Hartford
Church of England
High School

CARITAS ET VERITAS

Year 9

Knowledge Organiser

Contents

Maths

YEAR 9 KNOWLEDGE ORGANISER HALF TERM 3

Sum of angles at a point

The sum of angles around a point is 360°

Sum of angles on a straight line

Adjacent angles that share a common point on a line add up to 180°

Vertically opposite angles

Vertically opposite angles are the same

Sum of angles in triangles

Sum of interior angles in a triangle = 180°

Sum of angles in quadrilaterals

Sum of interior angles in a quadrilateral = 360°

$y = mx + c$

The **coefficient** of x (the number in front of x) tells us the gradient of the line

$y = mx + c$ ← The value of **c** is the point at which the line crosses the y-axis. **Y intercept**

y and x are **coordinates**

EXTRAS


English

English

Year 9 HT3 Great Expectations

Characters	Language Techniques	Structural Terminology
Pip Could be symbolic of the emotional, intellectual and spiritual growth that he makes throughout the novel as a pip describes a seed. **Estella** Means star-like. She is beautiful but is far beyond Pip's grasp. It may also link to her lack of feeling. Ch8: 'Her light came along the long dark passage like a star.' **Miss Havisham** A compound of the verb 'have' and the noun 'sham' meaning false. Miss Havisham could have anything she wants because of her wealth but instead she lives a self-imposed impoverished life. **Abel Magwitch** Pip's convict is dangerous and desperate, but Dickens used his first/forename to identify him as a victim. Cain and Abel were the sons of Adam and Eve. Cain committed the first ever murder by killing his brother. Abel was a shepherd and while Magwitch was transported to Australia he'd been living as a sheep farmer which further strengthens the analogy.	**Simile:** A comparison of two things using the key words like or as. *The world is like a stage* **Metaphor**: A direct comparison of two things which is not literal. *The world is a stage* **Emotive language:** Words which elicit an emotional reaction. *Defeated and heartbroken, the team left the pitch* **Hyperbole:** exaggerated statements or claims not meant to be taken literally **Pathetic fallacy:** When nature reflects human emotion (we often see this in the weather) *The sun shone in the cloudless sky as the friends were reunited* **Imagery:** Creating a mental picture for the reader through appealing to the senses (smell, touch, taste, see, hear). *The smell of freshly cut grass filled the air* **Personification:** the giving of human characteristics to a non-human object *The rain tapped against the window* **Semantic field:** a group of words within a sentence or paragraph which are related in meaning and theme. *Corpse-like, skeleton, deathly, frail, grotesque*	**Motif:** a repeated pattern—an image, sound, word, or symbol that comes back again and again within a particular story. **Symbolism:** the use of symbols/ things to represent ideas **Juxtaposition**: two things being seen or placed close together with contrasting effect **First person narrative:** a mode of storytelling in which a storyteller recounts events from their own point of view using the first person such as "I" **Bildungsroman:** a novel that depicts and explores the manner in which the protagonist develops morally and psychologically. A "pip" is a small seed, something that starts off tiny and then grows and develops into something new. Pip's name, then, is no accident, as Great Expectations is a bildungsroman, a story of the growth and development of its main character. **Simple sentence:** contains one clause with a subject and verb – the train was late. **Compound sentence:** contains two independent clauses that are related and joined with a conjunction – I like coffee and she likes water **Complex sentence:** contains one or more subordinate clause – Although I enjoy Maths, English is my favourite subject.

Plot		
Volume 1	Ch. 1-6	Christmas Eve, afternoon: Pip meets the convict (Abel Magwitch); Pip asked to steal file and "wittles" for them. Joe and Mrs. Joe introduced; guns signal escaped convicts; Pip steals food and suffers from "wild fancies" in his guilt. The soldiers; Magwitch and Compeyson; Magwitch "confesses" to Pip's crime. Pip's guilt; Pumblechook describes Magwitch's "theft".
	Ch. 7-13	The reader is introduced to Pip's limited education (from Biddy). This is compared with Joe's lack of learning. Miss Havisham wants Pip to visit; Pip sees Estella, Miss Havisham at Satis House: the gothic conventions are prevalent throughout Chapter 8. Estella seen as "a star" is Pip's eyes and she derides him as he "calls knaves, Jacks" demonstrating his poor breeding. Pip lies about Satis House and what he sees. Pumblechook pretends to know; Pip tells Joe the truth. Joe Gargey goes to Satis House and is given twenty-fie guineas for Pip's time, he is now bound into an apprenticeship with Joe which he feels sullen about. Mrs. Joe feels slighted not to see Miss Havisham
	Ch. 14-19	Retrospective narrative reflection on Pip's shame and ingratitude – juxtaposed with this, Joe's virtues are described. The half-holiday: Joe fights Dolge Orlick and Mrs. Joe is assaulted. Biddy moves in to look after Mrs Joe. Jaggers tells Pip of his "great expectations" and secrecy of benefactor. Pip undergoes transition point in Chapter 19 as he visits Mr Trabb's shop and apparently without "boasting" flaunts his new wealth.
Volume 2	Ch. 20-26	Pip lodges with Herbert. Wemmick takes Pip to Barnard's Inn; Pip recognizes Herbert as "pale young gentleman". Herbert tells Miss Havisham's story. Pip takes up rowing and living the life of a 'gentleman' as he spends his fortune. Mr Jaggers flaunts his housekeeper, Molly's wrists in a scene of social power and male dominance. Pip is yet to realise Molly is Estella's mother.
	Ch. 27-33	Biddy writes to Pip asking if Joe can visit Barnard's Inn; he calls Pip "Sir" highlighting Joe's "simple dignity" that does not fit with the figure of the 'gentleman'. Pip reads in local paper that Pumblechook is his "patron". Pip visits Miss Havisham; Orlick is gatekeeper. Pip declares his love for Estella. Pip waits for Estella who is visiting London. Wemmick shows him Newgate (convict motif).
	Ch. 34-39	Pip and Herbert accumulate rather large debts and Mrs. Joe dies. Pip comes of age (November) and becomes responsible for his finances; asks Wemmick's advice for Herbert. Pip is to escort Estella and take her to Satis House; quarrels with Miss Havisham and discovers Bentley Drummle as Estella's suitor. He leaves heartbroken. Pip is 23 now and Magwitch returns - revealing he is Pip's benefactor.
Volume 3	Ch. 40-44	The man on the stairs, "Provis" comes to stay; Jaggers confirms his story as Pip's benefactor. Herbert then meets Magwitch/"Provis". Herbert advises Pip to take Magwitch out of the country; they ask him about his life. Pip tells Estella he loves her but Estella is set to marry Bentley Drummle.
	Ch. 45-50	Pip feels he is being watched...He fears Estella is married but will not make sure. Pip dines with Jaggers; Estella is married. Pip recognizes Molly as her mother and Wemmick tells of Molly's trial. Chapter 49 sees Miss Havisham's confession and repentance; Estella's adoption and the fire. Pip says "I forgive her". Herbert tells of Magwitch's child and Pip knows Estella is his. Magwitch said that Pip reminded him of her.
	Ch. 51-59	Jaggers explains Estella's adoption and advises that Pip keep it secret. Orlick's confession and attempted revenge; Pip rescued by Trabb's boy and Herbert. Magwitch's escape is thwarted; Compeyson drowned and Pip reconciled to his benefactor, Magwitch. Pip's wealth is forfeited to the crown. Magwitch convicted and sentenced; Pip tells him, before his death, of Estella. Pip becomes ill and is arrested for debts but rescued by Joe. Orlick ends up in jail. Miss Havisham's will is read and Pip plans to propose to Biddy. Satis House goes up for auction and Joe marries Biddy. Eleven years later, Pip returns; sees young Pip and meets (widowed) Estella at Satis; "no shadow of...parting".

Themes and Context

Ambition and Self-Improvement

Dickens presents the ambition to improve oneself that drives Pip along with many of the novel's secondary characters as a force capable of generating both positive and negative results. Pip's early ambitions focus on elevating his social class, on making himself into someone who seems worthy of Estella, but in the process he turns himself into someone who feels like a sham, is unkind to those who were kindest to him such as Joe and Provis, and ruins himself financially. Through these humbling experiences, Pip eventually comes to understand self-improvement as a more complex process involving moral and spiritual development as well. Pip's own ambitions are echoed by the self-improvement efforts of secondary characters like Joe and Ms. Havisham, who learn to write and to empathize, respectively, at Pip's encouragement.

Crime and Justice

In 1800, there were about 5,000 crimes a year in Britain. This rose to 20,000 by 1840. Many people were forced to steal because they had no work or money. Dickens' father went to debtor's prison – he felt strongly that the justice system needed reform to help the convicted.

Social Class

Dickens explores the class system of Victorian England, ranging from the most wretched criminals (Magwitch) to the poor peasants of the marsh country (Joe and Biddy) to the middle class (Pumblechook) to the very rich (Miss Havisham). The theme of social class is central to the novel's plot and to the ultimate moral theme of the book—Pip's realization that wealth and class are less important than affection, loyalty, and inner worth.

Education

Education in the 19th century was not yet widely seen. There was no compulsory, state-provided education, so about half the population never learned to read or write because they could not afford to go to school.

Science

Science: Key Concepts Part 1

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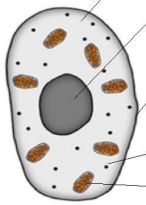
Edexcel GCSE Biology Key Concepts Part 1



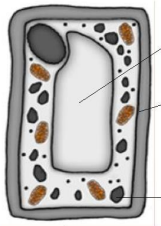
cytoplasm	*site of chemical reactions in the cell*	gel like substance containing enzymes to catalyse the reactions
nucleus	*contains **genetic material***	controls the activities of the cell and codes fro proteins
cell membrane	*semi permeable*	controls the movement of substances in and out of the cell
ribosome	*site of protein synthesis*	mRNA is translated to an amino acid chain
mitochondrion	*site of respiration*	where energy is released for the cell to function

animal cell

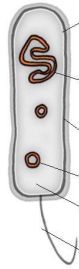
plant cell

Eukaryotes complex organisms

contains all the parts of animal cells plus extras



permanent vacuole	*contains cell sap*	keeps cell turgid, contains sugars and salts in solution
cell wall	*made of cellulose*	supports and strengthens the cell
chloroplast	*site of photosynthesis*	contains chlorophyll, absorbs light energy



cell membrane	*site of chemical reactions in the cell*	gel like substance containing enzymes to catalyse the reactions
bacterial DNA	*not in nucleus floats in the cytoplasm*	controls the function of the cell. Can be found as chromosomal DNA and plasmid DNA (small rings).
cell wall	***NOT** made of cellulose*	supports and strengthens the cell
cytoplasm	*semi permeable*	controls the movement of substances in and out of the cell
flagella	*whip like tail*	allows the bacterial cell to move
ribosome	*site of protein synthesis*	mRNA is translated to an amino acid chain

Bacterial cells are much smaller than plant and animal cells

Prokaryotes simpler organisms

Specialised cells

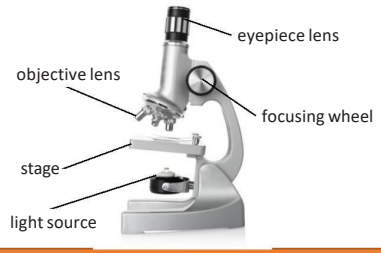
egg		*fertilised by a sperm*	nutrients in the cytoplasm, haploid nucleus and changes in the cell membrane after fertilisation
sperm		*fertilise an egg*	streamlined with a long tail acrosome containing enzymes large number of mitochondria, haploid nucleus
Ciliated epithelial cell		*push and move mucus*	Thin layer of moving hairs on the surface of the cells called cilia.

Microscopy

magnification M = $\frac{\text{size of image I}}{\text{real size of the object A}}$

decreasing size and scale

PREFIXES		
Prefix	Multiple	Standard form
centi (cm)	1 cm = 0.01 m	x 10^{-2}
milli (mm)	1 mm = 0.001 m	x 10^{-3}
micro (㎛m)	1 ㎛m = 0.000 001 m	x 10^{-6}
nano (nm)	1nm = 0.000 000 001 m	x 10^{-9}
pico (pm)	1pm = 0.000 000 000 001m	x 10^{-12}



Estimates can be useful when you only have a sample of what you are counting e.g. the number of red blood cells in a blood sample

Many of the structures found in cells were not able to be seen before the development of electron microscopes e.g. ribosomes

Feature	Light (optical) microscope	Electron microscope
Radiation used	Light rays	Electron beams
Max magnification	~ 1500 times	~ 2 000 000 times
Resolution	200nm	0.2nm
Size of microscope	Small and portable	Very large and not portable
Cost	~£100 for a school one	Several £100,000 to £1 million plus

Science: Key Concepts Part 2

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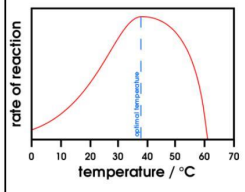
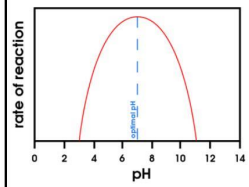
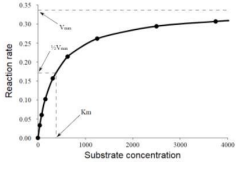
Enzymes catalyse (increase the rate of) specific reactions in living organisms.

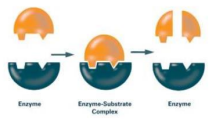
The rate of a reaction can be measured by how fast reactants are used up or by how fast products are formed.

Enzymes

The activity of enzymes is affected by changes in temperature, pH and substrate concentration

Enzymes activity has an optimum temperature	*Enzyme activity has an optimum pH*	*Increasing substrate concentration increases rate (limited by number of active sites)*
		

The 'lock and key theory' is a simplified model to explain enzyme action

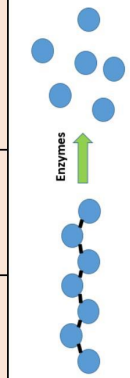


Enzymes catalyse specific reactions in living organisms due to the shape of their active site.

Digestive enzymes speed up the conversion of large insoluble molecules (food) into small soluble molecules that can be absorbed into the bloodstream.

Large changes in temperature or pH can stop the enzyme from working (denature).

Temperature too high	*pH too high or too low*
Enzyme changes shape (denatures) the substrate no longer fits the active site.	

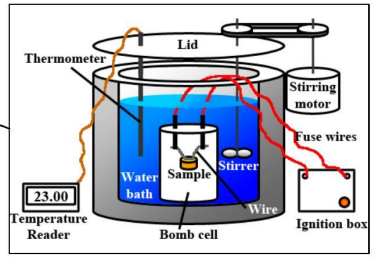
Carbohydrases (e.g. amylase)		*Made in salivary glands, pancreas, small intestine*	Break down carbohydrates to simple sugar (e.g. amylase breaks down starch to glucose).
Proteases		*Made in stomach, pancreas*	Break down protein to amino acids.
Lipases		*Made in pancreas (works in small intestine)*	Break down lipids (fats) to glycerol and fatty acids).

The products of digestion are used to build new carbohydrates, lipids and proteins. Some glucose is used for respiration.

Edexcel GCSE Biology Key Concepts Part 2

Calorimetry

The energy in food can be calculated by how much it heats up water when it burns in a calorimeter.



Osmosis

Calculate percentage gain/loss of mass in osmosis.

$$\%\ \text{gain/loss of mass} = \left(\frac{\text{final mass} - \text{initial mass}}{\text{initial mass}}\right) \times 100$$

The greater the difference in concentrations the faster the rate of diffusion.

Transport in cells

Diffusion ***No*** energy required	*Movement of particles in a solution or gas from a higher to a lower concentration*	E.g. O_2 and CO_2 in gas exchange, urea in kidneys. Factors that affect the rate are concentration, temperature and surface area.
Osmosis ***No*** energy required	*Movement of water from a dilute solution to a more concentrated solution*	E.g. Plants absorb water from the soil by osmosis through their root hair cells. Plants use water for several vital processes including photosynthesis and transporting minerals.
Active transport ***ENERGY*** required	*Movement of particles from a dilute solution to a more concentrated solution*	E.g. movement of mineral ions into roots of plants and the movement of glucose into the small intestines.

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EDEXCEL TOPIC 3 - CONSERVATION OF ENERGY (PART 1)

Energy transfers

System	*An object or group of objects that interact together*
Closed system	*No change in total energy in system*
Open system	*Energy can dissipate (can enter or leave)*

Kinetic	*Anything moving has energy in its kinetic energy store.*
Thermal	*Any object – the hotter it is the more energy is in its thermal energy store*
Chemical	*Anything that can release energy by a chemical reaction e.g. food, fuels*
GPE	*Anything that can fall / in a gravitational field*
EPE	*Anything stretched e.g. springs, rubber bands*
Electrostatic	*Two charges that attract or repel each other*
Magnetic	*Two magnets that attract or repel each other*
Nuclear	*Atomic nuclei release energy from this store in nuclear reactions*

Gravitational Potential energy (GPE)	*Energy gained by an object raised above the ground*
Kinetic energy (KE)	*Energy stored by a moving object*

Change in GPE = Mass X gravitational field strength X change in vertical height
$\Delta GPE = m \times g \times \Delta h$

$KE = \frac{1}{2} \times mass \times (speed)^2$
$KE = \frac{1}{2} \times m \times v^2$

Energy transfer diagrams	*An easy way to show what happens to the energy*
	Boxes = energy stores and arrows = energy transfers

Unit
Joules (J)

Thermal energy store of hot drink

By heating Thermal energy transfers from hot liquid to cooler air and cup →

Thermal energy store of cup and surrounding s

Transfers between stores	
Mechanical	A force acts on an object (doing work e.g. push, squash, stretch
Electrically	A charge doing work against resistance e.g. charges moving round a circuit
By heating	Energy transfers from a hot object to a cooler object e.g. hot drink
By radiation	Energy transfers by waves e.g. sunlight reaching the Earth

Conservation of energy

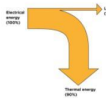
Dissipate	*To scatter in all directions or to use wastefully*	When energy is 'wasted', it dissipates into the surroundings as thermal energy and the temperature rises.

Useful energy	*Energy transferred and used*
Wasted energy	*Dissipated energy, stored less usefully*

Total energy input = useful energy output + wasted energy

Principle of conservation of energy	*The amount of energy always stays the same.*	Energy cannot be created or destroyed, only changed from one store to another.

Energy is only useful when it is transferred from one store to another useful store



Cavity walls	*An air gap reduces the amount of energy transfer by conduction*
Thick walls	*Thick walls have a slow rate of energy transfer*

Conduction transfers thermal energy through solid objects.

Thermal conductivity
How well a material conducts energy
Metals have high thermal conductivity.

In buildings the lower the thermal conductivity the slower the rate of energy transfer

Efficiency

Efficiency	*How much energy is usefully transferred*

$Efficiency = \frac{Useful\ output\ energy\ transfer}{Total\ input\ energy\ transfer}$

$Efficiency = \frac{Useful\ power\ output}{Total\ power\ input}$

HIGHER ONLY

Efficiency can be increased by reducing the thermal energy transferred due to friction by lubricating and the energy transferred by heating by insulation.

Energy (KE, EPE, GPE, thermal)	*Joules (J)*
Velocity	*Metres per second (m/s)*
Mass	*Kilogram (Kg)*
Gravitational field strength	*Newton per kilogram (N/Kg)*
Height	*Metres (m)*

Important energy Transfers between stores	
An object projected upwards or up a slope	The object does work against gravity so energy is transferred mechanically from the object's KE store to the GPE store.
A moving object hitting an obstacle	The moving object has energy in it's KE store. Some of this is mechanically transferred to the obstacle's KE store. Some energy is mechanically transferred to the thermal energy store of the object and obstacle, to the thermal energy store of the surroundings by heat and the rest of the energy is 'carried' away by sound
An object being accelerated by a constant force	Assuming there is no air resistance, gravity does work on the object. The object accelerates constantly towards the ground. Energy is transferred mechanically from the GPE store to the object's KE store.
A vehicle slowing down	Energy in the vehicle's KE store is transferred mechanically due to friction between the road and tyres, and then by heating to the thermal energy store of the vehicle and road.
Boiling water in an electric kettle	Energy is transferred electrically from the mains to the element in the kettle. The energy is then transferred by heating to the thermal energy store of the water.

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EDEXCEL TOPIC 3 - CONSERVATION OF ENERGY (PART 2)

Energy resources

Non-renewable energy resource	*These will run out. It is a finite reserve. It cannot be replenished.*	e.g. Fossil fuels (coal, oil and gas) and nuclear fuels.
Renewable energy resource	*These will never run out. It is an infinite reserve. It can be replenished.*	e.g. Solar, Tides, Waves, Wind, Geothermal, Biomass, Hydroelectric

Most do cause some damage to the environment but less than non-renewables

Do not provide a lot of energy and some are unreliable

Biofuels

Made from plants and animal waste dung

Positives.	Negatives.
Renewable.	Cost to refine biofuels is very high.
Can be solid, liquid or gas and can be burnt to produce electricity.	Growing biofuels takes space away from growing food.
Reliable and take a short time to grow.	Natural habitats are destroyed to make room to grow biofuels.
'Carbon neutral' theoretically plants take in the same amount of CO_2 as they release when burnt	Decay or burning of the cleared vegetation increases methane and CO_2 emissions.

Solar cells

Made from materials that use energy transferred by light to create an electric current

Positives.	Negatives.
No damage to the environment	Expensive
Used in remote places.	Weather dependant – cannot be used in cloudy countries.

Tidal barrages

Big dams built across river estuaries with turbines in them. As the tide comes in, water fills up the estuary, then water is let out through the turbines to generate electricity

Positives.	Negatives.
No polluting gases	Visual pollution
Reliable as tides occur twice a day	Prevent boat access
	Alter habitats for wading birds
No fuel costs, minimal running costs	Initial costs high

Wind

Each wind turbine has a generator inside it. As the wind rotates the blades, the generator turns and produces electricity

Positives.	Negatives.
No polluting gases.	Initial costs quite high
	Need lots to make enough electricity.
Running costs minimal.	Visual and noise pollution.
	Weather dependant – only work when windy

Hydro-electric power

Rainwater collects behind the dam and is allowed out through turbines.

Positives.	Negatives.
Can respond immediately to demand.	Building dams and flooding valleys
	Big impact upon environment. Loss of habitats. .
No polluting gases.	Initial costs high but minimal running costs.

Trends in Energy resource use

Fossil fuels

Produce most of our electricity	The need for electricity increased greatly in the 20th century
Devices are becoming more efficient	Designers are trying to reduce the amount of wasted energy

Other uses of fossil fuels

Oil (diesel and petrol) used to fuel cars
Gas is used to heat homes and to cook food

Energy resources are chosen for their effect upon the environment.

Fossil fuels have a negative effect upon the environment.

Targets have been introduced to reduce the use of fossil fuels.

Car companies are designing electric and hybrid cars.

Renewable fuels

Limited by reliability	Energy resources cannot quickly respond to demand like fossil fuels
Limited by cost	Building new renewable power stations is expensive

Hybrid cars and solar panels for houses are still very expensive

Research into improving the reliability of renewable energy resources is expensive and takes time.

People object to wind farms (visual pollution).

Negatives for using fossil fuels and nuclear fuel

Create environmental problems	Fossil fuels release carbon dioxide when burnt.
Non-renewable	Will run out.
Nuclear power stations are expensive	To build and to decommission safely.

Burning coal and oil release sulphur dioxide which causes acid rain.

Oil spillages cause serious marine environmental problems

Nuclear waste is dangerous and difficult to dispose of and there is always a risk of catastrophes.

CO_2 is a greenhouse gas and contributes to global warming

Positives for using fossil fuels and nuclear fuel

Reliable	Provides lots of energy.
Plenty of fuel to meet current demand	Respond quickly to electrical needs from National Grid.
Cost to extract is low	Fossil fuel power plants relatively cheap to build and run.

History

History - How did World War II end?

Why was D-Day important?

On 6 June 1944 – 'D-Day' – **Allied forces launched the largest amphibious invasion in the history of warfare**. Codenamed Operation 'Overlord', the Allied landings on the beaches of Normandy marked the start of a long and costly campaign to liberate north-west Europe from Nazi occupation.

Early on 6 June, Allied airborne forces parachuted into drop zones across northern France. Ground troops then landed across **five assault beaches** - Utah, Omaha, Gold, Juno and Sword. By the end of the day, the Allies had established a foothold along the coast and could begin their advance into France.

Germany tried to defend the northern coast of France with a series of fortifications known as the 'Atlantic Wall'. However, **German defences** were often incomplete and insufficiently manned.
Members of the French Resistance and the British Special Operations Executive (SOE) provided intelligence and helped weaken defences through sabotage. The **Allied deception campaigns** succeeded in convincing the Germans as late as July 1944 that the main invasion force would still land elsewhere. The threat of this larger, second invasion kept German reinforcements tied down away from Normandy.

History - How did World War II end?

Stalingrad

On June 22, 1941, despite the terms of the Nazi-Soviet Pact of 1939, Nazi Germany launched a massive invasion against the USSR. Aided by its greatly superior air force, the German army raced across the Russian plains, inflicting terrible casualties on the Red Army and the Soviet population. With the assistance of troops from their Axis allies, the Germans conquered vast territory, and by mid-October the great Russian cities of Leningrad and Moscow were under siege. However, the Soviets held on, and the coming of winter forced a pause to the German offensive.

For the 1942 summer offensive, Adolf Hitler ordered the Sixth Army, under General Friedrich von Paulus, to take Stalingrad in the south, an industrial center and obstacle to Nazi control of the precious Caucasian oil wells. In August, the German Sixth Army made advances across the Volga River while the German Fourth Air Fleet reduced Stalingrad to a burning rubble, killing over 40,000 civilians. In early September, General Paulus ordered the first offensives into Stalingrad, estimating that it would take his army about 10 days to capture the city. Thus began one of the most horrific battles of World War II and arguably the most important because it was the turning point in the war between Germany and the USSR.

In their attempt to take Stalingrad, the German Sixth Army faced a bitter Red Army under General Vasily Zhukov employing the ruined city to their advantage, transforming destroyed buildings and rubble into natural defensive fortifications. In a method of fighting the Germans began to call the *Rattenkrieg,* or "Rat's War," the opposing forces broke into squads eight or 10 strong and fought each other for every house and yard of territory. The battle saw rapid advances in street-fighting technology, such as a German machine gun that shot around corners and a light Russian plane that glided silently over German positions at night, dropping lethal bombs without warning. However, both sides lacked necessary food, water, or medical supplies, and tens of thousands perished every week.

Soviet leader Joseph Stalin was determined to liberate the city named after him, and in November he ordered massive reinforcements to the area. On November 19, General Zhukov launched a great Soviet counteroffensive. German command underestimated the scale of the counterattack, and the Sixth Army was quickly overwhelmed by the offensive, which involved 500,000 Soviet troops, 900 tanks, and 1,400 aircraft. Within three days, the entire German force of more than 200,000 men was encircled.

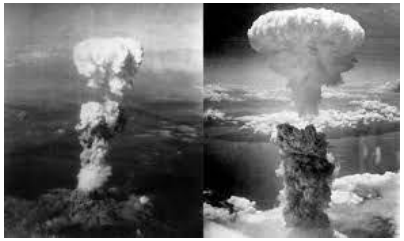
Italian and Romanian troops at Stalingrad surrendered, but the Germans hung on, receiving limited supplies by air and waiting for reinforcements. Hitler ordered Von Paulus to remain in place and promoted him to field marshal, as no Nazi field marshal had ever surrendered. Starvation and the bitter Russian winter took as many lives as the merciless Soviet troops, and on January 21, 1943, the last of the airports held by the Germans fell to the Soviets, completely cutting the Germans off from supplies. On January 31, Von Paulus surrendered German forces in the southern sector, and on February 2 the remaining German troops surrendered. Only 90,000 German soldiers were still alive, and of these only 5,000 troops would survive the Soviet prisoner-of-war camps and make it back to Germany.

History - How did World War II end?

Atomic Bomb

At 8.15 on the morning of 6th August 1945, the Japanese city of Hiroshima was devastated by the first atomic bomb to be used as a weapon of war. The bomb, nicknamed **`Little Boy'**, was dropped from the USAAF **B29 bomber `Enola Gay'** and exploded some 1,800 feet above the city. Delivering the equivalent of around 12.5 kilotons of TNT, the bomb reduced 5 square miles of the city centre to ashes and caused the deaths of an estimated 120,000 people within the first four days following the blast. Many were instantly vaporised by the explosion, others died afterwards from the effects of burns and radiation.

Three days later, just after 11 on the morning of 9th August, a second **atomic bomb nicknamed `Fat Man'** exploded above the city of Nagasaki. Although it was even more powerful than `Little Boy', the destruction caused by this bomb was less than at Hiroshima due to the nature of the terrain (the original target had been the city of Kokura, but the B29 carrying the bomb had been diverted to Nagasaki because of heavy cloud cover). Nonetheless, over 2 square miles of the city were pulverised and some 73,000 people killed.



The two atomic explosions had the effects desired by the Allies. On 10th August the Japanese government indicated its readiness to accept defeat, subject to certain conditions. On 14th August it finally accepted the demand for unconditional surrender. The following day was declared **`Victory over Japan' or VJ Day**, although it was not until 2nd September that the final Japanese surrender was signed, thereby bringing the Second World War to a formal close.

Why had the Allied powers considered it necessary to inflict such unprecedented destruction on Japanese civilians in order to bring the war to an end?

At the **Potsdam Conference** (17th July – 2nd August 1945) the Allies formulated their terms for ending the war with Japan, which centred on that country's acceptance of unconditional surrender, as had been the case with Nazi Germany in May. However, the Allies were also aware that whilst the **Japanese Emperor Hirohito** desired an end to hostilities, and would probably accept the unconditional capitulation demanded, the `hawks' of the Japanese military and civilian leadership were totally opposed to such a humiliating condition and were ready to fight to the finish – whatever that might look like.

History - How did World War II end?

Research

Find out who Robert Oppenheimer was

What were ‘Hobart’s Funnies’?

What was PLUTO and why was it important?


Geography

Geography - Glaciation

Tier 3 - Vocabulary

Ice age, tundra, glacier, glaciated, ice shelf, iceberg, crevasses, erosion, transportation, deposition, plucking, abrasion, freeze-thaw, corries, arêtes, pyramidal peaks, hanging valley, u-shaped valley, ribbon lake, till, terminal moraine, lateral moraine, ground moraine, erratics, drumlins

Tier 2 - Vocabulary

- Compacted
- Flow
- Spectacular
- Bulldoze
- Route

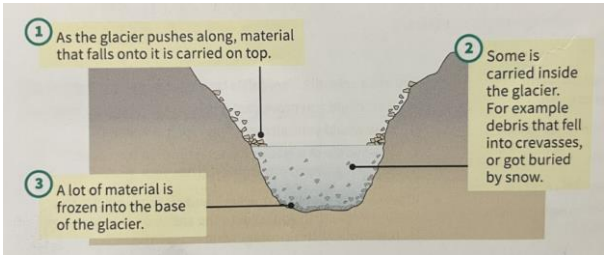
What and where are glaciers?

- During the last **ice age** ice covered about a third of Earth's land.
- **Glaciers** are large masses of ice that flow across the land. Giant glaciers are called **ice sheets.**
- Glaciers are found on every continent.
- Antarctica and Greenland contain 99% of Earth's ice.
- Mountain or alpine glaciers are much smaller than ice sheets.
- Glaciers depend on snow. They form when snow falls layer upon layer and become **compacted** into ice. It takes a layer of snow 10m thick to make 1m of ice. As the ice gets heavier it starts to **flow**.
- Ice can flow *inside* a glacier because the ice crystals slide over each other, under pressure. The ice at the bottom of a glacier can melt due to the weight of the glacier causing the glacier to slide along on the melted water.
- Mountain glaciers flow down the sides of mountains and eventually meet a place where they melt.
- Ice sheets flow out to the thinnest parts. In Antarctica they flow into the oceans and form **ice shelves**.

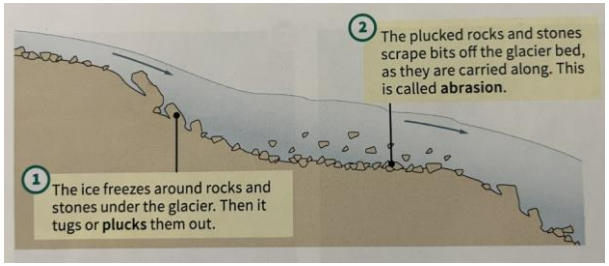
How do glaciers shape the land?

- As glaciers flow they scrape and shape the landscape like giant **bulldozers.**

Erosion Processes



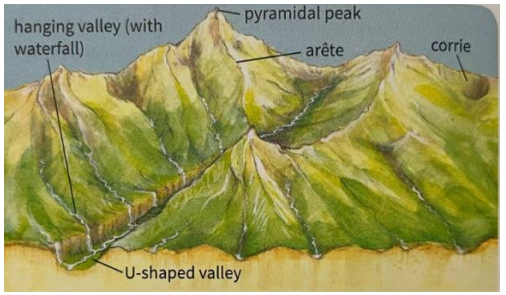
Transportation Processes



Deposition Processes

Till is the load in a glacier which has fallen to the floor. Water melting from ice is called **melt water.** It runs off to feed rivers and lakes.

Landforms shaped by erosion



Corries start as sheltered hollows that are deepened by **abrasion** and **plucking**. They can often have lakes in them called **tarns**.

Arêtes are a sharp ridge formed by two back-to-back corries.

Pyramidal Peaks are formed by three or four corries forming around a mountain top.

U-shaped valleys begin as v-shaped valleys that are bulldozed by a glacier and widened and deepened. They often contain **misfit rivers**.

Geography - Glaciation

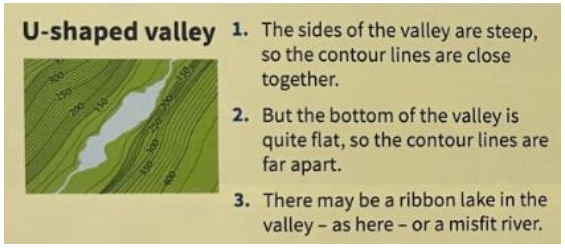
Careers linked to glaciated landscapes:

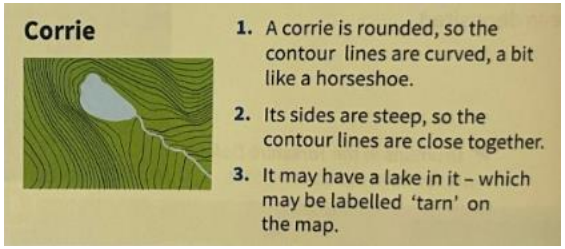
Glaciologist – A scientist who conducts tests to understand the movement and processes of glaciers and snow.
Ski-instructor – Someone who teaches skiing to large groups of people of similar ability or to individuals.
Mountain Rescue - teams of highly trained individuals who come to the aid of the injured, unwell, lost or missing in our mountain regions

Living in a glaciated landscape

Case study: The Lake District is in Cumbria, north west England. It is a national park.

Glaciation on OS maps:
On OS maps glaciated areas are often shown with contour lines that are very close together showing steep land. Contour lines help us to pick out landforms left behind by glaciers.

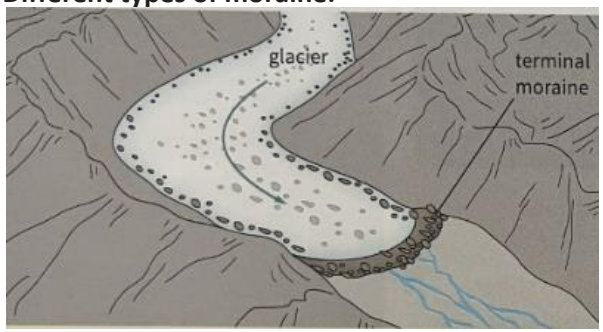


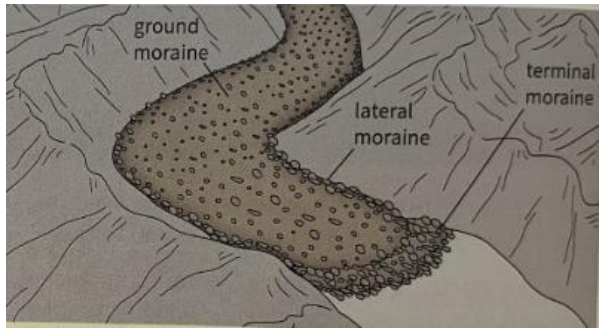


People in the Lake District earn money from the landscape through **tourism, farming** and **forestry**.

Landforms shaped by deposition

Different types of moraine:





Erratics are huge rocks that are dropped as the ice melts. They may be a long way from where they started.

Drumlins are low hills, shaped like the back of a spoon.

What was Europe like in the last ice age?

- The last ice age began around 110,000 years ago. An ice sheet spread over much of northern Europe, and most of the British Isles.
- The ice sheet did not cover the whole of Britain, but the areas that were not covered where **tundra**. The ground was deeply frozen and only the surface thawed in summer. There was limited vegetation and animal life (Woolly mammoth, bison, Arctic fox).
- By 10 000 years ago, Earth had warmed up again. The ice age ended and the ice over Britain melted away.
- During the ice age, water levels in the oceans were much lower than today (Up to 120m lower). This meant that Britain was connected the rest of Europe by land.
- There was nobody in Britain 20 000 years ago. People had arrived there 40 000 years ago, but it became too cold. People returned to Britain
- 12 000 years ago.
- Britain was cut off from Europe by rising sea levels 8 100 years ago.


Religious
Studies

Religious Studies - Relationships and Families

Key Words			
Adultery	Having sex with someone who is not your husband or wife, outside of marriage	**Gender Prejudice**	Holding biased opinions about people based on their gender
Artificial Contraception	Methods of preventing pregnancy e.g. condoms, the pill, the coil	**Heterosexual**	Sexual attraction to the opposite gender
Cohabitation	Living and starting a family with someone who you are not married to	**Homosexual**	Sexual attraction to the same gender
Divorce	The legal ending of a marriage	**Marriage**	A legal and religious ceremony joining two people together in love
Family Planning	Using a woman's natural cycle of fertility to try and avoid pregnancy	**Procreation**	Bringing babies into the world
Gender Discrimination	Acting against people based on their gender	**Remarriage**	Marrying someone else after divorce

Key Ideas		
Religious Views on Sexuality 	**Sexual Orientation** - The Roman Catholic church teaches that sex between people of the same gender is 'disordered' - They argue that **homosexual** relationships are banned by the Bible - Liberal Christians teach that Jesus wanted people to love each other and show **mercy** and that we should be accepting of homosexuals - **Gay marriage** is banned in the Catholic Church and Church of England *"Do not have sexual relations with a man as one does with a woman"* – Leviticus 18:22	**Adultery and Sex Outside Marriage** - Roman Catholics argue that all **sex before marriage** and after a divorce is unacceptable. Sex should only take place inside a marriage which is a lifelong, loving relationship. - **Adultery** means the act of having sex with someone who is not your husband or wife. - It is prohibited by the Bible and Christians argue it is wrong as it undermines marriage involves lies and secrecy. *"You shall not commit adultery"* - Exodus 20:14
Artificial Contraception 	- **Artificial contraception** means using something to stop yourself from getting pregnant. This could be a condom, the pill or a device like the coil. - **Family planning** means using the natural cycle of fertility which women go through to predict when a woman would be least fertile. It is much less effective than artificial contraception. - God tells Adam and Eve (the first couple) to "*be fruitful and multiply*" (Genesis 1:2) which encourages them to have children. ☒ The ***Catholic Church*** argues that all sexual acts inside marriage must be open to **procreation** (having babies) and that a baby is a gift from God. They may use family planning as it is a natural method. ☑ The ***Church of England*** argues that contraception should be allowed so that couples can take time and consider if they want to have children.	
Marriage and Divorce 	- **Marriage** is a religious and legal ceremony in which two people make **vows** (promises) in front of their friends and family and (if in a church) in front of God - During the ceremony you agree to be **together for life** saying "*til death do us part*" (Marriage Ceremony) - **Divorce** is the legal break-up of a marriage. It is **legal** in the UK and many marriages currently end in divorce. - Many Christians do not like it as it is seen to **break the promises** made in a marriage. ☒ The ***Catholic Church*** do not support divorce. They believe that sex after divorce is a form of adultery and you cannot get remarried in a Catholic Church once you have been divorced. Jesus says *"if a man divorces his wife [...] he involves her in adultery"* (Matthew 5:32) ☑ The ***Church of England*** accepts divorce, especially if it is for reasons of abuse but you have to receive special permission to get remarried in a church. They might see it as a merciful option.	
Family 	**Types of Family** - **Nuclear Family** is a family with a mother, father and children – some Christians argue this is the ideal - **Extended Family** is a family where grandparents and other relatives are involved - **Single Parent Family** this is a family where one parent brings up the child	**Purpose of the Family** - **Procreation** – the family should be for the purpose of having and bringing up children - **Stability** – the family should be for providing a secure, stable environment for children - **Faith** – the family should be a way of bringing children up as good Christians
Gender 	- **Gender equality** means that men and women should be equal and given the same rights and opportunities as each other -In the UK women can face gender **prejudice and discrimination** where they are not treated equality - The **Catholic Church** argues that women have a special role as mothers and they do not allow women to be priests - The **Church of England** has allowed women priests since 1994	


Spanish

Hartford Church of England High School

Spanish

LA VIDA SANA

LA DIETA – DIET

1. ¿Qué comes?	1. What do you eat?
2. ¿Qué bebes?	2. What do you drink?
3. Como	3. I eat
4. Bebo	4. I drink
1. café	1. coffee
2. leche	2. milk
3. pescado	3. Ffsh
4. pan	4. bread
5. fruta	5. fruit
6. pasta	6. pasta
7. caramelos	7. sweets
8. pasteles	8. cakes
9. verduras	9. vegetables
10. galletas	10. biscuits
1. Porque es sano/a/os/as	
2. Ya que es deliciso/a/os/as	
3. Dado que es rico/a/os/as	

¿QUÉ SUELES COMER/BEBER? – WHAT DO YOU USUALLT EAT/DRINK?

1. ¿Qué sueles comer?	1. What do you usually eat?
2. ¿Que sueles beber?	2. What do you usually drink?
3. SUELO comer	**3. I USUALLY** eat
4. SUELO beber	**4. I USUALLY** drink
1. pollo	1. Chicken
2. carne	2. Meat
3. ensalada	3. Salad
4. verduras	4. Vegetables
5. tostadas	5. Toast
6. cereales con leche	6. Cereals with milk
7. paella	7. Paella
8. pizza	8. Pizza
9. bocadillos	9. Sandwich
10. limonada	10. Lemonade
11. yogur	11. Yogurt
12. zumo de naranja	12. orange juice

¿QUÉ TE GUSTARÍA PROBAR? – WHAT WOULD YOU LIKE TO TRY?

1. Voy a	1. I am going
2. Me gustaría	2. I would like
3. PROBAR	**3. TO TRY**
1. mariscos	1. Seafood
2. gambas	2. Prawns
3. té de limón	3. Lemon tea
4. tapas	4. small traditional plates of Spanish food

DE COSTUMBRES – CUSTOMS (MEAL TIMES)

1. ¿A qué hora desayunas?	1. What time do you eat breakfast
2. ¿A qué hora comes?	2. What time do eat lunch?
3. ¿ A qué hora bebes?	3. What time do you drink?
4. ¿A qué hora meriendas?	4. What time do you have a snack?
5. ¿ A qué hora cenas?	5. What time do you have a tea/dinner?
1. **DESAYUNO** a las siete	**1. I EAT BREAKFAST** at 7
2. **COMO** a las doce	**2. I EAT LUNCH** at 12
3. **BEBO** a las diez	**3. I DRINK** at 10
4. **MERIENDO** a las tres	**4. I SNACK** at 3
5. **CENO** a las seis	**5. I HAVE TEA/DINNER** at 6

RUTINA DIARIA – DAILY ROUTINE

1. Por la mañana/tarde/noche	1. In the morning/afternoon/night
2. Me despierto	2. I wake up
3. Me levanto	3. I get up
4. Me ducho	4. I shower
5. Me visto	5. I get dressed
6. Me peino	6. I do my hair
7. Desayuno	7. I eat breakfast
8. Voy al instituto	8. I go to school
9. Como en la cantina	9. I eat in the canteen
10. Vuelvo a casa	10. I return home
11. Hago los deberes	11. I do my homework
12. Ceno	12. I eat tea/dinner
13. Veo la television	13. I watch TV
14. Me lavo los dientes	14. I brush my teeth
15. Me acuesto	15. I go to bed
16. Salgo de casa	16. I leave the house
17. **TEMPRANO/TARDE**	**17. EARLY/LATE**

¿QUÉ HICISTE AYER?

1. AYER	**1.YESTERDAY**
2. Por la mañana/tarde/noche	2. In the morning/afternoon/night
3. Me desperté	3. I woke up
4. Me levanté	4. I got up
5. Me duché	5. I showered
6. Me vestí	6. I got dressed
7. Me lavé los dientes	7. I brushed my teeth
1. a las siete y cuarto	at 7 :15
2. a las doce y media	at 12.30
3. a las cuatro	at 4 o'clock
4. a las seis	at 6 o'clock
5. a las siete	at 7 o'clock
1. luego	then
2. después	after
3. más tarde	later on
1. Desayuné	I had breakfast
2. Fui al instituto	I went to school
3. Hice los deberes	I did my homework
4. Me acosté	I went to bed

Hartford Church of England High School

LA VIDA SANA

¿LLEVAS UNA VIDA SANA / MALSANA? Do you lead a healthy or unhealthy lifestyle?	
1. Llevo una vida sana 2. Llevo una vida malsana	1. I lead a healthy lifestyle 2. I lead an unhealthy lifestyle
1. Para mantenerme en forma **2. SUELO / NO SUELO** **3. SOLÍA / NO SUELO**	1. In order to keep fit **2. I USUALLY / I DIDN'T USUALLY** **3. I USED TO / I DIDN'T USED TO**
1. Comer comida rápida/basura 2. Beber agua 3. Jugar al fútbol 4. Hacer ejercicio/deportes 5. Dormir ocho horas 6. Tomar drogas/vitaminas 7. Fumar cigarillos	1. Eat junk / fast food 2. Drink water 3. Play football 4. Do exercise/sports 5. Sleep 8 hours 6. Take drugs / vitamins 7. Smoke cigarettes
1. Porque/ya que/dado que es	1.Because it is
1. Sano 2. Malsano 3. Bueno para la salud 4. Malo para la salud	1. Healthy 2. Unhealthy 3. Good for your health 4. Bad for your health
CONSEJOS - ADVICE	
1. Para llevar una vida sana **2. SE DEBE** **3. NO SE DEBE**	1. In order to lead a healthy life **2. YOU MUST** **3. YOU MUST NOT**
1. Tomar drogas 2. Hacer deporte 3. Dormir ocho horas 4. Beber agua 5. Comer una dieta equilibrada 6. Comer más fruta 7. Comer menos caramelos 8.Beber alcohol 9. Beber refrescos 10. Fumar 11. Comer comida basura	1. Take drugs 2. Do sport 3. Sleep eight hours 4. Drink water 5. Eat a balanced diet 6. Eat more fruit 7. Eat less sweets 8. Drink alcohol 9. Drink fizzy drinks 10. Smoke 11. Eat junk food

UNA VIDA SANA (FUTURO) – A HEALTHY LIFE (FUTURE)	
1. Para llevar una vida sana	1. In order to lead a healthy life
1. Mañana 2. La próxima semana 3. Cuando sea mayor	1. Tomorrow 2. Next week 3. When I am older
1. (NO) VOY A **2. (NO) ME GUSTARÍA** **3. (NO) QUISIERA**	**1. I AM GOING / (I AM NOT GOING TO)** **2. I WOULD LIKE / (I WOULD NOT LIKE)** **3. I WOULD LIKR / (I WOULD NOT LIKE)**
1. Tomar vitaminas 2. Hacer más deporte 3. Dormir ocho horas 4. Beber mucha agua 5. Comer una dieta equilibrada 6. Comer más fruta 7. Comer menos caramelos 8. Beber menos alcohol 9. Beber menos refrescos 10. Comer menos comida basura	1. To take vitamins 2. To do more sports 3. To sleep eight hours 4. To drink a lot of water 5. To eat a balanced diet 6. To eat more fruit 7. To eat less sweets 8. To drink less alcohol 9. To drink less fizzy drinks 10. to eat less junk food
UNA VIDA SANA (PASADO) – A HEALTHY LIFE (PAST)	
1. En el pasado 2. Ayer 3. La semana pasada	1. In the past 2. Yesterday 3. Last week
1. No hice mucho ejercicio 2. Solo comí hamburguesas 3. Bebí mucha cerveza y vino 4. No comí mucha fruta 5. Fumé mucho en el pasado 6. Tomé drogas 7. No tomé vitaminas 8. Solo comí caramelos	1. I didn't do a lot of exercise 2. I only ate hamburgers 3. I drank a lot of beer and wine 4. I didn't eat a lot of fruit 5. I smoke a lot 6. I took drugs 7. I didn't take vitamins 8. I only ate sweets


French

Hartford Church of England High School

French

Les fêtes/festivals et les traditions

Les festivals - Festivals	
1. Un / le festival	1. A / the festival
2. Un festival français	2. A Hispanic festival
3. Les pays francophones	3. French speaking countries
4. est fêté/célébré	4. Is celebrated
5. sont fêtés/célébrés	5. Are celebrated
6. le plus célèbre c'est	6. The most famous is
7. Le plus populaire c'est	7. The most popular
8. La France a	8. France has
9. À Paris il y a	9. In Paris there is/are

Les festivals- Festivals	
La fête Nationale du 14 juillet	**Bastille Day**
1. Les feux d'artifices	1. Fireworks
2. Les soldats	2. Soldiers
3. Les défilés	3. Parades
4. Les drapeaux	4. Flags
5. Les démonstrations	5. Demonstrations
6. Les chansons	6. Songs
7. La liberté	7. Freedom
8. L'égalité	8. Equality
9. La fraternité	9. Brotherhood
La fête des lumières	**The Festival of Light (name of festival)**
1. Lyon	1. Lyon – a town in France
2. Les bougies	2. Candles
3. Les foules	3. Crowds
4. Le théâtre	4. Theatre
5. L'ambiance	5. Atmosphere

Les festivals - Festivals	
Noël	**Christmas**
1. Les cadeaux	1. Presents
2. Les Chants de Noël	2. Christmas carols
3. Joyeux Noël	3. Merry Christmas
4. Un arbre de Noël	4. Christmas tree
5. Une église	5. A church
6. Le Réveillon De Noël	6. Christmas Eve

DESCRIPTIONS - DESCRIPTIONS	
Un festival….	A festival….
1. animé	1. lively
2. dangereux	2. dangerous
3. religieux	3. religious
4. important	4. important
5. amusant/drôle	5. fun
6. célèbre	6. famous
7. populaire	7. popular
8. créatif	8. creative
9. bruyant	9. noisy
10. plein de couleur	10. full of colour
11. passionnant	11. exciting
12. divertissant	12. entertaining

Coutumes et traditions – Customs and traditions	
1. Le festival s'appelle	1. The festival is called
2. Il a lieu	2. It takes place
3. Chaque année	3. each year
4. Pendant le festival	4. During the festival
5. L'ambiance est	5. The atmosphere is
Les gens….	**The people….**
1. dansent et chantent	1. Dance and sing
2. boivent	2. Drink
3. mangent	3. Eat
4. se déguisent	4. Dress up in fancy dress
5. reçoivent des cadeaux	5. Receive presents
6. reint	6. Laugh

Les événements familiaux (Le passé) – FAMILY EVENTS (PAST)	
1. L'année dernière	1. Last year
2. Il y a un mois	2. A month ago
3. La semaine dernière	3. Last week
4. Le mois dernier	4. Last month
5. J'ai célébré/fêté	5. I celebrated
6. Nous avons célébré/fêté	6. We celebrated
7. Je suis allé à	7. I went to
8. Nous sommes allés à	8. We went to
9. Noël	9. Christmas
10. Un mariage	10. A wedding
11. Pâques	11. Easter (Holy Week)
12. Le Réveillon de Nouvel an	12. New Years' Eve
13. Le Nouvel An	13. New Year
14. La fête des Pères	14. Father's Day
15. Une fête d'anniversaire	15. A birthday party
16. Un baptême	16. A christening

Hartford Church of England High School

French

Les Festivals et Les Traditions

Qu'est-ce que tu as fait? – WHAT DID YOU DO?	
Où	**WHERE**
1. J'ai célébré beaucoup	1. I celebrated a lot
2. J'ai prié à l'église	2. I prayed in church
3. J'ai dansé	3. I danced
4. J'ai chanté	4. I sang
5. J'ai mange un gâteau	5. I ate cake
6. J'ai bu du champagne	6. I drank champagne
7. J'ai parlé avec les invités	7. I talked with the guests
8. J'ai ri	8. I laughed
9. J'ai acheté des cadeaux/des ballons	9. I bought presents / balloons
10. J'ai porté une nouvelle robe	10. I wore a new dress
11. J'ai acheté des fleurs	11. I brought flowers
12. J'ai pris des photos	12. I took photos

Les événements familiaux (Le futur) – FAMILY EVENTS (FUTURE)	
1. Quand je serai plus âgé	1. When I am older
2. La semaine prochaine	2. Next week
3. Demain	3. Tomorrow
4. Le mois prochain	4. Next month
5. Je vais	5. I am going
6. Je voudrais	6. I would like
7. aller à	7. To go to
8. célébrer	8. To celebrate
9. Un mariage	9. A wedding
10. une communion	10. A communion
11. Une fête d'anniversaire	11. A birthday party
12. Une fête de fin d'année	12. An end of year party
13. Une cérémonie	13. A ceremony
14. Pâques	14. Easter (Holy Week)
15. Le Réveillon de Nouvel an	15. New Years' Eve
16. Le Nouvel An	16. New Year
17. La fête des Pères	17. Father's Day
18. Une fête d'anniversaire	18. A birthday party
19. Un baptême	19. A christening
20. Noël	20. Christmas

Qu'est-ce que tu vas faire? – WHAT ARE YOU GOING TO DO?)	
1. Je vais	1. I am going
2. Nous allons	2. We are going
3. Je voudrais	3. I would like
4. Nous voudrions	4. We would like
5. Célébrer beaucoup	5. To celebrate a lot
6. Chanter	6. To dance
7. Danser	7. To sing
8. Prier à l'église	8. To pray in church
9. Porter de nouveaux vêtements	9. To wear new clothes
10. Acheter des cadeaux	10. To buy presents
11. Manger des gâteaux	11. To eat cake
12. Prendre des photos	12. To take photos
13. Rire avec la famille	13. To laugh with family
14. Parlet avec des invités	14. To talk to guests
15. Boire du champagne	15. To drink champagne

LES OPINIONS - OPINIONS	
1. Est-ce que tu t'intéresses au festival de …	1. Are you interested in the …..festival?
2. Tu aimes le festival de …….?	2. Do you like the …..festival?
3. J'aime	3. I like
4. J'aime beaucoup	4. I really love
5. Je préfère	5. I prefer
6. Je m'intéresse à	6. I'm interested in
7. Mon festival préféré est	7. My favourite festival is
8. Je déteste	8. I hate
9. Je n'aime pas	9. I don't like
10. Je ne supporte pas	10. I can't stand

Pâques – Holy Week (Easter Time)	
1. C'est un festival religieux	1. It is a religious festival
2. Ça raconte l'histoire de la résurrection de Jésus	2. It tells the story of the resurrection of Jesus
3. Il y a des parades religieux	3. There are religious parades
4. Prier	4. To pray

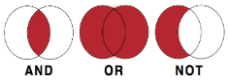

IT

IT - Computing - Digital Detectives

Browsers

A browser is a piece of software that allows a user to access the internet. Without the browser the user would not be able to use the internet.
There are various types of browsers available and users can choose whichever one suits them best depending on the features they need/want.

Browsing for information



When looking for information, the user must consider how accurate and how reliable the source is. One way a user can narrow down search results when browsing online is through **Advanced searches:**

AND	Results must contain both criteria	Harry AND potter which would only return results containing both words.
OR	Results must contain at least one of the search criteria	Harry OR Potter would return all results containing the words either Harry or Potter
NOT	Results must not contain the specified criteria	Harry NOT Potter would only return results containing the word Harry.

Airbrushing

Airbrushing is the manipulation and altering of an image or photo. It is mostly done using a piece of software called Adobe Photoshop.

Benefits

- Helps businesses market their products
- Can increase self confidence
- Can remove unwanted parts of photos

Drawbacks

- Gives people a false image of "perfection"
- Can be misleading
- Overused in media to create fake news

Key terms

Key Term	Definition
Browsers	A piece of software that allows a user to access the internet. An example of this is Safari, Chrome, Edge etc
Accuracy	This refers to how up to date a source of information is. If information hasn't been updated/isn't updated regularly it will not be reliable.
Reliability	This refers to how trustworthy and truthful information is.
Advanced Searches	Making use of Boolean terms to ensure you get relevant results when searching for information online.
Photoshop	A piece of software used to manipulate and edit photos/images
Airbrushing	The process of editing an image.
Spot healing brush	A tool in Photoshop that removes blemishes/spots on the skin in photos.
Quick Selection Tool	A tool in Photoshop that allows the user to quickly select parts of a photo
Cloning	A tool in Photoshop that allows the user to select parts of an image, which can then be copied and used elsewhere within the image.
Composition	Where two or more images are combined.
Liquify	A tool in Photoshop where the user can push/pull/smudge pixels within an image. This method quickly distorts images as the pixels are turned to "liquid"
Masking	This allows the user to manipulate layers within an image.

Art

Hartford Church of England High School

ART

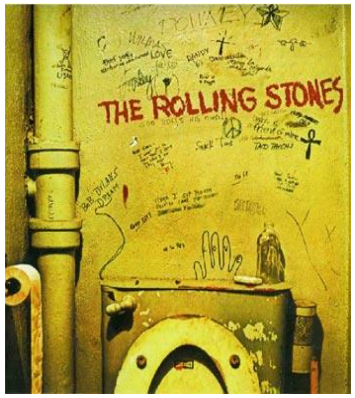
Graffiti Art

Graffiti is a form of **visual communication** involving writing or drawing on a wall or other surface, often without permission and within public view. Graffiti ranges from simple written words to elaborate wall paintings, and has existed since ancient times, with examples dating back to ancient Egypt, ancient Greece, and the Roman Empire.

Graffiti introduction - https://youtu.be/4Ul4mhho03M

Graffiti, Art or Vandalism

https://m.youtube.com/watch?feature=youtu.be&v=azolNnTCnMI



Art or Vandalism – Watch the video and consider this argument.

Deliberate Practice –

- **Graffiti alphabet –** produce a graffiti alphabet using different graffiti fonts.
- **Graffiti doodle spray can.** Select appropriate graffiti images to create a graffiti doodle. Examples on Google classroom.
- **Graffiti research task**

Select a graffiti artist to complete a research page on. You can select an artist from the list below or research your own artist.

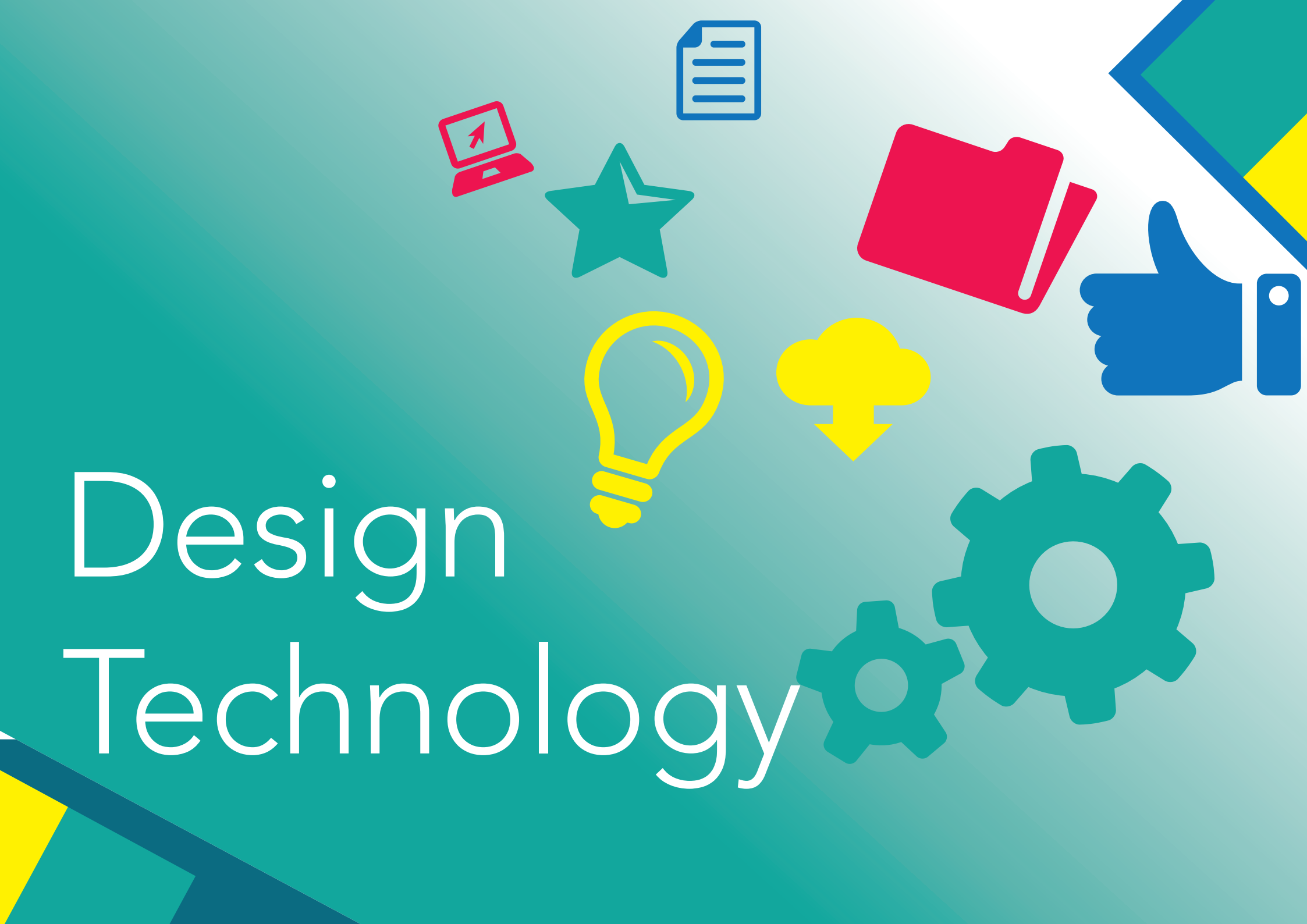
Graffiti artists

Blek Le Rat
Banksy
Chris Daze
Lee Quinnones (Fab 5)
Shepherd Fairey
Zane Lewis
Freddy (Fab 5)
Keith Haring

- **Design your own graffiti trainer/hi top.**

Key words

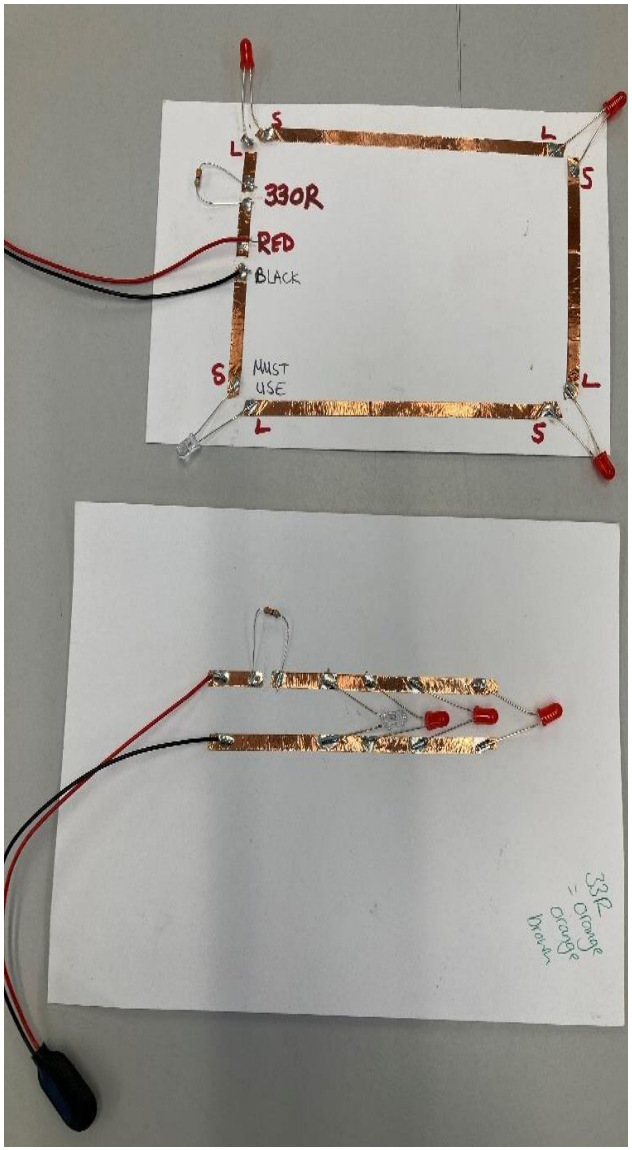
Tag Hip-Hop Expression Wildstyle
Stencil Font Flow Dynamic


Design
Technology

Hartford Church of England High School

CARITAS ET VERITAS

Design & Technology - Control



WHAT IS POP ART ?

Pop Art was originally an Art Movement, with artists such as Andy Warhol and David Hockney producing colourful screen prints.
Every day objects were often painted and reproduced as cheap prints and sold to the general public. These include coke tins, dollar bills and comic strips.
Pop Art has been applied to product design - e.g. furniture.

Warhol produced his art work 'Campbell's Soup' in 1962.

Pop Artwork like this is regarded as an Iconic drawing of the 1960s.

CHARACTERISTICS OF POP ART

Images stand for popular culture.

The images are often consumer products - e.g.soup cans and coke bottles.

Pop Art is colourful and distinctive.

Multiple copies printed and sold to the general public.

Comic strips are popular.

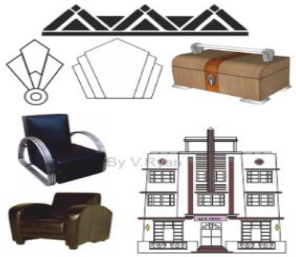
Multiple images often used in art work (see above).

ART DECO 1924 - 1940

Art Deco is an international decorative arts movement, popular between the years 1924 - 1940. Art Deco is usually associated with the architecture of the 1930s and speed and luxury. Recently it has seen a revival.
It is a style, that relies on bold designs, clear lines, vibrant colours and patterns. Geometric shapes and intense colour schemes are prominent.

KEY FEATURES
BOLD DESIGNS
GEOMETRIC SHAPES AND PATTERNS
VIBRANT COLOUR SCHEME
SYMMETRICAL DESIGNS
ELEGANT
STYLISH
STREAMLINED

ART DECO - SHAPES AND FORMS - 1



SAMPLE ARTS AND CRAFTS PRODUCTS

HAND MADE CHAIR

HAND PRINTED WALL PAPER

WROUGHT IRON TABLE

STAIN GLASS

THE ARTS AND CRAFTS MOVEMENT
1880 to 1910

The Arts and Crafts Movement was one of the most influential design movements of all. During the industrial revolution, skilled craftsmen saw the increased use of machines, replacing their skills.

Before the industrial revolution, craftsmen trained for many years, perfecting their skills and this was reflected in the products they made. The industrial revolution changed all this.

Members of the Arts and Crafts Movement, saw the industrial revolution removing craft skills from the manufacturing process, making workers less creative.

THE BAUHAUS (GERMANY)
1919 - 1930s

A Design and Architecture School called Bauhaus was established in 1919. Its name is still regarded as a mark of quality of design. It developed into an international arts / design movement and its influence on design has been considerable.
The Bauhaus encouraged designers, to design and develop products that were stylish and aesthetically interesting and mass produced.
The Bauhaus has influenced architecture, furniture design, interior and exterior design. There is even a Bauhaus font / writing style.

BAUHAUS

CHARACTERISTICS OF BAUHAUS DESIGNS

Bauhaus approached product design in a fresh way. They moved away from traditional skills and fashion to new ideas and ways of manufacturing on an industrial scale.

Bauhaus design characteristics

PRODUCTS MASS PRODUCED
NEW MATERIALS APPLIED TO PRODUCTS
SIMPLICITY, FUNCTION AND AESTHETICS
INNOVATIVE DESIGNS
NEW MANUFACTURING TECHNIQUES
AFFORDABLE PRODUCTS
PRODUCTS FOR THE GENERAL PUBLIC

Design & Technology - Resistant Materials

2. Plastics

Acrylic		Hard wearing Shatterproof Can be coloured
Polypropylene		High impact strength Softens @ 150 C Flex without breaking
High Impact Polystyrene (HIPS)		Light but strong Widely available in sheets Used for casing for electronics
Polythene (LDPE)		Weaker & softer than HDPE Lightweight Used for carrier bags & squeezy bottles
Polythene (HDPE)		Stiff strong plastic Used for pipes & bowls Used for buckets
Urea formaldehyde		Thermoset plastic Colourless Can't be recycled High temperature resistance

fsd

1. CAD – Computer Aided Design

Advantages of CAD	Disadvantages of CAD
Designs can be created, saved and edited easily, saving time	CAD software is complex to learn
Designs or parts of designs can be easily copied or repeated	Software can be very expensive
Designs can be worked on by remote teams simultaneously	Compatibility issues with software
Designs can be rendered to look photo-realistic to gather public opinion in a range of finishes	Security issues - Risk of data being corrupted or hacked
CAD is very accurate	SolidWorks 2D DESIGN CAD Software
CAD software can process complex stress testing	

2. CAM – Computer Aided Manufacturing

Advantages of CAM	Disadvantages of CAM
Quick – Speed of production can be increased.	Training is required to operate CAM.
Consistency – All parts manufactures are all the same.	High initial outlay for machines.
Accuracy – Accuracy can be greatly improved using CAM.	Production stoppage – If the machines break down, the production would stop.
Less Mistakes – There is no human error unless pre programmed.	Social issues . Areas can decline as human jobs are taken.
Cost Savings – Workforce can be reduced.	


Laser Cutter


Robots


Barcode Scanner


AGV – Automated Guided Vehicle

THE 6 R's OF SUSTAINABILITY

Repair	Can we repair what we may throw away? How nutrients help as to repair our bodies. What can we do to repair the UK diet?	
Reduce	Try to reduce our food intake. Reduce food miles and the consumption of processed foods. Reduce packaging.	
Refuse	Say no to something. For example chose free range instead of battery. Refuse products high in fat/salt/sugar. Refuse foods which contain additives/fertilisers/pesticides	
Rethink	Rethink and make a better choice about something. For example rethink your lifestyle in relation to diet, food miles, seasonal, local, animal cruelty and sustainability	
Reuse	Reuse packaging for another purpose. Reuse leftover ingredients. This normally doesn't involve any further processing	
Recycle	Reuse a product – this normally requires further processing, eg. from a coke can into another coke can!	


Food
Technology

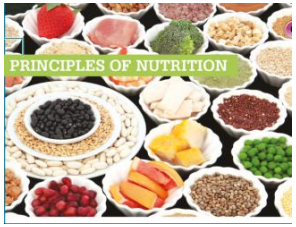
Food Technology

Food Preparation & Nutrition Knowledge Organiser: Food, Nutrition & Health

You must be able to demonstrate knowledge and understanding of the functions, structures and main sources of protein, carbohydrates and fat. Know the biological value of protein, understand an individuals need for carbohydrate, understand the consequences of excess and deficiencies of protein, carbohydrate and fat.
Demonstrate the knowledge and understanding of the sources and functions of vitamins and minerals. Understand the consequences and deficiencies of vitamins and minerals. Understand the retention of water soluble vitamins during cooking.
Demonstrate the knowledge of the Eatwell Guide and health eating guidelines. Understand diet requirements throughout life and diet related illnesses.

Key words

1. Amino Acids
2. High Biological Value (HBV)
3. Low Biological Value (LBV)
4. Protein Complementation
5. Kwashiorkor
6. Fatty Acids
7. Glycerol
8. Saturated Fats
9. Unsaturated Fats
10. Fat Soluble vitamins
11. Water Soluble Vitamins
12. Cholesterol
13. Hydrogenation
14. Trans fats
15. Dietary Fibre
16. Photosynthesis
17. Monosaccharides
18. Disaccharides
19. Polysaccharides
20. Non starch Polysaccharide (NSP)
21. Constipation
22. Diverticular Disease



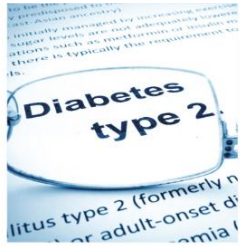
Keywords

1. Fortified
2. Rickets
3. Osteomalacia
4. Antioxidant
5. Thiamin
6. Riboflavin
7. Spina bifida
8. Ascorbic acid
9. Peak Bone Mass
10. Haemoglobin
11. Anaemia
12. Thyroid
13. Dehydration
14. Lactating

Keywords

1. Eatwell Guide
2. Reference Intake (RI)
3. Body Mass Index
4. Iron Deficiency anaemia
5. Osteoporosis
6. Foetus
7. Basal Metabolic Rate (BMR)
8. Physical Activity Level (PAL)
9. Estimated Average Requirement (EARs)

Consuming more energy than is needed by the body will lead to weight gain and obesity.



Diabetes type 2 can occur in later life; it is often associated with obesity and can cause serious long term health problems.

Quick Test

1. What are the functions of fat in the diet?
2. Give an example of protein complementation.
3. What does NSP stand for?
4. What are the fat soluble vitamins
5. What is peak bone mass?
6. Why is a good supply of folic acid needed in early pregnancy?
7. What is Osteoporosis?

Key Points

1. Protein is required by the body for growth, maintenance and repair.
2. Proteins are built up of units of amino acids.
3. Fats can be classified as either saturated and unsaturated.
4. Saturated fats are considered to be more harmful to health because they raise levels of cholesterol.
5. Carbohydrate provides the body with energy.
6. Most of our energy should come from complex starchy foods.
7. Vitamins are micronutrients, required in small amounts to do essential jobs in the body.
8. Water soluble vitamins are easily destroyed during preparation and cooking.
9. Water makes up two thirds of the body so it is vital to drink regularly to stay hydrated.
10. Nutritional needs change throughout life, but everyone needs to consider the current healthy eating guidelines when planning meals.
11. Energy balance is the balance of energy consumed through eating and drinking compared to energy burned through physical activity.

Food Preparation & Nutrition Knowledge Organiser: Food Provenance

You must be able to demonstrate knowledge and understanding of the environment issues associated with food and its production. Demonstrate knowledge and understanding of where ingredients are grown, reared and caught. Have a clear understanding of different farming methods and their effect on the environment. Demonstrate knowledge and understanding of the impact that food has on local and global markets. Demonstrate a knowledge of primary and secondary processing. Know and understand how processing affects the sensory and nutritional properties of ingredients.

Keywords

1. Traceability
2. Field to fork
3. Barn reared animals
4. Organic
5. Genetically Modified (GM)
6. Free range
7. Fish Farms
8. Intensive farming

Keywords

1. Green house gases (GHG's)
2. Crop rotation
3. Fairtrade
4. Red Tractor
5. Climate change
6. CFC's
7. Sustainability of food
8. Deforestation

Keywords

1. Homogenised
2. Primary and Secondary processing
3. Pasteurised
4. Skimmed
5. Semi skimmed
6. Ultra heat treated (UHT)
7. Sterilised
8. Evaporated, Condensed

Key words

1. Transportation
2. Food Miles
3. Food Origin
4. Climate Change
5. Carbon Footprint
6. Recycling
7. Packaging
8. Landfill
9. Food Waste
10. Composting
11. Sustainable food

Keywords

1. Preservation
2. Temperature
3. Drying
4. Chemical Preservation
5. Modified Atmospheric Packaging
6. Vacuum packaging, Irradiation

Key Points

1. Food and packaging waste contributes to greenhouse gases (GHG's)
2. Seasonal and sustainable foods address many environmental issues.
3. MSC – Marine Stewardship Council = Seafood can be traced back to a certified sustainable fishery.
4. Food miles are the distance food travels from its point of origin to your table. Recycling and producing less waste can help reduce carbon emissions.
5. Nearly a third of all food produced ends up in landfill sites where it gives off methane gas as it decomposes.
6. Cheaper foods are ones that are GM/intensively farmed
7. Best quality protein foods are ones where the welfare of the animals has been considered.
8. Hydroponic farming is the production of food using specially developed nutrient rich liquids rather than soil.
9. Free range farming allows animals to access outdoor areas as part of their life. Increased demand for fish stocks has seen stocks diminishing in the wild due to over fishing.
10. Barn reared animals live in an environment similar to intensive farming
11. Under EU law, all foods need to be traceable from field to fork.
12. Carbon emissions and global climate change affect food and water supplies. Sustainable food production ensures less negative impact on the environment and the farmers.

Quick Test

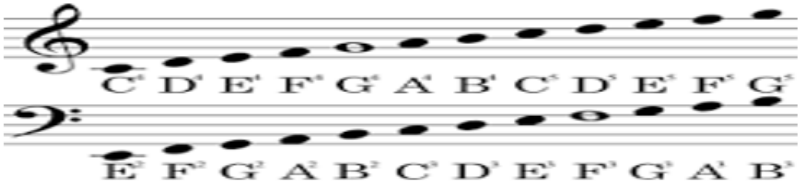
1. Explain what food miles are.
2. Give two ways that fish stocks can be made more sustainable than intensive farming.
3. What are the benefits are free range farming>
4. Why is it important that the origins of food can be traced?
5. What does the flag on the Red Tractor logo mean?
6. How does Fairtrade support farmers in developing countries?
7. Which two gases contribute to global warming?
8. What is the outer skin on the wheat grain called?
9. What is homogenised milk?
10. What type of flour is used to make pasta?
11. Which vitamins may be lost during irradiation?
12. How does vacuum packaging differ to MAP?

Music

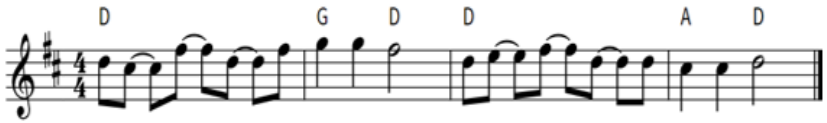
Music - Britpop- Topic Two

ELECTRONIC DANCE MUSIC

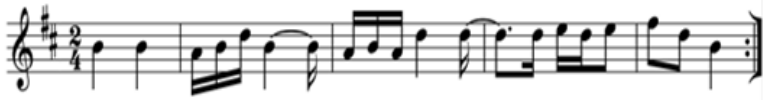
Notes on the stave



Without You - Avicci & Sandro Cavazza (D major F# C#)

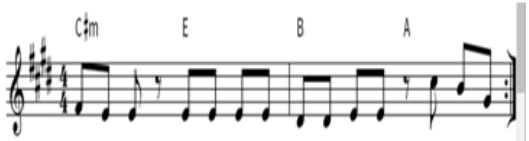


Wake Me Up – Avicci (D major F# C#)



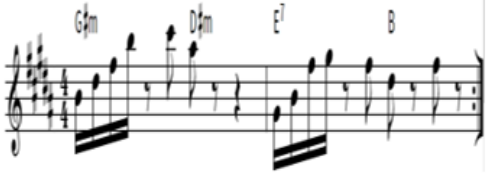
Levels – Avicci

C#m = F# C# G# D#



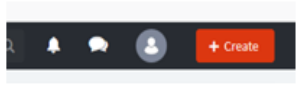
Rather Be – Clean Bandit

G#m = F# C# G# D# A#



EXAMPLE OF DANCE STRUCTURE

Using Bandlab – edu.bandlab.com



- Click on "Create" to open the software.
- Choose instruments from the list that appears.
- Set your click track to a speed you can manage to play at
- Click on the metronome icon to turn it green.
-

LETS START

Let's start with your BASS line. These are the notes of the chords. E.g D, G, A, D

- Open the midi editor (bottom left of screen)
- Draw your bass notes in using the pencil tool
- You can use the keys of the Chromebook also

Track (press add track)

- Do this in the same way as your bass line.
- Write or play one chord only.
- Copy and paste it four times.
- Move each one up or down until it reaches the correct notes.

Drama

Drama

Y9 Drama – HT3 & 4 – Knowledge Organiser

Constantin Stanislavski: Born: 17 January 1863, Moscow, Russia and died: 7 August 1938. He was widely recognized as an outstanding character actor and the many productions that he directed garnered him a reputation as one of the leading theatre directors of his generation.

Naturalism: Naturalism is a movement in European drama and theatre that developed in the late 19th and early 20th centuries. It refers to theatre that attempts to create an illusion of reality through a range of dramatic and theatrical strategies.

Naturalistic Techniques:
Given circumstances – the facts about a character that cannot be changed.
The magic if – an actor imagines what it would feel like to be in the situation of their character.
Objective – A character's purpose or motivation for behaving in a certain way.
Subtext – The hidden meaning behind words.

Bertolt Brecht: born in Germany in 1898 and died aged 58 in 1956. He was a poet, playwright and theatre director. His most famous plays include Life of Galileo, Mother Courage and Her Children and The Caucasian Chalk Circle. Brecht's political and satirical writing made him an early enemy of the Nazi Party. Fearing persecution, Brecht left Nazi Germany in February 1933, just after Hitler took power.

Epic Theatre: Epic theatre is a form of didactic drama presenting a series of loosely connected scenes that avoid illusion and often interrupt the story line to address the audience directly with analysis, argument, or documentation. Epic theatre is often highly political.

Epic Theatre Techniques:
Placard - a sign or additional piece of written information presented onstage. The information doesn't just comment upon the action but deepens our understanding of it.
Multi-rolling - when an actor **plays** more than one character onstage. The differences in character are marked by changing voice, movement, gesture and body language.
Gestus - a clear character gesture or movement used by the actor that captures a moment or attitude rather than delving into emotion.
Alienation - the use of techniques designed to distance the audience from emotional involvement in the play

Blood Brothers Plot:

Blood Brothers, a musical by Liverpudlian playwright Willy Russell, revolves around twin boys (Mickey and Edward) who are separated at birth and brought up in completely different environments in the city. The play, set in the 1960s, is divided into two acts, with songs throughout.

Mickey is brought up with his seven older siblings by his struggling single mother, Mrs Johnstone. His twin brother, Edward, however is brought up as the only child of the wealthy Lyons family, who live nearby, after Mrs Lyons persuaded Mrs Johnstone to hand over one of her twins at birth. Mickey and Edward don't meet each other until they're seven years old, but immediately become best friends and blood brothers. The bond continues when the boys are teenagers and both live in the countryside, despite them both being in love with Mickey's neighbour Linda. However, as they get older, the huge difference in their backgrounds pulls them apart and eventually leads to their tragic deaths.

Written during a period of huge changes in society and politics, *Blood Brothers* draws the audience's attention to the detrimental effect that social inequality can have on people's lives.

Blood Brothers Characters:

Main characters
Mickey Johnstone – The twin kept by Mrs Johnstone (Working Class)
Edward Lyons – The twin given away to Mrs Lyons by Mrs Johnstone (Middle Class)
Mrs Johnstone – A working class mother who struggles to provide for her family
Mrs Lyons – A middle class woman who longs for a child and takes one of the twins
Secondary characters
Linda – A childhood friend of Mickey and then Edward. Marries Mickey but has an affair with Edward later in the play
Narrator – Comments on the action in a sinister manner often referencing superstition
Minor characters
Sammy – An older brother of Mickey (and Edward) Always getting into trouble
Mr Lyons – Mrs Lyons' husband. He is away for the duration of Mrs Lyons' "pregnancy" and believes Edward to be his biological son.