




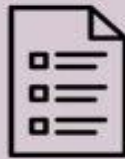




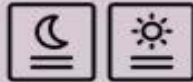









Knowledge Organisers

Year 8 – Half Term 6

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How to use a knowledge organiser – step by step guide

P2

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	<p>Look at and study a specific area of your KO.</p> 	<p>Write down the key words and definitions.</p> 	<p>Use your KO to condense and write down key facts or information onto flash cards.</p> 	<p>Use your KO to create a mini quiz. Write down your questions using your KO.</p> 	<p>Create a mind map with all the information you can remember from your KO.</p> 	<p>Ask a friend or family member to have the KO or flash cards in their hands.</p> 
Step 2	<p>Cover or flip the KO over and write down everything you can remember.</p> 	<p>Try not to use your KO to help you.</p> 	<p>Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other!</p> 	<p>Answer the questions and remember to use full sentences.</p> 	<p>Check your KO to see if there are any mistakes on your mind map.</p> 	<p>They can test you by asking you questions on different sections of your KO.</p> 
Step 3	<p>Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat.</p> 	<p>Use your green pen to check your work.</p> 	<p>Ask a friend or family member to quiz you on the knowledge.</p> 	<p>Ask a friend or family member to quiz you using the questions.</p> 	<p>Try to make connections, linking the information together.</p> 	<p>Write down your answers,</p> 



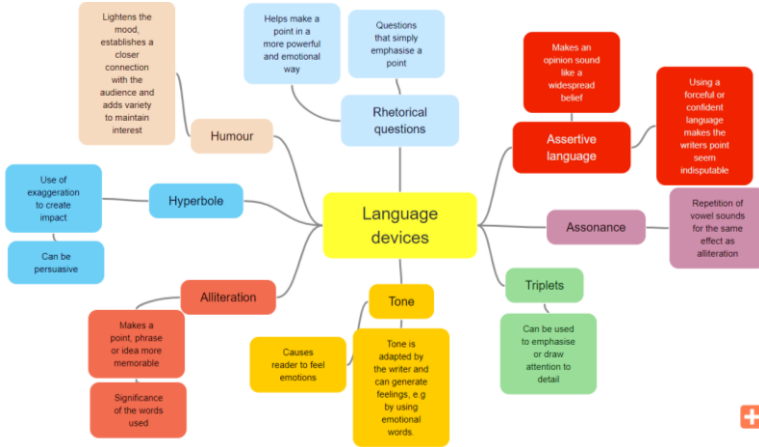
How to dissect a quote.

- Explain what the quote means
- Find language techniques
- Explain a key word
- Link it to the context of the lesson

What is the British Empire?

An **empire** is a group of areas of land (or whole countries) that are ruled over by one leading or 'mother' country. The places controlled by one mother country are usually called colonies. More than 100 years ago, Britain ruled over 450 million people living in 56 colonies around the world.

- Why did Britain want such a large empire?
- How did it get its empire?



Structure of a paragraph

P- Point

E- Evidence

T- Technique (language, Structure)

A- Analysis

L- Link to the question or context.

External
and
Internal
conflict

How does someone feel on the inside
Vs how they express their emotions.

Narrative
Voice

Whose perspective is the story told from. You need to consider the British empire from the aborigine's point of view as well as the settler's point of view.

Key Term

Colony

A country or area under the full or partial political control of another country and occupied by settlers from that country

Settlers

A person who moves with a group of others to live in a new country or area.

Colloquial

(of language) used in ordinary or familiar conversation; not formal or literary.

Natives

Being a member of the original inhabitants of a particular place.

SHAKESPEARE’S LIFE

- BORN IN STRATFORD UPON AVON 1564
- DIED 1614
- EDUCATED STRATFORD GRAMMAR SCHOOL
- MARRIED TO ANN HATHAWAY
- THEY HAD THREE CHILDREN – HAMNET, JUDITH, SUSAN
- FATHER WAS A GLOVEMAKER-GUILDSMAN
- MAIN THEATRE WAS THE GLOBE IN LONDON
- SHAKESPEARE WROTE 37 PLAYS & 154 SONNETS
- GENRE OF PLAYS = TRAGEDY, HISTORY, COMEDY
- MAIN PLAYWRIGHT RIVALS WERE CHRISTOPHER MARLOWE, BEN JONSON, THOMAS KYD
- SHAKESPEARE’S THEATRE COMPANY WAS CALLED THE LORD CHAMBERLAIN’S MEN

HISTORICAL CONTEXT

- SHAKESPEARE’S WRITING CAREER SPANNED THE ELIZABETHAN AGE (LAST OF THE TUDORS) AND THE JACOBAN AGE (FIRST OF THE HOUSE OF STUART).
- ELIZABETH WAS A PROTESTANT QUEEN
- SHAKESPEARE WROTE PLAYS FOR QUEEN ELIZABETH I AND JAMES I
- ELIZABETHAN BELIEFS CENTRED AROUND THE GREAT CHAIN OF BEING & A SPECIFIED ORDER OF LIFE
- JAMES 1 BELIEVED IN THE DIVINE RIGHT OF KINGS
- JAMES 1 WROTE A BOOK ABOUT WITCHCRAFT CALLED ‘DAEMONOLOGIE’
- GUY FAWKES ATTEMPTED TO ASSASSINATE JAMES 1
- JAMES 1 WROTE A VERSION OF THE BIBLE
- JAMES 1 WAS A PROTESTANT KING

SHAKESPEARE’S METHODS & LITERARY DEVICES

- SOLILOQUY
- MONOLOGUE
- PROLOGUE/EPILOGUE
- IAMBIC PENTAMETER & RHYMING COUPLETS
- PROTAGONIST/ANTAGONIST
- HERMETICA
- DRAMATIC IRONY
- SIMILE/METAPHOR
- ANTONYMS/CONTRAST
- MAJOR/MINOR SCENES
- 5 ACT STRUCTURE
- MOTIF & IMAGERY- LIGHT & DARKNESS, GOOD & EVIL
- METAPHYSICAL & SUPERNATURAL
- FREYTAG’S NARRATIVE STRUCTURE – SINGLE PLOT ONLY



THEMES IN MACBETH

AMBITION Macbeth is driven by ambition – he’s willing to kill Duncan to become King and he’ll do anything to keep the crown.

LOYALTY & BETRAYAL Duncan trusts the wrong people. Macbeth doesn’t trust anyone. Malcolm is very careful about who he trusts.

THE SUPERNATURAL The evil witches manipulate Macbeth. Ghostly visions drive him and his wife mad with guilt.

FATE & FREE WILL The play explores the idea of-self-fulfilling prophecy. It’s unclear whether Macbeth has control over his fate.



SHAKESPEARE’S MESSAGE TO THE AUDIENCE

- REGICIDE (KILLING THE MONARCH) IS NOT ACCEPTABLE
- MEN SHOULD CONTROL THEIR HOUSE & WIFE
- WOMEN ARE NOT TO BE TRUSTED
- LIVE LIFE TO CHRISTIAN VALUES
- RESPECT THE MONARCH AS GOD’S HOLY REPRESENTATIVE ON EARTH
- KEEP TO YOUR PLACE IN THE GREAT CHAIN OF BEING – DO NOT BE AMBITIOUS
- DO NOT DO ANYTHING UNGODLY




CHARACTERS IN MACBETH	THE THREE WITCHES	MACBETH	LADY MACBETH
		Thane of Glamis	Wife of Macbeth
KING DUNCAN	MALCOLM	BANQUO	FLEANCE
King of Scotland	Son of Duncan	Scottish General	Banquo’s son
MACDUFF	LADY MACDUFF	THE PORTER AT MACBETH’S CASTLE	LENNOX & ROSSE
Thane of Fife			Scottish Nobles

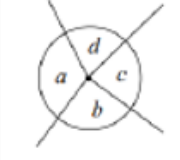
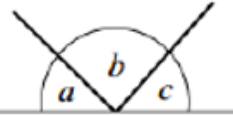
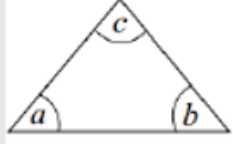

Characters		Themes		Context	
Macbeth	Is considered a hero at the beginning of the play. Gets promoted from Thane of Glamis to Thane of Cawdor and eventually King. Is ambitious and manipulated by his wife.	Ambition	Macbeth allows his ambition to overwhelm him and becomes a murderer. LM is affected by the guilt of her actions caused by her ambition.	Witchcraft	People believed in witches and bad events were blamed on women who were considered to be witches. They were also tested in this time and KJ was superstitious about them.
Lady Macbeth	Is manipulative and does not follow the stereotypical Jacobean woman of this time. Is presented as strong at the beginning of the text and weak at the end when she becomes insane because of how guilty she feels.	Fate	Macbeth puts himself in the position of having to master fate always and struggles against parts of the witches' prophecies that do not benefit him.	King James I	Ordered huge witch hunts (bigger than ever seen before) in Scotland. He also survived an assassination attempt.
King Duncan	Is the King of Scotland at the beginning of the play. He is murdered by Macbeth after Lady Macbeth persuades him to so he can get the throne.	Guilt	Macbeth feels guilt early on whilst LM becomes guilty later on which leads to her increasing lack of sanity.	Monarchy	His mother was known as an incompetent ruler and KJ was constantly worried, when he become King of England, that people would rebel and overthrow him.
Banquo	Macbeth's best friend. Is ordered to be and is murdered by Macbeth as he poses as a threat to Macbeth's chances of becoming King. Macbeth loses trust in Banquo because he was present when Macbeth saw the witches. Appears as a ghost at the banquet after his murder.	The Supernatural	The witches are a clear image, as well as Macbeth disrupting the social and political order by killing KD. Also raging storms are presented mirroring Macbeth& LM's acts.	Key Terminology	
Fleance	Banquo's son. Ordered to be killed by Macbeth as he is a threat to Macbeth becoming King, however, Fleance escapes from the murderers. Foreshadowed that Fleance is a light for Scotland and Fleance will be the first King (in the witches' predictions) who will start the line of descendants.	Power	Macbeth deeply desires power. Macbeth abuses his power when he is King to avoid any threats. Lady Macbeth also desires power which is not considered a traditional trait for a woman of this time.	Hubris	Excessive pride or self-confidence. Seen in the character of Macbeth especially when the witches give the last prophecies. Macbeth becomes arrogant until he realises that Macduff was not 'born of woman'.
Macduff	Soldier, Thane of Fife and Macbeth's rival. Grows suspicious of Macbeth after KD's murder. Forms an army with Malcolm in England and kills Macbeth at the end; a figure of mortality.	Violence	Macbeth commits violence from the beginning and continues to do so until violence is all he has left.	Hamartia	Fatal flaw. Macbeth's is unchecked ambition (also Lady Macbeth) as well as desire for power and position, as well as King.
Lady Macduff	Macduff's wife. Is murdered along with her son after Macduff flees.	Masculinity vs Femininity	Many questions around manhood towards Macbeth and Macduff from their wives because of their decisions.	Tyrant	A cruel and oppressive ruler. Macbeth becomes this by the end of the play.
Malcolm	King Duncan's son. Flees to England after he is killed. Represents order and once that is restored at the end of the play, he becomes King.	Loyalty	Macbeth is loyal to KD at the beginning and those who were loyal to Macbeth change side later in the play.	Treason	The crime of betraying one's country, especially by attempting to kill/overthrow the monarchy or Government.
Donalbain	King Duncan's other son who flees to Ireland after King Duncan is killed.			Betrayal	Being disloyal to a person/ group/ one's country.
Key Quotes					
The Witches	The three witches open the play and later meet Macbeth with prophecies, which impacts Macbeth's life. The witches guide Macbeth on the path of his own destruction.	Fair is foul, and foul is fair.	Foreshadowing that people who are seen as good will turn evil (Macbeth) and situations seen as good will be bad (prophecies). Warns the reader to not trust expectations.	Are you a man?	LM questions Macbeth's manhood as he hallucinates as sees Banquo's ghost and then becomes hysterical. This comment contrasts to what women were like at this time.
Hecate	Known as the Head Witch or Goddess of Witchcraft; Hecate is in charge of the three witches. She is angry at the three witches but also hints at Macbeth's downfall at the end of the scene she appears in.	His mother's womb untimely ripped	Means Macduff can kill Macbeth based on the prophecy as he was born by c-section.	Look like the innocent flower but be the serpent under it.	LM tells Macbeth he must appear to be innocent, kind and polite but must deceive the others so he is not suspected. Also has religion connotations to Garden of Eden.
Ross and Lennox	Ross is Macbeth's cousin who, with Lennox, is a Scottish noble. Lennox questions Macbeth and Ross eventually turns his back on Macbeth and sides with Malcolm and Macduff.	Is this a dagger which I see before me?	Macbeth is unsure on whether to murder KD. He begins to hallucinate and comments on the wickedness of the world before being interrupted by the ringing of the bell.	All hail Macbeth, that shalt be King hereafter!	The witches predict that Macbeth will become King. This starts Macbeth's downfall and ambition for the throne.
Macdonwald	Leader of rebel forces and is killed by Macbeth. Macbeth is praised when Macdonwald is defeated.	Out damned spot! Out I say!	The blood on LM's hands will not wash off. Is a motif as connects to Macbeth saying the ocean could not wash off KD's blood after the murder.	(looking at his hands) this is a sorry sight.	Macbeth shows guilt and remorse for his actions. LM only finds this comment from Macbeth 'foolish'.
Siward	King Duncan's brother and leads the English army against Macbeth. His army distinguishes itself s Birnam Wood. He is a proud father and declares his approval when his son dies in battle.	I am afraid to think what I have done.	Represents guilt but also Macbeth's downfall as he continues to kill later in the play. His loyalty for KD and others has been shattered.	Wash this blood clean from my hand.	Foreshadows that LM will be overwhelmed with guilt and see the blood on her hands as Macbeth does here after the murder of KD.
	Plot	Unsex me here.	Lady Macbeth wants to be stripped of female weakness and given the strength of man.	Don't shake thy gory locks at me.	Shows the true mental state Macbeth is in. Also shows guilt and remorse for Banquo's murder
Act 1	The play opens with the three witches gathering and planning to meet Macbeth. Meanwhile, King Duncan it told about how brave Macbeth has been and has been victorious in the fight against the rebel forces led by Macdonwald. The rebellious Thane of Cawdor has been captured and is sentenced to death- KD decides Macbeth will be Thane of Cawdor. The witches meet again and tell Macbeth's future- he will become Thane of Cawdor and then King. They tell Banquo that his children will be kings. Macbeth demands to know more but the witches vanish and Ross and Angus arrive to tell Macbeth his new title. He then realises that to become king, King Duncan has to die. KD announces Malcolm will inherit the throne when he dies- this sows the first seed into Macbeth's head about how to become King. Macbeth writes a letter from Macbeth about his encounter with the witches but she fears he is too kind to get the throne; when Macbeth comes home they hatch a plan. KD later arrives at Macbeth's castle and that night Lady Macbeth continues to goad and persuade Macbeth into killing the King.				
Act 2	The night of the murder, Banquo and Fleance unexpectedly meet Macbeth. They are surprised to see him and Banquo gives Macbeth a diamond from King Duncan for Lady Macbeth to thank her for her hospitality. Banquo tells Macbeth he dreamt of the 3 witches but Macbeth lies and says he hasn't even thought of them. Alone, Macbeth hallucinates and sees a vision of a bloody dagger. He hears a bell ring and goes off to kill KD. Lady Macbeth waits for Macbeth to return and reassures herself that she drugged the guard's wine so they will not wake up. Macbeth returns and is alarmed - he has heard a noise. Lady Macbeth realises that he has brought the daggers back and when Macbeth insists he can't go back to plant the knives on the guards, she goes instead. Whilst she is gone, Macbeth hears knocking and when she comes back, she scolds him for his cowardice and insists they go to bed. The porter opens the door to Macduff and Lennox who are to meet with King Duncan. Macbeth takes Macduff to the chambers and they discover King Duncan is dead. They scream murder, which wakes the rest of the household. Macbeth explains that he killed the guards in anger and when Macduff questions him Lady Macbeth faints as a distraction.				
Act 3	Macbeth grows concerned about Banquo as the witches' prophecy said that Banquo's descendants will be Kings. Macbeth hires two murderers to kill Banquo and Fleance. Lady Macbeth is unaware of these plans. The murderers kill Banquo but Fleance escapes. At the celebratory banquet, Macbeth hallucinates and sees Banquo's ghost sending him into a frenzy of terror. Lady Macbeth tries to cover up his odd behaviour, but the banquet comes to a premature end and guests begin to question Macbeth's sanity. Macbeth then decides he must revisit the witches to look into the future once more. Meanwhile, Macbeth's thanes begin to turn against him and Macduff meets Malcolm in England to form an army against Macbeth.				
Act 4	The witches show Macbeth three apparitions. The first warns him against Macduff; the second tell him to fear no man born of woman and the third says he will fall only when Birnam Wood comes to Dunsinane castle. Macbeth believes he is almost untouchable but when he asks the witches if Banquo's prophecy will come true they show him a procession of eight kinds, all of whom look like Banquo. Meanwhile, Malcolm tests Macduff's loyalty and the two strategise against Macbeth. Back in Scotland, Macbeth has Macduff's wife and children murdered.				
Act 5	Lady Macbeth is suffering from sleepwalking and a doctor comes to observe her symptoms. She unwittingly reveals her guilt as she says she can't wash her hands clean of bloodstains. Macbeth is too busy dealing with battle preparations to pay much heed to her dreams and expresses anger when the doctor says he can't cure her. As the English army approaches, Lady Macbeth commits suicide. When Macbeth hears of this, he says she should have died at a future date. Macbeth still believes, because of the witches, that he is impregnable to the army but Malcolm has instructed each soldier to cut a tree branch from Birnam Wood and hold it up as disguise. Therefore, Macbeth's servant reports that Birnam Wood is moving to the castle and Macbeth becomes worried but still engages the oncoming army. In the battle, Macbeth kills Young Siward and then battles Macduff where Macduff tells Macbeth he is not born of woman and kills Macbeth and decapitates him. Malcolm is then proclaimed the new king of Scotland.				

UNIT 6F – ANGLES

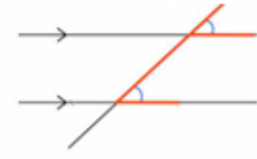
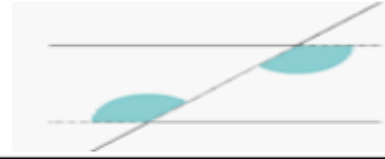
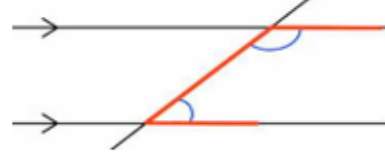
SUM OF INTERIOR AND EXTERIOR ANGLE– Videos 561/563

1	Sum of Interior Angles.	$(n - 2) \times 180$ where n is the number of sides.
2	Size of Exterior Angle in a Regular Polygon.	$\frac{360}{n}$
3	Angles in a quadrilateral add up to 360° .	e.g. 

ANGLES AT A POINT, STRAIGHT LINE AND IN A TRIANGLE – Videos 812/485/477

Angles at a point add up to 360° .	 $a + b + c + d = 360^\circ$
Angles on a straight line add up to 180° .	 $a + b + c = 180^\circ$
The interior angles in any triangle add up to 180° .	 $a + b + c = 180^\circ$
The interior angles in an equilateral triangle are all 60° .	

ANGLES IN PARALLEL LINES – Videos 481/482/483

1	Corresponding angles are equal	
2	Alternate angles are equal	
3	Interior angles add to 180°	

Vocabulary

1	Regular Polygon	All sides the same length All angles the same size
2	Interior	An interior angle is the angle inside the polygon at a vertex
3	Exterior	If the side of a polygon is extended, the angle formed outside the polygon is the exterior angle.

UNIT 7F – AVERAGES AND RANGE

ESTIMATED MEAN/MEDIAN FROM A TABLE– Videos 418/416

1 Mean for grouped data
AKA 'estimated mean'.

Because data is grouped we find a mid-point which we then treat as our data.

length, L, cm	Frequency	Midpoint	fx
$0 < L \leq 10$	21	5	105
$10 < L \leq 20$	11	15	165
$20 < L \leq 30$	31	25	775
$30 < L \leq 40$	12	35	420
$40 < L \leq 50$	25	45	1125
	<u>+ 100</u>		<u>+ 2590</u>

Calculate an estimate of the mean length of the fish.

$$2590 \div 100$$

$$25.9$$

2 Median for grouped data

Height (x cm)	Frequency
$0 < x \leq 10$	3
$10 < x \leq 20$	7
$20 < x \leq 30$	12
$30 < x \leq 40$	31
$40 < x \leq 50$	27

80

Frequency total $\div 2$ then count down the frequency total until we get to the number.

$$\frac{80}{2} = 40^{\text{th}} \text{ value}$$

$$30 + \frac{18}{31} \times 10$$

35.806

cm
(3)

MMMR- Videos 405/406/409/404/410

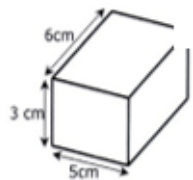

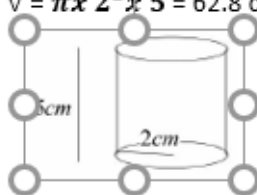
1	Mean Add the numbers up and divide by the amount of numbers there is.	<p>70, 72, 74, 76, 80, 114</p> $\frac{70 + 72 + 74 + 76 + 80 + 114}{6} = \frac{486}{6} = 81$
2	Median Arrange them in order and find the middle value.	<p>70, 72, 74, 76, 80, 114</p> $\text{median} = \frac{74 + 76}{2} = \frac{150}{2} = 75$
3	Mode Find the number that occurs the most.	<p>5, 13, 9, 7, 1, 9, 2, 9, and 11</p> <p>Mode = 9</p>
4	Range The largest value take away the smallest value.	<p>3 4 6 7 9</p> <p>Range $9 - 3 = 6$</p>

Vocabulary

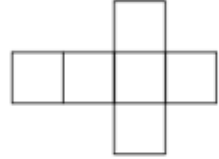
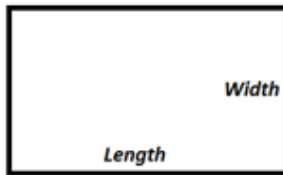
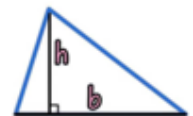
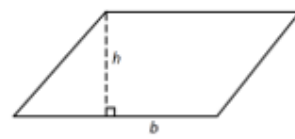
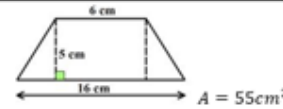
1	Modal Class	The class (or group) with the highest frequency
2	Estimate	Roughly calculate or judge the value, number, quantity, or extent of

UNIT 8F – PERIMETER, AREA AND VOLUME 1

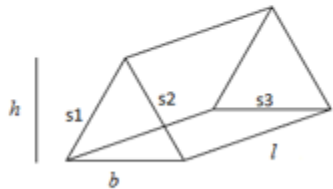
VOLUMES OF PRISMS— Videos 571/573

1	Volume of a Cube/Cuboid $V = \text{Length} \times \text{Width} \times \text{Height}$	 volume = $6 \times 5 \times 3 = 90 \text{ cm}^3$
2	Volume of a Prism $V = \text{Area of Cross Section} \times \text{Length}$	 $V = \pi(4)(5) = 62.8 \text{ cm}^3$
3	6. Volume of a Cylinder $V = \pi r^2 h$	 $V = \pi \times 2^2 \times 5 = 62.8 \text{ cm}^3$

RECTANGLES, PARALLELOGRAMS AND TRIANGLES – Videos 517/559/556

1	Area – counting by squares	 = 6
2	Area of a rectangle (length x width)	
3	Area of a Triangle (base x perpendicular height ÷ 2)	
4	Area of a Parallelogram (base x perpendicular height)	
5	Area of a trapezium $\frac{(a + b)}{2} \times h$	 $A = 55 \text{ cm}^2$

SURFACE AREA OF PRISMS – Videos 584/585

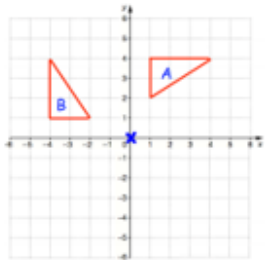
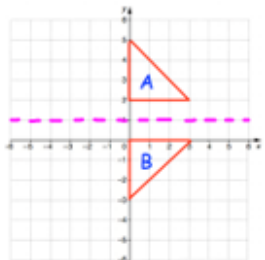
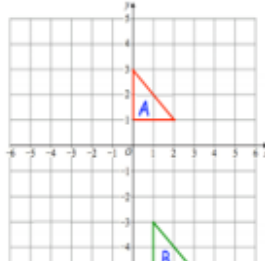
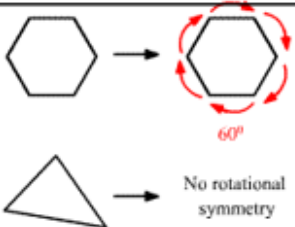
1	Surface area of a rectangular prism (cuboid)	$2(\text{length} \times \text{width}) + 2(\text{length} \times \text{depth}) + 2(\text{width} \times \text{depth})$
2	Surface area of a triangular prism	$(h \times b) \times (s1 \times l) + (s2 \times l) + (s3 \times l)$ 
3	Surface area of a cylinder	$2\pi r^2 + 2\pi r l$

Vocabulary

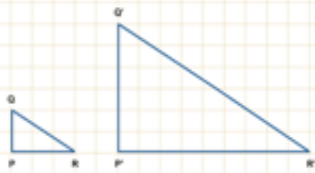

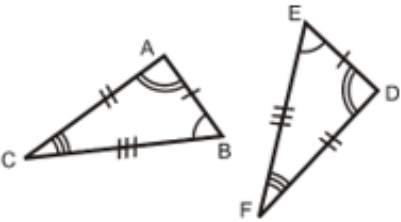
1	Perpendicular	Lines that are at right angles (90°) to each other
2	Volume	the amount of space that a substance or object occupies
3	Surface area	The surface area of a solid object is a measure of the total area that the surface of the object occupies

UNIT 10F – TRANSFORMATIONS

ROTATION, REFLECTION, TRANSLATION AND ROTATIONAL SYMMETRY– Videos 648/649/828/639/640/637/638

1	Rotation: need the degrees turned, direction (clockwise or anti-clockwise) and the centre of rotation .	
2	Reflection: need the line that the shape has been reflected in. This shape has been reflected in $y = 1$.	
3	Translation: need the direction and how far the shape has travelled. Can be given as a column vector. Example: $\begin{pmatrix} 1 \\ -6 \end{pmatrix}$ This means 1 right and 6 down.	
4	Rotational Symmetry The number of times a shape looks the same when spun 360	

ENLARGEMENTS – Videos 642/643/644

1	Enlarging by a Scale Factor • Example SF 2	
2	Enlarging a shape using a Centre of Enlargement • SF of 2 & COE (0, 0)	
3	Congruent Triangles • Side Angle Side • Angle Side Angle • Right Ang, Hypot, Side • Side, Side, Side	

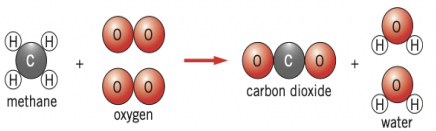
Vocabulary

1	Rotational Symmetry	A shape that still looks the same after some rotation. Eg. a square has a rotational symmetry of order 4.
2	Enlarging	Changing the size of a shape (smaller or larger).

Part 2 – Reactions

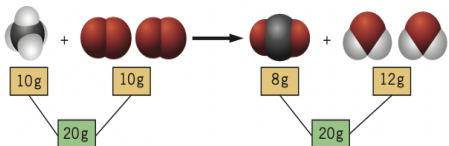
Key content:

Chemical reactions

- Word equations can represent a **chemical reaction**:
- 
- methane + oxygen → carbon dioxide + water
- The **reactants** are on the left side of the arrow and the **products** are on the right side of the arrow
 - We use an arrow instead of an equals sign as it represents that the reactants are changing into a new substance
 - In a reaction, the amount of each type of atom stays the same, however they are rearranged to form a new product

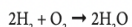
Conservation of mass

- In a reaction the mass will be **conserved**, this means that the total mass of the reactants will be equal to the total mass of the products
- If it appears that some of the mass has been lost, this means that a gas has been produced and escaped, accounting for the lost mass



Balanced symbol equations show the amounts of all of the individual atoms in a reaction

- The symbols used are from the Periodic Table
- They also show:
 - Formulae of reactants and products
 - How the atoms are rearranged
 - Relative amounts of reactants and products



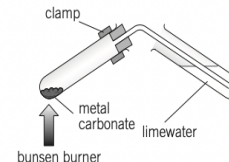
Combustion

- Combustion** is the burning of a **fuel** in oxygen
 - A fuel is a substance which stores energy in a chemical store
 - Examples of fuels include petrol, diesel, coal and hydrogen
 - When a carbon based fuel undergoes combustion, it will produce water and carbon dioxide
- methane + oxygen → carbon dioxide + water
- Hydrogen can also be used as a fuel, this is much better than traditional fossil fuels as it does not produce carbon dioxide:
- hydrogen + oxygen → water

Thermal decomposition

- A **thermal decomposition** reaction is one where the reactants are broken down (decomposition) using heat (thermal energy)
- An example of this is with metal carbonates:

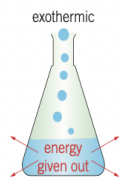
zinc carbonate → zinc oxide + carbon dioxide
- We can test for this carbon dioxide by bubbling the gas through limewater, if the limewater turns cloudy, the gas is carbon dioxide



Exothermic and endothermic reactions

Exothermic reactions involve a transfer of energy from the reactants to the surroundings

- As energy is transferred to the surroundings this will show an increase in temperature
- Examples of exothermic reactions include combustion, freezing, and condensing



Endothermic reactions involve a transfer of energy from the surroundings to the reactants

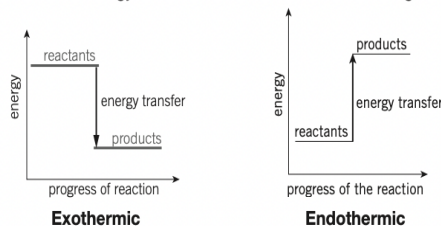
- As energy is taken into the reactants a decrease in temperature will be shown
- Examples of endothermic reactions include thermal decomposition, melting, and boiling



Energy level diagrams

Energy level diagrams show the values of energy between the reactants and the products in a reaction

- If the energy is greater in the reactants than the products then the reaction is exothermic as energy has been given out to the surroundings
- If the energy is lower in the reactants than the products then the reaction is endothermic as energy has been taken in from the surroundings



Bond energies

- Energy must be used to break **chemical bonds**, meaning that this reaction is endothermic
- Energy is given out when chemical bonds are made, meaning that this reaction is exothermic
- To see if a reaction is endothermic or exothermic, you must find the difference in the energy needed to break and to make the bonds in the reaction
- If the energy needed to break the bonds is less than the energy given out when making the bonds, the reaction is exothermic
- If the energy needed to break the bonds is more than the energy released when making the bonds, the reaction is endothermic

Key words:

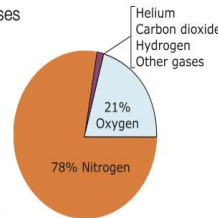
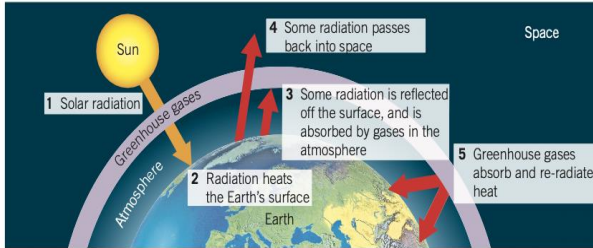
Key term	Definition
balanced symbol equation	In a balanced symbol equation, chemical formulae represent the reactants and products. The equation shows how many atoms are rearranged and joined together differently, and gives the relative amounts of reactants and products.
catalyst	Substances that speed up chemical reactions but are unchanged at the end.
catalytic converter	A part of a car between the engine and exhaust pipe that converts harmful substances made in the engine into less harmful ones.
chemical bond	Force that holds atoms together in molecules.
chemical reaction	A change in which a new substance is formed. In a chemical reaction, atoms are rearranged and joined together differently.
combustion	A chemical reaction in which a substance reacts quickly with oxygen and gives out light and heat. Also called burning.
conservation of mass	In a chemical reaction, the total mass of reactants is equal to the total mass of products. This is conservation of mass. Mass is conserved in chemical reactions and in physical changes.
conserved	When the quantity of something does not change after a process takes place.
decomposition	A chemical reaction in which a compound breaks down to form more than one product.
endothermic reaction	An endothermic reaction takes in energy, usually as heat. In other words, it transfers energy from the surroundings.
energy level diagram	Diagram showing the relative energies of the reactants and products. It shows whether a reaction is endothermic or exothermic.
exothermic reaction	An exothermic reaction gives out energy, usually as heat or light. In other words, it transfers energy to the surroundings.
fossil fuel	A fuel made from the remains of animals and plants that died millions of years ago. Fossil fuels include coal, oil, and natural gas.
fuel	A substance that stores energy in a chemical store which it can release as heat.
non-renewable	Energy resources that have a limited supply and that cannot be replaced within a short timeframe.
physical change	One that changes the physical properties of a substance, but no new substance is formed. A physical change is reversible.
products	Substances that are formed in a chemical reaction, shown on the right of the arrow in a chemical equation.
reactants	Substances that react together, shown on the left of the arrow in a chemical equation.
renewable	A fuel that can be easily replaced within a short timeframe.
thermal decomposition	A chemical reaction in which a compound breaks down on heating to form more than one product.

Part 2 – Earth

Key content:

The atmosphere

- The air around us all of the time is known as the **atmosphere**, it is made up of a mixture of gases
- When the Sun heats the Earth's surface, some of the radiation is absorbed and some is reflected back into space
- Some of the gases in the atmosphere absorb radiation that is about to be reflected into space, this keeps the Earth at a warmer temperature than it would be without the atmosphere, this is needed as otherwise it would be too cold for life
- The gases in the atmosphere which absorb and trap this radiation are known as **greenhouse gases**, the most commonly known greenhouse gases are carbon dioxide and methane

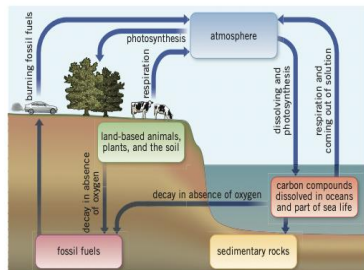


Global warming

- Global warming** is the gradual increase in temperature of the Earth
- This is closely linked to the rise in carbon dioxide levels in the atmosphere

The carbon cycle

- The **carbon cycle** is the processes by which carbon is naturally transferred to different stores through a range of natural processes
- Carbon is released into the atmosphere through **combustion of fossil fuels**, and animal **respiration**
- It is then reabsorbed by plants during **photosynthesis**



Climate change

- Long term changes to weather patterns are known as **climate change**
- This can cause the ice caps to melt, leading to sea levels rising and flooding of low level land
- Graphs alone cannot confirm that humans are the cause, but the majority of scientists now believe that human activity is a very likely cause
- We can help to prevent climate change by:
 - Using renewable energy resources
 - Using cars less
 - Buying and wasting less resources

Extracting metals

- Metals are a **natural resource**, with most being found joined with other elements in compounds
- Naturally occurring metals and their compounds are known as **minerals**
- An **ore** is a naturally occurring rock which contains enough of a mineral to be worth extracting
- An example of an ore is Bauxite, which contains aluminium hydroxide
- When metals are extracted they first have to be separated from other minerals in the ore, then they need to undergo a chemical reaction to separate them from the other element that they are joined to in a compound
- If a metal is below carbon in the reactivity series, it can be extracted by reacting it with carbon in a displacement reaction
- As carbon is more reactive it will take the place of the metal in the compound, leaving the metal on its own:
 - carbon + metal oxide → metal + carbon dioxide
 - carbon + copper oxide → copper + carbon dioxide
- If the metal is above carbon in the reactivity series, **electrolysis** can be used, this involves separating the metal by using electricity

Reactivity series

magnesium
aluminium
carbon
zinc
iron
lead
copper

Recycling

- Recycling** is the collecting and processing of materials that have been used so that the resources can be used again
- Recycling can have both advantages and disadvantages:

Advantages	Disadvantages
<ul style="list-style-type: none"> Resources will last longer It uses less energy than extracting new materials It reduces waste and pollution 	<ul style="list-style-type: none"> Separating rubbish can be seen as a nuisance The lorries collecting recycling produce pollution Some materials are easier to recycle than others

Key words:

Key term	Definition
atmosphere	The mixture of gases surrounding the Earth.
carbon cycle	The carbon cycle shows carbon sinks, and summarises how carbon and its compounds enter and leave the atmosphere and these sinks.
carbon sink	Areas of vegetation, the ocean or the soil, which absorb and store carbon. Carbon and its compounds may remain in carbon sinks for many years.
climate change	A long-term change in weather patterns.
combustion	A chemical reaction in which a substance reacts quickly with oxygen and gives out light and heat. Also called burning.
electrolysis	Using electricity to split up a compound into its elements.
extraction	Separation of a metal from a metal compound.
fossil fuel	A fuel made from the remains of animals and plants that died millions of years ago. Fossil fuels include coal, oil, and natural gas.
global warming	The gradual increase in the average surface temperature of the Earth.
greenhouse effect	When energy from the Sun is transferred to the thermal energy store of gases in Earth's atmosphere. The greenhouse effect keeps the surface of the Earth warmer than it would otherwise be.
greenhouse gas	A gas that contributes to the greenhouse effect, such as carbon dioxide.
mineral (chemistry)	Naturally occurring metals, and their compounds.
natural resources	Materials from the Earth, its atmosphere, and the oceans, which act as raw materials for making a variety of products.
ore	A naturally occurring rock that contains enough of a mineral to make it worth getting the mineral – and then the metal it includes – out of the rock.
photosynthesis	The process plants and algae use to make their own food, glucose. In photosynthesis, carbon dioxide and water react together to make glucose and oxygen.
recycling	Collecting and processing a material so that it can be used again.
respiration	The process that transfers energy in plants and animals. In respiration, glucose reacts with oxygen to make carbon dioxide and water.

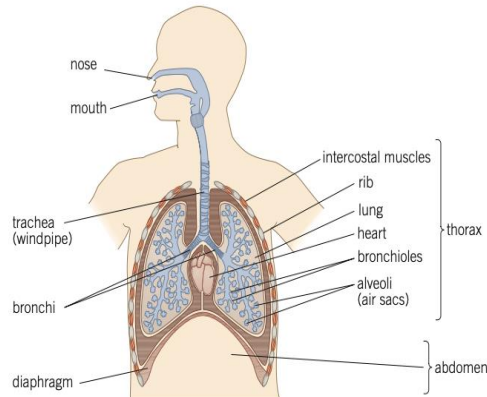
Part 2 – Organisms

Key content:

Key words:

Gas exchange and breathing

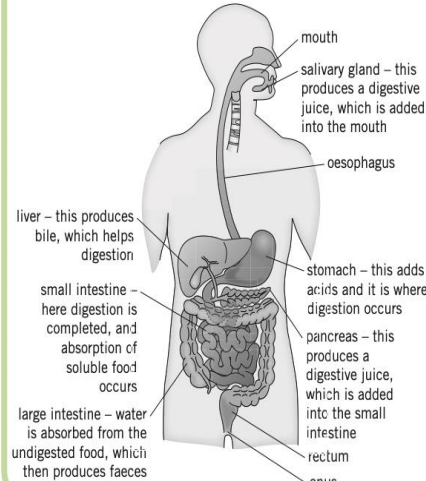
- Gas exchange** is the process of taking in oxygen and giving out carbon dioxide
- This occurs in the **respiratory system**
- The proportions of gases in the air we **inhale** and **exhale** changes due to using oxygen in **respiration** and producing carbon dioxide



What happens when you breathe in and out

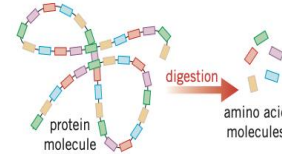
when you breathe in (inhale)	<ul style="list-style-type: none"> muscles between the ribs contract ribs are pulled up and out diaphragm contracts and flattens volume of the chest increases pressure inside the chest decreases air rushes into the lungs
when you breathe out (exhale)	<ul style="list-style-type: none"> muscles between ribs relax ribs are pulled in and down diaphragm relaxes and moves up volume in the chest decreases pressure inside the chest increases air is forced out of the lungs

The digestive system



Enzymes

- Enzymes** are biological **catalysts**, they speed up the digestion of **nutrients**
- Each enzyme is specific to each nutrient
- The way the enzyme and nutrient bind with each other is called a lock and key model
- Carbohydrases** break **carbohydrates** down into simple sugars
- Proteases** break **proteins** down into amino acids
- Lipase** breaks **lipids** (fats) down into fatty acids and glycerol



Nutrients

- A **balanced diet** involves eating the right amount of nutrients for your body to function
- Not eating enough of a nutrient means you have an unbalanced diet, and this can lead to a **deficiency**

Nutrient	Role in your body
carbohydrates	main source of energy
lipids	fats and oils provide energy
proteins	growth and repair of cells and tissues
vitamins and minerals	essential in small amounts to keep you healthy
water	needed in all cells and body fluids
fibre	provides bulk to food to keep it moving through the gut

Drugs

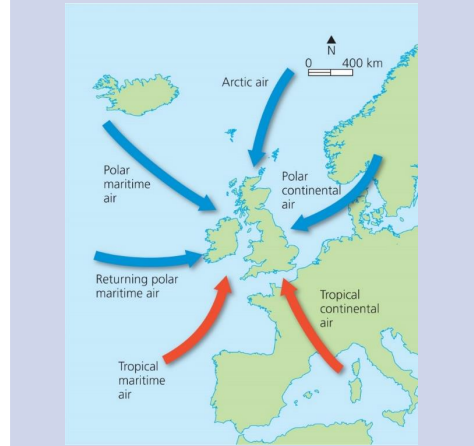
- Drugs** are chemicals that affect the way that our body works
- Medicinal drugs** are used in medicine, they benefit health
- If medicinal drugs are not taken in the correct way they can harm health
- Examples include antibiotics and pain killers
- Recreational drugs** are taken by people for enjoyment
- Recreational drugs normally have no health benefits and can be harmful for health
- Examples include alcohol and tobacco
- Drug **addiction** is when your body gets so used to a drug, it feels it cannot cope without it
- If someone who has an addiction stops taking the drug, they will experience **withdrawal symptoms**

Key term	Definition
addiction	A need to keep taking a drug in order to feel normal.
alveolus	Small air sacs found at the end of each bronchiole where gas exchange takes place with the blood.
anus	Muscular ring through which faeces pass out of the body.
asthma	A lung disorder in which inflammation (swelling) causes the bronchi to swell and narrow the airways, creating breathing difficulties.
balanced diet	Eating food containing the right nutrients in the correct amounts.
bile	Substance that breaks fat into droplets.
breathing	The movement of air in and out of the lungs.
bronchiole	Small tube in the lung.
bronchus	One of two tubes which carry air into the lungs.
carbohydrase	Enzyme that breaks down carbohydrates into sugar molecules.
carbohydrate	Nutrient that supplies the body's main source of energy. There are two types: simple (sugars) and complex (starch).
catalyst	Substances that speed up chemical reactions but are unchanged at the end.
deficiency	A lack of minerals that causes poor growth.
depressant	A drug that slows down the body's reactions by slowing down the nervous system.
diaphragm	A sheet of muscle found underneath the lungs which is used in breathing.
dietary fibre	Parts of plants that cannot be digested. It helps the body to eliminate waste by providing bulk to keep food moving through the digestive system.
digestion	Process in which large molecules are broken down into smaller molecules.
drug	Chemical substance that affects the way your body works.
enzyme	Substances that speed up the chemical reactions of digestion resulting in large molecules being broken into small molecules.
food test	Chemical test to detect the presence of particular nutrients in a food.
gas exchange	The transfer of gases between an organism and its environment.
gullet	Tube that food travels down into the stomach.
large intestine	Lower part of the intestine from which water is absorbed and where faeces (solid waste of undigested food) are formed.
lipase	Enzyme that breaks down lipids into fatty acids and glycerol.
lipid	Nutrient that provides a store of energy and insulate the body. Found in butter, milk, eggs, nuts.
lung volume	Measure of the amount of air breathed in or out.
malnourishment	Eating the wrong amount or wrong types of food.
medicinal drug	Drug that has a medical benefit to your health.
mineral (biology)	Essential nutrient needed in small amounts to keep you healthy.
nutrient	Essential substance that your body needs to survive, provided by food.
protease	Enzyme that breaks down proteins into amino acids.
protein	Nutrient your body uses to build new tissue for growth and repair. Sources are meat, fish, eggs, dairy products, beans, nuts, and seeds.
recreational drug	Drug that is taken for enjoyment.
rectum	Faeces are stored here, before being passed out of the body.
respiration	The process that transfers energy in plants and animals. In respiration, glucose reacts with oxygen to make carbon dioxide from water.
small intestine	Upper part of the intestine where digestion is completed and nutrients are absorbed by the blood.
stimulant	A drug that speeds up the body's reactions by speeding up the nervous system.
stomach	Organ where food is mixed with acidic juices to start the digestion of protein and kill microorganisms.
trachea	Tube which carries air from the mouth and nose to the lungs.
villi	Tiny projections in the small intestine wall that increase the area for absorption.
vitamin	Essential nutrients needed in small amounts to keep you healthy.
withdrawal symptoms	Unpleasant symptom a person with a drug addiction suffers from when they stop taking the drug.

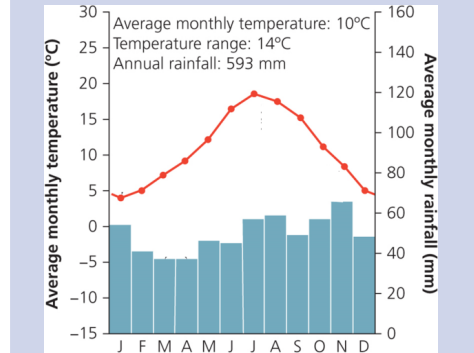
Why does the UK have such mixed weather?

Climate of the UK

The UK is influenced by a number of air masses because it is almost halfway between the cold North Pole and hot Equator.



The climate of the UK is variable – it changes a lot, day to day. The UK has cool summers, mild winters and rainfall spread evenly throughout the year. The climate type is classified as temperate, which means we rarely experience extreme weather conditions e.g. serious storms.

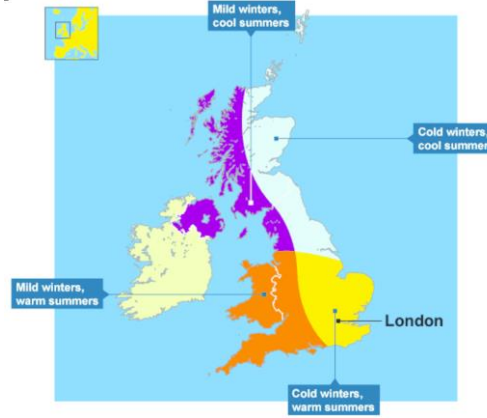


Above is a climate graph which shows the climate of London over the course of a year. We can see that the blue bars show rainfall from January to December – this ranges between 38mm and 65mm a year. The red line shows temperature through the year – this ranges from 3°C and 20°C on average.

Weather or Climate?

Weather - Short term conditions in the atmosphere e.g. rain, snow.

Climate - Long term conditions in the atmosphere – patterns of weather



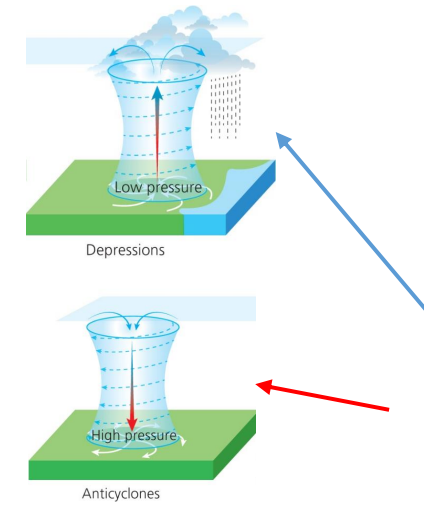
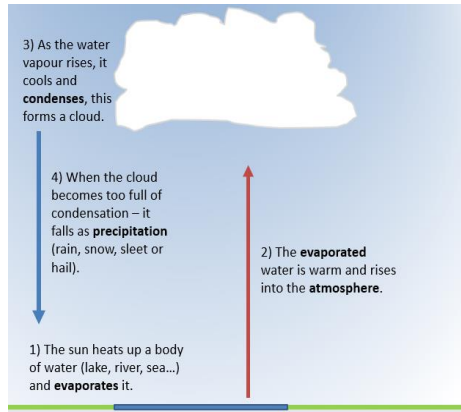
Why does it rain?

Water droplets are held in the air by warm air which is rising.

This process continues over time and the clouds become bigger and heavier as the water droplets join together.

The clouds become darker as more water droplets form.

Eventually the clouds become too heavy so the droplets fall to Earth as one of the forms of precipitation.



Anticyclones and Depressions

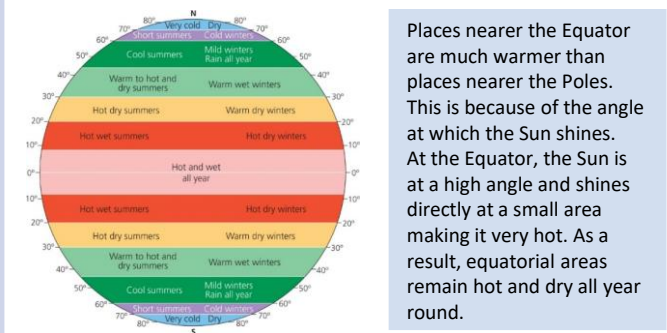
The air around you has weight, and it pushes down on the earth. This pressure is called **air pressure**.

The weather is strongly influenced by air pressure.

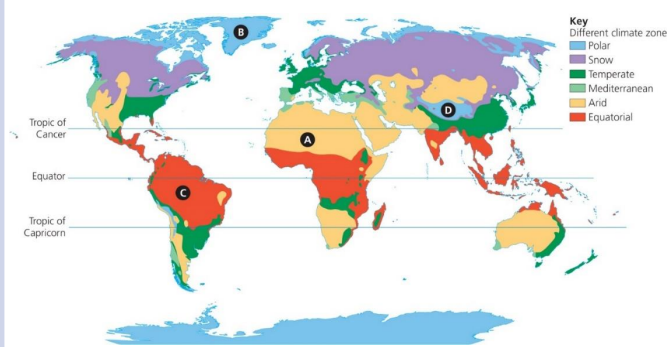
Depressions occur when air pressure is **low** (less than 1016 mb) this is because **warm air near the ground** is rising. **Depression** conditions lead to wetter and more turbulent weather.

Anticyclones occur when air pressure is **high** it is because **colder air in the atmosphere is sinking** towards the ground. **Anticyclone** conditions lead to drier, settled and warmer weather.

Here in the UK we have a temperate climate but you will notice that depending on where in the world a country is in the world, there are different climates.



Places nearer the Equator are much warmer than places nearer the Poles. This is because of the angle at which the Sun shines. At the Equator, the Sun is at a high angle and shines directly at a small area making it very hot. As a result, equatorial areas remain hot and dry all year round.



Factor	How does this affect climate?
Prevailing winds	Prevailing winds are the dominant wind direction in an area. The temperature of the wind and the amount of rainfall partly depend on where the air has come from .
Altitude	Temperatures decrease by about 1°C for every 100 m increase in height above sea level because at higher altitudes air becomes less dense so it is less able to retain heat.
Latitude	Places nearer the Equator are warmer than places nearer the Poles. At the Equator , the Sun is at a high angle and shines directly at a small area making it very hot this makes these areas hot and dry all year round .
Distance from the sea.	The sea takes longer to warm up than the land but keeps its heat longer. In the winter, the sea keeps coastal areas warm and in summer, it cools them down. The further away from the sea a place is, the wider the range of temperatures found there

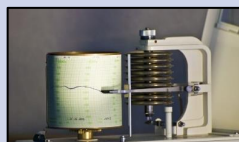
How do we measure the weather?



The Stevenson screen is a slatted box (painted white to reflect the sun's heat) which air passes through and allows us to accurately measure the temperature of air in the shade.

Thermometers are used to measure the current temperature.

The liquid inside the thermometer is very sensitive to temperature. When the temperature increases, the liquid expands and when the temperature drops the liquid contracts. Temperatures are measured in degrees Celsius (°C)



Air pressure is measured by a **barometer**. A barometer works similarly to a thermometer. When air pressure increases a liquid (mercury or water) expands and contracts again when air pressure drops. Air pressure is measured in millibars.

Campbell Stokes Sunshine recorder is a glass sphere which concentrates the rays of the Sun onto a card which is scorched by the Sun. The card is marked off in hourly intervals. As the Sun travels across the sky, the rays scorch different sections of the card. This allows us to calculate the hours of sunlight.



Anemometers are used to measure wind speed and direction.

Wind speed is recorded on an anemometer. The faster the wind blows the faster the cups on the anemometer turn. **Wind direction** is shown by a wind vane attached. The arrow points in the direction the wind is coming from.



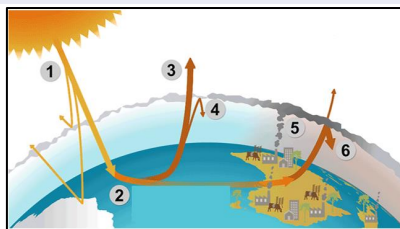
Rainfall is measured using **rain gauge**. This is a metal cylinder is sunk part way into the ground. Any rain that falls is collected in a container and measured.



The Greenhouse Effect

The gases act as like the glass in a greenhouse – trapping the heat in and keeping the inside warm.

1. Heat radiates from the sun to the Earth.
2. The Earth absorbs (takes in) some heat.
3. Most heat is reflected back into space.
4. Greenhouse gases such as (carbon dioxide) in the atmosphere block some of that heat from leaving the atmosphere.
5. More and more greenhouse gases build up in the atmosphere because of human processes e.g. factories and car exhausts.
6. This means that an increasing amount of heat is trapped over time causing the greenhouse effect.



What impact will climate change have on weather hazards?

Human causes of climate change

More countries are using fossil fuels (coal, oil and gas) to make electricity. When these are burnt they release greenhouse gases.

Rice fields (growing rice) produces methane, which is a greenhouse gas.

Cars produce air pollution -gases such as carbon dioxide and nitrous oxide

Rubbish, when it's left to rot and break down and releases greenhouse gases.

Physical causes of climate change

Volcanoes erupt releasing large amounts of volcanic dust- this can lower the temperature.

Sometimes there are sunspots which send more heat than usual.

The Earth is tilted and sometimes we are closer to the sun than others.

Cutting down trees means there are less trees to take in greenhouse gases.

Extreme Weather UK:

Extreme weather is weather which is not the norm / exceptional / breaks (Met Office) records. It occurs relatively rarely and may last for longer than expected.

The Beast from the East

- 50cm of snow fell in some places but strong winds blew much of the snow into large 'drifts'.
- Red warnings were issued by the MET Office which means there is a 'risk to life'.
- Some areas in the UK experienced temperatures as low as -15°C.
- Thousands of drivers were stranded in vehicles, some having to sleep in their cars in freezing temperatures.
- Shelves were left empty as normal deliveries couldn't be made.

Summer 2018

- There were 1000 more deaths than average for that time of year – mainly elderly people.
- In June just 15 mm of rain fell across the country - 75 per cent less than usual.
- There was an 80% rise in last minute trip bookings for holidays over the three month period.
- Heat damage to road surfaces in Oxfordshire in 2006 cost an estimated £3.6m to repair.
- A wildfire on the moors on Winter Hill in Bolton raged for five days

Extreme Weather across the world

Wildfires – Summer 2018

- California – 38,000 deaths, 17 missing people, 3400 firefighters were sent out to fight the fire.
- Manchester – Schools closed, soldiers and firefighters were sent out to help.
- Greece – 74 deaths, 150 injured, People had to be rescued by boat as they were cut off.
- Sweden – 13 water bomber planes were brought in (each carrying 6000 litres of water) to put out the flames

Typhoon Haiyan

- Typhoon Haiyan formed in the Pacific ocean in November 2016 – the Philippines was the worst affected.
- Typhoon Haiyan was a category 5 tropical storm with winds reaching speeds of 195mph
- A total of 6340 people were killed
- A total of \$2.9 billion of damage was caused – Philippines is a NEE country so this will be difficult to repair quickly.

Climate change and extreme weather

If an extreme weather event is linked to warm weather (e.g. wildfires or heatwaves) then the frequency and intensity of these events will increase.

If an extreme weather event is linked to cold conditions then it is likely that the frequency will decrease but when they do happen, it will be much more intense.

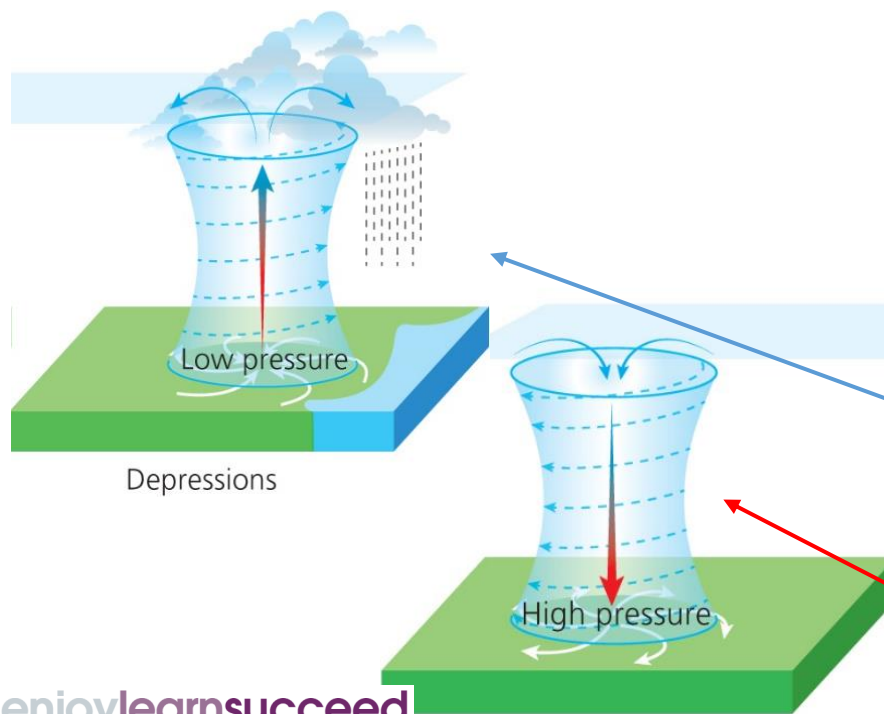
		Changes in frequency/ intensity so far?	Is this likely linked to climate change?	What is most likely in future?
UK	UK Warm Spells	☀️ Increase	Yes	Increase
	UK Cold Spells	❄️ Decrease	Yes	Decrease
	UK Heavy Rain	☁️ Increase	Inconclusive	Increase
	UK Dry Spells	💧 No trend detected	Inconclusive	Increase (summer)
	UK Wind Storms	🌀 No trend detected	Inconclusive	Inconclusive
Global	Global Heatwaves	☀️ Increase	Yes	Increase
	Global Cold Events	❄️ Decrease	Yes	Decrease
	Global Heavy Rain	☁️ Increase	Yes	Increase
	Global Drought	💧 Increase*	Yes*	Increase
	Global Tropical Storms	🌀 No trend detected	Inconclusive	Increase and decrease**

Weather or Climate?

Weather - Short term conditions in the atmosphere e.g. rain, snow.



Climate - Long term conditions in the atmosphere – patterns of weather



Anticyclones

How does rain form?

3) As the water vapour rises, it cools and **condenses**, this forms a cloud.

4) When the cloud becomes too full of condensation – it falls as **precipitation** (rain, snow, sleet or hail).

1) The sun heats up a body of water (lake, river, sea...) and **evaporates** it.

2) The **evaporated** water is warm and rises into the **atmosphere**.

Anticyclones and Depressions

The air around you has weight, and it pushes down on the earth. This pressure is called **air pressure**.

The weather is strongly influenced by air pressure.

Depressions occur when air pressure is **low** (less than 1016 mb) this is because **warm air near the ground** is rising. **Depression** conditions lead to wetter and more turbulent weather.

Anticyclones occur when air pressure is **high** it is because **colder air in the atmosphere is sinking** towards the ground. **Anticyclone** conditions lead to drier, settled and warmer weather.

Climate of the UK

The Uks weather is brought by air which blows up from Africa (hot air) and down from the arctic (cold air).

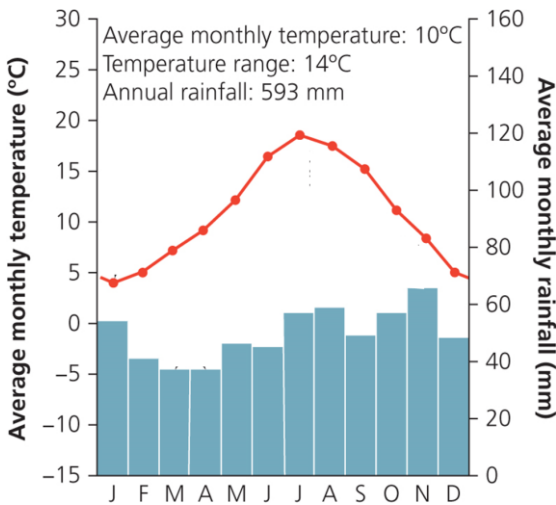
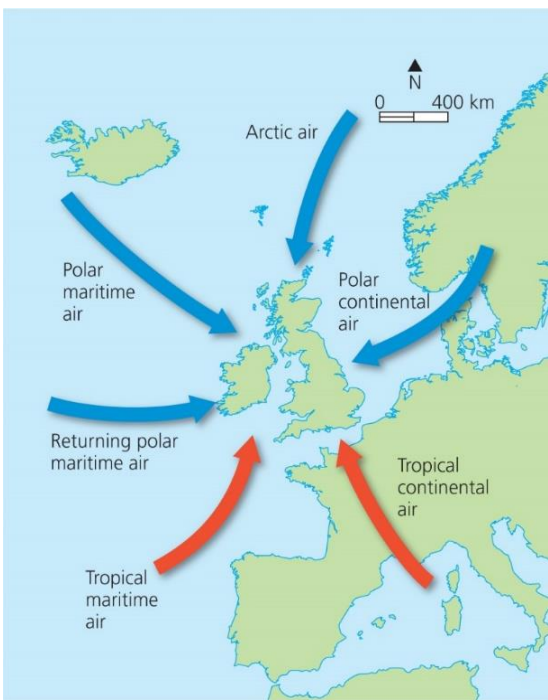
The climate of the UK is changes every day. The UK has warm summers and cold winters and rainfall spread evenly throughout the year.

We call our climate ‘temperate’, which means we don’t get a lot of extreme weather conditions e.g. serious storms.

The climate graph shows the pattern of weather we see over a year in London.

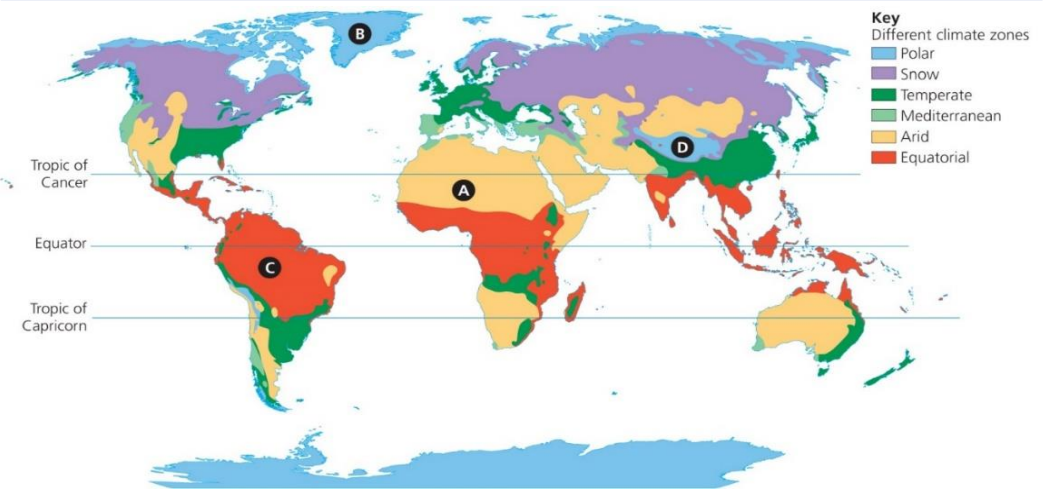
We can see that the blue bars show rainfall from January to December – this ranges between 38mm and 65mm a year.

The red line shows temperature through the year – this ranges from 3°C and 20°C on average.



Climates across the world

Here in the UK we have a temperate climate but you will notice that depending on where in the world a country is in the world, there are different climates.



Factor	How does this affect climate?
Prevailing winds	Prevailing winds is the main direction wind moves in . If wind comes from a hot place, it will bring warm weather . If wind comes from a cold place, it will bring cold weather .
Altitude	Altitude looks at how high up the land is . Every 100m higher you go, the temperature drops by 1°C . This means, the higher up you live the colder it is.
Latitude	Places nearer the Equator are much warmer . Places near the Poles are colder . The equator sticks out more and is closer to the sun than the poles.
Distance from the sea.	In the winter , the sea keeps coastal areas warmer and in summer , it cools coastal areas down. This means there isn't a lot of change through the year, The further away from the sea a place is, the wider the range of temperatures found there

How do we measure the weather?



The Stevenson screen air passes through the slats in the box and we **measure the temperature of the air** inside.

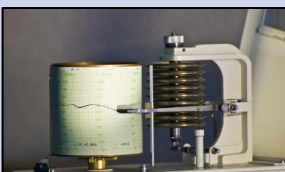
Thermometers

Thermometers **measure the temperature**.

When the temperature increases, the liquid moves up

When the temperature drops the liquid contracts.

Temperatures is measured in degrees Celsius (°C)

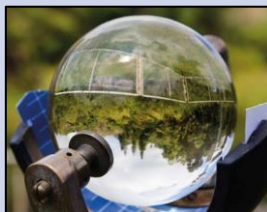


Barometers measure **air pressure**.

When air pressure is high, the liquid pushes the needle up and when it is low, the needle drops.

Air pressure is measured in millibars.

Campbell Stokes Sunshine recorder is a glass sphere which **sunlight passes through** and **burns a piece of card** underneath. The longer the burn line, the more sunlight we have had.



Anemometers are used to **measure wind speed and direction**.

The faster the wind blows the faster the cups on the anemometer turn. Wind direction is shown as the arrow points in the direction the wind is coming from.

Rain gauges measure **rainfall**.

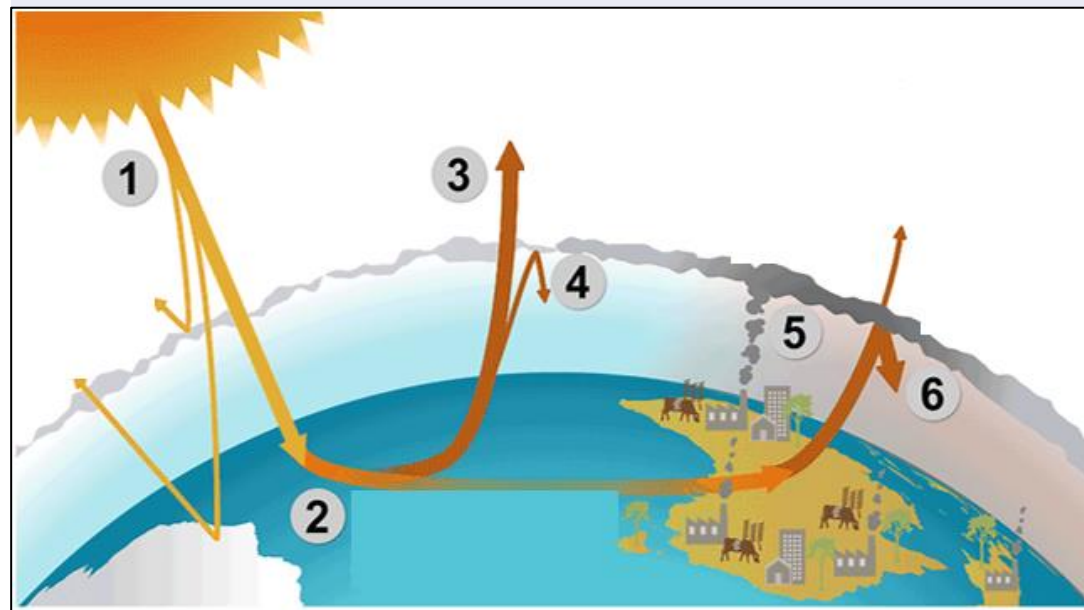
This is a metal cup is sunk part way into the ground. Any rain that falls is collected in a container and measured.













The Greenhouse Effect



The gases act as like the glass in a greenhouse – trapping the heat in and keeping the inside warm.

1. **Heat** travels from the **Sun** to the **Earth**.
2. The **Earth absorbs** (takes in) some **heat**.
3. **Most heat** is **reflected** back into **space**.
4. **Greenhouse gases** (like carbon dioxide) in the atmosphere **trap** some of that **heat** from leaving the atmosphere.
5. **More and more greenhouse gases build up** in the atmosphere because of human pollution e.g. factories and car exhausts.
6. Over time, the **gases in the atmosphere builds up**, this is the greenhouse effect. Our **Earth becomes warmer** and warmer.



Human causes of climate change	Physical causes of climate change
<p>Countries burn fossil fuel (coal and oil) which causes pollution.</p> 	<p>Volcanoes erupt ash and gas which builds up and blocks the sun's heat.</p> 
<p>Rice fields (growing rice) produces methane, which is a greenhouse gas.</p> 	<p>Sometimes there are sunspots which send more heat than usual.</p> 
<p>Cars produce gases such as carbon dioxide from their exhausts.</p> 	<p>The Earth is tilted and sometimes we are closer to the sun than others.</p> 
<p>Rubbish, when left to rot and break down and releases greenhouse gases.</p> 	<p>Cutting down trees means there are less trees to take in greenhouse gases.</p> 

Extreme Weather UK:	
<p>Extreme weather is weather which is not normal and often breaks records. It occurs rarely but can last for longer than expected.</p>	
<p><u>The Beast from the East</u></p> 	<p><u>Summer 2018</u></p> 
<ul style="list-style-type: none"> 50cm of snow fell. Strong winds blew much of the snow into large 'drifts'. Red warnings were issued by the MET Office which means there is a 'risk to life'. Temperatures dropped as low as -15°C. Thousands of drivers were trapped in their cars, on motorways over night. Food couldn't be delivered to supermarkets. 	<ul style="list-style-type: none"> There were 1000 more deaths than average for that time of year – mainly elderly people. in June only 15 mm of rain fell across the country – 75% less than usual. There was an 80% rise in bookings for UK holidays. Heat damage to roads in Oxfordshire cost an estimated £3.6m to repair. A wildfire on the moors on Winter Hill in Bolton raged for five days

Extreme Weather across the world	
<p><u>Wildfires – Summer 2018</u></p> 	<p><u>Typhoon Haiyan</u></p> 
<ul style="list-style-type: none"> California – 38,000 deaths, 17 missing people, 3400 firefighters were sent out to fight the fire. Manchester – Schools closed, soldiers and firefighters were sent out to help. Greece – 74 deaths, 150 injured, People had to be rescued by boat as they were cut off. Sweden – 13 water bomber planes were brought in (each carrying 6000 litres of water) to put out the flames 	<ul style="list-style-type: none"> Typhoon Haiyan formed in the Pacific ocean in November 2016 The Philippines was the worst affected. Wind speeds reached speeds of 195mph A total of 6340 people were killed A total of \$2.9billion of damage was caused – Philippines is a NEE country so this will be difficult to repair quickly.

Knowledge Organiser: American West

Tribe • A distinct community of Indians for example the Sioux	Great Plains • Large grassland in the West of America , home of the Plains Indians.	Social • relating to society/group/community/ country you live in.	Tipi • Home of the plains Indians, made out of Buffalo Hide (skin).
Frontier • a line or border separating two countries.	Ceremonies • a formal religious or public occasion, especially one celebrating a particular event, achievement, or anniversary.	Nomadic • When a group of people move around and do not settle to live in one place.	Polygamy • When a man has more than one wife.
Chief • leader of a tribe/ band but not elected. The tribe did not have to follow his orders.	Migration • The movement of people from one area to another.	Mormon • A branch of Christianity which was started by Joseph Smith in 1830.	Manifest Destiny • Idea it was God's plan that white Americans should settle over all of America.
Missionary • a person sent on a religious mission, to convert people to the Christian faith.	Prairie • a large open area of grassland, especially in North America.	Cannibalism • When one human eat another human such as the Donner party.	Reservation • An area of land to live on given to the Indian's by the Federal (American) government.

Indian Society

Tribes were made up of bands (10-50 families), they would often meet once/twice a year for the Buffalo hunt.

Chiefs were the leaders of Indian society and they were chosen for their skill (leadership, spiritual, wisdom or fighting).

Famous chiefs include Red Cloud and Sitting Bull. Chiefs had no actual power as everything had to be agreed by the well respected tribal council - these were a group of elders, medicine men and chiefs.

Warrior brotherhoods, were trained young fighters who led the buffalo hunt and went to war. They did not have to follow council orders - which caused problems.



Indian Warfare

Real honour came not from killing but from **counting coup**. This was getting close enough to touch an enemy without being hurt.



Taking scalps of enemies or stealing horses was evidence of success. White people saw scalping this as evidence of Indians being savages.

Indians mainly fought to protect their hunting grounds or to steal horses and not for land. War parties would even run away from a fight if they were losing.



Indian Beliefs

Dances were used when the whole tribe needed to contact the spirits e.g. Buffalo dances.

Some land was sacred, such as the Black Hills to the Sioux - they were burial grounds.



Land was sacred - 'the mother'. They believed it could not be bought or owned by anyone as it belonged to everyone. Farming or mining was seen as disrespectful.

Survival on the Plains

Survival was based on hunting buffalo and the following of their migration across the plains. Survival relied on hunting skills.

The Indians lived a travelling 'nomadic' lifestyle - they constantly moved camps. Living in tipis allowed them to pack up camp and move within minutes.

Tipis were perfect for the Plains, made from wood and buffalo skin they were warm in winter, cool in summer. Some lived in wooden lodges during winter.



Indians also lived off the land, they were hunter-gatherers - eating wild fruits and berries. They did not farm.



Family life

Each person also had a role equally important as the other. Working together was key to survival on the Plains.

Women (squaws) were responsible for the home and families. They also turned buffalo remains into hides and meat.



Men were responsible for hunting, looking after the horses and protecting the bands.



Horses were essential to the plains Indians, they were needed to hunt buffalo and for the constant travel. They also were important for status - men measured wealth with horses, the Comanches had over 8000 horses in a tribe of 3000.



Horses were key to warfare and Indians would often raid others to steal horses. Also, horsemanship was a sign of warrior bravery.

Elders were often members of the tribal council and their opinions were respected.

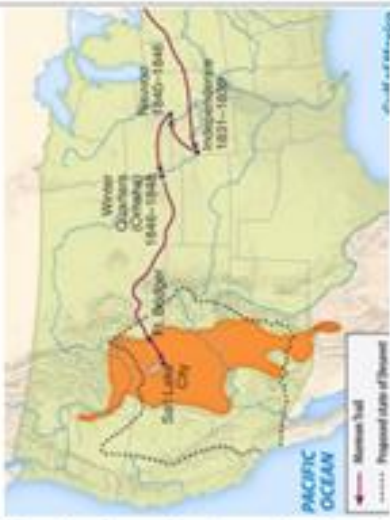
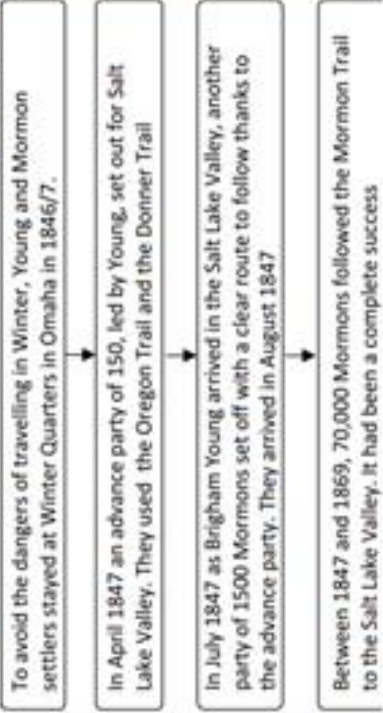


forced to leave in 1838 after riots.

The Mormons decide to move West

Following Joseph Smith's murder in 1845, the new leader, Brigham Young, decided the Mormons should move West to the Great Salt Lake Valley. He decided this because: it was isolated, it supposedly had water and farming land, the Mormons could live freely and importantly it was not part of the United States.

The Journey West



The Donner Party

In May 1846, the Donner party, led by Jacob and George Donner, left Missouri for California with 60 wagons and 300 people.



By July 1846, they reached Fort Bridger in the Rocky Mountains and a small group decided to take a 'short cut' using a leaflet (no-one had ever gone this way!)

The wagons train was well equipped and they chose to follow the Oregon Trail, however they were more women, elderly and children than usual.

It proved to be a fatal mistake.



They then became trapped in heavy snow storms in the mountains. All the cattle died and the group turned to cannibalism to survive.

Only 46 survived the journey to California after being eventually rescued in January 1847

Impact of reservations on Plains Indians

By the mid 1870s, the government had forced most Indians onto reservations, the Indians were virtually prisoners there which effectively took away their independence.

The reservations were usually lands not wanted by whites. It was not fertile, did not contain minerals and would make survival difficult. These lands were gradually made smaller as whites took over more land.



Living Conditions

Indians were no longer allowed to leave reservations to hunt the buffalo meaning they couldn't independently feed, clothe or shelter themselves. Indians struggled to learn to farm and as the lands were unfertile, most of the crops failed due to droughts, pests and diseases. Indian skills were lost Disease (Flu), alcoholism and depression spread through the reservations

Control

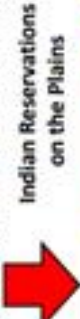
The government removed the power of Indian councils and chiefs by setting up US federal law courts in 1885. This meant that Plains Indians lost the power to govern themselves. Some Plains Indians were bribed into joining the Indian Agency Police to keep order amongst the Indians. Feast, ceremonies and dances were banned to end their spirituality and reliance on medicine men. Christian missionaries were sent to convert

Civilising Indians

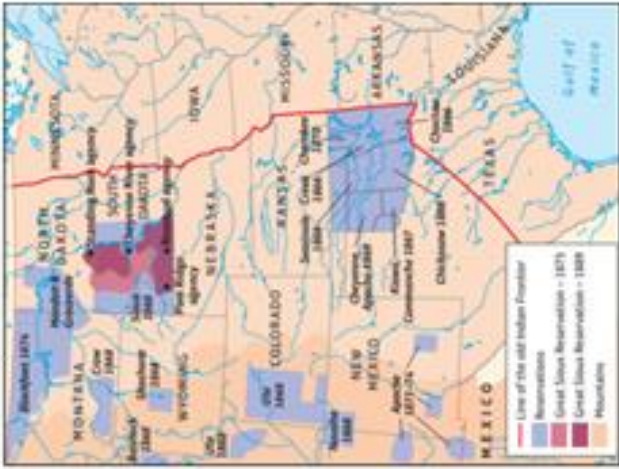
Plains Indian children were sent to schools off reservation, if they refused food was cut off. At school they were taught Christianity, punished if they spoke Indian or danced. By 1887 there were over 2020 Indians in 110 boarding schools. The motto was 'Kill the Indian in them, save the man'



Reservations destroyed the remains of the traditional Plains Indian way of life



Indian Reservations on the Plains



• morality	sense of right and wrong	• stewardship	taking responsibility for the conservation of the natural environment; religious duty
• absolute morality	unchanging moral code, giving a fixed attitude to an issue	• addiction	being unable to stop doing something; having a dependence on something (e.g. drugs, alcohol)
• relative morality	morality which is dependent on the circumstances of the situation, hence changeable	• drug abuse	misuse of drugs so as to potentially cause harm
• conscience	human sense of right and wrong; sometimes imagined as a devil and angel figure telling us what to do; seen by Christians as the voice of God	• gurmukh	Sikh belief God-centred – that a person should live every day focused on God
• justice	fairness; bringing greater equality to the lives of people	• sanctity of life	the principle that human life has unconditional value
• abortion	the deliberate termination of a pregnancy with the intention that there should be no baby born	• AID	artificial insemination from donor; a form of fertility treatment
• contraception	methods to prevent pregnancy	• AIH	artificial insemination from husband/partner; a form of fertility treatment
• creation	the living world; for most religions, this is considered to have been created by God	• brain death	complete loss of brain function, so that a person is legally dead
• death penalty	state execution as a punishment for specific crimes, e.g. murder	• conceive	become pregnant
• euthanasia	the deliberate ending of the life of a person who is terminally ill, or for whom life has become unbearable due to suffering; it is usually voluntary but can include the ending of life support by medical staff	• donor	the person from whom an organ is taken for use in a medical procedure to help another person in vitro fertilisation (IVF): often referred to as 'test tube'
• quality of life	idea of how comfortable one's life is; lack of suffering in one's life; standard of health, comfort and happiness enjoyed by an individual; defined in terms of health and happiness rather than wealth.	• IVF	in vitro fertilisation (IVF): often referred to as 'test tube'
• sanctity of life	the principle that human life has unconditional value	• medical ethics	ideas of what is right/wrong within medicine; principles governing medical advancement
• terminal illness	an incurable illness which will result in death	• organ transplant	surgically removing an organ, e.g. a kidney, from one person (donor) to put into another (recipient) to save or improve their life

Scientific evidence proves that humans have caused an increase in the levels of greenhouse gases in the Earth's atmosphere, leading to higher global temperatures – global warming. This means that humans are to blame for rising sea levels, melting ice sheets, extreme weather events and plant and animal extinctions. Global warming is only one of many ways in which humans are affecting the natural world. Humans pollute the world and destroy nature – our planet would certainly be safer without humans living on it!



▲ Destruction of the rainforest.



▲ Fly tipping

How does religion inspire environmental action?

Many religious people believe in a God who created the world. God created it, and gave it as his gift, so it needs to be looked after. Many believe humans are caretakers of the world, for example, Christians, Muslims and Jewish people believe they were given an instruction by God to be 'stewards of the world'. Other religions believe the world should be looked after because the essence of God is within all of nature. Many believe caring for the world is an act of worship and they will receive reward in the afterlife for doing so. So how do religious people put these beliefs into creating change for the planet? Every religion has groups who have the environment as their focus. They believe that action needs to be taken now as the planet is really suffering.

Friends of Vrindavan

Vrindavan is a Hindu place of pilgrimage in northern India which is of great importance to Vaishnavite Hindus (those who worship Vishnu). Increasing numbers of visitors over time, and the demands they made on the city's resources and infrastructure, caused massive damage. As the city grew, large areas of forest were cut down, sanitation became worse and rubbish was everywhere. Friends of Vrindavan (FoV) was set up in 1997 as a 'community initiative which focuses on restoring the environment'. It aims to make it possible for pilgrims to come to Vrindavan to see the many shrines devoted to Lord Krishna, a Hindu deity, without ruining the environment, as well as reversing damage already done. It is also part of the Green Pilgrimage Network. The next box gives some examples of its work.

Friends of Vrindavan projects

- Project 1 – FoV set up projects to manage rubbish, for example, daily collection of household waste and recycling of organic waste to create composting for farming to reduce pollution.
- Project 2 – Waterways clearance and tree planting: areas have been restored to their natural state for birds and wildlife and to provide a source of clean water for local people.
- Project 3 – Plastic recycling project set up to empower local women, who use recycled plastics to produce woven baskets, waste bins and other items. These are then sold, with the money reinvested into the project, providing more employment for local people.

The underlying principles here are using religious service – called sewa – to protect the environment as well as humans. Stopping the damage to the environment improves human lives too.

Religious environmental action

All religions have groups whose focus is to help the planet. They act because they believe it is an essential part of their religion. We need the Earth because it supports our existence and religious people believe they will be rewarded if they look after it. Below are some examples of environmental groups who use their religion as an inspiration for action for the planet.

- Buddhism – One Earth Sangha
- Christianity – Green Christians, A Rocha
- Islam – Islamic Foundation for Ecology and Environmental Sciences (IFEES)
- Judaism – Coalition on the environment and Jewish life (COEJL)
- Sikhism – EcoSikh

enjoylearnsucceed

Key belief

The idea of stewardship of, or responsibility for, the environment is a key factor in all religions. This is especially true now as the concern for the planet grows.



A. SUBJECTS

les matières	subjects
le français	French
le dessin	art
l'informatique	ICT
le théâtre	drama
l'allemand	German
l'espagnol	Spanish
l'anglais	English
l'histoire	history
la géographie	geography
l'EPS	PE
la technologie	technology

B. DESCRIPTIONS

amusant	fun
facile	easy
ennuyeux	boring
difficile	difficult
intéressant	interesting
fatigant	tiring
créatif	creative
sympa	nice
sévère	strict
mais	but
très	very
trop	too
un peu	a bit
assez	quite

Positive opinions

J'aime
J'aime beaucoup
J'adore
Je préfère

+
le/
la/
les

Negative opinions

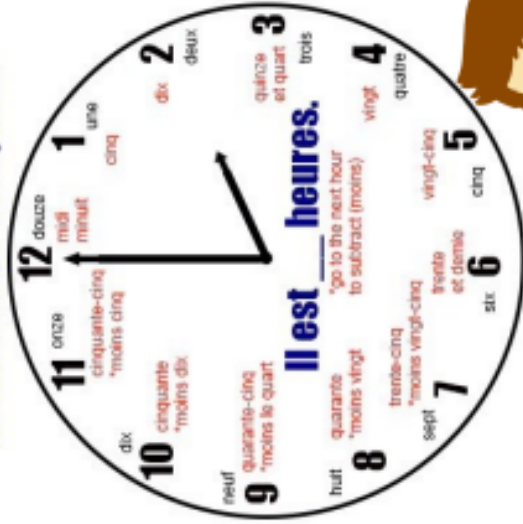
Je n'aime pas
Je déteste

beaucoup—a lot
tellement—much
vraiment—really

C. TEACHERS/TIMETABLE

ma matière préférée	my favourite subject
le prof	the teacher
les devoirs	homework
la récré	break
le déjeuner	lunch
un cours	a lesson
commencer	to start
finir	to finish
après	after
avant	before
puis/ensuite	then/next
suivi(e)s de	followed by

Mon horloge française



E. DAILY ROUTINE

Je me réveille	I wake up
Je me lève	I get up
Je m'habille	I get dressed
Je me brosse les dents	I brush my teeth
Je me lave	I wash
Je me douche	I shower
Je me couche	I go to bed

D. AFTER SCHOOL

Je rentre à la maison.	I return home.
Je prends le goûter.	I have a snack.
Je fais mes devoirs.	I do my homework.
Je regarde la télé.	I watch TV.
Je fais du vélo.	I ride my bike.
Je mange.	I eat.
Je fais la vaisselle.	I do the washing up.
Je me couche.	I go to bed.

plus ___ que = more ___ than
moins ___ que = less ___ than

e.g. J'aime le dessin moins que l'EPS.
I like art less than PE.

SCHOOL

F. L'UNIFORME SCOLAIRE

Je porte...	I wear...
un pantalon	trousers
une jupe	a skirt
une chemise	a shirt
un pull	a jumper
des chaussures	shoes
une cravate	a tie
affreux	terrible
confortable	comfortable
laid	ugly
pratique	practical
bon marché	cheap
cher	expensive
joli	pretty

G. LES RÈGLES SCOLAIRES

Il faut	You must
Il ne faut pas	You must not
faire ses devoirs	do your homework
porter des bijoux	wear jewellery
porter trop de maquillage	wear too much makeup
porter l'uniforme	wear uniform
manquer les	miss lessons
utiliser le portable	use a mobile phone
mâcher du chewing-gum	chew gum

H. CLUBS

Je fais de la danse	I do dance
Je vais au club de cuisine	I go to cooking club
Je vais au club de natation	I go to swimming club
Je vais au club d'échecs	I go to chess club
Je joue dans l'équipe de foot	I play in the football team
Je joue dans l'équipe de basket	I play in the basketball team
Je suis membre du club scientifique	I'm a member of the science club

PRESENT TENSE

	ER VERBS	IR VERBS	RE VERBS
Je	e	is	s
Tu	es	is	s
Il/Elle/On	e	it	-
Nous	ons	issons	ons
Vous	ez	issez	ez
Ils/Elles	ent	issent	ent

I. TRANSPORT

en bus	by bus
en voiture	by car
à vélo	by bike
en avion	by plane
en bateau	by boat
en train	by train
à pied	on foot

ESSENTIAL VERBS

DÉTESTER—TO HATE

Je déteste	I hate
Tu détestes	You hate (s)
Il/elle déteste	He/she hates
Nous détestons	We hate
Vous détestez	You hate (p)
Ils/elles détestent	They hate

PRÉFÉRER—TO PREFER

Je préfère	I prefer
Tu préfères	You prefer (s)
Il/elle préfère	He/she prefers
Nous préférons	We prefer
Vous préférez	You prefer (p)
Ils/elles préfèrent	They prefer

J. COMPLEX PHRASES

Ce que j'aime le plus c'est...	What I like the most is...
Ce que j'aime le moins c'est...	What I like the least is...
Ce que je préfère c'est...	What I prefer is...
Je trouve ça	I find it
C'est vrai que	It's true that
Je le/la/les trouve	I find it/them

Comment vas-tu au collège?

How do you get to school?

Je vais...

I go...

Urdu	English	Urdu	English
روٹی سمندری کھانا مچھلی سٹیک	Bread Seafood Fish Steak	بڑا گوشت چھوٹا گوشت چوزہ سبزی	Beef Lamb Chicken Vegetable
شراب مین / خاص کھانا پینے پینے	For starter For main course For desert To drink	شراب جوس پانی کی	Wine Juice Water Yogurt drink
کس وقت کتنی دیر میں	At what time...? After how long	چار لوگوں کے لیے	For four people
معاف کیجیے گا	Excuse me	میرے لیے	For me...
میں لینا چاہوں گا / گی	I would like to take...	کیا آپ کے پاس ہے برائے مہربانی	Do you have...? Please

Adjectives	Pronouns
فاسٹ فوڈ / جنگ / چینی / اطالوی / ہسپانوی / برطانوی / پاکستانی / امریکی / ہندوستانی امیر / سوادج / مزیدار / مسالہ دار / نمکین / میٹھا / پھیکا / صحت مند / غیر صحت مند	آپ - تم - تمہیں - ہم - ہمیں - انہیں - سب کو - Adverbs - بد قسمتی سے عام طور پر افسوس کی بات ہے کثرت سے جلدی سے

Fancy Phrases ہمیں چار لوگوں کے لیے میز چاہیے
ایک میز پانچ منٹ میں خالی ہو جائے گا۔
میں کھانے سے خوش نہیں ہوں تو میں اپنی رقم کی واپسی چاہتا ہوں...
میرے لئے مرغی کا سالن اور پینے کے لیے مالٹے کارس لائیں؟
کھانا مزیدار تھا اسی لیے میں مستقبل میں یہاں واپس جانا چاہوں گا
میں صحت مند کھانا کھانے کی کوشش کرتا ہوں جیسے سلا د...

Subtopics

- Food / drinks
- Booking a table in a restaurant
- Ordering & paying bill
- Making complaints
- Meal times / different verbs for each meal
- Furniture
- Smoking & Drugs
- Daily Routine

Food and eating out

Key questions to answer

آپ کا پسندیدہ کھانا کیا ہے؟
کیا آپ برطانوی یا پاکستانی کھانے کو ترجیح دیتے ہیں؟
آپ کا پسندیدہ مشروب کیا ہے؟
آپ کھانے میں کس ملک کے کھانوں کو ترجیح دیتے ہیں؟
ایک خصوصی ڈنر کا حال بیان کریں؟

Key grammar:

- Asking questions
- Use a range of pronouns
- Complex structure

اگر، تو، تب، اور

Infinitive	English	Present	Perfect / past I have.../ I did	Imperfect I used to...	Future I am going to...	Conditional I would...
کھانا	To order	کہا ہے	کہا ہے / کہہ چکی	کہا کرتا تھا	کہوں گا / گی	کہنا چاہوں گا / گی
کھانا	to eat	کھاتا / کھاتی ہوں	کھا چکا / کھا چکی	کھا یا کرتا تھا / تھی	کھائوں گا / گی	کھانا چاہوں گا / گی
پینا	to drink	پیتا / پیتی ہوں	پیا چکا / پیا چکی	پیا کرتا تھا / کرتی تھی	پیوں گا / گی	پینا چاہوں گا / گی
ناشتہ کرتا	to have breakfast	ناشتہ کرتا / کرتی ہوں	ناشتہ کر چکا / کر چکی	ناشتہ کیا کرتا تھا / کرتی تھی	ناشتہ کروں گا / گی	ناشتہ کرنا چاہوں گا / گی

POP MUSIC

Tier 2 Vocabulary:

List – say or write things one after another

Participate – take part in something

Compose - to make

Record – make a version that can be looked at/listened to in the future

Recall – remember something

Explain – give your reasons

Demonstrate – show

Rearrange – change the place

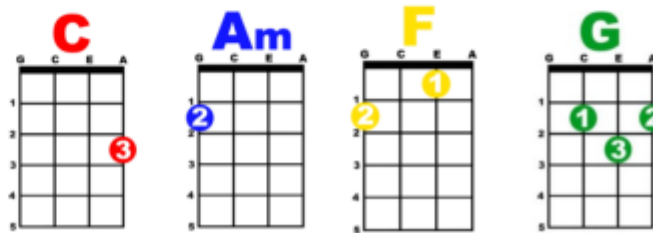
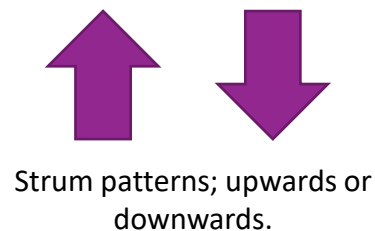
Diagram – simple pictures or shapes



Section 1: Key Words

Articulation	Strumming: brushing fingers over the strings Picking/Plucking: plucking individual strings
Structure	The sections of a piece of music e.g. verse/chorus
Introduction	The section of music before the singing starts
Verse	A part of a song—the lyrics change for each verse but the melody stays the same.
Chorus	A part of a song—the lyrics and melody are repeated in each chorus.
Bridge	A section which links the verse to the chorus
Middle 8	A section in the middle of a song which contrasts the verse and chorus
Instrumentation	The instruments used in a piece of music. In pop music these would include drum kit, guitar, bass and piano
Melody	The main tune (usually sung by the singer)
Chord	Two or more notes played at once
Bass line	The lowest pitched part
Riff	A repeated pattern
Improvisation	Making it up as you go along
Melody and accompaniment	The typical texture used in pop songs
Lyrics	The words in a song

Section 3: Ukulele chords

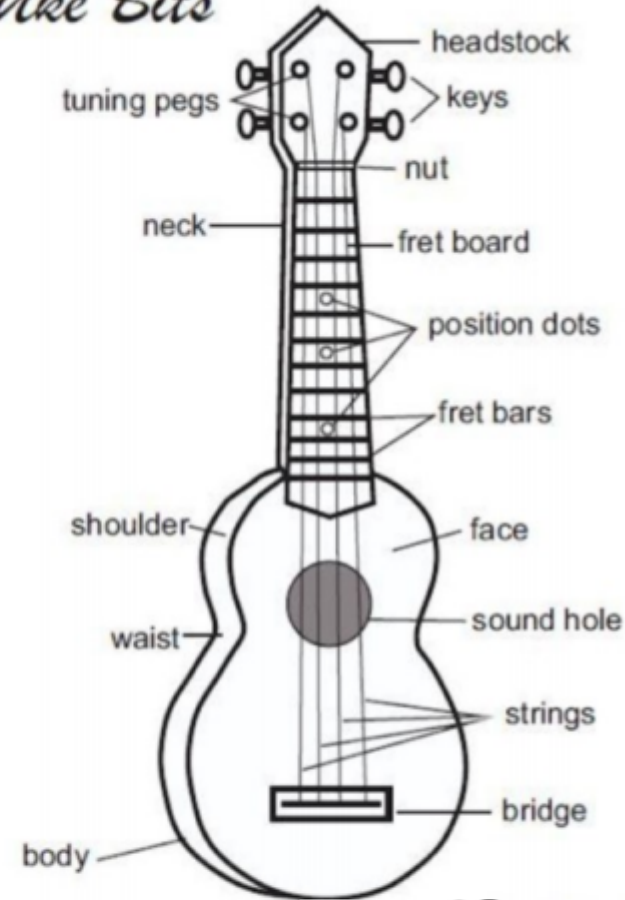


enjoylearnsucceed



Section 2: Ukulele Diagram and finger positions

Uke Bits

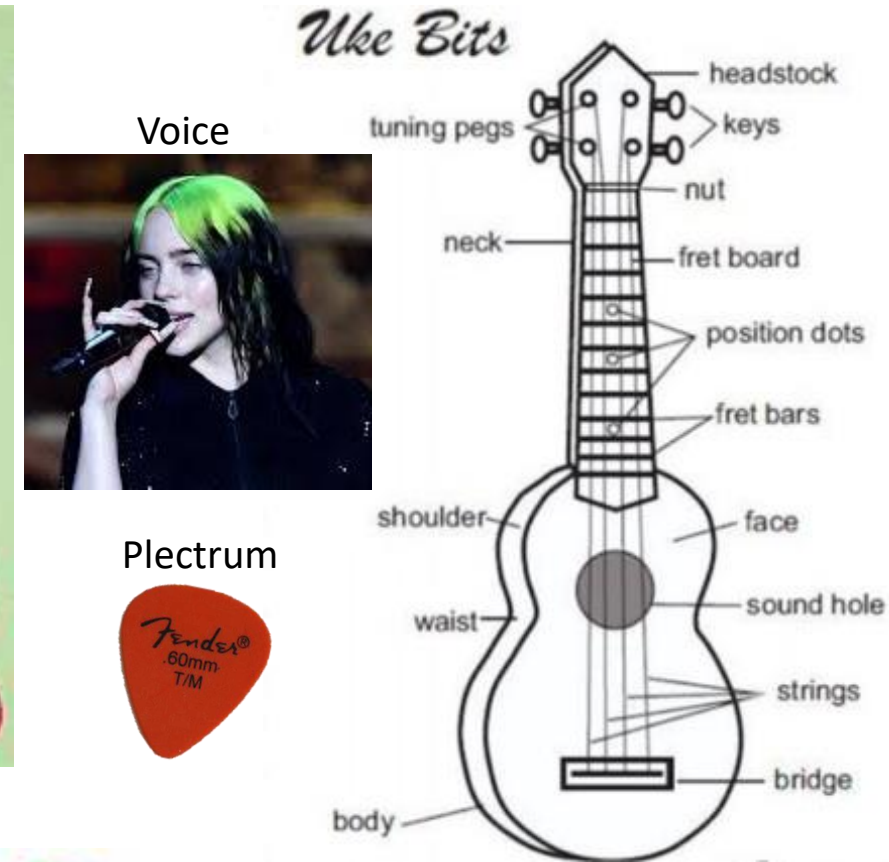


Plectrum/pick

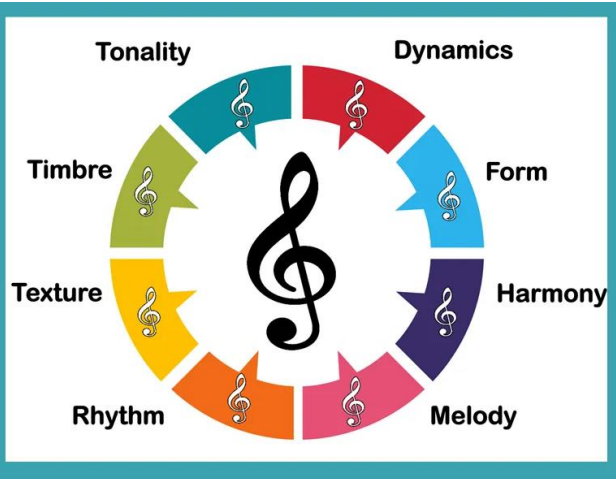


POP MUSIC

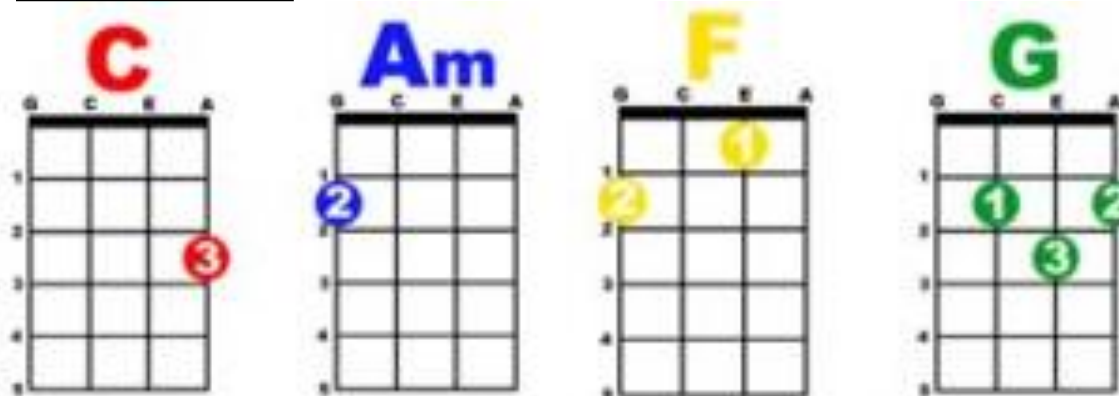
Genre – type or style



Elements of Music:



Ukulele Chords:



Ensemble – a group:



ART DECO

ART DECO was a popular design movement from 1910 until 1939. The Art Deco style was very important in the USA. New York has many Art Deco buildings including the **Empire State Building** (the original film "King Kong" was filmed there in 1933!) and the **Chrysler Building** - parts of this building are based on **car radiators** and **car bonnet decorations**.

ART DECO design was used in **architecture**, **interior design**, and **transportation design**, as well as **jewellery**, **painting**, **graphics**, and **film**. Art Deco was a luxurious style of design, after the poverty of World War I. Its popularity peaked during the 1920s, when the cinema became popular. Many cinemas were built in the Art Deco style. **Ocean liners** eg: the "**Normandie**" were also fitted out in the Art Deco style. The streamlining of car and aeroplane shapes, became important in the design of other items such as furniture, **jewellery**, household items, **pottery** and buildings.

ART DECO was influenced by... a variety of sources; such as **African**, **Egyptian**, and **Aztec Mexican art**, as well as **Machine Age** or **Streamline technology** such as **modern aviation**, **electric lighting**, the **radio**, and the **skyscrapers of New York**.

ART DECO designs appeared **geometric**, **zigzagged** and **decorative**. The bold use of **stepped shapes** and **sweeping curves** (unlike the sinuous, natural curves of the Art Nouveau), **chevron "v" patterns** and the **sunburst motif** are typical of Art Deco. Sunburst motifs were used in many ways eg: on ladies' shoes, car radiator grilles, the auditorium of the Radio City Music Hall and the spire of the Chrysler Building.

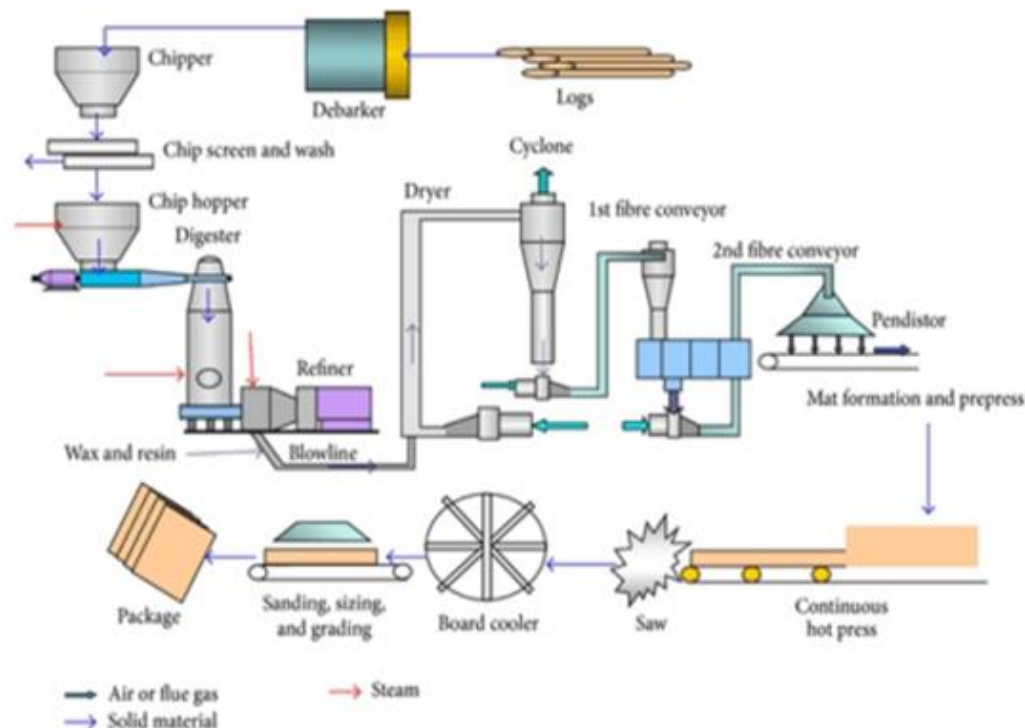
ART DECO designs made use of materials such as **bakelite**, **onyx**, **silver**, **diamonds**, **stainless steel**, **lacquer**, **inlaid wood**, **sharkskin (shagreen)**, and **zebra skin**. Popular Art Deco colours included **orange**, **black**, **silver**, **cream** and **green**.

ART DECO - Locally, the **India Rubber Tyre factory** in Inchinnan, and **Rogano's Restaurant** in Exchange Square, Glasgow, and the former **Beresford Hotel**, Sauchiehall Street, Glasgow, are all good examples of Art Deco buildings.

ART DECO - Jewellery designers of the Art Deco period include **Cartier & Company**, **Boucheron & Company** and **Jean Fouquet**.



MDF Production



Thermoplastics

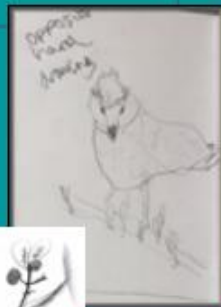


Heated & Re-Moulded 100's of times!
can also be recycled!



1. Experiment with a range of mark making techniques in pen and pencil

2. Explore the quality of line and mark making using different drawing techniques.



7. Explore form, shape, pattern and texture using paper techniques

6. Produce a range of mark making pages experimental marks and colour theory knowledge.



3. Create a tonal drawing of a bird showing texture and form.



4. Experiment with different mark making, blending, and layering with pencil techniques



5. Complete a colour theory A3 sheet using block paints.



6. Create a coloured tonal drawing, showing texture, form and blending techniques.



10. Add patterns inspired by mark making to add to your bird.

9. Using a bird template start to decorate your bird with different coloured papers showing texture and tone.



Knowledge Organiser: Yr8 Textiles—Day of the Dead Electronic Key Fob—Theory

Key words/ terms:	
Applique	A decorative technique where additional shaped fabrics are sewn on to create a pattern or decoration
Embellishment	An additional decorative feature. <i>e.g.</i> : beads, sequins, ribbons etc.
Embroidery	Stitches that create a pattern/design on the surface of fabric – by hand or machine
Pin	A thin piece of metal with a flat and pointed end to temporarily join things together
Needle	A thin piece of metal with a point at one end and an 'eye' at the other for thread to attach – then used to sew
Sewing	The process of passing thread through a fabric to join together or add decoration
Thread	A piece of spun polyester or cotton to sew with
Felted fabric (felt)	A non-woven fabric where woollen fibres are pressed and matted together
Reverse applique	A decorative technique where the top layer of fabric is cut away to reveal other fabrics that have been sewn on beneath
Fabric paint	A pliable paint that adheres well to fabric and remains flexible even when dry and set
Fabric pens	Similar to felt-tip pens but have a stronger pigment and do not wash out of fabric
SCAMPER	An acronym to help with development of designs (substitute, combine, adapt, minify/ maxify, put to another use, eliminate, reverse/ rotate)
E-textiles	The use of electronic components within textiles
Conductive thread	Thread that conducts electricity but is flexible, washable and safe to touch/ wear
Annotation	An explanatory note added to design work

Useful links/ further reading:

[Five Day of the Dead Facts \(Día de los Muertos\) - YouTube](#)

[Why Skull Makeup Is A Day Of The Dead Tradition - YouTube](#)

[Day of the Dead vs Halloween! What's the Difference? - YouTube](#)

[Electric Circuits: Series and Parallel - YouTube](#)



Design Process	
Design brief	A statement outlining what is to be designed and made
Task analysis	Exploring the brief and planning what research and tasks need to be completed
Artist research	Sourcing information on a specific artist, designer or movement to help with
Design ideas	A range of potential solutions to the problem
Design development	Further improving of an idea (often using the acronym SCAMPER)
Final design	A presentation drawing of chosen idea
Production diary	A record of the making/ practical work
Evaluation	Reviewing strengths and weaknesses of final product and design work



Knowledge Organiser: Yr8 Textiles—Day of the Dead Electronic Key Fob—Practical



HAND EMBROIDERY STITCHES

Back Stitch



Straight Stitch



Outline Stitch



Cross Stitch



Lazy Daisy Stitch



French Knot Stitch



Blanket Stitch



Herringbone Stitch



Broken Chain Stitch



Fly Stitch



Bullion Knot Stitch



Technical skills covered:

Pattern drafting
Felt applique (hand)
Embellishment (embroidery etc.)
Fabric cutting
Reverse applique (hand)
Fabric painting
E-textiles

Useful links/ further reading:

[Hand Embroidery for Beginners - Part 2 | 10 Basic Stitches | Handi-Works #52 - YouTube](#)

[50 Hand Embroidery Stitches: Beginners Tutorials by HandiWorks - YouTube](#)

What we will use:

Practical Equipment	Materials
Pins	Felt
Hand needles	Ribbon
Fabric scissors	Embroidery thread
Fabric paint	Conductive thread
Fabric pens	LED's
	Sew-able switch and battery
	Wadding

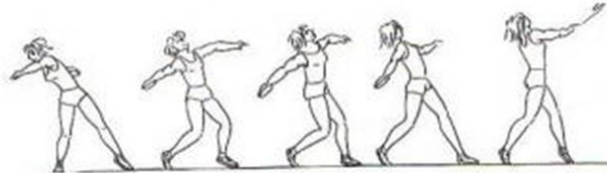
KS3 Athletics

Throwing



Discuss – Grip + Action:

- 'Swing' arm from a high to low position
- Release shot at 45 degrees

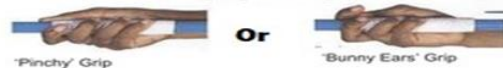


1. Chin, knee and toe in a line
2. make a bow
3. push and watch it go

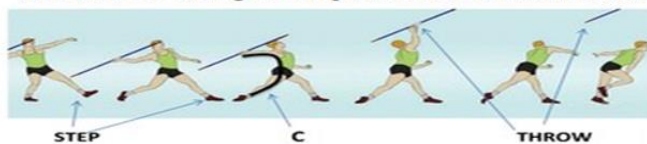


Javelin

Which grip will you use?



The basics - can you step, make a C and throw?



Rules of Athletics

- Track** - You must be behind the line before you start a race.
- You must wait for the gun to sound before starting, if you start before the gun it is a false start and the race will start again.
 - You must stay in your own lane, if you cross into someone's lane you will be disqualified from the race.
- Field (throwing)** - When throwing you must stay behind the throwing line.
- If the object you are throwing goes out of the throwing area it is a 'no throw'
- Field (Jumping)** - When jumping you must take off from the board or behind it.
- You must jump into the designated area.
 - When measuring a jump you measure from the point closest to the take off board.

Running

Sprint Start Technique

On Your Marks

- Rear knee should be level with front foot
- Form a 'V' behind the line with your hands
- Arms shoulder width apart, slightly ahead of hands

Get Set

- ❖ Raise hips higher than shoulders
- ❖ Lift legs at the knees
- ❖ Body weight on hands and feet equally

Go!

- ✓ Drive knee of rear leg forwards
- ✓ Extend front leg out
- ✓ Lean forwards
- ✓ Don't become upright too early

Up-Sweep



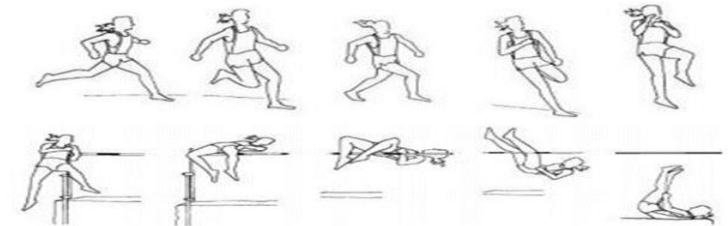
Down-Sweep



Jumping

High Jump – Fosbury Flop Technique:

- Curve run up
- Take off with nearest leg to the bar (1 footed)
- Use arms to drive the jump upwards
- Push hips forward to arch back on take off.

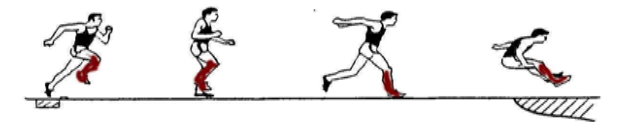


Long Jump



1. run towards marker
2. take off on strongest foot
3. use your arms and legs for height and distance
4. land safely on two feet

Sequence for Triple Jump



HOP must take off and land on same foot

STEP must land on opposite foot

JUMP must land in the landing area