.
- However, Godwinson knew that Hardrada and William would try to take his crown. He thought William would attack first so prepared his army along the South Coast.
- Most of Harold's army was made up of the Fyrd - these were an unprofessional, peasant army, who had to provide their own weapons and fought in their own clothes.
- The Housecarls were Godwinson's professional soldiers, they were trained, professionals.
- The Anglo-Saxon army did not fight on horseback.

However, Godwinson was not the only person who thought he should be the next king of England ...



Who wanted to be king in 1066?

Name:	From:	Related to Edward the Confessor?	Nominated by the old king?	Other support:
Edgar Aethling	England, raised in Turkey	Yes - Edgar was Edward's closest living male relative.	No	Very little
Harold Godwinson, Earl of Wessex	England, the most powerful English nobleman, from a noble family	Not by blood, but his sister was married to Edward.	Yes - Novissima verba. Godwinson had acted as Edward's regent, running the country for him when he was ill at the end of his life. On his deathbed, Edward said that Godwinson should be the next king.	The Witan crowned Godwinson king when Edward died. However, two powerful earls, Edwin and Morcar, opposed Godwinson. To gain their loyalty, he married their sister, Edith.
Harald Hardrada	Norway	No	Not Edward, but King Cnut (king from 1016-35) had promised Hardrada's family that they would one day rule England.	Godwinson's brother, Tostig
William, Duke of Normandy	Normandy, France	Edward was cousins with William's father, Robert of Normandy.	Yes, in 1051 Godwinson's family rebelled against Edward and William helped him to suppress the rebellion. Edward made William his heir after this.	In 1064 Godwinson was arrested in Normandy and William released him, but kept him in his own castle. While there, Godwinson swore an oath of fealty (allegiance/ loyalty) to William, saying that he would be the next king of England and that Godwinson would support him. Godwinson made this oath on two boxes, in which there were the bones of two saints. William was also supported by the Pope - he sent Bishop Lanfranc to seek his support and was awarded the Papal banner as a sign that the Pope approved of William's claim.

Round 1 Harold v Harold: the Battle of Fulford gate

- In September 1066 food was running low in England. Godwinson had to dismiss the Fyrd to go back to their villages and get in the harvest.
- Hardrada set sail with around 300 ships.
- Hardrada landed, near Hull on 18th September. He travelled towards York, where he met Godwinson's Northern army, led by the Earls Edwin and Morcar, on 20 September.
- The English fought all day, trying desperately to break the Viking's shield wall. However, they were trapped by the river and boggy marshland.
- Hardrada won, but Edwin and Morcar managed to escape.

Round 2 Harold v Harold: the Battle of Stamford bridge

- Hardrada knew that Godwinson would travel north to fight, but presumed that it would take him several days, as he would have to assemble an army first.
- However, Godwinson made the journey in just four days, gathering soldiers as he travelled north. He arrived at Tadcaster on 24 September. This gave him the element of surprise.
- Hardrada also failed to prepare - many of his men were back on their ships, resting after Fulford Gate; Hardrada failed to send spies out so did not realise how fast Godwinson had travelled; Hardrada failed to realise what he was seeing when he spotted the glimmer of the sun reflecting off Godwinson's army's armour; Hardrada's men were not ready when Godwinson arrived, many were not wearing their armour.
- On 25 September the English arrived. They had to cross the bridge at Stamford to reach Hardrada's men. Legend says that the bridge was defended by a lone Norseman, who fought off the entire advancing army, until Godwinson sent men to float under the bridge in barrels and one of them managed to kill the lone Norseman with his spear.

William prepares for battle

- William was known to be a ferocious fighter - he had already conquered Maine and Sicily.
- When Godwinson became king he started to get his army ready. However, he had to move his men East, as the wind was blowing in the wrong direction.
- While he waited to be able to set sail, William prepared his men. They cut down trees to make boats and also prepared the wood so that they could build castles when they arrived in England.
- William also sent his loyal friend, Bishop Lanfranc, to Italy to see the support of the Pope. He came back with the Papal banner which helped him to recruit more men, keen to fight and please God.
- William was also supported by mercenaries - professional fighters who would join an army if they were paid. Many of these were experienced and had excellent weapons.
- William had infantry (foot soldiers), archers and cavalry in his army. The Norman cavalry trained from the age of three!
- William's army set sail and landed in Pevensey on 29 September 1066.
- They set up camp at Pevensey, because there were Roman fortifications that they could use as defences.
- While they waited for Godwinson to travel down from the South, they were well fed and continued to train.
- The Normans attacked towns in the south so that Godwinson would have to travel down quickly, giving him no time to rest after the battle of Stamford Bridge.

Round 3: Harold v William: the Battle of Hastings

- Godwinson rushed back South.
- They met the Normans just north of the town of Hastings, on 14th October 1066.
- Godwinson's men gathered on top of Senlac Hill. William was at the bottom of the hill, surrounded by marshland. Godwinson's men had the advantage. They set up a shield wall at the top of the hill which the Normans found very difficult to break.
- When Norman arrows fell short of the English forces, William used conroi - a system using flags to communicate with his gonfanon (divisions of the army) and move them around. He was also on horseback which meant he could move around quickly and with ease.
- At one point a rumour went around that William had been killed. Part of the left flank of the Norman army got broke ranks and started to retreat, some of the English army broke the shield wall to chase after the retreating Normans.
- William was very brave - he took his helmet off to show that he was still alive.
- Seeing the English leaving the hill to chase after the retreating Normans gave William an idea - he used a tactic known as the feigned retreat, which he had also used during his campaigns in Sicily.
- The Normans pretended to retreat. The untrained English Fyrd saw the Normans running away and thought they had won. As they were peasants, they thought they might have the opportunity to steal weapons off the Normans, or to take prisoners that they could get a ransom for. They broke the shield wall and left the safety of Senlac Hill.
- When the English got to the bottom of the hill the Normans turned around and easily slaughtered the English Fyrd because they were superior fighters.
- The Cavalry were then able to reach and kill Godwinson.
- William had won.
- He later had an abbey built on the site of the battle as penance for all the lives lost there. However, he called 'Battle Abbey' - so that no one would remember that he had won there!

William won because: of his skill e.g. conroi, gonfanon, feigned retreat, he could react to events and change his plans; his superior soldiers e.g. cavalry trained since the age of three; the English tactics e.g. not fighting on horseback because they were used to Viking tactics; inexperience of English soldiers - the fyrd fell for the feigned retreat.

Y11 GCSE MUSIC

Key Terminology:

Melody- how the main tune of a piece is played

Harmony- how the accompaniment is played (chords, pedal notes)

Structure- the order of the music (ternary, binary, rondo)

Tonality- major or minor, atonal, modal

Timbre- the quality of the sounds (acoustic, electric)

Instrumentation- the instruments used in the music

Dynamics- volume of a piece of music (loud, quiet)

Texture- the layers of a piece of music (thick or thin)

Ornamentation- decoration in a piece of music (trills, mordents, appoggiatura, acciaccatura)

Conjunct- steps (scalar)

Disjunct- leaps

Crescendo- getting louder

Decrescendo- getting quieter

Coherence- wholeness of the piece

Fluency- is the piece played smoothly and does it flow

More terminology is listed on the knowledge organisers for each set work

Musical Skills Learnt:

Ensemble performance and rehearsal, solo performance and rehearsal, composing, appraisal, theory, elements of music,

Set works:

Instrumental Music:

- Brandenburg Concerto No.5 in D – 3rd Movement. JS Bach
- Piano Sonata No.8 in C minor ("Pathétique") – 1st Movement. Beethoven

Vocal Music:

- Music for a While. Purcell
- Killer Queen (album version). Freddie Mercury

Music for Stage & Screen:

- Defying Gravity (from Wicked) Stephen Schwartz
- Main Title/Rebel Blockade Runner from Star Wars: Episode IV A New Hope

Fusions:

- Release. Afro Celt System & Sinead O'Connor
- Samba Em Preludio. Vinicus de Moraes and Baden Powell de Aquino

BREAK DOWN OF THE COURSE:

- 2 performances – 1 solo, 1 group
- 2 compositions – 1 free, 1 brief (set by the exam board at the beginning of Y11)
- 1 exam – 1 hr 45 mins listening, focusing on set works covered in lessons.
- Coursework = 60% - marked internally then sent off for moderation.
- Exam = 40% - marked externally at end of Y11 (in summer term)

Component 2

A: Demonstrate professional and commercial skills for the music industry

B: Apply developmental processes for music skills and techniques

Key Structural Features – Task 1

1

- Music Performance



BTEC Level 1/Level 2 Tech Award in Music Practice

Music Skills Development

Performance:

Warm up/Skill techniques

Scales, flexibility patterns, finger warm ups

Practice techniques

Small sections, change the rhythm, repetition

Performance techniques

Visualisation, calming exercises

Creating Original Music:

Instrumental composition

Structure, melody, harmony, riffs, sequences, development

Garageband composition

Loops, sampling, sequencing, structure, layers, repetition

Musical Elements:

Instruments – techniques, ensembles, electronic sounds

Texture – solo, duet, homophonic, polyphonic

Timbre – sonic features, FX

Tonality – major (happy), minor (sad), blues scale, pentatonic

Harmony – major/minor, chords, power chords, arpeggios, inversions

Rhythm – metre, tempo, syncopation, polyrhythms

Structure – verse/chorus, 12-bar blues, intro, outro, AAB

Melody – conjunct/disjunct, chromatic, riffs, hooks, improvisation

Production – use of microphones, sampling, FX, loops, sequencing, quantisation.



Key Structural Features – Task 2

- Creating original music

BTEC Level 1/Level 2 Tech Award in Music Practice

Exploring Music Products and Styles

Component 1

A: Demonstrate an understanding of styles of music

B: Apply understanding of the use of techniques to create music

Key Structural Features – Task

1

- History/background
- Song analysis
- Music Theory



Musical styles (Popular):

50's-60's: rock'n'roll,

Simple chords, guitar, drums, bass & voice

70's-80's: Reggae

Syncopation, bass hook, political lyrics, skank

90's to present: Britpop

Coming back to more traditional music, use of some orchestral instruments,

Musical styles (others):

African drumming

Percussion based, cross rhythms, talking drums, call and response

Film music

Leitmotif, diegetic/non-diegetic, soundscapes

Delta Blues

12 bars, Chord based structure, AAB lyric pattern, slave trade – lyrics are sad

Musical Elements:

Instruments – techniques, ensembles, electronic sounds

Texture – solo, duet, homophonic, polyphonic

Timbre – sonic features, FX

Tonality – major (happy), minor (sad), blues scale, pentatonic

Harmony – major/minor, chords, power chords, arpeggios, inversions

Rhythm – metre, tempo, syncopation, polyrhythms

Structure – verse/chorus, 12-bar blues, intro, outro, AAB

Melody – conjunct/disjunct, chromatic, riffs, hooks, improvisation

Production – use of microphones, sampling, FX, loops, sequencing, quantisation.



Key Structural Features – Task 2

- Live performance
- Film music
- Multitrack recording
- DAW project
- Original composition

Year 11 French Winter

Ce qui me préoccupe

Ce qui est important pour moi dans la vie, c'est d'abord ...

Ensuite, c'est ...

le sport

la musique

ma santé

ma famille

l'argent (m)

mes études

mes animaux

mes amis

Ce qui me préoccupe/m'inquiète

(le plus), c'est ...

l'état (m) de la Terre

le réchauffement climatique

la pauvreté dans le monde

l'injustice (f)

l'environnement (m)

What worries me

The most important thing to me in life is above all ...

Then it's ...

sport

music

my health

my family

money

my studies

my pets

my friends

What worries me (the most) is ...

the state of the Earth/planet

global warming

world poverty

injustice

the environment

les sans-abri

les personnes qui sont emprisonnées

à tort

les enfants qui n'ont pas assez

à manger

On peut/Il est possible de ...

parrainer un enfant en Afrique

faire un don à une association caritative

faire du bénévolat

Il faut ...

lutter contre la faim

lancer des pétitions

écrire à son/sa député(e)

participer à des manifestations

agir maintenant

faire des campagnes de sensibilisation

Il ne faut pas ignorer (ces gens).

homeless people

people who have been wrongly imprisoned

children who don't have enough to eat

You can/It's possible to ...

sponsor a child in Africa

donate to a charity

do voluntary work

We must/You have to ...

fight against hunger/famine

launch petitions

write to your MP

take part in demonstrations

act now

carry out campaigns to raise awareness

We must not ignore (these people).

Notre planète

Le plus grand problème pour la planète, c'est ...

le changement climatique

le déboisement

la destruction de la couche d'ozone

la destruction des forêts tropicales

la disparition des espèces

la guerre

Our planet

The greatest problem for the planet is ...

climate change

deforestation

the destruction of the ozone layer

the destruction of tropical

rainforests

species dying out

war

le manque d'eau douce

la pollution de l'air

la sécheresse

la surpopulation

un incendie (m)

une fuite de pétrole

des inondations (f)

un tremblement de terre

un typhon

the lack of fresh water

air pollution

drought

overpopulation

a fire

an oil spill

flooding/floods

an earthquake

a typhoon

Protéger l'environnement

Que devrait-on faire pour sauver notre planète?

Actuellement, je ne fais pas grand-chose pour protéger l'environnement.

Je fais déjà pas mal de choses.

Je pourrais/On devrait ...

trier les déchets

faire du compost à la maison

éteindre les appareils électriques

et la lumière en quittant une pièce

baisser le chauffage et mettre un pull

utiliser du papier recyclé

éviter les produits jetables

acheter des produits verts

privilégier les produits bio

Protecting the environment

What should we do to save our planet?

Currently, I don't do much to protect the environment.

I already do quite a lot.

I could/We ought to ...

separate the rubbish

make compost at home

turn off appliances and the light

when leaving a room

turn down the heating and put on

a sweater

use recycled paper

avoid disposable products

buy green products

where possible, choose organic

products

utiliser les transports en commun

favoriser le covoiturage

aller au collège à vélo

refuser les sacs en plastique

apporter une bouteille d'eau au lieu

de prendre un gobelet jetable

recupérer l'eau de pluie pour arroser

le jardin

fermer le robinet pendant qu'on se

lave les dents

boire l'eau du robinet

prendre une douche au lieu de

prendre un bain

tirer la chasse d'eau moins

fréquemment

faire plus

use public transport

encourage car-sharing

go to school by bike

turn down plastic bags

carry a bottle of water instead of

using disposable cups

collect rainwater for watering the

garden

turn off the tap while you brush

your teeth

drink tap water

have a shower instead of having

a bath

flush the toilet less frequently

do more

D'où vient ton tee-shirt?

Les produits pas chers sont souvent fabriqués dans des conditions de travail inacceptables.

Les ouvriers sont sous-payés.

Leur journée de travail est trop longue.

Si un produit est bon marché, je ne l'achète pas.

Trop de travailleurs sont exploités/exposés à des risques.

À mon avis, on devrait ...

boycotter les grandes marques qui ne respectent pas leurs ouvriers

Where does your T-shirt come from?

Cheap products are often made in unacceptable working conditions.

The workers are underpaid.

Their working day is too long.

If a product is cheap, I don't buy it.

Too many workers are exploited/exposed to risks.

In my opinion, people should ...

boycott big brands that don't respect their workers

forcer les grandes marques à garantir un salaire minimum

acheter des habits issus du commerce équitable

acheter des vêtements fabriqués en France

réfléchir à l'impact sur l'environnement

essayer de respecter l'homme et l'environnement à la fois

force big brands to guarantee a minimum wage

buy fairly traded clothes

buy clothes made in France

think about the impact on the environment

try to respect mankind and the environment at the same time

Faire du bénévolat

Ça me permet d'élargir mes compétences.

Ça me donne plus confiance en moi.

Ça me donne le sentiment d'être utile.

C'est important de participer à la vie en société.

On a la responsabilité d'aider les autres et de ne pas se focaliser sur soi-même.

Il y a beaucoup de personnes qui ont besoin d'un peu de gentillesse.

Je travaille ...

sur un stand d'Oxfam

dans un refuge pour les animaux

Je fais partie de l'organisation X.

Volunteering

It allows me to expand my skills.

It gives me more confidence in myself/makes me feel more confident.

It makes me feel useful.

It's important to participate in society.

We have a responsibility to help others and not focus on ourselves.

There are lots of people who need a little kindness.

I work ...

on an Oxfam stand

in an animal sanctuary

I'm a member of X.

Je rends visite à une personne âgée.

Je participe à des projets de conservation.

J'aide des enfants du primaire à faire leurs devoirs.

Je soigne les animaux.

Je soutiens les SDF.

On s'adresse aux ...

sensibiliser

prendre conscience de

soigner

accueillir

affronter

soutenir

I visit an elderly person.

I take part in conservation projects.

I help primary school children to do their homework.

I look after/treat animals.

I support homeless people.

We appeal to ...

to raise awareness

to become aware of

to look after, treat

to welcome

to face, confront

to support

Les grands événements

Un avantage de cet événement, c'est que ...

D'un côté, ça ...

En plus, ça ...

met en avant la culture

met en avant la ville hôte

crée un sentiment de fierté nationale

permet aux gens de passer un bon moment

encourage la pratique du sport

unit les gens

donne des modèles aux jeunes

crée du travail

attire des touristes

Cependant, ...

Un inconvénient, c'est que ...

D'un autre côté, ...

Big events

An advantage of this event is that ...

On the one hand, it ...

What's more/Moreover, it ...

promotes the culture

promotes the host city

creates a sense of national pride

allows people to have a good time

encourages participation in sport

unites people

gives young people role models

creates jobs

attracts tourists

However, ...

A disadvantage is that ...

On the other hand, ...

Par ailleurs, ...

les ouvriers qui construisent les stades sont souvent exploités

les prix augmentent

la ville hôte est souvent endettée après l'événement

ça laisse une empreinte carbone très importante

J'estime/Je trouve/Je suis persuadé(e) que/qu' ...

il y a du pour et du contre

les festivals sont une chose positive/négative pour un pays/une région

les panneaux solaires

les toilettes sèches

les véhicules électriques

le papier recyclé

What's more, ...

the workers who build the stadiums are often exploited

prices rise

the host city is often in debt after the event

it leaves a significant carbon footprint

I reckon/find/am convinced that ...

there are pros and cons

festivals are positive/negative for a country/region

solar panels

dry toilet

electric vehicles

recycled paper

Les mots essentiels

à part tout cela

bien que (+ subjunctive)

ceci dit

comme ça ...

du coup, ...

en ce qui concerne ...

en même temps

High-frequency words

apart from all that

although

that said, ...

in this way ...

as a result, ...

as far as ... is concerned

at the same time

en train de

il s'agit de

pas mal de

quotidiennement

tel(le)(s) que

tout le monde

in the process of (doing)

it's about, it's a matter of

quite a lot of

daily

like, such as

everyone

Command Words and Instructions

Lies den Bericht.	Read the article.	Hör zu	Listen
Entscheide ob die Sätze richtig oder falsch sind.	Decide if the phrases are true or false.	Nenne vier Dinge.	Mention four things.
Finde die vier richtigen Sätze.	Find the four correct statements.	Beschreib deinen Liebblingssänger.	Describe your favourite singer.
Schreib die richtigen Buchstaben in die Kästen.	Write the correct letter in the boxes.	Beantworte die Frage.	Answer the question.
Was passt zusammen?	What matches?	Sprich auf Deutsch.	Speak in French.
Welche Antwort ist richtig?	Which answer is correct?	Diskutiere mit einem Freund.	Discuss with a friend.

Idioms and Flash German

Ich drücke dir die Daumen.	I'm keeping my fingers crossed for you
Rede nicht um den heißen Brei herum.	Get to the point.
Ich bin fix und fertig.	I'm exhausted.
Alles Banane!	Everything's fine!
Ich verstehe nur Bahnhof.	I don't get it.
Hast du einen Vogel?	Are you mad?
Es geht mir auf den Wecker.	It annoys me.

Modules / Themes

- o 1 Me, my family and friends
- o 2 Technology and media
- o 3 Hobbies, food and festivals
- o 4 Home, town and region
- o 5 Travel and tourism
- o 6 Education and social issues
- o 7 Career and life choices
- o 8 Social and global issues

Literacy Mat: Key Stage 4 German

Time Frames and Verbs

Past	Gestern Letzte Woche Letztes Jahr Letztes Wochenende Vor zwei Monaten In der Vergangenheit Gestern Abend	habe ich gespielt habe ich gegeben habe ich gesehen habe ich gehört habe ich gelesen habe ich gekauft habe ich geholfen	habe ich gegessen. habe ich getrunken habe ich gewohnt habe ich gewollt habe ich gedurft habe ich gekonnt habe ich gemacht	bin ich gefahren bin ich gegangen bin ich geflogen bin ich geschwommen bin ich gelaufen bin ich geblieben bin ich geboren
Present	Heute Diese Woche Dieses Jahr Dieses Wochenende Heute Morgen Jeden Tag Normalerweise	spiele ich gebe ich sehe ich höre ich lese ich kaufe ich helfe ich	esse ich trinke ich wohne ich will ich darf ich kann ich mache ich	fahre ich gehe ich fliege ich schwimme ich laufe ich bleibe ich möchte ich
Future	Morgen Nächste Woche Nächstes Jahr Nächstes Wochenende In der Zukunft Morgen früh	werde ich spielen werde ich geben werde ich sehen werde ich hören werde ich lesen werde ich kaufen werde ich helfen	werde ich essen werde ich trinken werde ich wohnen werde ich wollen werde ich dürfen werde ich können werde ich machen	werde ich fahren werde ich gehen werde ich fliegen werde ich schwimmen werde ich laufen werde ich bleiben

Opinions and Reasons

Ich liebe	, denn	ich finde es	interessant praktisch lecker schön lustig lanweilig nervig schwierig aufregend toll wunderbar
Ich bevorzuge..... Ich mag..... Ich mag...nicht Ich hasse..... Ich interessiere mich für... Ich bin gegen... Ich bin für...		ich denke es ist ich glaube es ist meiner Meinung nach ist es	
!!! Remember!!! e.g.: ..., weil..... ist.			

Conjunctions

und - and
denn - because
aber - but
Verb 2nd
jedoch - however
deshalb - therefore
deswegen - for that reason
auch - also
Verb to end!
obwohl - although
dass - that
weil / da - because
wenn - if
falls - in case

Adverbs

glücklicherweise fortunately
leider unfortunately
zuerst first of all
normalerweise normally / usually
meistens mostly
im Allgemeinen generally
oft often
Ab und zu from time to time
immer always
manchmal sometimes
nie never
selten rarely

Grammar Terms

Proper noun	A name eg.: Berlin	Subject	The person or thing doing the action eg.: Ich kaufe ein Eis
Common noun	A thing eg.: eine Stadt	Direct object	The person or thing directly affected by the action eg.: Ich kaufe ein Eis
Pronoun	Replaces a noun eg.: er / sie / es	Indirect object	The person or thing directly affected by the action eg.: Ich kaufe dem Kind ein Eis
Adjective	Describes a noun eg.: blau / klein / nett	Negative	Usually to make a verb negative. eg.: Ich esse nicht gern Schokolade.
Verb	A doing word for an action or state eg.: spielen / machen	Comparative	To say something is bigger / smaller than something else eg.: größer / kleiner als
Adverb	Describes an action eg.: normalerweise, meistens	Superlative	To say something is the biggest / smallest eg.: am größten / am kleinsten
Infinitive	The name of a verb eg.: spielen, machen, gehen	Possessive pronoun	My / your / his / her etc. mein - meine mein dein - deine dein sein - seine sein
Tense	A change in the verb to show when the action is happening eg.: ich habe gespielt = I played	Subordinate clause	A part of a sentence which is dependent on another, main clause. eg.: Dieser Hund / diese Frau / dieses Buch, wenn ich Geld hatte.
Conjugate	To make the verb fit the subject eg.: ich spiele / du spielst	Demonstrative pronoun	How to say, this, that, these and those etc. eg.: dieser Hund / diese Frau / dieses Buch
Paradigm	The pattern of a whole verb in a given tense. eg.: ich spiele. du spielst. er/sie/es/man wir spielen ihr spielt sie/Sie spielen	Conjunction	A word used to join two clauses in a sentence. Eg. Ich liebe die Katze, weil sie niedlich ist.
		Falsche Freunde	A word that looks or sounds like English but does not mean the same. eg.: Rente = pension / Chef = boss / Bank = bench / Gift = poison

Punctuation

Full stop	.	Hyphen	-	
Comma	,	Inverted Commas	"	
Colon	:	Brackets	()	
Semi-colon	;	Apostrophe	'	
Question mark	?	A new paragraph is used when you change <u>Time, Place, Topic</u> or <u>Person</u>		Schafes s ß
Exclamation mark	!			Umlaut ä ö ü

Describing a Picture

¿Cómo es tu casa?

Vivo en...
 un bloque de pisos
 una casa individual
 una casa adosada
 una residencia de ancianos
 una finca / granja
 Alquilamos una casa amueblada.
 Está en...
 un barrio de la ciudad
 las afueras
 el campo
 la costa
 la montaña / sierra
 el cuarto piso de un edificio antiguo
 Mi apartamento / piso tiene...
 tres dormitorios

What is your house like?

I live in...
 a block of flats
 a detached house
 a semi-detached / terraced house
 an old people's home
 a farmhouse
 We rent a furnished house.
 It is in / on...
 a district / suburb of the city / town
 the outskirts
 the country
 the coast
 the mountains
 the fourth floor of an old building
 My apartment / flat has...
 three bedrooms

dos cuartos de baño
 una cocina amplia y bien equipada
 un comedor recién renovado
 un estudio
 un aseo
 un sótano
 un salón
 una mesa
 unas sillas
 Mi casa ideal sería...
 Tendría...
 una piscina climatizada
 mi propio cine en casa
 una sala de fiestas
 Cambiaría los muebles.
 Pintaría ... de otro color.

two bathrooms
 a spacious, well-equipped kitchen
 a recently refurbished dining room
 a study
 a toilet
 a basement / cellar
 a living room
 a table
 some chairs
 My ideal house would be...
 It would have...
 a heated swimming pool
 my own home cinema
 a party room
 I would change the furniture.
 I would paint ... another colour.

¿Cómo se debería cuidar el medio ambiente en casa?

Para cuidar el medio ambiente se debería...
 apagar la luz
 ducharse en vez de bañarse
 separar la basura
 reciclar el plástico y el vidrio

How should you look after the environment at home?

To care for the environment you / one should...
 turn off the light
 have a shower instead of taking a bath
 separate the rubbish
 recycle plastic and glass

desenchufar los aparatos eléctricos
 ahorrar energía
 cerrar el grifo
 hacer todo lo posible
 no se debería...
 malgastar el agua
 usar bolsas de plástico

unplug electric appliances
 save energy
 turn off the tap
 do everything possible
 you / one should not...
 waste water
 use plastic bags

¿Cuáles son los problemas globales más serios hoy en día?

Me preocupa(n)...
 el paro / desempleo
 el hambre / la pobreza
 la deforestación
 la diferencia entre ricos y pobres
 la drogadicción / la salud / la obesidad
 la crisis económica
 los problemas del medio ambiente
 los sin hogar / techo
 los animales en peligro de extinción
 Es necesario / esencial que...
 cuidemos el planeta
 hagamos proyectos de conservación
 compremos / usemos
 productos verdes / de comercio justo
 apoyemos proyectos de ayuda

What are the most serious global issues today?

I am worried about...
 unemployment
 hunger / poverty
 deforestation
 the difference between rich and poor
 drug addiction / health / obesity
 the economic crisis
 environmental problems
 the homeless
 animals in danger of extinction
 It's necessary / essential that (we)...
 look after the planet
 do conservation projects
 buy / use
 green / fairtrade products
 support aid projects

creemos oportunidades de trabajo
 ayudemos a evitar el consumo de sustancias perjudiciales
 ahorrarnos agua
 construyamos más casas
 cambiemos la ley
 consumamos menos
 hagamos campañas publicitarias
 recaudemos dinero para organizaciones de caridad en el tercer mundo
 No es justo / Es terrible que haya...
 tanta desigualdad social / contaminación
 tanta gente sin trabajo y sin techo
 tanta gente obesa y tantos drogadictos

create job opportunities
 help to avoid the consumption of harmful substances
 save water
 build more houses
 change the law
 consume less
 carry out publicity campaigns
 raise money for charities in the third world
 It's not fair / terrible that there is...
 so much social inequality / pollution
 so many people out of work and homeless
 so many obese people and so many drug addicts

¡Actúa localmente!

Hay demasiada...
 basura en las calles
 gente sin espacio para vivir
 destrucción de los bosques
 polución de los mares y ríos
 El aire está contaminado.
 Los combustibles fósiles se acaban.
 No corte tantos árboles.
 No vaya en coche si es posible ir a pie.
 No tire basura al suelo.
 No malgaste energía.
 No construya tantas casas grandes.
 No eche tantos desechos químicos.
 Plante más bosques y selvas.
 Reduzca las emisiones de los vehículos.
 Recicle el papel, el vidrio y el plástico.

Act locally!

There is / are too much / many...
 rubbish on the streets
 people with nowhere to live
 destruction of woodland / forest
 pollution of seas and rivers
 The air is polluted.
 Fossil fuels are running out.
 Don't cut down so many trees.
 Don't go by car if it's possible to walk.
 Don't throw rubbish onto the ground.
 Don't waste energy.
 Don't build so many large houses.
 Don't release so much chemical waste.
 Plant more woods and forests.
 Reduce vehicle emissions.
 Recycle paper, glass and plastic.

Use energías renovables.
 Diseñe casas más pequeñas.
 Introduzca leyes más estrictas.
 Llevar una vida más verde
 salvar el planeta
 reducir la huella de carbono ecológico/a
 el techo
 el agua de lluvia
 el domicilio
 los recursos naturales
 los paneles solares
 la arena
 los (eco-)ladrillos
 una fábrica
 mudarse (de casa)

Use renewable energy.
 Design smaller houses.
 Introduce stricter laws.
 (to) live a greener life
 (to) save the planet
 (to) reduce your carbon footprint
 environmentally-friendly roof
 rain water
 home
 natural resources
 solar panels
 sand
 (eco-)bricks
 a factory
 (to) move house

Una dieta sana

los alimentos lácteos
 carne, pescados y huevos
 frutas y verduras
 cereales
 fideos

A healthy diet

foods
 milk products
 meat, fish and eggs
 fruit and vegetables
 cereals
 noodles

grasas
 dulces
 legumbres
 frutos secos
 los nutrientes
 proteínas

fats
 sugars / sweet things
 pulses
 nuts and dried fruit
 nutrients
 proteins

Vocabulary mat Winter: El medio ambiente

minerales	<i>minerals</i>	La fibra...	<i>Fibre...</i>
grasa	<i>fat</i>	protege contra el cáncer	<i>protects against cancer</i>
sal	<i>salt</i>	combate la obesidad	<i>combats obesity</i>
vitaminas	<i>vitamins</i>	reduce el riesgo de enfermedades	<i>reduces the risk of diseases</i>
azúcar	<i>sugar</i>	evitar comer / beber...	<i>avoid eating / drinking...</i>
gluten	<i>gluten</i>	cambiar mi dieta	<i>change my diet</i>
el sabor	<i>taste</i>	llevar una dieta equilibrada	<i>have a balanced diet</i>
vegetariano / vegano	<i>vegetarian / vegan</i>	preparar con ingredientes frescos	<i>prepare with fresh ingredients</i>
saludable / sano / malsano	<i>healthy / healthy / unhealthy</i>	engordar	<i>to put on weight</i>
(No) Tengo hambre / sed / sueño.	<i>I am (not) hungry / thirsty / tired.</i>	saltarse el desayuno	<i>to skip breakfast</i>
tiempo para cocinar	<i>time to cook</i>	practicar más deporte	<i>to do more sport</i>
contiene / contienen	<i>it contains / they contain</i>		

¡Vivir a tope!

Beber alcohol...
Fumar cigarrillos / porros...
Tomar drogas blandas / duras...
Es / No es...
ilegal / peligroso
un malgasto de dinero
una tontería / un problema serio
un vicio muy caro
muy perjudicial para la salud
tan malo
provoca mal aliento
daña los pulmones
mancha los dientes de amarillo
causa el fracaso escolar / depresión
produce una fuerte dependencia física

Live life to the full

*To drink / Drinking alcohol...
To smoke / Smoking cigarettes / joints...
To take / Taking soft / hard drugs...
It is / isn't...
illegal / dangerous
a waste of money
stupid / a serious problem
an expensive habit
very damaging to your health
as bad
causes bad breath
damages the lungs
stains your teeth yellow
causes failure at school / depression
produces a strong, physical
dependence*

tiene muchos riesgos
afecta a tu capacidad para tomar
decisiones
te relaja / te quita el estrés
te quita el sueño / control
te hace sentir bien / más adulto
Es fácil engancharse.
¡Qué asco!
Cedí ante la presión de grupo .
Caí en el hábito de...
Empecé a...
Perdí peso.
No puedo parar.
Ya he empezado a...
Todavía no he dejado de...
A partir de ahora intentaré...

*has many risks
affects your capacity to make
decisions
relaxes you / relieves stress
robs you of sleep / self-control
makes you feel good / more adult
It is easy to get hooked.
How disgusting!
I gave in to peer pressure.
I fell into the habit of...
I started to...
I lost weight.
I can't stop.
I've already started to...
I still haven't given up...
From now on I will try to...*

¡El deporte nos une!

¿Para qué sirven...?
los eventos deportivos internacionales
los grandes acontecimientos deportivos
los Juegos Paralímpicos / Olímpicos
la Copa Mundial del Fútbol
Sirven para...
promover...
la participación en el deporte
el espíritu de solidaridad
regenerar los centros urbanos
elevar el orgullo nacional
transmitir los valores de respeto y disciplina
unir a la gente

Sport unites us!

*What are...for?
international sporting events
big sporting events
the Paralympics / Olympics
the Football World Cup
They serve to...
promote / foster / encourage...
participation in sport
team spirit
regenerate city centres
increase national pride
convey / instil the values of respect and
discipline
unite people*

dar un impulso económico
inspirar a la gente
Una / Otra desventaja es...
el riesgo de ataques terroristas
el tráfico
el dopaje
la deuda
el coste de organización de la seguridad
la ciudad anfitriona
el voluntariado
Solicité un trabajo voluntario porque...
(Nunca) Había sido...
Antes ya había trabajado como...

*give a boost to the economy
inspire people
A / Another disadvantage is...
the risk of terrorist attacks
the traffic
doping
the debt
the cost of organising the security
the host city
volunteering
I applied for a volunteering job because...
I had (never) been...
Previously I had already worked as...*

¡Apúntate!

¿Qué estabas haciendo?
Estaba / Estábamos / Estaban...
ensayando
nevando
entrando en casa
durmiendo
conduciendo por la ciudad
leyendo
volando por el aire
Se estaba convirtiendo en un río.
Se estaba moviendo.
a mi alrededor
Se estaban cayendo.
¿Cómo te enteraste del/de la/
de las...?
temblor
incendio forestal
huracán
tornado
terremoto
tormenta de nieve
acción humanitaria
inundaciones

Sign up!

*What were you doing?
I/He/She/It was / We were / They were...
rehearsing
snowing
coming into the house
sleeping
driving through the city
reading
flying through the air
It was turning into a river.
It was moving.
around me
They were falling.
How did you find out about the...?
tremor
forest fire
hurricane
tornado
earthquake
snow storm
humanitaria campaign
floods*

Estaba...
mirando/viendo las noticias / la tele
buscando informaciones en línea
charlando con un amigo / una amiga
leyendo un post en Facebook
cuando...
encontré un reportaje / un artículo
recibí un SMS
(lo) vi en las noticias
mi novio me llamó / me contó la historia
una organización de servicio voluntario
una campaña para las víctimas
una caja de supervivencia
Decidí apuntarme.
recaudar fondos / solicitar donativos
organizamos algunos eventos
un concierto / un espectáculo de baile
una carrera de bici apadrinada
una venta de pasteles
ser solidario
Te hace sentir más conectado con los demás.

*I / He/She was...
watching the news / the TV
looking for information online
chatting with a friend
reading a Facebook post
when...
I found a report / an article
I received a text message
I saw (it) on the news
my boyfriend called me / told me the story
a voluntary organisation
a campaign for the victims
a survival box
I decided to sign up.
to raise funds / ask for donations
we organised some events
a concert / a dance show
a sponsored bike race
a cake sale
showing solidarity / supporting...
Makes you feel more connected to others.*

OCR Sport Studies Knowledge Organiser

R184 TA2 The role of sport in promoting values

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #d8bfd8;"> <th style="text-align: center; padding: 5px;">Lance Armstrong (Cyclist)</th> </tr> <tr> <td style="padding: 5px;"> <p>Drug Offence: Blood Doping Stimulates extra growth of red blood cells To improve training and fitness/train for longer/train harder/improve performance (e.g. faster cycling times) Banned for life</p> </td> </tr> </table>	Lance Armstrong (Cyclist)	<p>Drug Offence: Blood Doping Stimulates extra growth of red blood cells To improve training and fitness/train for longer/train harder/improve performance (e.g. faster cycling times) Banned for life</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #d8bfd8;"> <th style="text-align: center; padding: 5px;">Dwain Chambers (Sprinter)</th> </tr> <tr> <td style="padding: 5px;"> <p>Drug Offence: Steroids Helps to build muscle so that they can give more explosive power for sprint start Banned for 4 years and stripped of medals</p> </td> </tr> </table>	Dwain Chambers (Sprinter)	<p>Drug Offence: Steroids Helps to build muscle so that they can give more explosive power for sprint start Banned for 4 years and stripped of medals</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #d8bfd8;"> <th style="text-align: center; padding: 5px;">Maria Sharapova (Tennis Player)</th> </tr> <tr> <td style="padding: 5px;"> <p>Drug Offence: Beta Blockers Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. Banned for 15 months</p> </td> </tr> </table>	Maria Sharapova (Tennis Player)	<p>Drug Offence: Beta Blockers Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. Banned for 15 months</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #f4a460;"> <th style="text-align: center; padding: 5px;">Types of Drugs</th> </tr> <tr> <td style="padding: 5px;"> <p>Beta blockers Diuretics Anabolic Steroids Blood doping Human growth hormone</p> </td> </tr> </table>	Types of Drugs	<p>Beta blockers Diuretics Anabolic Steroids Blood doping Human growth hormone</p>	
Lance Armstrong (Cyclist)												
<p>Drug Offence: Blood Doping Stimulates extra growth of red blood cells To improve training and fitness/train for longer/train harder/improve performance (e.g. faster cycling times) Banned for life</p>												
Dwain Chambers (Sprinter)												
<p>Drug Offence: Steroids Helps to build muscle so that they can give more explosive power for sprint start Banned for 4 years and stripped of medals</p>												
Maria Sharapova (Tennis Player)												
<p>Drug Offence: Beta Blockers Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. Banned for 15 months</p>												
Types of Drugs												
<p>Beta blockers Diuretics Anabolic Steroids Blood doping Human growth hormone</p>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #f08080;"> <th style="text-align: center; padding: 5px;">The reasons why sports performers should NOT use PEDs</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> - Unfair advantage over other athletes - Long term ill-health affects such as; Increased risk of stroke/organ failure/heart attack/kidney & liver cancer/infertility/high blood pressure - Risk of addiction - Against the ethos of fair play/ breeds a 'win at all costs' attitude. - Negative role models/breeds a win at all costs mentality - Sanctions/bans/fines </td> </tr> <tr style="background-color: #f08080;"> <th style="text-align: center; padding: 5px;">The impact of the use of PEDs on the sport</th> </tr> <tr> <td style="padding: 5px;"> <p>Mistrust of results/events as some sports have had repeated scandals such as cycling. Implication that all participants in a particular sport are taking drugs Where sports have not adopted the WADA policy people question whether or not that means the sport is hiding the fact that participants take drugs.</p> </td> </tr> </table>	The reasons why sports performers should NOT use PEDs	<ul style="list-style-type: none"> - Unfair advantage over other athletes - Long term ill-health affects such as; Increased risk of stroke/organ failure/heart attack/kidney & liver cancer/infertility/high blood pressure - Risk of addiction - Against the ethos of fair play/ breeds a 'win at all costs' attitude. - Negative role models/breeds a win at all costs mentality - Sanctions/bans/fines 	The impact of the use of PEDs on the sport	<p>Mistrust of results/events as some sports have had repeated scandals such as cycling. Implication that all participants in a particular sport are taking drugs Where sports have not adopted the WADA policy people question whether or not that means the sport is hiding the fact that participants take drugs.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #add8e6;"> <th style="text-align: center; padding: 5px;">The reasons why sports performers use PEDs</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> - Gain an advantage/to win/to reap financial awards/fame - To improve training and fitness/train for longer/train harder/improve performance - Pressure to succeed as an individual - Pressure to succeed from the nation/ personal pressure to fulfil national expectation - Pressure from coach/team members/significant others - Pressure from financial rewards from winning - Aids recovery from injury </td> </tr> <tr style="background-color: #add8e6;"> <th style="text-align: center; padding: 5px;">Effects of PEDs on the body</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> - Stimulates extra growth of red blood cells. - Builds muscle/Promotes growth of bones. - Boosts efficiency of heart. - Reduce amount of excess water - Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. </td> </tr> </table>	The reasons why sports performers use PEDs	<ul style="list-style-type: none"> - Gain an advantage/to win/to reap financial awards/fame - To improve training and fitness/train for longer/train harder/improve performance - Pressure to succeed as an individual - Pressure to succeed from the nation/ personal pressure to fulfil national expectation - Pressure from coach/team members/significant others - Pressure from financial rewards from winning - Aids recovery from injury 	Effects of PEDs on the body	<ul style="list-style-type: none"> - Stimulates extra growth of red blood cells. - Builds muscle/Promotes growth of bones. - Boosts efficiency of heart. - Reduce amount of excess water - Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #90ee90;"> <th style="text-align: center; padding: 5px;">The World Anti Doping Agency = WADA</th> </tr> <tr> <td style="padding: 5px;"> <p>WHEREABOUTS RULE – Performers must report their location (outside of competition). They must notify where they will be for at least one hour of every day (for a year). So that they can be random drug tested at any time. Three missed tests (in a year) results in sanction</p> <p>WADA Testing methods More effective/varied testing method will make detection more likely and therefore act as a deterrent. Tested via: urine samples, hair samples, nail samples, blood samples</p> <p>WADA Sanctions/Bans Threat of sanctions and bans may act as a deterrent. Sanctions can include; lifetime bans, fines, suspensions.</p> <p>WADA Educational Initiatives Education programmes that inform performers of the health risks of taking performance enhancing drugs. 100% Me-Educational anti-doping programme</p> </td> </tr> </table>	The World Anti Doping Agency = WADA	<p>WHEREABOUTS RULE – Performers must report their location (outside of competition). They must notify where they will be for at least one hour of every day (for a year). So that they can be random drug tested at any time. Three missed tests (in a year) results in sanction</p> <p>WADA Testing methods More effective/varied testing method will make detection more likely and therefore act as a deterrent. Tested via: urine samples, hair samples, nail samples, blood samples</p> <p>WADA Sanctions/Bans Threat of sanctions and bans may act as a deterrent. Sanctions can include; lifetime bans, fines, suspensions.</p> <p>WADA Educational Initiatives Education programmes that inform performers of the health risks of taking performance enhancing drugs. 100% Me-Educational anti-doping programme</p>
The reasons why sports performers should NOT use PEDs												
<ul style="list-style-type: none"> - Unfair advantage over other athletes - Long term ill-health affects such as; Increased risk of stroke/organ failure/heart attack/kidney & liver cancer/infertility/high blood pressure - Risk of addiction - Against the ethos of fair play/ breeds a 'win at all costs' attitude. - Negative role models/breeds a win at all costs mentality - Sanctions/bans/fines 												
The impact of the use of PEDs on the sport												
<p>Mistrust of results/events as some sports have had repeated scandals such as cycling. Implication that all participants in a particular sport are taking drugs Where sports have not adopted the WADA policy people question whether or not that means the sport is hiding the fact that participants take drugs.</p>												
The reasons why sports performers use PEDs												
<ul style="list-style-type: none"> - Gain an advantage/to win/to reap financial awards/fame - To improve training and fitness/train for longer/train harder/improve performance - Pressure to succeed as an individual - Pressure to succeed from the nation/ personal pressure to fulfil national expectation - Pressure from coach/team members/significant others - Pressure from financial rewards from winning - Aids recovery from injury 												
Effects of PEDs on the body												
<ul style="list-style-type: none"> - Stimulates extra growth of red blood cells. - Builds muscle/Promotes growth of bones. - Boosts efficiency of heart. - Reduce amount of excess water - Decrease an athlete's heart rate, steadying their nerves and reduce potential for shaking. 												
The World Anti Doping Agency = WADA												
<p>WHEREABOUTS RULE – Performers must report their location (outside of competition). They must notify where they will be for at least one hour of every day (for a year). So that they can be random drug tested at any time. Three missed tests (in a year) results in sanction</p> <p>WADA Testing methods More effective/varied testing method will make detection more likely and therefore act as a deterrent. Tested via: urine samples, hair samples, nail samples, blood samples</p> <p>WADA Sanctions/Bans Threat of sanctions and bans may act as a deterrent. Sanctions can include; lifetime bans, fines, suspensions.</p> <p>WADA Educational Initiatives Education programmes that inform performers of the health risks of taking performance enhancing drugs. 100% Me-Educational anti-doping programme</p>												

OCR Sport Studies Knowledge Organiser

R184 TA3 The implications of hosting a major sporting event for a city or country

Regular sporting events	Regular and recurring sporting events	One off sporting events	Nature of the event
<p>Held in a different city each year but could return after a few years.</p> <ul style="list-style-type: none"> - UEFA Champions' League Final - Tour De France - 6 nations 	<p>Held each year at the same venue/city.</p> <ul style="list-style-type: none"> - Wimbledon - Formula 1-Silverstone - FA cup final 	<p>Held in a host city once in a generation.</p> <ul style="list-style-type: none"> - Olympics - Paralympics - Football World Cup - Rugby World Cup - Netball World Cup 	<p>The event is usually international: involving participants and spectators from two or more countries</p>
Positives of hosting a major sporting event-PRE-EVENT	Positives of hosting a major sporting event-DURING	Positives of hosting a major sporting event-POST EVENT	
<p>Bidding for the event can create pre-event sponsorship</p> <ul style="list-style-type: none"> - Improved infrastructure and transport systems development - Financial/commercial investment/support- social and economic attractiveness of a host city/country in securing investment - The potential for increased employment <p>Local/national objections to the bidding process</p>	<ul style="list-style-type: none"> - Improved social infrastructure - Improved national morale/social cohesion - Increase in national status - Greater national interest in sport - Increased media coverage of the sport(s) - A potential increase in direct and indirect tourism - An increase in short-term employment during the event 	<ul style="list-style-type: none"> - A legacy of improved/new sporting facilities - An increase in the sports' participation - An increase in the profile of sports involved - A legacy of improved transport and social infrastructure - Raising of the city/nation's international profile/ status - An increase in future financial investment 	
Negatives of hosting a major sporting event-PRE-EVENT	Negatives of hosting a major sporting event-DURING	Negatives of hosting a major sporting event-POST EVENT	
<ul style="list-style-type: none"> - Bidding can be expensive, especially if they don't win the event - Costs can be more than what is made by the event - Local/National Social objections - how money is used for bidding for an event, instead of being spent on perceived greater social needs and the impacts 	<ul style="list-style-type: none"> - Increase in transport, litter and noise - The potential for an increase in terrorism and crime - Poor performance by home nation/team and the impact on national pride/morale - Perceived relegation/lack of investment in regional areas not involved in the national event - Negative media coverage of perceived deficiencies in the organisation or infrastructure/facilities 	<ul style="list-style-type: none"> - The event might have costed more to host than the revenue generated - Sports facilities unused after the event - A loss in national reputation/status if the event was badly organised, the host nation's participants performed badly, or scandals emerged 	

Year 11 Sports Studies - Leadership Lessons

Unit R185: Performance and leadership in sports activities	
Topic Area 3: Organising and planning a sports activity session	
Teaching content	Exemplification
3.1 Organisation of a sports activity session	
3.1.1 Appropriate venue: <input type="checkbox"/> Location <input type="checkbox"/> Size <input type="checkbox"/> Weather 3.1.2 Equipment: <input type="checkbox"/> Type <input type="checkbox"/> Amount required 3.1.3 Timing: <input type="checkbox"/> Appropriate <input type="checkbox"/> Allowing for progression 3.1.4 Supervision: <input type="checkbox"/> Number of participants <input type="checkbox"/> Size of groups 3.1.5 Contingency plan	To include organisation of: <ul style="list-style-type: none"> • Appropriate venue – considering the working space required • Timing – suitable for the age and ability of the group • Supervision – will depend on age and activity chosen
3.2. Safety considerations when planning a sports activity session	
3.2.1 Risk assessment and corrective action: <input type="checkbox"/> Activity-specific risks 3.2.2 Checking of equipment 3.2.3 Basic first aid and child protection 3.2.4 Emergency procedures	To include safety considerations such as: <ul style="list-style-type: none"> • Risk assessment and corrective action – facilities, equipment, clothing • Emergency procedures – what to do in the event of an accident or other emergency, summoning qualified help
3.3 Objectives to meet the needs of the group	
3.3.1 Introduction and conclusion 3.3.2 Basic warm up and cool down 3.3.3 Skill and technique development	Objectives may include: <ul style="list-style-type: none"> • Introduction and conclusion – should briefly introduce the leader and the aims of the session, check for any injuries, then briefly conclude the session with a summary • Basic warm up and cool down – should be relevant to the activity and the participants • Skills and technique development – consider how to structure the activities so that they progress, plan for any participants struggling with the activity or finding it too easy

Year 11 Sports Studies - Leadership Lessons

Unit R185: Performance and leadership in sports activities	
Topic Area 4: Leading a sports activity session	
Teaching content	Exemplification
4.1 Organisation of a sports activity session	
4.1.1 Safe practice 4.1.2 Timing 4.1.3 Adaptability 4.1.4 Reliability	Organisation may include: <ul style="list-style-type: none"> • Safe practice – organising the group and the activities appropriately depending on the space, number of participants and equipment being used • Timing – being punctual and prepared for the session, considering the length of activities • Adaptability – making changes to the session if people find it too easy or too hard • Reliability – turning up when you say you will and running to time
4.2 Leading a sports activity session	
4.2.1 Leading a sports activity session: <ul style="list-style-type: none"> <input type="checkbox"/> Activity-specific details <input type="checkbox"/> Leadership style <input type="checkbox"/> Adaptability <input type="checkbox"/> Communication <input type="checkbox"/> Positioning <input type="checkbox"/> Enthusiasm for the activity and motivation of the group <input type="checkbox"/> Confidence <input type="checkbox"/> Creativity 	To include: <ul style="list-style-type: none"> • Activity-specific details – showing the skills, techniques and tactics appropriate to the needs of the participants • Leadership style – democratic, autocratic, laissez-faire • Delivery style – proactive, reactive, demonstrations from the leader or involving participants from the group, explanation of activities • Communication – verbal, non-verbal, using appropriate language and technical terms depending on the group • Positioning – considering where they are stood in relation to the group when giving demonstrations and explanations • Creativity – design of activities related to the group, how they demonstrate and explain

Physics Knowledge Organiser Electromagnetism (Higher Tier Only Page)

Fleming's left hand rule and the motor effect

If you have a current-carrying wire and a permanent magnet, each have their own magnetic fields. This means that if you put them near each other, there'll be a force acting on each other – just thanks to magnetic attraction or repulsion. This is called the **motor effect**. You can work out the direction that the force acts if you know the direction of the magnetic field and the direction of the current – we use **Fleming's left hand rule**. It has to be your left hand to work. Hold it as shown, and you can work out the direction of whichever thing you don't know. You have to think in three dimensions here. You can twist your hand at the wrist to get it right – confirm using the example of the wire cutting through the magnetic field in the diagram – field from N to S with first finger, current with middle finger pointing downwards, meaning force must be out of the page towards you, like the diagram shows.

Now, the size (or *magnitude*) of the force on the conductor (the bit of wire) depends on three factors:

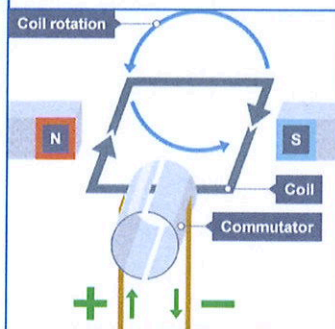
1. The **length** of the wire in the magnetic field, measured in metres
2. The **strength** of the magnetic field (formally, the **magnetic flux density**, in teslas, T)
3. The **size** of the **current** (A, as usual).

As the equation shows, increasing any or all of these factors will increase the size of the force on the conductor. [NB this equation only applies when the current and magnetic field are at right angles to each other]

Electric motors

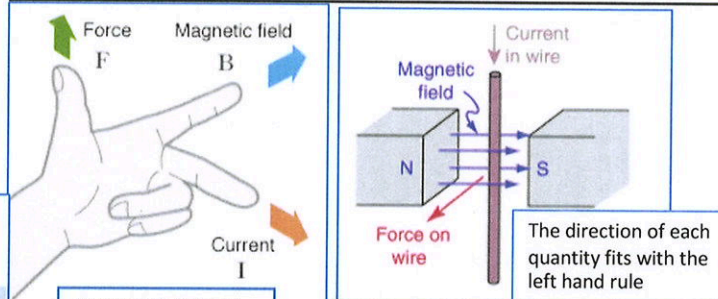
Electric motors make use of the motor effect. A coil of wire carrying a current is placed in a magnetic field; as you know, the magnetic fields interact to cause a force each other. If the coil is set up so it can spin, it most certainly will. In fact, it will spin round and round (**rotate**). This is thanks to the force acting **up** on one side of the coil, and **down** on the other – see the diagram and use Fleming's left hand rule to understand why...

The magnetic field goes from N to S of course, and the arrows on the coil show the direction of the current. So, the left side of the coil has a force **downwards** exerted on it (use the left hand rule). The right side of the coil has a force **upwards** exerted on it, so it rotates as shown. (NB the commutator just allows the coil to spin without the wires getting tangled up!)

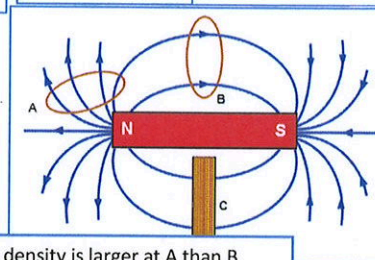


Key Terms	Definitions
Motor effect	The forces exerted on each other by a wire carrying a current and a magnetic field, thanks to the two magnetic fields interacting.
Magnetic flux density	A measure of the strength of a magnetic field – think of it as the number of magnetic field lines going through a set area – see diagram to help explain.
Electric motor	Device that causes rotation of a coil of wire carrying a current when it is placed in a magnetic field.

Equation	Meanings of terms in equation
$F = B l I$	F = force (newtons, N) B = magnetic flux density (tesla, T) I = current (amps, A) l = length (m)



Fleming's left hand rule. FBI – easy to remember!



Magnetic flux density is larger at A than B since more magnetic field lines cut through a given area (shown by the oval).

Physics Knowledge Organiser

Electromagnetism

Electromagnetism – current and magnetic fields

A wire that is carrying a current has a magnetic field around it. No current means no magnetic field, but switch it on and you get a magnetic field. As the diagram shows, switching the direction of the current switches the direction of the magnetic field. Also notice that the magnetic field gets stronger as you get closer to the wire carrying the current – this is shown by the field lines getting closer together (more concentrated).

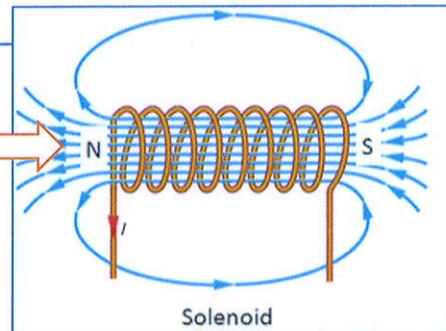
Not surprisingly, increasing the current increases the strength of the magnetic field. You can easily check the *direction* of the magnetic field with a magnetic compass, just like with bar magnets. We can dramatically increase the strength of the magnetic field by winding the current-carrying wire into a coil called a **solenoid**. Even with the same size current, the magnetic field is stronger in a solenoid. Once you've made a solenoid, notice that the magnetic field is very similar in shape to the magnetic field of a bar magnet – it has a north and south pole, and it's strongest at the poles. The magnetic field is also strong *inside* the coil – as the concentrated field lines show.

We can increase the strength of the magnetic field even further by putting a magnetic (e.g. iron) **core** in the solenoid – literally a cylinder of iron. We call this an **electromagnet**. (see diagram)

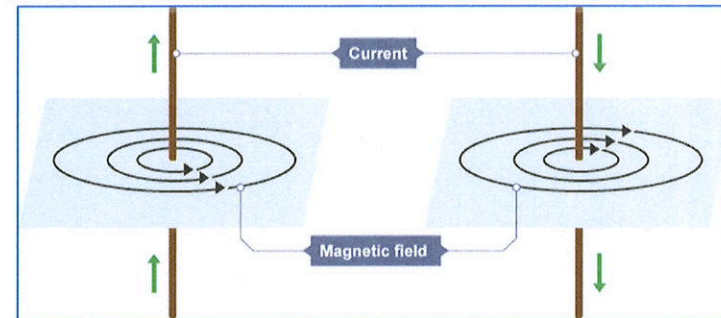
You can make an electromagnet **stronger** by:

- Increasing the **current** in the wire (probably by increasing the potential difference of the power supply)
- Increasing the **length** of wire in the solenoid – perhaps by adding more turns to the coil of wire.

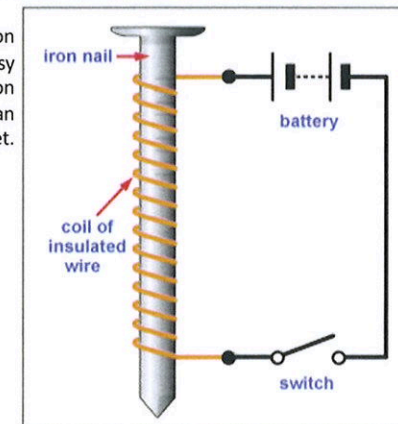
A north pole, since another north pole brought to this end would be repelled.



Key Terms	Definitions
Current	The rate of flow of charges in a circuit. If a current is flowing in a component, charges (e.g. electrons) are flowing through it.
Solenoid	A coil of wire.
Iron core	A piece of iron placed in the middle of a solenoid.
Electromagnet	A coil of wire with an iron core



In school, an iron nail is an easy choice for the iron core of an electromagnet.



Physics Knowledge Organiser Electromagnetism

Magnets

The **poles** of a magnet are where the magnetic forces are strongest. This is because the magnetic field lines are *most concentrated* at the poles, as you can see on the diagram below.

Magnets exert forces on one another when they are brought together: a **non-contact** force. If like poles (N-N or S-S) are brought together, the force is of repulsion. If unlike poles are brought together (N-S), the force is of attraction.

Magnets can be classified as **permanent** or **induced** (temporary). Permanent magnets have their own magnetic field, and it doesn't go away. Induced magnets are made when a material is placed in a magnetic field. (In most cases, this needs to be a magnetic material. The **only** magnetic materials are iron, steel, cobalt and nickel.) Induced magnets are always **attracted** to the magnet that turned them into a magnet – this is why you can pick up paper clips or nails with a bar magnet: the paper clip becomes an induced magnet with poles that are aligned so there is a force of attraction. See the poles labelled on the diagram. Induced magnetism is quickly lost when the material is removed from the magnetic field that induced it.

Magnetic fields

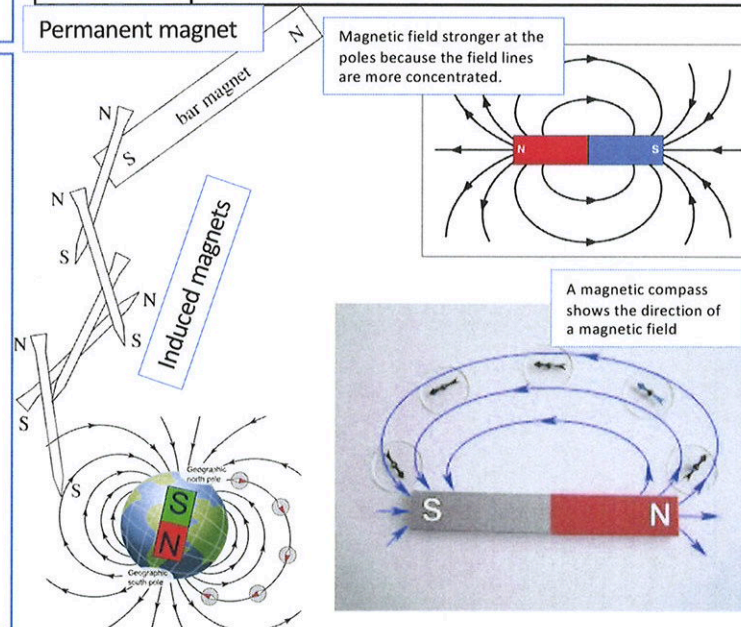
Magnetic fields are around all magnets (permanent or induced). The **direction** of the magnetic, as the diagram shows, is from **north to south**. The north pole of a magnet is properly defined as: *the pole that causes a force away from it, if a north pole is placed at that end*. This makes sense when you remember that like poles repel. So you can decide which end is north on an 'unknown magnet' by looking at the direction of the force that acts if a north pole (on another magnet) is brought to one end of your magnet. Repulsion (force away) means that end must be a north pole. Sometimes the north pole is called the **north seeking pole**, because it will point north on Earth if left freely suspended.

Magnetic fields are **strongest** at the poles and get weaker as the **distance** from the magnet increases. Using a **magnetic compass** (sometimes called a plotting compass), we can find out the direction of a magnetic field – the diagram shows how to do this.

Earth has a **magnetic field**. Using a compass, you can tell that the magnetic field points towards the north pole (Santa's house), so this actually means that the geographic north pole of Earth is a south pole of a magnet! See diagram.

Furthermore, we know it is the **core** of the Earth that is magnetic (not the whole thing) because a compass at the north pole (in the Arctic circle) points down below your feet. It is worth realising, too, that the geographic north pole (the top of Earth's axis) is in a different location to 'magnetic north' – the latter is actually in northern Canada. So a magnetic compass actually wouldn't be much use if you were trying to get to Father Christmas's house.

Key Terms	Definitions
Permanent magnet	A magnet that always has its own magnetic field. Attracts magnetic materials, and can attract or repel other magnets.
Induced magnet	A temporary magnet: make one by putting a suitable material in a magnetic field.
Poles	The ends of a magnet. Named north and south, based on which way on Earth they'd point if suspended freely. The other name is 'north seeking' or 'south seeking' as a result.
Magnetic field	The region around a magnet where a force acts on other magnets or on magnetic materials. (3D, unlike diagrams usually show)
Magnetic compass	A small bar magnet balanced on a pin so it can spin around. Points towards Earth's magnetic north due to Earth's magnetic field, but can also be used to find the direction of a magnetic field for another magnet.



Chemistry Knowledge Organiser

Using resources

LCA's

Life cycle assessments (LCAs) are carried out to assess the environmental impact of products in each of these stages of a products life:

1. extracting and processing raw materials
2. manufacturing and packaging
3. use and operation during its lifetime
4. disposal at the end of its useful life, including transport and distribution at each stage.

Some things for example the energy required to make the product are easy to measure. However some things like how much pollution it releases are hard to measure and therefore difficult to give a value to.

Example of an LCA

	Plastic Bag	Paper Bag
Raw Material	Crude Oil	Timber
Manufacturing and Packaging	Made from crude oil by fractional distillation, then cracking and polymerisation, high energy process. Little waste as other fractions are used for other things	Made by pulping timber. Lots of waste, high energy process
Use of product	Has multiple uses, can be reused.	Usually only used once.
Disposal	Can be recycled but are not biodegradable	Can be recycled and are biodegradable

Key Terms	Definitions
LCA	An evaluation of the environmental impact a product had over its lifetime

Recycling

Many of the Earth's resources are finite: for example, metals and crude oil. It is therefore vital we recycle resources. The processes for extracting these materials are often high energy and damaging to the environment.

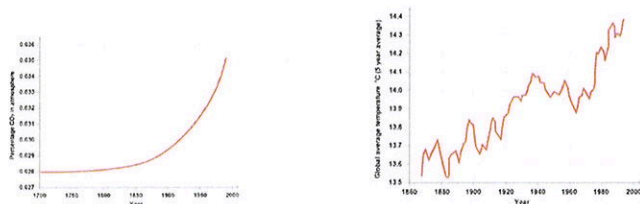
Metals can be recycled by melting and **recasting or reforming** into different products.

Some products, such as glass bottles, can be reused. Glass bottles can be **crushed and melted** to make different glass products. Other products cannot be reused and so are recycled for a different use.

Chemistry Knowledge Organiser Atmosphere and using resources

The Enhanced Greenhouse Effect

In the last 100 years humans have added to the greenhouse layer through combustion of fossil fuels, increased farming and deforestation. Many scientists believe this has led to a **rise in global temperature**.



However, this is such a complex system that misunderstandings of it can lead to **inaccurate or biased** opinions being reported in the media.

Consequences of Climate Change

An increase in average global temperature is a major cause of **climate change**.

The potential effects of global climate change include:

- sea level rise, which may cause flooding and increased coastal erosion
- more frequent and severe storms
- changes in the amount, timing and distribution of rainfall
- water shortages for humans and wildlife
- changes in the food producing capacity of some regions
- changes to the distribution of wildlife species.

Students should be able to discuss the scale, risk and environmental implications of global climate change.

Waste water and Sewage

Water from houses and farming needs to be **treated** before it can be released into rivers and lakes. It is firstly **filtered** to remove large particles and is then left so that the sediment drops to the bottom. The "sludge," this is the name given to the sediment at the bottom, is then anaerobically digested (broken down by bacteria) to make methane gas. Any remaining **effluent** is broken down by aerobic respiration. The water is then released back into the rivers and lakes.

Key Terms	Definitions
Carbon Footprint	The carbon footprint is the total amount of carbon dioxide and other greenhouse gases released over the life of a product
Carbon Neutral	There is no net increase in carbon dioxide in the atmosphere

Carbon Footprint

The **carbon footprint** is the total amount of carbon dioxide and other greenhouse gases released over the life of a product. Many people or businesses look to reduce their carbon footprint by:

- increased use of alternative energy supplies
- energy conservation
- carbon capture and storage
- carbon taxes and licences

People also try to **offset** their carbon by planting trees.

If something is carbon neutral, this means that there is no net increase in **carbon dioxide in the atmosphere** when it is used.

Water

Water of appropriate quality is **essential for life**. For humans, drinking water should have low levels of dissolved **salts and microbes**. Water that is safe to drink is called **potable water**.

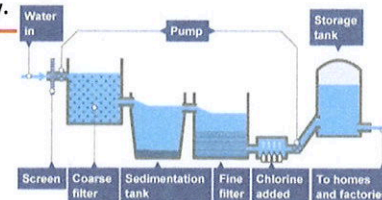
The methods used to produce potable water depend on available supplies of water and local conditions.

In the United Kingdom (UK), rain provides water with low levels of dissolved substances (fresh water) that collects in the ground and in lakes and rivers, and most potable water is produced by:

- passing the water through filter beds to remove any solids
- sterilising to kill microbes, using chlorine or UV light

In some parts of the world there is not enough fresh water so the salt has to be removed from water. This process is called **desalination**.

Desalination can be done by distillation or reverse osmosis. This requires a **large amount of energy**.



Physics Knowledge Organiser.

Waves.

Electromagnetic Waves (EM Waves): Producing Them

EM waves can be generated by changes in atoms or the nuclei of atoms. For instance, gamma rays are produced due to changes in the nucleus of an atom (nuclear decay – more on this in a later topic).

HT: radio waves can be produced by oscillations in electrical circuits. This is how a TV/radio broadcast is produced. It is received (e.g. by your TV aerial) by another electrical circuit; the radio waves create an alternating current with the same frequency as the radio wave itself. More on alternating current in the electricity topic – but it is enough to say for now that it involves oscillations.

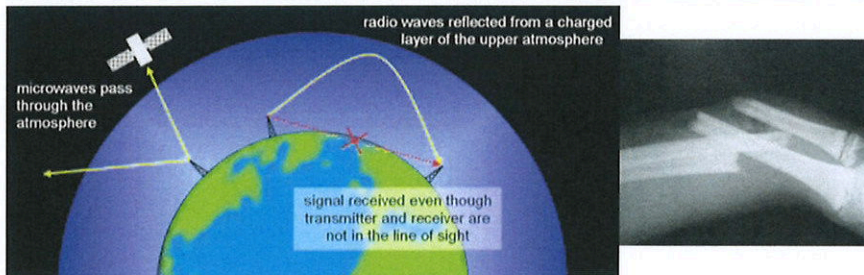
Dangers Of EM Waves

Ultraviolet waves, X-rays and gamma rays are potentially dangerous types of EM waves, since they can have hazardous effects on human tissues. How severe the effects are depends on the type of radiation and the size of the **dose** received.

Doses of radiation are measured according to how great the risk of harm to the body is. The radiation dose, or danger due to **exposure** to radiation, is measured in **sieverts (Sv)**.

A specific risk due to exposure to ultraviolet waves: they cause skin to prematurely age and increase the risk of skin cancer.

X-rays and gamma rays are **ionising** types of radiation. This means they can damage DNA, causing mutations and therefore increasing the risk of cancer.



Key Terms	Definitions
Radiation dose	The risk of harm due to exposure to radiation.
Exposure	Receiving and absorbing radiation (by the body).
Sievert	The measure of radiation dose. As with the usual prefix: 1000 millisieverts (mSv) = 1 sievert (Sv)
Ionising	Describes radiation that forms ions by 'knocking' electrons off atoms to make ions.
Cancer	Type of disease caused by specific mutations to DNA, resulting in cells dividing out of control (making a tumour).

Applications Using EM Waves

It is not exaggerating to say that EM waves dominate our technology and our lives. Here are some examples of the practical applications of EM waves:

- **Radio waves:** used for *television, radio* and Bluetooth. A signal carried by radio waves can get from a transmitting mast to a receiver by being reflected off a layer in the atmosphere.
- **Microwaves:** obviously, cooking food, but also communication with *satellites* and *mobile phones*; Wi-Fi internet. Unlike radio waves, microwaves can pass through the atmosphere (see diagram bottom left). In microwave ovens, the microwaves cause the water particles in the food to vibrate, heating it up.
- **Infrared:** electrical heaters, cooking food, infrared cameras. All objects emit infrared, but hotter objects emit more. An infrared camera detects infrared instead of visible light, so it can see hotter objects in the dark – night vision.
- **Visible light:** *fibre optic communication* (like the best broadband). Optical fibres reflect pulses of light all the way along their length. The pulses of light transmit the information.
- **Ultraviolet:** *sun tanning* beds... however, look at the dangers of UV in the other box.
- **X-rays:** both medical imaging for *diagnosis* (like broken bones) and medical *treatments*. X-rays can pass through soft tissue (like muscle), but not bone. That's why an X-ray image works to show up bones, and any breaks.
- **Gamma rays:** used in medical treatments such as radiotherapy.

Physics Knowledge Organiser.

Waves.

Electromagnetic Waves (EM Waves)

EM waves are always **transverse waves**. They transfer energy from the source of the waves to an **absorber** – object that absorbs the wave. EM waves occur all over the universe naturally, and we can produce them ourselves for all sorts of uses.

EM waves all travel at the **same velocity** through empty space (a vacuum) – at what we call the **speed of light**. However, the wavelength of EM waves varies from a few kilometres to wavelengths even smaller than an atom. The EM waves form a **continuous spectrum**, but for convenience we've grouped the infinite types of waves into seven groups of wavelengths, based on their properties. Learn the order of EM waves in the EM spectrum. Notice that a *longer* wavelength equates to a *lower* frequency and vice versa – this is clear from the wave equation.

Long wavelength —————> Short wavelength

Radio waves	Microwaves	Infrared	Visible light	Ultraviolet	X-rays	Gamma rays
-------------	------------	----------	---------------	-------------	--------	------------

Low frequency —————> High frequency

Visible light is the only kind of EM wave we can detect with our eyes (hence the name). Thus, we can only detect a limited range of EM waves without special equipment. However, it is easy to understand examples of how EM waves transfer energy. If you are standing in front of a fire, you feel the warmth thanks to infrared. Getting sunburn is due to the transfer of energy by ultraviolet waves from the Sun. Using Wi-Fi means a transfer of energy by microwaves.

Properties Of EM Waves

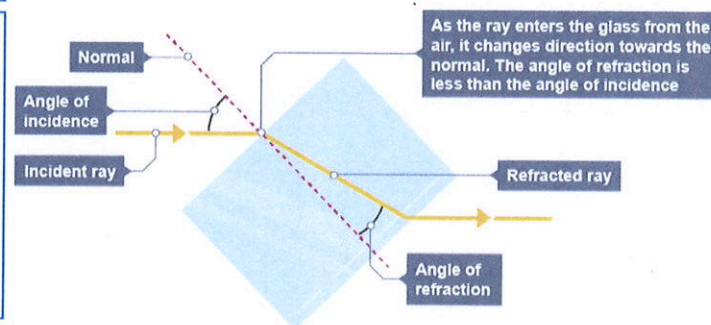
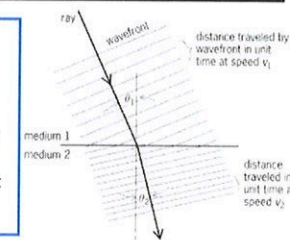
All EM waves can be **reflected, refracted, absorbed or transmitted** depending on the wavelength of the EM wave and the **medium** they are travelling through, or surface they are reaching.

Refraction occurs when a wave changes the medium it is travelling through. Refraction is a change in direction of the wave, and it happens at the boundary, or junction, between the media – for instance, the surface of a sheet of glass would be the boundary between the glass and the air. You need to be able to draw diagrams to show refraction, like the example opposite. Notice that the light ray refracts *towards* the normal as it enters the glass (this is because it slows down), and refracts *away* from the normal as it leaves the glass (it speeds back up), ending up parallel to the original ray in air.

Key Terms	Definitions
Reflection	Rebounding of a wave from a surface. The angle between the incident (in-going) wave and the normal is the same as the angle between the reflected wave and the normal.
Refraction	Changing direction of a wave due to a change in the medium it is travelling through.
Absorption	'Taking in' energy from a wave and transferring it to another form, usually heat. For instance, you warming up if you lie in the sunshine (revising science, of course).
Transmission	A wave travelling through a material. Right now, visible light waves are being transmitted through the air to your eyes.
Media	<i>Singular 'medium'</i> . The medium is the material through which a wave travels.
Normal	A 'construction line' (made up line to help with diagram drawing) at right angles to a surface at the point where the wave hits the surface.

HT: More On Refraction

Refraction is due differences in the velocity of the waves in different media. The diagram shown here represents the **wave fronts**. The wave slows down as it enters medium 2, but the near edge slows first. The other end is faster, as it is still in medium 1. This is what causes the 'bending' of the wave towards the normal.



Physics Knowledge Organiser. Waves.

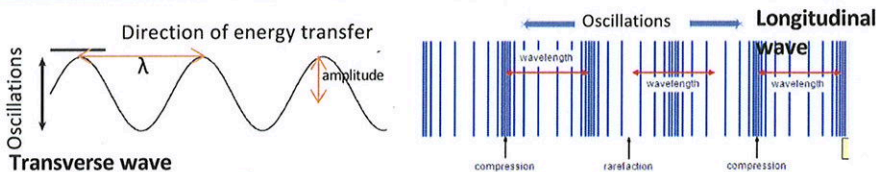
Types Of Wave

You can see waves easily in the sea, or if a tap is dripping into a sink of water. However, waves are far more common than just that. Waves can be **mechanical**, which means they involve particles moving, or **oscillating**, such as waves in the sea or sound waves in the air. Or, they can be **electromagnetic**, which don't involve any particles oscillating – instead, EM waves involve vibrations or oscillations of the electromagnetic field. All waves involve the transfer of energy.

The other way of defining types of wave is whether they are **longitudinal** or **transverse**. Which one they are depends on the direction of the oscillations compared to the direction of energy transfer by the wave.

- In **transverse waves**, the oscillations are **perpendicular** to the direction of energy transfer.
- In **longitudinal waves**, the oscillations are **parallel** to the direction of energy transfer. They show areas of **compression** and **rarefaction** – see diagram.

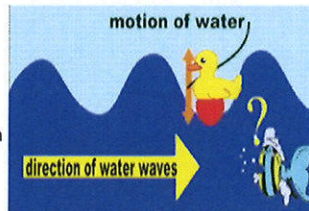
Examples: ALL electromagnetic waves are transverse. Mechanical waves can be either longitudinal or transverse. For instance: sound waves are mechanical and are longitudinal. Ripples in water are mechanical waves, and are transverse.



Particles Don't Travel, But The Wave Does. Particles Just Oscillate.

An easy way to see that the particles aren't travelling but the wave is (so energy is being transferred): put a rubber duck in a tank of water where waves are moving across. The duck goes up and down, just like the water particles (oscillations perpendicular to direction of energy transfer, remember), while the waves move across.

With longitudinal waves, you can tell the particles aren't flowing either – just oscillate. When you speak, you don't breathe into someone else's ear! Also, when a tuning fork is vibrating to produce a sound wave, it doesn't create a vacuum around it due to air particles travelling away.



Key Terms	Definitions
Wave	A wave transfers energy from one place to another, and can also carry information. All waves involve movements or oscillations , allowing energy to be transferred without particles having to flow or travel from one place to another.
Oscillations	Vibrations or movements. These movements are of particles in mechanical waves, or of the electromagnetic field when it comes to electromagnetic waves.
Perpendicular	At right angles to.
Amplitude	The amplitude of a wave is the maximum displacement of a point on the wave from the undisturbed position. <i>Translated:</i> the distance from a peak or trough to the 'midline' of the wave.
Wavelength	The distance from a point on one wave to the equivalent point on the next wave along. This is easiest to measure at the distance from the centre of one area of compression to the next (longitudinal waves) or the distance from peak to peak (transverse waves). Symbol: λ
Frequency	The frequency of a wave is the number of complete waves that pass a point per second. Symbol: f
Period	The period, or time period, of a wave is the time it takes to complete a full wave. Symbol: T

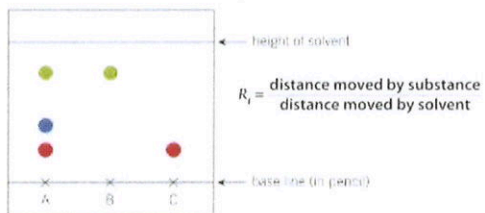
Equation	Meanings of terms in equation
$T = \frac{1}{f}$	$T = \text{time period (seconds, s)}$ $f = \text{frequency (hertz, Hz)}$
$v = f\lambda$	$v = \text{wave speed (m/s)}$ $f = \text{frequency (Hz)}$ $\lambda = \text{wavelength (metres, m)}$

The Wave Equation

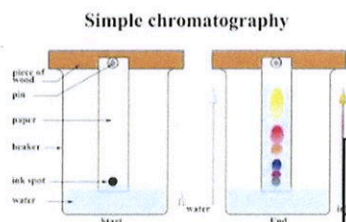
The equation is directly above. You could measure the speed of sound in air, with a long distance between you and a friend. They make a loud noise (you start your clock when you see them do it) and you time how long it takes to get to you. Just use distance/time to calculate the speed.

Chemistry Knowledge Organiser

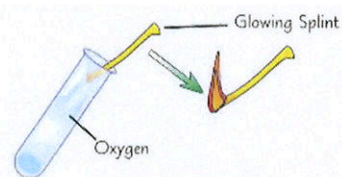
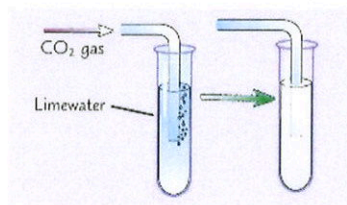
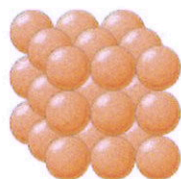
Chemical analysis



Chromatography: separates substances within a mixture



Pure substances – made up of one compound or element

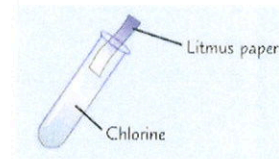
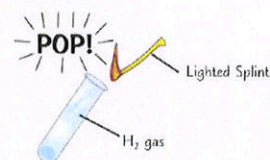


Testing for	Results
Chlorine	Bleaches damp litmus paper white
Oxygen	Can relight a glowing splint
Carbon dioxide	If Carbon dioxide bubbles through limewater it will turn cloudy
Hydrogen	A lit splint will make a squeaky pop noise when put in a test tube with hydrogen gas



Pure substances melt and boil at specific temperatures.

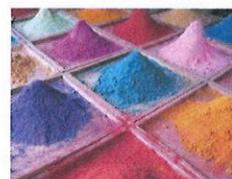
Impure substances will have lower melting points but can increase the boiling point of your substance.



Formulations are useful in the pharmaceutical industry as you can alter the formula of a tablet or pill to make sure the properties of the drug are correct: concentration and shelf life



Formulations: useful mixtures with a precise purpose



Chemistry Knowledge Organiser

Atmosphere

The Atmosphere

For 200 million years, the amount of different gases in the atmosphere have been much the same as they are today:

- 78% nitrogen
- 21% oxygen
- The atmosphere also contains small proportions of various other gases, including carbon dioxide, water vapour and noble gases.

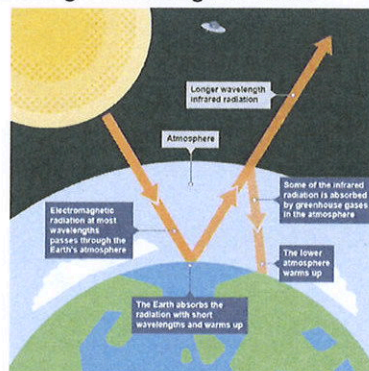
The Greenhouse Effect

The Earth has a layer of gases called the **Greenhouse layer**. These gases, which include carbon dioxide, methane and water vapour, maintain the temperature on Earth high enough to support life.

The greenhouse layer allows the short wave infrared radiation emitted by the Sun to pass through it but absorbs the long wave infra red radiation which is emitted by the Earth. This is how it insulates the Earth.

Some human activities increase the amounts of greenhouse gases in the atmosphere. These include:

- combustion of fossil fuels
- deforestation
- methane release from farming
- more animal farming (digestion, waste decomposition)



Key Terms	Definitions
Greenhouse Layer	The layer of gases which absorb infra red radiation emitted from the Earth

The Evolution of the Atmosphere

Scientists are not sure about the gases in the early atmosphere, as it was so long ago (4.6 billion years) and the lack of evidence. Many scientists believe the early atmosphere was made up of mainly carbon dioxide, water vapour and small amounts of methane, ammonia and nitrogen, released by **volcanoes**. **There was little or no oxygen around at this time**. The early Earth was very hot, but as it cooled the water vapour in the atmosphere condensed and **formed the oceans**.

As the oceans formed, carbon dioxide dissolved in the ocean. The carbon dioxide formed carbonates and precipitated out (formed solids). This process reduced the amount of carbon dioxide in the atmosphere.

Approximately 2.7 billion years ago, plants and algae evolved. This decreased the amount of carbon dioxide in the atmosphere and increased the amount of oxygen in the atmosphere.

When sea animals evolved they used the carbon dioxide in the ocean to form their shells and bones (which are made of carbonates). When these sea creatures died their shells and bones became limestone (calcium carbonate), which is a sedimentary rock.

Once enough oxygen was in the atmosphere, it could support animals, which carry out respiration. These processes have caused the levels of gases in the atmosphere to be where they are today.

Changes in the atmosphere

Recent activity by humans has changed the composition of the atmosphere. Combustion of fossil fuels has increased the amount of carbon dioxide in the atmosphere as well as other harmful gases such as nitrous oxides, which are made by nitrogen reacting with oxygen in the air.

Sulphur is also present in many fuels, this has increased the amount of sulphur dioxide which causes acid rain. Carbon particles can also be released as carbon monoxide from incomplete combustion.

Year 11 Higher ITERATION

Key Concepts

Iteration is the **repetition** of a mathematical procedure applied to the result of a previous application, typically as a means of **obtaining successively closer approximations** to the solution of a problem.

Examples

When $x_0 = 0$ $x_{n+1} = \frac{2}{x_n^2 + 3}$

Calculate the values of x_1, x_2, x_3 to find an estimate for the solution to $x^3 + 3x = 2$

$$x_{0+1} = \frac{2}{0^2 + 3} = 0.\dot{6}$$

We substitute this value into the next step.

$$x_{1+1} = \frac{2}{0.\dot{6}^2 + 3} = 0.5806451613$$

$$x_{2+1} = \frac{2}{(0.58\dots)^2 + 3} = 0.5993140006$$

An estimate of the solution is 0.6 because all of the solutions round to 1d.p.

Key Words

Iteration
Solution
Approximate

Starting with $x_0 = 1$, use the iteration formula

$$x_{n+1} = \sqrt{\frac{3}{2x_n}}$$

four times to find an estimate for the solution.

Year 11 Higher

DIRECT AND INVERSE PROPORTION ON GRAPHS

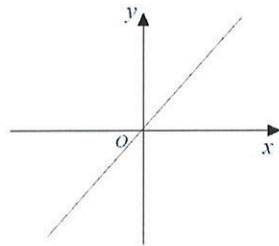
Key Concepts

Variables are **directly proportional** when the **ratio is constant** between the quantities.

Variables are **inversely proportional** when **one quantity increases in proportion to the other decreasing**.

Direct and inverse proportion can also be represented on **graphs**.

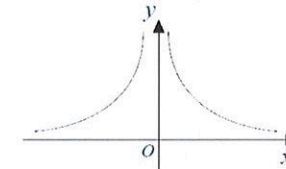
Examples



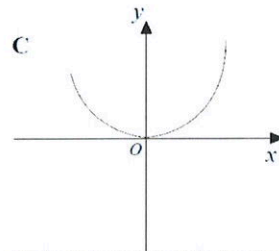
y is directly proportional to x

$$y \propto x$$

$$y \propto \frac{1}{x}$$



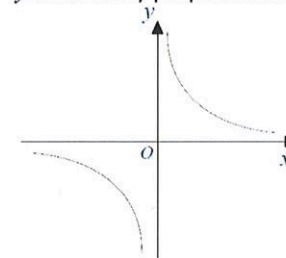
y is inversely proportional to x



y is directly proportional to x^2

$$y \propto x^2$$

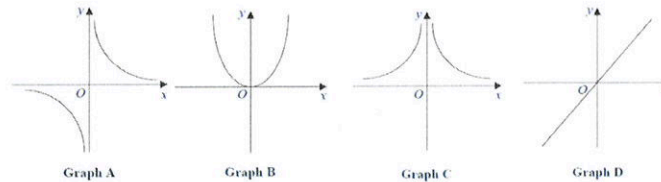
$$y \propto \frac{1}{x^2}$$



y is inversely proportional to x^2

Key Words

Direct
Inverse
Proportion
Graph



Match the correct graph to each statement:

Proportionality relationship	Graph letter
y is directly proportional to x	
y is inversely proportional to x	
y is proportional to the square of x	
y is inversely proportional to the square of x	

ANSWERS

Year 11 Higher

DIRECT AND INVERSE PROPORTION USING ALGEBRA

Key Concepts

Variables are **directly proportional** when the **ratio is constant** between the quantities.

Variables are **inversely proportional** when **one quantity increases in proportion to the other decreasing**.

α is the symbol we use to show that one variable is in proportion to another.

Direct proportion: $y \propto x$

Inverse proportion: $y \propto \frac{1}{x}$

Direct proportion:

g is directly proportional to the square root of h

When $g = 18, h = 16$

Find the possible values of h when $g = 2$

$$\begin{aligned}
 g &\propto \sqrt{h} & g &= 4.5\sqrt{h} \\
 g &= k\sqrt{h} & \text{When } g &= 2 \\
 18 &= k\sqrt{16} & 2 &= 4.5\sqrt{h} \\
 18 &= 4k & \frac{2}{4.5} &= \sqrt{h} \\
 4.5 &= k & \left(\frac{4}{9}\right)^2 &= h \\
 g &= 4.5\sqrt{h} & \frac{16}{81} &= h
 \end{aligned}$$

Examples

Inverse proportion:

The time taken, t , for passengers to be checked-in is inversely proportional to the square of the number of staff, s , working.

It takes 30 minutes passengers to be checked-in when 10 staff are working. How many staff are needed for 120 minutes?

$$\begin{aligned}
 t &\propto \frac{1}{s^2} & t &= \frac{3000}{s^2} \\
 t &= \frac{k}{s^2} & 120 &= \frac{3000}{s^2} \\
 30 &= \frac{k}{10^2} & s^2 &= \frac{3000}{120} \\
 3000 &= k & s^2 &= 25 \\
 t &= \frac{3000}{s^2} & s &= \sqrt{25} \\
 & & s &= 5
 \end{aligned}$$

Key Words

Direct
Inverse
Proportion
Divide
Multiply
Constant

1) e is directly proportional to f

When $e = 3, f = 36$

Find the value of f when $e = 4$

2) x is inversely proportional to the square root of y .

When $x = 12, y = 9$

Find the value of x when $y = 81$

Year 11 Higher

DIRECT AND INVERSE PROPORTION

Key Concepts

Variables are **directly proportional** when the **ratio is constant** between the quantities.

Variables are **inversely proportional** when **one quantity increases in proportion to the other decreasing.**

Examples

Direct proportion:

Value of A	32	P	56	20	72
Value of B	20	30	35	R	45

Ratio constant: $20 \div 32 = \frac{5}{8}$

From A to B we will multiply by $\frac{5}{8}$.
 From B to A we will divide by $\frac{5}{8}$.

$P = 30 \div \frac{5}{8} = 48$
 $\times \frac{5}{8} = 12.5$

$R = 20$

Inverse proportion:

Value of A	10	20	14	R	28
Value of B	14	P	10	70	5

$P = 7$

$\times 5$

$R = 2$

Key Words

Direct
 Inverse
 Proportion
 Divide
 Multiply
 Constant

Complete each table:

1) Direct proportion

Value of A	5	P	22
Value of B	9	28.8	Q

2) Inversproportion

Value of A	4	P	18
Value of B	9	3	Q

ANSWERS 1) P = 16, Q = 39.6 2) P = 12, Q = 2

Year 11 Higher

EQUATION OF A CIRCLE

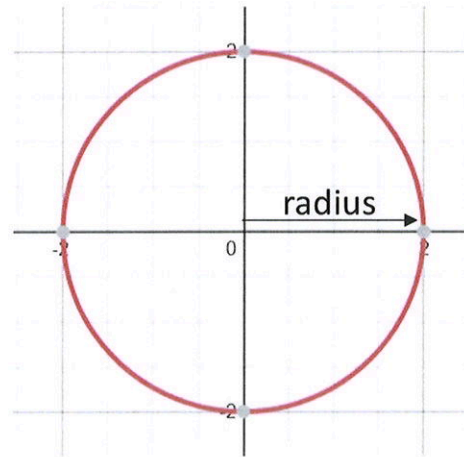
Key Concepts

The **equation of a circle** will be in the format:

$$x^2 + y^2 = \text{radius}^2$$

The **centre** of each circle will be at the coordinate **(0,0)**.

Examples



$$x^2 + y^2 = 4$$

$$\begin{aligned} \text{Radius} &= \sqrt{4} \\ &= \pm 2 \end{aligned}$$

Therefore we can plot the following coordinates to support us sketching our graph: (0,2), (0,-2), (2,0), (-2,0)

Key Words

Radius
Centre
Sketch
Square root

Calculate the length of the radius for each of the following equations of circles:

1) $x^2 + y^2 = 25$

2) $x^2 + y^2 = 49$

3) $x^2 + y^2 = 256$

4) $x^2 + y^2 = 22$

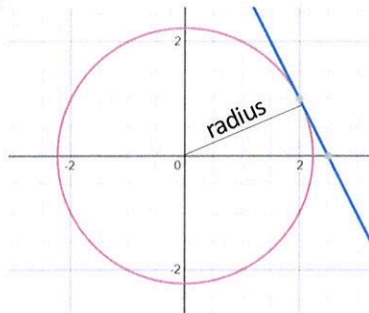
Year 11 Higher TANGENT TO A CIRCLE

Key Concepts

A **tangent** touches a circle at **one point**.

A **tangent** line is **perpendicular** to the **radius** of the circle.

The gradient of the tangent is the **negative reciprocal** of the gradient of the equation of the line of the radius.



Find the equation of the tangent to the circle with equation:

$$x^2 + y^2 = 5$$

which passes through the point (2,1).

Examples

1) Find the equation of the line which is the radius of the circle.

$$\text{gradient} = \frac{1}{2} \text{ therefore } y = \frac{1}{2}x$$

2) The tangent is perpendicular to the radius.

$$\begin{aligned} \text{gradient of tangent} &= \text{negative reciprocal of } \frac{1}{2} \\ &= -2 \end{aligned}$$

3) Substitute in the given coordinate (2,1) to $y = -2x + c$

$$\begin{aligned} y &= -2x + c \\ 1 &= (-2 \times 2) + c \\ 1 + 4 &= c \\ 5 &= c \\ y &= -2x + 5 \end{aligned}$$

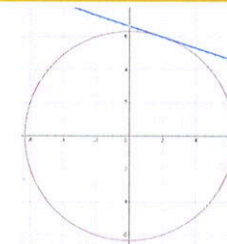
Key Words

Radius
Tangent
Negative reciprocal
Perpendicular
Gradient

Find the equation of the tangent to the circle with equation:

$$x^2 + y^2 = 40$$

which passes through the point (2,6).



ANSWER $y = -\frac{1}{2}x + \frac{3}{20}$

Year 11 Higher

THE SINE AND COSINE RULE

Key Concepts

Sine rule

To calculate a missing side:

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

To calculate a missing angle:

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Cosine rule

To calculate a missing side:

$$a^2 = b^2 + c^2 - 2bccosA$$

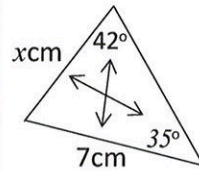
To calculate a missing angle:

$$cosA = \frac{b^2 + c^2 - a^2}{2bc}$$

Area of a triangle using sine

$$area = \frac{1}{2} absinC$$

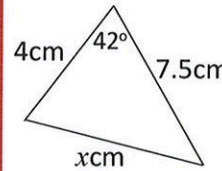
Examples



$$\frac{x}{\sin 35} = \frac{7}{\sin 42}$$

$$x = \frac{\sin 35 \times 7}{\sin 42}$$

$$x = 6.0 \text{ cm}$$

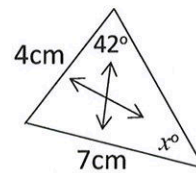


$$a^2 = b^2 + c^2 - 2bccosA$$

$$x^2 = 4^2 + 7.5^2 - 2 \times 4 \times 7.5 \times \cos 42$$

$$x^2 = 27.66$$

$$x = \sqrt{27.66} = 5.26 \text{ cm}$$

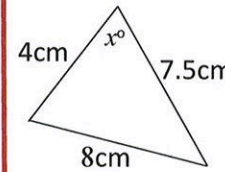


$$\frac{\sin x}{4} = \frac{\sin 42}{7}$$

$$\sin x = \frac{\sin 42 \times 4}{7}$$

$$x = \sin^{-1} \left(\frac{\sin 42 \times 4}{7} \right)$$

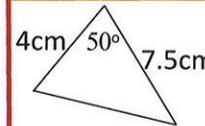
$$x = 22.5^\circ$$



$$\cos A = \frac{4^2 + 7.5^2 - 8^2}{2 \times 4 \times 7.5}$$

$$A = \cos^{-1} \left(\frac{4^2 + 7.5^2 - 8^2}{2 \times 4 \times 7.5} \right)$$

$$A = 82.1^\circ$$

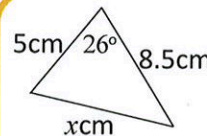


$$area = \frac{1}{2} \times 4 \times 7.5 \times \sin 50$$

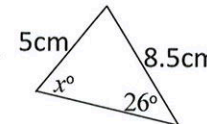
$$area = 11.49 \text{ cm}^2$$

Key Words

Sine
Cosine
Side
Angle
Inverse
2D



1a) Calculate x
b) Calculate the area of the triangle



2a) Calculate x
b) Calculate the area of the triangle

ANSWERS 1a) 4.57cm 2a) 9.32cm² b) 48.18° b) 20.45cm²

Year 11 Foundation

EXPAND AND SIMPLIFY BRACKETS

Key Concepts

Expanding brackets

Single: Where each term inside the bracket is multiplied by the term on the outside of the bracket.

Double: Where each term in the first bracket is multiplied by all terms in the second bracket.

Factorising expressions

Putting an expression back into brackets. To "factorise fully" means take out the HCF.

Difference of two squares

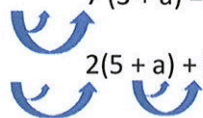
When two brackets are repeated with the exception of a sign change. All numbers in the original expression will be square numbers.

Examples

Linear expressions

Expand and simplify where appropriate

1) $7(3 + a) = 21 + 7a$



2) $2(5 + a) + 3(2 + a) = 10 + 2a + 6 + 3a$



$5a + 16$

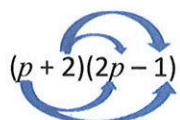
3) Factorise $9x + 18 = 9(x + 2)$

4) Factorise $6e^2 - 3e = 3e(2e - 1)$

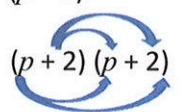
Quadratic expressions

Expand and simplify:

1) $(p + 2)(2p - 1)$
 $= 2p^2 + 4p - p - 2$
 $= 2p^2 + 3p - 2$



2) $(p + 2)^2$
 $(p + 2)(p + 2)$
 $= p^2 + 2p + 2p + 4$
 $= p^2 + 4p + 4$



Factorise:

3) $x^2 - 2x - 3 = (x - 3)(x + 1)$

Factorise and solve:

4) $x^2 + 4x - 5 = 0$
 $(x - 1)(x + 5) = 0$

Therefore the solutions are:

Either $x - 1 = 0$

$x = 1$

Or $x + 5 = 0$

$x = -5$

Key Words

- Expand
- Factorise
- Simplify
- Product
- Solve

- 1) Expand and simplify (a) $3(2 - 7f)$ (b) $5(m - 2) + 6$ (c) $3(4 + t) + 2(5 + t)$
- 2) Factorise (a) $6m + 12t$ (b) $9t - 3p$ (c) $4d^2 - 2d$
- 3) Expand $(5g - 4)(2g + 1)$
- 4) (a) Factorise $x^2 - 8x + 15$ (b) Factorise and solve $x^2 + 7x + 10 = 0$

- ANSWERS: 1) (a) $6 - 21t$ (b) $5m - 4$ (c) $22 + 5t$ (d) $2d(2d - 1)$ (e) $10g^2 - 3g - 4$
- 2) (a) $3(2 + 7f)$ (b) $3(3t - p)$ (c) $2d(2d - 1)$ (d) $3(4 + t) + 2(5 + t)$ (e) $10g^2 - 3g - 4$

Year 11 Foundation

ALGEBRAIC EXPRESSIONS

Key Concepts

When collecting like terms involving addition or subtraction, add/subtract the numbers in front of the letters.

If the like terms are multiplied, multiply the numbers in front of the letters and put the letters next to each other.

If the like terms are divided, divide the numbers in front of the letters.

Key Words

Simplify

Term

Collect

Examples

Simplify the following expressions:

1) $4p + 6t + p - 2t = 5p + 4t$

2) $3 + 2t + p - t + 2 = 5 + t + p$

3) $f + 3g - 4f = 3g - 3f$

4) $f^2 + 4f^2 - 2f^2 = 3f^2$

5) $6a \times 3b \times 2c = 36abc$

6) $\frac{9b}{3} = 3b$

Questions

Simplify:

1) $7p + 3q + p - 3q$

3) $m - 8g - 5m$

5) $2a \times 5b \times 4c$

7) $\frac{36p}{12}$

2) $5 + 4t + 3p - 2t + 7$

4) $b^2 - 7b^2 + 2b^2$

6) $8m \times 3n \times 2m$

8) $\frac{6t}{18}$

ANSWERS: 1) $8p$ 2) $12 + 2t + 3p$ 3) $-4m - 8g$ 4) $-4b^2$
 5) $40abc$ 6) $48m^2n$ 7) $3p$ 8) $\frac{2}{3}$

Year 11 Foundation

EXPRESSIONS/EQUATIONS/IDENTITIES AND SUBSTITUTION

Key Concepts

A **formula** involves two or more letters, where one letter equals an **expression** of other letters.

An **expression** is a sentence in algebra that does NOT have an equals sign.

An **identity** is where one side is the equivalent to the other side.

When **substituting** a number into an expression, replace the letter with the given value.

Key Words

Substitute
Equation
Formula
Identity
Expression

Examples

- 1) $5(y + 6) \equiv 6y + 30$ is an identity as when the brackets are expanded we get the answer on the right hand side
- 2) $5m - 7$ is an **expression** since there is no equals sign
- 3) $3x - 6 = 12$ is an **equation** as it can be solved to give a solution
- 4) $C = \frac{5(F - 32)}{9}$ is a **formula** (involves more than one letter and includes an equal sign)
- 5) Find the value of $3x + 2$ when $x = 5$
 $(3 \times 5) + 2 = 17$
- 6) Where $A = b^2 + c$, find A when $b = 2$ and $c = 3$
 $A = 2^2 + 3$
 $A = 4 + 3$
 $A = 7$

Questions

- 1) Identify the equation, expression, identity, formula from the list
- 2) (a) $v = u + at$ (b) $u^2 - 2as$
- 3) (c) $4x(x - 2) = x^2 - 8x$ (d) $5b - 2 = 13$
- 2) Find the value of $5x - 7$ when $x = 3$
- 3) Where $A = d^2 + e$, find A when $d = 5$ and $e = 2$

(d) equation

(c) identity

(b) expression

(3) $A = 27$

ANSWERS: 1) (a) formula

(2) 8

Year 11 Foundation STANDARD FORM

Key Concepts

We use standard form to write a very large or a very small number in scientific form.

$$a \times 10^b$$

Must be $1 \leq a < 10$

Must be $\times 10$
 b is an integer

Links
Science

Key Words
Standard form
Base 10

Examples

Write the following in **standard form**:

- 1) $3000 = 3 \times 10^3$
- 2) $4580000 = 4.58 \times 10^6$
- 3) $0.0006 = 6 \times 10^{-4}$
- 4) $0.00845 = 8.45 \times 10^{-3}$

Calculate the following, write your answer in **standard form**:

- 1) $(3 \times 10^3) \times (5 \times 10^2)$
 $3 \times 5 = 15$
 $10^3 \times 10^2 = 10^5$
 $15 \times 10^5 = 1.5 \times 10^6$
- 2) $(8 \times 10^7) \div (16 \times 10^3)$
 $8 \div 16 = 0.5$
 $10^7 \div 10^3 = 10^4$
 $0.5 \times 10^4 = 5 \times 10^3$

- A) Write the following in standard form:
 1) 74 000 2) 1 042 000 3) 0.009 4) 0.000 001 24
- B) Work out:
 1) $(5 \times 10^2) \times (2 \times 10^5)$ 2) $(4 \times 10^3) \times (3 \times 10^8)$
 3) $(8 \times 10^6) \div (2 \times 10^5)$ 4) $(4.8 \times 10^2) \div (3 \times 10^4)$

ANSWERS: A1) 7.4×10^4 2) 1.042×10^6 3) 9×10^{-3} 4) 1.24×10^{-6}
 B1) 1×10^8 2) 1.2×10^{12} 3) 4×10^4 4) 1.6×10^{-2}

Year 11 Foundation STANDARD FORM

Key Concepts

We use standard form to write a very large or a very small number in scientific form.

Must be $\times 10$
 b is an integer

$$a \times 10^b$$

Must be $1 \leq a < 10$

Examples

Write the following in **standard form**:

- 1) $3000 = 3 \times 10^3$
- 2) $4580000 = 4.58 \times 10^6$
- 3) $0.0006 = 6 \times 10^{-4}$
- 4) $0.00845 = 8.45 \times 10^{-3}$

Calculate the following, write your answer in **standard form**:

- 1) $(3 \times 10^3) \times (5 \times 10^2)$
 $3 \times 5 = 15$
 $10^3 \times 10^2 = 10^5$
 15×10^5
 $= 1.5 \times 10^6$
- 2) $(8 \times 10^7) \div (16 \times 10^3)$
 $8 \div 16 = 0.5$
 $10^7 \div 10^3 = 10^4$
 0.5×10^4
 $= 5 \times 10^3$

Key Words

Standard form
Base 10

Links

Science

A) Write the following in standard form:

- 1) 74 000 2) 1 042 000 3) 0.009 4) 0.000 001 24

B) Work out:

- 1) $(5 \times 10^2) \times (2 \times 10^5)$ 2) $(4 \times 10^3) \times (3 \times 10^8)$
- 3) $(8 \times 10^6) \div (2 \times 10^5)$ 4) $(4.8 \times 10^2) \div (3 \times 10^4)$

ANSWERS: A1) 7.4×10^4 2) 1.042×10^6 3) 9×10^{-3} 4) 1.24×10^{-6}
 B1) 1×10^8 2) 1.2×10^{12} 3) 4×10^4 4) 1.6×10^{-2}