Avonbourne Boys' & Girls' Academies

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Knowledge Organiser

Year 9 - 2025/26

Student Name: _

Need to ask your teacher about any of these topics? Make a note here!

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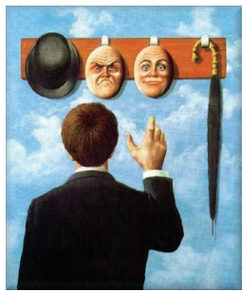
Art Year 9 Autumn Term—Surrealism

Concepts	Definitions
Fantasy	the faculty or activity of imagining impossible or improbable things
Subconscious	Of or concerning the part of the mind of which one is not fully aware, but which influences one's actions and feelings.
Juxtaposition	The fact of two things being seen or placed close together with contrasting effect.
Visualisation	The formation of a mental image of something .
Influence	the capacity to influence someone or something. The surrealists were influenced by the psychologist Sigmund Freud. Later Pop artists were influenced by Surrealism.
Inspiration	the process of being mentally stimulated to do or feel something, especially to do something creative.
Hidden meaning	Used by surrealist artists and often hinted in the title of the artwork.
Visual metaphor	A visual metaphor is the representation of a person, place, thing, or idea by means of a visual image that suggests a particular association or point of similarity.
Observational drawing	Drawing from life. In art we recognise the benefit of drawing from objects that are directly in front of you.
Cold glaze	A cold glaze makes colours bright and shine
Texture	The feel, appearance, or consistency of a surface or substance.
Blending	The technique of gently intermingling colours or values to create a gradual transition or to soften lines.

Rene Magritte

Date of birth/ death	1898— 1967
Location	Born in Belgium
Materials	Oil paint on canvas
Education	Académie Royale des Beaux-Arts in Brussels
Art Movement	Surrealism
Inspiration	Everyday objects
Context/ Concepts and Characteristic	He often blurred the line between what is real and what is imagined. He painted with photographic clarity, which made the surreal elements more striking.



Salvador Dali

Context	1904–89), was a **Spanish surrealist painter**. He was inspired by dreams and the subconscious.

Art Movements

A style in art with a specific common philosophy or goal, followed by a group of artists during a specific period of time

Surrealism	A 20th-century avant-garde movement in art and literature which sought to release the creative potential of the unconscious mind, for example by the irrational juxtaposition of images.
Realism	The quality or fact of representing a person or thing in a way that is accurate and true to life.

Clay

Wooden modelling tools	Used for shaping, sculpting and smoothing clay, to slice, dice, cut, contour and shape.
Kiln	A kiln is a thermally insulated chamber, a type of oven, that produces temperatures sufficient to fire clay.
Firing	Firing is the process of bringing clay and glazes up to a high temperature
Rolling Pin	For rolling out clay to create smooth flat pieces.
Clay tools	Wooden or plastic instruments that help to shape and carve out clay.
Scoop/ Ribbon tool	To hollow out handmade shapes, especially sculptural forms.
Sponge	For smoothing and shaping clay surfaces and transferring water to the clay.

Colour Theory

Tertiary colours	Made by mixing a primary colour and a secondary colour together
Vermillion	Red + Orange
Amber	Orange + Yellow
Chartreuse	Green + Yellow
Teal	Green + Blue
Violet	Blue + Purple
Magenta	Purple + Red
Tints	Made by mixing a colour into white

Art Year 9 Spring Term—Pop Art

Key terms	Definitions
Composition	Composition is how all the parts of an artwork are arranged and put together. It's like the layout or design of a picture.
Ben day dots	Tiny, evenly spaced dots used in printing to create shading, color, and texture.
Mass-produced	Something made in large quantities, usually by machines in a factory.
Printer inks	Include: Cyan, Magenta, Black and Yellow.
Font	A style of text used in writing and design. It changes how letters and numbers look on a screen or on paper.
To enlarge	To make something bigger in size, amount, or importance.
To exaggerate	To make something seem bigger, better, worse, or more important than it really is.
Collage	A piece of art made by sticking various materials such as photographs, pieces of paper, fabric, or other objects onto a surface.
Mixed media	a type of art that combines different materials or artistic techniques in a single piece of work.
Viewpoints	the position or angle from which the subject is seen or represented.

Art Movement

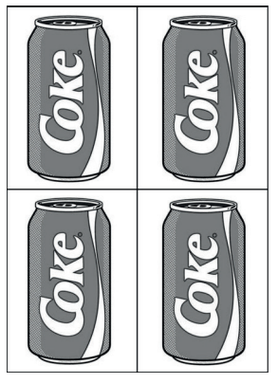
A style in art with a specific common philosophy/goal, followed by a group of artists during a specific time period

Pop Art	**Pop Art** is an art movement that emerged in the **mid-1950s in Britain** and **late 1950s in the United States**, reaching its peak in the 1960s. It challenged traditional fine art by incorporating imagery and techniques from **popular and mass culture**, such as advertising, comic books, and everyday consumer products.

Skills Building Tasks

Recreate the pop art style lettering as accurately as you can using a ruler and a pencil. Once complete add colour by only using Ben Day Dots in primary colours (red, yellow and blue)

Remember: Ben Day Dots are perfectly uniform not random



Create a grid in your books and draw in the repeated Coca-Cola can in each quarter. Use complementary colours to create a Warhol inspired drawing

Roy Lichtenstein

Date of birth/death	1928—1997
Location	Born in New York, USA
Materials	Oil paint on canvas
Education	Studied Art and Design at Ohio state university
Art Movement	Pop art
Inspiration	Comic strips and commercial printing techniques
Context, Concepts and Characteristic	He used the Ben Day dotting system to mimic the style of comics and commercial printing techniques. He often added speech/thought bubbles to give narrative to his work

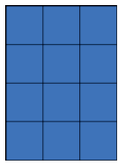
Andy Warhol

Date of birth/death	1928– 1987
Location	Born in Pennsylvania, USA
Materials	Screen print
Education	Studied Fine Art at Carnegie institute of Technology
Art Movement	Pop art
Inspiration	Mass production, consumer goods, and celebrity culture.
Context, Concepts and Characteristic	Explored how mass media and consumer goods shaped identity and culture. Often portrayed celebrities such as Elvis and Marilyn. Often used repetition and a limited colour palette.

Art Year 9 - Summer Term

Composition

Composition is how all the parts of an artwork are arranged and put together. It's like the layout or design of a picture.

Diptych	Triptych	Montage
An artwork made up of two panels that are connected or meant to be viewed together.	An artwork made up of three panels that are usually connected or displayed together.	A collection of images or scenes combined into one to show a bigger idea or story.
		
Grid	**Landscape**	**Portrait**
Image has a grid layered over it.	The paper is wider than it is tall. The longer side is at the top.	The paper is taller than it is wide. The shorter side is at the top.
		

Skills Building Tasks

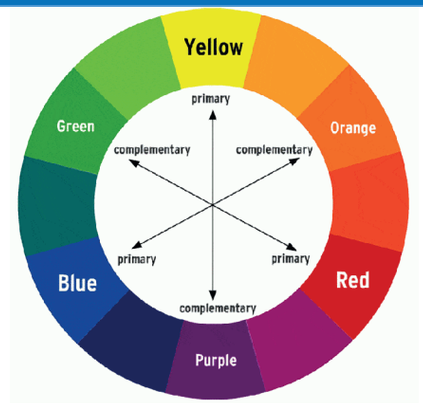
Create a copy of cupcake icing, focus on creating soft gradients and tone	Combine together an ice cream and a squid
	 

Wayne Thiebaud




Date of birth/death	15th November 1920—died 25th December 2021 (Aged 101)
Location	Born in Arizona, USA. Raised in Long Beach California
Materials	Oil Paint
Education	Bachelors then Masters degree in Commercial art at California State University, Sacramento
Art Movement	Pop Art
Inspiration	Food commonly found in diners and cafeterias. His own experience working in a café when he was a teenager
Context, Concepts and Characteristic	Used heaving pigments and exaggerated colours
	Was linked to pop art due to his use of repetition and mass produced items

Key terms

Colour Theory	**Complementary Colours**	
	Colours that are opposite on the colour wheel	
	Harmonious Colours	
	Colours that are adjacent on the colour wheel	
Thumbnails	Small, quick sketches artists make to plan out ideas for a larger artwork .	
Collage	Made by sticking different materials (like paper, fabric, or photos) onto a surface to create a new image.	

Computer science—Autumn 1– Binary Logic

1 Binary Logic			
	Key term	**Definition**	**Example**
Cracking the Code: Understanding Binary Numbers	Binary	A number system using only 0s and 1s.	The binary number `1010` means 10 in decimal.
	Decimal	Our everyday number system using digits from 0 to 9.	`13` in decimal is written as `1101` in binary.
	Bit	A single binary digit: 0 or 1.	`1010` has 4 bits.
	Nibble	A group of 4 bits.	`1011` is a nibble.
	Byte	A group of 8 bits.	`01000001` is one byte (represents the letter A in ASCII).
	Place Value	The value of a binary digit based on its position (powers of 2).	In `1001`, the leftmost digit is worth 8 (2^3), the rightmost is worth 1.
	Binary place values are powers of 2: 1, 2, 4, 8, 16, etc.	Binary place values are powers of 2: 1, 2, 4, 8, 16, etc.	The third position from the right in `1000` is 8 (2^3).
Binary Maths: Doing Arithmetic the Computer's Way"	Binary Addition	Adding binary numbers using the rules: 0+0=0, 1+0=1, 1+1=10.	1010 + 0011 = 1101
	Carry	When two 1s are added, a 0 is written and a 1 is carried to the next column.	`1 + 1 = 0` (carry 1).
	Binary Subtraction	Subtracting one binary number from another using borrowing.	`10 - 1 = 1` in binary.
	Borrow	Taking a 1 from the next column when subtracting.	`1000 - 0001 = 0111` (borrow from 8 to subtract 1).
	Overflow	When the answer is too big for the bits available.	`1111 + 0001 = 10000` (5-bit result from 4-bit numbers).
	Bit Shift	Moves all bits one place (left - multiplies, right - divides)	`0001` (1) shifted left = `0010` (2). `0100` (4) shifted right = `0010` (2).
Binary in the Real World: How Computers Understand Data"	Data	Information stored or processed by a computer.	Text, images, and sound are all types of data.
	Character Encoding	A system that gives each character a binary number.	The letter "A" is `01000001` in ASCII.
	ASCII	A character set where each letter or symbol is represented by a binary code.	"Hi" = `01001000 01101001`
	Colour Depth	The number of bits used to store colour for each pixel.	8-bit colour = 256 possible colours.
	Sample Rate	How often sound is measured per second. Higher rates = better quality.	4,100 samples per second is CD-quality sound.
	Binary File	A file made up of binary data (not plain text).	Images, music files, and programs are stored as binary files.

Computer science—Autumn 2– Search and Sort Algorithms

2 Search & Sort Algorithms			
	Key term	**Definition**	**Example**
Finding Things Fast: Search Algorithms	Search	Looking for a specific item in a list or group.	Searching for your name on a class register.
	Linear Search	A method that checks each item in a list one by one.	Check names one by one to find “Sam”.
	Binary Search	A method that checks the middle of a **sorted list** to find an item quickly.	In a list of numbers 1–100, check 50 first, then 25 or 75.
	Efficiency	How quickly and easily an algorithm works.	Binary search is more efficient than linear search in large lists.
	Index	The position of an item in a list.	In the list [‘a’, ‘b’, ‘c’], ‘b’ is at index 1.
Putting Things in Order: Sort Algorithms	Sort	To arrange items in a specific order.	Sorting test scores from lowest to highest.
	Bubble Sort	A simple sorting method that swaps items if they are in the wrong order.	Compare 7 and 2 → Swap to make 2, 7.
	Insertion Sort	A method that puts each item into its correct place in the sorted part of the list.	Like sorting playing cards in your hand.
	Unsorted List	A list that is in no particular order.	[4, 2, 9, 1] is an unsorted list.
	Compare	Looking at two items to decide which is bigger or smaller.	Compare 6 and 4 to decide if you should swap.
Smart Thinking: Why We Use Search & Sort Algorithms	Algorithm	A clear set of steps to solve a problem.	A set of rules to find a book in a library.
	Input	The data that goes into an algorithm.	A list of names to sort.
	Output	The result after running the algorithm.	A sorted list of names is the output.
	Performance	How well an algorithm works (speed, accuracy).	Binary search performs better than linear search in big lists.
	Computational Thinking	Solving problems using logic and step-by-step thinking.	Breaking down a list to sort it using bubble sort.
	Flowchart	A diagram that shows the steps of an algorithm.	A flowchart can show how a bubble sort works.

Computer science—Spring 1&2 – Networks

3 Networks			
	Key term	**Definition**	**Example**
Introducing Networks and Topologies	Network	A group of computers or devices connected to share data and resources.	A school network connects all computers to a shared printer.
	LAN	Local Area Network – covers a small area like a school or office.	Your school's network is a LAN.
	WAN	Wide Area Network – covers a large area, like cities or countries.	The internet is a WAN.
	Star Topology	A network setup where all devices connect to a central switch or hub.	In school, each PC is connected to a main switch in a star layout.
	Bus Topology	A network where all devices share one central cable (now less common).	Older networks used a single cable (bus) to connect devices.
	Router	Sends data between networks and connects your home to the internet.	Your home Wi-Fi router connects your phone to the internet.
	Switch	Sends data to the correct device on a network.	A switch in school sends a print job only to the printer, not all PCs.
How Do Networks Work? – Data, Devices & Connections	Data	Information sent across a network (like a message or video).	Watching YouTube involves sending lots of data to your device.
	Packet	A small piece of data sent over a network.	A video is broken into packets that travel to your screen.
	Transmission	The act of sending data from one device to another.	Sending an email is a data transmission.
	Bandwidth	The amount of data that can be sent at once.	More bandwidth = More internet at any one moment.
	Ethernet Cable	A physical cable used to connect devices in wired networks.	In school, your PC might be plugged in with an Ethernet cable.
	Wireless (Wi-Fi)	Data sent through air using radio waves instead of wires.	Wi-Fi lets your phone connect to the internet without cables.
	Network Interface Card (NIC)	A hardware component that connects a device to a network.	Every computer has a NIC to connect to Wi-Fi or Ethernet.
Online Identity: IPs, Addresses & the Internet" – Addressing and Devices	IP Address	A unique number that identifies a device on a network.	192.168.0.1 might be your home router's IP.
	MAC Address	A unique code built into a device's network card.	Used by a router to identify which laptop is which.
	DNS	Domain Name System – turns website names into IP addresses.	Typing "bbc.co.uk" uses DNS to find its IP.
	URL	The full website address typed in a browser.	`https://www.bbc.co.uk` is a URL.
	Firewall	A security device that blocks harmful network traffic.	Your school network might use a firewall to block games websites.

Computer science—Summer 1 – Protocols

4 Protocols			
	Key term	**Definition**	**Example**
How Computers Talk: Communication Protocols	Protocol	A set of rules that computers follow to communicate with each other.	All protocols listed are examples
	TCP/IP	A group of protocols that work together to send data across the internet.	TCP ensures data is sent correctly, while IP makes sure it goes to the right place.
	IP Address	A unique number that identifies a device on a network.	Your computer's IP address is like its street address on the internet.
	HTTP	HyperText Transfer Protocol – the protocol used to load websites.	When you open a webpage, your browser uses **HTTP** to fetch it.
	HTTPS	A secure version of HTTP that encrypts data for safer communication.	Online shopping websites use **HTTPS** to protect payment information.
	Ping	A tool that checks if a device on a network is reachable.	You can **ping** a website like google.com to check if it's online.
Connecting to the Web: Protocols for Web & Apps	FTP	File Transfer Protocol – a method used to transfer files between computers.	Sending files from your computer to a website uses **FTP**.
	UDP	User Datagram Protocol (UDP) is a connectionless protocol used to send data packets directly to a destination	Real-time multiplayer games rely on UDP's speed and low overhead, even if some data packets are lost.
	SMTP	Simple Mail Transfer Protocol – a protocol used to send emails.	**SMTP** is used when sending emails from Outlook or Gmail.
	IMAP	Internet Message Access Protocol – a protocol that allows email clients to access and store emails on a server.	Using IMAP, you can access your emails from any device.
	POP3	Post Office Protocol 3 – another protocol for receiving emails, but it downloads emails to a device.	**POP3** downloads emails to your phone so you can read them offline.
	WebSocket	A protocol used for real-time communication between a server and a browser.	Online games or chat apps use **WebSockets** for instant messaging.
Keeping it Safe: Security Protocols	SSL/TLS	Secure Sockets Layer / Transport Layer Security – protocols used to encrypt data for secure communication over the internet.	Websites like online banking use **SSL/TLS** to protect login details.
	VPN	Virtual Private Network – a protocol that creates a secure, private network over the internet.	**VPNs** let users access content safely, even on public Wi-Fi.
	Two-Factor Authentication (2FA)	A security process that requires two forms of identification.	Using **2FA** with Google adds an extra layer of security when logging in.
	OAuth	A secure protocol that allows third-party services to access data without giving away passwords.	**OAuth** is used when logging into a website using Facebook or Google.
	SSH	Secure Shell – a protocol that allows secure remote access to a device or server.	Developers use **SSH** to securely log into their servers to manage websites.
	AES	Advanced Encryption Standard – a widely used encryption protocol for securing data.	**ES** encrypts sensitive data in credit card transactions online.

Computer science—Summer 2 – Impacts of Technology

5 Impacts of technology			
	Key term	**Definition**	**Example**
Tech in Our Everyday Lives	Smartphone	A mobile phone with advanced features like internet access and apps.	You use a **smartphone** to text friends or browse the internet.
	Internet	A global network that connects millions of devices and allows communication.	The **internet** lets you send emails, watch videos, or use social media.
	Social Media	Online platforms like Facebook, Instagram, and Twitter, used for social interaction.	**Social media** helps you connect with family and friends online.
	App	A software program designed for mobile phones or computers.	Using a **shopping app** like Amazon to buy clothes.
	Online Shopping	Buying goods and services over the internet.	**Online shopping** makes it easy to order things from home.
	E-commerce	The buying and selling of goods and services on the internet.	Stores like Amazon and eBay are examples of **e-commerce** websites.
	Streaming	Watching videos or listening to music in real-time over the internet.	Watching a movie on Netflix is an example of **streaming**.
The Effects of Technology on Communication	Instant Messaging	Sending text messages in real-time via an app or online platform.	**WhatsApp** and **Messenger** are popular for **instant messaging**.
	Email	A method of sending written messages electronically over the internet.	You use **email** to communicate with your teachers or family.
	Video Calling	Making face-to-face calls over the internet using a camera.	**Skype** or **Zoom** lets you make **video calls** with family or friends.
	Social Isolation	Feeling disconnected or isolated due to too much time spent online.	Spending too much time on **social media** can sometimes lead to **social isolation**.
	Cyberbullying	Bullying that takes place over the internet or through social media.	Posting mean comments online can be an example of **cyberbullying**.
	Digital Footprint	The trail of data you leave behind when you use the internet or social media.	Every time you post a picture, you create a **digital footprint**.
	Online Privacy	Protecting personal information when using the internet.	Using **passwords** and **privacy settings** helps keep your **online privacy** safe.
The Environmental Impact of Technology	E-waste	Discarded electronic devices that are no longer used.	Old phones, computers, and TVs become **e-waste** once they're thrown away.
	Recycling	The process of turning waste materials into reusable materials.	**Recycling** old phones can prevent harmful materials from polluting the environment.
	Carbon Footprint	The total amount of carbon dioxide and other greenhouse gases emitted by human activities.	**Smartphones** and **laptops** contribute to your **carbon footprint** through energy use.
	Energy Consumption	The amount of energy used by devices like computers, phones, and TVs.	**Energy consumption** increases when you keep devices on for long periods.
	Sustainability	Using resources in a way that does not deplete them for future generations.	Using **solar panels** and **recycling e-waste** helps promote **sustainability**.
	Green Technology	Technology that is designed to help protect the environment.	**Electric cars** and energy-efficient **LED light bulbs** are examples of **green technology**.

Design and Technology (Food) - Nutrition

Hygiene and safety	
Hazard	Anything that could cause harm
Food Poisoning	Illness caused by bacteria in food.
Bacteria	Single celled organisms, some can cause food poisoning
Cross Contamination	The spread of bacteria from one place to another
Food Hygiene	Food hygiene is the practice of handling, preparing, and storing food in a way that prevents foodborne illnesses
Personal Hygiene	Washing your hands before handling food, never cough / sneeze over food, or where it is being prepared or stored.
Safety	Working in a way to prevent accidents or injuries e.g. tie back long hair, put bags away, using the right equipment for the job

Practical skills	
Claw hold	Little finger and thumb hold the food down, the knife briefly runs over your knuckles.
Bridge hold	Food is held by the fingers and thumb creating a bridge. The knife should go through the bridge to cut.
Rubbing in	Using the fingertips to rub a solid fat such as butter or margarine into flour to create a fine breadcrumb texture
Boiling	The method of cooking food in boiling water. The boiling point of water is typically considered to be 100 °C
Baking	The method of preparing food that uses dry heat,

Chopping boards	
Red	Raw meat and poultry
Blue	Raw fish
Green	Salad vegetables and fruit
Brown	Root vegetables
Yellow	Cooked meat, poultry and fish
White	Dairy and bakery products

Eatwell guide food groups	
Yellow	Potatoes, rice, bread, pasta, and other starchy carbohydrates
Blue	Dairy and alternatives
Green	Fruits and vegetables
Pink	Beans, pulses, fish, eggs, meat and other proteins
Purple	Oils and spreads

Design and Technology (Food) - Food Science

Hygiene and safety	
The 4 Cs	Principles in keeping food safe – cross contamination, cleaning, cooking, chilling
Pathogens	A pathogen is an organism that causes disease
Danger zone	Single celled organisms, some can cause food poisoning
Binary fission	The spread of bacteria from one place to another
Food poisoning	Illness caused by bacteria or other toxins in food, typically with vomiting and diarrhoea
Contaminate	Contamination is when unwanted bacteria, objects, or chemicals get into food making it unsafe to eat
Pests	Pesta are animals or insects that need to be kept out of the kitchen as they can carry food poisoning causing bacteria. Their hair and faeces could also contaminate the food.

Food science	
Food science	Food science is the study of the physical, biological (including microbiological) and chemical makeup of food.
Raising agents	Substances that are added to baking mixtures which react chemically to release carbon dioxide which helps the product rise.
Yeast	One celled fungus. They are used by bakers because they can produce carbon dioxide to make bread to rise.
Carbon dioxide	A chemical compound composed of one carbon and two oxygen atoms produced by raising agents to make a mixture rise.
Coagulate	The change in the structure of protein (from a liquid form to solid or a thicker liquid) brought about by heat, mechanical action or acids.

Practical skills	
Kneading	Kneading is when you work the dough, usually by hand, for the purpose of developing the glutens in the flour, which is
Melting	Changing a solid into a liquid when heat is applied.
Zesting	Scraping off the outer coloured part of the peel of (a piece
Stir fry	Frying food quickly over high heat in a lightly oiled pan (such
Breading	Coating food in bread crumbs (using egg and flour to help the

Nutrition	
Nutrients	a substance that provides nourishment essential for the
Micro nutrients	Micronutrients are vitamins and minerals needed by the body in very small amounts. However, their impact on a body's
Macro nutrients	Macronutrients are the nutrients we need in larger quantities that provide us with energy: in other words, fat, protein and
Protein	Protein is needed for the growth and repair of our cells. Its
Carbohydrates	Carbohydrates provide us with our main source of energy. They also provide use with fibre, which is important for our gut
Fats	Fat is needed for warmth, insulation, and protection in the body. It is also a secondary source of energy

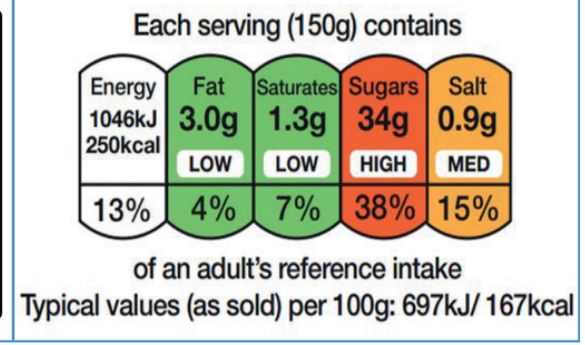
Design and Technology (Food) - Food Hygiene Regulations

Hygiene and safety	
Risk	The consequence of a hazard. e.g. food poisoning caused by bacteria (a biological hazard)
Prevention/control method	Actions put in place to avoid the risk from a hazard e.g. Using different coloured chopping boards for different food to avoid cross contamination.
High risk food	Foods which support the growth of bacteria being high in protein and moisture e.g. meat, fish, eggs, dairy and cooked rice
Temperature control	To keep food safe when storing, preparing, cooking, and serving food. Freezer -18C, Fridge 1-4C, core temperature of cooked food should be 75C.
Danger zone	The range of temperatures from 5-63C in which bacteria multiply every 20 minutes
Risk assessment	A way of identifying things that could cause harm to people.

Environmental health officer	
Environmental health officer (EHO)	The officer protects the health and safety of the general public from any harmful exposures that they may encounter, often in food businesses it is food safety and hygiene.
Food hygiene rating	A rating given from 0-5 showing the food hygiene standards of an establishment. 0 being very bad and 5 being excellent.
Improvement notice	A notice that specifies what you're doing that breaks the law and say what you need to do to correct the issue.
Emergency Prohibition Notice	This is when the EHO gives notice to stop the use of the premises and equipment. Essentially this shuts down an establishment that has been deemed a serious risk to health.

Practical skills and food science	
Whisking	Blending ingredients together quickly or to incorporate air into ingredients such as egg whites
Roux	A mixture of fat (usually butter) and flour used in making sauces
Blind baking	A term used to describe the process of pre-baking a pie crust before the filling is added
Aeration	The process of adding air into a mixture
Gelatinisation	Gelatinization happens when starch absorbs liquid and bursts, thickening the liquid

Food labels	
Allergen	A substance that causes an allergic reaction.
Manufacturer	A person or company that makes goods for sale
Reference intake (RI)	Used to communicate recommended nutrient intake to the public
Traffic lights system	The traffic light label is colour coded and shows that green is low in a particular nutrient, amber means medium and red is high in a nutrient

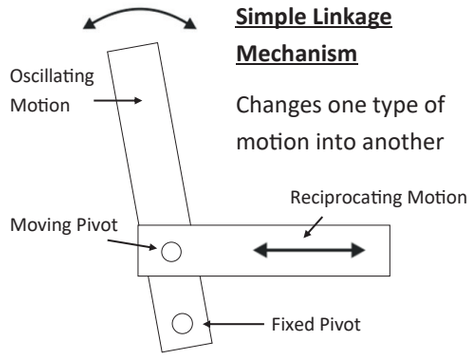


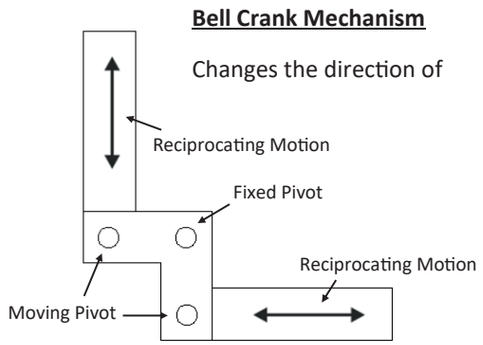
Design and Technology (Graphics) - Mechanical Card

ACCESSFM	
Aesthetics	How a product looks
Cost	How much a product costs to make or buy
Customer	Who a product is aimed at
Environment	Where a product will be used
Size	How big a product will be
Safety	How safe a product is, and how safe the manufacture of a product is
Function	What a product does
Materials	What a product is made from

The Design Process	
Task analysis	Picking apart a task to try and solve the problem within
Mood board	A collection of images to help you when designing
Product Analysis	Investigating and evaluating products to find out more
Design brief	A statement saying what you are going to design and
Specification	A list of points saying what your project is going to be
Model	Making part of your product to check that you like it

Mechanisms	
Motion	The ways in which things move
Mechanism	A device that you can make to transform one type of motion into another
Bell crank	Part of a mechanism that allows reciprocating motion to change direction
Collar	Holds the arms of a mechanism in place
Pivot point	The point that motions move around
Split pin	A small metal component used to make pivot points on cards
Linear	Motion that moves forwards in one straight line
Rotary	Motion that moves in a circular path around a fixed point
Oscillating	Motion that swings back and forth from a fixed point
Reciprocating	Motion that moves continuously, and repetitively, back and forth, up and down, or left to right

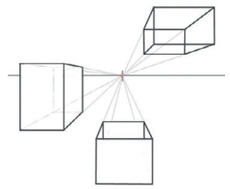
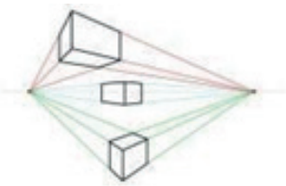




Design and Technology (Graphics) - Chocolate Bar Display

ACCESSFM	
2D	Two dimensional
3D	Three dimensional
Perspective Drawing	Methods of drawing where the product appears to “get smaller” as it gets further from the viewer
Net	A flat 2D shape that can be folded into a 3D shape
Solid line	A continuous black line on a net representing where it should be cut out
Dotted line	A broken line on a net representing where it needs to be folded

The Design Process	
Task analysis	Picking apart a task to try and solve the problem within it
Mood board	A collection of images to help you when designing
Product Analysis	Investigating and evaluating products to find out more about them
Design brief	A statement saying what you are going to design and make
Specification	A list of points saying what your project is going to be and do
Model	Making part of your product to check that you like it and to check that it works

Technical Drawing	
Horizon line	A horizontal line on your page representing “eye level” in real life
Vanishing point	The point at which all side and plan view lines disappear to when drawing in perspective
	**<u>One Point Perspective</u>** A method of 3D drawing when objects are drawn above, on or below a horizon line, and the objects disappear into one vanishing point.
	**<u>Two Point Perspective</u>** A method of 3D drawing when objects are drawn above, on or below a horizon line, and the objects disappear into two vanishing points on either side of the drawing.

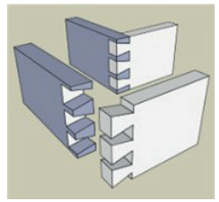
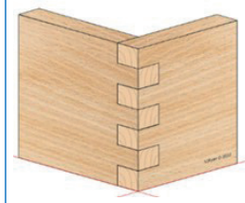
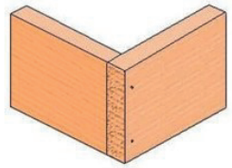
Pattern Repeats			
The use of one single design that can be repeated in different ways			
			
Block	Half Drop	Diamond	Random

Design and Technology (Product Design) - Finger Jointed Box

CAD/CAM	
CAD	Computer Aided Design
CAM	Computer Aided Manufacture
CNC	Computer Numerically Controlled
2D design	A programme on the computer that can be used to create drawings to be laser cut and engraved.
Laser cutter	A machine that uses a high powered laser to cut and engrave materials

Workshop Tools	
Tri Square	Marking out equipment – used to mark out an accurate right angle
Bench Hook	Cutting equipment – used to put your timber on to stabilise it when cutting
Tenon Saw	Cutting equipment – used to cut straight lines in wood
Vice	Workshop equipment – used to hold you work still while you are marking, measuring or cutting
Coping Saw	A saw with a thin blade used for cutting curves in wood
Belt Sander	A machine used for smoothing the surface of timber
File	A tool used for removing waste timber through abrasion

Woodwork Joints — Box corners

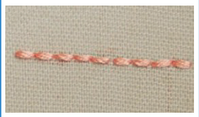
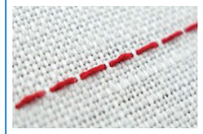
Dovetail joint	**Finger joint**	**Dowel joint**	**Butt joint**
			
A complex joint to mark out and cut, but a sign of excellent craftsmanship. The two sides are called tails and pins.	A simpler version of the dovetail joint which is easier to mark out and cut, and just as strong. Used for box corners.	Holes are drilled in both sides of the timber and dowels glued into both sides. Used in flat pack furniture.	Butt joints are weak because they are simply glued together but can be supported by adding nails through the end.

Softwood	
Softwood	A type of wood that has needles / pine cones growing on it, has a triangular shape, wide rings and a loose grain.   
Pine 	A type of softwood that is yellow in colour with a strong grain pattern, and easy to work with. Used for interior

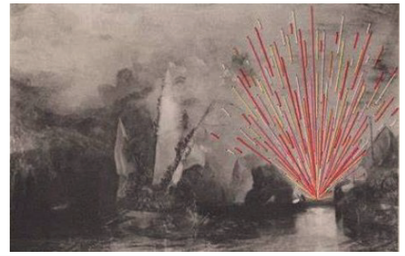
Design and Technology (Textiles) - Embellished Seascapes

Key Terminology	
Embellish	To make (something) more attractive by the addition of decorative details or features.
Embroidery	The method used for decorating fabrics with a needle and a thread.
Pattern	A repeated decorative design.
Organic shapes	Shapes with a natural look and a flowing, curving appearance.
Geometric shapes	Precise and regular, like squares, rectangles, and triangles. Often found in human-made things.
Simplify	To make something less complicated.
Composition	The arrangement of elements within a work of *art*.
Thread	A long, thin strand of cotton, nylon, or other fibres used in sewing or weaving.
Bondaweb	A soft adhesive used for joining fabric layers together
Moodboard	A collection of visual images to show your thoughts and ideas
Textile artist	An artist / designer who creates their pieces using fabrics, stitches and other textile materials

Types of Stitch

				
Back Stitch	Running Stitch	Satin Stitch	French Knots	Cross Stitch

Francesca Colussi Cramer



- A textile artist and designer based in North Wales, UK.
- Studied Literature and Women's History in Italy, then went to do a degree in textile design in the UK
- Her design work has been acquired by fashion and interior design brands such as Boden, Ikea and Nike.
- She transforms and re-purposes found images, vintage postcards and photographs through a contemporary, three dimensional viewpoint
- She has exhibited at New Designers in London, and Premiere Vision in Paris

Textiles Equipment

			
Ironing Board	Sewing Machine	Tape Measure	Pin Cushion
			
Pins	Needle	Iron	Fabric Scissors

Design and Technology (Textiles) - Aerial Weaving

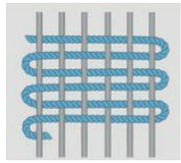
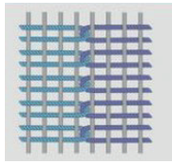
Key Terminology	
Weave	The process of interlocking two threads to create a fabric
Loom	A tool used to weave cloth and tapestry. It stretches the warp threads to help weave in the weft threads.
Warp	The yarn that is wound onto the loom.
Weft	The yarn that is woven over and under the warp threads.
Balanced Weave	A weave containing equal amounts of warp and weft.
Beat	To apply downward pressure on the weft threads.
Interlock	A weaving technique in which two weft ends loop around each other when they meet.
Tension	The amount of tautness put on the warp threads.
Weaver's knot	A simple knot used by weavers so that threads may be clipped close to the knot without coming apart.
Soumak	A finger-manipulated weave in which the weft yarn is wrapped around one or two warp threads.
Woven fabric	Fabrics with two yarns crossing each other at right angles. eg. Cotton.
Non woven fabric	Fabrics made without the use of weaving e.g. bonded fabric
Knitted textiles	Fabrics created when yarns loop round each other instead
Yarn	Fibrous threads used to make fabric

Tammy Kanat



- Large scale textile artist inspired by the Australian landscape
- Started as a jewellery designer before moving to textiles
- Enrolled in the Australian Tapestry Workshop in 2011
- Exhibition in 2014 "Spirit" for her hand woven wall art
- Gained international recognition through social media
- Artworks are inspired by organic shapes found in nature—tree trunks and geological formations such as agate
- Inspired by the textile artist Sheila Hicks

Types of Weaving

		
Tabby	Soumak	Interlock

Types of Macrame Knots

		
Square Knot	Half Hitch Knot	Lark's Head

Design and Technology (Textiles) - Applique

Key Terminology	
Applique	Stitching cut out fabric shapes to a base layer of fabric using different methods
Bondaweb	A soft adhesive used for joining fabric layers together
Snip	Small cuts in the edge of the fabric to allow it to fold inwards when doing needle turn applique.
Baste	Temporary large stitches to hold fabrics together.
Embellish	To make something more attractive by the addition of decorative details or features.
Evaluate	To review work in order to see if the design can be corrected or improved.
Needle	A very fine slender piece of metal with a point at one end and a hole or eye for thread at the other, used in sewing
Thread	Long, thin strand of cotton, nylon, or other fibres used in sewing or weaving.
Geometric Shapes	Shapes made up of points and lines including the triangle, square, and circle.
Texture	The feel and/or appearance of a surface
Simplify	Make (something) simpler or easier to do or understand.
Embroidery	Patterns or pictures made from stitches sewn directly onto cloth.
Calico	A plain-woven textile, made from half-processed and unbleached cotton fibres
Design	A plan or drawing produced to show the look and function of an object before it is built or made.

Angie Lewin



- Born in Cheshire in 1963
- Worked as an illustrator, studied horticulture then turned to print making
- Lives and works in Scotland
- Studied printmaking at St Martin's College of Art and Design
- Inspired by clifftops and saltmarshes of Norfolk Coast and Scottish Highlands
- Uses wood engraving, linocut, silkscreen, lithograph and collage
- Incorporates seedpods, grasses, flint, seaweed and feathers into her work

Types of Applique

Applique	Needle Turn Applique	Reverse Applique
		
Created by stitching fabric shapes onto a background fabric.	Created by turning the raw edges of the fabric shape under before it is stitched onto the base fabric.	Created by cutting away the top layer of fabric to reveal a contrasting fabric underneath.

Year 9 English Knowledge Organiser – Chanting - Y9 Key Subject Terminology

Key Terminology	Definition	Key Terminology	Definition
Alliteration	The repetition of sounds at the start of a group of words	Hyperbole	Deliberate exaggeration
Allusion	A reference to a figure, place or event from outside of the text	Imagery	When something is described in a way which appeals to the senses
Anadiplosis	The word at the end of one sentence or clause, is repeated at the beginning of the *next* sentence or clause	Imperative	To give an authoritative command or instruction
Anecdote	A short, humorous or interesting story	Juxtaposition	Putting two things alongside each other that do not usually belong together, for example 'light' and 'dark'
Anaphora	Repetition at the start of successive sentences, clauses and lines	Metaphor	Comparison stating one thing is another when it can't be
Antagonist	A character who opposes the protagonist	Motif	A repeated image or idea
Assonance	The repetition of vowel sounds in a group of words	Onomatopoeia	Auditory words, for example 'Bang'
Caesura	A pause in the middle of a line of poetry, created by a punctuation mark	Oxymoron	Putting two words together to create something impossible, for example, 'cold fire'
Climax	The most exciting part of a narrative	Protagonist	The main character of the narrative
Denouement	The final part of the narrative when matters are explained or resolved	Realism	When the narrative is written as true to life as possible
Emotive Language	Language used to evoke a particular emotion in the reader	Refrain	A regularly recurring phrase or verse in a poem or song
End-stopped	When a line of poetry ends with punctuation	Rising Action	The events preceding the climax of the narrative
Enjambment	No punctuation at the end of a line of poetry and the 'sentence' continues onto the next line	Semantic Field	A group of words linked to the same idea, place or object
Epistrophe	Repetition at the end of a sentence, clause or line	Sibilance	The repetition of the 's', 'sh' or 'z' sound in a group of words
Exposition	The introduction to characters, themes and setting at the beginning of the narrative	Simile	Comparing two things using 'like' or 'as'
Fact	Information that is known or proved to be true	Stage Directions	Information for the actor and director to guide the performance on stage
Falling Action	The events after the climax of the narrative	Statistic	A numerical piece of information
Figurative Language	Similes, metaphors or personification to describe something in a non-literal way	Stanza	A paragraph or verse in a poem
Five Act Structure	Narrative arc consisting of: exposition, rising action, climax, falling action, denouement	Structure	The order and arrangement of ideas and events in a narrative or poem
Hamartia	A fatal flaw that leads to the death of the protagonist	Symbolism	The use of objects to represent deeper ideas beyond literal interpretation
Hubris	Excessive pride	Tragic Hero	Initially admirable but fall from grace leads to their tragic downfall

Year 9 English Knowledge Organiser – Autumn 1 – Poetry: Relationships

Big Ideas		Moments
Search for My Tongue – Big Idea 1	**Arguably, Bhatt presents identity as a source of struggle, as the speaker navigates across two cultures.**	'two tongues'
		'blossoms out of my mouth'
Search for My Tongue – Big Idea 2	**As the poem progresses, identity is conveyed as a product of societal constraint.**	'If you lived in a place you had to speak a **foreign tongue**'
		'**you** could not use them both together.'
Search for My Tongue – Big Idea 3	**Finally, Bhatt comments on identity as being fluid and ever changing.**	'your mother tongue would **rot, rot and die** in your mouth'
		'it ties the other tongue in **knots**.'
Be Nobody's Darling – Big Idea 1	**Arguably, Walker presents the speaker as desiring liberation from discrimination.**	'**Be** nobody's darling, **Be** an outcast'
		'Watch the **people succumb**'
Be Nobody's Darling – Big Idea 2	**As the poem progresses, Walker presents society as destructive to self.**	'Qualified to **live** among your **dead**'
		'Where thousands **perished** / For **brave hurt** words / They said.'
Be Nobody's Darling – Big Idea 3	**Finally, Walker comments on societal prejudice and rejects the stereotyping placed on women as a result.**	'Let them look askance at you, And you askance reply'
		'**Take** the contradictions of your life and wrap around you like a shawl'
Knock Knock – Big Idea 1	**Arguably, Beaty argues that relationships are a mixture of immense joy and painful loss.**	'I **shared** a **game** with my father / **Played** it every morning 'til I was three.'
		'For the **little boy** in me who still awaits his papa's knock'
Knock Knock – Big Idea 2	**As the poem progresses, Beaty conveys the importance of family connection.**	'For every lesson I **failed** to teach'
		'The best of **me** still lives in **you**'
Knock Knock – Big Idea 3	**Finally, Beaty confirms the damage that racism can have on relationships.**	'the lost **brilliance** of the **black** men who **crowd** these **cells**'
		'**knock knock** down the **doors** of **racism** and **poverty** that I could not'

Key Vocabulary

Marginalisation (noun)	The treatment of a person, group or concept as insignificant or peripheral
Injustice (noun)	Lack of fairness or justice
Discrimination (noun)	The practice of unfairly treating a person or group of people differently from other people or groups of people
Integrate (verb)	To mix, as an equal, in society
Emigration (noun)	To leave one's own country in order to settle permanently in another
Tolerance (noun)	The ability or willingness to tolerate the existence of opinions or behaviour that one dislikes or disagrees with
Civil Rights (noun)	The rights that every person should have regardless of his or her sex, race, or religion
Adversity (noun)	A difficult or unpleasant situation
Prejudice (noun)	Preconceived opinion that is not based on reason or actual experience

Year 9 English Knowledge Organiser – Autumn 2 – The Crucible

Big Ideas	Moments
1. Miller presents Abigail as deceptive around different people in order to get what she wants.	'[Strikingly beautiful]'
	'Abigail: There be no blush about my name.'
	'Abigail: Pointy reckoning'
	'Abigail: Shut it. Now shut it!'
	'Abigail: Give me a word John, a soft word.'
2. Miller characterises Proctor as a flawed protagonist in order to show how fixated his is on his reputation and maintaining his integrity.	'Proctor: I will cut off my hand before I ever reach for you again.'
	'Proctor: You are pulling down heaven and raising up a whore!'
	'Proctor: I have given you my soul but leave me my name!'
3. Miller utilises the theme of justice to comment on how power leads to corruption and true justice is hard to find.	'Abigail: Pointy reckoning'
	'Proctor: Is the accuser always holy now?'
	'Danforth: You mut understand that a person is either with this court or he must be counted against it, there be no road between.'
4. Miller explores the theme of hysteria to illustrate how moral people can easily be led by powerful personalities and remain silent or comply to protect their individual reputation.	'Betty: Stop it!' 'Girls: Stop it!'
	'Abigail: I saw Sarah Good with the Devil! I saw Goody Osburn with the Devil!'
	'Proctor: the little crazy children are jangling the keys to the kingdom.'
	'Proctor: We will burn together!'

Key Vocabulary

Anagnorisis	A moment of realisation, for example when Proctor realises his affair with Abigail was a mistake
Goody (archaic title)	Good wife
Hysteria (noun)	An extremely heightened emotional state which can cause a person to lose control of their thoughts and / or actions
Lust (noun)	Sexual desire
McCarthyism (noun)	Accusations of treason against suspected Communists within the United States in the 1940s and 1950s. Named after Senator Joe McCarthy.
Misogynist (noun)	A man who hates women or believes that men are much better than women.
Paranoia (noun)	Extreme and unreasonable mistrust
Peripeteia (noun)	Reversal in fortune, for instance when Abigail gets Proctor's family in trouble.
Pious (noun)	Devoutly religious
Puritanism (noun)	A religious belief in becoming stronger and purer through strict worship and doctrine
Submissively (adverb)	Acting in a meek and mild way, in order to please
Theocracy (noun)	A community led by the church
Trepidation (noun)	Anxiety

Year 9 English Knowledge Organiser – Spring 1 – Non-Fiction

Big Ideas		Moments	Writer's Perspective
The writers of the non-fiction texts expose the injustice present in society, for example: Kilgore exposes male privilege.		'I enjoy the attention I receive as a stay at home dad;'	Kilgore acknowledges that he has benefitted from male privilege.
		'men receive undeserved praise, attention, and rewards for performing work traditionally done by women.'	Kilgore explains the pedestal effect.
The writers advocate for change, for example: Nic Dhughaill advocates for greater awareness of the UK's indigenous languages.		'The ten languages indigenous to the British Isles and still spoken today are English, Scots, British Sign Language, Welsh, Gaelic, Irish, Cornish, Manx, Angloromani and Shelta.'	NicDhugaill utilises asyndetic listing as a subheading to introduce her article.
		'almost a quarter of school pupils in Wales are educated through the medium of Welsh.'	NicDhugaill includes statistics to exemplify the continued prominence of indigenous languages, adding ethos and credibility to her argument.
The writers utilise rhetoric and the Aristotelian triad of ethos, pathos and logos to convince their readers of the importance of their argument, for example, Fountain utilises pathos in the form of emotive language to emphasize the desperate situation.		'climate change and its effects are accelerating, with climate related disasters piling up, season after season.'	Fountain uses emotive language (pathos) to argue that climate change is advancing at an alarming rate.
		'"All the time we're breaking records in temperatures," Dr Taalas said.'	Fountain uses quotations from experts to add ethos and credibility to his argument.

Key Vocabulary

Feminist (noun)	Someone who advocates for or supports the rights and equality of women
Indigenous (adjective)	Originating or occurring naturally in a particular place
Objective (adjective)	Based on real facts and not influenced by personal beliefs or feelings
Privilege (noun)	A special advantage, permission, right or benefit given to or enjoyed by an individual or group of indviduals
Reductive (adjective)	Thinking about or presenting something in a way that is too simple.
Stigma (noun)	A strong feeling of disapproval that most people in society have about something
Subjective (adjective)	Influence or based on personal beliefs or feelings, rather than based on facts

Year 9 English Knowledge Organiser – Spring 2 – A Scandal in Bohemia

Big Ideas		Moments
1. Holmes: Doyle characterises Sherlock Holmes as someone who can solve mysteries that are normally beyond the capability of human reasoning.		‘extraordinary powers'
		‘He untangled the most inextricable mysteries.'
		'You would certainly have been burned had you lived centuries ago.'
2. Doyle portrays Holmes' methods as scientific at a time when people saw science as leading humanity to an inevitable knowledge of everything in the Victorian era.		'He was...the most perfect reasoning and observing machine the world has seen.'
		'All emotions were abhorrent to his cold, precise but admirably balanced mind.'
3. Adler: Doyle portrays Irene Adler as an independent woman who defies conventional Victorian societal roles.		'She eclipses and predominates the whole of her sex.'
		'She has the face of the most beautiful of women, but the mind of the most resolute of men.'
4. Gender: Doyle subverts the gender stereotypes of the time; Holmes underestimates Irene Adler because she is a woman, and she proves herself the better of any man.		'Male costume is nothing new to me. I often take advantage of the freedom which it gives.'
		'Mr Sherlock Holmes was beaten by a woman's wit.'

Key Subject Terminology

Climax	The most exciting part of the narrative
Denouement	The final part of the narrative when matters are explained or resolved
Exposition	The introduction to characters, themes and setting at the beginning of the narrative
Falling Action	The events after the climax of the narrative
Mystery	A genre where the nature of an event, usually a murder or crime, remains mysterious until the end of the narrative
Peripheral Narrator	When the narrator is another character in the story, one who witnesses the main character's story and conveys it to the reader. They may be part of the action but not the focus.
Rising Action	The events preceding the climax of the narrative

Year 9 English Knowledge Organiser – Summer 2 – King Lear

Big Ideas		Moments
1. Power: Shakespeare explores how power can lead to corruption. Lear's abdication defies the Divine Right of Kings, resulting in devastating consequences.		'A very honest-hearted fellow, and as poor as the king.' (disguised Kent to Lear) 'All thy titles thou hast given away; that thou wast born with. (Fool to Lear.) 'Here I stand, your slave, A poor, infirm, weak, and despised old man' (Lear)
2. Appearances vs Reality Both Lear and Gloucester suffer from metaphorical blindness; they fail to see the true characters of their own children.		'Let's see: come, If it be nothing, I shall not need spectacles.' (Gloucester) 'Nothing will come of nothing: Speak again. (Lear) 'O villain, villain! His very opinion in the letter! Abhorred villain! Unnatural, detested, brutish villain! Worse than brutish! (Gloucester)
3. Madness Lear is characterised as lacking emotional control in the face of challenge.		'My lady's father! My lord's knave: you whoreson dog! You slave! You cur!' (Lear to Oswald) 'Doth any here know me? This is not Lear: Doth Lear walk thus? Speak thus? Where are his eyes?'
4. King Lear: Lear is a tragic hero; initially a powerful leader, he is blinded by flattery and false declarations of love, resulting in poor judgement and his ultimate downfall.		'See better, Lear' (Kent) 'Come not between the dragon and his wrath.' 'I am a man More sinn'd against than sinning.'
5. Goneril and Regan The older sisters act in an obsequious manner using hyperbolic flattery to convince Lear of their love.		'Sir, I love you more than words can wield the matter; Dearer than eye-sight, space and liberty.' (Goneril) 'Thou madest thy daughters thy mothers: for when thou gavest them / the rod, and put'st down thine own breeches.' (Fool to Lear) 'Ingratitude, thou marble-hearted fiend, More hideous...Than the sea-monster! (Lear to Goneril)
6. Edmund Shakespeare characterises Edmund as the archetypal Machiavel.		'Edmund the base Shall top the legitimate. I grow; I prosper: Now, gods, stand up for bastards!' 'Let me, if not by birth, have lands by wit: All with me's meet that I can fashion fit.' 'My cue is villanous melancholy, with a sigh like Tom o'Bedlam.'

Key Subject Terminology

Abdication (noun)	To give up one's position as king or queen
Divine Right of Kings	The belief that the monarch's authority to rule comes directly from God and that he or she is not subject to any earthly authority
Great Chain of Being	Belief in the natural order that God had for both nature and humankind, within which every creature and person had their allotted place
Machiavellian (adjective)	Cunning, scheming and unscrupulous, especially in politics
Soliloquy (noun)	A speech in drama when a character on stage speaks to himself, herself or the audience, expressing their inner thoughts and feelings

Ethics - Religion and Morality

1. Abrahamic Religions	
Abraham	A prophet who made a covenant with God to worship only one God.
Isaac	Abraham's son with Sarah and an ancestor of Jesus.
Ishmael	Abraham's son with Hagar and an ancestor of Prophet Muhammad.

2. Catholic and Church of England		
Catholic Church	**Papal Infallibility**- the Pope is never wrong on moral or religious issues.	Jesus appointed the first Pope (Peter).
	Magisterium- The official teachings of the church.	
Church of England	**State Church-** The official religion of England, led by the Archbishop of Canterbury.	Started by Henry VIII in 1534.

3. Quaker and Evangelical		
Quaker	**Agape love**- Unconditional love.	Began in 1600s and focused on a personal relationship with God.
	Conscience- Our conscience is the *"small, still voice of God."*	
Evangelical	**Traditional view-** The Bible is the literal word of God and must be followed.	Started in the 1700s as a protest against formal worship.

4. Natural Law	
Natural Law	The idea we can use our God-given reason to determine what is 'good' and 'bad'.
St Thomas Aquinas	A Catholic theologian who had a substantial impact on Catholic teachings.
Five Primary Precepts	Precepts humans know **innately** (by nature) to help us be good. They are: Protect life, live in a society, worship God, reproduce and educate children.
Secondary Precepts	Rules based off the primary precepts e.g. not using contraception as we should reproduce.

5. Situation Ethics	
Situation Ethics	The idea that each situation should be considered when deciding right or wrong, rather than following absolute rules. (Pragmatic, personal, practical).
Joseph Fletcher	An American Philosopher who developed Situation Ethics as a moral theory.
Based on love	Fletcher said that all moral decisions should be based on the principle of agape love.
Agape Love	Agape love in this context is love that promotes the wellbeing of others. Love and justice should be treated as the same.

Monotheism	Revelation	Night of Power	Torah	Qur'an	Bible	Absolute Morality	Relative Morality
The belief in one God.	How God reveals His nature through prophets and angels.	When Angel Jibril first revealed the Qur'an to Prophet Muhammad.	The Hebrew Bible, studied by Jews.	The holy book of Islam, said to be Allah's exact words.	The holy book of Christianity, consisting of the Old Testament and New Testament.	The idea that some actions are always right or wrong, no matter the situation.	The idea that the rightness of wrongness of an action depends on the situation.

Ethics - Issues of Life & Death

Creation

Origin of the universe

Christian	Humanist
Genesis 1: • God created universe ex nihilo in 6 days and rested on 7th. • Created humans Imago Dei.	Big Bang: • A theory that states the universe is expanding from a **singularity** (13.7 billion years ago). • Developed by Stephen Hawking. • Richard Dawkins (atheist) critiqued Big Bang as a 'God of the Gaps' argument.

Origin of humans

Christian	Humanist
Genesis 2: • Adam= dust, Eve=rib • Adam receives "breath of life" (soul)	Evolution: • A theory that states humanity has evolved by the process of natural selection—Useful, random mutations are passed down and species gradually change. • First formulated by Charles Darwin. • Richard Dawkins argued genes behave in a way that ensures their own survival (Selfish Gene). Supported Darwin.

Christian Interpretations of Genesis

Creationist ***Evangelical***	• Genesis is a factual, historical account. • World is 10,000 years old (Adam & Eve's family tree). • Ken Ham (Young earth creationism) - USA.
Progressive ***Catholic***	• Allegory- Genesis is not a historical account, but has hidden meanings e.g. "breath of life" shows God is close to us and we have a spiritual nature like God. • Theistic guided evolution- God guided evolution over 7 'yom' (period of time). • Big Bang- God is the first cause of the Big Bang (proposed by George LeMaitre).

Environment

Christianity

Stewardship	A God-given special responsibility to care for creation	• *"Care and cultivate" Garden of Eden.* • *Imago Dei- We represent God on earth.*	• Christian Climate Action- Work with Extinction Rebellion e.g. blocking London roads.
Dominion	God-given power to rule over nature on God's behalf.	• *"Fill the earth and subdue it"* • *"Rule over the fish of the sea and birds of the sky"*	• Permission to use world's resources in a sustainable way e.g. fossil fuels, meat industry.

Humanism

Humanist Climate Action	A group of UK Humanist volunteers who campaign for policies that are low-carbon and promote sustainability.	• 'Plant a humanist forest'- A 2022 project.
Utilitarianism	Moral philosophy based on '*greatest good for greatest number*'.	• Reduce extinction rates.
Global citizenship	Humans have a duty to leave a legacy for future generations of a healthy planet.	• Humanist and scientist, Hermann Bondi: 'I want my grandchildren to see elephants'

Sanctity of life vs Speciesism

Religious view– Christianity and Islam

Sanctity of life	• All life is sacred and belongs to God. • Humans were made as the pinnacle of creation. • *"Breath of life"/ "Imago dei"*

Humanist view

Equality of all life forms	• All **sentient** beings (ability to experience pain/pleasure) should have the same protections. • Veganism, campaigning against animal testing;
Speciesism (Peter Singer)	Religious attitudes are speciesist as they encourage humans to discriminate against other species. *"Christianity is our foe"*

Abortion

Catholic- Always wrong	• Contravenes first primary precept 'self preservation'- Natural Law. • "Before I formed you in the womb I knew you"- Bible. • "Abortion is not the lesser of two evils" Pope Francis.
Islam - Can be acceptable (halal)	• Acceptable before the foetus receives a 'ruh' (soul) at 120 days. • Is not acceptable for financial reasons (zakat can be used): "Do not kill your children for fear of want" Qur'an
Humanist- Individual's choice.	• We have autonomy (control) over our bodies, not God. • Utilitarianism- "*Greatest good…*" Reduces backstreet abortions. • Guided by law– The Abortion Act 1967.

Quality of life	Sanctity of life	Afterlife	Evolution	Global Citizenship	Euthanasia	Abortion	Environmental Sustainability	Soul
The standard of health or happiness experienced by an individual.	All life is sacred and given by God.	The belief that life continues after death.	The process where physical characteristics of living creatures change over time.	The idea that we should work as a community to look after the world.	Assisted suicide- ending a patient's life to relieve suffering.	The deliberate termination of a foetus up to 24 weeks.	To use natural resources responsibly to preserve them for future generations.	Non-physical, immortal part of a human.

Ethics - Life & Death

The Soul	
Dualism	The belief that we are made up of a spiritual soul & physical body.
Christianity	
God-given	God breathed first soul into Adam through the "breath of life".
Immortal	Unlike our current bodies, our soul will live forever.
Judgement	We will be judged on the content of our souls, not our bodies.
Islam	
Ruh	The Arabic word for soul.
Allah-given	Allah breathed a "ruh" into Adam's nostrils
Fitrah	Our souls have inner knowledge of Allah & good/ evil.
Humanism	
Materialism	The belief that only the physical/empirical world is all there is. There is no evidence for a soul.
Bertrand Russell	A Humanist philosopher- *"When I die, my body shall rot. No part of shall survive."*

Euthanasia	
Catholic- Always wrong.	• *"It is a false act of compassion"*- Pope Francis • "Thou shall not kill" 10 Commandments • Support the hospice movement. Hospices provide spiritual and physical comfort for those entering the dying process.
Islam- Rarely acceptable.	• *"The term of every life is fixed by Allah"*- Qur'an • Passive euthanasia may be acceptable if it is artificially sustaining life (e.g. patient is brain dead).
Humanist- Individual's choice	• Dignity in Dying= campaign to legalise euthanasia in the UK- supported by 90% of the UK. • Influence MPs, using social media to mobilise support, holding local debates and inviting guest speakers. • We should have autonomy over our bodies (e.g. **Paul Lamb** failed to overturn ban in Supreme Court).

Funerals	
Christian Practice	**Link to afterlife**
Prayers and Hymns from the Bible e.g. *the lord is my shepherd.*	Communicating with God in the hope the deceased with achieve a place in heaven.
The priest will light candles in a church.	Physical representation of hope and light– Jesus leading us to salvation.
Islamic Practice	**Link to afterlife**
Shahadah is recited *"There is one God Allah and Muhammed is his messenger".*	Said as a reminder of a Muslims lifelong faith. Faith will be tested by two angels in the afterlife, so the Shahadah acts as a prompt.
Buried in a white shroud, facing Mecca.	This garment represents equality in death "*equal as the teeth of a comb*". Facing this direction will increase their chances of reaching Jannah.
Humanist Practice	**Link to afterlife**
Celebrant	A Humanist celebrant leads the service.
Music / eulogy	Music with meaning and messages from relative may be shared with no mention of God or faith. Instead a focus on the legacy they have left behind.

Judgement		
Christianity		
Bodily resurrection	On Judgement Day we will be raised with new, immortal bodies.	"The body is sown perishable and raised imperishable"
Parable of the sheep & Goats	Jesus will judge everybody and those who have helped others will go to Heaven.	"When I was hungry, you fed me"- Jesus
Islam		
Barzakh	A cold sleep our 'ruh' waits in until judgement. Asked three questions to determine barzakh.	
Day of Judgement	Allah is 'most-just' and will judge us on our book of good and bad deeds presented by Raqib and Atid.	

Afterlife		
Traditional View: Physical place		**Contemporary view: Spiritual**
Heaven: • Rapture- Christians believe they will physically ascend to Heaven (as Jesus did). • God created the "Heavens and the Earth". • God's dwelling, angels, a new "tree of life."		• A feeling of closeness to God and comfort. • "*Heaven is within you*" • Universalism- All souls will eventually experience Heaven.
Hell: • An eternal place of torture- darkness and fire. • *"Weeping and gnashing of teeth"*		• Sinners will not be resurrected. • *"Sinners will not reach eternal life"*
Islam		
Azrail	Angel of death is commanded to take our soul as *"the term of every life is fixed by Allah"*	
As-Sirat	Bridge crossing over to Jannah which is *"thin as a hair and sharp as a sword"*	
Jannah	Paradise, described as a garden with *"rivers of milk & honey"* 7 stages- the prophets are already in Jannah.	
Jahannam	A place of torture where people wear "*garments of fire*" 7 stages- the 7th stage is for hypocrites.	
Humanism		
No afterlife	There is no immortal part to us- only our legacy. No expectation of reward.	Bertrand Russell- *"the things we care for will continue"*

Ethics - Equality & Human Rights

1. Personal Conviction	
Oscar Romero	• El Salvador/Archbishop • Stood up against government. • Broadcasted truth on the radio, shot dead by army. • *"Release the oppressed"*- Jesus
Malala Yousafzai	• Lived under the Taliban in Pakistan. • Blogged about female education. • Shot (survived) in 2012 for going to school. • Khadija– Businesswoman

2. Prejudice and Racism	
Christianity	
Martin Luther King Jr	Stood up for Civil Rights in 1960s USA through peaceful marches. "I have a dream" speech.
Ku Klux Klan	White supremacist group who used the Bible to justify racism e.g. Abraham had slaves.
Islam	
Malcolm X	Previously supported 'African racial superiority' Changed views after Hajj- saw all races as equal.
Qur'an	"Allah made Adam from soil of many colours"

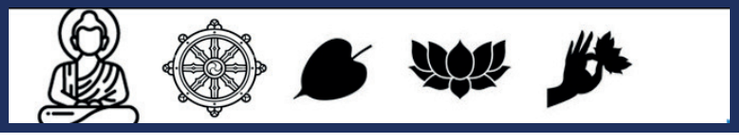
3. & 4. Prejudice and Gender / LGBTQ+	
Gender	
Catholic	Women have a role in worship, but not priesthood. "Christ is head of man, man is head of woman"
Islam	• Women must be treated with respect, but are mostly not permitted to become an imam. • Mariam Mosque (Denmark)- fights Islamophobia & patriarchy.
LGBTQ+	
Law	• Same-sex relationships decriminalised in 1972. • Still illegal in over 60 countries worldwide.
Catholic	• No same-sex marriage due to Primary Precept to 'Reproduce'. • Permitted Civil Unions as we are all 'children of God'.
Islam	• Commonly not accepted in Islam. • "As for two men guilty of lewdness, punish both" (Qur'an) • IMAAN– First Muslim LGBTQ+ charity.

5. Prejudice and Disability	
Disability	A physical/mental condition that limits movement, senses, or activities.
Prejudice	72% of people in Britain think of disabled people as less productive than others.
Christianity	Some Christians view disability as linked with sin. "Stop sinning or something worse will happen to you"- Jesus
Islam	Disability viewed as a challenge from Allah. Muslims should help the poor as shown by the Final Sermon.

6. Religious Expression	
Evangelism	Preach with the intention of converting. ***"Go and preach the gospel" Jesus***
Religious Protest	Some Christians protest outside abortion clinics.
Religious clothing	Muslim women may choose to wear a hijab. ***"Women should guard their modesty"***
7. Extremism	
Anti–Abortion	George Tiller (a doctor) murdered by anti-abortion militant.
ISIS	• Use violence to create an Islamic state. • Criticised- *#notinmyname*

8. Censorship	
Christianity	
FOR	• Harmful material should be censored. • "Bad company corrupts good character.
AGAINST	• Preaching should not be censored. • "Go and preach the gospel"
Islam	
FOR	Images of Allah should be censored (shirk).
AGAINST	Religious clothing should not be censored e.g. France.

9. Wealth & Charity	
Christianity	
Attitude	"Love of money is the root of all evil"
Acquisition	Christians should choose a job that benefits others.
Use	Charity (tithe=10% voluntary).
Example	Tearfund: Work in over 50 countries e.g. Colombia.
Islam	
Attitude	All wealth is Allah's and part of His plan (Al Qadr).
Acquisition	**Riba** (earning interest) is forbidden.
Use	Charity (Zakat: Compulsory (2.5%) Sadaqah:Voluntary)
Example	National Zakat Foundation: Since 2011 raised £25 million.



Ethics - Buddhism

Buddhism: history and context	
Origins	Started in Nepal, 623 BC. Founder: Siddhartha Gautama (The Buddha).
Nepal in 623 BC	Hindu at the time of Siddhartha.

Concepts of Buddhism	
Atheist	Buddhists do not believe in God.
Meditation	Buddhists develop spiritually by meditating.
No soul (anatta)	Humans do not have a permanent, unchanging spiritual self.
Impermanence (anicca)	All mental and physical states are constantly changing.
Re-birth	• Life is cyclical. • At death, a new birth is 'caused' by the person's karma.

Life after death	
Rebirth	At the moment of death, a new life is caused by the person's karma.
Wheel of life	• Shows the cycle of samsara. • Demon holding the wheel represents impermanence. • Six realms into which a person can be reborn. • Moon symbolises that everyone can attain enlightenment.
Nirvana	The goal of Buddhism. Release from Samsara and therefore Dukkha.

Siddhartha Gautama		
Birth	Born a prince, living in lavish luxury. Predicted that if Siddhartha saw suffering, he would become a holy man, if not a king.	
Early life	Father shielded him from suffering– in palace.	
Four Sights:	**Impact then**	**Impact today**
Death, old age, sickness, holy man.	Showed Siddhartha reality of existence.	Reminds us of reality of our existence.
	Siddhartha became holy man.	We too should search for meaning.
Ascetic	Siddhartha tried to develop spiritually by giving up all bodily comfort.	
Enlightenment	Realised the middle way: enlightenment lies between the two extremes of bodily comfort and extreme hardship (living in moderation).	

Enlightenment and meditation	
Buddha's enlightenment	
Middle way	Realised the path to enlightenment lies in the middle way *"if you tighten the string…"* Buddha sat under a Bodhi tree and meditated until he attained enlightenment.
Enlightenment today	
Dharma	Follow and live the Buddha's teachings.
Meditation	A Buddhist practice focusing on calming the mind and breathing that helps them attain enlightenment.

Suffering (Dukkha)	
Dukkha	All life is suffering.
Nothing is permanent (anicca)	Being attached causes suffering as it will inevitably change.
Analogy	The analogy of a doctor finding a cure for the world's suffering shows how we overcome suffering.
Sickness	We all suffer (experience dukkha).
Diagnosis	Attachment to things that change causes suffering.
Cure	Stop craving and attachment.
Loving kindness	Buddhists cultivate kindness to all living beings. In wishing others well they forget their own desire.

Living as a Buddhist	
Precept	A rule that guides how Buddhists should live.
Five precepts	• Not killing or causing harm to other creatures. • Not taking things not given. • Avoiding sexual misconduct. • Avoiding false speech (lying). • Avoiding things that cloud the mind (drink and drugs).

Anuradhapura, and sangha	
Anuradhapura	a major city located in the north central plain of Sri Lanka.
Bodhi tree of Sri Lanka	Jaya Sri Maha Bodhi Tree is a sacred bodhi tree in Mahamewuna Garden in the historical city of Anuradhapura. Commonly known as the tree of enlightenment

Three jewels of Buddhism	
The Budda	The enlightened beings who have achieved enlightenment and serve as a guide and example for others.
The Dharma	This refers to the teachings of the Buddha, including the Four Noble Truths, the Eightfold Path, and other principles that guide the path to enlightenment.
The Sangha	This refers to the community of Buddhist practitioners, both ordained and lay, who support and encourage each other on their path.

Samsara	Enlightenment	Nirvana	Meditation	Karma	Caste system	Buddha
The cycle of life, death and rebirth.	Realisation or understanding.	Release from Samsara and escape from Dukkha.	Thinking about something deeply, reflecting.	The law of cause and effect. Every action has an equal reaction	A division of society based on differences in wealth, race, and occupation	A title meaning enlightened one, given to Siddhartha Gautama.

Geography - Climate Change

1. How have global temperatures changed over time?

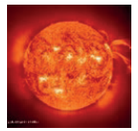
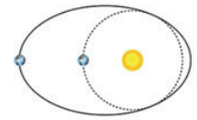
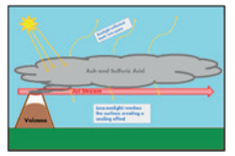
- The world's climate has always changed. During the medieval period, grapes were grown in London, but during the time of the Stuarts the River Thames used to freeze over.
- **Since 1880** the Earth's climate has increased by approximately **0.8 degrees Celsius**.
- This has **not been steady**, but has **fluctuated.**

Key term	Definition
Climate change	A change in the global climate from the expected average.
Glacial period	Colder period of time—more ice. Lasting approximately 100,000 years.
Interglacial period	Warmer periods of time—less ice. Lasting approximately 10,000 years.

2. What is the evidence for climate change?

Evidence	Explanation
Tree rings	As a tree grows, a new outer layer (or ring) is formed. A new ring forms each year. Tree rings are thicker in warm and wet conditions. Tree rings can go back 10,000 years.
Ice cores	Ice sheets are huge blocks of ice, which are made of layers. A new layer forms each year. Gases trapped in the ice give information about the temperature when they were trapped. One ice core from Antarctica shows temperature change over 40,000 years.
Diaries and paintings	These provide insight into the climate conditions of a particular time. For example, paintings from the time of the Stuarts show Frost Fairs on the frozen River Thames. These records can be compared to current conditions to identify differences.

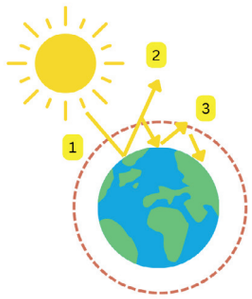
3. What are the natural causes of climate change?

Solar output e.g. sunspot theory	These are **dark spots** that appear on the surface of the sun. The more dark patches, the **greater the heat** released by the sun. These come and go in **11 year cycles**, known as sunspot cycles.	
Changes in Earth's orbit e.g. Milankovitch cycles	Orbital change is about **how close the Earth is to the sun**. Every **100,000 years** the proximity of the Earth's orbit will change from circular to elliptical (oval). The **further** the Earth is from the sun, the **colder** the temperature of the Earth.	
Volcanic activity e.g. Mount Pinatubo	Lots of material is released into the atmosphere during a volcanic eruption as an **ash cloud**. This **reflects the sun rays** back out to space (so they **do not heat the surface** of the earth). As a result the earth's **climate is cooled**. The Mount Pinatubo eruption in 1991 caused global temperatures to fall by 0.5degrees Celsius.	

4. What is the Greenhouse Effect?

The Greenhouse Effect

1. The atmosphere is made up of **greenhouse gases**, such as carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and water vapour (H2O).
2. The Sun's rays **(solar radiation)** travel through the atmosphere to Earth.
3. As the Sun's rays **reflect** off the Earth, some escape to space and some are **trapped**.
4. This **balance** is needed to keep the Earth **warm enough for life**.



5. What is the Enhanced Greenhouse Effect?

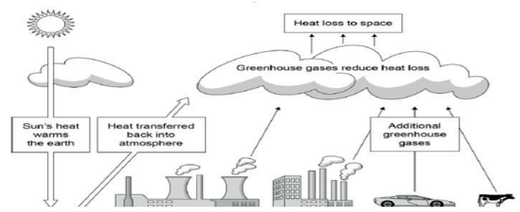
The enhanced Greenhouse Effect

1. Many **human activities release greenhouse gases.**
2. These **greenhouse gases** are released into the atmosphere, and they trap more of the sun's rays than would normally be trapped.
3. This makes the global temperature increase.

Human causes of short term climate change:

Burning fossil fuels by using cars (and other transport), plus coal and gas power stations. All of which release CO_2 into the atmosphere.
Increased agriculture (farming) means more dung so more methane.
Deforestation means less trees to absorb CO_2.

Developed countries are the biggest contributors to the enhanced greenhouse effect. This is because they have more technology and money to do the things above.



Geography - Climate Change

6. What are the effects of climate change?	
Social impacts	1. **Temperature rise** so there are more **droughts & deaths** from dirty water in places like the Sahel. 2. **Rising sea levels** means coastal areas are flooded, leading to migration. For example, **Shanghai** is at risk with 24.5 million people. 3. **Lower yields of crops** (e.g. Maize) due to warmer temperatures means farmers go bankrupt. 4. Droughts cause **crop failure**, which can cause famine and starvation. 5. **Sea temperatures increase**, causing more **tropical storms**, causing death / homelessness.
Environmental impacts	1. **Warmer climate** means glaciers and **ice sheets melt** (e.g. Greenland) so sea levels will rise. 2. **Sea ice shrinking** means lost habitats e.g. **polar bears** risk **extinction.** 3. **Rising sea levels** means coastal areas flood which **destroys habitats** e.g. Norfolk Broads. 4. **Sea temperatures rise** so **coral reefs are bleached** and habitats are lost e.g. the Great Barrier Reef.

7. Why are LICs more vulnerable to climate change than HICs?

1. Many LICs have a history of being **colonised**, meaning they are **not as developed** as they might otherwise have been. This means that they **do not have** the **money to invest** in defences meaning it is difficult to prevent things like increased flooding.
2. An **increase** in the number of **mosquitoes** due to increased temperatures will lead to **more disease** and this is **expensive** to cope with.
3. Many people **work in farming** meaning they may suffer a **loss of income** due to **droughts**.

8. Managing climate change: Mitigation

Mitigation	Trying to stop climate change from happening, by reducing greenhouse gases.		
Strategy	**Description**	**Positive**	**Negative**
International agreements	Countries agree to reduce their carbon emissions (carbon footprint) by setting emission targets.	Reduces CO_2 being released, so stops the negative impacts e.g. flooding	Countries may choose to pull out of agreements or not join in the first place e.g. USA pulled out of the Paris Accord, but has since rejoined.
Alternative energy sources	Using wind farms, solar energy, nuclear and tidal.	Reduced CO_2 and associated effects, also they will not run out (infinite).	Unreliable so will need to use fossil fuels when they are not working. Expensive initially, so higher bills.
Carbon capture and storage	Some power plants are designed to capture the CO_2 they create when they burn fossil fuels. Once caught, it is stored underground.	Reduces CO_2 released into the atmosphere, so reduces consequences e.g. flooding.	Expensive. It costs $1bn to convert a power station to capture carbon.
Afforestation (planting trees)	Encouraging people to plant trees, which absorb CO_2	More carbon dioxide will be removed from the atmosphere and locked within vegetation.	Takes time for trees to grow and there is not enough available land to plant as many trees as would be needed to reverse climate change.

9. Managing climate change: Adaptation

Adaptation	Changing our behaviour to better cope with the effects of climate change.		
Strategy	**Description**	**Positive**	**Negative**
Coping with rising sea levels	Sea levels are predicted to rise by 82cm by 2100. Physical barriers / flood embankments (levees) could be built e.g. The Thames Barrier.	These will hold the water back.	Very expensive, so developing countries will unlikely be able to prevent floods and the people will be forced to move.
Changing agricultural systems	Crop patterns are changing. In Kenya drought resistant crops are being used (e.g. millet) to provide food even when rainfall is low.	Reduces the risk of starvation.	Can be expensive, so the cost of food increases, resulting in the poor going without.
Managing water supply	Areas will get drier. Adding water meters will encourage people to use less water, therefore reducing use.	People will have clean water during times of low rainfall.	Limited impact in wealthy countries. Also, little impact if there is low rainfall, so the impacts of droughts (drinking dirty water) will remain.

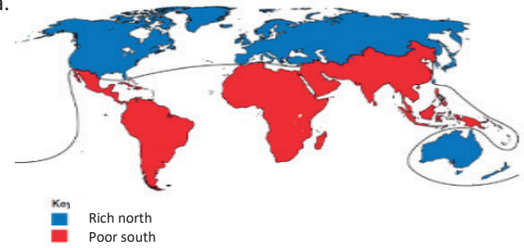
Geography - Life in a newly emerging economy (NEE)

1. What are newly emerging economies?

Term	Definition
NEE	Newly emerging economy. A country that has experienced rapid economic growth.
BRICs	The fastest growing economies named in 2001. Brazil, Russia, India, China. (South Africa)
MINTs	The four more recently growing NEEs named in 2014. Mexico, Indonesia, Nigeria, Turkey.
Industrialisation	The process of a country moving from mostly agriculture (farming) to manufacturing goods (factories).
Brandt line	A line drawn in the 1980s, dividing the rich north from the poor south.

2. Is the Brandt line still correct today?

1. The Brandt line suggests that there are only 2 categories of country, rich and poor.
2. Created in the 1980s and based purely on GDP (an economic measure).
3. Rise of BRIC and MINT countries undermines Brandt line.
4. Seven of the BRIC and MINT countries are south of the line.
5. Today many countries are seeing a rapid increase in their GDP per capita.



3. What are development indicators?

Term	Definition
Birth rate	The number of live births per 1,000 of the population per year
Death rate	The number of deaths per 1,000 of the population per year
Infant Mortality Rate	The number of babies that die before the age of 1, per 1,000 live births per year
Life expectancy	The average age that a person may be expected to live to in a country.
Literacy rate	The percentage of adults that can read and write.
GDP per capita	The total value of the goods and services produced by a country in a year, divided by the population
GNI per capita	The total value of the goods and services produced by a country, including income earned from investments overseas, in a year, divided by the population.
Human Development Index	A composite indicator, taking into account both economic and social measures. HDI gives a score between 0 and 1, and combines: • Life expectancy (social) • Average number of years at school (social) • Gross national income per capita (economic)

4. What are the characteristics of NEEs?

Large land masses….	…means countries have space for industries to develop.
Large, young populations….	…means countries have a lots of people to work and pay tax.
Rich in natural resources….	…means countries can sell (export) them to other countries.
Home to many TNCs….	…this means there are more jobs available.
Large secondary sector….	…because of the growth of industries.

5. What is rural-urban migration?

Term	Definition
Rural	Countryside
Urban	Towns and cities
Urbanisation	An increase in the number of people living in urban areas compared to rural areas.
Push factor	Any factor that encourages a person to leave an area
Pull factor	Any factor that encourages a person to move to an area

6a. Push factors from rural areas in NEEs

Mechanisation	The introduction of machines and new technology to farming means fewer jobs available in rural areas.
Drought	A prolonged period of low rainfall leading to a shortage of water.
Lack of schools	Poor education infrastructure means less chance of children getting an education.
Lack of access to healthcare	Lack of accessibility to medical care means disease and illness are left untreated.

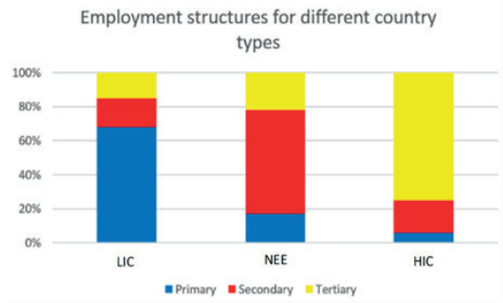
6b. Pull factors to urban areas in NEEs

More available jobs	Increased chances of securing employment and increasing your standard of living.
Higher wages	Increased income for workers.
More access to schooling	Good education infrastructure means more chance of children getting an education
Increased access to healthcare	Improved accessibility to medical care means disease and illness can be treated.

Geography - Life in a newly emerging economy (NEE)

7. Changing employment structure of NEEs

Term	Definition
Employment structure	How the workforce is divided up between primary, secondary, tertiary and quaternary employment.
NEE employment structure	Secondary is increasing and primary is decreasing.
Informal employment	Jobs which are not taxed, workers don't have contracts or rights. Causes: • There are not enough formal jobs. • Jobs not created quickly enough. • Migrants are not skilled enough.



8. Factors leading to China's success

Imports	Goods brought into a Country
Exports	Goods sent to another country for sale.
Trade Unions	An organisation of workers who work to protect the rights of those employed.
Tax breaks	A reduced amount of tax due, normally for a fixed period. This increases the profits a company can make.
Subsidies	Money given by a government to help an industry keep down the cost of exports.

- China had a very low minimum wage, so low wage costs.
- Trade unions were weak, so shifts were very long, increasing productivity.
- TNCs were given tax breaks, so more profit.
- Lower environmental laws, so reduced costs for waste disposal.
- The Chinese Government placed subsidies on exports ($1billion each year).

9. Rio de Janeiro

Rio is a city in Brazil, which has seen **rapid** rates of **urbanisation**.

Some people live in modern apartments, whilst others live in **favelas**. Favelas are:

- Densely packed together
- Built illegally and can be knocked down by authorities.
- Built on marginal land (land that developers would not usually build houses on), including hillsides, marshland, near railway tracks and the outskirts of the city.

10a. What are the opportunities of living in Rio de Janeiro?

Highest income per head	More jobs could lead to wages for food, medicines and sending children to school.
Water supply	88% houses are connected to a water supply reducing diseases e.g., Cholera
Electricity	Houses have electricity which means an improved quality of life e.g. being able to heat and light the home.

10b. What are the challenges of living in Rio de Janeiro?

Unemployment	Unemployment in favelas is 20%, so many people do informal, cash in hand jobs. Pay can be low, so they might not be able to afford basic medicines and food.
Waste collection	Only 50% of waste is collected, so waste builds up in the streets, sometimes leading to vermin and mosquitos, which can increase the risk of diseases, such as malaria.
Crime	Corruption and crime are difficult to manage and can be a problem.

11. What are the impacts of a TNC locating in a NEE?

Term	Definition
Transnational Corporation (TNC)	Companies that operate in more than one country, often having their headquarters in a HIC and their factories in an NEE or a LIC.
Source country	The country where a TNC has its headquarters (HIC)
Host country	The country where a TNC places its factories (NEE/LIC)

12a. Opportunities of having a TNC in an NEE (positives)

Job opportunities: employ local people, who earn a wage.	Pay taxes to government: Local infrastructure improved (e.g. schools)
Learn new skills: Workers can learn new skills to get higher paid jobs.	

12b. Challenges of having a TNC in an NEE (negatives)

Poor working conditions: Workers work long hours without breaks.	Strict rules: Rules inside factories can be strict, with reports of financial penalties
Low taxes: Taxes can sometimes be quite small compared to profits made.	Footloose: Factories are not permanent and can relocate at any time.

13. Shell in Nigeria. A TNC in an NEE

Positives of Shell (Benefits)	65,000 direct jobs.
	90% of contracts given to Nigerian companies.
Negatives of Shell (Costs)	Bodo oil spill 08/09 spilled 280,000 barrels of oil over the Niger Delta
	Gas flares affect people's health.

Geography - Global Health

1. Geography and Health	
Health	The overall condition of an individual at a given time regarding soundness of body or mind and freedom from disease or abnormality.
Disease	illness of people, animals, plants, caused by infection or a failure of health rather than by an accident.

2. Factors affecting the spread of disease		
A. Climate	B. Flooding after heavy rain	C. Mass vaccination programmes
D. Distance from outbreak	E. Government policies	F. Health education programmes

3. Diseases of Affluence	
CHD	Coronary Heart Disease
Causes of CHD	
Diet	Eating too many foods high in saturated fats narrows the arteries.
Lifestyle	Stress leads to an increase in fatty food intake.
Smoking	Nicotine - the main ingredient in cigarettes – causes an increase in both heart rate and blood pressure.
Genetics	Some people inherit a predisposition to developing heart disease from their parents.
Impacts of CHD	
Social	Family & friends must provide informal care
Economic	Health costs have increased, and more hospital beds needed £3 billion of lost earnings to the economy

4. Diseases of Poverty	
Famine	The extreme scarcity of food
Causes of Famine	
Social	Food Aid received was not distributed by rebel groups
Environmental	Ethiopia suffers from unpredictable rainfall that can lead to drought
Economic	Poverty means people do not have the money to deal with economic shock.
Impacts of famine	
Social	Milk became scarce, severely impacting health of women and children
Economic	Food prices began to rise
Response to famine	
Foreign aid needed to run camps	
Increased use of fertilisers and 'high yield' crops	
Improvements to systems getting food to market more efficiently	

5. Obesity vs Famine	
Obesity	Abnormal or excess body fat that impairs health
Famine	The extreme scarcity of food
Malnourishment	A lack of proper nutrition, caused by not having enough to eat or not eating the right things

6. HIV and AIDs	
HIV	Human Immunodeficiency Virus, a disease which damages cells in the immune system.
AIDs	Acquired Immunodeficiency Virus, the more advanced stage of HIV.

7. Malaria	
Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of the female anopheles mosquito. It is preventable and curable.	
Factors affecting the spread of Malaria	
Human	Physical
Poor housing and sanitation Irrigation projects Settlements	Climate Altitude Stagnant water

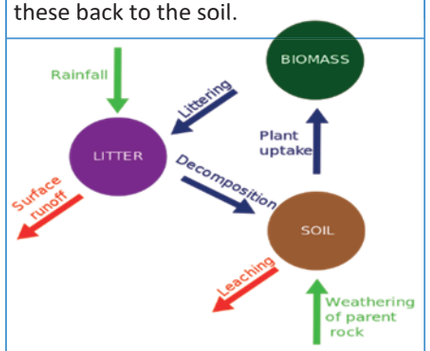
8. Disasters and Disease	
Natural disaster	A natural event, such as an earthquake, which causes great damage or loss of life.
Dengue Fever	A debilitating viral disease of the tropics, transmitted by mosquitoes. This causes sudden fever and pain in the joints.
Factors affecting disease spread after a natural disaster	
Lack of access to clean water People displaced to crowded camps Healthcare services not widely available Increased standing water Damage to infrastructure	Bangladesh floods 2019 7.6 million people affected 300,000 people displaced 600,000 homes damaged 114 people died

9. Managing Disease	
Epidemic	A disease outbreak that spreads quickly through the population of one geographical area.
Pandemic	A disease outbreak that spreads quickly across a wide geographical area / the world.
Endemic	A disease that exists permanently within a population.
Mitigation	The action of reducing the severity of something.

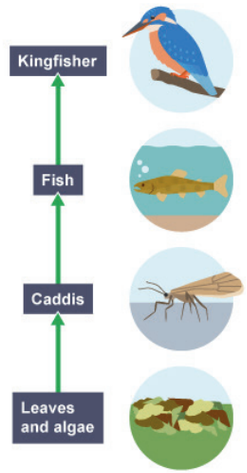
Geography - Global Biomes

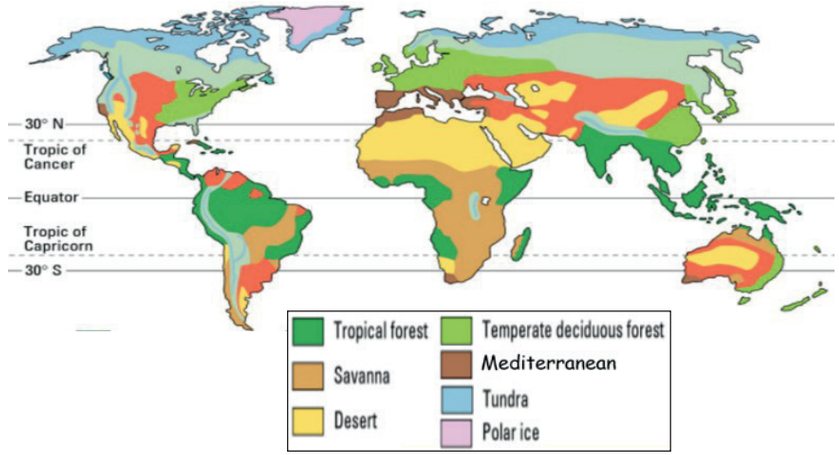
1. What is an ecosystem?

Term	Definition
Ecosystem	A community of plants and animals (**biotic**) and their environment –**abiotic**
Biotic	Living elements e.g. plants, animals.
Abiotic	Non-living elements e.g. soil, climate.
Food web	A complex food chain.
Food chain	Arrows showing the flow of energy from producers to consumers.
Producer	A plant that can absorb energy from the sun through photosynthesis.
Consumer	Organisms that eat other organisms. Primary consumers - grasshoppers. Secondary consumers eat herbivores.
Decomposer	An organism that breaks down organic material and recycles nutrients to the soil. E.g. bacteria and fungi.
Nutrient cycle	A set of processes whereby organisms extract the nutrients necessary for growth from soil or water, before passing them on through the food chain. Decomposers ultimately return these back to the soil.



2. What are the rules of food chains?

1. Arrows show the flow of energy	
2. Producers always start food chains	
3. Biomass decreases as you go up food chain	
4. Energy is lost at each stage through animals respiring and moving	



3. Large scale natural ecosystems

Biome	A large ecosystem.
Name	**Characteristics**
1. Tropical forests	Hot and humid and contain a huge variety of plants and animals
2. Savanna / tropical grasslands	Hot and dry, dominated by grass, scrub and occasional trees. They have two distinct seasons.
3. Hot Desert	The driest and hottest of areas.
4. Mediterranean	Not too hot or cold with some seasonality
5. Temperate grasslands	Dominated by grass and trees and large bushes are rare - the climate is mild with moderate rainfall.
6. Temperate deciduous forests	Contain trees that lose their leaves - the climate is mild and wet.
7. Coniferous forests	Containing evergreen trees – cool climate with moderate rainfall.
8. Mountain	Very cold at night and during winter. The growing season is short and at higher levels trees will not grow.
9. Tundra/polar	An extremely cold climate with limited numbers of plants and animals able to survive there.

Geography - Global Biomes

4. Rainforest characteristics

Characteristic	Description
Climate	Hot (27-29°C) and wet (rainfall over 2000mm/year)
Soil	Some nutrients near the surface, but mostly infertile.
Structure (4 layers)	• Emergents • Upper canopy • Lower canopy • Shrub layer 
Biodiversity	Very high >50% of all the species
Plants	Plants grow all year. Dense canopy blocks light from forest floor.

5. Adaptations to tropical rainforests

	Name	Description	Explanation
Plants	**Drip tips**	Waxy leaves shaped like a funnel.	Water runs off leaf quickly to prevent rotting.
	Buttress roots	Wide, shallow roots visible above the surface.	Supports trees so they do not fall over when growing tall into the canopy and emergent layers.
Animals	**Jaguar**	Spotted fur.	Provides camouflage on the dark forest floor.
	Flying frog	Flaps of skin between their arms and legs.	Allows them to glide up to 15m between tall trees to avoid being eaten by predators on the forest floor.

6. What is deforestation?

Case study	Borneo (Malaysia), south east Asia.
Deforestation	The cutting down and removal of trees and vegetation.
Causes of deforestation	
The cutting down and removal of trees.	
Farming	**Subsistence** - Grow just enough food for their family. **Commercial** - Farming palm oil to sell.
Logging	Cutting down trees to sell, such as the Belian tree (iron man).
Mineral extraction	Removal of tin, copper, coal, diamonds and gold from the ground.
Impacts of deforestation	
Soil erosion	- Roots no longer hold soil together. Heavy rain washes the soil away.
Climate change	- Fewer trees mean less CO_2 is absorbed, increasing climate change.
Economic development	+ Provides jobs = more tax. Profit from selling tin, palm oil, HEP.

7. How can we protect the tropical rainforest?

Strategy	Explanation
Education	Educating locals on how to make money without cutting down trees.
Ecotourism	Small scale tourism, employs locals, educates tourists.
Replanting	New trees are planted to replace the ones that have been cut down.
Debt reduction	Debt cancelled in exchange for trees to be protected.

8. Cold environment characteristics

Characteristic	Description
Climate	**Polar**—Freezing—covered in snow and ice. Annual precipitation below 250mm. Cold deserts. **Tundra**—Very cold—Average temperature in winter is minus 30 Celsius. Very little rainfall (150-250 mm)
Soil	**Polar**—Rocky and covered in snow and ice all year round. **Tundra**—Soil is frozen, known as permafrost. Permafrost can extend up to 450 metres deep.
Biodiversity	Very low. Mostly lichens, flowering plants and insects.

9. Adaptations to cold environments

	Name	Description	Explanation
Plants	**Arctic Poppy**	Helitropic; flower tracks sun in day	Allows the plant to photosynthesise as much as possible
	Bearberry plant	Grows close to the ground	Protects the plant in windy conditions, so it is less likely to fall over.
Animals	**Arctic Fox**	Thick white fur all over body	Ensures fox does not freeze by trapping heat.
	Polar bear	Front paws are webbed	Allows polar bear to swim quickly and easily in water, enabling them to hunt.

Geography - Fieldwork

1. Introduction to fieldwork

The enquiry process in geography fieldwork involves **six stages**: developing a question, collecting data, presenting data, analysing results, drawing conclusions and evaluating the investigation.

1. The **enquiry question or hypothesis** is used to guide the investigation and gives you something to test.

2.**Collecting data** involves using different methods to collect data to help answer the question or hypothesis.

3. **Presenting data** involves showing the data on graphs, labelled photographs, maps etc.

4. **Analysing data** involves reviewing the data to find trends, patterns and anomalies.

5. A **conclusion** is what you found out in relation to the question or hypothesis.

6. An **evaluation** answers how you would improve your fieldwork enquiry if you were to do it again.

2. Forming your hypothesis

Enquiry	a systematic process of investigation and exploration to gather information including a question or hypothesis, data collection, data presentation, data analysis, conclusions and evaluation.
Fieldwork	practical work undertaken in physical and human environments to investigate geographical questions or hypotheses.
Prove	to demonstrate or establish the truth or validity of something through evidence.
Disprove	to show that something is not true or valid through evidence.
Investigate	to carefully examine or explore something in order to gather information.
Hypothesis	a prediction or statement which can be proven to be correct or incorrect based on the evidence collected in the field.

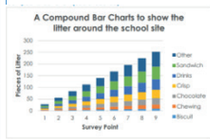
3. Collecting your data

Data collection	the process of gathering information or facts through various methods.
Methodology	the approach or set of methods used to conduct research.
Primary data	data that you collect first hand.
Secondary data	Data that is gathered from someone else's research – e.g. photos which you didn't take or data collected by a council.
Risk assessment	a way of looking at potential dangers or problems in a certain area to understand how likely they are and how much damage they might cause.
Mitigate	to make something less serious than it could have been.
Sample	a representative portion of a larger group or population that is selected for study or analysis.
Random sampling	selecting a person to interview or site to measure, at random. Random sampling is unbiased as particular people or places are not specifically selected.
Systematic sampling	collecting data in an ordered or regular way, e.g. every five metres or every fifth person.
Stratified Sampling	Deliberately introducing bias to ensure you survey different populations / areas. i.e. making sure you survey an equal number of boys and girls.
Qualitative	Techniques that don't involve numbers, they are subjective (opinion based). Photo annotation, field sketches,
Quantitative	Factual data that can be counted (numbers). Land use survey, species, river velocity, environmental quality survey.

5. Analysing your data

Data analysis	the process of examining information to understand it better and make decisions based on what it reveals.
Mean	add the total of all values that have been collected and then divide by the number of values.
Range	the difference between the highest and lowest values in a dataset.
Percentage	divide the part by the whole, then multiply the result by 100.
Anomaly	something that is different from what is expected or normal.

4. Presenting your data

Data presentation	strategies used to communicate and display findings clearly.
Compound bar chart 	a compound line graph is a development on the simple line graph. They show layers of data and allow you to see the proportion that makes the total.
Radar Graph 	a radar graph is used to compare two or more items or groups on various features or characteristics.

6. Forming a conclusion

Conclusion	a summary of something that has been found out or identified.

7. Evaluating your enquiry

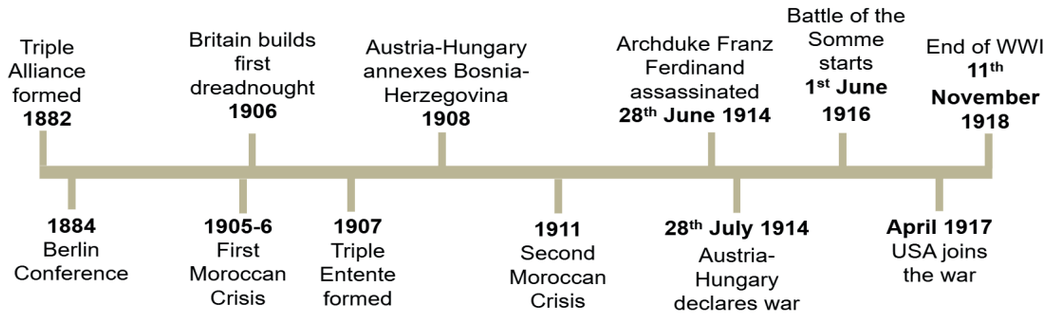
Evaluation	determining the strengths and limitations of the study by identifying areas for improvement and assessing the reliability of the findings.
Bias	the tendency to favour or support one viewpoint, person, or group over others, often leading to unfairness.
Reliability	the consistency of results and conclusions, e.g. keeping factors the same to compare variables.
Accuracy	the number of errors in the collection of data, e.g. using the correct equipment.
Validity	Whether the data, and the resulting conclusion, is true. If data is inaccurate, this reduces the validity of the conclusion, as it is based on incorrect data.

History Topic 1: The First World War

Knowledge Organiser Questions		
1	Which three countries were in the Triple Alliance, signed in 1882?	Germany, Austria-Hungary, Italy
2	Which three countries were in the Triple Entente, formed in 1907?	Great Britain, France, Russia
3	Who was the leader of Germany from 1888 to 1918?	Kaiser Wilhelm II
4	Which term refers to a system in which a country rules over other countries, often using force to gain power over them?	Imperialism
5	Which term refers to Germany's aim to become a global power?	Weltpolitik
6	What was the name given to the competition for colonies in Africa?	The Scramble for Africa
7	By 1914, which country had an empire that spanned 24% of the world's land?	Great Britain
8	Which African country's independence did Germany unsuccessfully try to protect in 1905-6 and 1911?	Morocco's
9	Which term refers to the belief that a country needs strong armed forces?	Militarism
10	Which country had the largest and most powerful navy in 1900?	Great Britain
11	What was the name of the type of battleship first built by Britain in 1906?	Dreadnought
12	How many of these battleships had Britain and Germany each built by 1914?	Britain – 29, Germany – 17.
13	Which country had the largest land army in 1914 of 1.5 million men?	Germany
14	Which country annexed Bosnia-Herzegovina in 1908, angering Serbia?	Austria-Hungary
15	What was the name of Serbia's state-sponsored terrorist organisation?	The Black Hand
16	What was the aim of the Serbia's state-sponsored terrorist organisation?	To unite all Serbs under the leadership of Serbia
17	What was the name of the heir to the throne of Austria-Hungary in 1914?	Archduke Franz Ferdinand
18	Where did the heir to Austria-Hungary visit on 28 June 1914?	Sarajevo (Bosnia's capital)
19	Who carried out the assassination of Austria-Hungary's heir?	Gavrilo Princip
20	Which country gave Austria-Hungary a 'blank cheque' of support against Serbia?	Germany

Knowledge Organiser Questions		
21	Which broken peace treaty, signed with Belgium in 1839, brought Britain into the war?	Treaty of London
22	What was the name of Germany's failed plan to invade France before Russia mobilised?	Schlieffen Plan
23	In which month and year was conscription introduced in Britain?	January 1916
24	What did the development of trenches result in, meaning that neither side could gain the advantage?	Stalemate
25	What was unoccupied land between the opposing sets of trenches called?	No Man's Land
26	Which medical condition, caused by standing in water, often led to amputation?	Trenchfoot
27	Which psychological condition was caused by the trauma of the trenches?	Shell shock
28	What was the date of the first day of the Battle of the Somme?	1 July 1916
29	How many casualties did the Battle of the Somme result in?	Over 1 million
30	Who was the British military leader behind the Battle of the Somme?	Sir Douglas Haig
31	Aside from Europe, in which continents were battles fought?	North America, South America, Asia, Africa
32	Why did Indian nationalists support the British war effort?	Hoped for greater autonomy for India after the war
33	How many non-white, non-European soldiers fought for Britain, France and their allies?	4 million
34	What sort of work did the Chinese Labour Corps do?	Digging trenches and maintenance
35	Which native Canadian tribe was the soldier Mike Mountain Horse from?	Kainai Blood Tribe
36	Which country entered the war against Germany in April 1917?	The USA
37	Which country left the war in March 1918, due to its own revolution?	Russia
38	When did WWI officially end?	11am 11 November 1918
39	Which peace treaty, which blamed Germany for the war, was signed on 28 June 1919?	The Treaty of Versailles
40	How much was Germany forced to pay in reparations?	£6.6 billion

History Topic 1: The First World War



Why did tensions between the 'Great Powers' increase before 1914?

The Alliance System: In 1882, Germany, Austria-Hungary & Italy signed the Triple Alliance. In 1907, Russia joined Britain & France in the Triple Entente. These alliances led to growing competitiveness & mistrust on both sides. Russia also has an alliance with Serbia, & Britain with Belgium, which would later draw these countries into the war, creating a domino effect.

Imperialism: European countries were competing to have the largest empires, which offered natural resources, manpower & prestige. The Scramble for Africa left Britain & France with large empires, but Germany wanted more land due to its Weltpolitik foreign policy under Kaiser Wilhelm II. Tensions rose when France tried to take control of Morocco, with Germany trying to protect Morocco's independence to challenge France. Ultimately, France was given the protectorship of Morocco in 1911, humiliating Germany.

Militarism: By 1900, Britain had had the largest & most powerful navy for over 100 years. In 1906, Britain built the dreadnought, a powerful new battleship. Germany copied the design & a naval arms race ensued, increasing competitiveness between the two countries. Other European countries were also building up their armed forces throughout this period, suggesting increasing preparedness for war.

How did a single bullet lead to a global war?

1908: Austria-Hungary's annexation of Bosnia angered Serbia due to the large number of Serbs living in Bosnia. The Black Hand, a Serbian nationalist group, wanted all Serbian people to be united.

28 June 1914: Archduke Franz Ferdinand, heir to the Austro-Hungarian throne, shot in Sarajevo by Gavrilo Princip, a member of the Black Hand.

28 July 1914: Austria-Hungary declares war on Serbia. Germany gave Austria-Hungary a 'blank cheque' of support against Serbia.

August: The Alliance system drew Germany, Russia & France into the war. Germany invaded Belgium to get to France, causing Britain to join due to the 1839 Treaty of London.

Key Themes	
Causes of the war	Reasons for increasing tension between the Great Powers up to 1914: Militarism, Alliances, Imperialism, Nationalism.
The Western Front	Development of trench warfare, conditions in the trenches and the experiences of soldiers, the Battle of the Somme
Soldiers of the Empire	Soldiers from 5 different continents, different experiences of soldiers on the Western front and how commemoration of soldiers has differed
End of the war	Reasons for Germany surrender, Treaty of Versailles and impact on Germany

What happened on the Western Front?

What was trench warfare? Since neither side could gain an advantage, trenches were dug, resulting in stalemate. Conditions were poor, often wet & muddy, leading to medical conditions like trench foot. The constant shelling contributed to thousands of soldiers developing 'shell-shock'.

Who fought on the Western Front? Countries from across the empires of France and Britain fought in the war, across 5 different continents. It was the first true war in which peoples and nations across the globe fought and laboured alongside each other.

Why was the Battle of the Somme significant? The first day of the battle was the single deadliest day in British military history, with horrific casualties. General Haig's leadership has been controversial for historians.

Why did Germany surrender in 1918? The USA joined the war, boosting the Allies numbers & weapons. Germany's Ludendorff Offensive failed and the German military grew weaker. German citizens, worn down by the Allies naval blockade, lost morale.

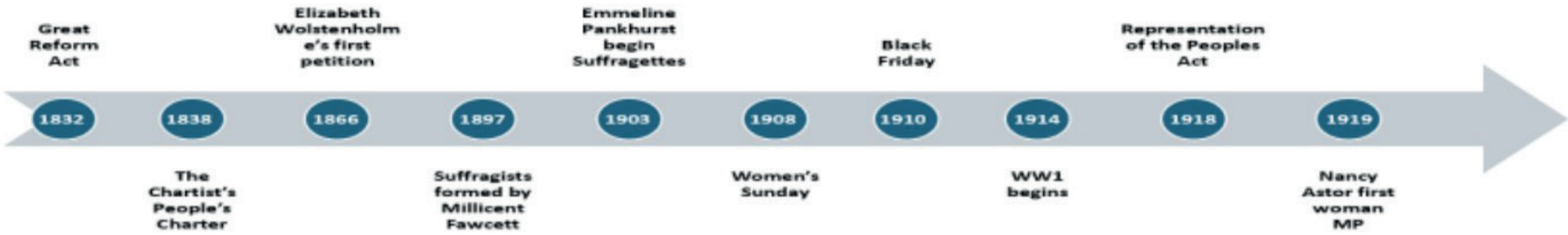
History Topic 2: Suffrage and Russian Revolution

Knowledge Organiser Questions		
1	What proportion of the British population had the right to vote before the Great Reform Act?	2.5%
2	What were boroughs where one family or landowner elected the MP?	Rotten boroughs
3	What problems did the working-class face in work?	Dangerous & unsanitary conditions
4	Before 1870, what happened to a woman's wealth when they got married?	It became their husband's
5	In which year was the Great Reform Act passed?	1832
6	What was the voting qualification in Britain following the Great Reform Act?	Men living in a property over £10
7	Which working-class movement for equal political rights began in 1838?	Chartism
8	Which people passed laws that could increase the number of people who could vote?	Members of Parliament (MPs)
9	Who led the Suffragists?	Millicent Fawcett
10	What methods did the Suffragists use to persuade people to their cause?	Pamphlets, petitions, meetings, marches
11	Who led the Suffragettes when they split from the Suffragists in 1903?	Emmeline Pankhurst
12	What methods did the Suffragettes use to persuade people to their cause?	Protests, hunger strikes, damaging property
13	Which law, passed in 1913, allowed hunger-striking suffragettes to be freed from prison, until they had eaten, and then be rearrested?	The 'Cat and Mouse' Act
14	Who was trampled by the King's horse at the 1913 Epsom Derby?	Emily Davison
15	What type of work did British women do during the First World War?	Munitions factories, farming, clerical work, nursing
16	How did the war help all men get the vote?	They had fought for their country
17	Which Prime Minister encouraged female suffrage?	David Lloyd George
18	Which law passed in 1918 gave all men aged 21+ and women 30+ the vote?	Representation of the People's Act
19	Who was the first woman elected as a Member of Parliament (MP)?	Nancy Astor
20	In which year were women given the vote on equal terms with men?	1928

History Topic 2: Suffrage and Russian Revolution

Knowledge Organiser Questions		
21	What is a social system based on the freedom to buy, sell and trade?	Capitalism
22	What is a social system based on equal distribution of land and resources?	Communism
23	Which book did Karl Marx write in 1848?	The Communist Manifesto
24	Who was the leader of Russia from 1894 to 1917?	Tsar Nicholas II
25	Which term refers to a system of government where absolute power is concentrated in the hands of one person?	Autocracy
26	Which event in January 1905 saw soldiers fire on a peaceful march of 200,000 people?	Bloody Sunday
27	What was the parliament in Russia called from 1906 to 1917?	The Duma
28	Which self-proclaimed holy man had considerable influence over the Tsar?	Rasputin
29	How did taking personal control of the armed forces in September 1915 increase hostility towards the Tsar?	Tsar personally blamed for defeats
30	Why were there fuel and food shortages during WW1?	It could not be transported into cities
31	What happened to the Tsar during the 1917 February Revolution?	Taken prisoner by revolutionaries
32	Who ran the country after the 1917 February Revolution?	Provisional Government
33	How did the peasants react to the 1917 February Revolution?	Seized land for themselves
34	Who was the leader of the Bolsheviks?	Vladimir Lenin
35	What was the Bolsheviks' main slogan?	'Peace, land and bread'.
36	What were the Bolsheviks' own army called?	The Red Guards
37	When did the Bolsheviks overthrow the Russian government?	October 1917
38	What did opposition to the Bolsheviks lead to from 1918 to 1922?	Civil war
39	When Lenin died in 1924 who replaced him as leader?	Josef Stalin
40	What name is given to the period of 1936-8 where Stalin purged internal opponents?	The Great Terror

History Topic 2: Suffrage and Russian Revolution



How did some women get the vote?

Popular protest: The Chartists emerged after the 1832 Great Reform Act as a working-class men's protest movement, which failed to expand suffrage beyond middle class men. The Suffragists began unofficially following the first petition for women's suffrage to Parliament in 1867. Their peaceful methods of meetings, marches and petitions continued into the c.20th, when the Suffragettes broke off to engage in more militant actions. They took different approaches: persuading vs. getting attention.

WW1: Despite their combined protests, women were still seen in a misogynistic way. Men, and importantly MPs with power, did not believe women were responsible or intelligent enough for the vote. WW1 changed this, as women took up male jobs in factories and offices. This proved previously held misogynistic views wrong, giving MPs a chance to change their opinions. Both campaign groups halted their protests to help the war effort. Only some women received the vote in 1918.

Role of individuals: Mary Wollstonecraft, English writer and feminist, first advocated for women's suffrage in 1792. Elizabeth Wolsteholme founded the first suffrage group in 1865, organising the first petition in 1866. These significant women are matched by the influential leaders surrounding the expansion of suffrage in 1918. Millicent Fawcett (Suffragist), Emmeline Pankhurst, & Emily Davison (Suffragettes), all leading and inspiring their respective groups. At a critical political turning point, PM David Lloyd George was pivotal in supporting the suffrage movement during WW1.

History Topic 2: Suffrage and Russian Revolution

Why did Russia turn communist in 1917?

Failures of the Tsar: Originally known as 'the Little Father of Russia', Tsar Nicholas II was a weak leader and autocratic tyrant. His actions caused discontent amongst the working-class and peasants. His failure to reform after the 1905 Revolution led to further discontent and Russia's economy was suffering before entering WW1. The Tsar's military leadership led to disaster, and he was forced to abdicate in 1917 following strikes and mutinies sparked by the women's protest in Petrograd.

WW1: The Tsar's popularity grew when Russia entered the war and there was confidence that 'the Russian steamroller' would defeat Germany. However, by the end of 1914, Russia had over one million casualties. The army was under supplied, the peasants were starving due to supplying the war, and the workers were underpaid and going hungry in the cities. Tsar Nicholas II had no answers for this. Protests, strikes, and mutinies followed as WW1 brought misery for Russia's people.

Bolshevik tactics: Inspired by Marx's theory of communism, the Bolsheviks were an extreme leftwing group advocating for revolution to develop a communist society in Russia. They had a lot of influence in the 'Soviets' (worker councils) after the Tsar abdicated. Soviet Order Number One took power from the Provisional Government and Lenin called for a second revolution. His slogan of, 'Peace, Land and Bread' appealed to the workers and peasants. After defeating Kornilov's rebellion in September, the Bolsheviks seized power in October 1917 using the Red Guard and the support of the 'Soviets'.

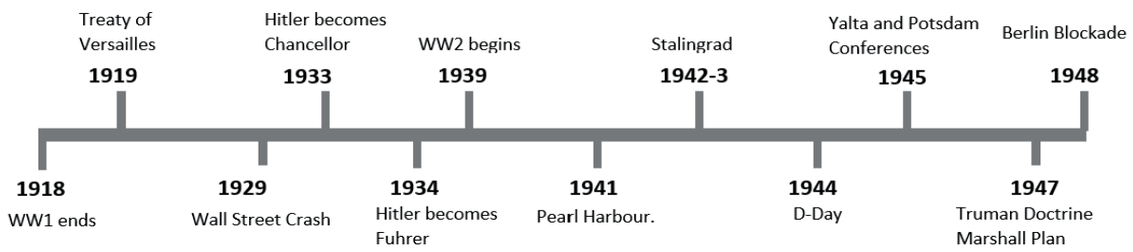
History Topic 3: Shifting World Orders

Knowledge Organiser Questions		
1	Which political party did Hitler become the leader of in 1921?	Nazi Party
2	Which treaty from 1919 did Hitler and many other Germans dislike?	Treaty of Versailles
3	Which economic crisis in 1929 caused mass unemployment in Germany?	Great Depression
4	In which year did Hitler become the chancellor of Germany?	1933
5	Which German term means more 'living space' for German people?	Lebensraum
6	Which policy did Britain and France initially follow as Hitler invaded Austria and Czechoslovakia?	Appeasement
7	Which agreement did Hitler sign with Stalin in August 1939, agreeing not to go to war with each other?	Nazi-Soviet Non-Aggression Pact
8	On which date did Germany invade Poland, starting WW2?	1st September 1939
9	Which tactic, meaning 'lightning war', did the Nazis use to conquer Europe rapidly?	Blitzkrieg
10	Who was the leader of the Soviet Union?	Joseph Stalin
11	Why did Hitler invade the Soviet Union?	To destroy communism and conquer land for his empire
12	What did Hitler launch on 22nd June 1941?	Operation Barbarossa
13	What halted the German advance in the Soviet Union at the end of 1941?	Severe winter
14	How many casualties did the Soviet Red Army suffer in WW2?	4 million
15	Why did Hitler order the German army to advance south into the Soviet Union?	To capture the oil fields
16	How many German soldiers surrendered at Stalingrad?	300,000
17	What percentage of Germany's resources were deployed to the Eastern Front?	75%
18	How many soldiers did Germany initially lose invading the Soviet Union?	1 million
19	What idea did Soviet commander Khukov have to counter and encircle the German army?	Pincer movement
20	Where were the Nazis in retreat after the defeat of Stalingrad, 31st January 1943?	The Eastern Front

History Topic 3: Shifting World Orders

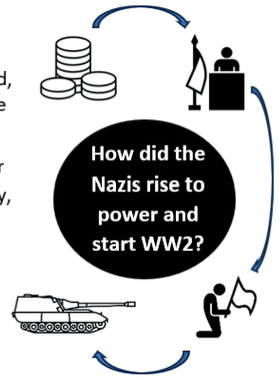
Knowledge Organiser Questions		
21	What was the foreign policy adopted by the USA after the First World War?	Isolationist
22	How did the USA support Britain without being directly involved in fighting?	Lend-lease program
23	On which date did Japan attack the USA naval base at Pearl Harbour in Hawaii?	7th December 1941
24	Who was the President of America?	Franklin D. Roosevelt
25	Where had Japan expanded its empire by invading China and European colonies?	The Pacific
26	What percentage of US resources were targeted at Germany?	85%
27	Where in France were the Allies planning to invade?	Normandy
28	What defences did Hitler put Rommel in charge of?	The Atlantic Wall
29	How many ships were in the fleet invading France?	7,000
30	Where were the Nazis in retreat after the invasion of France?	The Western Front
31	On which date did the Allies invade France?	6th June 1944
32	What was the name for the Allied invasion of Normandy on 6 June 1944?	D-Day/Operation Overlord
33	What ideology did the USA and Soviet Union follow?	Capitalism and Communism
34	What were the three major disagreements between the USA and Soviet Union at the end of WW2 about?	Germany, reparations, and Eastern Europe
35	In which months and year did the Potsdam Conference take place?	July 1945
36	What was America's policy of stopping Communism spreading further known as?	Containment
37	How did Stalin justify Soviet expansion into Eastern Europe?	To create a 'buffer zone' to prevent attack
38	How did Stalin try to prevent the establishment of West Germany as an independent nation in 1948?	Berlin Blockade
39	What was the name for the economic support the US provided Europe to prevent the spread of Communism?	Marshall Aid
40	What was the name for the economic and political support provided by the Soviet Union to spread Communism?	Cominform and Comecon

History Topic 3: Shifting World Orders



Impact of the economic crisis: Reparations from the Treaty of Versailles, 1919, and later the 1929 Great Depression left many Germans unemployed, homeless, or struggling to feed their families. The Nazis offered hope and jobs to many.

WW2 begins: Hitler invades Poland 1st September 1939. England & France declared war on Germany, but the Soviet Union also attacked from the east, leaving it divided between Stalin and Hitler. This was down to *Blitzkrieg* ('lightning war'), a tactic using speed, tanks, and sudden attacks, which helped Germany seize most of Europe by 1940.



Hitler's personal appeal: Hitler was a gifted orator who inspired many Germans through persuasive speeches. Propaganda also helped to spread Nazi messages about nationalism, anti-Semitism, anti-communism, and a stronger Germany.

Appeasement: Hitler had plans to establish *Lebensraum* by expanding Germany and began rearming Germany after 1933. He stationed troops in the Rhineland, annexed Austria and the Sudetenland, and the lied to PM Chamberlain before conquering the rest of Czechoslovakia. Britain and France failed to stop Hitler.

Who was to blame for the breakdown of the wartime alliance?

USA- Dropped atomic bombs on Japan to inimidate Stalin. They undertook a policy of containment to stop the spread of communism through the Truman Doctrine and Marhsall Plan in 1947. The Marshall Plan spent $12.7 billion on rebuilding Europe to ensure countries remained capitialist and were anti-communist.

USSR – Promises to offer free elections in eastern Europe at the Yalta Conference in February 1945 were not kept. Expansion of political and economic control in eastern Europe including Poland, Hungary, Romania, Bulgaria, Albania and Czechosolovakia. Insisted on crippling Germany at Potsdam in July 1945. Eastablished Cominform in 1947 and Comecon in 1949 to spread communism. Blockaded Berlin in 1948.

Both sides equally to blame – Created opposing organisations and schemes that increased tension (Truman Doctrine v Cominform, Marshall Plan v Comecon). Failure to agree over how to treat Germany. Not resolving differences at Potsdam Conference. Competing over countries to be in spheres of influence.

No one was to blame, the Cold War was inevitable – Conflciting ideologies (commuism v capitalism), contradictory principles (equality vs. freedom). Both the USA and USSR wanted the whole world to have the same belief and ideas as them. The need for security meant both sides were willing to struggle.

Why was Nazism defeated?

Stalingrad: The Battle of Stalingrad took place between July 1942 and February 1943. It was during the second advance of the German Wehrmacht (army) against the Soviet Red Army since Operation Barbarossa was launched June 22nd, 1941. The conflict had already claimed 1 million German soldiers. The German army became encircled, and 300,000 soldiers eventually surrendered. It prevented the Germans from capturing the oil fields in the south, marking a turning point on the Eastern Front

Pearl Harbour: Japan planned a mass conquest of east Asia and the Pacific to gain natural resources. Japan launched a pre-emptive attack against the USA naval base at Pearl Harbour on 6th December 1941 to destroy its navy and prevent its opposition. On 11 December 1941, Hitler declared war on the USA. President Roosevelt saw the war against Germany as the priority, sending 85% of resources to Europe, whilst

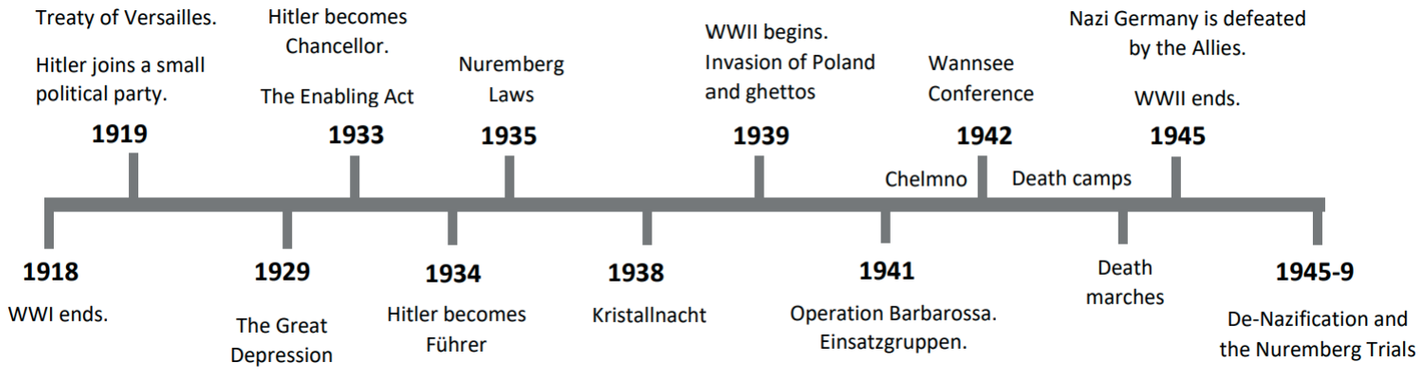
D-Day: Codenamed Operation Overlord, also known as D-Day, began on June 6, 1944, when some 156,000 American, British and Canadian forces onboard 7,000 ships landed on five beaches along a 50-mile stretch of the heavily fortified (Atlantic Wall) coast of Normandy. By late August 1944, northern France had been liberated, and by the following spring the Allies had defeated Germany. D-Day is seen as the beginning of the end of war in Europe since

History Topic 4: The Holocaust

Knowledge Organiser Questions		
1	How long have Jewish people lived in Europe?	Over 2000 years
2	What is an organised massacre of a group, typically Jewish, known as?	Pogrom
3	What does scapegoat mean?	Wrongly blamed for problems
4	What was the study of eugenics?	The scientific belief in races
5	What race did Nazi ideology claim was the most superior?	The Aryan race
6	Which term refers to hostility or prejudice against Jewish people?	Antisemitism
7	What proportion of Germany's population was Jewish?	Less than 1%
8	Which law in 1933 allowed Hitler to pass laws without consulting the Reichstag?	The Enabling Act
9	Which law meant Jewish Germans were no longer German citizens?	The Nuremberg Laws
10	Who was Hitler's propaganda minister?	Joseph Goebbels
11	How was anti-Jewish propaganda spread in Nazi Germany?	Posters, newspapers, radio, speeches, schools
12	Which two Nazi paramilitary groups attacked Jewish people?	The SA and SS
13	Which event in November 1938 saw Jewish shops and synagogues attacked?	November Pogrom (Kristallnacht)
14	How many Jewish people lived in Europe in 1933?	9.5 million
15	What is the areas of cities where Jewish people were separated from others?	Ghettos
16	Which three reasons caused 50,000 Jewish people to die in the Warsaw ghetto?	Hunger, cold, disease
17	What 'sub-human' race did the Nazis believe the Soviet people were?	Slavs
18	What were German military units tasked with killing Jewish people called?	Einsatzgruppen
19	How many were murdered in the 'Holocaust by bullets?'	2.2 million
20	At which camp were Jewish people first systematically murdered?	Chelmno

Knowledge Organiser Questions		
21	How were Jewish people initially killed at this death camp?	In gas vans
22	Which meeting coordinated the deportation of Jewish people to death camps?	The Wannsee Conference
23	What was the agreement to solve the 'Jewish problem' known as?	The Final Solution
24	How were Jewish people primarily killed in death camps?	Gas chambers
25	Alongside Jewish people, name four minority groups who were persecuted by the Nazis.	Queer people, Roma and Sinti people, people with disabilities, and Black people
26	Which religious group were persecuted like they were political opponents?	Jehovah's Witnesses
27	How did the Nazis treat people with disabilities?	Sterilisation and euthanasia
28	How many Roma and Sinti people were murdered by the Nazis?	500,000
29	In which ghetto famously resisted deportation in Poland?	The Warsaw ghetto
30	How did Jewish people resist persecution through small everyday actions?	Singing, reading, theatre, painting
31	Why was it hard for prisoners to fight back in camps?	They were malnourished and unarmed
32	What were resistance groups who escaped capture by hiding in the forests called?	Partisans
33	When did the Soviets liberate Auschwitz-Birkenau (also Holocaust memorial day)?	27th January 1945
34	What did the Nazis do with surviving prisoners as they retreated?	Forced them on 'death marches'
35	On which date did the Second World War in Europe end?	9 May 1945
36	In total, how many Jewish people were murdered in the Holocaust?	6 million
37	What state was created for Jews when the UN split Palestine into two countries?	Israel
38	Where did many trials of Nazi war criminals take place?	Nuremberg, Germany
39	What proportion of people responsible for the Holocaust never faced justice?	99%
40	What was the process of removing Nazi influence in post-war Germany known as?	De-Nazification

History Topic 4: The Holocaust



What is the Jewish Diaspora and antisemitism?

The Jewish people were exiled from the Kingdom of Isael in the c.8th. From that moment, Jewish people spread out living around Europe and the Middle East. From medieval to modern times, laws banned Jewish people from different areas of life. However, they found tolerance and safety in certain cities, such as Amsterdam, and countries, such as Poland, after other European nations had expelled them. Anti-Jewish laws began to be lifted in the c.19th, until in 1870 the new race science of eugenics claimed Jewish people were an inferior 'race', not a religion. Antisemitic attacks called 'pogroms' were carried out in Russia in 1881. 2 million Jewish people emigrated from Russia to America from 1880 and 1924, whilst Britain passed the 'Aliens Act' in 1905 to stop Jewish migrants.

Why did the Holocaust happen?

Hitler and Nazi ideology: Hitler believed in eugenics, arguing Aryans were the superior race, and had an ideological obsession against Jewish people and other minorities he wanted to get rid of to purify Germany. Hitler had significant power after the 1933 Enabling Act, passing antisemitic laws to remove Jewish people from public life, after Hitler had increased antisemitism and support for the Nazis through propaganda and speeches**.** As the leader of the Nazis, he waged war in Europe for Lebensraum (living space) and invaded the Soviet Union, taking more Jewish people under Nazi control. Hitler's dehumanising Nazi ideology meant there was the idea of the 'Jewish problem', which the Nazis solved using the 'Final Solution' documented at the Wannsee Conference, 1942, which was the systematic extermination of Jewish people using poison gas.

War: As Germany invaded other European countries and more Jewish people came under Nazi control, the 'Jewish problem' became bigger and more pressing. The Nazis used ghettos in Poland and other parts of Easter Europe to confine Jewish people in terrible condition. Invading the Soviet Union meant using the SS Einsatzgruppen to shoot 2.2 million Jewish people in the 'Holocaust of Bullets'. Before the Wannsee Conference, Chelmno (Poland) was already established as the first death camp in 1941 where Jewish people were murdered using gas vans. Heightened wartime secrecy made it difficult for the Allied powers to know the extent of Jewish persecution. Even when the Allies knew of the atrocities, Britain saw winning the war as the best way to help the Jewish people, which was not a quick solution.

Ordinary people: Germany democratically voted the Nazis into power when they promised to pass antisemitic laws. There was a long history of antisemitism in Europe, so people believed the Jewish people were to blame for problems such as losing WW1 and the Treaty of Versailles. Bystanders allowed Jewish persecution to continue. Some Germans actively supported Jewish persecution, such as putting up antisemitic road signs, profiting from the confiscation of Jewish property and businesses, and taking part in the November Pogrom (Kristallnacht). Millions of ordinary people joined the Nazi Party, believed the Aryan ideology they were taught, and were part of or knew of the system transporting Jewish people to their deaths. Millions of people supported the persecution of minorities and the purification of the Aryan race.

History Topic 5: The Arab-Israeli Conflict

Knowledge Organiser Questions		
1	Which empire controlled Palestine from the c.16th century onwards?	The Ottoman Empire
2	In what communication did the British promise to support Arab independence from Ottoman Rule?	Husayn-McMahon Correspondence
3	Which British and French agreement divided the Middle East between them?	Sykes-Picot
4	What British declaration supported a "national home for the Jewish people"	The Balfour Declaration
5	What increased after the Balfour Declaration?	Jewish immigration to Palestine
6	What was the name for Britain's control of Palestine, beginning in 1922?	The British Mandate for Palestine
7	Why was British control of Palestine causing tensions for Palestinian Arabs?	Denied self-rule and opposed to increased Jewish immigration
8	What could happen after Jewish land purchases in Palestine?	Palestinian farmers were expelled
9	What Riots occurred in 1929 due to tensions over religious sites?	Wailing Wall Riots
10	Why did Jewish immigration to Palestine increase dramatically in 1933?	Hitler's rise to power
11	What did increased Jewish land purchases and British rule lead to 1936-1939?	The Arab Revolt
12	Which Commission in 1937 argued for separating a Jewish and Arab state?	The Peel Commission
13	Which British policy recommended there should be a bi-national state?	The 1939 White Paper
14	What was the UN Partition Plan of 1947 also known as?	Resolution 181
15	How much land did the UN Partition Plan propose for Jews and Arabs?	Jews=55% Arabs =45%
16	When did Israel declare that its independence?	May 15th 1948
17	How many Palestinians were expelled from their homes during the 1947-49 war?	750,000
18	What is the Palestinian name for the 1947-49 war?	Al-Nakba ('the Catastrophe')
19	What was the Israeli military plan to secure their new state?	Plan Dalet
20	What have some criticised the Israeli military for doing during the 1947-49 war?	Ethnic cleansing

History Topic 5: The Arab-Israeli Conflict

Knowledge Organiser Questions		
21	Which significant massacre occurred during the 1947-49 war?	Deir Yassin
22	What percentage of Palestinian land did Israel control after the 1947-49 war?	78%
23	Which Egyptian leader nationalised the Suez Canal?	Gamal Abel Nasser
24	Where did Israel invade following the closing of the Suez Canal to their ships?	The Sinai Peninsula
25	Which countries joined the Arab alliance preparing to attack Israel?	Egypt, Syria, and Jordan
26	Which Palestinian group was created to conduct guerilla warfare?	Fatah
27	When did Israel launch a pre-emptive strike, beginning the Six-Day War?	June 1967
28	What was a major consequence of the Six-Day War for Israel?	Expanded occupied territory
29	Which UN Resolution called for Israel to withdraw after the Six-Day War?	Resolution 242
30	Where was occupied by Israel after the Six-Day War?	Gaza, West Bank, Golan Heights
31	Which group was formed in 1964 to unite Palestinian resistance?	The PLO
32	What tactics did Yasser Arafat use as leader of the PLO in the 1970s?	Terrorism
33	What is the name of the attack by Egypt and Syria on Israel in 1973?	The Yom Kippur War
34	What is the name for the peace settlement between Egypt and Israel in 1978?	The Camp David Accords
35	Which Islamist group emerged following the Israeli invasion of Lebanon?	Hezbollah
36	What term means ‘rebellion’ or ‘uprising’ in Arabic?	Intifada
37	When did the First Intifada begin?	December 1987
38	What was the name of the agreements signed between Israel and the PLO in 1993?	The Oslo Accords
39	Which Israeli Prime Minister was assassinated in November 1995?	Yitzhak Rabin
40	Which Islamist militant group defeated Fatah in elections in 2006 to control the Gaza Strip?	Hamas

History Topic 5: The Arab-Israeli Conflict

Balfour Declaration – The Declaration in 1917 was a critical show of support for an independent Jewish State by the British. It encouraged increased Jewish migration to Palestine who were escaping Pogroms in Eastern Europe. Arabs had been promised independence from the Ottoman Empire if they supported the British in WW1, but the Sykes-Picot agreement with France had betrayed this. The British Mandate of Palestine followed and the British struggled to manage the needs and rights of both Jewish and Palestinian Arabs, the growing nationalist movements and new settler communities.

UN Partition Plan – Palestinian Arab attempts to oppose British rule failed and Zionists were left unhappy with the British government White Paper in 1939 calling for a bi-national state. With rising tensions and British failure, the United Nations came up with a plan to partition Palestine into a Jewish and Arab state, although 55% of the land was given to the Jewish state, despite only constituting one third of the population. In the following 8 months, 750,000 Palestinians and 20,000 Jews were expelled from their homes as Israel carried out Plan Dalet to secure the new Jew-

Six-Day War – Following the nationalisation of the Suez Canal and the blocking of Israeli ship, Gamel Abel Nasser's Egypt, supported by Syria and Jordan, began to prepare an attack on Israel. The militant Palestinian group, Fatah, was armed and trained to conduct guerilla warfare against Israel. Israel pre-emptively attacked and defeated the Arab Alliance, leading to their occupation of Gaza, the West Bank, the Golan Heights, and East Jerusalem. UN Resolution 242 called for Israel's withdrawal, however they retained the land and expanded settlements, argued as part of Israel's security against threats. The occupation and subsequent settlement building by Israel led to increased support for the PLO.

The Peace Process and Intifadas – The Camp David Accords of 1978 led to peace between Israel and Egypt after a tumultuous decade in the region which saw the Yom Kippur War of 1973 and increased acts of Palestinian terrorism carried out by groups affiliated with the PLO. The First Intifada or uprising broke out in December 1987 and led to violent clashes between Palestinians and Israelis, this ended with the signing of the Oslo Accords in 1993 which focused on the establishment of Palestinian self-governance in the West Bank and Gaza Strip. However, the assassination of Yitzhak Rabin and the growing influence of hardliners in Israel was a major setback to the peace process. Attempts to get the peace process back on track failed and in September 2000 the second Intifada broke out, this lasted until 2005 and caused the deaths of 1000 Israelis and 3,200 Palestinians, it also led to the construction of the West Bank barrier by Israel.

Emergence of Hamas in Gaza to today – In 2007 Hamas defeated Fatah in elections in the Gaza Strip and, after violent clashes, took control of the territory. This has caused division among the Palestinian territories with Fatah controlling the West Bank and Hamas in Gaza. Hamas has launched several significant attacks on Israel from its base in Gaza, including on October 7th 2023, which was the trigger for the current conflict. There have been various attempts to kickstart peace talks again since the end of the second Intifada however none have resulted in any meaningful steps towards a solution. At the time of writing, the current conflict has led to almost two million Gazans (85% of the population) fleeing their homes and the deaths of

History Topic 6: Black British Civil Rights

Knowledge Organiser Questions		
1	When did Black people begin to settle in Britain?	Roman Britain
2	What ship left the Caribbean to bring migrants to rebuild Britain post-WW2?	HMT Windrush
3	Why were Black Britian's excluded from housing, employment and education?	The Color Bar
4	What racist housing policies did Black Britain's face?	No Black's, No Irish, No Dog's
5	What was the name of the white working-class racist gang?	Teddy boy's
6	Where did violent racists riots erupt in 1958?	Notting Hill Riots
7	What did Claudia Jones start up to challenge the racist riots?	Notting Hill carnival
8	What newspaper did Claudia Jones create to fight racism?	The West Indian Gazette
9	What inspired the Bristol Boycott?	Montgomery Bus Boycott
10	What group in 1964 wanted to end racial discrimination and legislative reforms?	C.A.R.D.
11	Why was the race relations act criticised?	Did not cover discrimination in employment and housing
12	Who delivered the 'rivers of blood' speech in 1968?	Enoch Powell
13	Why did Enoch Powell criticise immigration in British society?	Threatened British Identity
14	How did Claudia Jones respond to Enoch Powell?	Emphasised contributions to society from Caribbean migrants.
15	What did the Race Relations act of 1976 make illegal in employment?	Racial discrimination
16	What challenges did Black children face in the education system in Britain?	Low expectations from teachers and limited opportunities
17	What did Bernard Coard challenge in the education system?	Institutional racism
18	What impact did Bernard Coard have on the education system?	Future educational reforms
19	What movement inspired the British Black power?	U.S. Civil rights
20	Who used music to resist and challenge racism?	Bob Marley

History Topic 6: Black British Civil Rights

Knowledge Organiser Questions		
21	Who inspired young black Britons to fight for self-determination and identity?	Stokely Carmichael
22	What changes were made to the British curriculum in schools?	More inclusive
23	What did the Black British power movements promote?	Self-determination and pride
24	What is Black consciousness?	Embracing Caribbean and African cultures, no pressure to assimilate
25	How did Black communities use culture as a tool of resistance?	Through music and fashion
26	What did Stokely Carmichael argue was failing Black Britons?	Legal system
27	What did Olive Morris campaign against?	Police violence and housing discrimination
28	What movement worked on projects to empower Black communities in 1968?	Black Panther Movement
29	What are grassroots movement?	Activism in local communities
30	What did SUS laws give the police the power to do?	Stop and Search with no evidence
31	Why did the Brixton Riots in 1981 erupt?	Police brutality and harassment
32	How did the government respond to racial discrimination towards Black Britons?	The Scarman Report 1981
33	What is believed to have caused the new crossfire 1981?	Arson
34	How many marched on the Black people's day of action?	20,000
35	How old was Stephen Lawrence when he was murdered in a racist attack?	18
36	What did the police fail to do in the Stephen Lawrence case?	Failure to interrogate suspects
37	What did the Macpherson Report 1999 confirm was in the metropolitan police?	Institutional racism
38	How did the Stephen Lawrence campaign gain attention through the public?	Media
39	How was the Race Relation act amended in 2000?	Promoted racial equality
40	What newspaper show voices which could be overlooked in mainstream media?	The voice

History Topic 6: Black British Civil Rights

Period	What challenges have Black British people faced?	What has the response to these challenges been?	Extent of success in overcoming challenges?
1945-60 	Colour bar Social racism Lack of government action Violence (Notting Hill Riots 1958)	Marches against racial discrimination. Claudia Jones created the West Indian Gazette to challenge racism in Britain.	Slow progress due to limited government action.
1960s 	Anti-immigration rhetoric by Enoch Powell Slow legislative change	Race relations act in 1965 made discrimination in public illegal and in 1968 illegal to refuse housing, employment and public services based on race.	Slow changes as they were not enforced. Institutional racism remained and did not receive the same support as they US civil rights movement. Yet, inspired the black power movement.
1970s 	Institutional racism remained with heavy state control. The media would often paint activists as extremists and a lack of political representation.	Black British power movement and community empowerment bought communities together. This was done through music, art and newspapers.	Inspired young people still to do this day with groups such as BLM.
1980s/90s 	Police racism/brutality Over policing- Sus laws Institutional racism Lack of justice (Notting Hill Fire/Stephen Lawrence)	SUS laws created which were proven to be discriminative. Scarman report 1981 found racial disadvantaged. Major riots in Toxteth and Brixton in response to police brutality.	Sus laws repealed in 1981 but police harassment continues. Stephen Lawrence case was slow to progress.

Mathematics - Number

Key Term	Definition
Ascending	Increasing in size (or numerical value)
Compare	To look at two or more numbers and say what is similar or different.
Composite Numbers	A positive integer with more than two factors.
Consecutive	Describing things which follow each other in a particular order.
Cube Numbers	The result of multiplying a number by itself twice. 1, 8, 27, 64, 125, 216, 343, 512, 729, 1000
Decimal Places	The number of digits to the right of a decimal point in a decimal number.
Degree of Accuracy	Describing how precise or accurate a value is, in terms of number of decimal places or significant figures.
Denominator	The bottom number of a fraction. Must be an integer.
Descending	Decreasing in size (or numerical value)
Difference	The result of a subtraction.
Divisible	One number is divisible by another if it is capable of being divided exactly, without a remainder.
Equivalent	Of equal value.
Estimate	To find an approximate answer to a calculation by rounding the numbers involved, commonly to 1 significant figure.
Evaluate	To find the numerical value of.
Factor	An integer that divides another integer exactly, without a remainder.
Factor Pair	A set of two factors that have a particular product.
Fraction	A number which represents part (or parts of) a whole.
Highest Common Factor	The largest number that divides exactly into two or more numbers.

Key Equivalents		
FDP Conversion	$1 = \frac{1}{1} = 100\%$ $0.5 = \frac{1}{2} = 50\%$ $0.1 = \frac{1}{10} = 10\%$ $0.25 = \frac{1}{4} = 25\%$	$0.75 = \frac{3}{4} = 75\%$ $0.2 = \frac{1}{5} = 20\%$ $0.\dot{3} = \frac{1}{3} = 33.\dot{3}\%$

Key Term	Definition
Improper Fraction	A fraction where the numerator is larger than the denominator.
Indices	The power of a number which shows how many times the number is multiplied by itself.
Inequality	The relationship between two numbers that are not equal to each other, shown using the symbols <, > , ≤, ≥ or ≠.
Integer	A whole number including positive and negative numbers and zero.
Lowest Common Multiple	The smallest number which appears in the list of multiples for two or more numbers.
Mixed Number	A number formed of both an integer (whole number) and a fraction.
Multiple	The result of multiplying a number by an integer, i.e. the times tables of a number.
Numerator	The top number of a fraction. Must be an integer.
Order of Operations	BIDMAS—Brackets, Indices, Division & Multiplication and Addition & Subtraction.
Power of 10	The product of multiplying 10 by itself, a number of times.
Prime Number	A positive integer with only two factors, 1 and itself. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
Product	The result of a multiplication.
Proper Fraction	A fraction in which the numerator is less than the denominator.
Remainder	In division, the amount leftover when a number does not divide exactly.
Square Numbers	The result of multiplying a number by itself. 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225
Square Root	The particular factor of a number which can be multiplied by itself to produce that number.
Sum	The result of an addition.
Unit Fraction	A proper fraction with a numerator of 1.
Significant figures	The significant figures of a number are the digits which **carry meaning** (ie. are significant) to the size of the number. The **first significant figure** of a number **cannot be zero**.

Mathematics - Number

Key Definition		Definition
Equivalent Fractions		Fractions which have different numerators and denominators but represent the same value.
Percentage Increase/Decrease		Calculating a percentage of an amount and either adding this onto (increasing) or subtracting this from (decreasing) the original amount.
Percentage Change		To calculate the percentage change, use the following: $\frac{difference}{original} \times 100$
Percentage Multiplier		The number you multiply a quantity by to increase or decrease it by a percentage. E.g. to increase by 10% the multiplier is 1.1.
Write number in standard form		A way of writing large or small numbers.
Product of prime factors / Prime factorisation		Finding which prime numbers multiply together to make the original number. Should be written as primes multiplied together e.g. 20 = 5x2x2 or as index form :20 = $5x2^2$
Simple Interest		Interest calculated as a percentage of the original amount.
Compound Interest		Interest calculated as a percentage of the current value.
Cube Root		The particular factor of a number which can be multiplied by itself twice to produce that number.
Key units of measurement	**Time** 1 hour = 60 minutes 1 minutes = 60 seconds 1 hour = 3600 seconds	**Length** 1 cm = 10mm 1m = 100cm 1km = 1000m
	Mass 1kg = 1000g 1 tonne = 1000kg	**Area** $1cm^2 = 100mm^2$ $1m^2 = 10000cm^2$

Mathematics - Algebra

Key Term	Definition
Algebra	A branch of mathematics in which letters are used to represent numbers.
Coefficient	A constant value which multiplies a variable. Always written before the variable.
Constant	A fixed number on its own.
Equation	A mathematical statement in which two expressions with equal values are connected by an equals sign.
Expand	To remove the brackets from an expression by multiplying terms and simplifying as necessary.
Expression	An algebraic expression is made up of two or more terms combined by operators.
Factorise	To rewrite an expression in brackets. Completed by finding the highest common factor, placing this outside the bracket and dividing by this to get an expression for inside the bracket.
Formula	An equation that shows the relationship between two or more variables.
Identity	An equation that is true for all values.
Linear	Contain only variables with a power of one, such as *x*
Simplify	To write an expression or fraction in a more concise form using the rules of algebra.
Solution	The value or values that can be substituted for the unknown in an equation to make it true.
Solve	To find the solution(s) to an equation by isolating the unknown.
Subject	The dependant variable in a formula or equation, identifiable by being on its own on one side of the equals sign.
Substitution	The process by which symbols are replaced by numbers in order to evaluate an expression or formula.
Term	A constant, variable or coefficient and one or more variables.
Unknown	A value that is not known in an equation.
Variable	A symbol, often a letter, whose value can vary.

Key Term	Definition
Inverse operation	The opposite operation that is being performed on a variable.
Term	A constant, variable or coefficient and one or more variables.
Inequality	Inequality Symbols ≠ not equal < less than ≤ less than or equal to > greater than ≥ greater than or equal to

Key Term	Definition	Examples
Inequalities on a Number Line	Inequalities can be shown on a number line. Open circles are used for numbers that are less than or greater than $(< or >)$ Closed circles are used for numbers that are less than or equal or greater than or equal $(\leq or \geq)$	 $x \geq 0$  $x < 2$  $-5 \leq x < 4$

Key Term	Definition
Direct Proportion	If two quantities are in direct proportion, as one increases, the other increases by the same percentage.
Inverse Proportion	If two quantities are inversely proportional, as one increases, the other decreases by the same percentage.
Scale Factor	A factor by which a shape is enlarged
Ratio	Comparing the size of one part to another. The ratio of a to b is written as a:b.
Equivalent ratio	Equivalent ratios are found by multiplying/dividing all parts of the ratio by the same value.

Key Term	Definition
Quadratic	A quadratic expression is of the form $ax^2 + bx + c$ where a, b and c are numbers, $a \neq 0$

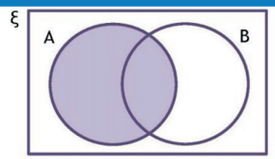
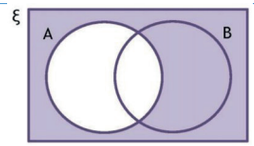
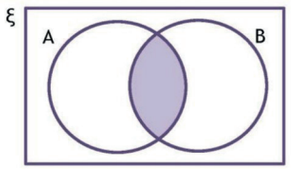
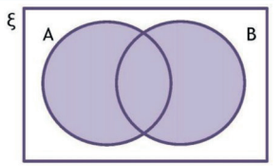
Key Term	Definition
Function machine	Shows the relationship between two variables, the input and the output.

Key term	Definition
Multiplication Index Law	When **multiplying** with the same base (number or letter), **add the powers**. $a^m \times a^n = a^{m+n}$
Division Index Law	When **dividing** with the same base (number or letter), **subtract the powers**. $a^m \div a^n = a^{m-n}$
Brackets Index Laws	When raising a power to another power, multiply the powers together. $(a^m)^n = a^{mn}$
Notable Powers	$p^0 = 1$ $\quad$ $p^1 = p$

Key Term	Definition
Linear Sequence	A number pattern with a common difference.
Term	Each value in a sequence is called a term.
Term-to-term rule	A rule which allows you to find the next term in a sequence if you know the previous term.
nth term	A rule which allows you to calculate the term that is in the nth position of the sequence. Also known as the 'position-to-term' rule. n refers to the position of a term in a sequence.

Mathematics - Statistics & Probability

Key Term	Definition
Basics	Probabilities add to 1.
Probability Scale	Impossible will definitely happen 0 1 Unlikely Likely
Relative Frequency	$frequency \div total\ trials$
Independent Events	Independent events: one event doesn't impact the other.
Expected Outcome	Expected outcome = probability x number of trials

Key Term	Definition
A	Everything in the set A 
A'	Complement. Everything **not in** set A 
$A \cap B$	Intersection of set A and set B. i.e. In A **and** in B 
$A \cup B$	Union of set A and set B. i.e. In A **or** in B 

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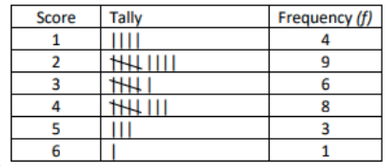
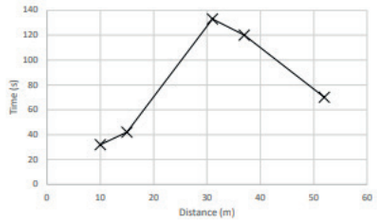
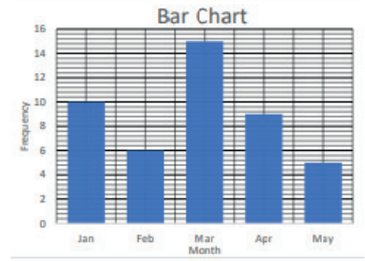
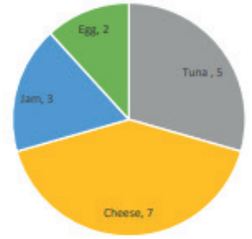
Mathematics - Statistics

Key term	Definition
Average	A single number or value that is used to represent a set of data. There are three main averages we focus on: mode, median and mean.
Data	Information in the form of facts and numbers.
Data point	A single item from a data set.
Data Set	A collection of data which all refers to the same category or topic.
Intersection	The numbers of elements that belong to both/all sets. In a Venn Diagram, this is where the circles overlap.
Mean	The sum of all the values in a data set, divided by the number of values in the data set.
Median	The middle value in an ordered list.
Mode	The most common value. It is possible to have more than one mode
Qualitative Data	A type of data that can be grouped under named categories, often described as data that can be described.
Quantitative Data	Types of data that can be represented numerically, often described as data that can be counted.
Range	The difference between the smallest and largest value.
Two-way Table	A diagram in which frequencies for two categories may be organised; one variable in rows and the other in columns.
Venn Diagram	A diagram in which circles are used to illustrate the relationships between different sets. Must have a box drawn around it.

Key term	Definition	Examples
Frequency Table	A table showing how often something occurs. Can include tally charts.	
Line Graph	Uses lines to join points on a graph to represent a data set.	
Bar Chart	A way of displaying data using horizontal or vertical bars which are the same width and have gaps between them.	
Pie Chart	A method of displaying proportional information by dividing a circle up into different-sized sectors.	

Statistics	Definition
Frequency	How many times something occurs.
Continuous data	Data that can take any value. E.g. height, weight, length.
Discrete data	Data that can only take certain values. E.g. shoe size.

Mathematics - Geometry and Measure

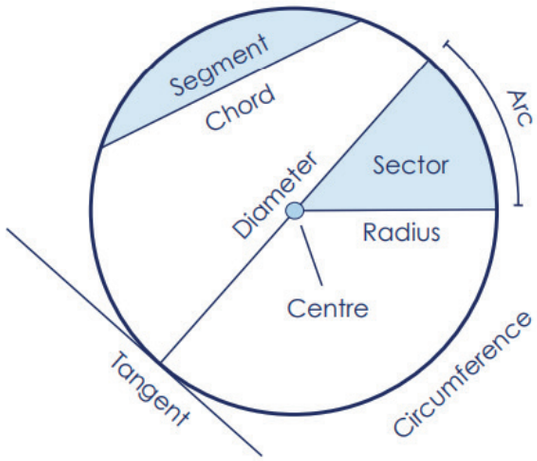
Key Term	Definition
Acute Angle	An angle less than 90°.
Adjacent	Next to, or near.
Area	A measure of the space inside a closed two-dimensional shape.
Axes	The straight lines on a graph used to define the position of a point. The x-axis goes across (horizontal). The y-axis goes up (vertical).
Centimetre (cm)	A metric unit of length equal to one hundredth of a metre. 100cm = 1m
Compound Shape	A shape made up of two or more geometric shapes.
Coordinate	An ordered pair of points that show an exact position on a set of
Exterior Angle	An angle between one side of a shape and a line extending from an
Irregular Polygon	A polygon with unequal length sides and angles.
Kilometre (km)	A metric unit of length equal to one thousand metres. 1km = 1000m
Line of Symmetry	A line that can divide a shape into identical halves, which are mirror
Metre (m)	The base unit of length in the international system of units.
Midpoint	The point exactly halfway between two points.
Millimetre (mm)	A metric unit of length equal to one thousandth of a metre. 10mm = 1cm
Obtuse Angle	An angle measuring between 90° and 180°.
Order of Rotation	The number of times that a shape appears identical during a turn of
Origin	The point with coordinate (0, 0).
Parallel	Two lines that will never cross and that will remain the same
Perpendicular	Two lines that meet at an angle of 90°.

Key term	Definition
Perpendicular	Two lines that meet at an angle of 90°.
Perimeter	The total distance around the outside of a closed two-dimensional shape.
Polygon	A closed two-dimensional shape made up of all straight edges.
Protractor	An instrument used to measure angles.
Quadrilateral	A two-dimensional shape with four sides.
Reflex Angle	An angle measuring between 180° and 360°.
Regular Polygon	A polygon with sides of equal length and angles of equal size.
Right-angle	A 90° angle.
Rotational Symmetry	A symmetry in which a shape may be rotated about a central point and appears identical after a turn of less than 360°.
Square Units	Units used to measure area.
Triangle	A two-dimensional shape with three sides.
Vertex	A point on a polygon at which two lines meet to form an angle.

Key terms	Definition
Angles around a point	Angles around a point sum to 360°.
Angles on a straight line	Angles on a point on a straight line sum to 180°.
Angles in a triangle	Angles in a triangle sum to 180°.
Angles in a quadrilateral	Angles in a quadrilateral sum to 360°.

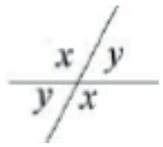
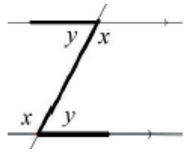
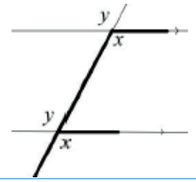
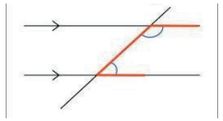
Key terms	Definition
Area of a rectangle or square	Length x width
Area of a parallelogram	Length x perpendicular height
Area of a triangle	$\frac{\text{Base x perpendicular height}}{2}$
Area of a trapezium	$\frac{a + b}{2} \times h$, where a and b are parallel sides.

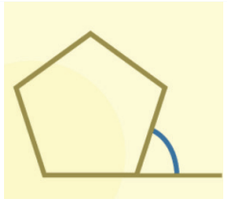
Mathematics - Geometry & Measure

Key Term	Definition
Parts of a circle	
Arc	A section of the circumference.
Sector	The area bounded by two radii and an arc.
Chord	A straight line joining any two parts of the circumference.
Circumference	The distance around the outside of the circle.
Diameter	A straight line going from one end of the circle to another passing through the centre.
Segment	The area bound by the circumference and a chord
Tangent	A straight line that touches the circumference at a single point.
Pi (π)	The ratio of a circle's circumference to its diameter.

Key Term	Definition
Circumference	The perimeter of the circle. C = πd
Radius	$diameter \div 2$
Diameter	$2 \times radius$
Perimeter of semi-circle	$p = \frac{\pi d}{2} + d$
Perimeter of quarter circle	$p = \frac{\pi d}{4} 2r$
Perimeter of three-quarter circle	$p = \frac{3}{4}\pi d + 2r$
Area of a circle	$A = \pi r^2$
Area of a semi-circle	$A = \frac{\pi r^2}{2}$
Area of a quarter-circle	$A = \frac{\pi r^2}{4}$
Area of three-quarter circle	$A = \frac{3\pi r^2}{4}$
Sector	**Sectors** are sections of a circle that are created by two radii and an arc
Arc	A portion of the circumference
Area of sector	$Area\ of\ a\ sector = \frac{\theta}{360}\pi r^2$
Length of arc	$length\ of\ arc = \frac{\theta}{360}\pi d$

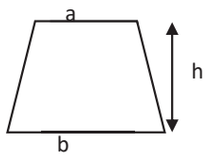
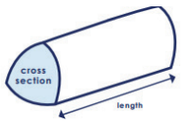
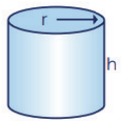
Mathematics - Geometry & Measure

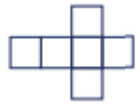
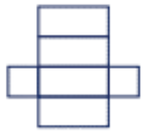
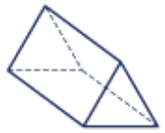
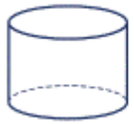
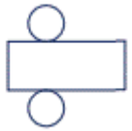
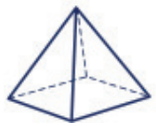
Key Term	Definition
Vertically Opposite Angles	Vertically opposite angles are equal. 
Alternate Angles	Alternate angles are equal. 
Corresponding Angles	Corresponding angles are equal. 
Co-Interior Angles	Co-Interior angles add up to 180°. 

Key Term	Definition
Sum of all angles in Polygons	n is the number of sides. $(n-2) \times 180$
Internal angle in regular polygon	$\frac{(n-2) \times 180}{n}$
External angle	The angle between a side of a polygon and an extended adjacent side.
Exterior angle regular polygon	 $\frac{360}{n}$

Key term	Definition
Translation	Translate means to move a shape. The shape does not change size or orientation.
Column Vector	In a column vector, the top number moves left (-) or right (+) and the bottom number moves up (+) or down (-)
Rotation	The size does not change, but the shape is turned around a point.
Reflection	The size does not change, but the shape is 'flipped' like in a mirror. Line $x = ?$ is a vertical mirror line. Line $y = ?$ is a horizontal mirror line. Line $y = x$ is a diagonal mirror line.
Enlargement	The shape will get bigger or smaller in relation to a centre of enlargement. Multiply each side by the scale factor.
Scale factor	The multiplier for the length of each side of a shape when carrying out an enlargement.
Centre	Used in rotations and enlargements as the centre for the transformation.

Mathematics - Geometry & Measure

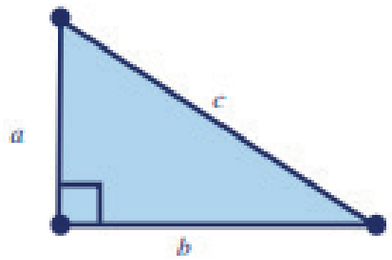
Key Term	Definition	
Area of a trapezium	$\frac{a+b}{2} \times h$	
Face	A face is a single flat surface.	
Edge	An edge is a line segment between two faces.	
Volume	The amount of 'space' a solid object occupies. Units: ***mm³, cm³, m³***, etc. The volume of a prism ***V = Area of Cross Section x Length***  The volume of a *cylinder* ***= π r² h*** 	
Volume of a cube / cuboid	Length x width x height	
Prism	A 3D shape with a constant cross-section.	
Cross-section	The 2D shape that is consistent throughout the prism	
Volume conversions	1 L = 1000 cm^3 0.5 L = 500 cm^3	

Key Term	Definition	Shape	Net
Cube	6 square faces 12 edges 8 vertices		
Cuboid	6 rectangular faces 12 edges 8 vertices		
Triangular Prism	5 faces 9 edges 6 vertices		
Cylinder	3 faces 2 edges 0 vertices		
Square-based Pyramid	5 faces 8 edges 5 vertices		
Triangular-based Pyramid	4 faces 6 edges 4 vertices		
Cone	2 faces 1 edge 1 vertex		
Sphere	1 face 0 edges 0 vertices Half a sphere is known as a hemisphere.		

Mathematics - Geometry & Measure

Key Term	Definition
Properties of Solids	Faces = flat surfaces Edges = sides/lengths where faces meet Vertices = corners where edges meet
Plans and Elevations **Plan View** **Side Elevation:** **Front Elevation**	This takes 3D drawings and produces 2D drawings. from **above** from the **side** from the **front**

Key Term	Definition
Surface Area	The total area of all the faces of a 3D shape.
Surface area of a cylinder	$A = 2\pi rh + 2\pi r^2$
Volume of a Prism	$\boldsymbol{V = Area\ of\ Cross\ Section \times Length}$

Key Term	Definition
Right-angled triangle	A triangle that contains a 90^0 angle
Hypotenuse	The longest side – opposite the right angle
Pythagoras' theorem	For any right-angled triangle, the area of the square of the longer length (the hypotenuse) is equal to the area of the squares of the shorter lengths added together. $c^2 = a^2 + b^2$ $a^2 = c^2 - b^2$ $b^2 = c^2 - a^2$ 

French - Les rapports familiaux et les passetemps

1. Parle-moi de ta famille	Tell me about your family
Dans ma famille il y a	In my family there is
Mes parents et moi	My parents and me
Mon frère	My brother
Ma sœur	My sister
Mon père	My father
Ma mère	My mother
Ma tante	My aunt
Mon oncle	My uncle
Mon grand-père	My grandad
Ma grand-mère	My grandma
Mon cousin	My cousin (male)
Ma cousine	My cousin (female)
Ma demi-sœur	My half sister
Mon demi-frère	My half brother

4. Avec qui tu t'entends bien ?	Who do you get on with?
Je m'entends bien avec	I get on well with
Je me dispute avec	I argue with
Je me chamaille avec	I bicker with
Je m'amuse avec	I have fun with
Je me confie à	I confide in

5. Voudrais-tu te marier ?	Would you like to marry?
Je voudrais me marier	I would like to marry
Je voudrais tomber amoureux /euse de quelqu'un	I would like to fall in love with someone
Je voudrais me fiancer	I would like to get engaged

2. Tu peux décrire ton frère ou ta sœur ?	Can you describe your brother or sister?
Il / elle est	He / she is
Grand (e)	Tall
Petit (e)	Small
De taille moyenne	Average height
Mince	Slim
Maigre	Thin
Gros / se	Fat
Il / elle a	He / she has
Les cheveux courts	Short hair
Les cheveux longs	Long hair
Les cheveux raides	Straight hair
Les cheveux bouclés	Curly hair
Les cheveux blonds	Blond hair
Les cheveux bruns	Brown hair
Les yeux bleus	Blue eyes

Reasons	
Parce que	Because
Car	Because
Puisque	Because
Étant donné que	Given that

Ce serait	It would be
Car ce serait romantique	Because it would be romantic
Car ce serait incroyable	Because it would be incredible
Ce serait trop cher	I would be too expensive

3. Il / elle est comment?	What is he / she like?
Il / elle est	He / she is
Il / elle peut être	He / she can be
Il n'est jamais	He is never
Elle n'est pas	She is not

Extra detail	Intensifer
Très	Very
Assez	Quite
Un peu	A bit

Intelligent (e)	Clever
Drôle	Funny
Sportif / ive	Sporty
Généreux / euse	Generous
Fiable	Trustworthy
Timide	Shy
Debrouillard (e)	Resourceful
Branché (e)	Trendy
Gentil /le	Kind
Sympa / aimable	Nice

Têtu (e)	Stubborn
Egoïste	Selfish
Agaçant(e), énervant(e)	Annoying
Paresseux / euse	Lazy
Méchant(e)	Nasty / mean
Pénible	A pain

Il / elle m'aide	He / she helps me
Il / elle me soutient	He / she supports me
Il / elle me fait rire	He / she makes me laugh

French - Les rapports familiaux et les passetemps

PRESENT - I form

6. Que fais-tu le weekend ?	What do you do at the weekend?
Je danse / je fais de la danse	I dance
Je fais de la natation	I swim
Je fais des arts martiaux	I do martial arts
Je joue de la guitarre	I play guitar
Je joue du piano	I play piano
Je joue au golf / tennis / foot / rugby / netball	I play golf / tennis / football / rugby / netball
Je traine avec mes amis	I hang out with my friends
Je regarde des films	I watch films
Je lis	I read
Je vais à la gym	I go to the gym

7. Que fais tu sur ton portable / ton ordi?	What do you do on your phone / computer?
Je partage des photos	I share photos
Je vais sur des réseaux-sociaux	I go on social media sites
Je lis des blogs	I read blogs
Je commente des photos	I comment on photos
Je regarde des clips sur youtube	I watch clips on youtube
Je fais des quiz	I do quizzes
Je joue à des jeux	I play games
Je télécharge de la musique	I download music
Je fais mes devoirs	I do my homework

If you use an opinion verb like 'j'aime the next verb needs to be an INFINITIVE. It will end in **-er**, **-re** or **-ir**

Eg J'aime FAIRE du vélo

If you don't use an opinion verb, it ends in E

Irregulars are *Je vais = I go, Je fais = I do, Je lis = I read

PRESENT - Opinion + Infinitive

8. Qu'est-ce que tu aimes faire ?	What do you like to do?
Time expressions	
D'habitude / Normalement	Normally
Quand il fait beau	When it is nice
De temps en temps	From time to time

Opinions	
J'aime	I like
J'adore	I love
Je préfère	I prefer
Je n'aime pas	I don't like
Je déteste	I hate

Faire des magasins	To do (go) shopping
Aller à la plage	**To go to the beach**
Faire du sport	**To do sport**
Sortir avec mes amis	**To go out with my friends**
Aller au cinéma	**To go to the cinema**
Faire des randonnées	**To go hiking**
Faire du vélo	To do cycling

What to include in your writing (colour key)	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

PAST - Imperfect

Time expression	
Quand j'étais petit (e)	When I was little

9. Que faisais tu quand tu étais petit/e ?	What did you do when you were younger?
J'aimais	I used to like
Je n'aimais pas	I didn't like
J'aimais lire	I used to like to read
J'aimais écouter des histoires	I used to like to listen to stories
J'aimais dessiner	I used to like drawing
J'aimais chanter	I used to like singing
Je n'aimais pas étudier	I didn't like studying
C'était	It was

FUTURE

Time expression	
Ce weekend	This weekend

10. Que vas-tu faire ?	What are you going to do?
Je vais + infinitive	**I am going to...**
Ce weekend je vais sortir	This weekend I am going to go out
Je vais rencontrer des amis en ville	I am going to meet friends in town
Je vais manger au restaurant	I am going to eat at a restaurant
Ce sera divertissant	It will be fun

Spanish - Relaciones familiales y tiempo libre

1 ¿Quién hay en tu familia?	Who is in your family?
Hay	There is / there are
En mi familia hay	In my family there is
Mi hermana	My sister
Mi tia	My aunt
Mi madre	My mum
Mi abuela	My grandma
Mi prima	My cousin (fem)
Mi madrastra	My stepmum
Mi hermano	My brother
Mi padre	My dad
Mi tio	My uncle
Mi abuelo	My grandad
Mi primo	My cousin (m)
Mi padrastro	My stepdad
Mis padres	My parents

2 ¿Con quién te llevas bien?	Who do you get on with?
Me llevo bien con	I get on with
Discuto con	I argue with
Me peleo con	I bicker with
Me divierto con	I have fun with
Confio en	I trust

3 ¿Te gustaría casarte?	Would you like to marry?
(No) Me gustaría	I would (not) like
Me gustaría casarme	I would like to marry
Enamorarme	To fall in love with some-one

Reasons	
Porque	Because
Ya que	Because
Dado que	Because
Puesto que	Because

Sería	It would be
Sería increíble	It would be incredible
Sería romántico	It would be romantic
Sería demasiado caro	It would be too expensive

4 ¿Puedes describir a tu hermano / a?	Can you describe your brother or sister?
Es	He / she is
Alto /a	Tall
Bajo /a	Small
Medio /a	Average height
Delgado /a	Slim
Gordito/a	Chubby
Tiene	He / she has
El pelo corto	Short hair
El pelo largo	Long hair
El pelo liso	Straight hair
El pelo rizado	Curly hair
El pelo rubio	Blond hair
El pelo castaño	Brown hair
Los ojos azules	Blue eyes

What to include in your writing	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

5 ¿Cómo es?	What is he / she like?
Es	He / she is
Puede ser	He / she can be
Nunca es	He / she is never
No es	He / she is not

Extra detail	Intensifer
Muy	Very
Bastante	Quite
Un poco	A bit

Inteligente	Clever
Gracioso /a	Funny
Deportista	Sporty
Generoso /a	Generous
Guapo /a	Beautiful
De confianza	Trustworthy
Tímido /a	Shy
Listo /a	Smart
Amable	Kind
Simpático /a	Nice

Terco /a	Stubborn
Egoísta	**Selfish**
Pesado /a	**Annoying**
Perezoso /a	**Lazy**
Cruel	**Nasty / mean**
Molesto/a	Annoying

Me ayuda	He / she helps me
Me apoya	**He / she supports me**
Me hace reír	He / she makes me laugh

Spanish - Relaciones familiales y tiempo libre

PRESENT - I form - ends o

6 ¿Qué haces el fin de semana?	What do you do at the weekend?
Bailo	I dance
Hago natación / nado	I swim
Hago artes marciales	I do martial arts
Toco la guitarra	I play guitar
Toco el piano	I play piano
Juego al golf / tenis / futbol / rugby / netball	I play golf / tennis / football / rugby / netball
Paso el rato con mis amigos	I hang out with my friends
Veo las películas	I watch films
Leo	I read
Voy*al gimnasio	I go to the gym

7 ¿Qué haces en tu móvil?	What do you do on your phone / computer?
Comparto las fotos	I share photos
Voy en las redes sociales	I go on social media sites
Leo los blogs	I read blogs
Comento en las fotos	I comment on photos
Pongo al día mis gustos	I update my likes
Veo los clips en Youtube	I watch clips on youtube
Hago los quiz	I do quizzes
Juego a los videojuegos	I play games
Descargo música	I download music
Hago mis deberes	I do my homework

PRESENT - Opinion + Infinitive

8 ¿Qué te gusta hacer?	What do you like to do?
Time expression	
Normalmente	Normally
Cuando hace buen tiempo	When it is nice
De vez en cuando	From time to time

Opinions	
Me gusta	**I like**
Me encanta	**I love**
Prefiero	**I prefer**
No me gusta	**I don't like**
Odio	**I hate**

Ir de compras	**To go shopping**
Ir a la playa	**To go to the beach**
Hacer deporte	**To do sport**
Salir con mis amigos	**To go out with my friends**
Ir al cine	**To go to the cinema**
Hacer senderismo	**To go hiking**
Hacer ciclismo	**To do cycling**

Very important!

If you use an opinion verb like 'me gusta' the next verb needs to be an **INFINITIVE**. It will end in **–ar –er –ir.** Eg me gusta jugar

If you don't use an opinion verb, you need to remove the **–ar –er –ir** and replace with **o**

Irregulars are *voy = I go, hago = I do, juego = I play

PAST - Imperfect

Time expression	
Cuando era pequeño /a	When I was little

9 ¿Qué solias hacer cuando eras pequeño?	What did you do when you were younger?
Solía	I used to
No solía	I didn't use to
Me gustaba	I used to like
Solía leer	I used to read
Solía escuchar historias	I used to listen to stories
Solía dibjujar	I used to draw
Solía cantar	I used to sing
Solía estudiar	I used to study
Era	It was

FUTURE

Time expression	
Este fin de semana	This weekend

10 ¿Qué vas a hacer?	What are you going to do?
Voy a	I'm going to
Este fin de semana voy a salir	This weekend I am going to go out
Voy a quedar con mis amigos	I am going to meet friends in town
Voy a comer al restaurante	I am going to eat at a restaurant
Será divertido	It will be fun

French - Les fêtes et les traditions

What to include in your writing	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

1. Qu'est-ce qu'on mange en France ?	What do they eat in France?
Au dîner	At dinner
Au déjeuner	At lunch
Au petit-déjeuner	At breakfast
On mange	One eats
On prends	One eats
De la viande	Meat
Du poisson	Fish
Du pain	Bread
Du fromage	Cheese
Des céréales avec du lait	Cereal with milk
Des légumes	Vegetables

3. Quel est ton festival préféré ?	What is your favourite festival?
Mon festival français préféré est..	My favourite French festival is
Pâques	Easter
La fête du citron	Mentón Lemon festival
Le quatorze juillet	Bastille Day
la fête de la musique	The festival of music
la Saint -Sylvestre	New Years Eve
La fête des lumières	The festival of light

4. Quel est ton opinion des festivals?	What is your opinion of festivals?
À mon avis les festivals sont	In my opinion festivals are
Un aspect important du patrimoine	An important part of the heritage
Traditionnels et intéressants	Traditional and interesting
Importants	Important
Trop commercialisés	Too commercialised
Trop bondés	Too packed
Trop chers	Too expensive

Opinions	
2. Qu'est-ce que tu aimes manger ?	**What do you like to eat?**
J'aime manger	I like to eat
Je préfère manger	I prefer to eat
Je déteste manger	I hate to eat

Du chocolat	Chocolate
Du fromage	Cheese
Du yaourt	Yogurt
Du paté	Paté
Du jambon	Ham
De la charcuterie	Cold meat
Des tartes	Tarts
Des gâteaux	Cakes
Des produits laitiers	Dairy products

Reasons	
Parce que	Because
Car	Because
Puisque	Because
C'est délicieux	It's delicious
C'est degoûtant	It's digusting
C'est trop épicé	It's too spicy
C'est sain	It's healthy

5. Comment est le Noël en France ?	What is Christmas like in France?
On chante	One / We sings
On danse	One / We dances
On porte le déguisement	One / We wear fancy dress
On mange	One / We eat
On boit	One / We drink
On fête	One / We celebrate
On rejoint sa famille	We meet up with family
On joue des instruments	One / We play instruments
On offre des cadeaux	One / We give gifts

PAST - Passé Composé

6. Tu es allé à quel festival ?	Which festival did you go to?
L'année dernière je suis allé (e) au festival de..	Last year I went to the….festival
J'y suis allé (e) avec ma famille	I went there with my family
Nous sommes restés dans un hôtel / un appartement	We stayed in a hotel / flat
On a vu des défilés	We saw parades
On a dansé et chanté	We danced and sang
On a bu et mangé	We drank and ate
On a vu des feux d'artifices	We saw fireworks

French - Les fètes et les traditions / Ta ville

7. Où habites-tu?	Where do you live?
J'habite à + city	I live in + city
Dans le sud de l'Angle-terre	It is in the South of England
Elle se trouve	It is located
Sur la côte	On the coast
À la campagne	In the countryside
C'est	It is
Une grande ville	city
Une petite ville	A small town
Un village	a village
Un quartier	A zone / area
Il y a	There is
Une région	A region
Une montagne	A mountain
Une rivière	A river
Un lac	A lake
Un volcan	A volcano
Des collines	Hills

8. Qu'est-ce qu'il y a ?	What is there?
Il y a	There is / are
Il n'y a pas de (no article)	There is not
Un centre de loisirs	A leisure centre
Un parc	A park
Un centre commercial	A shopping centre
Un cinéma	A cinema
Un magasin	A shop
Un marché	A market
Un restaurant	A restaurant
Une cathédrale	A cathedral / church
Une piscine	Swimming pool
Une plage	A beach
Des magasins	Some shops
Des restaurants	Some restaurants

9. C'est comment?	What is it like?
C'est	Is it
Rural(e)	Rural
Tranquille	Quiet /peaceful
Sûr (e)	Safe
Dangereux/euse	Dangerous
Propre	Clean
Sale	Dirty
Joli(e)	Pretty
Beau / belle	Pretty
Moche	Ugly
Touristique	Touristy
Industriel/le	Industrial

PAST - Imperfect

Time Expressions	
Avant	Before
Dans le passé	In the past

C'était It was

Plus	More
Moins	Less

Sale	Dirty
Propre	Clean
Bruyant	Noisy
Pollué	Polluted
Animé	Lively
Cher	Expensive

Que **Than**

Maintenant **Now**

Present

10. Quel temps fait-il ?	What is the weather like ?
S'il fait beau	If it's nice
S'il fait chaud	If it's hot
S'il pleut	If it rains
Quand il fait froid	When it's cold
Quand il y a du soleil	When it's sunny

11. Qu'est-ce qu'on peut faire?	What can you do ?
On peut	One can
On peut aller à la plage	You can go to the beach
On peut faire des sports nautiques	You can do watersports
On peut aller au cinéma	You can go to the cinema
On peut faire des magasins	You can go shopping
On peut faire du vélo	You can go cycling
On peut faire de la randonnée	You can go hiking

Future

12. Où voudrais-tu visiter?	Where would you like to visit?
je veux visiter	I want to visit
j'aimerais visiter	I would like to visit
Je voudrais visiter	I would like to visit
Je ne voudrais pas visiter	I wouldn't like to visit
Ce serait	It would be
Incroyable	Incredible

Spanish - Fiestas y tradiciones

1 ¿Qué se come en España?	What do they eat in Spain?
Para cenar	At dinner
Para comer	At lunch
Para desayaunar	At breakfast
Se come	One eats
(El) pescado	Fish
(El) pan	Bread
(El) queso	cheese
(La) carne	Meat
(Los) cereales con leche	Cereal with milk
(Las) verduras	Vegetables
(Las) tostadas	Toasted bread

Grammar note

After se come you **DON'T** need an article (el / la / los / las) Eg Para desayunar se come tostadas

2 ¿Cuál es tu fiesta favorita?	What is your favourite festival?
Mi fiesta española favorita es	My favourite Spanish festival is
La Semana Santa	Holy Week—Over Easter there are processions in the street
La Tomatina	The Tomatina—Tomato throwing in Buñol
La Fallas de Valencia	The Fallas of Valencia—burning big structures
El Día de los Muertos	The Day of the Dead—In South America
La Noche Vieja	New Years Eve—Eating grapes at midnight
La Fiesta de San Fermín	San Fermin—running of the bulls

Opinions	
3 ¿Qué te gusta	**What do you like to eat?**
Me gusta comer	I like to eat
Prefiero comer	I prefer to eat
Odio comer	I hate to eat

Chocolate	Chocolate
Pasteles	Cakes
Tartas	Tarts
Tortilla española	Spanish omlette
Jámon	Ham
Chorizo	Chorizo (spicy sausage)
Queso	Chesse
Albondigas	Meatballs
Productos lácteos	Dairy products

Reasons	
Porque	Because
Ya que	Because
Es delicioso	It is delicious
Es rico	It is delicious
Es saboroso	It is tasty
Es soso	It is bland
Es asqueroso	It is disgusting

4 ¿Cómo es la Navidad en España?	What is Christmas like in Spain
La gente canta	People sing
La gente baila	People dance
La gente lleva disfraces	People wear fancy dress
La gente come una gran comida especial	People eat a big special meal
La gente bebe	People drink
La gente regala regalos	People give gifts
La familia se junta	The family gets together

PAST - Preterite

5 ¿Fuiste a cuál fiesta ?	Which festival did you go to?
El año pasado fui a la fiesta de…	Last year I went to the….festival
Fui con mi familia	I went there with my family
Nos quedamos en un hotel / un apartamento	We stayed in a hotel / flat
Vimos los desfiles	We saw parades
Bailamos y cantamos	We danced and sang
Bebimos y comimos	We drank and ate
Vimos los fuegos artificiales	We saw fireworks

6 ¿Cuál es tu opinión de las fiestas?	What is your opinion of festivals?
En mi opinion las fiestas son	In my opinion festivals are
Un aspecto importante del patrimonio	An important part of the heritage
Tradicionales y interesantes	Traditional and interesting
Importantes	Important
Comercializadas	Commercialised
Concurridas	Packed
Demasiado caras	Too expensive

Spanish - Fiestas y tradiciones

7 ¿Dónde vives?	Where do you live?
Vivo en	I live in
Está	It is located
Está en el sur de Inglaterra	It is in the South of England
Está en la costa	It is on the coast
Un gran pueblo	A town
Un pueblo	A village
Un barrio	A zone / area
Un rio	A river
Un lago	A lake
Un volcán	A volcano
Una colina	A hill
Una ciudad	A city
Una región	A region
Una montaña	A mountain

9 ¿Qué hay en tu ciudad ?	What is there?
Hay	There is / there are
No hay (no article)	There is not
Un polideportivo	A leisure centre
Un parque	A park
Un centro commercial	A shopping centre
Un cine	A cinema
Un mercado	A market
Un restaurante	A restaurant
Un puerto	A port
Una piscina	A swimming pool
Una playa	A beach
Una tienda	A shop
Una catedral	A cathedral

11 ¿Cómo es?	What is it like?
Es	It is
Rural	Rural (in the countryside)
Tranquilo /a	Quiet /peaceful
Seguro /a	Safe
Peligroso /a	Dangerous
Hermoso /a	Pretty
Bonito /a	Pretty
Feo /a	Ugly
Turístico /a	Touristy
Industrial	Industrial
Está	It is (with clean and dirty)
Limpio /a	Clean
Sucio /a	Dirty

PAST - Imperfect

Antes	Before
En el pasado	In the past

Estaba	It was
Era	It was

Más	More
Menos	less

Sucio	Dirty
Limpio	Clean
Animado	Lively
Peligroso	Dangerous

Que	Than
Ahora	Now

Present

8 ¿Qué tiempo hace?	What is the weather like ?
Si hace buen tiempo	If it's nice
Si hace calor	If it's hot
Si llueve	If it rains
Cuando hace frío	When it's cold
Cuando hace sol	When it's sunny

10 ¿Qué se puede hacer?	What can you do ?
Se puede	You can
Se puede ir a la playa	You can go to the beach
Se puede hacer deportes acúaticos	You can do watersports
Se puede ir al cine	You can go to the cinema
Se puede ir de compras	You can go shopping
Se puede montar en bici	You can go cycling
Puedes hacer senderismo	You can go hiking

Future

12 ¿Dónde te gustaría	Where would you like to visit?
Quiero visitar	I want to visit
Me gustaría visitar	I would like to visit
Me encantaría visitar	I would love to visit
No me gustaría visitar	I wouldn't like to visit
Sería	It would be
Increíble	Incredible

French - L'environnement

1.	Quels sont les problèmes de l'environnement dans ta région?	What are the environmental problems in your local area?
	Malheureusement	Unfortunately
	Il y a	There is / there are
	Trop de	Too much
	Beaucoup de	Too many
	Voitures	Cars
	Déchets	Rubbish
	Plastique	Plastic
	Monde	People
	Emballages	Packaging
	Circulation	Traffic
	Il n'y a pas assez de	There aren't enough
	Poubelles	Bins
	Espaces verts	Green spaces
	Transports en commun	Public transport
	Quel dommage!	What a shame

Dans le passé il y avait moins de circulation que maintenant. Maintenant, il y a plus des gens et il n'y a pas assez des transports en commun.

2. Qu'est-ce qu'on peut faire ?	What can we do?
On peut	We can
On pourrait	We could
On doit	We must
On devrait	We should …
Utiliser	Use
Recycler	Recycle
Réutiliser	Reuse
Réduire la consommation de	Reduce the consumption of
Sauver **économiser**	Save (animals, the planet) Save up (not spend)
Eteindre les lumières	Turn the light off
Débrancher les appareils électriques	Unplug electrical devices
Utiliser les transports en commun	Use public transport
Consommer moins d'energie	Consume less energy
Utiliser moins d'eau	Use less water
Refuser le plastique	Refuse plastic

What to include in your writing	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

3. Quels problèmes y avait-il avant ?	What problems were there before?
Avant	Before
Dans la passé	In the past
Il y avait	There was
C'était	It was

Plus	More
Moins	Less

de circulation	Traffic
de pollution	pollution
de bâtiments	Buildings
de gens	People

Sale	Dirty
Propre	Clean
Bruyant	Noisy
Tranquille	Quiet

Que	Than
Maintenant	Now

Time expressions	
Quand ?	**When?**
Après le collège	After school
Normalement	Normally
Jamais	Never
Toujours	Always
Parfois / quelquefois	Sometimes
Le lundi	On Monday
Le mardi	On Tuesday
Le mercredi	On Wednesday
Le jeudi	On Thursday
Le vendredi	On Friday
Le samedi	On Saturday
Le dimanche	On Sunday

French - L'environnement

4.	Quels droits ont les enfants?	What rights do children have?
	Les enfants ont le droit	To have the right to
	De jouer	To play
	De vivre en paix	To live in peace
	À l'éducation	To education
	À la liberté d'expression	To freedom of speech
	À l'amour	To love
	À la nourriture	To food
	Je pense que c'est normal	I think it's normal
	Je crois que c'est juste	I think it's fair

Opinions		
	Il me semble que	**It seems to me that**
	C'est juste	**It's fair**
	C'est injuste	**It is not fair**
	C'est inacceptable	**It is unacceptable**
	C'est important	**It is important**

6.	Comment peut-on aider les autres ?	How can we help others?
	On peut	We can…
	Acheter des produits issus du commerce équitable	Buy fair trade products
	Collecter des fonds	Fundraise
	Donner de l'argent / des vêtements	Donate money /clothes
	Travailler comme bénévolat	Work as volunteer
	Visiter les boutiques de charité	Visit charity shops
	Utiliser les magasins d'occasion	Use second hand shops
	Aider les ONG	Help NGOs (non governmental organisation = charity)
	Une association caritative	Charity

5. Qu'est-ce qu'ils doivent faire?	What do they have to do?
Les enfants doivent	**Children must / have to**
Faire du travail manuel	**Do manual work**
Aider à la maison	**Help at home**
Gagner de l'argent	**Earn money**
Chercher de l'eau	**Look for water**
Recolter les fruits	**Harvest fruit**

What to include in your writing	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

Spanish - El medioambiente

1 ¿Qué problemas medioambientales hay?	What environmental problems are there?
(No) hay	There is/are (no)
Mucha/o/s	A lot of
Demasiada/o/s	Too much
Mucho tráfico	A lot of traffic
Demasiado plástico	Too much plastic
Mucho ruido	Lots of noise
Demasiado embalaje	Too much packaging
Muchos contenedores	Lots of bins
Muchos espacios verdes	Lots of green spaces
Demasiada contaminación	Too much pollution
Mucha basura	Lots of rubbish
Es un desastre	It is a disaster
¡Qué lastima!	What a shame
Desafortunadamente	Unfortunately

3 ¿Qué se puede hacer?	What can we do/be done?
Se puede	We can
Se podría	We could
Se debería	We shoud
Se debe / hay que	We must
Usar el transporte público	Use public transport
Reciclar la basura	Recycle rubbish
Reusar las bolsas	Reuse bags
Reducir el consumo de agua	Reduce the consumption of water
Ahorrar	Save (as in save up, not to rescue or salvage)
Apagar la luz	Turn the light off
Desenchufar los aparatos eléctri-cos	Unplug electrical devices

What to include in your writing	
C	Connectives
O	Opinions
R	Reasons
N	Negatives
E	Extra detail
T	Time expressions
T	Tenses
I	Intensifiers
	Masculine
	Feminine
	Plural

2 ¿Qué problemas había antes ?	What problems were there before?
Antes	Before
En el pasado	In the past
Había	There was
Estaba	It was
Era	It was

Más	More
Menos	Less

Tráfico	Traffic
Contamina-ción	Pollution
Edificios	Buildings
Gente	People

Sucio	Dirty
Limpio	Clean

Animado	Lively
Peligroso	Dangerous

Que	Than
Ahora	Now

4 ¿Cuándo?	When?
Después del insti	After school
Normalmente	Normally
Nunca	Never
Siempre	Always
A veces	Sometimes
Los lunes	On Mondays
Los martes	On Tuesdays
Los miércoles	On Wednesdays
Los jueves	On Thursdays
Los viernes	On Fridays
Los sábados	On Saturdays
Los domingos	On Sundays

Spanish - El medioambiente

5 ¿Qué derechos tienen los niños?	What rights do children have?
Tienen	They have
Tienen derecho a	They have the right to
Jugar	Play
La libertad (de expresión)	Freedom (of speech)
La educación	Education
La securidad	To security
Vivir en paz	To live in peace
Ser feliz	To be happy
Lo que es	Which is
Lo que es justo	Which is fair
Lo que es normal	Which is normal

6 ¿Cómo podemos ayudar a otros?	How can we help others?
Se puede	We can…
Comprar productos de comecio justo	Buy fair trade products
Recaudar fondos	Fundraise
Donar dinero y ropa	Donate money /clothes
Trabajar de voluntaria/o	Work as volunteer
Visitar las tiendas benéficas	Visit charity shops
Ir a las tiendas de segunda mano	To go to second hand shops
ONG	NGO (non gouvernemental organisation = charity)
Asociación de ayuda (al refugiado, a los animales, a la infancia…)	Charity helping (refugees, animals, children…)
Porque vale la pena	Because it's worth it

	7 ¿Que tienen que hacer en ciertos paises?	What do they have to do in some countries?
	Hay que + infinitive	You have to
	Tienen que	They have to
	Trabajar	Work
	Ayudar en casa	Help at home
	Ganar dinero	Earn money
	Estudiar	Study
	Llevar	Wear
	Me parece que	I think that
	Es injusto / no es justo	It's unjust / it is not fair
	Es inaceptable	It is inacceptable

Opinions	
En mi opinión	In my opinion
Desde mi punto de vista	From my point of view
Es muy fácil	It's very easy
Es muy importante	It's very important
No es complicado	It's not complicated

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Dance - Year 9

AURAL SETTING	
Song	A piece of music with someone singing lyrics
Instrumental	A piece of music which has no sung or spoken words.
Orchestral	A piece of music performed by a full orchestra
Spoken Word	The use of a speech/poem/story spoken out loud (this could be over music)
Silence	No audible sound
Natural Sound	Use of sounds created by nature (birdsong, wolf howl, rain etc
Found Sound	A 'non-musical' sound used creatively in a piece of music
Body Percussion	Using the human body to create percussive sounds

CHOREOGRAPHIC DEVICES	
MOTIF & DEVELOPMENT	A movement phrase encapsulating an idea that is repeated and developed using relationships and choreographic devices throughout the dance.
REPETITION	Performing the same action or phrase again.
CONTRAST	Movements or shapes that have nothing in common.
HIGHLIGHTS	Important moments of a dance.
CLIMAX	The most significant moment of the dance.
MANIPULATION OF NUMBER	How the number of dancers in a group is used.
UNISON & CANON	A combination of two or more dancers performing the same movement at the same time and same movements overlapping in time.
FRAGMENTATION	Use of parts of a phrase or motif.
RETROGRADE	Reversing a movement phrase.

RELATIONSHIPS	
LEAD & FOLLOW	When one dancer begins a phrase of movement and a second dancer or group of dancers repeat the phrase after the lead dancer.
MIRRORING	When two or more dancers perform the same phrase of movement on the opposite side, as if a reflection of each other.
ACTION & REACTION	One/Group of Dancer/s performs an action or series of actions and another dancer/dancers perform a different action in response.
ACCUMULATION	When a dancer performs a series of movements and others join in at different times until all perform in unison.
COMPLIMENT & CONTRAST	Perform actions or shapes that are similar to but not exactly the same as another dancer's followed by movements or shapes that have nothing in common (or vice versa).
COUNTERPOINT	When dancers perform different phrases simultaneously
CONTACT	When two or more dancers perform whilst physically connected to each other.
FORMATIONS	Shapes or patterns created in space by dancers

Dance - Year 9

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Dance - Year 9

Benefits of warming up
Prevents injury
Prepares the mind
Prepares the body

Physical changes in the body during the warm-up
Increase in body temperature, heart rate and breathing rate.
Increased elasticity of the muscles, tendons and ligaments.
Increased Production of Synovial fluid (lubricant in the joints)
Messages travel faster through the nerves between the muscles and the brain.

Benefits of stretching
Increases the range of motion in the body, increases the athletic performance of the body, increases the blood flow to the muscles making them work more efficiently and reduces the risk of injury.

Warming Up structure

PULSE RAISER	This section increases the heart rate by gradually increasing the amount of energy the dancer is using.	Marching, Jogging, High-Knees, Jumping, Skipping, Walking Running, Burpees, Heel-Kicks, Sprinting
JOINT MOBILISATION	This section is about using the full range of movement in each of your joints. This is increased gradually to allow the muscles, tendons and ligaments to relax.	Head-turns, arm/ankle/wrist circles, open/close hips, leg swings, rolling up/down through the spine, upper body twisting/tilting shoulder rolls
STRETCHING	This section is designed to extend each muscle to its full length, allowing the dancer a better range of movement and preventing muscles from 'pulling' during the lesson.	Legs- Touching Toes , lunges, calf stretches, hurdle stretch, Downward dog, plie in 2nd Back – Bridge, touching toes, cobra stretch, cat stretch.

Physical Skills Development

STRENGTH	Muscular power.	Crunches – Straight, twisting, side, Press-ups – wide, narrow, full, knees, Plank – From elbows, hands, up and down, side etc, Lunges - with jumps, without jumps, Squats – with jumps, without jumps	To increase the difficulty of skills exercises, you can: • Increase the length of time • Increase the number of repetitions • Increase the number of sets • Add weight or resistance • Increase intensity/speed • Reduce rest period between sets • Combine exercises
COORDINATION	The efficient combination of body parts.	Any combination of body parts moving in different ways at the same time.	
STAMINA	The ability to maintain physical and mental energy over long periods of time	Jogging – high knees, heel kicks, Jumping – Star, tuck, straight, Burpees, Squat thrusts, Skipping – free or with rope, Galloping or side steps	
ISOLATION	An independent movement of a part of the body.	Rib isolations, head turns, shoulder shrugs, wrist flips, hip circles etc	
Balance	A steady or held position achieved by the even distribution of weight.	Rises on one foot, arabesque, pivots, developpes, Ronde de jambes a l'aire.	

Golden Rules of Stretching
•Warm-up first
•Avoid pain
•Stretch slowly
•Stretch the correct muscle
•Only work the necessary joint

Cool Down – A series of activities which gradually reduce the heart rate at the end of an exercise period. It typically has 3 parts.

•Exercising at a very reduced intensity and diaphragmatic breathing exercises (deep breathing using the diaphragm)
•Low-intensity, long-hold static stretching (very gentle self massage or foam rolling is also helpful)
•Re-hydrate and re-fuel.

Dance - Year 9

How to identify Improvements

- Get a friend/teacher to watch you dance
- Watch yourself in the mirror
- Get a friend to film you and watch it back.

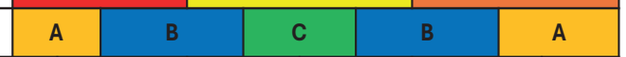
Safe Practice

Appropriate Dancewear	Safe Execution	General Practice
Freedom of movement & modesty	Hands First	Warm-up & Cool-down
Hair tied up	Soft knees	Stretch out
No jewellery	Build up speed slowly	Nutrition
Bare feet - NO SOCKS	Use mats when learning lifts etc	Hydration

Developing a Motif

Change the Space	Add in actions	Change Dynamics	Fragmentation	Retrograde	Repetition	Change the Order
• Level • Direction • Size • Shape • Floor pattern	• Jump • Roll • Travel • Turn • Stillness • fall	• Speed • Weight • Energy • Flow • Accent/stress	Break up the motif by only performing a small section of it, doing something new, then completing the motif.	Perform the Motif in reverse (back to front)	Repeating the whole motif or smaller sections	Mix up the order that the actions happen in.

Dance Structures

Binary (AB)	A dance with 2 clear sections with different themes OR dynamic qualities OR music	
Ternary (ABA1)	A dance with 3 clear sections. 2 with different themes OR dynamic qualities OR music and the 3rd is a repeat of the 1st with some developments.	
Arch (ABCBA)	A dance with 3 clear sections but the first 2 are repeated in reverse order.	
Rondo (ABACAD)	A dance that keeps returning to the original section after each new section.	
Narrative (Tells a story)	Think about a classic story arch. This is usually a seamless piece of dance.	
Episodic (Clear sections with different themes)	Each section has a new feel and is not connected to the previous sections.	

Key Terms for Performing	Definitions
Monologue	A long speech performed by a single actor in a play.
Duologue	A long section of a play performed by 2 actors
Split Staging	When a stage is split into 2 sections so 2 different things can happen at the same time
Audience Awareness	Being aware of how your audience in positioned and adapting your performance to it
Blocking	The movement and positioning of actors on stage
Character Analysis	An exploration of the traits, personality, and characteristics of a character within a story

Vocal Skills	Definition
Tone	The emotion heard in an actor's voice
Projection	Speaking in a way that is both loud but also clear
Volume	How loud or quiet an actor speaks
Pace	How fast or slow an actor speaks
Emphasis	Making a word(s) stand out in a sentence to change its meaning
Accent	Changing the way your voice sounds to reflect a certain dialect or region

Physical Skills	Definiton
Posture	The position of an actor's body when standing or sitting
Gestures	A movement of the head, hand or other body part to express meaning
Movement	Where the actors move on the stage and what this communicates to the audience
Gait	The attitude and feelings shown by how actor walks and moves in the space.
Body Language	Using your body to show emotion and feelings
Facial Expressions	Using your face to show emotion and feelings

Key Terms for Performing	Definition
Collaboration	The act of producing or making something together as a group
Devising	A group collaboration in response to a stimulus leading to the creation of an original performance
Chair Duets	A physical theatre performance on chairs with a partner that demonstrates relationship
Audience Awareness	Being aware of how your audience in positioned and adapting your performance to it
Essence Machine	A movement sequence that shows the key movements in a situation
Stimulus	A stimulus is a starting point or trigger which generates ideas – Such as a painting, poem or picture

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Drama - Year 9

Physical Skills	
Exaggeration	Making a movement larger than normal to increase dramatic effect
Proxemics	The physical space between you and another actor on stage
Eye Contact	Looking someone directly in the eyes
Audience Awareness	Making sure you are facing the audience so they can see what you are doing
Body Language	How you use your body to show how your character is feeling

Vocal Skills	
Tone	The emotion used alongside words to show how the character is feeling
Volume	How loud or quiet a character is speaking
Projection	The energy used whilst speaking to ensure that you can be heard from far distances
Emphasis	Stressing a particular word or phrase to indicate importance

Topic Knowledge	
Steven Berkoff	A British playwright who specialises in exaggeration and heightened theatre
Playwright	Someone who writes and distributes plays
Political Theatre	A type of theatre aimed to challenge societal norms to create change
Building Tension	Evoking emotions such as worry, anxiety, fear and stress
Antagonist	Being actively hostile to someone or something

Character Skills	
Facial Expressions	The way the face moves to convey an emotional state
Hand Gestures	A movement of the hand to express meaning
Gait	the attitudes conveyed by an actor which impacts the way they walk
Pace	The speed of an actors movements

Music Year 9

Tempo Italian terms	
Tempo	The speed of the music
Adagio	Slowly
Andante	At a walking pace
Allegro	Quite fast
Vivace	Quick and lively
Accelerando	Gradually speeding up
Rallentando	Gradually slowing down

Musicals Key Terms	
Jukebox Musical	A musical made up of existing songs, usually from one band or artist or one style or genre.
Vamp	A repeated phrase of music that bridges dialogue with a song. Usually played under the speaking as an introduction to the next musical number.
Pedal	A long held notes that creates tension and suspense, can be used for the same purpose as a vamp.
Animated Musical	A musical that is based around a story that uses animation or live action.
Modulation	A key change. When a piece of music changes all the pitches so there is a new tonic.
Mega Musical	A large scale musical that became popular in the 80s. Uses large scale set designs and lighting.
Compound Time Signatures	A time signature that is created by using triplet feel. Examples are 6/8, 9/8, 12/8.
Lin Manuel Miranda	Composer of Hamilton
Hip hop	Style of music that mixes loops, samples and rapping.
Vocal Inflections	Small flicks in the voice that move a note around to create more emphasis on particular lyrics or words.

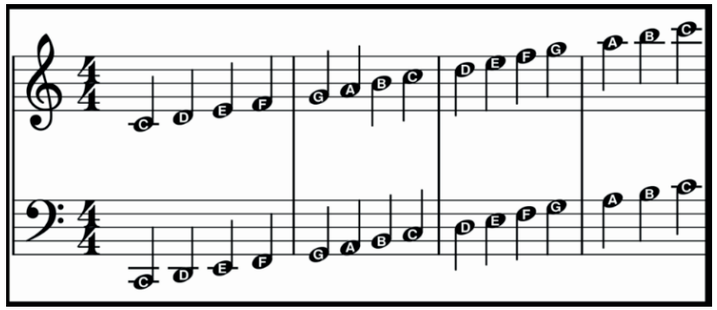
Elements of music	
Term	**Definition**
Dynamics	How loud or quiet the music is
Duration	The length of the notes
Harmony	The accompaniment to the melody
Melody	The tune
Pitch	How high or low a sound is
Rhythm	The pattern of beats in a piece of music
Sonority	The instrument's tone colour or sound FX used
Texture	The layers in a piece of music

Film music key terms	
Diegetic	Music that is part of the action. The characters can hear the music.
Non-diegetic	Music that is not part of the action, the characters in the film cannot hear it. It is just for the audience.
Dissonant chords	Chords that are clashing in sound and are neither major or minor in tonality. Used to create a sense of unease.
Pedal	A long held note or chord that is used to create tension. It means that the harmony is static.
Ostinato	A short repeating pattern used to create tension or accompany a repeated movement on screen eg: running or cycling.
Underscore	Where the music is played at the same time as the action/ dialogue.
Stab Chords	Dissonant chords that are played staccato and off beat to mirror on screen action.
Leitmotif	A short musical idea that represents a character in a film score.
Tremolo	An instrument playing a shaking or quivering effect, usually seen on string instruments
Pizzicato	String instruments are plucked rather than bowed (arco) to create short notes.
Chromatic	Notes moving by semitone either up or down in pitch.
Perfect 5th	A leap in pitch of 5 notes.

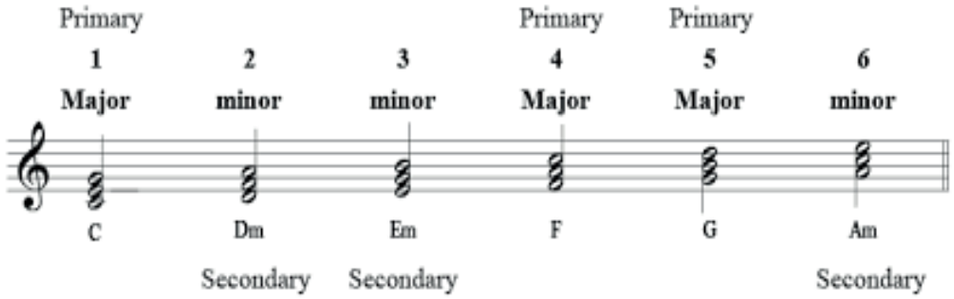
Music Year 9

Minimalism key terms	
Cell	Short musical ideas used and developed as the basis of minimalism composing techniques
Phase Shifting	Moving a musical idea forward by a beat or beats to create the feeling of an echo
Inversion	A musical idea that is flipped upside down
Retrograde	A musical idea that is reversed
Note Addition	Adding notes to a musical cell
Note Diminution	Removing notes from a musical cell

Treble and Bass Clef Notation



Primary and secondary chords



Jazz and Blues key terms	
Term	**Definition**
Blues	A style of music originating at the beginning of the 20th century in the southern states of America.
Call and Response	An instrument plays a musical idea and another instrument plays something back similar.
Syncopation	Off-beat rhythms.
Blues Scale	A scale used in Blues and Jazz music, contains flattened notes.
Improvisation	Musical ideas made up on the spot.
Extension Chords	Triads with added notes e.g.: 9ths, 7ths 13ths.
32 bar Song Structure	A structure used in Jazz and Blues music: AABA
Swing Rhythm	Rhythm that sounds like a dotted rhythm used in Jazz music.

Music Technology and EDM key terms	
MIDI	Musical Instrument Digital Interface, is a technical standard that allows electronic musical instruments, computers, and other devices to communicate and interact with each other.
DAW	Digital Audio Workstation, the software that is used to create electronic music.
Sequence	To draw in pitches and note lengths into a DAW to create music.
Sample	A short snippet or music or sound that is reused and inserted into a new piece of computer generated music. Sometimes this sample is 'treated' by being changed in some way so it sounds different from the original.
Loop	A short musical idea such as a drum pattern that is then copy and pasted for a section / sections of music
Panning	Moving the sound from left to right or right to left speakers. Positioning each track in the 'mix' from left to right.
Synthesiser	A musical instrument that creates sound electronically.
EQ	EQ (equalization) in music tech is the process of adjusting the levels of different frequencies in an audio signal to shape the overall sound.

Physical Education - Year 9

Curriculum	
PE Vision	To develop competent and confident performers who continue to maintain healthy active lives beyond their academic career.
Competence	The ability to do something successfully or efficiently.
Confidence	Feelings / belief in abilities and qualities.
Fit to Lead	Develop communication, cooperation, confidence, leadership and understanding of tactics. Activities Studied- Badminton, Netball
Fit to Perform	Develop actions, skills and techniques. Activities Studied- Handball, Basketball
Fit for Life	The importance of a balanced, healthy, active lifestyle. Activities Studied- Health Related Fitness (HRF)

Keywords	
SMART targets	Help you set goals that are specific, measurable, achievable, relevant, and time-bound.
Extrinsic	An extrinsic risk of injury is a risk caused by external factors, such as the environment, equipment, clothing, or actions of other players.
Intrinsic	An intrinsic risk of injury is a risk that comes from inside the body, such as poor fitness, muscle imbalance, lack of flexibility, or previous injuries.
Psychological Factors	Things that affect how your mind works, like confidence, motivation, focus, or anxiety.
Physiological Factors	Things that affect how your body works, like fitness, strength, flexibility, or tiredness.
Nutrition	Affects your energy levels, recovery, and ability to train or play sport effectively.
Progressive overload	When you slowly increase how hard you train to get fitter or stronger.

Warm-up	
Warm- Up	Simple exercise routine that is performed before a workout session. Exercises to prepare the body for exercise so that the chances of injury are reduced
Pulse Raiser	The starting activity of a warm-up. It consists of exercises that slowly increase the heart rate and body temperature. This is performed at low intensity
Pulse Raiser Activity	Gentle jog, skipping. Jog, weave, twist, turn. (If the activity has another way of moving apart from running, use that form of movement e.g., swimmers = slow swim, cyclists = short bike ride).
Dynamic Stretching	Involves stretching whilst moving or taking the joint though the full range of movement. This is performed at medium intensity
Dynamic Stretching activities	High knees, heel flicks, arm rotations, skipping, lunges, walking hamstring stretches (feed the chickens), side steps
Game Related/Skill rehearsal	The last phase of a warm-up. Practicing the actions that are about to be used in the game or activity. This is performed at high intensity
Game related/skill rehearsal activities	Finger tag, stuck in the mud, splat, end-zone, passing drills

Warm-up Benefits	
Increase muscle temperature	Help the muscles to be more elastic and flexible, reducing the risk of injury.
Increase heart rate	Help to speed delivery of oxygen to working muscles.
Increase flexibility	Stretching will help to increase how much movement can happen at joints
Increase speed of muscle contraction	Help the muscles to work quicker and reduce reaction time.
Increase motivation	Thinking about the task will increase the performers drive to perform well
Increase concentration	Thinking about the task will help the performer to focus and concentrate on the activity
Increase confidence	Practicing skills in a warm-up will improve confidence and speed up reaction time.

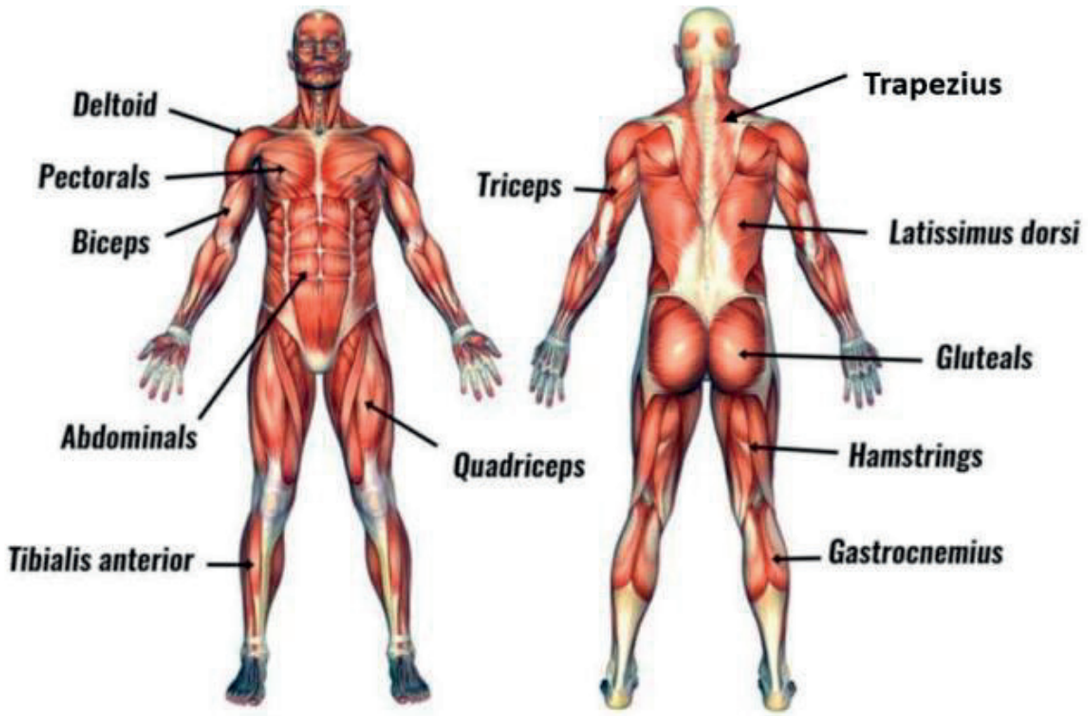
Cool Down	
Cool down	Easy exercise done after an activity to allow the body to return to a resting condition
Pulse lowering (first part of cool-down)	Gradually lowering the heart rate and body temperature. A slow walk or jog
Stretching (second part of cool-down)	Return muscles that have been used back to their normal length

Components of fitness and Principles of training	
Body Composition	The percentage of body weight which is fat.
Cardiovascular Fitness	The ability of the heart, lungs and blood to transport oxygen.
Flexibility	The range of motion at a joint.
Muscular Endurance	The ability to use voluntary muscles repeatedly without tiring.
Strength	The amount of force a muscle can exert against a resistance.
Agility	The ability to change the position of the body quickly and control the movement.
Balance	The ability to maintain the body's centre of mass above the base of support.
Coordination	The ability to use two or more body parts together.
Power	The ability to perform strength performances quickly.
Reaction time	The time taken to respond to a stimulus.
Speed	The ability to put body parts into motion quickly.
Specificity	The training must be relevant to the individual by tailoring the training towards their sport, position or muscles groups.
Progressive overload	Gradually increase how often, how hard, how long, or what type of exercise you do to keep challenging your body and avoid performance plateaus or injuries.
FITT Principle	**Frequency**: Train more often. **Intensity**: Train harder (lift heavier weights or increase heart rate). **Time**: Train longer or reduce rest times. **Type**: Mix different types of exercises.
Individual needs	Tailor training to each athlete's age, gender, injury status, and fitness level to keep them motivated and successful.
Rest and recovery	Physical improvements happen during rest. Ensure enough rest, good sleep, and proper nutrition, including protein, to repair muscles.
Reversibility	If training stops or is reduced, fitness levels drop. Keep training consistently to stay motivated and avoid losing progress.
Overtraining	Without enough rest, the body can't adapt, leading to decreased fitness and higher risk of illness or injury.

Nutrition	Function	Sources	In Sport
Nutrition	Substances in food that the body needs to grow, stay healthy, and function properly.		
Balanced Diet	A diet that includes the right amounts of all the necessary nutrients from different food groups.		A balanced diet helps an athlete have the energy to play well by eating lots of different healthy foods.
Vitamins & Minerals	Essential nutrients that help keep the body healthy and support different body functions.	leafy greens, citrus fruits, eggs, fish, and beans	An athlete eats a variety of fruits and vegetables to get vitamins and minerals that help their muscles and bones stay strong.
Fats & Oils	Foods that give you energy and help keep your body warm.	Butter, olive oil, nuts, avocado	A basketball player eats avocado and nuts for healthy fats that give long-lasting energy.
Hydration	Drinking enough water to keep your body working properly.	Water, fruit juice and Tea	Helps keep your body cool, gives you energy, helps your muscles work properly and replaces fluid lost from sweat.
Protein	Nutrients that help the muscles grow and repair itself, found in meat, eggs, beans, and nuts.	Chicken, fish, eggs, beans, lentils	A gymnast eats chicken and beans after training to help their muscles grow and recover.

Carbohydrates	Foods that give you energy, like bread and fruit.	Bread, rice, pasta, potatoes	A runner eats pasta the night before a race to get lots of energy for running.
Vegetables	They give you vitamins, help you stay strong, and keep your body working well.	Apples, bananas, carrots, broccoli	A football player eats a banana and some salad before a match to get vitamins and stay healthy.
Dairy	help keep your bones strong.	Milk, cheese, yogurt	A swimmer drinks milk after practice to help build strong bones and teeth.

Muscles	


Deltoid
Pectorals
Biceps
Abdominals
Tibialis anterior
Quadriceps
Trapezius
Triceps
Latissimus dorsi
Gluteals
Hamstrings
Gastrocnemius

Science—Reactivity

Key terms	
Pure metal	A pure metal is made up of one type of metal only.
Alloy	An alloy is made of a metal and another metal or non-metal mixture together e.g. steel is an
Reactants	The chemicals you start with in a chemical reaction.
Products	The chemicals you make during a chemical reaction
Properties of metals	Shiny, solid (except mercury), high density, strong, malleable, conducts heat, conducts electricity, sonorous
Malleable	Able to be hammered or pressed into shape without breaking or cracking.
Sonorous	Capable of producing a deep or ringing sound.
Base	A base is a substance that can react with acids and neutralise them.
Alkali	A soluble base
Relative formula mass	Is calculated by adding up the atomic masses of all the atoms in a compound.
Displacement	A chemical reaction in which a more reactive element displaces (pushes out) a less reactive element from a compound.
Oxidation	The addition of oxygen to a molecule
Reduction	The removal of oxygen from a molecule
Neutralisation	When an acid reacts with a base to produce a salt an water (neutral solution)

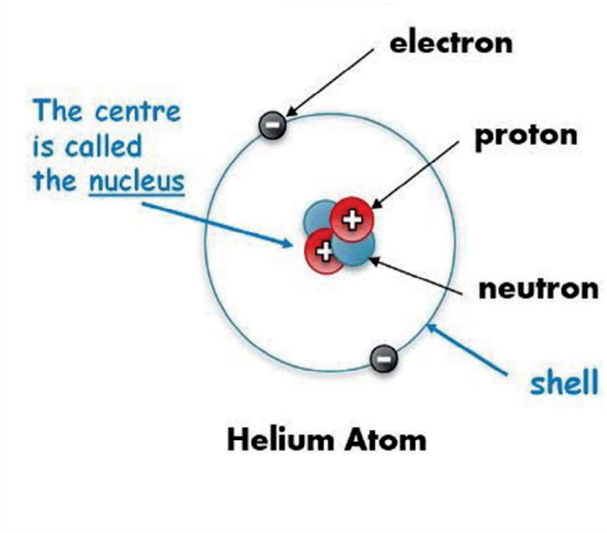
Chemical tests	
Hydrogen	Place a lit splint in a test tube containing the gas. If the gas I hydrogen there will be a squeaky
Carbon dioxide	Bubble the gas through limewater, if the limewater turns milky the gas is carbon dioxide.

Key terms	
Atom	The smallest part of an atom
Element	A substance made of only one type of atom
Compound	A substance made of two or more types of atom chemically bonded
Ion	A charged particle
Positive ion	An atom that has lost electrons, these are
Negative ion	An atom that has gained electrons, these are always non-metals
Ionic bonding	A bond formed between a metal and a non-metal atom, formed by the transfer of electrons from the metal to the non-metal.

General equations
Metal + acid —> salt + hydrogen
Metal oxide + acid —> salt + water
Metal carbonate + acid —> salt + water + carbon dioxide
Metal hydroxide + acid —> salt + water

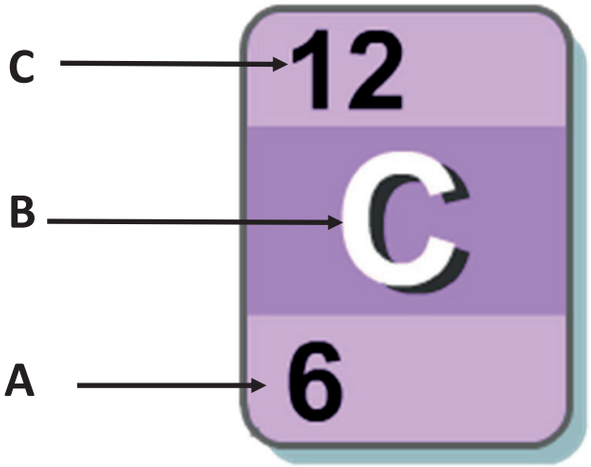
Rules for naming salts
Hydrochloric acid —> chloride
Sulfuric acid —> sulfate
Nitric acid —> nitrate

Subatomic particles			
Name of particle	Relative mass	Relative charge	Location in the atom
Proton	1	+1	Nucleus
Neutron	1	0	Nucleus
Electron	Very small	-1	Electron shells/energy levels



Extracting metals	
Ore	A naturally occurring solid material from which a metal or valuable mineral can be extracted profitably.
Reduction using carbon	carbon displaces the metal from the compound, and removes the oxygen from the oxide.
Electrolysis	Splitting an ionic compound using electricity.

Using the periodic table	
A	Atomic number, number of protons
B	Element symbol
C	Relative atomic mass, number of protons and



Reactivity series

The **reactivity series** is a list of elements in order of their reactivity:

Most reactive

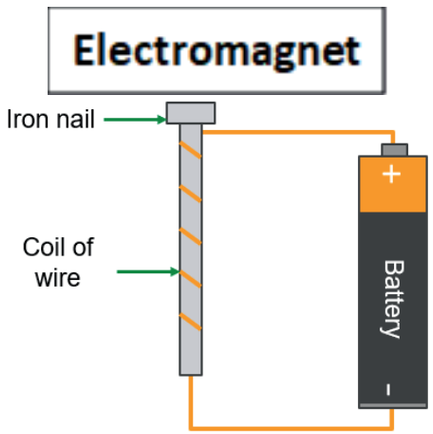
Potassium
Sodium
Calcium
Magnesium
Aluminium
Carbon
Zinc
Iron
Tin
Lead
Hydrogen
Copper
Silver
Gold
Platinum

Least reactive

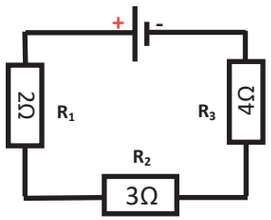
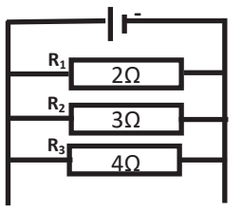
Science - Electricity

Key terms	
Key words	**Definition**
Current	The flow of electrical charge per second
Electron	Subatomic particle, with a negative charge
Potential difference	Tells us the amount of energy being carried by the electrons and the amount of energy they are transferring to the components it is measured in volts (V) using a Voltmeter
Resistance	Resistance opposes the flow of current in a circuit. Measure in Ohms (Ω)
Factors affecting resistance in a wire	• as the length increases the resistance increases • as the cross-sectional area increases, resistance decreases • as the temperature increases the resistance increases • the material of the component effects the resistance
Conductor	An electrical conductor is a material which allows electrons to flow
Insulator	Material that does not allow electrons to flow through it easily. It has a
Series circuit	Circuit with only one branch
Parallel circuit	Circuit with multiple branches

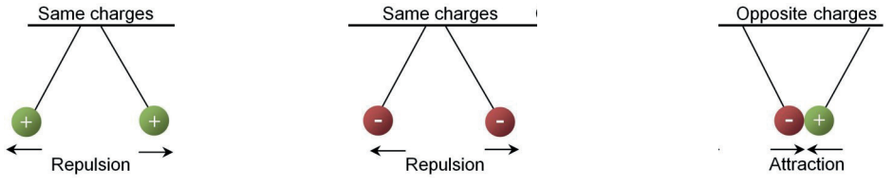
Electromagnets	
Solenoid	A coil of wire carrying an electric current to create a magnetic field
Electromagnet	A magnet made by wrapping a coil of wire around an iron bar and
Increasing the strength of an electromagnet	• use an iron core • increase the number of coils • increase the current



Symbol	Component
	Cell
	Battery
	Voltmeter
	Ammeter
	Lamp
	Resistor
	Switch
	Variable Resistor

V, I and R in Series and Parallel			
Components connected in...	**Current**	**Potential Difference**	**Resistance**
Series - one branch 	In a series circuit, the current is the **same** in all parts of the circuit	The potential difference is **shared** between the components	The **more resistors**, the **greater** the resistance. The total resistance of two components is the sum of the resistance of each component. $R_{total} = R_1 + R_2 + R_3$
Parallel - multiple branches 	The current in a parallel circuit is **shared** between the branches	In a parallel circuit, the potential difference across each branch is the **same** as the potential difference of the cells	Total resistance is less than the smallest resistance of R_1 **and** R_2**and** R_3

Static Electricity	
Static electricity	Static electricity is caused when electrons are transferred from one insulator to another by friction
Static charges	• If an object gains electrons, it becomes negatively charged • if an object loses electrons, it becomes positively charged • opposite charges attract, like charges repel



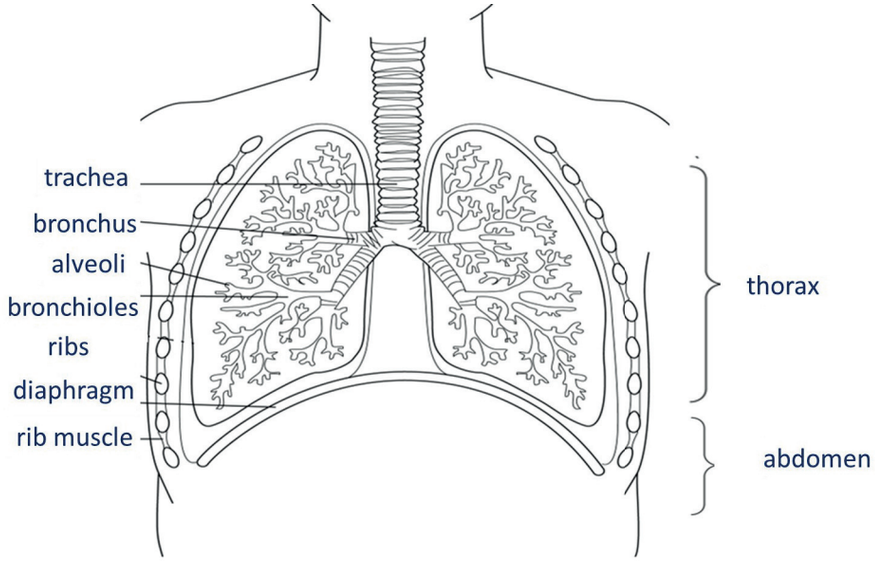
Equations
Potential difference (V) = current (A) x resistance (Ω) (V = IR)
Power (W) = current (A) x potential difference (V) (P = IV)

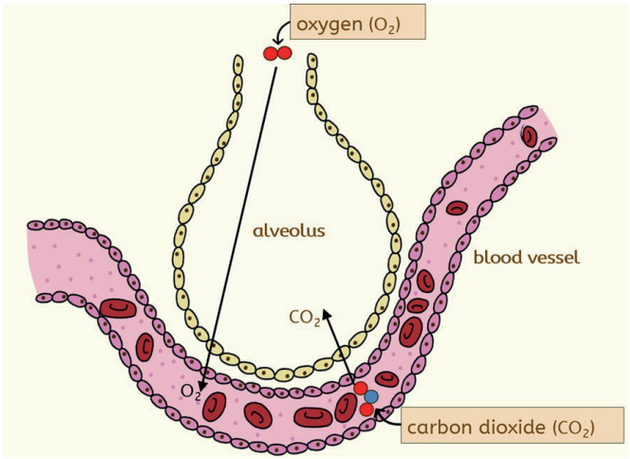
Science - Energetics and rates

Key terms	
Exothermic reactions	Releases energy to the surroundings resulting in a rise in temperature
Endothermic reactions	Takes in energy from the surroundings; resulting in a drop in temperature
Rate of reaction	How fast a chemical reaction happens. It depends on how often particles collide with enough energy (called activation energy)
How we can increase the rate of reaction	**Higher concentration** – this means there are more particles in the same volume and therefore more frequent collisions. **Greater surface area** – this means more particles are exposed on the surface and therefore there are more frequent collisions. **Use a catalyst** – lowers the activation energy needed for a successful collision.
How we can measure rate of reaction	Time for a reactant to disappear, Time for a colour change, Count bubbles in a set time, Measure gas volume over time, Measure mass change over time
Conservation of mass	Atoms are not destroyed nor created during chemical reactions, so in any reaction: (Total mass of reactants = total mass of products)
Identification tests	**Limewater**: Turns **cloudy** when carbon dioxide is bubbled through. **Glowing splint**: **Relights** in oxygen **Cobalt chloride paper**: Turns **blue to pink** with water
Catalyst	Speed up reactions and are not used up during a reaction. They reduce the amount of energy needed to start a reaction (Activation Energy)
Benefits of Catalysts	Save money and cut the use of fossil fuels
Examples of Catalysts	Car Exhaust—reduce amount of toxic gases released and contain Platinum and Rhodium
Oxidation	A substance that gains Oxygens; for example metals and non-metals can be oxidised.
Oxidation metal example	Magnesium + Oxygen—> Magnesium Oxide $2Mg + O_2 \rightarrow 2MgO$
Oxidation non-metal example	Carbon + Oxygen—> Carbon Dioxide $C + O_2 \rightarrow CO_2$
Complete Combustion	Fuel (Hydrocarbon) + Plenty of Oxygen produces Carbon Dioxide ($C0_2$) Water Vapour (H_20) resulting in Maximum energy released for example Methane—$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
Incomplete Combustion	Not enough oxygen and produces Carbon Monoxide (CO) toxic gas, Carbon (Soot) Causes breathing issues, Water Vapour and Carbon Dioxide Still pro-
Thermal Decomposition	Breaking down a substance using heat and produces two or more products. It is also an endothermic reaction (Required constant heat.
Thermal Decomposition Equation	Metal carbonate —> Metal Oxide + Carbon Dioxide

Science—Biological processes and systems

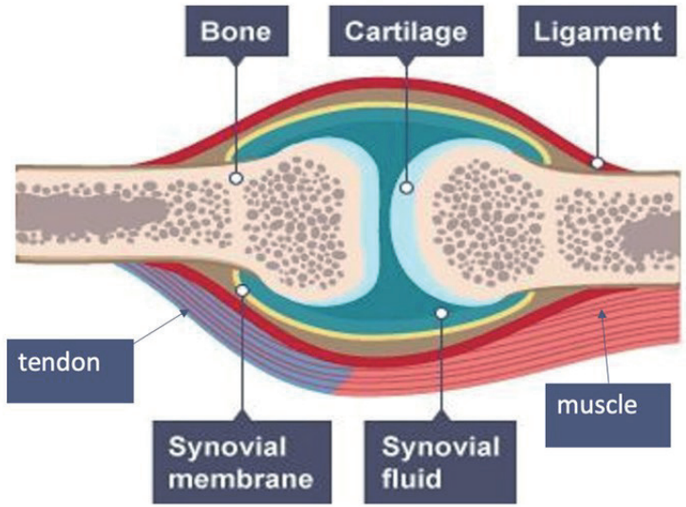
Key terms	Key Definition
Gas Exchange	Oxygen is needed for respiration Oxygen diffuses into the blood, and Carbon Dioxide diffuses out of the blood
Respiratory System Pathway	Mouth —>Trachea—>Bronchi (One in each lung)—>Bronchioles (Small tubes)—>Alveoli (Air sacs)
Alveoli	Increased lung surface area for efficient gas exchange, Moist, one cell thick wall, lots of tiny blood vessels called capillaries
Aerobic Respiration	Used for Growth, Repair, movement and temperature control. Happens in the mitochondria of **ALL** living cells and requires OXYGEN and releases energy from glcose
Aerobic respiration equation	Glucose + Oxygen —> Carbon Dioxide + Water (+ Energy)
Anaerobic Respiration in humans	Glucose —> Lactic Acid
Lactic Acid	Builds up in muscles and causes pain, cramp and fatigue
Fermentation (In yeast)	Glucose —> Ethanol + Carbon Dioxide Happens in yeast and some microbes
Ethanol	Used in beer and wine
Ventilation	Breathing; involved ribs, intercostal muscles and Diaphragm
Inhale	Breathing in
Exhale	Breathing out
Effects of Exercise on breathing	Increases breathing rate and Tidal Volume (Air per breath)
Benefits of regular exercise	Strengthens Diaphragm and Intercoastal Muscles—Increases vital capacity

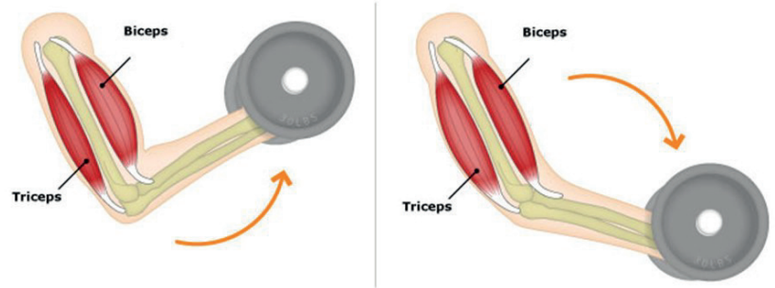




Science—Biological processes and systems

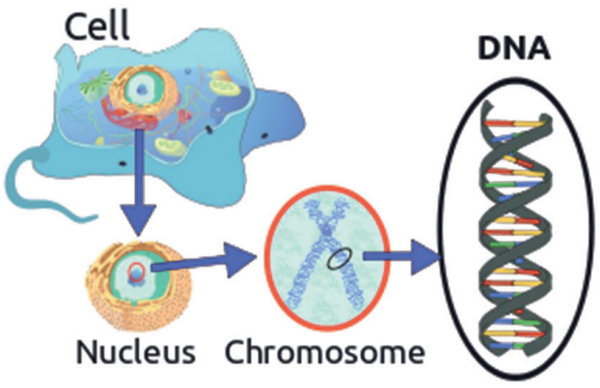
Key terms	Definitely
Joints	Allows parts of the skeleton to move. Most joints in the body are Synovial joints
Cartilage	Covers the ends of bones—smooth and tough Without cartilage, bones would rub and weat down—this can cause arthritis
Ligaments	Holds bones together
Synovial fluid	Keeps the joints lubricate
Skeleton	Bone is a living tissue with a blood supply. It can be broken down and rebuilt. Bones can be repaired themselves if broken. With calcium and other minerals make bones strong but slightly flexible.
Support	Holds the body upright (Backbone supports posture)
Protection	Skull Protects the brain, Ribcage protects heart and lungs and backbone protects spinal cord
Movement	Joints link bones, muscles pull on bones to create movement. Some joints are fixed and other are flexible
Making blood cells	Bone marrow makes: Red blood cells , White blood cells
Muscle	A tissue that contracts to produce movement by exerting force on bones.
Biceps	A muscle in the upper arm that contracts to lift the forearm.
Triceps	A muscle on the back of the upper arm that contracts to straighten the arm.
Biomechanics	The study of how muscles, bones, and joints work together to produce movement.
Antagonist muscles	Work in pairs. One muscle contracts the other relaxes for example Biceps and Triceps in the arm.

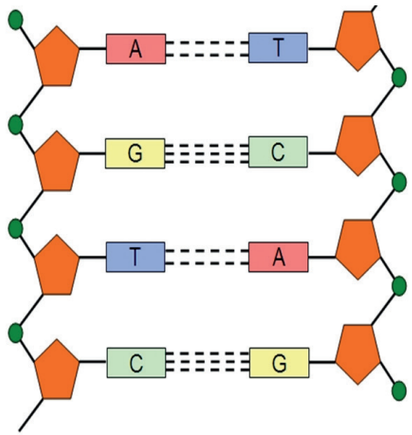




Science—Biological processes and systems

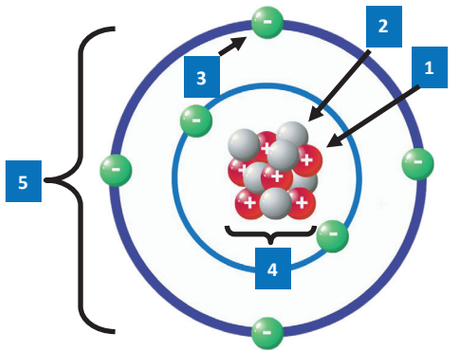
Key terms	Definition
Base Pair	A pair of nitrogenous bases that connect the complementary strands of DNA.
Bond	A chemical link that holds molecules together.
Chromosome	A coiled structure made of DNA, found in the nucleus of cells.
DNA	Deoxyribonucleic acid; the chemical that carries the genetic code.
Double Helix	The twisted ladder shape of the DNA molecule, made of two strands.
Gene	A section of DNA that controls part of a cell's chemistry (e.g. protein production).
Heredity	The passing of genetic information from one generation to the next.
Nucleus	The part of a cell that controls its activities and contains chromosomes.
Rosalind Franklin	Scientist who produced X-ray diffraction images of DNA.
Watson and Crick	Scientists who used Franklin's images to model the double helix structure of DNA.
Maurice Wilkins	Franklin's colleague who supported Watson and Crick's DNA model.
Genome	One complete set of an organism's chromosomes.
Gamete	A sex cell (sperm or egg) that contains half the number of chromosomes (23 in humans).





Key terms	Definition
Drugs	Substances that affect how the body works, include medicines and recreational drugs
Depressants	Slow down messages in the brain and nerves for example; Alcohol, Heroin and Solvents
Smoking	Smoking is very harmful to health. Smoke contains harmful substances such as Tar, Carbon Monoxide and Nicotine
Smoking effects on the lungs	Damages Cilia (tiny hairs), causes coughing and bronchitis
Tar	Causes lung, mouth, throat cancer, Damages Alveoli
Nicotine	Addictive substance—raises heart rate and blood pressure
Carbon Monoxide	Replaces oxygen in red blood cells leading to less oxygen being carried to the heart.
Asthma	A condition that affects the small airways in the lungs. Airways can become narrow, swollen and filled with musus, making it hard to breathe.
Symptoms of Asthma	Wheezing, Tightness of chest, Shortness of Breathe

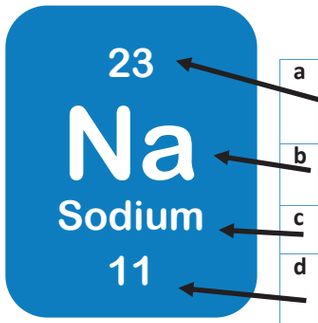
Science - C1 - Atomic structure and the Periodic table



	Name	Relative Mass	Relative Charge
1	Proton	1	+1
2	Neutron	1	0
3	Electron	very small	-1
4	Nucleus	A	+ Z
5	Atom	A	0

Term	Definition
Atom	A neutral particle consisting of protons, neutrons and electrons. Number of protons = number of electrons
Mass number, A	Total of number of protons and neutrons in the nucleus of an atom
Atomic number, Z	Number of protons in the nucleus of an atom; determines the identity of the element
Atomic radius	Distance from the centre of an atom's nucleus to the electrons (approx. 10^{-10}m or 0.1nm)
Isotopes	Atoms of the same element (i.e. same number of protons) with different number of neutrons
Nanometre	1x10^{-9}m = 0.001µm = 0.000 001mm = 0.000 000 001m
Nucleus	The positively charged centre of an atom made of protons and neutrons. Approximately 10 000 times smaller than the atom (approx.10^{-14}m)
Subatomic	Smaller than the size of an atom

23
Na



		Determined by....
a	Relative atomic mass	mean mass of nucleus taking into account relative abundance of isotopes
b	Element symbol	element name
c	Element name	number of protons
d	Atomic number	Number of protons

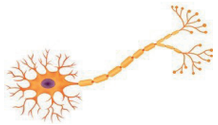
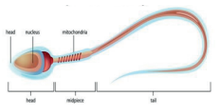
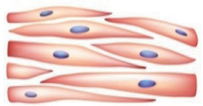
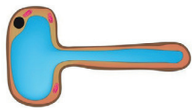
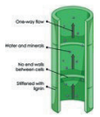
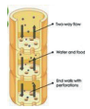
Term	Definition
Element	Substance that contains only one type of atom
Mixture	Two or more elements and/or compounds not chemically combined together
Compound	Contains two or more different elements chemically combined
Group	Columns on the periodic table, informs us of the number of electrons in the outer shell of the atom. Contain 'families' of elements with similar properties
Period	Rows on the periodic table, informs us of the number of electron shells in an atom
Reactants	The substances that take part in a chemical reaction
Products	The substances that are made in a chemical reaction
Electronic structure	Pattern of electrons in shells. Shells fill from the inside; 1st shell max 2, 2nd shell max 8, 3rd shell max 8, 4th shell max 2
Ion	An atom with an overall positive or negative charge due to the loss or gain of electrons

Method	For separating mixtures	Requirements	Example
Filtration	insoluble solids from liquids/solutions	Filter funnel, filter paper	Sand from water
Crystallisation	soluble solids from solvents	Heat energy for evaporation	Copper sulphate crystals from solution
Simple distillation	two liquids of different boiling points	Heat energy, condenser	Ethanol (alcohol) from water
Fractional distillation	many liquids of differing boiling points	Heat energy, condenser or fractionating column	Crude oil fractions
Chromatography	different coloured compounds	Solvent, chromatography paper	Pigments in ink/dye

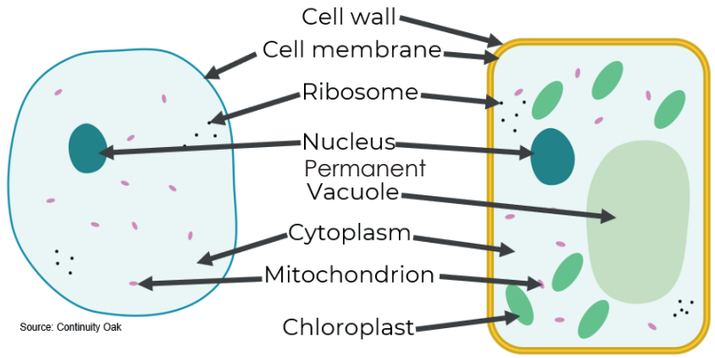
Scientist	Contribution
Rutherford	Disproved 'plum pudding' model. Replaced with 'Nuclear model' Atom mostly empty space, nucleus positive where almost all the mass is concentrated
Bohr	Modified the 'Nuclear' model: central nucleus with orbiting electrons at specific distances.
Chadwick	After the proton was discovered, provided experimental evidence for existence of neutrons.

Science - B1 - Cell Biology

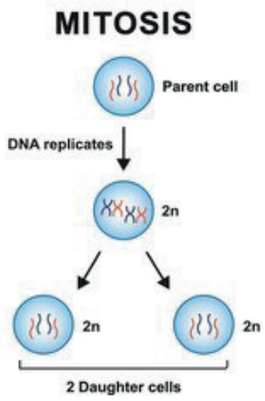
Key words	
DNA	The molecule that holds the genetic information in a cell
Plasmid	A small loop of DNA, only found in prokaryotic cells (bacteria)
Eukaryotic cell	DNA contained within nucleus (plant and animal)
Prokaryotic cell	DNA not contained in nucleus (bacteria)
Cell differentiation	Cells become specialised by developing different sub-cellular
Chromosomes	Found in nucleus of a cell, made of DNA. Usually found in pairs.

Specialised cells		
Specialised cell	**Image**	**How the structure relates to the function**
Nerve cell		Elongated axon to transmit electrical impulses over a distance; large dendrites; fatty sheath covering the axon for insulation, to speed up transmission
Sperm cell		Has a long tail to allow it to swim; contains many mitochondria to release lots of energy; streamlined head containing enzymes
Muscle cell		Lots of mitochondria to release energy for muscle contraction; elastic fibres to allow the muscle to contract and relax
Root hair cell		Has a large surface area and thin cell wall for water and mineral absorption
Xylem cell		Strengthened walls by lignin for the transport of water and dissolved ions
Phloem cell		Sieve plates to allow the transport of dissolved sugars

Sub-cellular	Function
Nucleus	Controls the cell's activities and contains genetic material
Cell membrane	Controls the movement of substances into and out of the cell
Cytoplasm	Jelly-like substance where chemical reactions take place
Mitochondria	The site of aerobic respiration
Ribosome	Site of protein synthesis (proteins are made)
Cell wall	Strengthens the cell, made of cellulose
Chloroplast	Site of photosynthesis (contains chlorophyll, a green pigment which absorbs light)
Permanent Vacuole	Filled with cell sap to help keep the cell turgid (stiff) to provide support



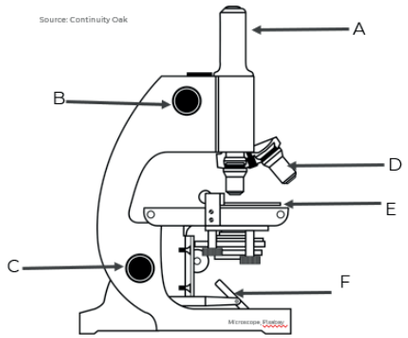
Mitosis – cell division	
Stage	**Description**
1	Cell grows, number of sub-cellular structures (e.g. ribosomes and mitochondria) increases and DNA
2	Nucleus divides and one set of chromosomes is pulled to
3	Cytoplasm and cell membranes divide to form two

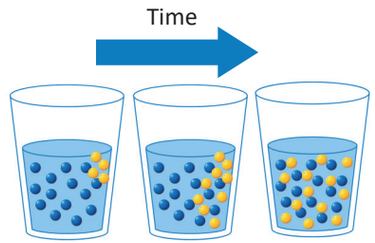
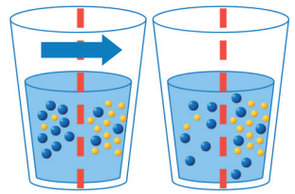
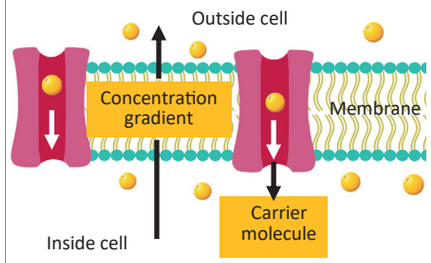


Science - B1 - Cell Biology

Microscopy	
Term	**Definition**
Magnification	Magnification = size of image ÷ size of actual object
Focus	Start with lowest magnification to focus image
Resolution	This is the measure of the level of detail you can see in the image using a microscope
Light microscope	Device that uses visible light and a series of lenses to produce an enlarged image of an object, maximum magnification of 1500x and low resolution
Electron microscope	Microscope with a much higher magnification and resolution than a light microscope so can be used to study cells in much finer detail and see sub-cellular structures.

Microscopes		
A	**Eyepiece lens**	Where the viewer looks through to see the specimen
	Clips	Keep the specimen secure on the stage
B	**Coarse focus**	Moves the stage up and down
C	**Fine focus**	Used to make the image clearer
D	**Objective lens**	Changes the magnification of the image
E	**Stage**	Where the specimen is placed
F	**Light**	Produces light to see the specimen



Transport across membranes			
Process	**Definition**	**Image**	**Uses**
Diffusion	The net movement of particles from an area of higher concentration to an area of lower concentration. Occurs in solutions and gases.		Movement of oxygen and carbon dioxide in gas exchange (lungs - alveoli; leaves – spongy mesophyll and stomata), and of the waste product urea from cells into the blood plasma for excretion in the kidney.
Osmosis	The diffusion of water from a dilute to concentrated solution, across a partially permeable membrane (shown		Movement of water across cell membranes into and out of cells.
Active Transport	The movement of particles from a low concentration to a high concentration, using energy from respiration.		Absorption of mineral ions into plant root hairs from very dilute solutions in the soil. Absorption of sugar molecules from lower concentrations in the gut into the blood which has a higher sugar concentration.

Stem cells		
A stem cell is an undifferentiated cell of an organism which is capable of giving rise to many more cells of the same type, and from which certain other cells can arise from differentiation. Stem cells may be able to help conditions such as diabetes and paralysis.		
Embryo	**Adult**	**Meristem**
Can be cloned and made to differentiate into most different types of human cells	Adult bone marrow can form many types of cells including blood cells	Can differentiate into any type of plant cell, throughout the life of the plant
In therapeutic cloning an embryo is produced with the same genes as the patient		

Science - P1 - Energy

	Types of Energy Stores	
	Term	**Definition**
Stores	**Kinetic**	Energy stored in a moving object
	Gravitational potential	Energy stored in an object in a gravitational field.
	Internal	Energy stored in all materials; due to the motion of particles (thermal) and forces between particles (chemical).
	Elastic potential	The potential stored in a spring or something stretchy that will spring back after being released
	Nuclear	Energy stored in nuclei of atoms, released through nuclear fission or fusion.
	Magnetic	The potential energy stored in a magnetic field
	Electrostatic	The energy stored when like charges are moved closer together/unlike charges are pulled
Transfers	**Mechanical**	A force moving an object through a distance
	Electrical	When an electric current flows through a device
	Heating	By conduction, convection, or radiation
	Radiation	Energy transferred by electromagnetic radiation (e.g. light)

Energy Resources

Name of Resource	Production	Advantages	Disadvantages
Coal	Burning coal heats water, producing steam which turns turbines to generate electricity	Readily available – reliable	Non-renewable, inefficient, high water use, produces greenhouse gases
Crude oil	Burned to heat water into steam to turn turbines to generate electricity	High energy density, vast quantity of other products also made from oil	Produces greenhouse gases, non-renewable, expensive
Natural Gas	Piped to consumer and burned on site	Energy efficient, less greenhouse gases than coal	Non-renewable, not available everywhere, limited applications
Solar	Energy converted to electricity using photosynthetic cells	Abundant, free, renewable, no greenhouse gas	Not yet available everywhere, expensive to set up – unreliable
Tidal/Wave	Waves power turbines which generate electricity	Readily available, renewable, close to cities	Difficult and expensive to harness wave power effectively – unreliable
Wind	Wind causes turbines to turn, which generate electricity	Free, clean, no greenhouse gas emissions	Expensive to set up, can endanger birds - unreliable
Hydroelectric	Running water turns turbines to generate electricity	Renewable, readily available	Set-up generate greenhouse gases and damages environment
Biofuel	Plant matter burned to power electricity generators	Potentially renewable, recycles agricultural waste – reliable	Cultivation and burning of fuel can yield low level pollutants

Energy Stores and Systems

System	Energy Transfer
An object projected upwards 	**Kinetic** energy decreases. **Gravitational potential** increases
A moving object hitting an obstacle 	**Kinetic** energy **transferred** to the obstacle. (Sound, heat, deformation of the object)
A vehicle slows down 	**Kinetic** energy decreases as it is **transferred** to internal energy (**thermal**) e.g. in brakes.
Water boiling in an electric kettle 	Waters internal energy increases as energy is transferred from electrical energy

Unwanted energy transfers

Energy transfers can be reduced through lubrication and the use of thermal insulation.

Key Term	Definition
Renewable	A resource which can be replenished as it is
Non-renewable	A resource that will run out, as it is being used at a greater rate than it can be replaced