


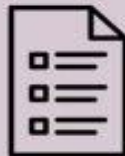




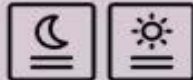











# Knowledge Organisers

## Year 8 – Half Term 5

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# How to use a knowledge organiser – step by step guide

	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> 

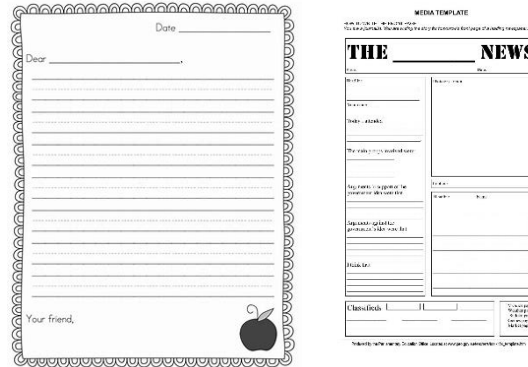
### Key Vocabulary

- Connotation**- an idea or feeling which a word invokes for a person
- Ambitions**- a strong desire to do or achieve something.
- Conventions**- a way in which something is usually done.
- Prosperous**- Successful in material terms; flourishing financially.
- Empowerment**- Authority or power given to someone to do something.
- Inclusivity**- The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized
- Distortion**- A misleading impression.
- Satire**- The use of humor, irony or exaggeration
- Social Responsibility**- Acting in the best interests of others.
- Stereotype** - A fixed image or assumption of a person/thing
- Duplicitous** – somebody who has two sides to their personality
- Deceitful** – somebody who deceives and misleads others



Analyse how people have risen to success through financial gain, personal ambition and social influence and how they have fallen

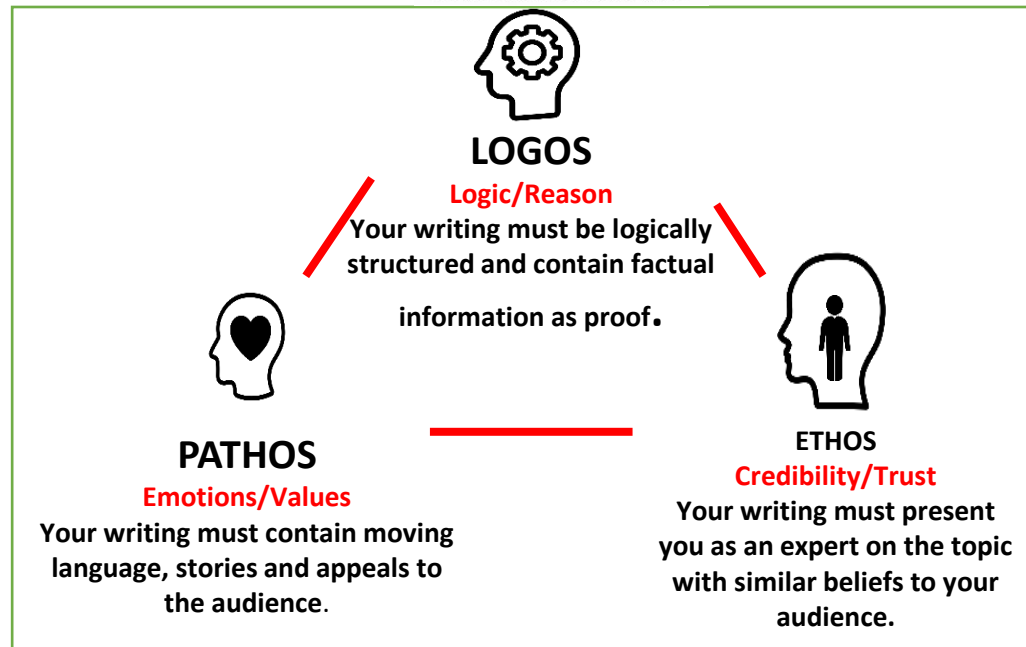
Forms: letter, biographical, report, expository, transactional, news article.



- Transactional writing;
- A- Alliteration
- F- Forest
- O- Opinion
- R- Rhetorical question/ Repetition
- E- Emotive Language
- S- Statistic
- T- Three (power of three)

### SPAG

SPAG Term	Definition
Modal Verbs	These are verbs that indicate likelihood, ability, permission or obligation. (should/would/could)
Subordinate conjunction	A subordinate conjunction joins two ideas or clauses in a sentence. (after/although/if/because)
Expanded noun phrase	An expanded noun phrase tells you more about the noun ( <i>The scary beast</i> )
Possessive apostrophe	An apostrophe can be used to show that one thing belongs to or is connected to something.
Relative Clause	A relative clause adds to a sentence by using a pronoun (who, that, which, where, when, whose)



### 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



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

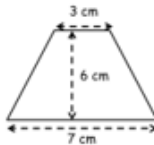
Characters		Themes		Context			
Macbeth	Is considered a hero at the beginning of the play. Gets promoted from Thane of Glamis to Thane of Cawdor and eventually King. Is ambitious and manipulated by his wife.	<b>Ambition</b>	Macbeth allows his ambition to overwhelm him and becomes a murderer. LM is affected by the guilt of her actions caused by her ambition.	<b>Witchcraft</b>	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.	<b>Fate</b>	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.	<b>King James I</b>	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.	<b>Guilt</b>	Macbeth feels guilt early on whilst LM becomes guilty later on which leads to her increasing lack of sanity.	<b>Monarchy</b>	His mother was known as an incompetent ruler and KJ was constantly worried, when he became 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.	<b>The Supernatural</b>	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.	<b>Key Terminology</b>			
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.	<b>Power</b>	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.			<b>Hubris</b>	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.	<b>Violence</b>	Macbeth commits violence from the beginning and continues to do so until violence is all he has left.			<b>Hamartia</b>	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.	<b>Masculinity vs Femininity</b>	Many questions around manhood towards Macbeth and Macduff from their wives because of their decisions.			<b>Tyrant</b>	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.	<b>Loyalty</b>	Macbeth is loyal to KD at the beginning and those who were loyal to Macbeth change side later in the play.			<b>Treason</b>	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.	<b>Key Quotes</b>					
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.	<b>Fair is foul, and foul is fair.</b>	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.	<b>Are you a man?</b>	LM questions Macbeth's manhood as he hallucinates as he 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.	<b>His mother's womb untimely ripped</b>	Means Macduff can kill Macbeth based on the prophecy as he was born by c-section.	<b>Look like the innocent flower but be the serpent under it.</b>	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.	<b>Is this a dagger which I see before me?</b>	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.	<b>All hail Macbeth, that shalt be King hereafter!</b>	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.	<b>Out damned spot! Out I say!</b>	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.	<b>(looking at his hands) this is a sorry sight.</b>	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.	<b>I am afraid to think what I have done.</b>	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.	<b>Wash this blood clean from my hand.</b>	Foreshadows that LM will be overwhelmed with guilt and see the blood on her hands as Macbeth does here after the murder of KD.		
<b>Plot</b>		<b>Unsex me here.</b>	Lady Macbeth wants to be stripped of female weakness and given the strength of man.	<b>Don't shake thy gory locks at me.</b>	Shows the true mental state Macbeth is in. Also shows guilt and remorse for Banquo's murder		
<b>Act 1</b>	The play opens with the three witches gathering and planning to meet Macbeth. Meanwhile, King Duncan is 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.						
<b>Act 2</b>	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.						
<b>Act 3</b>	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.						
<b>Act 4</b>	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.						
<b>Act 5</b>	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 5F – EQUATIONS, INEQUALITIES AND SEQUENCES

## EQUATIONS- Videos 217

1	Solving one-step and two-step equations	Using <b>inverse (opposite) operations</b> to find out a missing number. Example 1: $x + 6 = 11$ (subtract 6) $x = 5$ Example 2; $3x - 2 = 10$ (add 2) $3x = 12$ (divide by 3) $x = 4$
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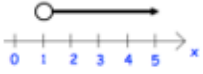
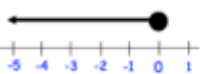
## USING FORMULAE- Videos 287



1	Substitute numbers into a formula	Eg. Substitute numbers into the formula for the area of a trapezium:  $\frac{(a + b)h}{2} = \frac{(3 + 7) \times 6}{2} = 30$
2	Rearranging formula	Make a the subject of the formula $b = 5a + 21$ $b - 21 = 5a$ $\frac{b - 21}{5} = a$

## SOLVING INEQUALITIES- Videos 269/270/271/272

1. Solve inequalities $\begin{array}{r} -3 \leq 2x - 1 \leq 5 \\ +1 \quad +1 \quad +1 \\ \hline -2 \leq 2x \leq 6 \\ \frac{-2}{2} \leq \frac{2x}{2} \leq \frac{6}{2} \\ \hline -1 \leq x \leq 3 \end{array}$	2. Find all the integer solutions which satisfy this inequality: $-1 \leq x \leq 3$ <p style="text-align: center; font-weight: bold;">-1, 0, 1, 2, 3</p>
3. Solve with unknown both sides $\begin{array}{r} 4m - 3 < 2m + 6 \\ \frac{-2m}{-2m} \quad \frac{-2m}{-2m} \\ \hline 2m - 3 < \quad + 6 \\ \frac{+3}{+3} \quad \frac{+3}{+3} \\ \hline 2m < \quad 9 \end{array}$ $\frac{2m}{2} < \frac{9}{2}$ $m < \frac{9}{2}$	

## INEQUALITIES- Videos 266/267/268

1	Greater than (>) Less than (<)	Greater than or equal to ( $\geq$ ) Less than or equal to ( $\leq$ )
2	Representing inequalities on a number line	$x > 1$  $x \leq 0$ 

Inequalities on a number line An <b>open circle</b> means that the value is <b>not included</b> : $x > 2$ <span style="border: 1px solid blue; padding: 2px;">x is greater than 2</span> 	A <b>filled in circle</b> means that the value is <b>included</b> : $x \geq 3$ <span style="border: 1px solid purple; padding: 2px;">x is greater than or equal to 3</span> 
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## Vocabulary

1	Equation	is an expression equaling another. Eg) $3b + 2 = 2d$
2	Substitution	Replace letters with numbers.
3	Formulae	Show the relationship between two or more variables
4	Inverse	The reverse of something else.

## Part 2 – Matter

### Key content:

#### Elements and atoms

- An **element** is a substance that only contains one type of atom, it is found on the **Periodic Table**
- Each element has its own unique chemical symbol which is the same in every language, these are also found on the Periodic Table
- An **atom** is the smallest part of which an element can be broken down into
- As there are around 100 types of elements that can occur naturally, there are around 100 different atoms

#### Compounds

- Compounds** are formed when two or more different elements chemically bond together
- The compound will have different **physical properties** to the elements which make up the compound, for example water is a liquid, but it is made from oxygen and hydrogen which are both gases
- Compounds are hard to separate and need a chemical reaction to do this

- When naming a compound, we always mention the metal first and the non metal second
- The name of the metal will not change but the name of the non metal will, for example oxygen can change to oxide
- Chemical formulae tell us how many atoms of each element are in the compound in relation to each other



- The small number tells us the number of each element which is in front of the number

#### Polymers

- Polymers** are long chains of groups of atoms which are repeated many times
- Natural polymers are not man-made and include wool, cotton, starch and rubber
- Synthetic polymers are man-made and include polythene, polystyrene and nylon

#### Groups and periods

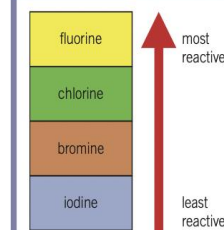
- Groups** are the columns in the Periodic Table, they go downwards
- Periods** are the rows in the Periodic Table, they go sideways
- Elements in the same group normally follow the same trends in properties such as melting point, boiling point and reactivity
- By placing these elements into these groups, scientists can make predictions about their properties

1		2			group number							0					
				H									He				
Li	Be				B	C	N	O	F	Ne							
Na	Mg				Al	Si	P	S	Cl	Ar							
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra																

#### Group 0

- Group 0** elements are known as the **noble gases**
- They are all non metals with low melting and boiling points, meaning all are gases at room temperature
- The boiling point decreases going down the group
- All of the group 0 elements are unreactive
- When electricity is passed through the gas, they emit a brightly coloured light, this can be seen in neon signs

#### Halogens



#### Group 1

- Group 1** elements are also known as the **alkali metals**
- They share similar properties with other metals such as:
  - Being shiny when freshly cut
  - Being good conductors of electricity and heat
- Group 1 metals are much softer than other metals and also have much lower melting and boiling points
- Group 1 elements react with water to form alkali solutions
  - $\text{lithium} + \text{water} \rightarrow \text{lithium hydroxide} + \text{hydrogen}$
  - $\text{metal} + \text{water} \rightarrow \text{metal hydroxide} + \text{hydrogen}$
- The further down the group that the metal is, the more vigorous the reaction will be. This is called a **trend**
- Another trend seen in Group 1 is with the boiling and melting points: the further down the group, the lower the boiling and melting points are

#### Group 7

- Group 7** elements are also known as the **halogens**
- They share similar properties with other non metals such as:
  - Having low melting and boiling points
  - Not conducting electricity
  - Moving down the groups the elements have an increased melting and boiling point
- The halogens also react in a similar way to one another, for example with iron:
  - $\text{iron} + \text{chlorine} \rightarrow \text{iron chloride}$
  - $\text{iron} + \text{bromine} \rightarrow \text{iron bromide}$
- Halogens can undergo **displacement reactions**, this is where a more reactive halogen will take the place of a less reactive halogen
- The most reactive halogens are at the top of the group, and the least reactive halogens are at the bottom of the group
- If the most reactive halogen is on its own, it will take the place of the less reactive halogen in a compound
  - $\text{calcium bromide} + \text{chlorine} \rightarrow \text{calcium chloride} + \text{bromine}$

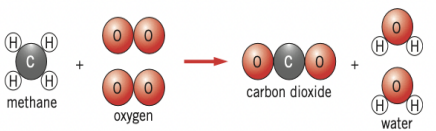
### Key words:

Key term	Definition
alkali metals	The elements in the left column of the Periodic Table including lithium, sodium, and potassium. Also called Group 1.
atom	The smallest part of an element that can exist.
carbonate	A compound that includes carbon and oxygen atoms, as well as a metal element. There are three atoms of oxygen for every one atom of carbon.
chemical formula	A formula that shows the elements present in a compound and their relative proportions.
chemical properties	Features of the way a substance reacts with other substances.
chemical symbol	A one- or two-letter code for an element that is used by scientists in all countries.
compound	Pure substances made up of atoms of two or more elements, strongly joined together.
element(s)	Substances that all other materials are made up of, and which contain only one type of atom. An element cannot be broken down into other substances.
group	A column of the Periodic Table. The elements in a group have similar properties.
Group 0	Group 0 is on the right side of the Periodic Table. Group 0 elements include helium, neon, argon, and krypton. Also called the noble gases.
Group 1	The elements in the left column of the Periodic Table, including lithium, sodium, and potassium. Also called the alkali metals.
Group 7	Group 7 is second from the right of the Periodic Table. Group 7 elements include fluorine, chlorine, bromine, and iodine. Also known as the halogens.
halogen	The name for elements in the group that is second from the right of the Periodic Table. Halogens include fluorine, chlorine, bromine, and iodine. Also known as the Group 7 elements.
hydroxide	A compound that includes hydrogen and oxygen atoms, as well as a metal element. There is one atom of oxygen for every one atom of hydrogen.
molecule	A group of two or more (up to thousands) atoms strongly joined together. Most non-metal elements exist either as small or giant molecules.
natural polymer	A polymer made by plants or animals. Examples include starch, wool, cotton, and rubber.
nitrate (chemistry)	A compound that includes nitrogen and oxygen atoms, as well as a metal element. There are three atoms of oxygen for every one atom of nitrogen.
noble gases	The name for elements in the group on the right of the Periodic Table. Noble gases include helium, neon, argon, and krypton. Also known as the Group 0 elements.
period	A row of the Periodic Table. There are trends in the properties of the elements across a period.
Periodic table	A table which shows all the elements arranged in columns and rows. Elements with similar properties are grouped together.
physical properties	Features of a substance that can be observed without changing the substance itself.
polymer	A molecule made by joining up thousands of smaller molecules in a repeating pattern. Plastics are synthetic polymers, and starch is a natural polymer.
sulfate	A compound that includes sulfur and oxygen atoms. There are four atoms of oxygen for every one atom of sulfur.
synthetic polymer	A polymer made by people, often in a factory. Examples include poly(ethene) and poly(propene).
trend	A pattern in properties, such as an increase or decrease.
unreactive	Elements that take part in few chemical reactions are unreactive.

## Part 2 – Reactions

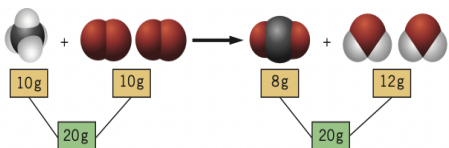
### Key content:

#### 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

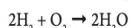
#### Conservation of mass

- 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



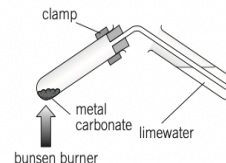
#### Combustion

- 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

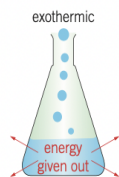
- A **thermal decomposition** reaction is one where the reactants are broken down (decomposition) using heat (thermal energy)
- An example of this is with metal carbonates:
 

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

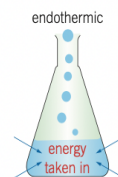


#### Exothermic and endothermic reactions

- 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



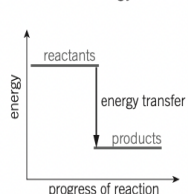
- Endothermic** reactions involve a transfer of energy from the surroundings to the reactants
- As energy is taken into the reactants a decrease in temperature will be shown
  - Examples of endothermic reactions include thermal decomposition, melting, and boiling



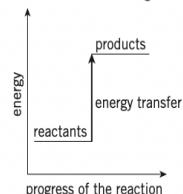
#### Energy level diagrams

**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



**Exothermic**



**Endothermic**

#### 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.



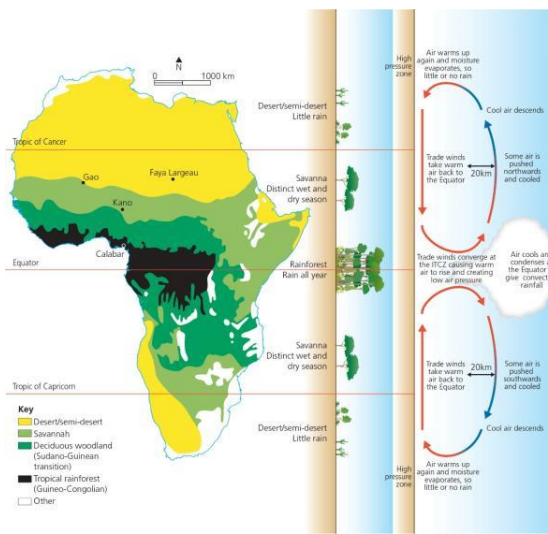
### Climate of Africa

<b>Weather</b>	Day to day conditions in the atmosphere e.g rainy.
<b>Climate</b>	Atmospheric conditions over a long period of time.

The climate zones and biomes of Africa have evolved as a repeated pattern north and south of the Equator. This pattern has developed due to the interactions of the atmosphere, hydrosphere and biosphere.

### Biomes in Africa

<b>Tropical rainforest</b>	Located on the equator – this area receives the most direct heat from the sun – the sunlight heats the moist air here which rises, cools and condenses forming rain clouds – the rain allows the vegetation to grow.
<b>Savannah</b>	Located between the equator and tropics – this area has a wet season and a dry season – there is limited vegetation here because of the limited rain.
<b>Deserts</b>	Located on the Tropics of Cancer and Capricorn – Hot and dry receiving very little to no rainfall. There is very little vegetation.



This figure shows the biomes across the continent of Africa on the left. On the right is a diagram of how the air causes the formation of the different Biomes.

### The Horn of Africa



This map shows the countries in the Horn of Africa.



### Countries in the Horn of Africa

Country	Population	HDI
Somalia	15 million	0.4
Ethiopia	109 million	0.47
Eritrea	3.5 million	0.35
Djibouti	994,000	0.49

### Physical features of the Horn of Africa

Physical features – features of the Horn of Africa controlled by climate and geological processes.

There is high and low lying land in the Horn of Africa. The low lying land is mainly in the east and south east of the country and covers most of the country of Somalia. The highland is located in Ethiopia, Djibouti and Eritrea.



### Volcanoes in the Horn of Africa

#### Tectonic plates

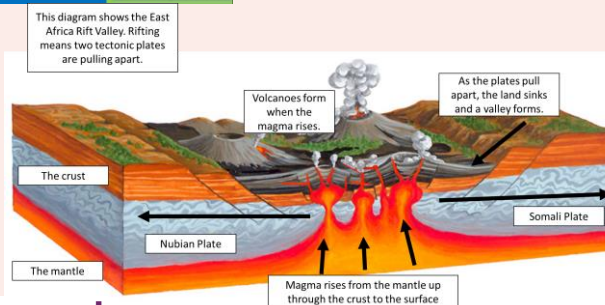
The Earth's crust is separated into plates which move. When the plates move, they cause volcanoes and earthquakes.



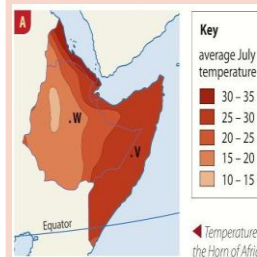
The East Africa Rift Valley formed because the Nubian plate and the Somali plate began to move apart.

This left a crack in the earths crust called a rift valley.

Today, this rift is a large rift in the landscape of Africa but in future, this rift will fill up with water and become a sea. Part of the rift has already filled with water, this is the Red Sea.

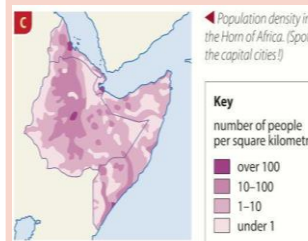
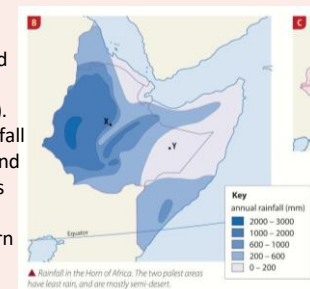


The diagram shows a cross section of the earth to show what is happening in the East African Rift Valley.



Temperatures in the Horn of Africa are higher in low lying land, particularly along the coast. The highest temperatures (30°C - 35°C) are in Somalia and the coasts of Eritrea and Djibouti. The lowest temperatures (10°C - 15°C) are in the highlands of Ethiopia.

Rainfall in the Horn of Africa is higher in the highlands in Ethiopia and the southern coast of Somalia (2000-3000mm). The lowest levels of rainfall are received in central and north eastern Somalia as well as eastern low lying Ethiopia and the northern coastline of Eritrea and Djibouti (0-200mm).



Population in the horn of Africa is unevenly distributed. The highest population are found in western Ethiopia and the northern coast of Somalia. The lowest population is located in the desert areas.

### Development in the Horn of Africa compared with other countries within Africa

	Ethiopia	Somalia	Eritrea	Djibouti	Nigeria	South Africa
<b>Birth rate</b>	32.1	41.8	29.6	21.2	37.2	19.9
<b>Infant mortality</b>	41	78.7	31.6	51.5	59.1	25.7
<b>Life expectancy</b>	65.5	55.4	65	63.8	54.8	64.1
<b>Literacy rate</b>	51.7	49.7	67.8	57	62	87
<b>GNI US\$</b>	850	130	567	3540	2030	6040
<b>HDI</b>	0.47	0.4	0.35	0.49	0.53	0.7



### Urbanisation in Addis Ababa, Ethiopia

**Urbanisation** An increase in the percentage of a countries population living in urban areas.

Addis Ababa is the capital city of Ethiopia. Since 1950 the population of the city increased from 400,000 people to 4.5 million people. Lets have a look at the push and pull factors for Addis Ababa

Pull factors	Push Factors
Addis Ababa is home to 4.5 million people speaking 80 languages.	80% of the population of Addis Ababa live in slums.
Life expectancy in all of Ethiopia is 45 but in Addis Ababa it is increased to 64.	25% of those living in the slums have no access to toilets.
Addis Ababa is the meeting place for the 55 countries of the African Union.	35% of properties in Ethiopia only have one room.
The River Bulbula and the River Akiki flow through the city supplying the city with water.	Due to poor sanitation systems, diseases such as cholera and typhoid are spread easily.
Bole International Airport is located in Addis Ababa which has ~12 million passengers a year.	23% of women in Addis Ababa are illiterate and only 22% of women complete primary school.

### Nomadic life in Somalia

**Nomads** People that travel from place to place to find fresh land for their animals and have no permanent homes.

When travelling Nomads use camels to carry everything. Sometimes, too many nomads travel to one place and fight over land.



There are at least 10 million nomads in the horn of Africa – over half of which live in Somalia (1/3 of the population).

Nomads live very basic lives with no electricity or sanitation systems. They depend on finding natural water sources and cook on fires. Each day, women spend a large proportion of time finding water.



Nomads breed and look after animals like cows and goats. They eat the produce but also sell it for money. Children attend school in the morning and tend animals in the afternoon.



### Salt Mining in the Danakil Depression

The Danakil depression, is a 200km by 50km area in Ethiopia, covered in salt flats, volcanoes and sulphur fields.



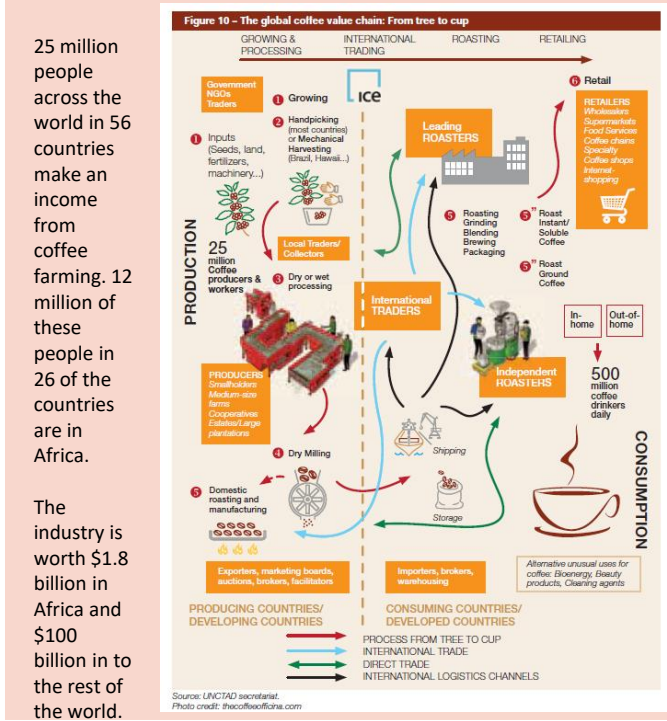
The salt mines located in Lake Afar, which forms part of the depression, stretch some 60 square km and go down to 300 feet below sea level. Salt is exported out of the region by 2000 Camels and 1000 Donkeys each day.



It is swelteringly hot, temperatures are on average 34 degrees Celsius and at times climb to 50 degrees. Over 1.3 million tonnes are extracted a year and sold worldwide.



### Coffee farming in Ethiopia



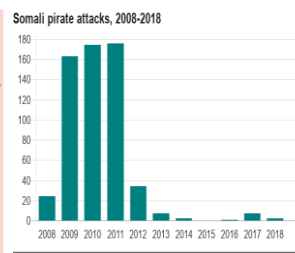
### Life by the coast in Somalia

Somalia has a population of 11 million people. The majority of people in Somalia are Muslim and speak Somali and Arabic. Somalia is one of the least developed countries in the world. 73% of people live in poverty and earn \$2 a day and the life expectancy is only 56 years.

Due to the climate, most of the population live by the coast. The most common employment is fishing.



Somalia's government is extremely ineffective. They collect no taxes so cannot provide services e.g. education. Somalia has also been rocked by civil wars and conflicts so life is very hard! Somaliland in the north is an area that essentially runs separately from the rest of the country and piracy is common. The EU and US have positioned Navy ships in the area to help reduce crime.



## Knowledge Organiser: American West

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

The Plains Indians believed in the *Great Spirit* who created the world. Everything was equal and sacred - people and nature



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

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

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



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



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

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

### Family life

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### Family life

### The role of Horses

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.



### 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.

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**

To avoid the dangers of travelling in Winter, Young and Mormon settlers stayed at Winter Quarters in Omaha in 1846/7.

In April 1847 an advance party of 150, led by Young, set out for Salt Lake Valley. They used the Oregon Trail and the Donner Trail

In July 1847 as Brigham Young arrived in the Salt Lake Valley, another party of 1500 Mormons set off with a clear route to follow thanks to the advance party. They arrived in August 1847

Between 1847 and 1869, 70,000 Mormons followed the Mormon Trail to the Salt Lake Valley. It had been a complete success



**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.



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**

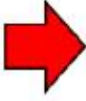
Indians were no longer allowed to leave reservations to hunt the buffalo meaning they couldn't independently feed, clothe or shelter themselves. Indians struggled to learn to farm and as the lands were unfruitful, most of the crops failed due to droughts, pests and diseases. Indian skills were lost Disease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

**Control**

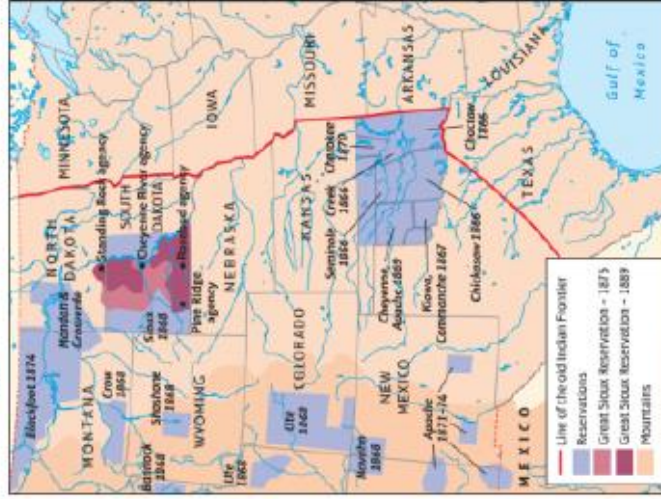
The government removed the power of Indian councils and chiefs by setting up US federal law courts in 1885. This meant that Plains Indians lost the power to govern themselves. Some Plains Indians were bribed into joining the Indian Agency Police to keep order amongst the Indians Feast, ceremonies and 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 200 Indians in 110 boarding schools. The motto was 'Kill the Indian in them, save the man'



**Indian Reservations on the Plains**



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

**Christian views on creation**

- God created the universe in 6 days & rested on the 7th. (Genesis)
- God Produced an environment on the earth which is perfectly suited for human life.
- Because God made the earth, the earth belongs to God.
- As everything has been made by God, the whole environment must be respected by humans.
- The environment is a gift from God to humans and so must be treated with care.
- God created the environment as something that is good, therefore Christians have a duty to preserve the environment and make sure that it continues to be what God intended it to be

**Muslim views on creation**

- The Universe and everything in it was created by Allah as a place perfectly suited for human life.
- It was created by one God so unity in all of creation.
- Balance in the universe which is revealed in this unity and the Qur'an.
- As everything has been made by God, the whole environment must be respected by humans.
- The environment is a gift from God to humans and so must be treated with care.
- There is unity and balance in creation, therefore Muslims have a duty to preserve the environment and make sure that it continues to be what God intended it to be.

**How does religion inspire environmental action?**

- Many religious people believed in a God who created a the world. God created it and gave it as a gift and so it needs to be looked after.
- Many believe that 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 word should be looked after because the essence of God is within all of the nature.
- Many believe caring for the world is an act of worship and they will receive reward in the afterlife for doing so.
- 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 -FoV**

Vrindavan is a Hindu place of pilgrimage in Northern India.

Increasing numbers of visitors put pressure on the city, rubbish piled up and forests cut down.

FoV was set up in 1997 as a community initiative aimed at restoring the environment.

**Scientific theory on creation**

- Time and space started with a small ball of infinite density – a singularity.
- The singularity exploded – the Big Bang. It let loose a huge amount of energy which travelled away from it.
- As the energy expanded, the amount of space got bigger and bigger. Particles of energy came together to form matter – the gasses and liquids and solids that make up the universe.



**Stewardship**

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.



**Taking care of the environment**

The Alliance of Religions and Conservation (ARC) was founded in 1995 by Prince Philip. It is a charity that helps the major religions of the world to develop their own environmental programmes based on their own core teachings, beliefs and practices.

**Buddhism-** One Earth Sangha

**Christianity** –Green Christmas

**Islam-**Islamic Foundation for Ecology and Environmental Sciences

**Sikhism** – EcoSikh

Science	Knowledge and facts based on the natural and physical nature of the world.	Duty	A legal or moral obligation and responsibility.
Religion	A belief system followed by a group of people.	Pilgrimage	A religious journey to a place of religious importance.
Universe	All existing matter and space (also known as the cosmos).	Environment	Everything around us, living and non living; especially nature.
Origins	The beginning of everything.	Khalifah	Duty to look after the plant ( Islam)
Creation	How the world began.	Krishna	An avatar of Vishnu; Vishnu heard the cries of humans suffering and incarnated as Krishna in order to help them.
Scientific truth	Truths reached through scientific experiment and research.	Pilgrimage	Spiritually motivated journey to a sacred place.
Religious Truth	Truths found in holy books and religious belief systems. Believed to be revealed by God.	Stewardship	Taking responsibility for the conservation of the natural environment; religious duty.
Theological Truth	Same as religious truth – see above	Vaishnavites	Those who worship Vishnu, who they see as the Hindu Supreme Lord.
Historical Truth	Truths about the past. Based on evidence, documents and archeology.	Vishnu	Part of Trimurti; sustainer role, maintaining life and the universe ( in Hinduism).
Legal Truth	A truth as a result of a court case that investigates the evidence presented.	Vrindavan	City in North India, which is sacred to Vaishnavites, said to have been the place Krishna loved when growing up.
Conscience	That ‘ inner voice’ that tells us right from wrong.	The Big Freeze	As the universe expands, it gets colder and colder too cold for any life form to exist.
Big Bang	A scientific theory on the creation of the world.	The Big Crunch	The expansion of the universe slows to a stop. Then it contracts back into singularity read for another Big Bang.
Biogenesis	Life can only come from things that are living.	The Big Rip	The universe gets faster and faster until everything in it rips apart.
Abiogenesis	The idea that life can come from non-living things.	Messiah	The King assigned by God who will lead the people during the end times in Judaism.
Creationism	The belief that the universe and living organisms originate from specific acts of divine creation, as in the biblical account, than by natural processes such as evolution.	Eschatology	The Christian belief in the end times/ the end of the world.
Evolution	Changes and adaptation in species and populations over time (through generations).	Brahma	The creator God in Hinduism.
Theistic Evolution	The belief that God directs evolution.	Trimurti	The three main aspects of God within Hinduism
Morality	The ability to decide right from wrong.	Vishnu	The preserver and protector God in Hinduism.
Spirituality	The search for meaning and purpose in life.	Shiva	The destroyer God in Hinduism.
Moksha	The Hindu belief that people can become free from the cycle of rebirth and be at one with God.	Rebirth	Cycle of death and rebirth.

<p><b>HOLIDAYS</b></p> <p>Places to stay <b>Je reste – I stay</b></p> <p>Un appartement – an apartment</p> <p>Un gîte - cottage</p> <p>Un hotel - hotel</p> <p>Une auberge de jeunesse – Youth hostel</p> <p>Une caravane - caravan</p> <p>Un camping - campsite</p> <p>Une villa - villa</p>	<p><b>At the seaside</b></p> <p>La plage - beach</p> <p>La mer - sea</p> <p>La piscine – swimming pool</p> <p>Au bord de la mer - seaside</p> <p>Le parc d'attraction – theme park</p> <p>Le promenade - promenade</p> <p>Les batiments - buildings</p> <p>Les sites touristiques – tourist sites</p>	<p><b>In the city</b></p> <p>Les magasins - shops</p> <p>Le centre commercial – shopping plaza</p> <p>La poste – post office</p> <p>Le restaurant - restaurant</p> <p>Le café - café</p> <p>Le musée - museum</p> <p>La gare – train station</p> <p>L'hôpital - hospital</p>	<p><b>Key Phrases</b></p> <p>Manger au restaurant- to eat at a restaurant</p> <p>Aller a la plage – to go to the beach</p> <p>Nager dans la mer – to swim in the sea</p> <p>Faire les sports aquatiques – to do water sports</p> <p>Faire une randonnée- to go hiking</p> <p>Faire une promenade – to go strolling</p> <p>Jouer aux sports – to play at sports</p> <p>Acheter des souvenirs – to buy souvenirs</p>
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**Le transport**

Le train - train

La voiture - car

Le car - coach

Le bus - bus

Le vélo - bike

Louer une voiture – to hire a car

Acheter un billet – to buy a ticket



**Activities on holiday**

La chambre – bedroom

Le clé – key

L'escalier – steps

La reservation – reservation

La serviette – towel

Le maillot de bains – swimsuit

**The weather**

Il fait beau – It is nice

Il faisait beau – It was nice

Il fera beau – It will be nice

Il pleut – It is raining.

Il plevait – It was raining

Il pleura – It will rain

**Les Verbes**

Je mange/ je bois – I eat/ I drink

Je nage/ je joue – I swim/ I play

Je fais/ je ne fais pas – I do/ I don't

Je prends – I get (as in transport)

Je me relaxe – I relax

Je vois/ je visite – I see/ I visit

**Tense Formation**

J'ai mangé / J'ai bu – I ate/ I drank

Je mangerai / je boirai – I will eat/ I will drink

J'ai nagé/ j'ai joué – I swam/ I played

Je nagerai/ je jouerai – I will swim/ I will play

J'ai fait / je n'ai pas fait – I did / I didn't

J'ai pris – I took, je prendrai – I will take

Je me suis relaxé (e)/ je me relaxerai – I will relax /I relaxed

J'ai vu/ j'ai visité – I saw / I visited

Je verrai/ je visiterai – I will see/ I will visit

**Additional Grammar – Opinions and adjectives**

C'était – It was/ Ce sera – It will be

formidable – fantastic

passionnant – exciting

barbant – boring

amusant – fun

super - super

Fatigant – tiring

Relaxant - relaxing

## HOLIDAYS

Places to stay

Je reste – I stay

Un appartement – an apartment

Un gîte - cottage

Un hotel - hotel

Une auberge de jeunesse – Youth hostel

Une caravane - caravan

Un camping - campsite

Une villa - villa

## At the seaside

La plage - beach

La mer - sea

La piscine – swimming pool

Au bord de la mer - seaside

Le parc d'attraction – theme park

Le promenade - promenade

Les batiments - buildings

Les sites touristiques – tourist sites

## In the city

Les magasins - shops

Le centre commercial – shopping plaza

La poste – post office

Le restaurant - restaurant

Le café - café

Le musée - museum

La gare – train station

L'hôpital - hospital

## Key Phrases

Manger au restaurant- to eat at a restaurant

Aller a la plage – to go to the beach

Nager dans la mer – to swim in the sea

Faire les sports aquatiques – to do water sports

Faire une randonnée- to go hiking

Faire une promenade – to go strolling

Jouer aux sports – to play at sports

Acheter des souvenirs – to buy souvenirs

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Le train - train

Louer une voiture – to hire a car

La voiture - car

Le car - coach

Acheter un billet – to buy a ticket

Le bus - bus

Le vélo - bike



## Activities on holiday

La chambre – bedroom

Le clé – key

L'escalier – steps

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## Les Verbes

Je mange/ je bois – I eat/ I drink

Je nage/ je joue – I swim/ I play

Je fais/ je ne fais pas – I do/ I don't

Je prends – I get (as in transport)

Je me relaxe – I relax

Je vois/ je visite – I see/ I visit

## Opinion verbs

J'aime – I like

Je n'aime pas – I don't like

J'adore I love

Je déteste – I hate

Followed by  
the infinitive

## Additional Grammar – Opinions and adjectives

C'est – It is

formidable – fantastic

passionnant – exciting

barbant – boring

amusant – fun

super - super

Fatigant – tiring

Relaxant - relaxing



Urdu	English	Urdu	English
رکنا / ٹھہرنا	to stay / lodge	اسلام آباد مارکیٹ	a market (in Islamabad)
چھٹیوں کا گھر	a holiday home	بد قسمتی	(un) fortunately
نوجوانوں کا ہاسٹل	a youth hostel	ٹکٹ۔ نوٹ۔ پیسے	a ticket a note (money)
اچھی قیمت	good value for money	ساحل سمندر سیر گاہ	the seaside resort

**adjectives**

حیرت انگیز۔ پر نعیش۔ پر خطر  
- آرام دہ۔ خوبصورت۔ آسانی سے  
واقع (نہیں)۔ مہنگا۔ خوشگوار  
- شور والا۔ معمولی۔ تیز رفتار۔ تھکا  
- دینے والا۔ بورنگ۔ تباہ کن۔  
مزے دار۔ لطف اندوز۔

**intensifiers**

کافی / تھوڑا / بلکہ / انتہائی / لہذا /  
تقریباً / واقعی / زیادہ / اس دوران میں

**time phrases**

Past کل / برسوں سے پہلے / جب میں جوان  
PRESENT اکثر / عام طور پر  
FUTURE کل / اگلے دن / اگلے سال

**Fancy Phrases**

۱۔ اگر میرے پاس انتخاب ہوتا تو۔  
۲۔ اس سے پہلے میرے پاس  
۳۔ ہمیں کچھ کرنا تھا  
۴۔ لیکن ترجیح دوں گا / گی کہ۔  
۵۔ میرا پہنچنا / روانہ ہونا۔

**Subtopics**

- holidays
- Booking hotels
- restaurants
- reviews
- travelling
- shopping

**Key grammar:**

- opinions
- Reflexive verbs
- Tenses
- Prepositions
- Complex structures

**Connectives**

ایک ہاتھ پر۔ دوسرے ہاتھ پر۔  
امن کے باوجود مزید براں۔  
- اضافی طور پر

Module 6: سیاحت / چھٹیاں  
Travel / Tourism local, national,  
international areas of interest

سوالات جواب دینے کے لئے

۱۔ آپ عام طور پر اپنی تعطیلات کہاں گزارتے ہیں؟  
۲۔ اپنی حالیہ چھٹیوں کے بارے میں مجھے بتائیں۔  
۳۔ آپ چھٹی پر کیا کرنا پسند کرتے ہو؟  
۴۔ آپ کس طرح کی چھٹی کو ترجیح دیتے ہیں؟  
۵۔ کہاں رہ رہے ہو آپ کے خواب کی تعطیل کیسی  
ہو گی؟  
۶۔ تعطیلات کیوں اہم ہیں؟



Infinitive	English	present	perfect (I have done)	imperfect (I was / used to)	future (I will do)	conditional (I would do)
سیر کرنا	to travel	سیر کرتا / کرتی	سیر کر چکا / چکی	سیر کرتا تھا / تھی	سیر کروں گا / گی	سیر کرتا چاہوں گا / گی
رہنا	to stay	رہتا / رہتی ہوں	رہ چکا / چکی	رہتا تھا / تھی	رہوں گا / گی	رہتا چاہوں گا
جانا	to go	جاتا / جاتی ہوں	جا چکی / چکا ہوں	جاتا تھا / تھی	جانوں گی / گا	جاتا چاہوں گی / گا
کرنا	to do	میں کر	میں نے کیا	میں کر رہا تھا	میں کروں گا	میں کروں گا
رکنا	to have	رکھتا / رکھتی ہوں	رکھ چکا / چکی	رکھتا / رکھتی تھی	رکھوں گا / گی	رکھتا چاہوں گا / گی
لینا	to take	لیتا / لیتی ہوں	لے چکا ہوں / لے چکی ہوں	لیتا / لیتی تھی	لوں گا / گی	لینا چاہوں گا / گی

Comes from Brazil:



Ensemble  
- a musical group



Used for Carnivals:



Rhythms:

"Shake the ganza quickly shake the ganza slow"

"we can play Samba all day long"

"Tamborim Tamborim Tamborim Samba"

"1 2 3 4 Steady Surdo"

Instruments:



### Musical Elements

- Timbre** *Sound quality*
- Pitch** *High or low sounds*
- Texture** *How many sounds?*
- Tempo** *Fast or slow?*
- Duration** *Long or short?*
- Structure** *The musical plan*

## SAMBA



Samba is a musical genre and dance style with its roots in Africa via the West African slave trade and African religious traditions. Samba is an expression of Brazilian cultural expression and is a symbol of carnival. Samba schools formed and compete bringing people together.

**Tier 2 Vocabulary:**  
**Compose** – to make  
**Contrast** – different  
**Select** - to choose  
**Recognise** – know what something is.  
**Respond** – to answer  
**Explore** – to find out  
**Repeat** - do it again  
**Demonstrate** - show it



### A. Key Words and Terms in Samba Music

- CALL AND RESPONSE** – one person plays or sings a musical phrase, then another person/group responds with a different phrase or copies the first one.
- CYCLIC RHYTHM** – a rhythm that is repeated over and over again.
- IMPROVISATION** – making up music as you go along, without preparation.
- OSTINATO** – a repeated pattern. Can be rhythmic or melodic; usually short.
- PERCUSSION** – Instruments that are mostly hit, scraped or shaken to produce sound. Samba uses many percussion instruments which together are called a **BATERIA**.
- POLYRHYTHM** – the use of several rhythms performed simultaneously, often overlapping each other to create a thick texture.
- PULSE** – a regular beat that is felt throughout music
- RHYTHM** – a series of notes of different lengths that create a pattern. Usually fits with a regular beat or pulse.
- SYNCOPIATION** – accenting or emphasising the weaker beats of the bar (often a half beat (quaver) followed by a full beat (crotchet)) giving the rhythm an **OFFBEAT** feel.
- SAMBISTA** – the leader of a Samba band or ensemble, often signalling cues to the rest of the band of when to change sections within the music with an **APITO** (Samba whistle)

### B. Form and Structure of Samba

Samba music often starts with an **INTRODUCTION** often featuring **CALL AND RESPONSE RHYTHMS** between the Samba Leader and ensemble. The main Ostinato rhythm of Samba is called the **GROOVE** when all the instruments of the Samba Band play their respective rhythms over and over again (**CYCLIC RHYTHMS**) forming the main body of the piece. The **GROOVE** is broken up by **BREAKS** - 4 or 8 beat rhythms providing contrast and **MID SECTIONS** – one or two instruments change the rhythm of their ostinato and the others stay the same or stop. Sometimes **BREAKS** and **MID SECTIONS** feature a **SOLOIST** who “shows off” their rhythms. The **SAMBISTA** must signal to the group when to change to a different section which is normally done with an **APITO** (Samba Whistle – loud!). A piece of Samba can end (this section is called the **CODA**) with either a **CALL AND RESPONSE** pattern or a pre-rehearsed ending phrase of rhythm. The **FORM AND STRUCTURE** of a piece of Samba may look like the following:



### C. Texture of Samba Music

Texture varies in Samba music, often **MONOPHONIC** where a single rhythm is heard as in **CALL AND RESPONSE** sections, sometimes **POLYPHONIC** where sections of the Samba band play different rhythms (**OSTINATOS**) creating **CROSS-RHYTHMS** (when two rhythmic patterns that “conflict” with each other occur simultaneously) creating a thick texture of interweaving and interlocking rhythms – a **POLYRHYTHM** or a **POLYRHYTHMIC TEXTURE**.

### D. Dynamics of Samba Music

The dynamics of Samba music are normally **VERY LOUD** – it is music designed to be performed outdoors at carnivals and is played by large numbers of instrumentalists and to accompany dancers and processions with large audiences watching and listening. Sometimes, a **CRESCENDO** is used at the end of a piece of Samba music for dramatic effect.

### E. Tempo of Samba Music

Samba music is generally **FAST** at around 104 bpm and keeps a constant tempo to assist the dancers or processional nature of the music. Sometimes the **SAMBISTA** (Samba leader) uses (**TEMPO**) **RUBATO** – tiny fluctuations in tempo for expressive effect.

### F. Instruments, Timbres and Sonorities of Samba

<b>SURDO</b>	<b>REPINIQUE</b>	<b>TAMBORIM</b>	<b>CHOCOLO</b>	<b>RECO-RECO</b>	<b>APITO</b>	<b>AGOGO BELLS</b>	<b>CAIXA DE GUERRO</b>

# Knowledge Organiser: D&T Year 8 Emoji Clock



Designing a CAD/CAM Emoji Style clock using Techsoft Design, the laser cutter and Stika machine.

The drawing tools are all located on the right hand side of your screen. At the top of your screen here, you will also find 'Open' and 'Save' buttons.



Before you start anything, please make sure your page is Setup correctly. Use the options in this toolbar to do this.

**Select** – to select multiple items hold down SHIFT on the keyboard and click the lines you want

**Draw a Circle** – click to place the center, and then click to place a point on the circumference.

**Draw a Rectangle** – click to place a corner, and then click to place the opposite corner.

**Deleting** – click on a part you want to get rid of and use the DELETE button on the keyboard. To delete part of a shape, click and hold on the DEL ANY icon.

**Straight line tool** – click to place the start of the line, click tool

**Curved line tool** – click to place the start of the line, click to place the first bend, second bend, etc. and right click to finish the line

**Fill** – select the area you want to fill. 'Are there any islands?' Click 'Yes' if you don't want to fill these in, or 'No' if you do.

**Dimensions** – Click at the beginning of where you want to measure, then again at the end. This will give you the measurement in millimeters.

**Text** – click to place text. The box below appears

Click to change font, size etc.

Enter text

Draw a box, and delete the contents

Delete anything

Delete part of a line

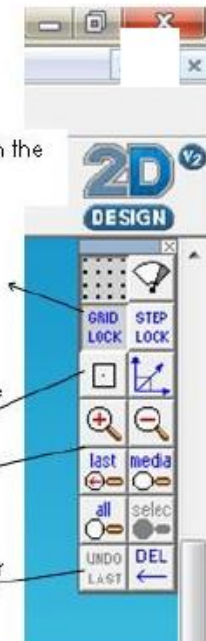
Your grid tools are all located on the left hand side of your screen.

**Lock to grid** – Keep this on to keep your lines straight and measurements accurate

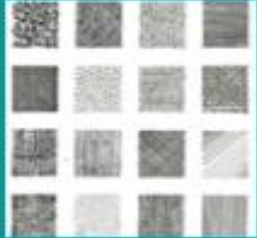
**Attach** – Use this tool to attach one point directly to another

**Zoom in/Out**



**Undo** – Undo or Delete your last move.





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.


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


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




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



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



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



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



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



## British Cuisine



The United Kingdom consists of four countries; England, Wales, Scotland and Northern Ireland.



Although Britain imports many of the foods we eat, we still produce crops such as barley, wheat and potatoes. Livestock farming is important too, with chickens, turkeys, beef and dairy cows, pigs and sheep reared for food.

## Chinese Cuisine



Chinese food is quick to make. Food is stir fried in a wok or steamed in a bamboo steamer – both are healthy ways of cooking.

**Traditional Ingredients**

- Cereals** – barley, wheat, oats, rye
- Vegetables** – potatoes, carrots, onion, parsnips, leeks, sprouts
- Herbs** – mint, chives, sage
- Animal** – beef, lamb, pork, chicken, eggs, milk, cream
- Fruit** – apples, strawberries, plums, pears, blackcurrants
- Fish** – mackerel, cod, haddock, salmon

**Traditional Dishes:**

- Fish and Chips
- Sunday Roast
- Sausage and Mash
- Pies and Pasties
- Fruit Crumble and Custard
- Full English Breakfast
- Victoria Sponge Cake
- Trifle

**Traditional Ingredients**

- Cereals** – rice, wheat
- Vegetables** – onion, edamame beans, water chestnuts, bamboo shoots, beansprouts
- Herbs/spices** – 5 spice, ginger, fennel, clove, star anis, coriander
- Animal** – pork, beef, chicken, duck
- Fruit** – lychee, apples, pears
- Fish** – prawns

**Traditional Dishes:**

- dim sum
- sesame toast
- spring roll
- fried rice
- chow mein
- Peking duck

## Indian Cuisine



India is a mainly agricultural country growing crops:

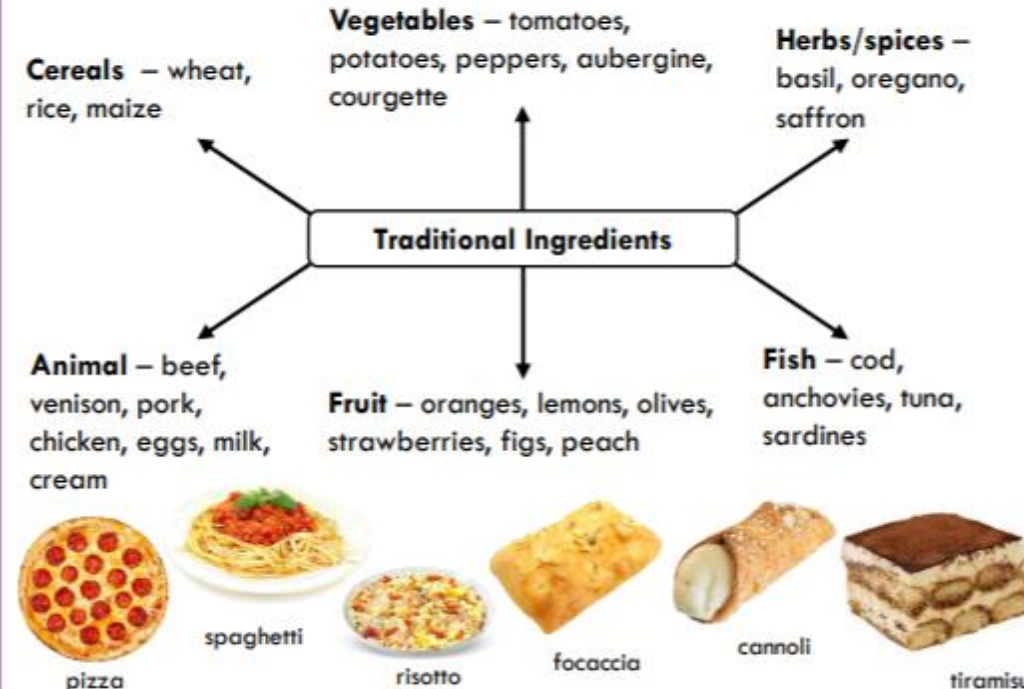
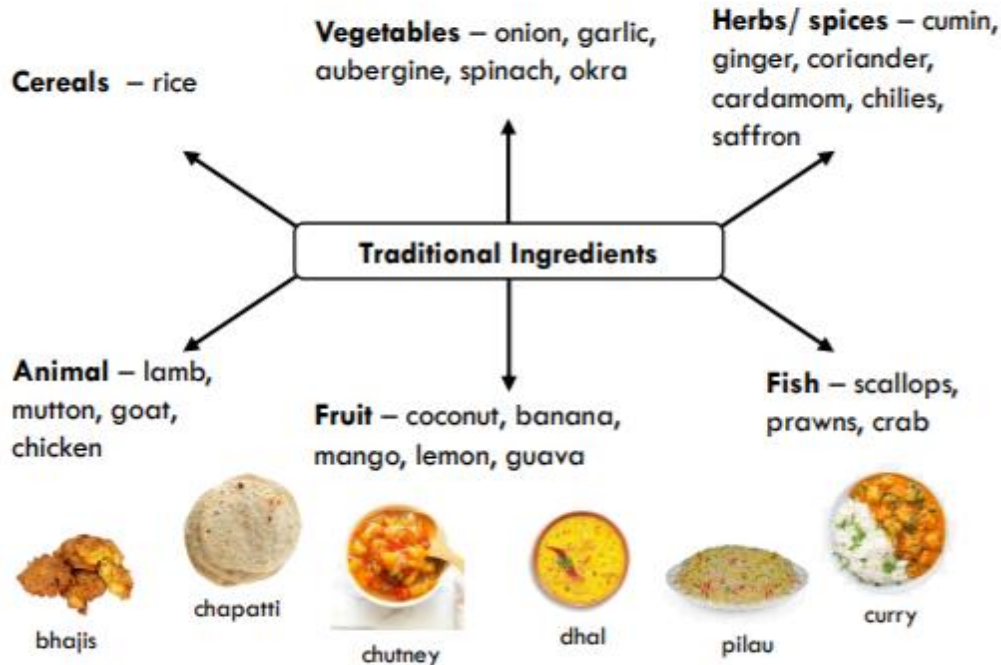
- In the north of India, wheat is the staple food and is used to make chapatti.
- In the south, rice is the staple food, and curries with sauce.

## Italian Cuisine



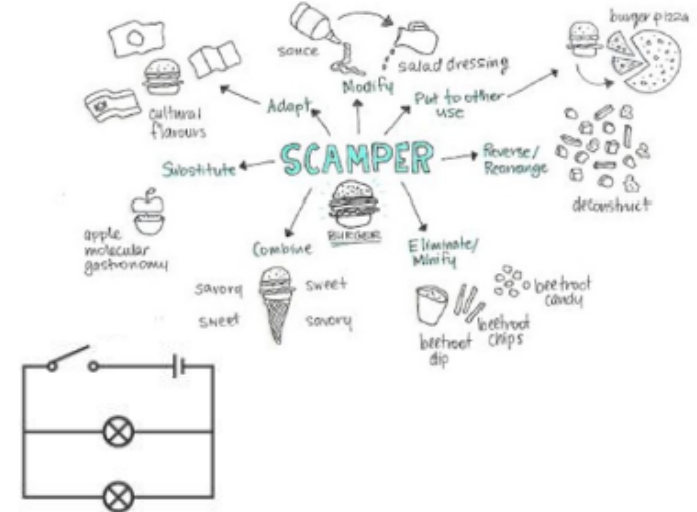
Different foods are produced in different areas of Italy:

- The north is cooler and mountainous; rice is grown, and the land is used to rear animals for cured meats.
- The south is hotter, so crops such as tomatoes, olives and lemons are grown.



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

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



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







## HAND EMBROIDERY STITCHES

Back Stitch



Straight Stitch



Outline Stitch



Cross Stitch



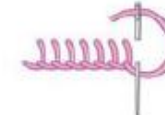
Lazy Daisy Stitch



French Knot Stitch



Blanket Stitch



Herringbone Stitch



Broken Chain Stitch



Fly Stitch



Bullion Knot Stitch

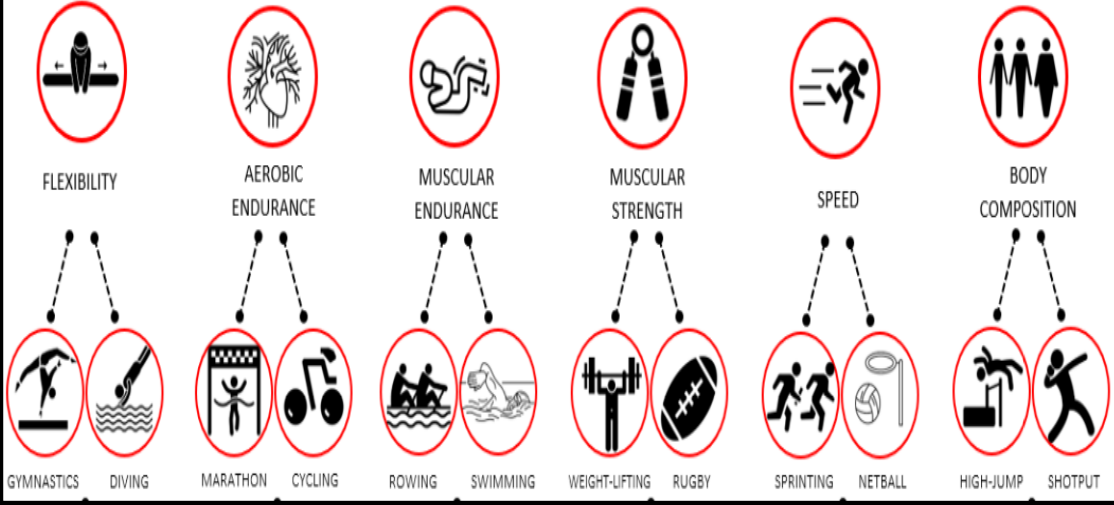
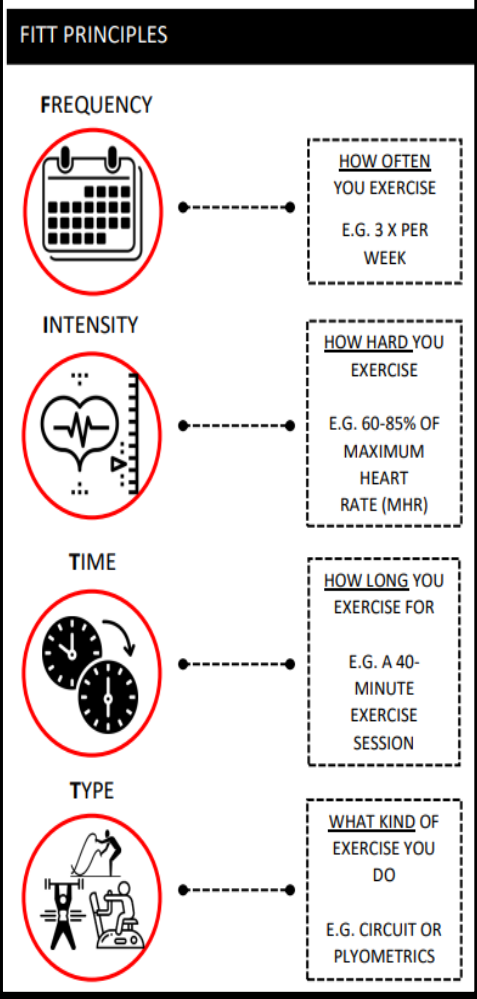


Technical skills covered:
Pattern drafting
Felt applique (hand)
Embellishment (embroidery etc.)
Fabric cutting
Reverse applique (hand)
Fabric painting
E-textiles

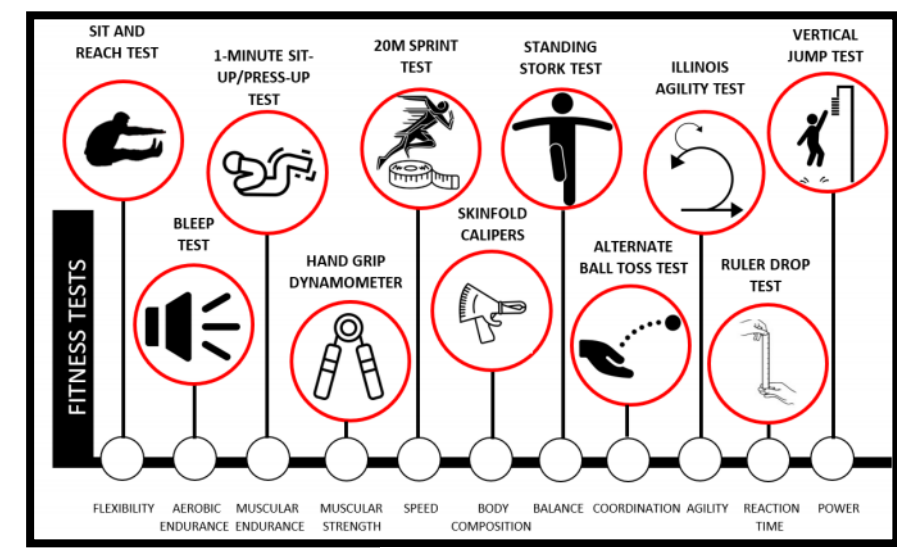
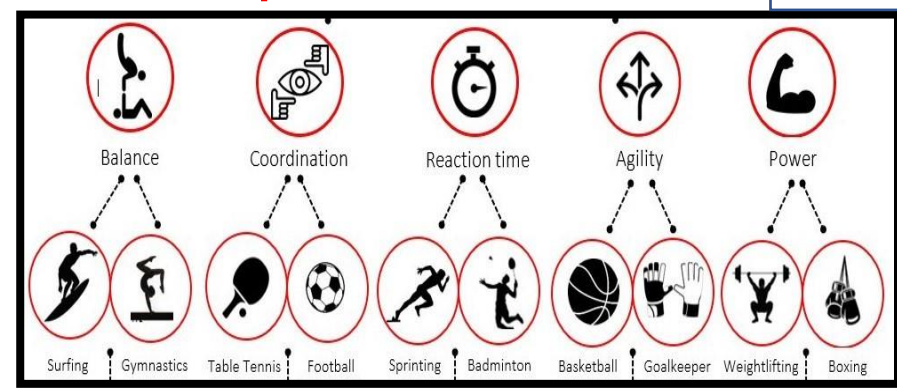
Useful links/ further reading:
<a href="#">Hand Embroidery for Beginners - Part 2   10 Basic Stitches   Handi-Works #52 - YouTube</a>
<a href="#">50 Hand Embroidery Stitches: Beginners Tutorials by HandiWorks - YouTube</a>

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

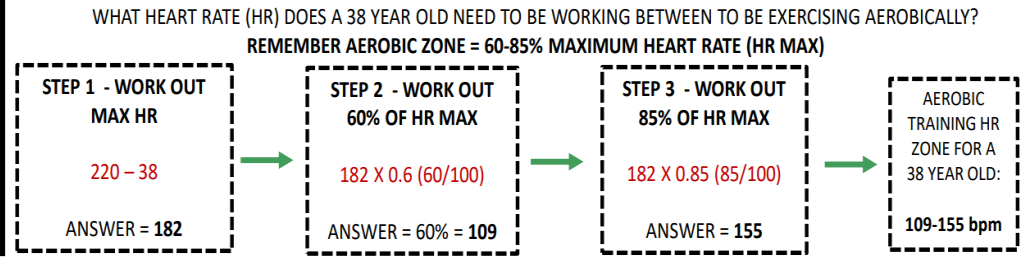
**PRINCIPLES OF TRAINING**



Method of Training	Component of Fitness
Continuous Training	Aerobic Endurance
Fartlek	Aerobic Endurance
Interval Training	Aerobic Endurance/Speed
Circuit Training	Aerobic Endurance/Muscular Strength/Muscular Endurance
Hollow Sprints	Speed
Accelerative Sprints	Speed
SAQ	Speed/Agility
Plyometrics	Power/Muscular Strength
Resistance Training	Power/Muscular Strength/Muscular Endurance
Free Weights	Power/Muscular Strength/Muscular Endurance
Static Stretching	Flexibility
Dynamic Stretching	Flexibility
Proprioceptive Neuromuscular Facilitation (PNF)	Flexibility



**THE MATHS**



**Borg Scale** – Rate of Perceived Exertion (RPE) – value x 10 to find out heart rate.

Max Heart Rate – 220 - age

6	No exertion
7	
8	
9	
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	
20	Maximal exertion

