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## English: The Nature of Power

### Key Texts

#### Drama

Julius Caesar – William Shakespeare

Henry V – William Shakespeare

Much Ado About Nothing – William Shakespeare

Macbeth – William Shakespeare

Dr Faustus – Christopher Marlowe

#### Poetry

Hawk Roosting – Ted Hughes

Ozymandias – Percy Bysshe Shelley

#### Modern Novel

1984 – George Orwell

The Power – Naomi Alderman

Fahrenheit 451 – Ray Bradbury

### Key Concepts

#### **Patriarchy**

Patriarchy is a social structure where men dominate and where society exists for the benefit and progression of men. The Middle Ages is often labeled as a patriarchal society because of the rigid roles that assigned men to the public sphere, and women to the private. Males dominated feudal society, which was defined by the three orders of society (those who pray, fight, and work). Men were expected to exude dominance in order to be considered masculine, in terms of women, war, and authority. Though we know that women intervened within these orders of society, they were undoubtedly restricted to the private sphere and left out of the hierarchy. Instead, women were confined to the roles of mother, widow, or virgin.

**The Divine Right of Kings** gave the monarch the image of a Demigod. This strengthened authority made going against the monarch considered a sin. Not obeying the monarch was considered treason and was punishable by death. The monarch had the power to send one to prison and order executions. All laws required her consent to be passed. However, even with this much power, the monarch was not above the law, and could be brought to court.

#### **The Great Chain of Being**

The Great Chain of Being is a hierarchical structure of all matter and life, thought in medieval Christianity to have been decreed by God. The chain starts with God and progresses downward to angels, humans, animals, plants, and minerals

The Great Chain of Being (Latin: scala naturae, "Ladder of Being") is a concept derived from Plato, Aristotle (in his *Historia Animalium*). The Chain of Being is a hierarchy, with God at the top, above angels, which like him are entirely in spirit form, without material bodies, and hence unchangeable. Beneath them are humans, consisting both of spirit and matter; they can change and die, and are thus essentially impermanent. Lower still are animals and plants. At the bottom are the mineral materials of the earth itself; they consist only of matter. Thus, the higher the being is in the chain, the more attributes it has, including all the attributes of the beings below it.

#### **Primogeniture**

Primogeniture is the right, by law or custom, of the firstborn legitimate son to inherit his parent's entire or main estate in preference to shared inheritance among all or some children, any illegitimate child or any collateral relative. In some contexts it instead means the inheritance of the firstborn child (absolute primogeniture) or the firstborn daughter (matrilineal primogeniture).

#### **Machiavelli**

Among the most widely-read of the Renaissance thinkers was Niccolò Machiavelli, a Florentine politician who retired from public service to write at length on the skill required for successfully running the state

In 1513 Machiavelli wrote his best-known work, *Il Principe* (The Prince). Dedicated to Lorenzo de' Medici, this little book offers practical advice on how to rule a city like sixteenth-century Florence. Its over-all theme is that the successful prince must exhibit *virtù* [variously translated as "strength," "skill," or "prowess"] in both favorable and adverse circumstances. This crucial quality of leadership is not the same as being a good person, since Machiavelli held that public success and private morality are entirely separate. The question is not what makes a good human being, but what makes a good leader. The word "Machiavellian" comes from Niccolò Machiavelli and describes a type of leadership where the leader will do whatever needs to be done to have power, including lying and manipulating the people around them. Someone Machiavellian is sneaky, cunning, and lacking a moral code as they believe that when they are leading that is all that matter and they can't be distracted by notions of right or wrong.

## English: The Nature of Power

### Key Concepts linked to rhetoric (the art of persuasive speech)

#### ARISTOTELIAN TRIAD:

1. Ethos: The appeal from character

Ethos refers to how we portray ourselves in an argument: it is the image persuaders present of themselves, to those they attempt to persuade. "You should believe my argument because you believe me." or perhaps "...believe in me."

2. Logos: The appeal from reason

Logos is a Greek term meaning 'word' and refers to using logic and reasoning as your appeal. Logos is the words we use, the clarity of the message itself, the credible arguments used and the supporting evidence on which our arguments are built. It's facts, rather than emotion.

3. Pathos: The appeal to emotion

Pathos is the emotional influence of the speaker on the audience. Its goal is to make the audience feel something. Whether this is fear, joy, or patriotism, appealing to people's emotions is a really powerful way of getting people on side.

#### AFOREST:

Anecdote: a short amusing or interesting story about a real incident or person. - 'I had a friend who...'

Facts: Something that can be proven to be true. - 'Smoking is bad for your health.'

Opinion: A personal belief - 'I believe that schools need more money for books.'

Rhetorical Questions: - A question designed to get the listener to think - 'Do you know what it's like to be homeless?'

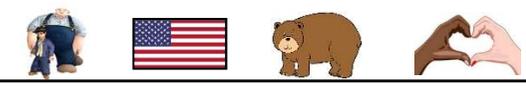
Emotive Language: Language designed to convey strong emotions - 'The litter in the playground is a disgrace.'

Statistics: Numerical facts, often expressed as percentages - '65% of students would prefer more homework'

Tricolon: a series of three parallel words, phrases, or clauses: "Friends, Romans, countrymen"

Word	Definition
Patriarchy	<b>Patriarchy</b> is a government or controlling power where men are in control and things are done for the benefit of men.
Hierarchy	A <b>hierarchy</b> refers to the organization of people at different ranks and levels from high to low.
Machiavellian	<b>Machiavellian</b> refers to a type of leadership that is very harsh and cut-throat.
Rhetoric	<b>Rhetoric</b> is the art of influence, through speaking powerfully and using undeniable logic.
Anecdote	An <b>anecdote</b> is a short story about something interesting, important or funny in a person's life.
Camaraderie	<b>Camaraderie</b> is a feeling of good friendship and togetherness among people in a group.
Subvert	To <b>subvert</b> something is to take away its power or authority by turning it on its head.
Subservient	If you are <b>subservient</b> to someone then you are willing to obey them and are happy for them to be in power
Tyranny	Tyrannical is a kind of leadership where once person is in absolute control and rules in a cruel way.
Arrogant	Arrogant is the attitude of a person who is overly proud of himself or herself or of his or her own opinions.
Regicide	The murder of the king or queen.
Hubris	Excessive pride and ambition.
Puissance	The power to influence or intimidate.
Omnipotent	Having unlimited power.
Supremacy	Power to dominate or defeat

English: Of Mice and Men



The Plot	
Section 1	The story opens with a description of the wooded area around the Salinas River in California. Two men approach: George and Lennie. As they talk more, it becomes clear that Lennie has a mild mental disability, and that George looks out for him. George catches Lennie petting a dead mouse and takes it off him, angrily. Lennie swears that he didn't kill it, although it becomes clear that Lennie's enormous strength means that he kills things unintentionally. George reminds Lennie that they are going to work on a ranch and he needs to behave. The two eat beans for dinner, with George losing his temper with Lennie for persistently asking for ketchup. He states that he would get along much better without Lennie. He then feels guilty about losing his cool, and reminds Lennie of their dream: one day, they are going to own their own farm. They then settle for the night.
Section 2	The two men arrive at the ranch, and after being scolded by their new boss, are assigned to a picking team led by Slim. They meet Candy, and also Curley, who immediately becomes aggressive towards Lennie. After he leaves, Lennie tells George to stay away from Curley. Curley's Wife then appears at the bunk, who Lennie finds 'purty' and who flirts with them. George has to tell Lennie to stay away from her. Slim then enters, who is clearly admired by all. He stokes up a friendship with George and Lennie.
Section 3	Slim gives one of his new pups to Lennie. George tells Slim of how they got chased out of the last town – Lennie grabbed hold of a girl's red dress, and wouldn't let go. Carlson begs Candy to let him shoot his old, stinking dog, to which Candy reluctantly agrees. Curley comes in, asking where his wife is. When he learns that she is not there, and neither is Slim, he storms out. The others follow, hoping to see a fight. Thinking they are left alone, George discusses the dream again to Lennie. Candy overhears, and swears to devote his life savings to it if he can be in. The other men return, Curley apologising to Slim for false accusations. Being mocked by the others, Curley turns his attention on Lennie, beating him. Lennie only fights back when George tells him to, severely crushing Curley's hand. Curley is warned by Slim not to get them fired.
Section 4	Crooks sits in his room alone. Lennie soon wanders in, lonely as the other men have gone out to town. Crooks initially tells him to go away, saying that he (as a black man) is not allowed in the others' bunk, and so they should not be allowed in his. Lennie persists, and eventually Crooks lets him in. Soon enough, Lennie begins to babble about his and George's dream. Crooks speaks of his own loneliness, before then taunting Lennie by suggesting that George might never return. He only relents when Lennie grows aggressive. Candy enters and begins to speak again of the men's dream. Curley's Wife interrupts, and taunts the men about being 'the weak ones' left behind. She speaks of her own loneliness. Crooks asks her to leave, but she threatens that she could easily have him lynched if he says too much more. The other men then return and Curley's Wife leaves.
Section 5	Lennie sits in the barn, stroking his dead puppy, questioning why it died. He decides to try and hide the puppy but then gets angry with it for dying and hurls it across the room. Curley's Wife enters, reassuring him that it is safe to talk to her. She speaks of her loneliness, and her past dreams. She explains that she doesn't like Curley. She asks Lennie to stroke her hair, but he quickly becomes too excited and holds on too tight. When she cries out, he tries to silence her, and accidentally breaks her neck. He runs away, towards the clearing that he and George were in at the beginning of the story. Candy finds the body and informs George – they immediately know what has happened. George asks Candy to pretend that George hasn't seen it, so he can't be implicated. Candy agrees. After a while, he calls the other guys in. Curley almost instantly asks for his shotgun, to track down Lennie.
Section 6	Steinbeck starts the last chapter as he starts the first, by describing in some depth the riverside scene from the opening. Lennie appears, anxious, but also proud that he has remembered the place that he should come to if he finds himself in trouble. He has two visions: of his Aunt Clara scolding him for getting into trouble, and a giant rabbit telling him that George will leave him. George appears, seeming unusually quiet. George tells Lennie that he is not made at him, comforting Lennie. Lennie asks him to talk about the dream again, which George does. As Lennie sits, listening to the story, looking out over the stream, George pulls Carlson's gun from his jacket and shoots Lennie in the back of the head. Lennie immediately dies, his body jerking to the ground. The sound of the gun causes the rest of the lynch party to locate the two. Carlson questions what happens, and George lies that he had to wrestle the gun from Lennie and shoot him with it. Only Slim understands what has truly happened and agrees with what George did.

Main Characters	
George – George is one of the two lead protagonists (with Lennie) in Of Mice and Men. Although he is <u>occasionally short-tempered</u> with Lennie, he is a <u>loyal and caring</u> friend. George could be described as an idealist, as he harbours <u>dreams</u> of one day owning his own farm and land. George is relatively <u>smart</u> , thinking and acting sharply in difficult situations.	Lennie– Lennie is a <u>kind and simple</u> character, who possesses <u>enormous physical strength</u> . At both the beginning and end of the novel he likes to pet soft things, is totally <u>devoted to George</u> , and is an unintentional threat to both himself and others. Lennie's huge size makes him a target of others – principally Curley. Lennie dreams of <u>tending the rabbits</u> on his and George's own farm.
Curley– Curley is the <u>boss's son</u> , and is perhaps the chief antagonist throughout the novella. He is <u>confrontational, mean-spirited and violent</u> , and to back up his threats he is rumoured to be a former prizefighter. Curley tries to compensate for this small stature by picking fights with larger men – such as Lennie. As a recently married man, Curley is extremely <u>paranoid, jealous and controlling</u> .	Curley's Wife – Curley's Wife is initially introduced to the reader as a <u>'tramp'</u> , a <u>'rat-trap'</u> and a <u>'tart'</u> , such are the views towards women on the farm. However, she emerges as one of the most <u>complex characters</u> in the text, revealing openly that she is disappointed with her life, that 'Curley ain't a nice fella' and that she is lonely. Eventually her longing for attention becomes her downfall.
Crooks – Crooks is the <u>lively and quick-witted stable-buck</u> , who is named so because of his crooked back. As with many of the other characters in the novella, Crooks openly admits that he is lonely – however in his case this is caused by the <u>racial discrimination</u> and separation that he suffers. Crooks <u>loneliness</u> can manifest itself into cruelty towards those who are even weaker, such as when he taunts Lennie.	Candy – Candy is an <u>old</u> odd-job worker who lives on the farm, who only has <u>one hand</u> after an accident. Candy worries that one day the boss will declare him unfit to work and he will be cast aside, left to die in poverty. His <u>old, smelly dog</u> (that is shot by the other ranch workers) is a harsh reinforcement of this belief. Candy is revitalised as he begins to share in <u>George and Lennie's dream</u> of owning their own place.



# English: Of Mice and Men

Key Context	
<p>John Steinbeck – John Steinbeck was an American author, who lived between 1902 and 1968. He was a Nobel Prize winner for Literature. Many of his <u>27 books</u> (including 16 novels) have been considered as classics of Western literature. His works frequently explore the themes of <u>fate and injustice</u>, as experienced by <u>everyman</u> characters. Many take place in the Salinas Valley of California.</p>	<p>The American Dream– The American Dream is a national ethos of the United States, which declares that <u>freedom, prosperity, success, and social mobility</u>, can all be achieved through <u>hard work</u>. It implies that society has few barriers preventing anyone from achieving their dreams, should they be willing to put in enough effort. James Truslow Adams described it as life should be better and richer and fuller for everyone.”</p>
<p>Racism– Life was tough for black people living in America in the 1930s. <u>Racism</u> was still rampant, and there were not yet laws ruling against racial discrimination. White and black people were <u>segregated</u> at the time, and black people were considered 2<sup>nd</sup> class citizens. Black people often had to work harder for less money, often being given the ‘dirty work’ in their industry. The <u>lynching</u> of black people was common, sometimes for the most petty or unproven of crimes. The Jim Crow laws of post-1876 strongly reinforced racism.</p>	<p>The Wall Street Crash and The Great Depression –In the 1920s, the USA had been an enormously prosperous nation. However, in <u>October 1929</u> millions of dollars were wiped out in an event that became known as the <u>Wall Street Crash</u>. This triggered the <u>Great Depression</u> across the country throughout most of the 1930s. In this time, between 12 and 15 million (one third of the population at the time) became <u>unemployed</u>, and many people lost their life savings as banks went bust. With no social support system, many families were left to face <u>poverty</u>.</p>
<p>Gender Inequality– Women had filled in for men when they had participated in the First World War. However, after the Great Depression, when many jobs were lost, <u>women’s jobs were often the first to go</u>. Women were not trusted as they were seen to be ‘taking jobs away from men.’ With so few job prospects, many women consigned themselves to a life as a <u>housewife</u>. Curley’s Wife provides an example of the difficulties for women at the time – she is forced into a marriage with a man she does not love to stave off poverty.</p>	<p>Golden California – To further compound the effects of the Great Depression, in the 1930s America received a number of <u>severe dust storms</u>, which greatly damaged the ecology and agriculture across much of the country. The only state that remained relatively unaffected was California on the west coast, which soon became known as ‘<u>Golden California</u>.’ Workers from all over the country descended upon the state in order to work for little pay as <u>farm-hands</u>. As men would often travel to do this alone, it was as an extremely solitary existence.</p>

Themes – A theme is an idea or message that runs throughout a text.
<p>Dreams – Each character in the text has their own dreams that they live and work for: George, Lennie, and Candy share in the dream of owning their own place. Curley’s dream is to be respected by others, whilst Curley’s Wife’s dream is to be a famous actress. Crooks simply longs to be accepted and treated equally. None of the characters make their dream, showing the impossibility of the American Dream.</p>
<p>Loneliness– All of the characters, in some sense, experience loneliness, except for Lennie (who has George). Curley’s Wife (isolated because she is a woman) and Crooks (isolated due to his colour) bemoan their lonely existences at any given opportunity, whilst all of the other men on the ranches live solitary lives as farm-hands, without families. At the end of the text, George is lonely too.</p>
<p>Inequality – Of Mice and Men was set in a time in which the laws favoured white people, and men held far more rights than women. This is evident through the characters of Crooks and Curley’s Wife. Similarly, life at the time could be deemed more selfish and predatory, as the strong do not care for (and many actively attack) the weak. Other characters’ behaviour towards Candy and Lennie is evidence of this.</p>
<p>Animals and Nature – Steinbeck makes frequent references to animals and nature, both literally and figuratively. At the start and end of the novella, he vividly describes the scene of nature, including the animals that reside there. He also compares characters to animals, for example Lennie is compared to a bear, whilst Curley is compared to both a fish and a frog.</p>

Word	Definition
Displaced	A person will be considered <b>displaced</b> when they are forced to leave their home, typically because of war, persecution, or natural disaster.
Segregation	<b>Segregation</b> is the action or state of setting someone or something apart from others.
Derogatory	Being <b>derogatory</b> is being expressive of low opinion
Imperiously	<b>Imperiously</b> is an adverb to describe carrying out an action in a manner showing arrogant superiority
Contemplate	To <b>contemplate</b> is to consider something as a possibility
Pugnacious	<b>Pugnacious</b> is being ready and able to resort to force or violence
Plaintively	<b>Plaintively</b> describes expressing sorrow
Ominous	<b>Ominous</b> is a way of describing threatening or foreshadowing evil or tragic developments
Gingerly	<b>Gingerly</b> describes with extreme care or delicacy
Mimic	To <b>mimic</b> is to copy or imitate
Discrimination	<b>Discrimination</b> is when a person or group of people is treated unfairly compared to others.
Sexism	Sexism is when you make a difference between people based on their gender
Novella	A novella is a short novel. Of Mice and Men is a novella.
Foreshadowing	Foreshadowing is a literary technique where the writer uses an event early in the text to predict an event that will follow later in the text.
Isolation	Isolation refers to a particular type of loneliness where someone is totally separated from other people.
Utopia	Utopia refers to a perfect place or state of being. It is the opposite of dystopia.

## Tables and Probability

### By the end you will be able to:

- Construct a sample space diagram
- Systematically list outcomes
- Find probability from two-way tables
- Find probability from Venn diagrams

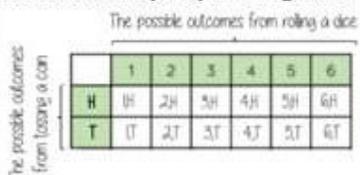
### Keywords:

- Outcomes:** the result of an event that depends on probability
- Probability:** the chance that something will happen
- Set:** a collection of objects
- Exclusive:** only that event (H or T, not H and T at the same time)
- Event:** the outcome of a probability
- Biased:** a built in error that makes all values wrong by a certain amount
- Exhaustive:** All the possible outcomes are listed

### Product Rule

The number of items in event a **X** The number of items in event b

### Construct sample space diagrams



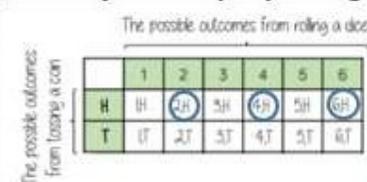
This is the set notation to list the outcomes S

$$S = \{1H, 2H, 3H, 4H, 5H, 6H, 1T, 2T, 3T, 4T, 5T, 6T\}$$

Sample space diagrams provide a systematic way to display exhaustive outcomes from events

IN BETWEEN THE {} ARE ALL THE POSSIBLE OUTCOMES

### Probability from sample space diagrams



What is the probability that an outcome has an even and a Heads?

$$P(\text{Even number and Heads}) = \frac{3}{12}$$

This is the set notation to represent probabilities. The bracket contents is the event asked for.

NUMERATOR THE EVENT

DENOMINATOR ALL THE POSSIBLE OUTCOMES

### Probability from two-way tables

Bivariate exclusive data  
One thing, two properties

	Car	Bus	Walk	Total
Boys	15	24	14	53
Girls	6	20	21	47
Total	21	44	35	100

Sometimes data is missing and you might have to fill in the blanks.

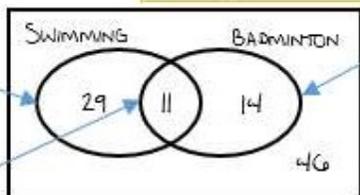
$$P(\text{Boys walking}) = \frac{14}{100} = \frac{7}{50}$$

Total number of items.

### Probability from Venn diagrams

The labelled oval represents all the students who swam  
 $11 + 29 = 40$

11 students did both, but not necessarily at the same time



The labelled oval represents all the students who played badminton  
 $11 + 14 = 25$

$$P(\text{Just swim}) = \frac{29}{100}$$

Outside the ovals in the set are those who didn't.  
 $100 - (29 + 11 + 14) = 46$

## Brackets, Equations & Inequalities

### By the end you will be able to:

- Form expressions
- Expand and factorise single brackets
- Form and solve equations
- Solve equations with brackets
- Represent inequalities
- Form and solve inequalities

### Form expressions

More than ... ADD For unknowns, use an alphabetical character.

Less than/difference ... SUBTRACT

Lots of ... MULTIPLY (but we place the number next to the letter)

- e.g. 4 more than t  $\rightarrow t + 4$
- 8 less than k  $\rightarrow k - 8$
- f less than 7  $\rightarrow 7 - f$
- 3 lots of w  $\rightarrow 3w$

e.g. Similar terms can be joined, like a perimeter.

$$t \quad 2t + 1 \quad t + 2t + 1 + t + 2t + 1 = 6t + 2$$

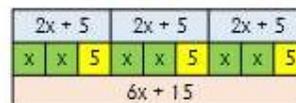
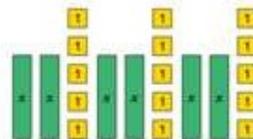
### Keywords:

- Simplify:** grouping and combining similar terms
- Substitute:** replace a variable with a numerical value
- Equivalent:** something of equal value
- Coefficient:** a number used to multiply a variable
- Product:** multiply
- Highest Common Factor (HCF):** the greatest factor of two terms (number or variable)
- Inequality:** comparison of values or terms, who's the greatest? (you are!)

### Multiply single brackets

$$3(2x + 5) = 6x + 15$$

$$\begin{array}{r} x \quad 2x \quad 5 \\ 3 \times 2x = 3 \times 5 = \\ 6x \quad 15 \\ \hline 6x + 15 \end{array}$$



THESE ARE DIFFERENT REPRESENTATIONS

### Factorise into a single bracket

$$\begin{array}{c} 8x + 4 \\ \leftarrow 4 \text{ This is the Highest Common Factor} \\ \hline 2x + 1 \end{array} \quad 8x + 4 = 4(2x + 1)$$

$$8x + 4 = 2(4x + 2) \text{ not fully factorised } \odot$$

### Inequalities

- $x < 7$  means "x is less than 7"
- $x \leq 4$  means "x is less than or equal to 4"
- $x > 3$  means "x is greater than 3"
- $x \geq 8$  means "x is greater than or equal to 8"
- NB
- $x > 7$  can also be written as  $7 < x$

### Algebraic constructs

- Term:** a single number or variable
- Expression:** minimum of two terms with an operation
- Equation:** an expression where two things are equal
- Formula:** a rule with many solutions
- Identity:** both sides of an equation are equal with the same variable. Includes =

### Solve equations with bracket

$$\begin{array}{c} 2x + 5 \quad 2x + 5 \quad 2x + 5 \\ \hline 27 \end{array} \quad 3(2x + 5) = 27$$

Expand the brackets

$$\begin{array}{c} x \quad x \quad 5 \quad x \quad x \quad 5 \quad x \quad x \quad 5 \\ \hline 27 \end{array} \quad 6x + 15 = 27$$

Keep the equals sign in a column

$$\begin{array}{c} x \quad x \quad x \quad x \quad x \quad x \quad 15 \\ \hline 27 \end{array} \quad -15 \quad -15$$

What you do to one side you must do to the other

$$\begin{array}{c} x \quad x \quad x \quad x \quad x \quad x \\ \hline 12 \end{array} \quad 6x = 12$$

$$\begin{array}{c} x \\ \hline 2 \end{array} \quad +6 \quad +6 \quad x = 2$$

### Solve inequalities

Solve

$$\begin{array}{l} 3(2x+5) > 27 \\ 6x + 15 > 27 \\ 6x > 12 \\ x > 2 \end{array} \quad \text{Check... let } x \text{ be } 4$$

$$3(4 + 5) > 27$$



# Sequences

# Indices

### By the end you will be able to:

- Generate a sequence from term-to-term or position to term rules
- Recognise arithmetic sequences and find the nth term
- Recognise geometric sequences and other sequences that arise

### Non-Linear Sequence

#### Fibonacci Sequence

0, 1, 1, 2, 3, 5, 8, ...

Each term is the sum of the previous 2 terms



### Generating Sequence

$3n + 6$  will be **linear** as  $n$  has a single power

$4n^2 - 4$  will be **non-linear** as  $n$  has an indices not equal to 1

To find a sequence, substitute the position ( $n$ )  
e.g. 1<sup>st</sup> term for  $3n + 6$   
is  $3 \times 1 + 6 = 9$

Checking for a term in a sequence  
Is 102 in the sequence  $3n + 6$ ?

$$\begin{array}{l} 3n + 6 = 102 \quad n = 32 \\ 3n = 96 \quad \text{Yes it is} \end{array}$$

### H Finding the algebraic rule

GIVEN THIS SEQUENCE  $\rightarrow 7, 11, 15, 19, 22...$

1. Find the common constant difference between the terms

It's 4, so we start the algebraic rule with  $4n$

2. Convert that to its times table  $\rightarrow 4, 8, 12, 16, 20...$

What is the comparison between the original sequence and the times table?

I have to add 3 to get from 4 to 7; I have to add 3 to get from 8 to 11... hold on!

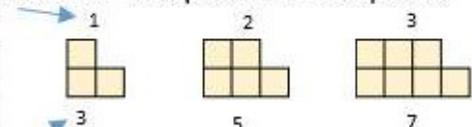
$$4n + 3$$

### Keywords:

- Sequence:** items or numbers put in a pre-decided order
- Term:** a single number or variable
- Position:** the place something is located
- Linear:** the difference between the terms is + or - a constant value
- Arithmetic:** see "Linear"
- Non-linear:** the difference between terms increases or decreases by different amounts or by a similar proportion
- Geometric:** terms are calculated as a proportion of the previous

### Sequence in a table or graphically

Position - the place in the sequence



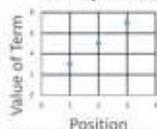
The term in position 3 has 7 squares

Term - the number or variable (the number of squares in each image)

In a table

Position	1	2	3
Term	3	5	7

Graphically



Because the terms change by the same amount each time, it is linear and plots in a straight line.

### Complex algebraic rules

$$2n^2$$

Square  $n$  first  
Then double

$$(2n)^2$$

double  $n$  first  
Then square the result

$$n(n + 2)$$

Add  $n$  to 2  
Then multiply by  $n$

### By the end you will be able to:

- Add and subtract expressions with indices
- Multiply and divide expressions with indices
- Raise indices to the power

### Keywords:

- Base:** The number that gets multiplied to the power
- Power:** The exponent - the number that tells you how many times to use the base in the multiplication
- Exponent:** See "Power"
- Indices:** See "Power"
- Coefficient:** The number used to multiply the variable
- Simplify:** Reduce the terms to their simplest form
- Product:** multiply

### Addition/ Subtraction with indices

Each square represents  $x^2$  and each cube represents  $x^3$

Only similar terms can be simplified. If they have different powers, they are unlike terms.

$5x^2 + 2x^2 \rightarrow 7x^2$

$5x^2 + 6x^3 - 3x^2 + x^3 \rightarrow 2x^2 + 7x^3$

### Multiply expressions with indices

$$\begin{array}{l} 4b \times 3a = 4 \times b \times 3 \times a = 4 \times 3 \times b \times a = 12ab \\ 5t \times 9t = 5 \times t \times 9 \times t = 5 \times 9 \times t \times t = 45t^2 \end{array}$$

$$\begin{array}{l} 2b^4 \times 3b^2 = 2 \times b \times b \times b \times b \times 3 \times b \times b = 2 \times 3 \times b \times b \times b \times b \times b \times b = 6b^6 \end{array}$$

**BREAK IT DOWN**

$$y^m \times y^n = y^{(m+n)}$$

### Dividing expressions with indices

$$\begin{array}{l} 4b^2 \div 2b = \frac{2 \times 2 \times b \times b}{2 \times b} = 2b \end{array}$$

$$a^5 \div a^3 = \frac{a \times a \times a \times a \times a}{a \times a \times a} = a^2$$

$$ab^2 \div a^3b = \frac{a \times b \times b}{a \times a \times a \times b} = \frac{b}{a^2}$$

$$x^m \div x^n = x^{(m-n)}$$

### Raising expressions with indices (power to the power)

$$\begin{array}{l} (b^3)^2 = b^3 \times b^3 = b \times b \times b \times b \times b \times b = b^6 \end{array}$$

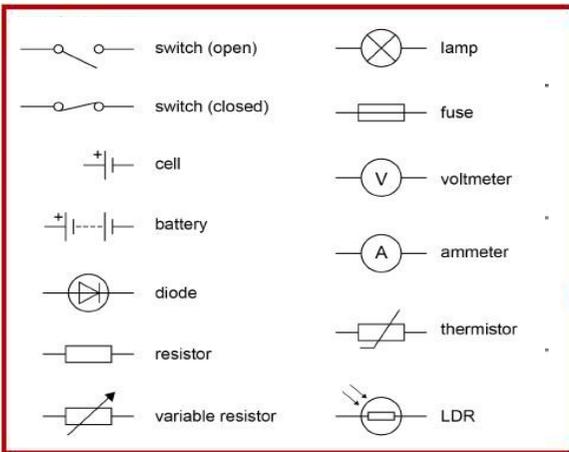
$$(y^m)^n = y^{(mn)}$$

$$\begin{array}{l} (3c^2)^4 = 3c^2 \times 3c^2 \times 3c^2 \times 3c^2 = 3 \times 3 \times 3 \times 3 \times c = 81c^8 \end{array}$$



# Science: Electricity and Magnetism

Keyword	Definition
Ammeter	A device used to measure electric charge.
Ampere	Unit of current. E.g. The current in the bulb is 4 amps or amperes (A).
Cell	A store of internal energy that can be transferred as an electric current in a circuit.
Conductor	A material which allows charge to move easily through it.
Electron	Sub atomic particle which flows in a circuit carrying a negative charge.
Series Circuit	A circuit connected in a way that the same current flows through each component in turn.
Parallel Circuit	In a parallel circuit, the current divides into two or more paths before recombining to complete the circuit.
Insulator	A material that does not allow charge or heat to pass through it easily.
Ohms	The unit of electrical resistance. Unit is $\Omega$
Resistance	The opposition in an electrical component to the movement of electrical charge through it. Resistance is measured in ohms.
Potential Difference	The potential difference (or voltage) of a supply is a measure of the energy given to the charge carries in a circuit.
Volt	Unit of voltage. E.g. the voltage across the lamp was 6 volts (V).
Voltmeter	A device used to measure potential difference or voltage.



**Potential Difference**

Potential difference is a measure of the difference in energy between two parts of a circuit. The bigger the difference in energy, the bigger the potential difference. Potential difference is measured in volts. A 230V is a bigger potential difference than 12V. A voltmeter is used to measure the potential difference, and must be in parallel.

**Series Circuit**

In series circuits:

- You get several components one after another.
- If a component breaks, the circuit is broken and all the other components stop working.
- The current is the same everywhere in a series circuit no matter where you put the ammeter – it will give the same reading.

**Electric Charge**

Some particles carry an electric charge. In electric wires these particles are called electrons. An electric current is a flow of charge, and in a wire this will be a flow of electrons.

For an electric current to flow we need:

- Something to transfer the energy to the electrons, such as a cell, battery or power pack.
- A complete path for the electrons to flow through (a complete circuit).

**Parallel Circuit**

In parallel circuits:

- Different components are connected on different branches.
- If a component breaks, the components on the different branches keep working.
- Unlike series, the lamps stay bright if you add more lamps in parallel.
- Current is shared between the components.

**Current**

Current is measured in amperes (A). 20A is a bigger current than 10A. An ammeter is used to measure the current. The ammeter must be connected in series.

**Equations To Remember**

**Current**

Current =  $\frac{\text{Charge}}{\text{time}}$

Current (Amps), Charge (Coulombs), time (seconds)

Potential Difference = Current  $\times$  Resistance  
 $V = I \times R$

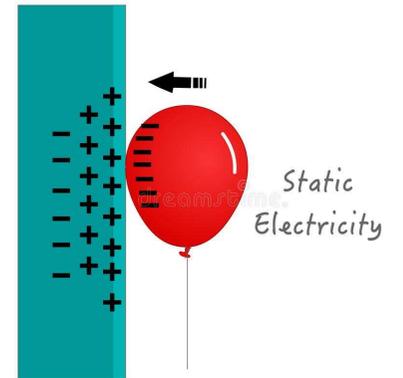
Potential difference in Volts (V), Resistance in Ohms ( $\Omega$ ), Current in Amps (A)

**Resistance**

The wires and other components in a circuit reduce the flow of charge through them – this is resistance. The resistance increases when you add more components in series. The resistance of two lamps is greater than the resistance of one lamp, so less current will flow through them.

Magnetic material can be magnetised or will be attracted to a magnet. These metals are magnetic: *iron, cobalt, nickel and steel*. A magnet creates a magnetic field around it. The magnetic field is strongest at the poles, where the field lines are most concentrated.

Unlike poles will attract. Like poles will repel.

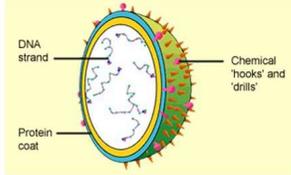
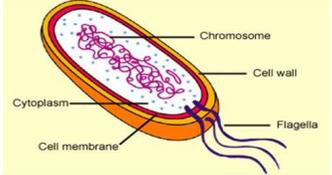


Static electricity is caused by separating and containing positive and negative charges. These charges are caused by moving electrons through friction. Like charges attract. Opposite charges repel.



# Science: Staying Healthy

food group	why it is needed
carbohydrates	energy
protein	growth and repair
fats	energy and to keep warm
fibre	keeps digestive system healthy
vitamins and minerals	keeps body healthy and working properly



- Bacteria are living cells and can multiply rapidly in favourable conditions. Once inside the body, they release poisons or toxins that can make us feel ill.
- Viruses can only reproduce inside host cells. Once inside, they make hundreds of thousands of copies of themselves.

Bacteria can be killed by **antibiotics**, viruses can not. With a virus you have to let your body fight it by learning how to make the antibodies. Some viruses have a vaccination, which is a weak or dead strain of the virus. Your body learns how to make the antibodies so it knows how to fight it in the future.

CHEMICAL	TESTS FOR ...?	HOW TO CARRY OUT THE TEST	RESULT	CHEMICAL	TESTS FOR ...?	HOW TO CARRY OUT THE TEST	RESULT
	Starch	1.) Add the iodine solution directly to the substance to be tested (in solid or liquid form) and look for a colour change.	Turns blue black with starch		Protein	1.) Add Buret's to the solution/suspension to be tested and look for a colour change.	Turns purple with protein
	Reducing Sugar	1.) Add Benedict's to the solution/suspension to be tested. 2.) Heat for 2 mins in a water bath at boiling point and look for a colour change.	Turns brick red with reducing sugars (green/yellow/orange if less sugar present)		Lipid (known as the Emulsion test)	1.) Add ethanol to the solution/suspension to be tested and shake thoroughly. 2.) Then add water and look for a colour change.	Turns cloudy/milky with lipid



### Drugs:

**Medicinal drugs** are prescribed by a doctor or to help someone who is feeling unwell like paracetamol.  
**Recreational drugs** are taken by people for enjoyment, to help them relax or to help them stay awake. Some recreational drugs are illegal.

Some people develop a **dependency** on drugs and if they stop taking them may develop **withdrawal symptoms** like anxiety, headaches and sweating.

Key word	Definition
Carbohydrates	A nutrient providing energy
Fats	Bulk energy store
Fibre	Nutrient to help keep the digestive system working
Lipids	See fats
Protein	Nutrient for growth of new tissues
Alcohol	A substance containing ethanol
Drugs	A chemical which affects the body
Nicotine	The addictive drug found in cigarettes
Antibiotic	A chemical which kills bacteria
Bacteria	A living cell which releases toxins making you unwell
Vaccination	A weak or dead dose of a virus to prevent people becoming unwell
Virus	A pathogen which takes over a host cell

### Why is it unhealthy to be underweight?

Some people do not eat enough food. In extreme cases this is known as **starvation**. If the energy in the food you eat is less than the energy you use, you will lose body mass. This leads to you being underweight. Underweight people:

- often suffer from health problems, such as a poor immune system
- lack energy to do things, and are often tired
- are likely to suffer from a lack of vitamins or minerals.

### Why is it unhealthy to be overweight?

Some people eat too much, or eat too many fatty foods. If the energy content in the food you eat is more than the energy you use, you gain body mass. This is stored as fat under the skin. If a person becomes extremely overweight, they are said to be **obese**.

Overweight people have an increased risk of:

- heart disease
- stroke
- diabetes
- some cancers.

### What is alcohol?

Alcohol contains the drug **ethanol**. When you drink alcohol, ethanol is absorbed into your bloodstream. It then travels to your brain, where it affects your nervous system. This chemical is called a **depressant** because it slows down your body's reactions.

### What's in tobacco smoke?

Cigarettes contain tobacco. Tobacco smoke contains over 4000 chemicals, many of which are harmful. These include:

- tar – a sticky black material that collects in the lungs. It irritates and narrows the airways. Some of the chemicals it contains cause cancer.
- nicotine – an addictive drug that speeds up the nervous system. It is a **stimulant**, which makes the heart beat faster and narrows blood vessels.
- carbon monoxide – a poisonous gas that stops the blood from carrying as much oxygen as it should. It binds to the red blood cells in the place of oxygen.



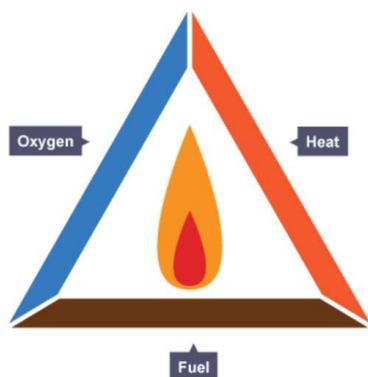
# Science: Chemical Reactions

## Physical vs Chemical Changes

Chemical	Physical
- not easily reversed	- easily reversible
- new product(s) formed	- no new products,
- reactants used up	- often just a state change
- often heat / light / sound / fizzing occurs	- e.g. ice melting.

**Combustion** is another name for burning. It is an example of an **exothermic** reaction, a reaction that releases energy to the surroundings.

Methane (fuel) + oxygen → water + carbon dioxide  
 $\text{CH}_4 + 2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{CO}_2$



**Incomplete combustion** occurs when there is less **oxygen** available. This produces a sooty flame and carbon monoxide instead of carbon dioxide

### Conservation of mass

During a chemical reaction, **the mass of the products is equal to the mass of the reactants**. This is called the conservation of mass. If there is a mass increase, chemicals from the atmosphere have made bonds (eg. Oxygen). If there is a mass decrease, gas has escaped the reaction.

### Oxidation

Combustion is an example of a type of reaction called **oxidation**. In an oxidation reaction, a substance gains oxygen. Metals and non-metals can take part in oxidation reactions.

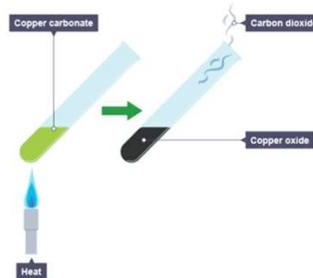
Metals react with oxygen in the air to produce metal oxides. For example, magnesium reacts with oxygen to produce magnesium oxide when it is heated in air:

magnesium + oxygen → magnesium oxide  
 $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$



### Thermal decomposition

Some compounds break down when heated, forming two or more products from one reactant. This type of reaction is called **thermal decomposition**.



### Exothermic reactions

If the temperature of a substance increases during a chemical reaction, the reaction is exothermic. Combustion is an exothermic reaction

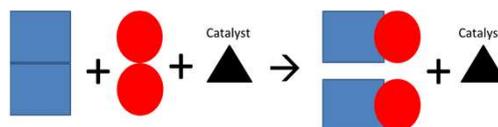


### Endothermic reactions

If the temperature decreases during a chemical reaction, the reaction is endothermic. Thermal decomposition and photosynthesis are endothermic reactions



A catalyst is a something that **INCREASES** the rate of a reaction and is itself **UNCHANGED** at the end



A **chemical reaction** is a change where atoms are rearranged to create new substances. Chemical reactions occur when reactants come into contact

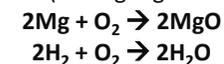


The atoms are joined together in one way before the reaction and in a different way after the reaction.

In chemical reactions, the starting substances are called the **reactants**. The substances made in the reaction are called **products**.

**Magnesium + oxygen → magnesium oxide**  
**Hydrogen + oxygen → water**

During a chemical reaction, you must have the **same number of atoms**, of each element, on the left and right hand side of the arrow. When balancing equations, you **cannot change the formula** (small numbers), only the number of molecules of a particular chemical (adding big numbers).



State symbols: solid (s), liquid (l), gas (g), aqueous (aq)

The rate of a reaction can be measured by the rate at which a reactant is used up, or the rate at which a product is formed.



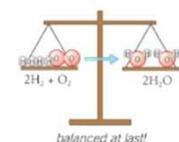
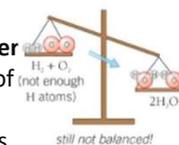
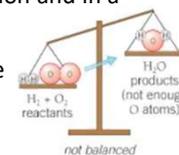
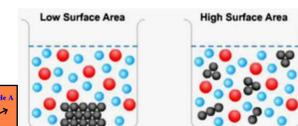
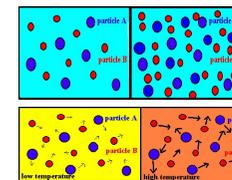
**REACTANTS**

**PRODUCTS**

Reactions that happen slowly have a low rate of reaction.  
Reactions that happen quickly have a high rate of reaction.

Factors affecting rate

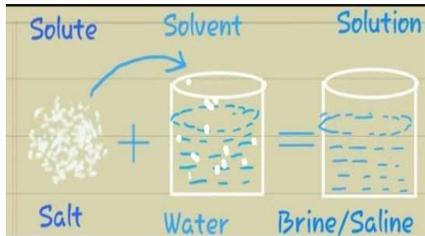
- Concentration
- Temperature
- Catalysts
- Surface Area



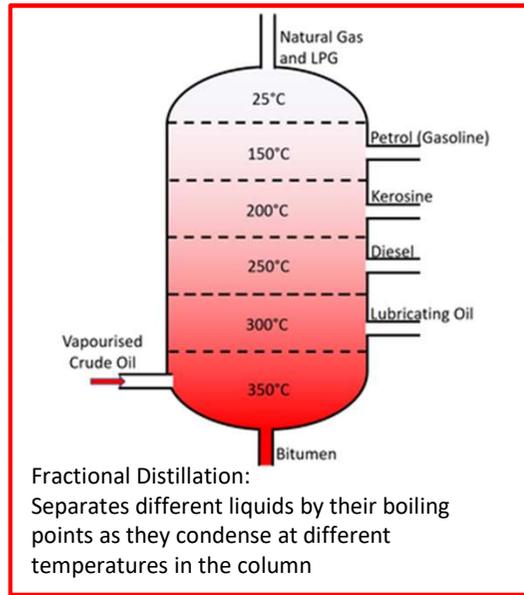
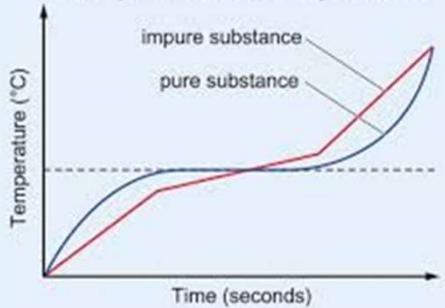


# Science: Separation Techniques

Key Term	Definition
Dissolve	When a substance breaks up & mixes completely with a solvent to make a solution
Formulation	A mixture that has been designed as a useful product
Insoluble	Does not dissolve
Mixture	Elements & compounds that mix together but are not chemically joined. Not a pure substance
Pure Substance	Only contains 1 type of element or compound
Saturated	The point when no more solute can dissolve in the solvent
Soluble	Can be dissolved (especially in water)
Solute	Dissolved substance in a solution
Solution	A liquid mixture where the solute has dissolved in the solvent
Solvent	The liquid that the solute dissolves in to make a solution



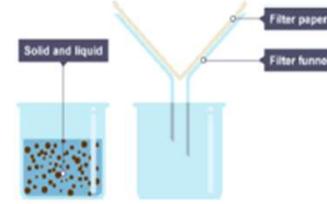
How temperature changes in a pure substance and an impure substance as they are heated



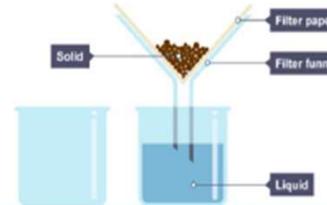
Fractional Distillation: Separates different liquids by their boiling points as they condense at different temperatures in the column

## Filtration:

- A method for separating an insoluble solid from a liquid. A beaker containing a mixture of insoluble solid and liquid. There is filter paper in a filter funnel above another beaker.

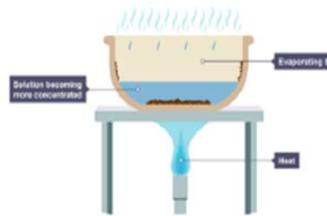


- The mixture of insoluble solid and liquid is poured into the filter funnel.
- The liquid particles are small enough to pass through the paper as a filtrate. The solid particles are too large to pass through the filter paper and stay behind as the residue.



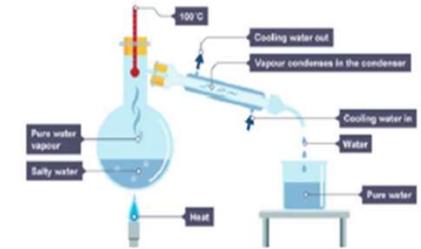
## Evaporation:

- A method used to separate a soluble solid from a liquid.
- A solution is placed in an evaporating basin and heated with a Bunsen Burner.
- The water will begin to evaporate and solid particles will begin to form in the basin.
- Once the water has evaporated, it will leave solid crystals behind.



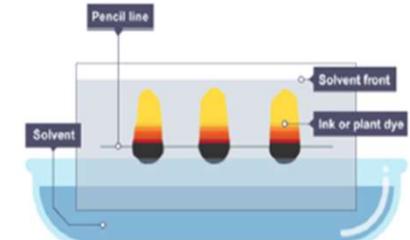
## Distillation:

- A method used for separating the solvent from a solution. E.g. water can be separated from a salt solution because the water has a much lower boiling point than the salt.
- Salt water is heated. The water evaporates and its vapours rise.
- The vapours rise and pass into the condenser, where they cool and condense.
- Liquid water drips into a beaker and the salt will be left in the round bottom flask.



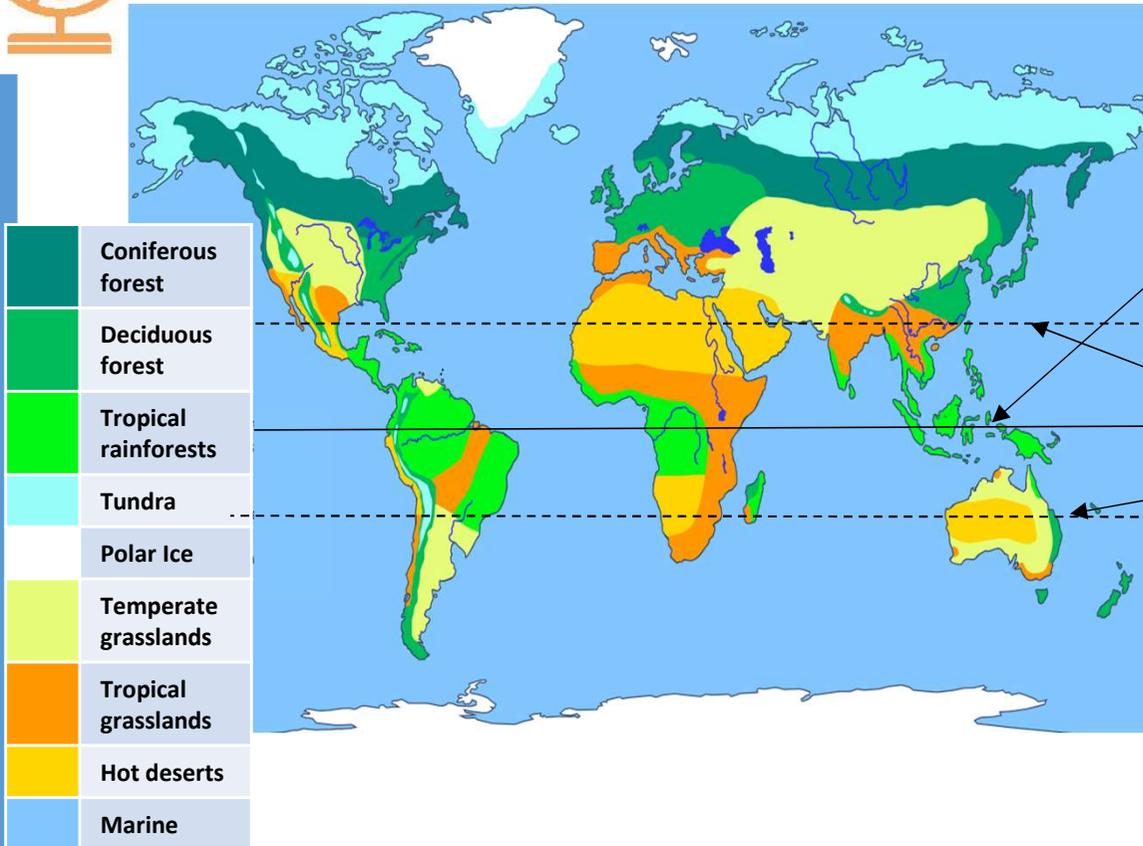
## Chromatography:

- Paper chromatography is a method for separating dissolved substance from one another. Often used when the dissolved substance are coloured such as inks, food colouring or plant dyes.
- A pencil line is drawn on the paper, and spots of ink are placed on the line.
- There is a solvent usually water or ethanol in a container/beaker.
- The paper is lowered into the solvent. The solvent travels up the paper, taking some of the substances with it.
- As the solvent travels up the paper, the different coloured substances are spread apart.





# Geography



Keyword(s)	Definition
<b>Biome</b>	A biome is a large scale ecosystem.
<b>Ecosystem</b>	An <b>ecosystem</b> is a natural environment and includes the <b>flora</b> (plants) and <b>fauna</b> (animals) that live and interact within that environment.
<b>Equator</b>	An imaginary line that runs around the middle of the earth and is always closest to the sun. It marks the difference between the two parts of the earth: the northern hemisphere and the southern hemisphere.
<b>Tropic of Cancer</b>	The <b>Tropic of Cancer</b> is an imaginary latitude line located above the equator that runs across the globe at about 23 degrees north.
<b>Tropic of Capricorn</b>	Opposite the Tropic of Cancer is the <b>Tropic of Capricorn</b> , whose latitude line circles the globe at about 23 degrees south (below the equator).

Components of an Ecosystem:	
<b>Abiotic</b>	These are non-living, such as air, water, heat and rock.
<b>Biotic</b>	These are living, such as plants, insects, and animals.
<b>Flora</b>	Plant life occurring in a particular region.
<b>Fauna</b>	Animal life of any particular region.

Climate (Average temperature and rainfall), plants (flora) and animals (fauna) found in different Biomes:

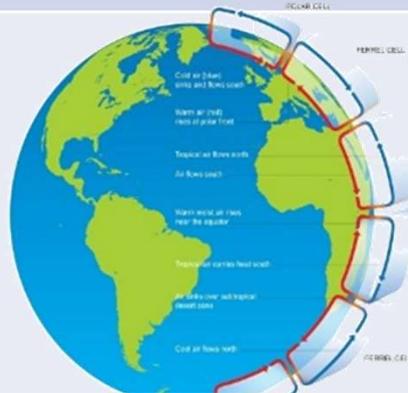
Biome	Location	Temperature	Rainfall	Flora (Plants)	Fauna (Animals)
<b>Tropical rainforest</b>	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
<b>Tropical grasslands</b>	Between latitudes 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/year)	Grasslands with widely spaced trees.	Large hooved herbivores and carnivores dominate.
<b>Hot desert</b>	Found along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
<b>Deciduous Forest</b>	Between latitudes 40° - 60° north of Equator.	Warm summers + mild winters (5-20°C)	Variable rainfall (500-1500m /year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
<b>Tundra</b>	Far Latitudes of 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/ year)	Small plants grow close to the ground and only in summer.	Low number of species. Most animals found along coast.

# Geography

## Global Pattern of Air Circulation – The Global Atmospheric Circulation Model:

Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

<b>Hadley cell</b>	Largest cell which extends from the Equator to between 30° to 40° north & south.
<b>Ferrel cell</b>	Middle cell where air flows poleward between 60° & 70° latitude.
<b>Polar cell</b>	Smallest & weakest cell that occurs from the poles to the Ferrel cell.

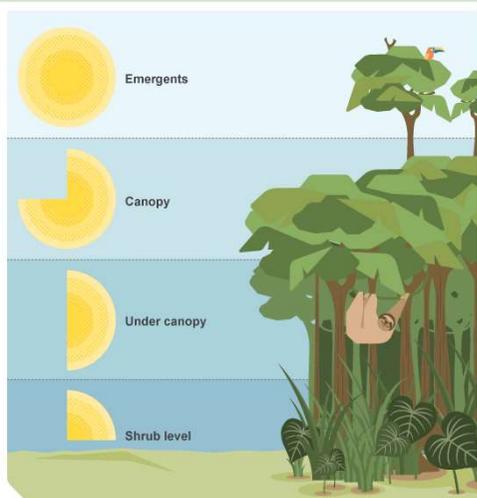


## Tropical Rainforest Biome

Tropical rainforests cover about 2 % of the Earth’s surface yet they are home to over half of the world’s plants and animals.

## Distribution of Tropical Rainforests

Tropical rainforests are centred along the Equator between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, Central Africa and South-East Asia. The Amazon is the world’s largest rainforest and takes up the majority of northern South America.



## Layers of the Rainforest

<b>Emergent</b>	Highest layer with trees reaching 50 metres, that emerge out of the canopy.
<b>Canopy</b>	The second layer in the rainforest. 50% of life is found here as it receives most of the sunlight and rainfall.
<b>Under Canopy</b>	Consists of trees that reach 20 metres high. Younger trees competing for light.
<b>Shrub Layer</b>	Lowest layer with smaller plants that have adapted to living in the shade.

Keyword(s)	Definition
<b>Hadley/Ferrel/Polar Cells</b>	Large cells of air created by the global pattern or air circulation – the Global Atmospheric Circulation Model.
<b>Condensation</b>	Where water vapour in the air cools down and changes back into tiny drops of liquid water, forming clouds.
<b>Cumulonimbus</b>	A type of cloud that extends to a great height and is associated with thunderstorms.
<b>Low Air Pressure</b>	A type of atmospheric pressure. When the air warms, the molecules fly further apart; the air becomes lighter and rises, creating low pressure. Low pressure draws moisture from the ground creating clouds, rain and storms.
<b>High Air Pressure</b>	A type of atmospheric pressure. When the air is cold, the molecules are packed tightly together; the air becomes denser and begins to sink. The air now presses on the Earth’s surface, creating high pressure. High pressure often brings fine sunny weather.
<b>Vegetation Layers</b>	The different layers of the rainforest composed of the shrub layer, under canopy, canopy and emergent layer.
<b>Decomposition</b>	The state or process of rotting, or decay.
<b>Species Diversity</b>	The number of different species that are represented in a given ecosystem e.g. the tropical rainforest.
<b>Endemism</b>	Something that can usually only be found in a particular place or population e.g. endemic species of animals are limited to specific geographical areas, such as Adelie Penguins in Antarctica.
<b>Habitat</b>	The natural home or environment of a plant or animal.
<b>Interdependence</b>	A rainforest works through <b>interdependence</b> . This is where the plants and animals <b>depend on each other</b> for survival. If one component changes, there can be <b>serious knock-on effects</b> for the entire ecosystem.

## Climate of Tropical Rainforests

- Evening temperatures rarely fall below 22°C.
- Due to the presence of clouds, temperatures rarely rise above 32°C.
- Most afternoons have heavy showers.
- At night with no clouds insulating, temperature drops.

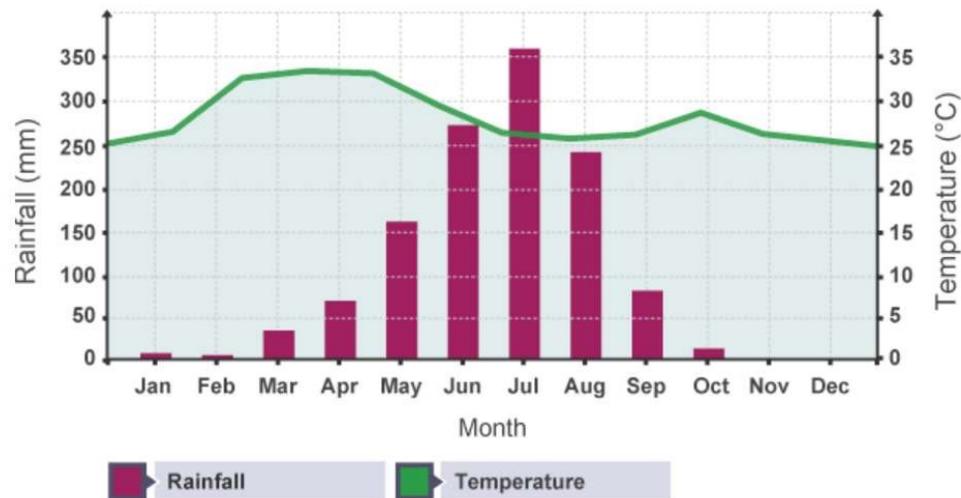


# Geography

## Savannah (Tropical) Grasslands Biome – Location and Climate:

Savannahs, also known as tropical grasslands, are found to the north and south of tropical rainforest biomes. The largest expanses of savannah are in Africa, where much of the central part of the continent, for example **Kenya** and **Tanzania**, consists of tropical grassland. Savannah grasslands can also be found in **Brazil** in South America.

Savannah regions have two distinct seasons - a wet season and a dry season. There is very little rain in the dry season. In the wet season vegetation grows, including lush green grasses and wooded areas. As you move further away from the equator and its heavy rainfall, the grassland becomes drier and drier - particularly in the dry season. Savannah vegetation includes **scrub**, grasses and occasional trees, which grow near **water holes**, seasonal rivers or **aquifers**.



## Plant and Animal Adaptations in the Savannah Biome:

**Plants and animals have to adapt to the long dry periods.** Many plants are xerophytic, which means they have adapted to live in a dry habitat - for example, the acacia tree with its small, waxy leaves and thorns. Plants may have adapted to enable them to store large amounts of water, for example the baobab tree, or have long roots that reach down to the water table.

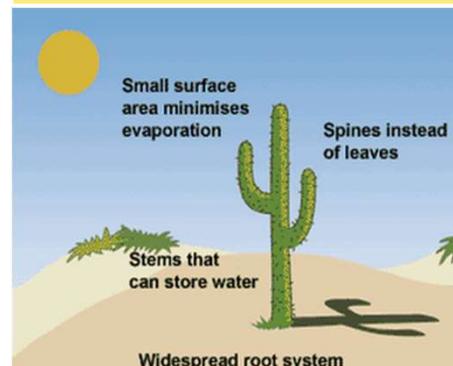
Animals may **migrate** (move/travel) great distances in search of food and water.

Keyword(s)	Definition
<b>Africa</b>	One of the seven continents of the world, containing 54 highly diverse countries, with a total population of over 1.3 billion people.
<b>Equator</b>	An imaginary line that runs around the middle of the earth and is always closest to the sun. It marks the difference between the two parts of the earth: the northern hemisphere and the southern hemisphere.
<b>Precipitation</b>	Water in the form of rain, hail, sleet or snow falling to the ground.
<b>Species</b>	A group of closely related organisms e.g. plants or animals that share common characteristics.
<b>Adaptation</b>	The process of change by which an organism or species becomes better suited to its environment.
<b>Predator</b>	An animal that naturally preys on others e.g. wolves are major predators of smaller mammals.
<b>Defense</b>	The action of defending from or resisting attack.

## Hot Deserts Biome – Location, Characteristics and Climate:

Most of the world's hot deserts are found in the **subtropics** between **20 degrees and 30 degrees north & south** of the Equator. The **Tropics of Cancer and Capricorn** run through most of the world's major deserts.

- **Aridity** – hot deserts are extremely dry, with annual rainfall below **250 mm**. It might only **rain once every two to three years**.
- **Major temperature change between the day and night** – temperatures in hot deserts rise to over **45 degrees during the day**, but they are **cold at night** (approx. 5 °C) due to little cloud cover.
- **Landscapes** – Some places have dunes, but most are **rocky** with **thorny bushes**.

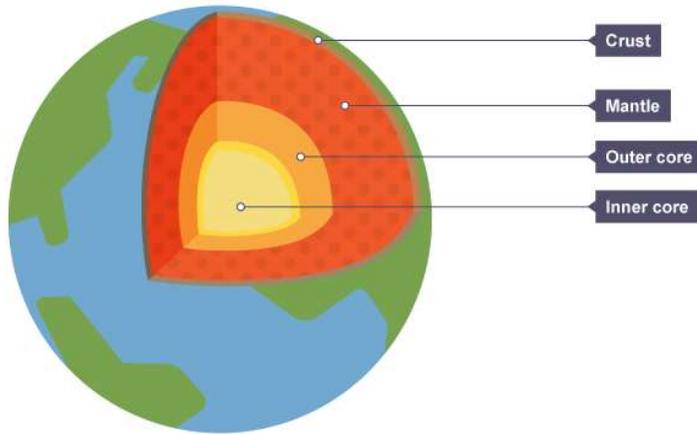


## Examples of adaptations to the desert:

<b>Cactus</b>	<ul style="list-style-type: none"> <li>• <b>Large roots</b> to absorb water soon after rainfall.</li> <li>• <b>Needles</b> instead of leaves to reduce surface area and therefore <b>transpiration</b>.</li> </ul>
<b>Camels</b>	<ul style="list-style-type: none"> <li>• Hump for storing <b>fat (NOT water)</b>.</li> <li>• <b>Wide feet</b> for walking on sand.</li> <li>• <b>Long eyelashes</b> to protect from sand.</li> </ul>

# Geography

Illustration showing the structure of the earth:



## Explanation of Convection Currents:

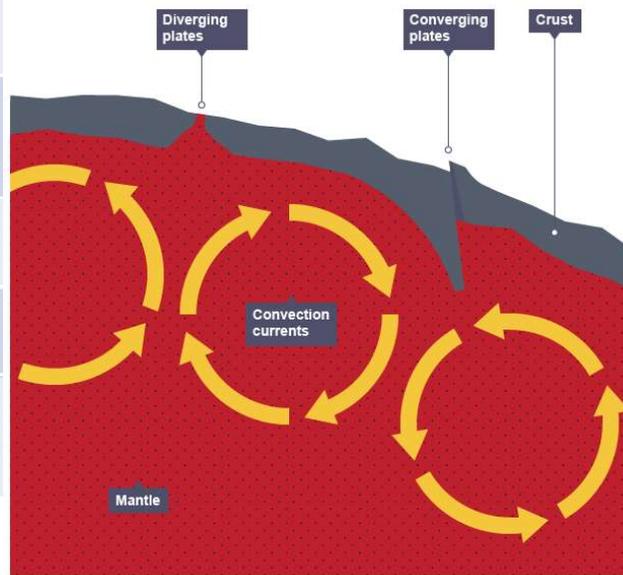
### Convection Currents

The crust is divided into tectonic plates which are moving due to convection currents in the mantle.

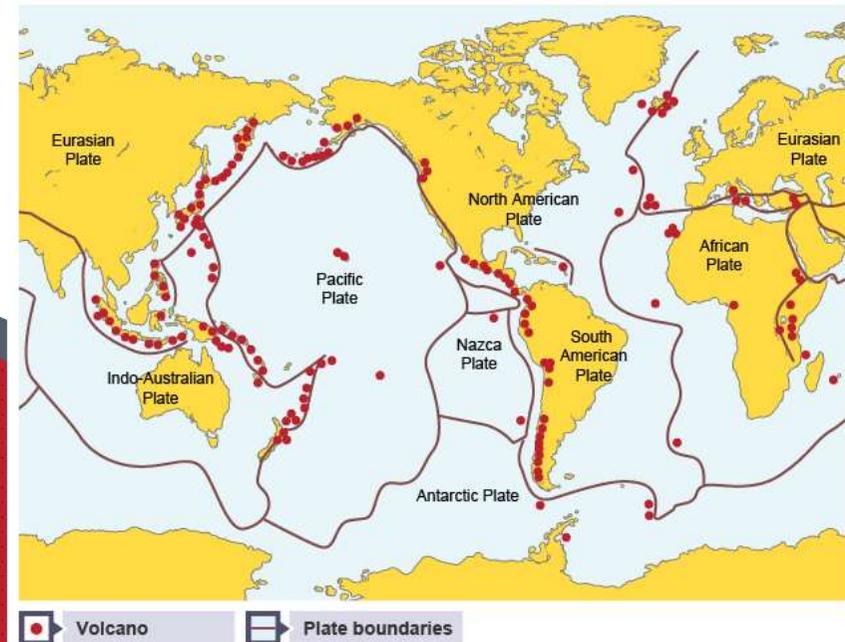
- 1 Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
- 2 When lower parts of the mantle molten rock (Magma) heat up they become less dense and slowly rise.
- 3 As they move towards the top they cool down, become more dense and slowly sink.
- 4 These circular movements of semi-molten rock are convection currents
- 5 Convection currents create drag on the base of the tectonic plates and this causes them to move.

Keyword(s)	Definition
<b>Crust</b>	The crust is made of solid rock which is between 0 and 60km thick. This layer is broken into tectonic plates which move around on top of the mantle.
<b>Mantle</b>	The mantle is about 2900km thick and is made of molten rock. This molten rock is called magma. The average temperature of the mantle is 3000 degrees C.
<b>Core</b>	The earth's core is made up of the inner and outer core. The inner core is made from a mixture of solid metals. These metals are called iron and nickel. The centre of the earth is extremely hot, about 6100 degrees C. The inner core is surrounded by the outer core, this section is made of the same two metals, iron and nickel, but they are liquids. The outer core is slightly cooler, approximately 4400 degrees C.
<b>Convection Currents</b>	Movement within the earth's mantle caused by the heat of the core.
<b>Oceanic Plate</b>	Oceanic plates makes up the sea floor. It is made of basalt and is heavier than the continental crust.
<b>Continental Plate</b>	Continental plates form large land masses. It is lighter than the oceanic plate and cannot be renewed or destroyed.

Diagram showing Convection Currents:

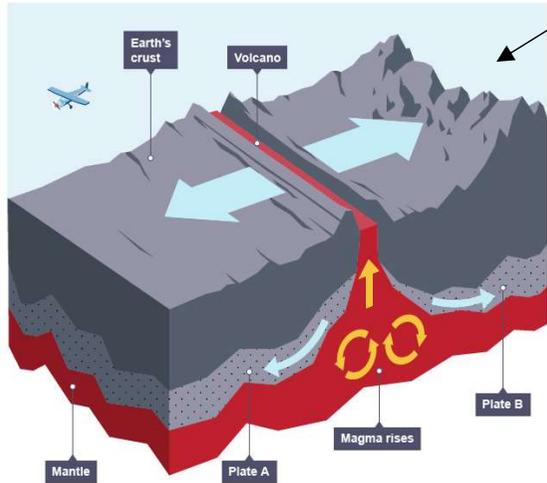


World map showing the location and names of tectonic plates:

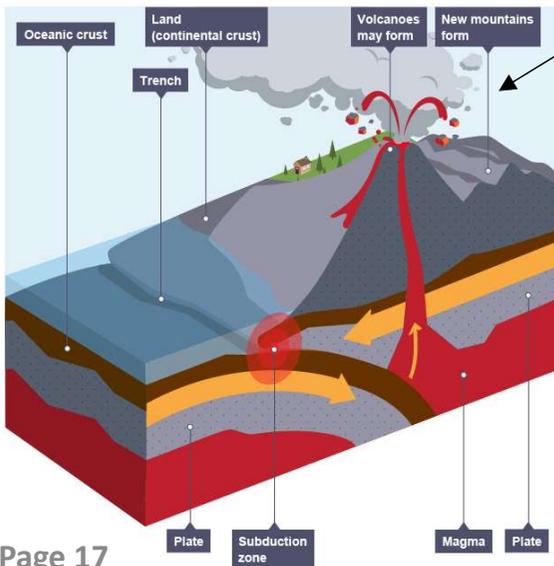


Keyword(s)	Definition
<b>Plate Boundary</b>	The region where two or more tectonic plates meet. It is a zone of intense seismic activity i.e. frequent movements of the earth such as earthquakes occur at plate boundaries.

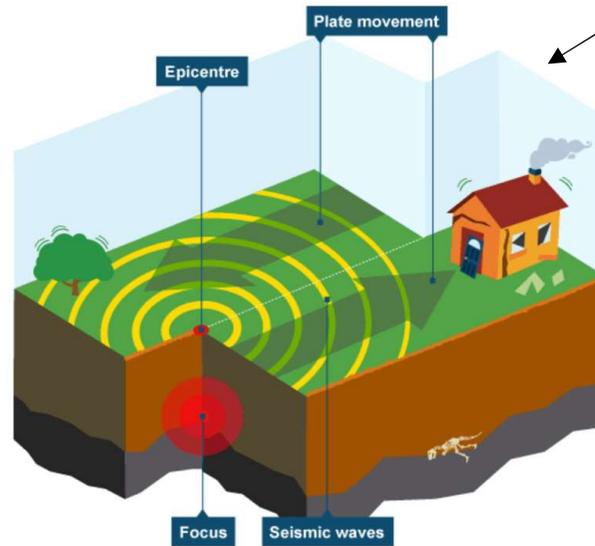
**Diagrams showing the different types of plate margin:**



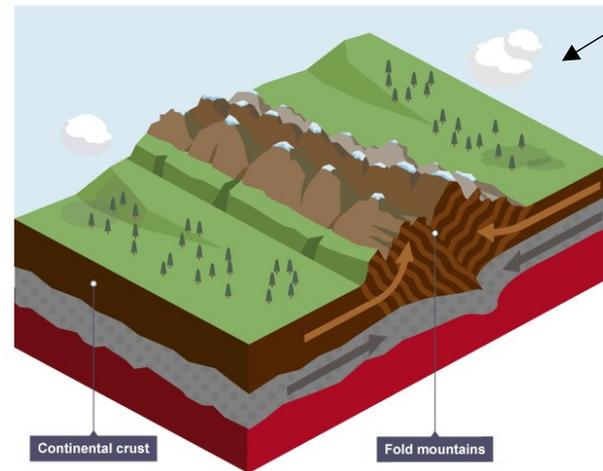
**Constructive Plate Margins:** Here two plates are **moving apart** causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic Ridge**.



**Destructive Plate Margins:** When a denser plate sub-ducts beneath the other, friction causes it to **melt and become molten magma**. The magma forces its way up to the surface to form a volcano. This margin is also responsible for **devastating earthquakes**.



**Conservative Plate Margins:** A conservative plate boundary occurs where plates **slide past each other** in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the **San Andreas Fault, USA**.



**Collision Zones:** At **collision zones**, **fold mountains** are formed. Where an area of sea separates two plates, sediments settle on the sea floor in depressions called **geosynclines**. These sediments gradually become compressed into **sedimentary rock**. When the two **oceanic** plates move towards each other again, the layers of sedimentary rock on the sea floor become crumpled and folded. Eventually the sedimentary rock appears above sea level as a range of fold mountains.

Fold mountains can also be formed where two **continental** plates push towards each other. This is how mountain ranges such as the **Himalayas**.



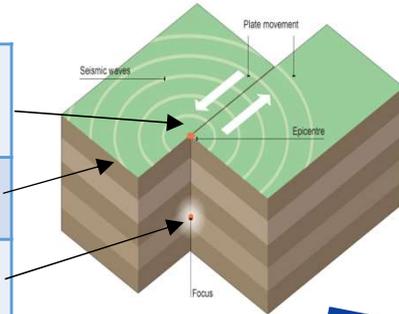
## Causes of Earthquakes

Earthquakes are caused when two plates become **locked** together causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

**SEISMIC WAVES** (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



## Case Study Overview – Haiti Earthquake, 2010



**Cause:** The Caribbean & North American plates sliding past each other in opposite directions at a Conservative Plate Margin. The **magnitude 7.0 earthquake** was only **15 miles** from the capital Port au Prince. With a very **shallow focus of 13km deep**.

### Overview of key impacts:

- 230,000 people died and 3 million affected. Millions left homeless.
- 250,000 homes collapsed or were damaged.
- Rubble blocked roads and shut down ports.

## Volcanic Hazards

<b>Ash cloud</b>	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
<b>Gas</b>	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
<b>Lahar</b>	A volcanic mudflow which usually runs down a valley side on the volcano.
<b>Pyroclastic flow</b>	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
<b>Volcanic bomb</b>	A thick (viscous) lava fragment that is ejected from the volcano.

## Keyword(s)

## Definition

### Earthquake

The shaking of the surface of the earth resulting from a sudden release of energy caused by the movement of tectonic plates.

### Magnitude

A measure of the size/strength of the seismic (energy) waves generated by an earthquake.

### Richter Scale

A numerical scale used to measure the strength of an earthquake. Values range from 0 for the least powerful earthquakes to 9 for the most powerful.

### Cone

A conical hill produced by volcanic eruptions, made up of lava, lava fragments and ash.

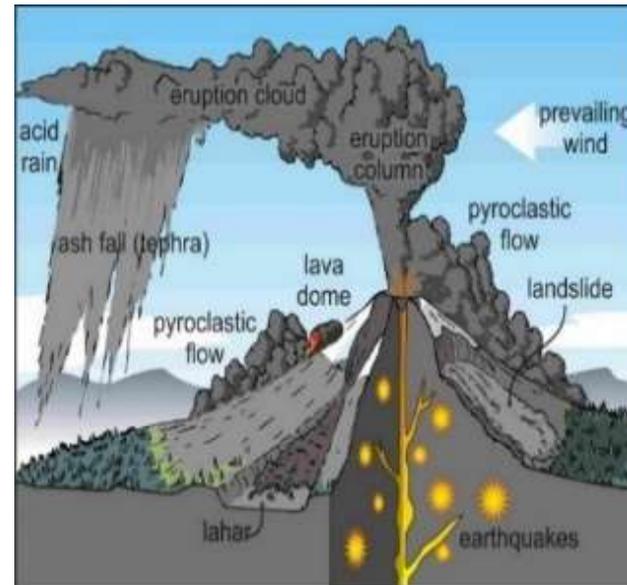
### Magma

Molten rock usually located deep within the mantle of the Earth that occasionally comes to the surface through cracks in the mantle or through the eruption of volcanoes.

### Lava

The molten, fluid rock that issues from a volcano or volcanic vent. The temperature of lava when it is first ejected from a volcano can vary between 700 and 1200 degrees C. The hottest temperature of the ovens in our homes is 240 degrees C!

## Diagram showing the hazards caused by an erupting volcano:



## Case Study Overview - Eyjafjallajokull (E15) Volcanic Eruption, Iceland 2010

**Cause:** The North-American and Eurasian plates moved apart at a constructive plate margin, causing new magma to reach the surface and the volcano to erupt.

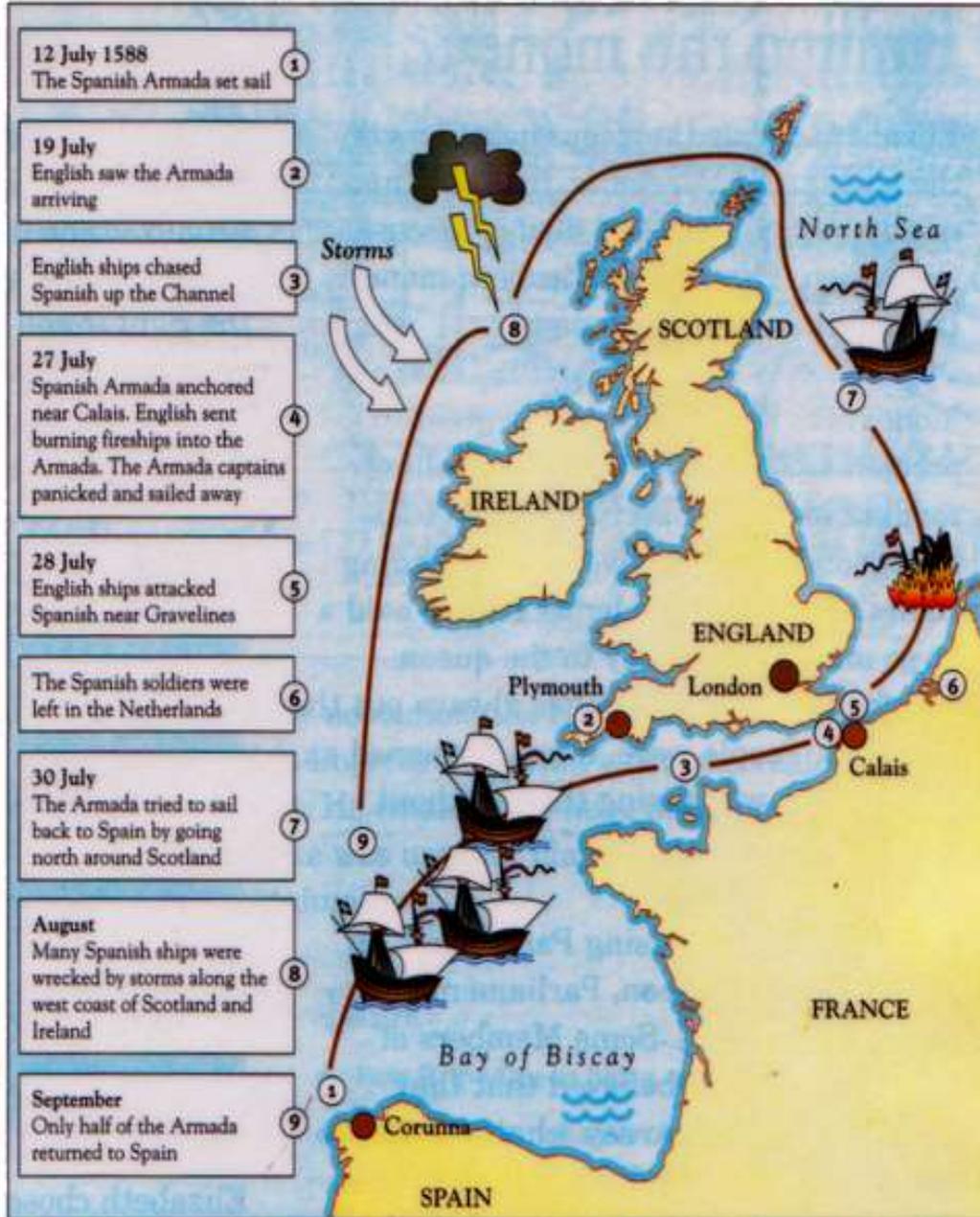
### Overview of key impacts:

- The **thick ice cap** melted which caused major flooding.
- **No reported deaths.**
- Airspace closed across Europe, with at least **17,000 flights** cancelled, costing insurers over £65million.



# History

## Elizabeth's problems



12 July 1588  
The Spanish Armada set sail

19 July  
English saw the Armada arriving

English ships chased Spanish up the Channel

27 July  
Spanish Armada anchored near Calais. English sent burning fireships into the Armada. The Armada captains panicked and sailed away

28 July  
English ships attacked Spanish near Gravelines

The Spanish soldiers were left in the Netherlands

30 July  
The Armada tried to sail back to Spain by going north around Scotland

August  
Many Spanish ships were wrecked by storms along the west coast of Scotland and Ireland

September  
Only half of the Armada returned to Spain

**The route of the Spanish Armada**

### Why did Spain want to attack England?

- England was becoming stronger & starting to challenge Spain's position
- English sailors like Sir Francis Drake had been attacking and stealing from Spanish ships
- Philip II wanted to protect Catholics in England

### Sir Francis Drake



Second in command  
Experienced sailor  
Had sailed around the world  
Had been attacking & stealing from Spanish ships for years

### Duke of Medina-Sidonia



In command  
Had no experience of commanding a fleet  
Got seasick & even his mother thought it was a bad decision to give him command!

### Why did England defeat the Spanish?

**English tactics:** the English were well trained to use their cannon. English ships were better designed than the Spanish ships. They were smaller, lighter and better built, this allowed the English to move faster. The English used fire ships to break up the Spanish fleet (ships)

**Spanish mistakes:** they had not prepared properly for a sea battle. For example most of their cannon were designed to be used on land once they had got to England.

The Spanish lost time getting their troops onto the ships in the Netherlands.

**Weather:** Many Spanish ships survived the battle with the English but were destroyed by the storms on the way home.



# History

## Year 8 History Knowledge Organiser- The English Civil War

### Charles I (King of England between 1625-1649)

Charles believed in the idea of **Divine Right of Kings**. He was a Protestant but married to a French Catholic. He made some changes to the Church which made it look more Catholic.

#### Long Term Causes

- 1625: England was beaten by the Spanish, in a very expensive war.
- 1629: Charles had argued with **Parliament**, so decided to rule without it. **Parliament** was not called again for 11 years.
- 1634: Charles introduced **Ship Money**, without the permission of **Parliament**
- 1640: He tried to make the Scottish use the English Prayer Book. They refused and sent an army to attack England.
- 1641: Charles was forced to recall **Parliament**.
- **Parliament** agreed to help Charles if he agreed not to introduce any more illegal taxes & execute his adviser (and friend) Lord Stafford.
- Charles agreed.
- The Irish also rebelled.

#### Short Term Causes

1642: Charles was again arguing with **Parliament**. He tried to arrest 5 MPs who he saw as the leaders.  
The MPs left **Parliament** before he arrived.  
Charles was furious & declared war.



← **Cavaliers** (also known as Royalists) fought for Charles.

The **Roundheads** fought for Parliament. →

Both sides had soldiers who fought on horseback (cavalry), pikemen who had a 5 metre pole with a spike on the end & musketeers who fired guns called muskets. Cannon were also used.



Key Terms	Definitions
<b>Civil War</b>	A war which is fought by people within the same country
<b>Divine Right of Kings</b>	The belief that God made Charles king
<b>Ship Money</b>	A tax introduced by Charles on the whole country, instead of counties by the sea
<b>Parliament</b>	A group of men who helped the monarch rule. They felt that Charles should be listening to them more.
<b>Cavaliers</b>	Soldiers on the side of Charles
<b>Roundheads</b>	Soldiers on Parliament's side
<b>Infantry</b>	Foot soldiers
<b>Ransacked</b>	Go through a place, stealing things & murdering

#### Battles

There were many battles during the Civil war (1642-1649). Key ones were Edgehill (Oct) 1642, Marston Moor (July 1644) & Naseby (June 1645). At first the **Cavaliers** were more successful but as the war continued the **Roundheads** improved the training of their men & introduced the New Model Army. Commanders in this army were promoted for their skill, unlike the Royalists. Prince Rupert, Charles' nephew lost several battles as he failed to follow orders.

**Civilians** were badly affected by the war. Towns, villages & castles which supported the enemy were attacked & if captured, **ransacked** & their people killed.

#### Should Charles be executed?

##### Yes

- He started both wars
- The victories of **Parliament**, show that God was on their side
- As long as Charles was alive there was always the chance of another war

##### No

- England needs a king - who will rule after him?
- Only God can put a king on trial

# Y8 French Parallel Text 1:

## Paris et Derby

Qu'est-ce que tu as fait à Paris ?	A	What you have done in Paris?
J'ai passé une semaine géniale à la capitale.	1	I've spent a week great at the capital.
On peut faire beaucoup d'activités ici !	2	You can do a lot of activities here!
<b>Avant-hier</b> , j'ai visité beaucoup de monuments	3	<b>(the day)Before-yesterday</b> , I visited lots of monuments
comme, par exemple, la Tour Eiffel et	4	like, for example, the Tower Eiffel and
j'ai même admiré la cathédrale de Notre-Dame,	5	I've even admired the cathedral of Notre-Dame <i>(lit: Our Lady)</i> ,
mais je n'ai pas visité le Sacré-Cœur!	6	but I have not visited the Sacré-Cœur <i>(lit: Sacred Heart)</i> !
J'ai entendu beaucoup de français bien-sûr !	7	I've heard lots of French of course!
Par contre, je n'ai pas acheté de souvenirs chers,	8	By contrast, I haven't bought of souvenirs expensive,
car ça coûte les yeux de la tête !	9	because it costs a fortune! <i>(lit: the eyes of the head)</i>
<b>Tu as vu la Joconde ?</b>	<b>B</b>	<b>You have seen the Mona Lisa?</b>
Lundi on a fait une balade en bateau-mouche	10	<b>Monday</b> we did a trip on tourist boat
et on a vu tous les monuments touristiques.	11	and we saw <b>all</b> the monuments touristy
<b>Hier</b> , on a loué des segways. C'était hypercool !	12	<b>Yesterday</b> we hired some segways. It was super cool!
<b>Aujourd'hui</b> on a vu la Joconde au musée du Louvre	13	<b>Today</b> we saw the Mona Lisa at the museum of Louvre
mais je n'ai pas pris de photos car c'était interdit !	14	<b>but I didn't</b> take of photos because it was forbidden
Enfin on a bu un jus d'orange rafraichissant au café.	15	Finally we drank an orange juice refreshing at the café.
<b>C'était comment les catacombes ?</b>	<b>C</b>	<b>It was how the underground tombs?</b>
Avant de rentrer nous avons visité les catacombes.	16	Before returning we visited the tombs.
Bien que ça coûte cher pour les adultes,	17	Although it costs expensive for the adults
c'était gratuit pour les jeunes jusqu'à 13 ans.	18	it was free for the young people up to 13 years.
<b>Quelle chance !</b> Je recommande de <b>les</b> visiter	19	<b>What luck!</b> I recommend to them visit
car c'était super étrange et effrayant !	20	because it was super strange and scary!
<b>À quelle heure est-ce que tu es arrivée ?</b>	<b>D</b>	<b>At which hour did you arrive?</b>
Je suis allé(e) à Paris en avion en voyage scolaire.	21	I went to Paris by plane on trip school.
Nous sommes parti(e)s vendredi matin à sept heures	22	We left Friday morning at seven hours (7am)
et nous sommes rentré(e)s dimanche.	23	and we returned Sunday.
Après être arrivé(e)s à l'hôtel à dix heures,	24	After having arrived at the hotel at ten hours (10am)
on est monté(e)s la Tour Eiffel à pied. Le soir,	25	we climbed the Tower Eiffel by foot. In the evening,
je ne suis pas sorti(e) car je suis resté(e) à l'hôtel.	26	I did not go out because I stayed at the hotel.
<b>Qu'est-ce que tu vas faire demain ?</b>	<b>E</b>	<b>What are you going to do tomorrow?</b>
Demain, si j'ai le temps, je vais faire les magasins	27	Tomorrow, if I have the time, I am going to do the shops
car j'adore la mode parisienne. Ce sera très chic !	28	because I love the fashion Parisian. It will be very chic!

PRESENT	PERFECT PAST TENSE	NEAR FUTURE
je visite (I visit)	j'ai visité (I have visited)	je vais visiter (I am going to visit)
j'entends (I hear)	j'ai entendu (I have heard)	je vais entendre (I am going to hear)
je vois (I see)	j'ai vu (I have seen/saw)	je vais voir (I am going to see)
je lis (I read)	j'ai lu (I have read)	je vais lire (I am going to read)
je fais (I do)	j'ai fait (I have done/did)	je vais faire (I am going to do)
je bois (I drink)	j'ai bu (I have drunk/drank)	je vais boire (I am going to drink)
je prends (I take)	j'ai pris (I have taken/took)	je vais prendre (I am going to take)
je vais (I go)	je suis allé(e) (I went)	je vais aller (I am going to go)
je sors (I go out)	je suis sorti(e) (I went out)	je vais sortir (I am going to go out)
je reste (I stay)	je suis resté(e) (I stayed)	je vais rester (I am going to stay)

**Grammar: using the perfect tense to describe past events (*le passé composé*)**  
The past tense is called *le passé composé* in French because it is composed of 3 parts:  
**Part 1** is the subject  
**Part 2** is the auxiliary verb: mostly **avoir** (to have), but sometimes **être** (to be).  
**Part 3** is the past participle.

**Part 1: the subject** of the sentence is **the person or people doing the verb**. This could be a named person/group (e.g. *ma mère, Marie-Laure, mes amis*) or it could be a subject pronoun (*je, tu, il, elle, on, nous, vous, ils, elles*).

**Part 2: the auxiliary verbs AVOIR and ÊTRE** in the present tense. These are irregular:

Subject pronoun	AVOIR (to have)	ÊTRE (to be)
je (I)	j'ai	suis
tu (you – singular)	as	es
il/elle/on (he/she/we)	a	est
nous (we)	avons	sommes
vous (you – plural)	avez	êtes
ils/elles (they – masc/fem)	ont	sont

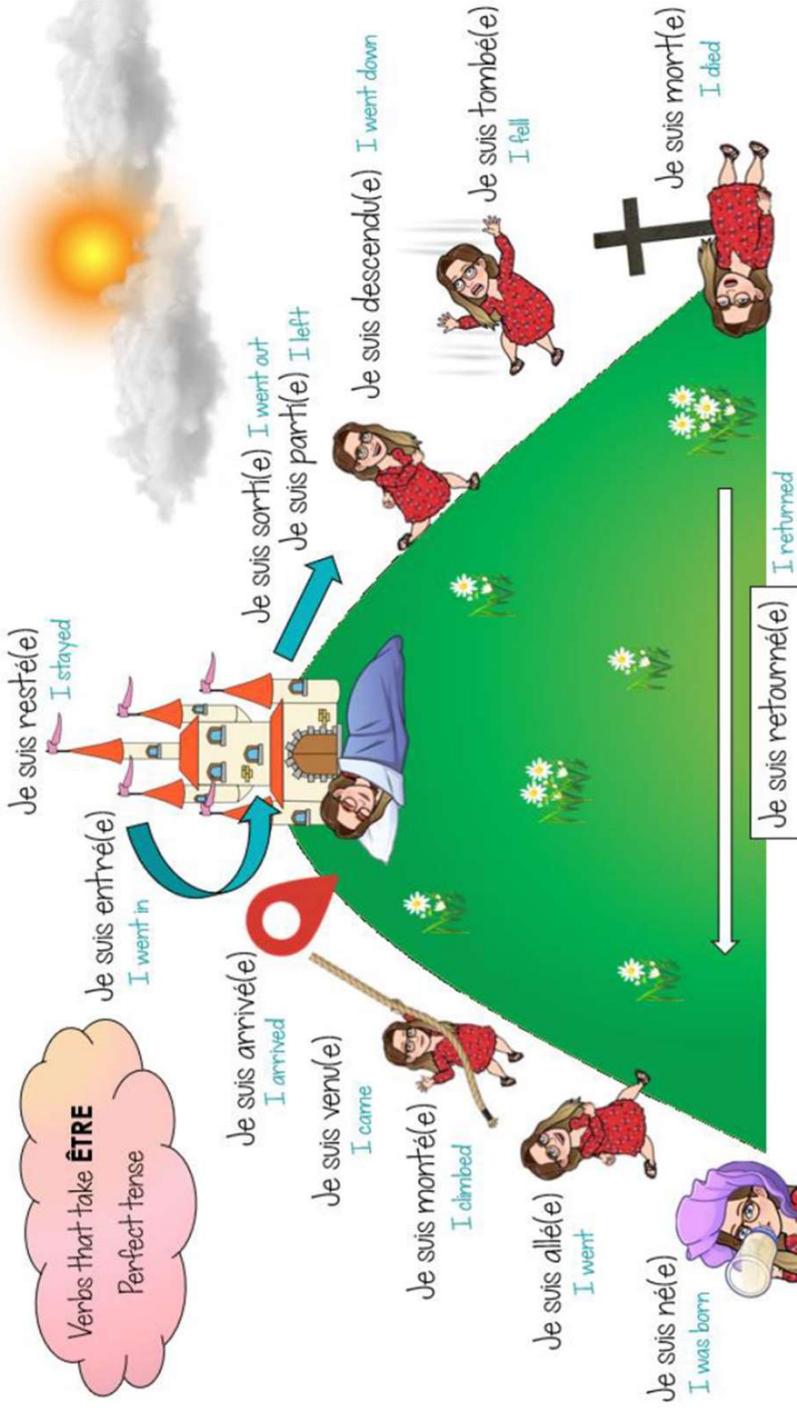
**Part 3: the past participle** is the ending of the main verb in the sentence. Because most verbs in French end in –ER, **most past participles end in 'é'**.

Forming the past participle:

TYPE OF INFINITIVE	WHAT TO DO	EXAMPLE
<b>-ER</b> verbs	take off <b>-er</b> , add <b>-é</b>	manger → mangé
<b>-IR</b> verbs	take off <b>-ir</b> , add <b>-i</b>	finir → fini
<b>-RE</b> verbs	take off <b>-re</b> , add <b>-u</b>	attendre → attendu

### AVOIR or ÊTRE?

- The vast majority of verbs use **avoir** as the auxiliary (e.g. *j'ai mangé, j'ai dansé, j'ai fait*).
- Very few use **être**: these are **mostly verbs of movement** (e.g. *je suis allé(e), je suis parti(e)*)
- With these verbs, the past participle needs to agree:
  - add an 'e' if the subject is feminine, 's' if plural, 'es' if both.



# Y8 French Parallel Text 2:

## Paris et Derby

Où habites-tu ?	A	Where do you live?
J'habite dans un petit appartement, près d'une grande ville	1	I live in a small apartment, near to a big town
qui s'appelle Derby, dans le nord de l'Angleterre.	2	which calls itself Derby, in the north of England.
C'est un bel appartement confortable	3	It's a beautiful apartment comfortable
donc je suis contente d'habiter ici,	4	so I am happy to live here,
bien que la salle de bains soit trop petite	5	although the bathroom is too small
et il n'y a pas de jardin, ce qui est dommage.	6	and there is no garden, which is a shame.
Ou voudrais-tu habiter à l'avenir ?	B	Where would you like to live in the future?
Je voudrais déménager à la campagne parce que	7	I would like to move house to the countryside because
j'aimerais habiter dans une plus grande maison.	8	I would like to live in a more big house.
En plus, je pense que c'est plus tranquille là-bas	9	Moreover, I think that it is more calm there
car il y a moins de personnes.	10	because there is less of people.
C'est comment ta maison ?	C	It's how your house?
Chez moi, il y a cinq pièces.	11	At my house, there is five rooms.
D'abord il y a le salon, où je regarde la télé,	12	First there is the living room, where I watch the tv,
et à droite, il y a la jolie cuisine moderne.	13	and to the right, there is the pretty kitchen modern.
À l'étage, ma chambre est plus petite que	14	Upstairs, my room is more small than
la chambre de mon frère, ce qui n'est pas juste à mon avis.	15	the room of my brother, which isn't fair in my opinion.
Qu'est-ce que tu manges normalement ?	D	What do you eat normally?
Pour le petit déjeuner, d'habitude, je bois du lait	16	For breakfast, normally, I drink some milk
et je prends des tartines avec de la confiture	17	and I take some bread slices with some jam
parce que ça me donne de l'énergie - ce qui est	18	because it gives me the energy - which is
important car j'ai toujours une grande faim de loup!	19	important because I have always a great hunger of wolfs!
Le soir, il faut manger à table à six heures, mais	20	The evening, we must eat at table at six o'clock, but
samedi dernier on a mangé chinois à emporter,	21	Saturday last we have eaten Chinese to takeaway,
assis sur le canapé, devant la télé.	22	sat on the couch, in front of the TV.
Parle-moi du carnaval.	E	Tell me about the carnival.
D'habitude, pour le carnaval, je regarde le défilé	23	Normally, for the carnival, I watch the parade
avec ma famille, et après on va au restaurant.	24	with my family, and after we go to the restaurant.
L'année dernière on est allés à la crêperie	25	The year last, we went to the crêperie (pancake place)
où j'ai mangé beaucoup de crêpes aux fraises	26	where I ate lots of crepes with strawberries
comme si c'était le Chandeleur - c'était délicieux !	27	as if it was Pancake Day - it was delicious!
Ce que j'aime le plus c'est le feu d'artifice le soir	28	What I like the most it is the fireworks in the evening
parce que c'est vraiment beau ! L'année prochaine	29	because it is really beautiful! Next year
je vais participer au défilé avec mes amis, donc	30	I am going to participate in the parade with my friends so
je vais porter un costume et on va chanter sur le char !	31	I'm going to wear a costume and we are going to sing on the float!
Ce sera tellement amusant ! Je l'attends avec impatience !	32	It will be so fun! I'm looking forward to it!

\*(lit: I wait for it with impatience)

**Sentence builder 1 - describing where you live**

VERB + PREPOSITION	ARTICLE	'BAGS' ADJECTIVE (before the noun)	NOUN	'NORMAL' ADJECTIVES (after the noun)	
J'habite dans I live in	un a	bel / joli beautiful/pretty vieux / nouveau old/new petit / grand small/big	appartement apartment	chic/branché confortable de luxe	chic comfortable luxury
À l'avenir, je voudrais habiter dans In the future, I would like to live in	une a	belle / jolie beautiful/pretty vielle / nouvelle old/new petite / grande small/big	maison house	démodée élégante moderne	old-fashioned elegant modern

**SB 2 – talking about food & drink using the partitive article (du / de la / des).**

MEAL	VERB	PARTITIVE ARTICLE	FOOD/DRINK	CONNECTIVE	REASON
Pour for le petit-déjeuner breakfast	je mange I eat	du some – m	pain bread poisson fish lait milk poulet chicken	parce que because	c'est bon pour la santé. it's good for your health.
le déjeuner lunch	je bois I drink	de la some – f	thé/café tea/coffee jus d'orange O.J. beurre butter riz rice chocolat chocolate	car because	c'est délicieux. it's delicious.
le dîner dinner	je prends I take	des some - pl	viande meat glace ice cream confiture jam boissons gazeuses fizzy drinks sucreries sweets produits laitiers dairy products pâtes pasta légumes / fruits vegetables / fruits céréales cereal champignons mushrooms pommes de terre potatoes		c'est plein de vitamines. it's full of vitamins.  ça me donne de l'énergie. it gives me energy.
le goûter after school snack		de l' some- before vowel	eau water	bien que ce soit mauvais pour la santé. although it's bad for your health.	

Prepositions	
dans	in
devant	in front of
derrière	behind
entre	between
sous	under
sur	on
à côté de	besides
à gauche de	to the left of
à droite de	to the right of
en face de	opposite

Rooms & items in the house	
la chambre	the bedroom
la cuisine	the kitchen
le jardin	the garden
la salle à manger	the dining room
la salle de bains	the bathroom
le salon	the living room
les toilettes	the toilets
l'armoire	the wardrobe
le bureau	the desk
le canapé	the sofa
la chaise	the chair
la douche	the shower
la fenêtre	the window
le frigo	the fridge
le lavabo	the wash basin
le lit	the bed
la machine à laver	the washing machine
la télé	the tv

**Grammar – adjectives that go before the noun (BAGS)**

<b>Beauty</b>	beautiful pretty	beau (m) / belle (f) / bel (m - before vowel) / beaux (m.pl) / belles (f.pl) joli (m) / jolie (f) / jolis (m.pl) / jolies (f.pl)
<b>Age</b>	new old	nouveau (m) / nouvelle (f) / nouveaux (m.pl) / nouvelles (f.pl) vieux (m) / vielle (f) / vieil (m - before vowel) / vieux (m.pl) / vieilles (f.pl)
<b>Goodness</b>	good bad	bon (m) / bonne (f) / bons (m.pl) / bonnes (f.pl) mauvais (m) / mauvaise (f) / mauvais (m.pl) / mauvaises (f.pl)
<b>Size</b>	big small	grand (m) / grande (f) / grands (m.pl) / grandes (f.pl) petit (m) / petite (f) / petits (m.pl) / petites (f.pl)

**Grammar SB 3 – using the near future to say what you are going to do**

SUBJECT + ALLER	INFINITIVE ACTIVITY
je vais (I am going)	aller au carnaval (to go to the carnival)
tu vas (you are going)	chanter et danser (to sing and dance)
il/elle va (he/she is going)	manger au restaurant (to eat at the restaurant)
on va (we are going)	participer au défile (to participate in the parade)
nous allons (we are going)	porter un costume (to wear a costume)
vous allez (you pl are going)	prendre des photos (to take photos)
ils/elles vont (they are going)	regarder le feu d'artifice (to watch the fireworks)

## RELIGIOUS EDUCATION

**Origins:** Another word for beginnings – how something started

**Humanity:** Characteristics of humans, the qualities of being human, e.g. kindness, mercy, sympathy etc.

**Dominion/stewardship:** When you are in charge of something – in the case of stewardship, in charge of the earth

**God as Creator:** The Christian belief that God had/has the ultimate role of creator

**Humans as Stewards:** The role humans play, as superior beings, in being in charge of and looking after the world

**Big Bang:** The idea that around 14 billion years ago, there was an explosion, the outcome of which was the universe as we know it (and it is still expanding outwards from this point today)

**Matter:** A physical substance which exists in space and makes-up everything which can physically be touched

**Energy:** The force or property which can be transferred from one object to another. The energy from the Big Bang has been transferred throughout the universe

**Evolution:** The process by which different kinds of living organisms have developed from earlier forms

**Natural Selection:** The process by which the best (most competitive) species or sub-species dominates and out-survives the others

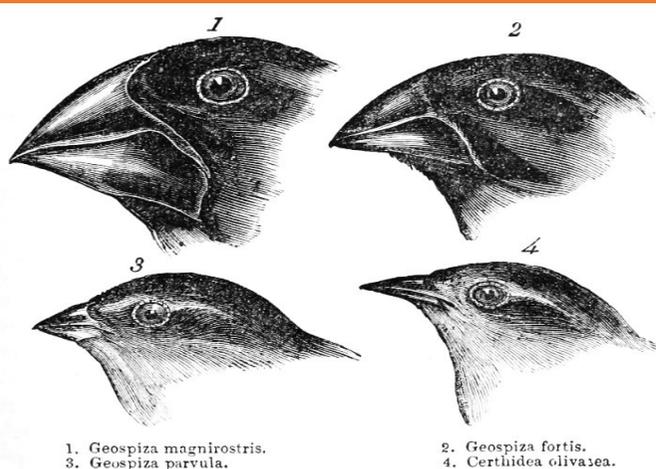
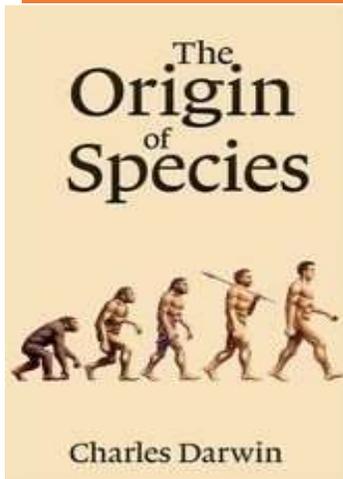
**Charles Darwin:** English naturalist known for his contributions to the science of evolution

**Origins of the Species:** Book by Charles Darwin in which he records his theories on evolution, the most important being that of natural selection

**Humanist:** People who do not believe in religion and accept that this life is our only life, that the universe is natural, and there is no supernatural (Godly) element to it

**Atheist:** A person who does not believe in God or Gods

**Supernatural:** Anything which we cannot explain through science or logic



## RELIGIOUS EDUCATION

What does Genesis 2 tell Christians about the origins of the universe?

- Genesis 2 tells Christians more about the creation of human life – **Adam** being created out of the dust of the earth and Eve from his rib
- They lived in the **Garden of Eden** and had the responsibility to look after it (**stewardship**)
- It implies that humans were actually created before animals
- Many people think that Genesis 2 is a description of what happened on day six

How does Genesis 1 and Genesis 2 compare?

- There is a difference in terms of when animals were created. Genesis 1 states they were created before humans, Genesis 2 says afterwards
- Genesis 2 is more about the creation of humans in the **Garden of Eden**

Can Christians believe in scientific ideas of creation such as the Big Bang Theory?

- Absolutely!
- George Lemaitre, a Belgian-born Catholic Priest (also a Professor of physics and an astronomer) first came-up with the ideas which eventually became the **Big Bang Theory**
- Roman Catholics are encouraged to use scientific knowledge to interpret Genesis in light of new understanding
- More literal believers take Genesis as being a true account of exactly how the earth and people were created

How does Darwin's theory of evolution compare to Genesis?

- **Evolution** describes how physical processes take place over vast periods of time in order to arrive at the present known species. Genesis covers a much shorter time span.
- The general theme of Genesis, life being created over time, is similar to that of evolution. The time span is different though.
- Both are similar in that they start with 'something less than what we have today' and end with the development of 'what we have today'

What do humanists believe about creation?

- **Humanists** believe that the earth was created entirely by natural processes.
- They do not believe that any part of the earth or the universe was created by a God
- They believe that scientific fact can (or will at some point) be able to explain the creation of the universe
- Humanists believe that there is just one life, and that when somebody dies, there is no afterlife/heaven etc.

In the beginning God created the heavens and the earth.  
Now the earth was formless and empty,  
darkness was over the surface of the deep,  
and the Spirit of God was hovering over the waters.  
**Genesis 1:1-2**



## RELIGIOUS EDUCATION

**Decorative:** Embellished, ornamental, serves to make something look more attractive

**Understated:** Serves to make something seem less attractive/plainer. Presenting it in a subtle but effective way

**Modest:** Using true qualities, not over-emphasising the best parts

**Lychgate:** A covered shelter area at the entrance to a church property. Traditionally, the coffin of the dead would wait there before entry to the church was granted

**Gargoyle:** A carved grotesque model of a demon or monster, often including a spout to carry water away from a church

**Tabernacle:** A locked box in a Catholic church, inside which holy items are stored. In a Jewish synagogue, it holds the Ark where the Torah Scrolls (sacred text) is stored

**Altar:** A table in a Christian church upon which consecrated bread and wine is held in the service

**Font:** A container of holy water used for baptism (Christening) services

**Symbol:** A sign with a meaning – usually represents something or an instruction

**Crescent:** A half-moon like symbol commonly associated with the Islamic faith

**Crucifix:** The Christian cross symbol

**Om/Aum:** The Hindu symbol

**Fresco:** A technique whereby plaster and paint are combined to give a to paint on walls and ceilings

**Sistine Chapel:** One of the most ornate examples of Fresco painting. It is in the Vatican in Rome (where the Pope lives) and can be visited. The roof of the Sistine Chapel was painted by Michelangelo and reflects images of the Old Testament.

**Michelangelo:** An Italian painter, sculptor and artist famed for his fresco on the ceiling of the Sistine Chapel

**Mosaic:** The use of broken or small tiles to form a larger image

**Imagery:** A visual representation or reproduction of something

**Geometric Pattern:** A mathematical pattern commonly used in Islamic art.



# RELIGIOUS EDUCATION

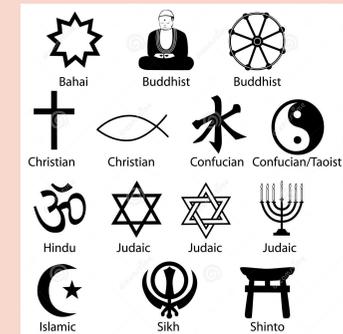
## What are places of worship like?

- They can be very different
- Some can be very small and simple
- Some can be large and **ornate**
- Some of the most **extravagant** ones are built using community funds or donations from the rich
- In some religions (e.g. Buddhism and Hinduism) colours such as gold feature heavily
- Some Christian churches are incredibly **understated** – they believe that the presence of God is more important than decorative features

## What are the features of a Christian Church?

- The outside often contains a grave yard and a **lychgate** – a covered shelter where the coffin and pallbearers would wait for permission to enter the church
- Some older churches (in the **gothic** style) have **gargoyles** incorporated into their design.
- There is often a tower and a bell to call people to worship.
- The **altar** is often at the centre of the inside of the church
- The **font** is found at the front of the church
- Many churches display religious scenes and imagery in paintings and in stained glass windows

## What symbols are used for religions?



## How did Michelangelo represent Christian beliefs in his frescoes?

- Places like the **Sistine Chapel**
- Incredibly ornate imagery
- Characters are often displayed as being God-like or cherubic (chubby)
- Angels feature heavily
- Many of the scenes depict images from the old testament
- The images of **Adam and Eve** were naked. Their genitals were later covered as some people found them offensive and distracting!
- God was always the largest character and looked parent-like, signifying his role as **'father'** in the **holy trinity**

## What does the Apse mosaic tell Christians about creation?

- Created around 500AD
- Beige and brown glass tiles with a shimmering finish
- Found in the Church of San Clemente in Rome
- Depicts the **Tree of Life**
- Jesus is central to the image, biblical scenes surrounding him in the boughs (large branches) of the tree
- Different to **Islamic geometric art**- this is pattern-based and repetitious. Does not contain imagery of God (Allah, pbuh) and of people. Might include italic/ornate text.



## **MUSIC: GRIME**

### **GETTING STARTED...**

1. Log onto the school laptop
2. Go to Google Chrome – Not any other search engine, it won't work!
3. Type in [vip.charanga.com](http://vip.charanga.com)
4. Log in using your username and password  
Scroll down until you see “articles by genre”  
(this is on the right hand side of the home page)
5. Click on “Grime”

### **NEXT STEPS...**

1. Scroll down to the videos
2. Find the video that your teacher has set for this lesson
3. Watch the video and make notes.
4. Go to “online studio” (top right hand side)
5. Press “launch soundation chrome”

### Grime – Key Facts

Originated in London in the early 2000s

Emerged from styles of music such as: Garage, Jungle and Hip-Hop

Key features include – rapid backbeat (130 bpm), rapping, electronic sound



- [vip.charanga.com](http://vip.charanga.com)
- Log in
- Articles by Genre – Grime
- Video 1: “How to make a drum beat” – watch and make notes!
- Online studio
- Launch Soundation Chrome
- **Save your work!**

## MUSIC: GRIME

### SUCCESS CRITERIA:

#### KEY SKILLS:

- adding a drumline
- adding a synth line
- creating an arrangement
- adding FX
- writing lyrics
- fitting lyrics with a beat
- Recording vocals
- exporting and sharing tracks

Simple drum beat with an accompanying synth line. The timing between the backing track and the rap might not be consistent throughout the track. The same ideas are repeated throughout the track.

An original drum beat and synth line. The timing between the backing track and rap is mostly in time and consistent. There will be a variation in the ideas in different sections.

The drum beat and synth lines are original and work very well together. The timing between the backing track and the rap is consistently in time. There are more than 2 variations in ideas in different sections of the track. The structure is clear and has very clear sections.



## PHYSICAL EDUCATION

### The Game

You have 6 attempts to score a try. The defending team must stop the opposition from scoring by tackling the player with the ball. Once 6 tackles have been completed by the defending team the ball is turned over for the other team to try and score with 6 attempts.

#### Rules of the Game

The game starts with a '**kick off**' and this must be a drop kick.

There are 13 on field players per team.

The ball must be passed (out of hand) backwards only.

After 6 completed tackles the '**hand over**' rule applies and the ball is given to the other team.

No tackle should be above the shoulders and shoulder barging is penalised.

No '**stripping**' the ball carrier of the ball.

No **rucks** or **mauls** can be formed.

**Offside** is when a player is in front of the ball and interferes with play or the ball is passed to them.

If the ball is kicked off the field of play this is called 'out of play' and the game restarts with a '**tap kick**' and they pass in field to a designated player.

A **scrum** is awarded for a knock on or a forward pass.

Players 8,9,10,11,12 and 13 form the scrum.

Player 9 is called the 'hooker' and is responsible for striking the ball back with his foot to player 13.

Player 7 is responsible for putting the ball in the scrum.

Penalty kicks are awarded for infringements of the rules, dangerous play, gamesmanship and dissent.

The referee can **sin bin** a player if they decide the offending player was unsafe in a tackle, dissent, carried out a dangerous act on the field and not playing to the laws of the game. If a player is sin binned they must leave the field of play for 10 minutes. More than 1 player can be sin binned at a time.

Red cards are awarded for serious offences and the player can not return to the game or be replaced.

Play the ball - After every completed tackle the player must stand up and play the ball.

Kicking the ball is allowed at any time but generally performed after the 4th or 5th tackle for tactical reasons.

# Rugby



KS3

**1** - Gathers and catches kicks from the opposition, tackles any player breaking through the line of defence and supports players 2,3,4,5 and 6 when attacking. Generally the smallest and fastest player on the pitch.

**2,3,4,5 and 6** - Their main role is to score tries and defend the wide channels.

**6** - The most creative player. Their main role is to create gaps and spaces to set up opportunities for 2,3,4 and 5 to score.

**7** - Collects the ball from all restarts and links up with player 6 to create opportunities for attacking players

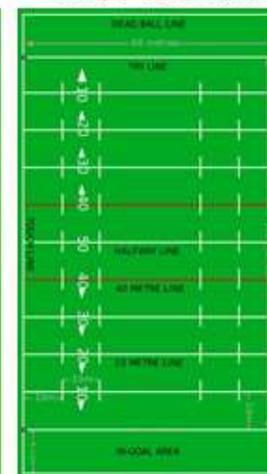
**8,9,10,11,12 and 13** - These are the biggest players who form the scrum. They are responsible for defending the centre of the pitch, trying to break through the defensive wall of the opposition and set up opportunities for others to score.

### Positions at Kick Off



1. Full-back
2. Wing
3. Centre
4. Centre
5. Wing
6. Stand-Off Half
7. Scrum Half
8. Prop Forward
9. Hooker
10. Prop Forward
11. Second Row Forward
12. Second Row Forward
13. Loose Forward

### The Pitch



#### Lesson Overview

1. Ball familiarisation
2. Passing and receiving
3. Use of width
4. Tackling technique
5. Attacking play
6. Develop attacking/kicking out of hand
7. Assessment

#### Scoring

- Try = 4 points
- Conversion = 2 points
- Penalty = 2 points
- Drop goal = 1 point



# PHYSICAL EDUCATION

## Trampolining: Basic Skills

SKILLS	DESCRIPTION	TICK <i>..if completed</i>
Straight Jump	Jump straight up from the cross and land back on the cross. Arms come up and you go up, and then down when you come down. Eyes fixed on one point.	
Stopping	Bend your knees as you touch down on the trampoline in a seat position and arms out in front.	
Tuck	Knees to chest. Bring arms forward and touch ankles. 	
Pike	Legs straight in front, reach towards toes. 	
Straddle	V shape with legs, in front. Reach out with arms to form a star-shape. 	
Half Twist	180 turn. As you go upwards, turn your head and shoulders into the direction you want to go. Will end up facing the other way. <i>DO NOT lean into the twist – let your head and shoulders do all of the work!!</i>	
Full Twist	360 turn. Will finish facing the same way. As you go upwards, turn your head and shoulders into the direction you want to go. <i>DO NOT lean into the twist – let your head and shoulders do all of the work!!</i>	

## PHYSICAL EDUCATION

KS3



## The Rules

**Starting a game:** Service is decided by a coin toss.

**Service:**

The player serving must stand with the ball held behind the endline of the table.

The ball must be held over the height of the table in the palm of the free hand.

The server must toss the ball without spin upwards at least 16cm

The server cannot obstruct the sight of the ball, the opponent and umpire must have a clear view of the ball at all times.

When serving, the ball must bounce once on the servers side and then bounce at least once on the opponent's side. If the ball strikes the net but does not strike the opponent's half of the table, then a point is awarded to the opponent.

However, if the ball hits the net, but goes over and bounces on the other side, it is called a let. Play stops and the ball must be served again. A player cannot commit any number of lets without a penalty.

**Returning service:**

To make a good return of service the ball must be returned before it bounces twice on your side of the table.

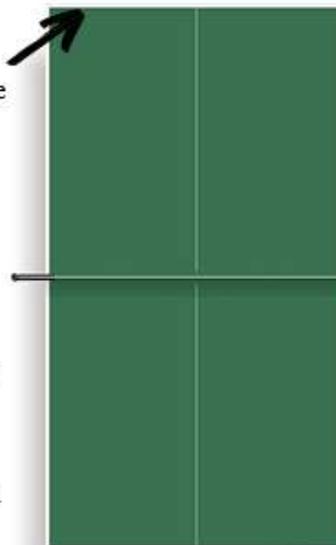
**Hitting the ball:**

The ball must be hit so that it passes over or around the net.

If a player cannot return a hit over or around the net so that the ball bounces on the opposite side of the table, the player loses the point.

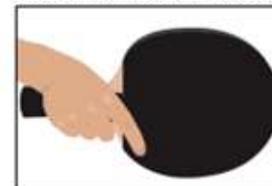


## Table Tennis

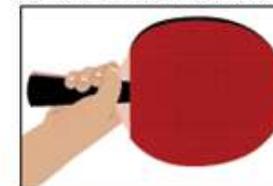


## Gripping the Bat

SHAKEHANDS GRIP FRONT



SHAKEHANDS GRIP BACK



## Key Terminology

**Backhand:** A shot done with the racket to the left of the elbow for a right hander, the reverse for a left hander.

**Backspin:** Backward spin placed on the ball.

**Closed:** Holding the racket such that the racket's hitting surface is aimed downward, with the top edge leaning away from you.

**Cross-table:** A ball that is hit diagonally from corner to corner.

**Dead:** A ball without any spin.

**Drive:** The basic topspin shot or smash executed close to the table.

**Forehand:** Any shot done with the racket to the right of the elbow for a right hander, the reverse for a left hander.

**Game:** Set. Each game is played to 11 points unless a deuce occurs.

**Game Point:** Last point of a game.

**Let:** Service ball hitting the net or a distraction that causes the point played over.

**Open:** Holding the racket such that the racket's hitting surface is aimed outward, with the top edge leaning towards you.

**Push:** A push is an underspin shot executed over the table, and usually close to the net. This is a passive shot that is used when it is impossible to attack a ball.

**Rally:** The period in which the ball is in play.

**Shake hand:** The most popular grip. It gives the best balance of forehand and backhand.

**Spin:** The rotation of a ball.

**Topspin:** Spin placed on a ball to allow it to curve down onto the table.

**Stroke:** Any shot used in the game, including the serve.

**Topspin:** Spin placed on a ball to allow it to curve down onto the table.



## Physical Education- Assessment- Year 8

	Practical Performance	Knowledge	Character
<b>GOLD</b> -	<p><b>UNDER PRESSURE</b> Consistently show precision, control &amp; fluency even when under pressure.</p> <p>Starting to attempt advanced skills. Decisions made can influence different situations in competition.</p>	<p><b>EXPLAIN</b> Explain why one student is different / similar to another using key terminology and teaching points for a variety of sports. Explain how different components of fitness are required for different sports. Describe a range of additional principles of training. Explain how to use a variety of training methods to develop specific components of fitness (Aerobic Endurance, Strength, Speed &amp; Flexibility). Explain how to conduct a range of fitness tests.</p>	<p><b>DETERMINATION</b> Set an example to others in lessons and competitive games. Demonstrates enthusiasm and commitment in a range of physical activities. Very fair in competition and is gracious in defeat. Has potential to be captain of a club. <b>ORGANISER</b> Can run a 2 part warm up and a small skill practice with smaller/familiar groups or peers. Confident in 3 roles (coach, recorder, manager, official) Show some motivational qualities and resilience to solve problems.</p>
<b>SILVER</b> +	<p><b>CONSISTENCY</b> Combine different basic skills &amp; techniques. Demonstrate precision &amp; control in competitive situations.</p> <p>Successfully selects and uses appropriate skills during competition.</p>	<p><b>LINK</b> Can describe WWW &amp; EBI when observing performances, using some key terminology and teaching points. Describe components of fitness using key terminology and link them to specific sports. Define the additional principles of training. Accurately link training methods to components of fitness / sports. Accurately describe the test protocol for a range of fitness tests. Link fitness tests to components of fitness.</p>	<p><b>TEAM WORKER</b> Work effectively in a team. Know when to include others and work cooperatively and seeks to help and encourage less confident students. Lead a 2 part warm up. Confident in 2 roles (coach, recorder, manager, official) Demonstrate organisational and communication skills.</p>
<b>SILVER</b> =	<p><b>LINKING SKILLS</b> Link different basic skills together showing precision and control in practices.</p> <p>Successfully selects and uses appropriate skills on some occasions.</p>	<p><b>DESCRIBE</b> Can describe WWW &amp; EBI when observing performances. Describe components of fitness using key terminology. Define the components of the FITT principle. Describe a variety of training methods for Aerobic Endurance, Strength, Speed &amp; Flexibility. Participate in a range of fitness tests, know what equipment is required &amp; identify the pre-test procedures.</p>	<p><b>RESPECTFUL</b> Show respect and support for fellow participants. Start to take responsibility of my own development and success. Can lead one part of a 2 part warm up. Work with peers to set up activities within a session and play a role in encouraging others. Confident at 1 role (coach, recorder, manager, official)</p>
<b>SILVER</b> -	<p><b>CORRECT TECHNIQUE</b> Demonstrate basic skills using the correct technique in practice situations under no pressure.</p>	<p><b>IDENTIFY</b> Can identify WWW &amp; EBI when observing performances. Identify components of fitness from definitions. Identify components of the FITT principle. Use the Borg Scale to measure exercise intensity. Participate in a variety of fitness tests adhering to the protocol.</p>	<p><b>POSITIVE</b> Demonstrate a consistently positive behaviour and attitude towards PE. Able to officiate a game or judge a performance. Can keep score during a range of games. Demonstrate basic communication skills (verbal/non-verbal) in a leadership situation.</p>
<b>BRONZE</b> +	<p><b>DEMONSTRATION</b> Can perform a few basic skills with limited accuracy. Involvement in the game is evident but demonstrates little understanding of the full game/performance.</p>	<p><b>JUDGE</b> Comment on performance using prompts and key words. I know several warm up activities including stretches. I recognise that there are different components of fitness.</p>	<p><b>PARTICIPATE</b> I rarely volunteer to become a leader. I have to be prompted to communicate effectively with my peers or teachers. Occasionally I demonstrate effort when participating.</p>

# Art

## Colour Theory

**Primary colours** are the three main colours, they can't be made, but are used to mix all of the other colours

**Secondary colours** are made by mixing two primary colours

**Tertiary colours** are made by mixing a primary and a secondary colour

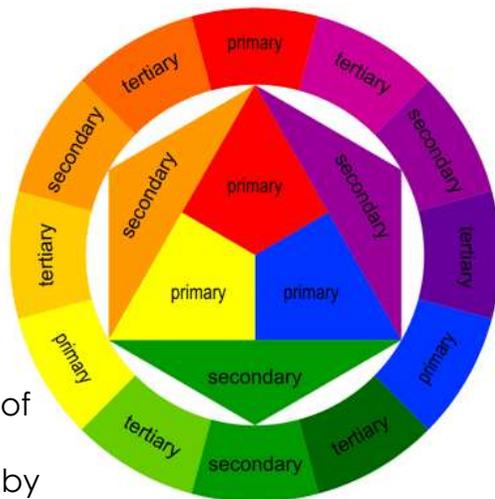
**Harmonious colours** are next to each other on the colour wheel

**Complementary colours** are opposite each other on the colour wheel

**Tint** – when you add white to a colour to make it lighter



**Shade** – when you add black to a colour to make it darker



### Making things look 3D:

To stop drawings looking flat use a range of tone and marks. Pressing harder and lighter and layering with your pencil creates different tones and adds depth.



**Mark Making:** To make drawings look more realistic try to use different marks on the surface. You can do this by changing the direction, pressure or length of your marks. Mark making can be used in conjunction with shading or separately.



## The Formal elements of Art

Tone	How light or dark something is	
Line	A mark which can be long, short, wiggly straight etc...	
Colour	What you see when light reflects off something. Red, blue and yellow are primary colours	
Texture	How something looks or feels e.g. smooth or rough	
Pattern	A symbol or shape that is repeated	
Shape	A 2D area which is enclosed by a line e.g. a triangle	
Form	Something which has 3 dimensions e.g. a cube, sphere or a sculpture	

## Technique Keywords

<b>Media/Medium</b>	The materials and tools used by an artist to create a piece of art
<b>Technique</b>	The way an artist uses tools and materials to create a piece of art
<b>Composition</b>	Where you place objects on the page
<b>Highlight</b>	The bright or reflective area on an object or piece of art, this area is closest to the light source
<b>Shadow/Shade</b>	The darker areas within a piece of art or object
<b>Proportion</b>	The size relationship between different parts e.g. height compared to width

# Art - Ocean & Plastic

In this topic you will be looking at the Ocean environment and plastic. You will explore the impact the effect this has on ocean animals and how to respond to this as an artist and create a meaningful piece of environmental art.

During this project you will be exploring the work of

**Alfred Basha:** an artist that creates surreal hybrid creatures using their habitat and outline to create original artworks.

**Andreas Lie:** this artist uses double exposure to manipulate photographs combining animals and their habitat

**Double Exposure:** is a photographic technique that mainly involves combining two exposures (pictures) to create a single image



## Grades of pencil

Pencils come in different grades, the softer the pencil, the darker the tone.

H=Hard B=Black

In art the most useful pencils for shading are 2B and 4B. If your pencil has no grade, it is most likely HB(hard black) in the middle of the scale.



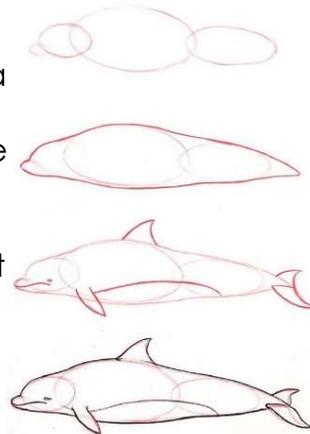
**Activist art** is a term used to describe art that is grounded in the act of 'doing' and addresses political or social issues.

<b>Habitat</b>	this is the natural environment of an animal/creature
<b>Environment</b>	the surroundings or conditions in which a person, animal, or plant lives. We must protect the environment from pollution
<b>Pollution</b>	this is a huge issue at the moment as waste is incorrectly disposed of
<b>Recycling</b>	we must do more of this to protect our oceans and the creatures that live within
<b>Plastic</b>	these items are often disposed of incorrectly and end up in the oceans and harm wildlife

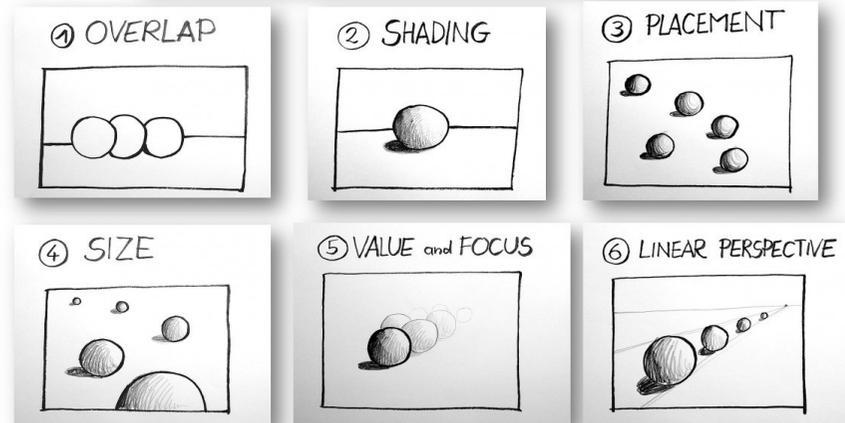
## Constructing a drawing

It is important to remember to build a drawing in stages:

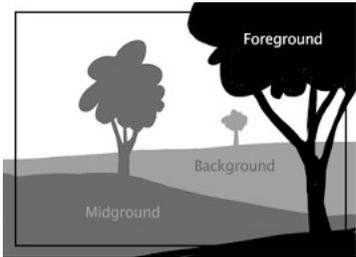
1. Plot out rough shapes (to ensure everything is in proportion) start with the bigger structures,
2. Refine line work (put the correct lines in)
3. Add details and smaller shapes
4. Plot out and apply shading or mark making



**Space** refers to the area within, around, above or below an object or objects. It is important to creating and understanding both two dimensional and three dimensional works of art.



# Art - Insects

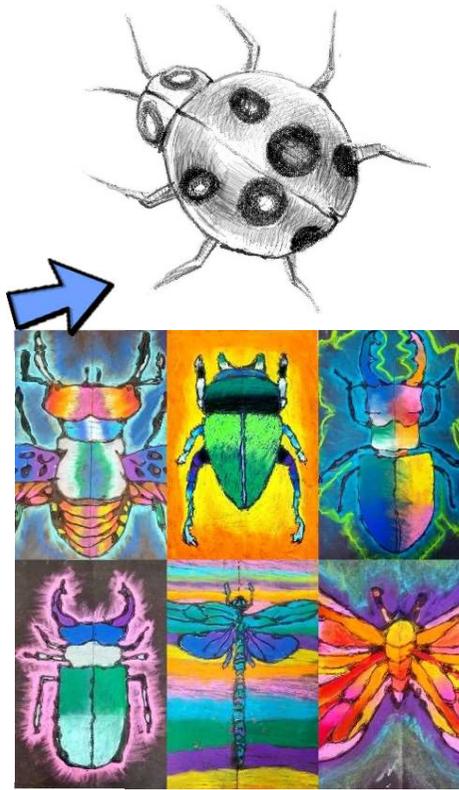


It is important to be able to identify the different layers in an image. When creating your own piece you will be building from background to middleground to foreground.

**In this project you will develop compositional skills and learn how to build up a background and image based on the stimulus of insects. You will be exploring colour theory and colour groups in this project.**



**Directional shading** is shading that follows the contours of an object. Using this method makes your work appear more realistic. Look at the insect, see how the shading changes direction and curves with the shape of the insect. Directional shading should be used all the time =, it is not exclusive to pencil shading, look at the way the oil pastel has been used.



**Things to help:**  
**Books**

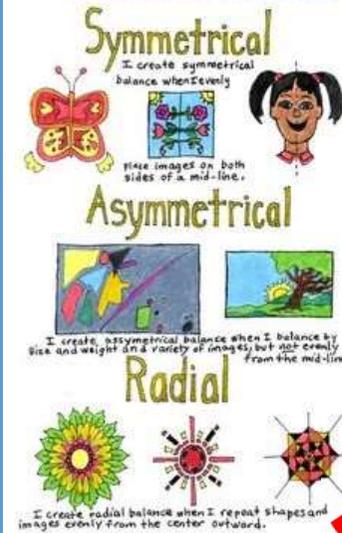
- **How to Draw Almost Everything: An Illustrated Sourcebook** – Chika Miyata
- **Keys to Drawing** – Bert Dodson
- **Drawing for the Absolute Beginner: A Clear & Easy Guide to Successful Drawing (Art for the Absolute Beginner –** Mark and Mary Willenbrink

**YouTube Tutorials**

- **Drawing & Painting – The Virtual Instructor**
- **The Basics of Oil Pastels - How to use Oil Pastels (Lets create something)**

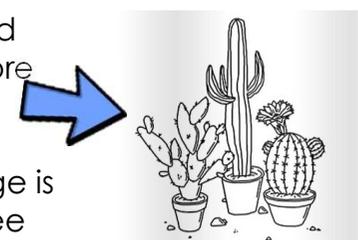
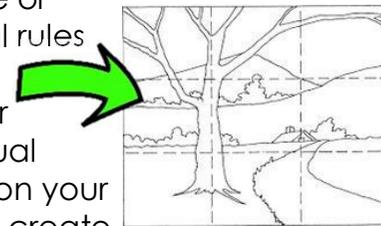
**Oil Pastel** are a new medium we will be using during this project. They are like wax crayons and produce a rich bright colour, they can be a little tricky to blend.

## BALANCE



**Composition** is the way that you place or position your objects, there are several rules that can be used.

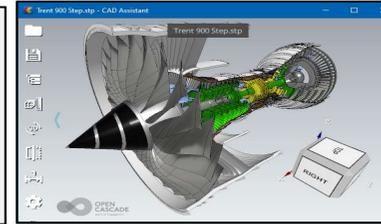
- **Rule of thirds:** You divide your paper horizontally and vertically into 9 equal sections, and by placing the focus on your image where the lines intersect you create a balanced composition.
- **The Rule of odds** suggests that an odd number of subjects in an image is more interesting to look at than an even number.
- **Balance** is where you ensure an image is 'balanced' look at the diagram to see different types of balance.



**Dominic Vonbern** is a designer, artist and author. Vonbern Has been active in the Swiss street art scene for over 24 years. He takes inspiration from street and pop art. He works today predominantly in the medium of spraying and colourful digital arts.

Design and Technology  
Knowledge Organisers – Bee  
Box.

2D Design - CAD, CAM and CNC  
CAD Computer-Aided-Design



Nets- A pattern that you can cut and fold to make a model of a solid shape

Tolerances

**Tolerance** is the allowable variation for any given size in order to achieve a proper function

Example: If I ask for a piece of wood to be cut to 500mm long and there is a tolerance of +/- 2mm, it can be 502mm or 498mm long!  
This is what is known as a tolerance

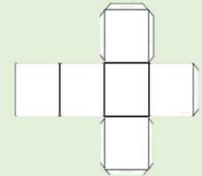
CAM Computer-Aided-Manufacture



CNC means Computer-Numerical-Control



Net of a cube!

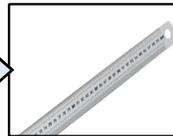


Hazard- Something that has the potential to cause harm, untidy cables between work spaces is a good example

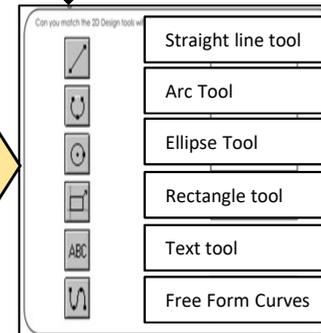
Tools and Equipment

Graphical tools

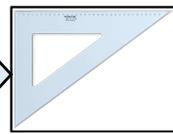
Steel Ruler- Used to draw very precise and accurate straight lines



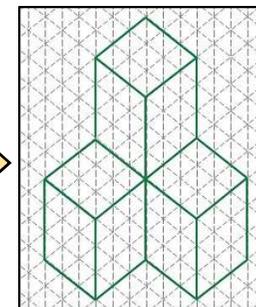
2D Design Tools Explained! These are the most common tools you will use in 2D Design



Set Square- Use for drawing 30 or 60 degree diagonal lines



Isometric drawing paper. Used to help you create drawings in 3D. Lines are 30 degrees



Isometric Drawing- **Isometric projection** is a method for visually representing three-dimensional objects in two dimensions in technical and engineering drawings

TOLERANCING	SCALE	SIZE
00 = ±0.2	1:1	A4
00.0 = ±0.1		
00.00 = ±0.05		
angular = ± 0°30		
<b>ALL DIMENSIONS IN MM</b>		
<p>3rd ANGLE PROJECTION</p>		
<b>DO NOT SCALE</b>		

Design and Technology  
Knowledge Organisers – Bee  
Box.

Graphic Design -  
The art or skill  
of combining  
text and  
pictures in  
advertisements,  
magazines, or  
books.



Pine Wood- Used  
indoor and outdoors  
for a range of  
cheap applications

Plywood- Strong  
man made board,  
made from layers  
glued together

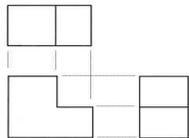


A Bug Hotel

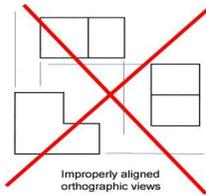
Scaled Drawings- Why  
use scaled drawings?  
A drawing that shows a  
real object with accurate  
sizes reduced or enlarged.  
We cant design a building  
as big as the Eifel tower  
so we have to draw it  
smaller. This is called a  
scaled drawing.

Orthographic Projection

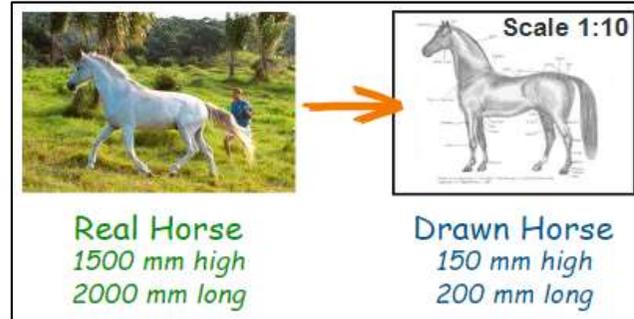
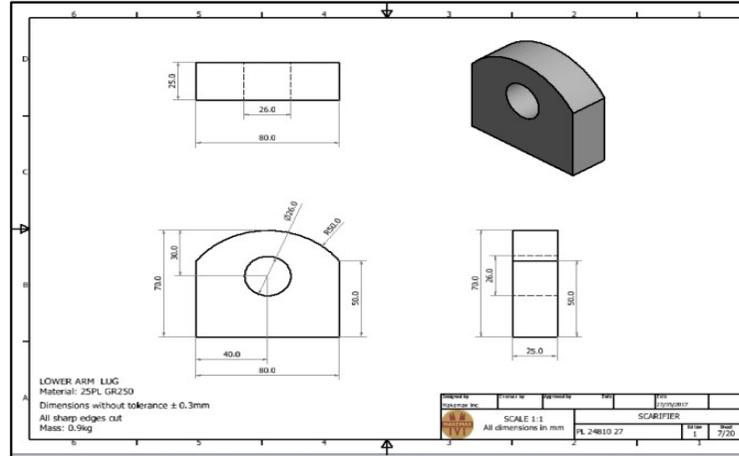
Views are aligned with one another (features project from one view to the next)



Properly aligned  
orthographic views



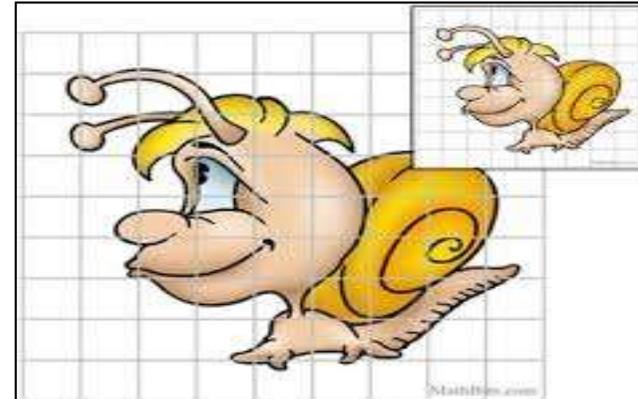
Improperly aligned  
orthographic views



Real Horse  
1500 mm high  
2000 mm long

Drawn Horse  
150 mm high  
200 mm long

Orthographic projection is a means of representing three-dimensional objects in two dimensions. It is a form of parallel projection, in which all the projection lines are orthogonal to the projection plane, resulting in every plane of the scene appearing in affine transformation on the viewing surface.





**Product analysis** involves investigating a **products** features, costs, availability, quality and other aspects. **Product analysis** is carried out by people who want to buy the product, by **product** managers attempting to understand competitors and by people who need inspiration to design and develop a new product. At school we use ACCESS FM to help us analyse a product. Below is an example of how it used.

**Market Research-** The action or activity of gathering information about consumers' needs and preferences.

**Customer-** What would you customer think of the product? Is it suitable for them? Does it fulfil their needs?

**Aesthetics-** Describe what the object looks like, you can discuss its colour, texture, features and more

**Cost-** Discuss the cost of the product, is it too expensive? too cheap? Would your client be happy with the price? Is it good value for money?

**Environment-** What location will your product be suitable for? Is your product environmentally friendly?



**Size-** What are the dimensions of your product? Is it just right? Too big? Too small?

**Function-** How does your product work? Are there any moving parts? What is it intended to do?

**Shape-** Describe the shape of your product, Is the shape suitable for your client? Could it be improved?

**Materials-** Describe the materials, What is the product made of? Are the materials suitable?

**ACCESSFM-** This is a useful tool used to analysis a product in detail

Project Planning Tools

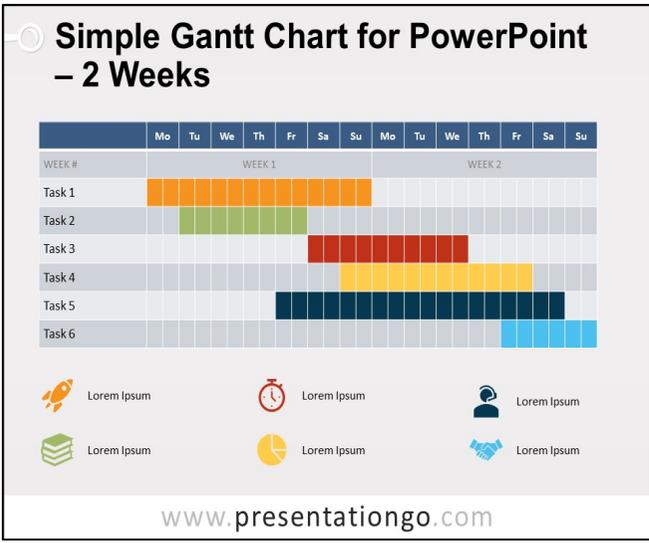
Project Planning Tools

Design and Technology Knowledge Organisers – Bee Box.

Sustainability

Sustainability- A way to avoid running out of natural resources in order to exist forever!

The Gantt Chart- A chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.



The 6R's

Reduce Re-use Recycle Refuse Repair Refuse

Units of Measurement:

In the UK and Europe we use mm which is know as the metric system, Across America they use imperial measurements which are feet and inches.

Length 100millimetres (mm) = 10centimetres (cm) 1centimetre (cm) = 10mm 100cm = 1metre (m)  
1000metres (m) = 1kilometre (km)

Weight 1gram (g) = 1000mg 0.1kilogram (kg) = 100grams (g) 1kilogram (kg) = 1000grams (g)  
1tonne = 1000kilograms (kg)

Capacity 1litre = 1000millilitres (ml) 1litre (l) = 100centilitres (cl) 1centilitre (cl) = 10millilitres (ml)  
0.1litre (l) = 100millilitres (ml)

**Skills & Processes Used In Year 8**



**Kneading Bread Dough- Bread**

Strong flour used for bread dough is high in a protein called gluten. This must be kneaded by hand to make it elastic and stretchy.



**Proving Bread Dough – Cinnamon Rolls**

Once the dough has been kneaded, it must be left to prove. This is where the yeast (a biological raising agent) ferments, creating carbon dioxide gas which makes the dough grow and rise.



**Frying off – Bolognese, chicken tikka, chicken and bacon pasta**

A method for cooking raw meat until it is sealed and cooked through. It should be brown on the outside with no pink left on the inside.



**Blind Baking – Savoury Flan/Quiche**

Baking a pastry case before adding a filling to dry it out and stop a soggy bottom (baking beads to weigh it down). Coagulation of egg.



**Rubbing In – Jam Tarts, Savoury Flan**

Combining fat and flour by 'rubbing in' with your fingertips before binding together with water to make pastry dough



**Binding, Coating, Shaping – Fish cake**

Combining all ingredients together, shaping into a patty, coating in flour, egg and breadcrumbs before cooking.



**Melting method – Flapjack and cheesecake**

Melting is a physical process that results in the phase transition of a substance from a solid to a liquid. We boil a small amount of water in a saucepan and place a glass bowl with the ingredients we want to melt above.



Keyword	Meaning
<b>Aeration</b>	Adding air/gas to a mixture, e.g. by whisking.
<b>Blind Baking</b>	A method of baking pastry without any filling to dry it out.
<b>Coagulation</b>	When liquid protein foods are cooked and turn from liquid to solid. E.g. egg in quiche.
<b>Convenience Foods</b>	Ready made foods that can be used to save time. E.g. puff pastry. More expensive than making from scratch though.
<b>Glazing</b>	Brushing with egg or milk before baking to give a shine. E.g. scones, pastry.
<b>Simmering</b>	When water or food in a saucepan bubbles gently (stays below boiling point).
<b>Kneading</b>	Working bread dough with the hands to stretch the gluten so it is elastic (helps the yeast to make bread rise).
<b>Lamination</b>	Thin layers of fat and dough in puff/flaky pastry. These separate when baked to form the flaky layers.
<b>Proving</b>	Leaving bread dough to develop and rise.
<b>Yeast</b>	A biological raising agent used in bread and beer.

**Equipment**

**Pastry brush** used for glazing



**Frying pan** used for frying off meat (can also be done in a saucepan)



**Garlic crusher**



**Electric whisk** used to mechanically aerate mixtures



**Colour Coded Chopping Boards**



**Chefs Knife** - a large all purpose knife



**Baking beans** used for blind baking pastry

**Vegetable Knife** - a small knife for preparing fruits and vegetables



The government recommends **8 top tips for healthy eating**. Following these guidelines you will give you a **balanced diet**, which leads to **good health**.



All the **foods** on the **Eatwell Guide** give us a range of **different nutrients** which all do **different jobs** in our body.  
Remember lots of foods provide more than 1 nutrient.

**eatwell** 8 TIPS for HEALTHY EATING

- 1 Base your meals on starchy foods
- 2 Eat lots of fruit and veg
- 3 Eat more fish – including a portion of oily fish each week
- 4 Cut down on saturated fat and sugar
- 5 Eat less salt – no more than 6g a day for adults
- 6 Get active and try to be a healthy weight
- 7 Drink plenty of water
- 8 Don't skip breakfast

Nutrient	Food Examples	Main Function in Body
<b>Macronutrients - We need these in large amounts.</b>		
<b>Starchy Carbohydrates</b>	Cereals, bread, rice, potatoes, pasta etc.	Give us slow release energy. (wholegrain versions are higher in fibre).
<b>Protein</b>	Meat, fish, eggs, nuts, seeds, pulses, lentils.	Growth, repair and maintenance of muscles.
<b>Fat</b>	Butter, lard, margarine, sunflower oil, olive oil etc.	Insulates our vital organs (heart, lungs etc) and keeps us warm.
<b>Micronutrients - We need these in small amounts.</b>		
<b>Vitamins</b>	Fruits and vegetables.	Help our immune system fight off illnesses and help us release energy from other foods.
<b>Minerals</b>		
<b>Other Essential Nutrients</b>		
<b>Dietary Fibre (NSP)</b>	Wholegrain cereals, fruit/vegetables, nuts/seeds etc	Helps our digestive system remove waste and avoid constipation.
<b>Water</b>	Keeps us hydrated, controls body temperature, helps digestion, gets rid of waste.	

**Healthy Food Swaps**



Changing just a few eating habits can make a big difference to your diet and is the healthiest way to lose weight. Eat less fat, salt, sugars, processed foods and high calorie foods. Swap them for something healthier, such as more fruit and vegetables (5 a day).

Find out more: [www.nhs.uk/change4life/food-facts](http://www.nhs.uk/change4life/food-facts)

<b>Main Major Health Issues Linked to Poor Diet</b>	
<b>Anaemia</b>	Too few <b>red blood cells</b> caused by a lack of <b>iron</b> in the diet.
<b>Diabetes (Type 2)</b>	Caused by too much <b>processed sugar</b> , obesity and lack of exercise.
<b>Heart Disease (CHD)</b>	Arteries get blocked by fatty deposits. Linked to <b>saturated fats</b> and <b>obesity</b> .
<b>Obesity</b>	Having too much <b>body fat</b> because of an <b>incorrect energy balance</b> .
<b>Osteoporosis</b>	Bone disease. Brittle <b>bones</b> due to a lack of <b>calcium</b> . Affects elderly people.
<b>Tooth Decay</b>	Plaque builds up on the teeth. Made worse by eating too much <b>sugar</b> .

Where does our food come from, how is it produced and why do we need to know?



**Red Tractor** is a food assurance scheme showing the food has been farmed, processed and packed in the **UK**. It is **traceable**, safe to eat and has been produced responsibly.



The **animals** have access to outdoor space and can live naturally. The **welfare** standards are high.



Foods that have this label mean the **animals** have had a good life and have been treated with respect



This means the food has been produced without using any chemicals. Only **natural fertilisers and pesticides** are used to help the crops grow.



The **farmer** gets a **fair price** for his produce and fair working and living conditions.



Using **sustainable methods** of fishing to prevent the decline in number of **fish** in our seas.

- Foods:**
- Milk, cheese, yoghurt, poultry**
- Foods:**
- Eggs, meat**
- Foods:**
- Eggs, meat & fish**
- Foods:**
- Eggs, chicken, fruit and vegetables**
- Foods:**
- Sugar, bananas, coffee, tea**
- Foods:**
- Fish, seafood**

# The school food standards



## Fruit and vegetables

- One or more portions of vegetables or salad as an accompaniment every day.
- One or more portions of fruit every day.
- A dessert containing at least 50% fruit two or more times each week.
- At least three different fruits and three different vegetables each week.



## Starchy food

- One or more wholegrain varieties of starchy food each week.
- One or more portions of food from this group every day.
- Three or more different starchy foods each week.
- Starchy food cooked in fat or oil no more than two days each week.\*
- Bread - with no added fat or oil - must be available every day.



## Milk and dairy

- A portion of food from this group every day.
- Lower fat milk must be available for drinking at least once a day during school hours.



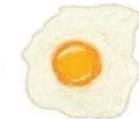
## Healthier drinks

- Free, fresh drinking water at all times. The only drinks permitted are:
  - Plain water.
  - Lower fat milk or lactose reduced milk.
  - Fruit or vegetable juice.
  - Plain soya, rice or oat drinks enriched with calcium; plain fermented milk drinks.
  - Combinations of fruit or vegetable juice with plain water.
  - Combinations of fruit juice and lower fat milk or plain yoghurt, plain soya, rice or oat drinks enriched with calcium; cocoa and lower fat milk; flavoured lower fat milk, all with less than 5% added sugars or honey.
  - Tea, coffee, hot chocolate.
- Combination drinks are limited to a portion size of 330ml.



## Foods high in fat, sugar and salt

- No more than two portions of food that has been deep-fried, batter-coated, or breadcrumb-coated, each week.\*
- No more than two portions of food which include pastry each week.\*
- No snacks, except nuts, seeds, vegetables and fruit with no added salt, sugar or fat.\*
- Savoury crackers or breadsticks can be served at lunch with fruit or vegetables or dairy food.
- No confectionery, chocolate or chocolate-coated products.\*
- Desserts, cakes and biscuits are allowed only at lunchtime.
- They must not contain any confectionery.
- Salt must not be available to add to food after it has been cooked.\*
- Any condiments must be limited to sachets or portions of no more than 10g or one teaspoonful.\*



## Meat, fish, eggs, beans and other non-dairy sources of protein

- A portion of food from this group every day.
- A portion of meat or poultry on three or more days each week.
- Oily fish once or more every three weeks.
- For vegetarians, a portion of non-dairy protein on three or more days each week.
- A meat or poultry product no more than once each week in primary schools and twice each week in secondary schools\*

## Food provided outside lunch

- Fruit and/or vegetables available in all school food outlets.
- No savoury crackers and breadsticks.
- No cakes, biscuits, pastries or desserts.

\* This Standard applies across the whole school day, including breakfasts, morning breaks, tuck shops, and after school clubs. Information from 'The School Food Plan' website.

**CHILDREN'S FOOD TRUST**  
Eat Better Do Better





**Food miles** - The distance food travels from **Farm To Fork**



**4 C's** Food hygiene is necessary in order to make food which is safe to eat. This involves

more than just being clean. A simple way to remember all the important areas where safety could be an issue are the **4Cs**:

- **Cooking**
- **Cleaning**
- **Chilling**
- **Cross Contamination**



Keyword	Meaning
<b>Ambient Foods</b>	Foods that can be safely stored at room temperature.
<b>Aeration</b>	Adding <b>air</b> to a mixture to help it rise (e.g. cakes, batters, yorkshire puddings).
<b>Bacteria</b>	A <b>micro-organism</b> that grows on food. Some of these are harmless but <b>pathogenic bacteria</b> can cause food poisoning.
<b>Coagulation</b>	When heat is applied to a liquid protein food making it become solid. E.g. Egg.
<b>Cross Contamination</b>	When bacteria passes from one food to another or from people to food. Can lead to food poisoning.
<b>Food Spoilage</b>	When bacteria causes food to decay. Food will start to smell, lose texture or flavour.
<b>Food Poisoning</b>	Caused by eating food infected with bacteria. Symptoms include sickness, fever and diarrhoea.
<b>High Risk Foods</b>	Foods where bacteria grows quickly and can lead to food poisoning. The majority of high risk foods are animal protein foods (meat, fish, dairy, meat stocks/gravies). The only exception is cooked rice.
<b>Mould</b>	A type of micro-organism. Grows on foods such as berries when they are starting to decay. Also used in food production to make foods such as blue cheese or soy sauce.

**Food Packaging Date Marks**

Date Mark	Description	Food Examples
<p><b>Use By</b></p>	A safety date. Used on high risk foods that usually need to be stored in the fridge. If you eat the food after this date you risk food poisoning.	<p>Meat Fish Seafood Cheese Milk Cream</p>
<p><b>Best Before</b></p>	A quality date. Food can still be eaten after but the quality will be reduced. E.g. cereals or biscuits will not be as crunchy.	<p>Bread Cereals Sugar Flour Pasta</p>

**Raising Agents**

**Biological** – Yeast, used in bread making.



**Mechanical** –

- folding,
- beating,
- whisking,
- sieving,
- creaming,
- rubbing in.



**Chemical** - Bicarbonate of soda, baking powder, S.R.flour.



**Steam** – Used in choux pastry, Yorkshire puddings, soufflés.



CHANGE IS ALWAYS  
**NEGATIVE**



**DISCUSS**

## At My Best - Dealing with change, Transition and School Values



**Aim:** To feel supported in the transition from Primary to Secondary School, understanding where and how to access support if required. Have an understanding on the schools values and the importance of these on the journey to success.

Word	Definition
Change	Make or become different
Positive	Showing progress or improvement.
Negative	(of a person, attitude, or situation) not desirable or optimistic.
Transition	The process or a period of changing from one state or condition to another.
Strategies	A plan of action designed to achieve a long-term or overall aim
Relationships	The way in which two or more people or things are connected, or the state of being connected.
Expected	Regarded as likely; anticipated.
Unexpected	Not expected or regarded as likely to happen.
Emotions	A strong feeling deriving from one's circumstances, mood, or relationships with others.
Thinking	A person's ideas or opinions.
Feelings	The emotional side of someone's character; emotional responses or tendencies to respond.
Aspiration	A hope or ambition of achieving something.
Belief	Trust, faith, or confidence in (someone or something).
Learning	Knowledge acquired through study, experience, or being taught.
Achievement	A thing done successfully with effort, skill, or courage.
Ready	In a suitable state for an action or situation; fully prepared.
Respectful	Due regard for the feelings, wishes, or rights of others.
Responsible	Capable of being trusted.
Mission	A strongly felt aim, ambition, or calling.
Purpose	The reason for which something is done or created or for which something exists.
Values	Principles or standards of behaviour; one's judgement of what is important in life.
Rules	The normal or customary state of things.

Kindness  
is  
Magic



## At My Best - Kindness, Friendships and Peer Pressure

**Aim:** To consider the importance of being kind and the impact friendships have on our decisions. Consider why we sometimes make bad decisions and how pressure from others can cause this to happen



Word	Definition
Kindness	The quality of being friendly, generous, and considerate.
Bullying	Seek to harm, intimidate, or coerce (someone perceived as vulnerable).
Cyber Bullying	The use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature.
Feelings	The emotional side of someone's character; emotional responses or tendencies to respond.
Emotions	A strong feeling deriving from one's circumstances, mood, or relationships with others.
Impact	A marked effect or influence.
Harmonious	Free from disagreement or dissent.
Community	A group of people living in the same place or having a particular characteristic in common.
Victim	A person harmed, injured, or killed as a result of a crime, accident, or other event or action.
Perpetrator	A person who carries out a harmful, illegal, or immoral act.
Bystander	A person who is present at an event or incident but does not take part.
Accessory	Someone who gives assistance to the perpetrator of a crime without taking part in it.
Culture	The attitudes and behaviour characteristic of a particular social group.
Friendship	The emotions or conduct of friends; the state of being friends.
Thoughts	An idea or opinion produced by thinking, or occurring suddenly in the mind.
Words	Something spoken or written; a remark or statement.
Deeds	Action or performance.
Mutual	(of a feeling or action) experienced or done by each of two or more parties towards the other or others.
Praise	The expression of approval or admiration for someone or something.
Characteristics	A feature or quality belonging typically to a person, place, or thing and serving to identify them.
Disagreement	Lack of consensus or approval.
Fear	An unpleasant emotion caused by the threat of danger, pain, or harm.
Peer Pressure	Influence from members of one's peer group.
FOMO	Anxiety that an exciting or interesting event may currently be happening elsewhere, often aroused by posts seen on social media.

## At My Best – Staying Safe & Healthy



**Aim:** To consider how we keep ourselves safe and healthy both physically and mentally. Explore support options available to us if we encounter challenges with our physical and/or mental health.



Word	Definition
Risk	A situation involving exposure to danger.
Danger	The possibility of suffering harm or injury.
Addiction	The fact or condition of being addicted to a particular substance or activity.
Brain	An organ of soft nervous tissue contained in the skull of vertebrates, functioning as the coordinating centre of sensation and intellectual and nervous activity.
Development	An event constituting a new stage in a changing situation.
Pressure	The use of persuasion or intimidation to make someone do something.
Safeguarding	Protect from harm or damage with an appropriate measure.
Abuse	Treat with cruelty or violence, especially regularly or repeatedly.
Online	While connected to a computer or under computer control.
Safety	The condition of being protected from or unlikely to cause danger, risk, or injury.
Dilemma	A situation in which a difficult choice has to be made between two or more alternatives.
Consequences	A result or effect, typically one that is unwelcome or unpleasant.
Legal	Permitted by law.
Barrier	A circumstance or obstacle that keeps people or things apart or prevents communication or progress.
Knife	An instrument composed of a blade fixed into a handle, used for cutting or as a weapon.
Password	A secret word or phrase that must be used to gain admission to a place.
Email	Messages distributed by electronic means from one computer user to one or more recipients via a network.
Sexting	Send (someone) sexually explicit photographs or messages via mobile phone.
Inappropriate	Not suitable or proper in the circumstances.
Bullying	Seek to harm, intimidate, or coerce (someone perceived as vulnerable).
Bystander	A person who is present at an event or incident but does not take part.

## At My Best – Staying Safe & Healthy

**Aim:** To consider how we keep ourselves safe and healthy both physically and mentally. Explore support options available to us if we encounter challenges with our physical and/or mental health.

Word	Definition
Mental	Relating to the mind.
Physical	Involving bodily contact or activity.
Emotional	Relating to a person's emotions.
Psychological	Of, affecting, or arising in the mind; related to the mental and emotional state of a person.
Health	The state of being free from illness or injury.
Everyday	Happening or used every day; daily.
Overwhelming	Be too strong for; overpower.
Feelings	An emotional state or reaction
Exercise	Activity requiring physical effort, carried out to sustain or improve health and fitness.
Heart	A hollow muscular organ that pumps the blood through the circulatory system.
Fitness	The condition of being physically fit and healthy.
Puberty	The period during which adolescents reach sexual maturity and become capable of reproduction.
Gender	Either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones. The term is also used more broadly to denote a range of identities that do not correspond to established ideas of male and female.
Stereotypes	A widely held but fixed and oversimplified image or idea of a particular type of person or thing.
Conform	Comply with rules, standards, or laws.
Expression	The action of making known one's thoughts or feelings.
Identity	The characteristics determining who or what a person or thing is.
Attraction	The action or power of evoking interest in or liking for someone or something.



Kindness  
is  
Magic



# PUNCTUATION

## Full Stop

Use full stops at the end of a sentence or abbreviation.

## Question Mark

Use question marks at the end of a question instead of a full stop.

Use quotation marks for direct quotations or to show spoken words.

“ ”

Quotation Marks

## Apostrophe

Use apostrophes in contractions and to show possession.

## Comma

Use commas to separate clauses in complex sentences and separate items in a list or before a speech mark.

## Ellipsis

An ellipsis can be used to show words that have been missed out of a quotation or informally to show an incomplete sentence.

## Exclamation Point

Use exclamation points at the end of an exclamation.

## Colon

A colon can be used to introduce a list and before a final clause that explains something in the sentence.

## Parentheses

Use parenthesis around an inserted comment, aside, explanation or additional information.

## Semicolon

Use a semicolon to join two independent clauses that are not connected with a conjunction.

# Paragraphs

Remember **PPPTT**

Start a new paragraph for these reasons:

**P**erson  
If a new person is talking or a new character being described.

**P**lace  
If the story or text has changed location.

**P**oint  
If you start to make a new point.

**T**opic  
If you've started writing about something different.

**T**ime  
If a significant change in time has happened and it has been mentioned.

# Literacy Writing Mat

## Sentence Openers

### Realities

- 'Once upon a time...'
- 'To begin with...'
- 'I sleepily opened my eyes...'
- 'I will never forget the time...'

### Expository Writing

- 'My name is \_\_\_\_\_ and I am writing to argue for...'
- 'Let me get things straight...'
- 'First of all...'

- 'One thing that you need to know about ... is...'

### Indication/Exclamation

- 'It has been reported that...'
- 'Witnesses were shocked last night as...'
- 'Recent research has shown...'

### Introducing

- 'Firstly...'
- 'To begin with...'

### Analyzing

- 'I am writing to analyse the...'
- 'The text that I have been reading is...'

### Summarizing

- 'The good points about ... are'

## Vocabulary

### Adjectives

- Instead of **Big** - **Huge, Enormous, or Gigantic.**
- Instead of **Small** - **Tiny, Minute, or Miniature.**
- Instead of **Old** - **Ancient, Outdated, or Antiquated.**
- Instead of **Young** - **Youthful, Infantile, immature.**
- Instead of **Good** - **Fantastic, Excellent, Outstanding.**

### Adverbs

Use these to add more detail to verbs and adjectives.

- 'Speedily' 'Thoughtfully'
- 'Casually' 'Purposefully' 'Slowly'
- 'Innocently' 'Consequently'
- 'Incredibly' 'Overwhelmingly'
- 'Nicely' 'Superbly' 'Flatly'
- 'Questionably' 'Maximally'
- 'Darkly' 'Nicely' 'Subtly'
- 'Maximally' 'Happily'

## Adding Connectives

- 'And' 'Also' 'As well as'
- 'Too' 'Additionally' 'Especially'
- 'Moreover' 'Furthermore'
- 'Notably' 'Above All' 'Indeed'
- 'Significantly' 'In addition to'

## Contrasting Connectives

- 'However' 'Whereas' 'But'
- 'Yet' 'Nevertheless' 'Still'
- 'Conversely' 'On the other hand'
- 'Then again' 'In spite of this'
- 'Though' 'Then' 'Except'
- 'But' 'Apart from' 'Aside from'

## Time Connectives

- 'Firstly' 'Finally' 'In the end'
- 'Secondly' 'Primarily' 'After'
- 'Thirdly' 'Before' 'Meanwhile'
- 'When' 'Consequently' 'Now'
- 'Later' 'Since' 'Suddenly'
- 'After a while' 'Following'

## Punctuation

- ( )
- ; - ?
- ! { }
- / , :
- ' ' \

### Using Speech Marks

"Speech marks should go around every word that was said."

Speech marks go outside the other punctuation in the sentence.

### Using Apostrophes

Use apostrophes only to:

- Show when something belongs to someone, e.g. "It was Sam's book."
- Show when letters have been left out, e.g. "format - com - article - ant - ant."

## Common Mistakes

### Their, There's, and There

Their = When something belongs to someone, e.g. "It was their dog."

They're = When you are replacing the word 'they are.' e.g. "I like dogs. They're funny."

There = All other situations, e.g. "The dog was over there."

### Should, Could, Would of

This mistake happens because people hear the term 'could've' and think that 'could of' is being said. What is actually meant is 'could have.'

Wrong: "I could of gone today."

Correct: "I could have gone today."

The same applies to 'should' and 'would.'

### Two, Two, To

Two = 200 number two, e.g. "There were two days until Christmas."

Too = 'Also' or 'As Well', e.g. "I am excited for Christmas too."

To = All other situations, e.g. "I went into town to buy a Christmas tree today. To see the lights was so lovely."

# TYPES OF SENTENCES.

## SIMPLE SENTENCE

Subject + **verb** = simple sentence.  
My **brother** **walked** into the field.

## COMPOUND SENTENCE

Sentence CONJUNCTION sentence.

These are called conjunctions

- but
- so
- and
- if
- when
- although
- whereas

My **brother** **walked** into the field and he **found** his football.

## COMPLEX SENTENCE

Opener, sentence.

Adverbs, connectives and verbs can be used as openers.

- slowly
- quietly
- carefully
- smiling
- finally
- in addition
- hoping
- screaming

This is an independent clause

Carefully **pushing** the gate open, my **brother** **walked** into the field.

**Smiling** to himself, my **brother** **walked** into the field.

(When you are confident with this structure, try moving your subordinate clause to the end of the sentence or embedding it into the middle of the independent clause.)

SENTENCES

SENTENCES

SENTENCES



# Vocabulary Instruction The Power of Words



**Break it down:**  
How many syllables?  
What does it sound like?

**Definition:**

**Say it in a sentence:**   
Now write the sentence.



**Synonyms:**  
Words with similar meanings

**Antonyms:**  
This word is opposite to...

**Can you draw it?** 

