

Contents

Page	Subject
2	English
6	Mathematics
9	Science
12	French
15	Geography
20	History
22	RE
26	Music
28	Art
31	Design and Technology
35	Food and Nutrition
40	PE
43	At My Best
44	Literacy

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	Patriarchy is a government or controlling power where men are in control and things are done for the benefit of men.
Hierarchy	A hierarchy refers to the organization of people at different ranks and levels from high to low.
Machiavellian	Machiavellian refers to a type of leadership that is very harsh and cut-throat.
Rhetoric	Rhetoric is the art of influence, through speaking powerfully and using undeniable logic.
Anecdote	An anecdote is a short story about something interesting, important or funny in a person's life.
Camaraderie	Camaraderie is a feeling of good friendship and togetherness among people in a group.
Subvert	To subvert something is to take away its power or authority by turning it on its head.
Subservient	If you are subservient 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: Animal Farm

Plot Summary



1. The animals gather to listen to old Major. He gives them a vision of a life without man.
2. The animals rebel and overthrow Jones. The commandments are written.
3. The animals' first harvest is a success. The pigs keep the milk and apples to themselves.
4. The Battle of the Cowshed: Jones attempts to reclaim the farm.
5. Snowball and Napoleon debate the windmill. Napoleon uses dogs to chase Snowball from the farm. Napoleon makes himself leader.
6. Work begins on the windmill. The pigs move into the farmhouse. Winds destroy the windmill.
7. Work on the windmill starts again. Napoleon demands eggs from the hens. Napoleon slaughters animals at the show trials.
8. Napoleon betrays Mr. Pilkington and sells timber to Mr. Frederick. Frederick pays with counterfeit money. Frederick attacks the farm. The animals suffer losses in the Battle of the Windmill. The windmill is destroyed.
9. Boxer is sold to the knacker's yard.
10. The pigs are leaders on the farm. They start walking on two legs and carrying whips. There is no difference between the pigs and the humans they sought to overthrow.

Key Characters

Napoleon - The pig who emerges as the leader of Animal Farm after the Rebellion. Based on Joseph Stalin, Napoleon uses military force (his nine loyal attack dogs) to intimidate the other animals and consolidate his power.

Snowball - The pig who challenges Napoleon for control of Animal Farm after the Rebellion. Based on Leon Trotsky, Snowball is intelligent, passionate, eloquent, and less subtle and devious than his counterpart, Napoleon. Snowball seems to win the loyalty of the other animals and cement his power.

Boxer - The cart-horse whose incredible strength, dedication, and loyalty play a key role in the early success of Animal Farm and the later completion of the windmill. Quick to help but rather slow-witted, Boxer shows much devotion to Animal Farm's ideals but little ability to think about them independently. He naïvely trusts the pigs to make all his decisions for him.

Squealer - The pig who spreads Napoleon's propaganda among the other animals. Squealer justifies the pigs' monopolization of resources and spreads false statistics pointing to the farm's success. Orwell uses Squealer to explore the ways in which those in power often use rhetoric and language to twist the truth and gain and maintain social and political control.

Old Major - The prize-winning boar whose vision of a socialist utopia serves as the inspiration for the Rebellion. Three days after describing the vision and teaching the animals the song "Beasts of England," Major dies, leaving Snowball and Napoleon to struggle for control of his legacy. Orwell based Major on both the German political economist Karl Marx and the Russian revolutionary leader Vladimir Ilych Lenin.

Clover - A good-hearted female cart-horse and Boxer's close friend. Clover often suspects the pigs of violating one or another of the Seven Commandments, but she repeatedly blames herself for misremembering the commandments.

Moses - The tame raven who spreads stories of Sugarcandy Mountain, the paradise to which animals supposedly go when they die. Moses plays only a small role in *Animal Farm*, but Orwell uses him to explore how communism exploits religion as something with which to pacify the oppressed.

Mollie - The vain, flighty mare who pulls Mr. Jones's carriage. Mollie craves the attention of human beings and loves being groomed and pampered. She has a difficult time with her new life on Animal Farm, as she misses wearing ribbons in her mane and eating sugar cubes. She represents the petit bourgeoisie that fled from Russia a few years after the Russian Revolution.

Benjamin - The long-lived donkey who refuses to feel inspired by the Rebellion. Benjamin firmly believes that life will remain unpleasant no matter who is in charge. Of all of the animals on the farm, he alone comprehends the changes that take place, but he seems either unwilling or unable to oppose the pigs.

Key themes: Power, Leadership, Lies & Deceit, Rules & Order, Violence

English: Animal Farm

Key Context

Communism and Karl Marx

Marx believed that capitalists exploit the proletariat in the same way that, in the novel, the humans exploit animals. Marx believed that this exploitation would only stop if the proletariat revolted.

Capitalists = the rich people who own the means of production, like factories

Proletariat = the working classes – those who work for the capitalists

Ultimately, communism is an advanced form of socialism. Its aim is for a society with no classes whatsoever – everyone would be equal, money would be unnecessary and the means of production would be shared. In a truly Communist society, all decisions would be made for the good of everyone, not just a few individuals. However, in reality, power and corruption lead communist societies into economic turmoil and a lack of autonomy for the masses.

The Russian Revolution

In the mid 1800s, the capitalist system was strong in Europe and America, but the profits of businesses came at the expense of workers who laboured 14 to 18 hours a day in unsafe conditions. There were no child labour laws, and poverty was a serious problem for the common worker. In 1847, an international workers' group asked Karl Marx, a German philosopher, to draw up a plan for their organisation. The group was called the Communist League. Marx wrote a plan called The Manifesto of the Communist Party.

Marx envisioned a workers' revolt followed by a kind of paradise where each person would work according to his or her ability and receive money according to his or her need. The people that followed Marx's thinking were called Socialists. The Socialists split into two groups. The milder group wanted to bring about Communism slowly by passing new laws. The other group (we'll call them Communists) stuck to Marx's original idea of a major worker revolt. The Communists were a small extremist group compared to the total number of Socialists. They formed a political party called the Bolshevik Party, which was led by a man named Vladimir Lenin. Russia at this time was being poorly managed by a Czarist government, ruled by Czar Nicholas II. Most of the Russian people were still underpaid workers on land owned by a small number of wealthy landlords.

By 1917, the suffering was too great and groups of people began a revolution. The Bolshevik Party, led by Vladimir Lenin, took a role in leading this revolution. Czar Nicholas II was forced to leave power, and later he and his family were executed. The Bolshevik Party under Lenin took control of the government.

Key vocabulary and methods

Word	Definition
Enmity	Enmity is hatred especially when shared
Allegory	An allegory is a story or poem with characters and events that stand for ideas about life or for a political situation.
Apathy	Apathy is lack of feeling or of interest
Cryptic	Cryptic refers to something that is difficult to understand; ambiguous or mysterious in meaning
Ignominious	Ignominious is something that is humiliating, degrading
Indoctrinate	To indoctrinate is to teach someone the ideas, opinions, or beliefs of a certain group.
Dictatorship	A dictatorship is a form of government in which a person or a small group rules with almost unlimited power.
Toil	To toil is to work long and hard.
Oppression	Oppression is when a person or group of people who have power use it in a way that is not fair, unjust or cruel.
Unscathed	To be unscathed is to be completely without harm or injury.
Capitalists	The rich people who own the means of production, like factories.
Proletariat	The working classes – those who work for the capitalists
Propaganda	information, especially of a biased or misleading nature, used to promote a political cause or point of view.
Cult of Personality	A cult of personality is where a leader convinces people to worship them, like a God



Number Sense

Angles in parallel lines and Polygons

By the end you will be able to:

- Round numbers to:
 - powers of 10
 - 1 significant figure (s.f.)
 - Any decimal place (d.p.)
- Estimate solutions
- Calculate using order of operations
- Calculate with money, time and units of measurement

Keywords:

- Significant:** Place value of importance
- Round:** Making a number simpler but keeping its value close to what it was
- Decimal:** Place holders after the decimal point
- Overestimate:** Rounding up - gives a solution integer higher than the actual value
- Underestimate:** Rounding down - gives a solution lower than the actual value.
- Metric:** A system of measurement
- Balance:** The amount of money in a bank account
- Deposit:** Putting money into a bank account

By the end you will be able to:

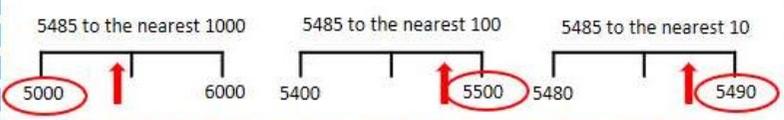
- Identify alternate angles
- Identify corresponding angles
- Identify co-interior angles
- Find the sum of the interior angles in a polygon
- Find the sum of the exterior angles in a polygon
- Find the interior angles in a regular polygon

Keywords:

- Parallel:** straight lines that never meet
- Angle:** The figure formed by two straight lines meeting (measured in degrees)
- Transversal:** A line that cuts across two or more other normally parallel lines
- Isosceles:** Two equal length lines and equal size angles in a triangle or trapezium.
- Polygon:** A 2D shape comprised of straight lines
- Sum:** Addition, total
- Regular polygon:** All the sides and therefore angles are the same size.

Round to powers of 10

If the number is half way between we 'round up'



Round to 1 significant Figure (s.f.)

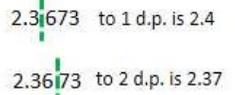
Round to the first **non-zero** number (starting with the highest place value)

370 to 1 s.f. is 400
 37 to 1 s.f. is 40
 3.7 to 1 s.f. is 4
 0.37 to 1 s.f. is 0.4
 0.037 to 1 s.f. is 0.04

Round to decimal places (d.p.)

Focus on the numbers after the decimal point.

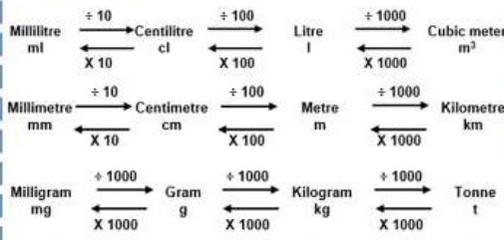
"to 1 d.p." - one number after the decimal point
 "to 2 d.p." - two numbers after the decimal point



Orders of Operation

- 1 ()
- 2 x^2 and/or \sqrt{x}
- 3 $\times \div$ Carried out from left to right
- 4 $+$ $-$ right

Metric conversions



Estimating

Round to 1 s.f. then calculate

$3.4 + 6.7 \approx 3 + 7 \approx 10$

This is an underestimate as 3.4 was rounded down more than 6.7 was rounded up.

British Currency

Pence or £? - pick your units carefully and convert

£ will always be 2.d.p.

Debit - money is taken from your account. If you have less than £0 you are in debt.

Credit - money goes into your account, like a wage; and when you have more than £0 in your account.

Time waits for no man

1 year - the time it takes for the earth to go round the sun - 365 days (or 366 in a leap year)

1 year - there are 12 months in a year. **January** (31 days), **February** (28 or 29 days in a leap year), **March** (31 days), **April** (30 days), **May** (31 days), **June** (30 days), **July** (31 days), **August** (31 days), **September** 30 days, **October** (31 days), **November** (30 days), **December** (31 days)

1 year - there are 52 weeks in a year. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday.

24 hours is a day;
 60 minutes in a hour;
 60 seconds in a minute.

Analogue
 5 times table for the minutes
 Hours up to 12, then am or pm

Digital
 0 - 11 for the morning
 12 - 23 afternoon and evening

Use a number line for time calcs

EXTERIOR ANGLE SUM

The exterior angles of ANY POLYGON add up to 360°

In a **REGULAR POLYGON** each exterior angle = $\frac{360^\circ}{\text{No. of angles}}$

Interior angle + exterior angle = 180° (Angles on a straight line)

INTERIOR ANGLE SUM

NUMBER OF SIDES	3	4	5	6	7
NUMBER OF TRIANGLES	1	2	3	4	5
SUM OF INTERIOR ANGLES	180°	360°	540°	720°	900°

5 SIDES, 3 TRIANGLES, 540°
 4 SIDES, 2 TRIANGLES, 360°
 3 SIDES, 1 TRIANGLE, 180°
 6 SIDES, 4 TRIANGLES, 720°
 7 SIDES, 5 TRIANGLES, 900°

NOTICE THE PATTERN, there are always 2 fewer triangles than sides.

ANGLE PROPERTIES OF PARALLEL LINES

VERTICALLY OPPOSITE ANGLES
 $\hat{a} = \hat{c}$, $\hat{b} = \hat{d}$, $\hat{e} = \hat{g}$, $\hat{f} = \hat{h}$

INTERIOR ANGLES
 $\hat{c} + \hat{e} = 180^\circ$, $\hat{d} + \hat{f} = 180^\circ$

CORRESPONDING ANGLES
 $\hat{a} = \hat{e}$, $\hat{b} = \hat{f}$, $\hat{c} = \hat{g}$, $\hat{d} = \hat{h}$

ALTERNATE ANGLES
 $\hat{a} = \hat{f}$, $\hat{c} = \hat{e}$, $\hat{d} = \hat{g}$

Take a triangle. Tear off the angles. They add up to 180°

Angles in a triangle add up to 180°

Angles on a straight line add up to 180°

Take a quadrilateral. Tear off the angles. They add up to 360°

Angles in a quadrilateral add up to 360°

Angles around a point add up to 360°



Area of Trapezia and Circles

Keywords:

- Congruent:** The same
- Area:** Space inside a 2D shape
- Perimeter:** the length around the outside of a 2D object
- 'Pi' π:** The ratio of a circles circumference to it's diameter
- Perpendicular:** Meets at an angle of 90° to a given line or surface
- Formula:** A mathematical relationship or rule given in symbols
- Infinity (∞):** A number without a given end
- Sector:** a part of a circle enclosed by two radii and an arc (slice)

By the end you will be able to:

- Recall areas of basic 2D shapes
- Find the area of a trapezium
- Find the area of a circle
- Find the area of compound shapes
- Find the perimeter of compound shapes

Areas of Rectangles, Triangles and Parallelograms

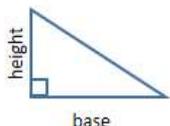
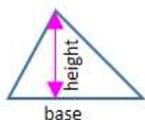
Rectangle

Base x Height



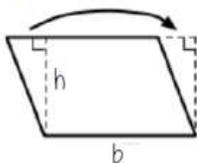
Triangle

$\frac{1}{2}$ x Base x Perpendicular height



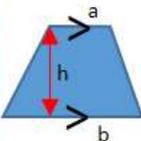
Parallelogram

Base x Perpendicular height



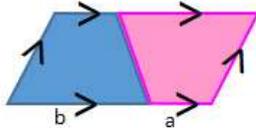
Area of a Trapezium

$\frac{1}{2}$ (Sum of the Parallel sides) x Perpendicular height



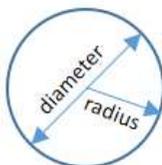
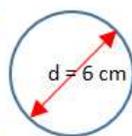
Why?
I'm glad you asked...

Two congruent trapezium make a parallelogram



Area of a Circle

π x radius²



π is usually found by pressing SHIFT then the middle bottom button on your calculator.

$d = 2r$, so $r = \frac{1}{2} d$

$$\begin{aligned} \text{Area} &= \pi r^2 \\ &= \pi 3^2 \\ &= 9\pi \text{ cm}^2 \\ &= 28.3 \text{ cm}^2 \text{ 1 d.p.} \end{aligned}$$

Perimeter of shapes

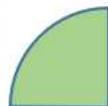
- Calculate any missing lengths.
- Make sure they're all in the same units.
- Mark as you go round the shape and sum the lengths.

Circumference of a circle = π x diameter

Area of compound shapes

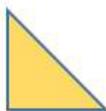
- Split the shape into more manageable shapes.
- Spot rectangles, parallelograms, trapezium, semi circles or quarter circles.
- Calculate the distances needed.
- Calculate each part.
- Add the individual areas together.

$$\frac{1}{4} \times \pi \times 5^2 = 19.6 \text{ cm}^2$$



$$\begin{aligned} \text{Base} &= 17 - 5 - 5 \\ &= 5 \times 7 \\ &= 35 \text{ cm}^2 \end{aligned}$$

$$19.6 + 35 + 12.5 = 67.1 \text{ cm}^2$$



$$\frac{1}{2} \times 5 \times 5 = 12.5 \text{ cm}^2$$

By the end you will be able to:

- Recognise line symmetry
- Reflect on a horizontal line
- Reflect on a vertical line
- Reflect on a diagonal line

Rotational symmetry

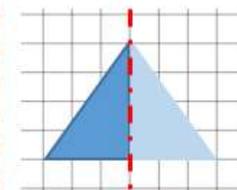
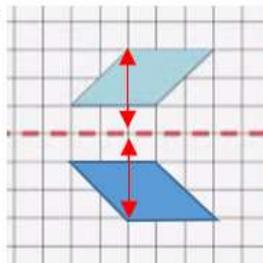
When turned slowly, how many times will it look the same?

This roundabout sign has an order of three – when it's turned, it looks the same 3 times when it get backs to the start.



Reflect horizontally or vertically

Identify the mirror line. Plot the vertices the same distance away on the other side.



Parallel to the x-axis? $y = _$
Parallel to the y-axis? $x = _$

Diagonal?
'Uphill' $y = x$
'Downhill' $y = -x$

Line Symmetry and Reflection

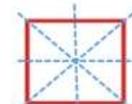
Keywords:

- Mirror line:** a line that passes through the centre of a shape with a mirror image on either side of the line.
- Line of symmetry:** see 'mirror line'
- Reflect:** mapping one object from one position to another of equal distance from a given line
- Vertex:** a point where two or more line segments meet (a corner)
- Horizontal:** a straight line parallel to the x-axis
- Vertical:** a straight line parallel to the y-axis

Lines of symmetry

How many ways can you fold it so the shape is the same on both sides of the fold? Shapes can have ore than one line of symmetry.

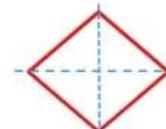
A regular pentagon has 5 lines of symmetry.



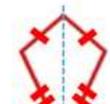
Square
4 lines of symmetry



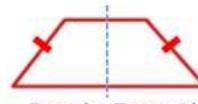
Rectangle
2 lines of symmetry



Rhombus
2 lines of symmetry



Kite
1 line of symmetry



Isosceles Trapezoid
1 line of symmetry



Trapezoid
No lines of symmetry



Parallelogram
No lines of symmetry



Equilateral Triangle
3 lines of symmetry

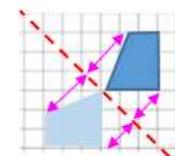
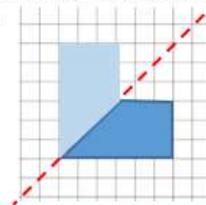


Isosceles Triangle
1 line of symmetry

Reflection on the diagonal

The mirror line is either $y = x$ or $y = -x$

Plot the vertices the same perpendicular distance away on the other side.



The Data Handling Cycle

Measures of Location (Averages)

By the end you will be able to:

- Set up a statistical enquiry
- Design and criticise questionnaires
- Draw and interpret multiple bar/line charts
- Draw and interpret line graphs
- Represent and interpret grouped quantitative data
- Find and interpret the range
- Compare distributions

Keywords:

- Hypothesis:** an idea or question you want to test
- Sampling:** the group of things you want to use to check your hypothesis
- Primary data:** data you collect yourself
- Secondary data:** data from somewhere else, i.e. the internet/ONS
- Discrete data:** numerical data that can only take set values
- Continuous data:** numerical data that has an infinite number of values (height, weight, distance, time)
- Spread:** how spread out the data is
- Average:** a measure of central tendency or the typical value of the data
- Proportion:** numerical relationship that compares two things

Keywords:

- Frequency:** how many times the data value occurs
- Range:** calculation of the spread (largest – smallest data item)
- Consistent:** A set of data that doesn't vary much
- Outlier:** a value that stands apart from the data set

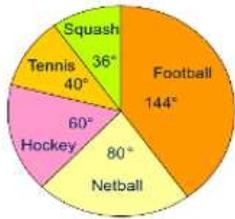
By the end you will be able to:

- Understand and use mean, mode and median
- Choose the most appropriate average
- Identify outliers
- Compare distribution using averages and range

Pie Charts

Used for showing how data breaks down into its constituent parts. When drawing a pie chart, divide 360° by the total frequency. This will tell you how many degrees to use for the frequency of each category.

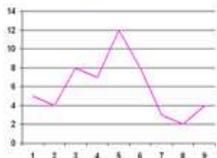
Remember to label the category that each sector in the pie chart represents.



If there are 40 people in a survey, then each person will be worth $360 \div 40 = 9^\circ$ of the pie chart.

Line Graphs

...uses points connected by straight lines to show how data changes over time.



Data gathering and representation

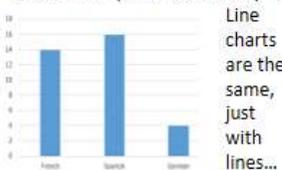
Tally charts to mark then state the frequency with numbers.

	Tally	Frequency
French		5
Spanish		5
German		4

Pictograms always need a key

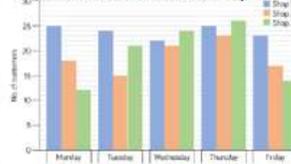
Language	Pictogram	Key
French	●●●●●	● = mean 4 students
Spanish	●●●●●	
German	●●●●	

Bar charts (when discrete) need



Comparative Bar Charts

Data side by side
Colour coded and clearly labelled



Weight in kg (w)	Frequency (F)	Cumulative Frequency	Mid Point (MP) of w in kg	F x MP
$40 < w \leq 50$	2	2	45	$2 \times 45 = 90$
$50 < w \leq 60$	3	$3 + 2 = 5$	55	$3 \times 55 = 165$
$60 < w \leq 70$	5	$5 + 5 = 10$	65	$5 \times 65 = 325$
$70 < w \leq 90$	2	$2 + 10 = 12$	80	$2 \times 80 = 160$
	12			740

Estimated mean is $740 \div 12 = 61.7\text{kg}$

Median value is in position $(12 + 1) \div 2 = 7.5$

Median class is $60 < w \leq 70$

Modal class is $60 < w \leq 70$

Refer back to the hypothesis
What has your data shown?

Analyse the data
find averages, make comparisons, draw conclusions

Make a Hypothesis
What are you investigating?

Collect data
research your topic, use a questionnaire etc.

Data Handling Cycle

Display the data
bar chart, pie chart, frequency diagram etc.

The question

Be clear but not leading.
Cheese and Onion are the best crisp flavour. Yes or no?

...or maybe...
Tick your favourite crisp flavour:

- Cheese and onion
- Salt and vinegar
- Ready Salted
- Prawn Cocktail
- other

How much pocket money do you get a week?

- £0
- £0.01 to £2.00
- £2.01 to £4.00
- £4.00 +

Grouped data

If there is a large spread of data, we group it. We can easily see trends, especially when they are equal sizes.

Discrete data

Number of cars	Tally	Frequency
0 – 10		7
11 – 20		10
21 – 20		2

Continuous data

Weight (w)	Frequency
$40 < w \leq 50$	2
$50 < w \leq 60$	3
$60 < w \leq 70$	5

Data Central Tendencies (Averages)

The **Mean** is the sum the data values divided by frequency.

The **Median** is the middle data value when arranged in size order. Exact value when frequency is odd; mean of two central data values if frequency is even.

The **Mode** is the most common data value. There can be two (**bi-modal**). More than two means there is no mode. There can also be no mode.

Science: Adaptations and Inheritance

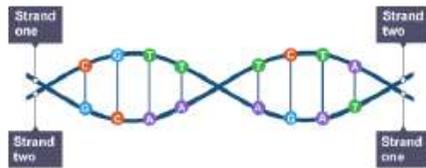
Keyword	Definition
Nucleus	Controls what happens inside the cell. Chromosomes are structures found in the nucleus of most cells.
DNA	Deoxyribonucleic Acid. The material inside the nucleus of cells, carrying the genetic information of a living being.
Double Helix	The shape of DNA molecule with two strands twisted together in a spiral.
Base Pair	The pair of nitrogenous bases that connects the complementary strands of DNA.
Bond	The chemical link that holds molecules together.
Gene	The basic unit of genetic material inherited from our parents. A gene is a section of DNA which controls part of a cells chemistry.
Heredity	Genetic information that determines an organisms characteristics, passed on from one generation to another. To do with passing genes to an offspring from its parent or parents.
Variation	Difference between individuals.
Continuous Variation	Variation that shows a wide range of intermediate values between two extremes. They can be measured. E.g. Hand Span
Discontinuous Variation	Differences between individuals in a characteristic that can only be put into different categories E.g. Eye colour
Environmental Variation	Differences between individuals of a species due to factors in their surroundings.

Continuous Variation
Human height is an example. It ranges from the smallest person on Earth to the tallest. Continuous variation shows characteristics that change gradually over time.

Further Reading:
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/1>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/2>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/3>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/4>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/5>

DNA
DNA is found in the nuclei of cells and organized into chromosomes. This genetic information is passed from one generation to the next. It is called heredity and why we resemble our parents. The genetic information itself is contained in a complex molecule called DNA.

DNA molecules contain two strands. The strands are twisted around each other to form a double helix. These strands are held together by bonds between base pairs.



A DNA molecule showing its base pairs, G-C and A-T

Chromosomes and Genes
DNA molecules are so long and thin, it is coiled into structures called chromosomes. The chromosomes are found in the nucleus of each cell.

Human body cells each contain 23 pairs of chromosomes, half of which are from each parent. Human gametes (eggs and sperm) each contain 23 chromosomes. When an egg is fertilized by a sperm, it becomes a cell with 23 pairs of chromosomes. This is why children resemble both their parents – half of their chromosomes and DNA come from their mother, and half from their father.

A gene is a section of DNA that is responsible for characteristics such as eye colour. Humans have around 20,000 genes. One copy of all your chromosomes is called your genome.

Discontinuous Variation
A characteristic of any species with only a limited number of possible values. Eye colour and blood group are examples.

Further Reading:
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/1>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/2>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/3>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/4>
<https://www.bbc.co.uk/bitesize/guides/zw9jg6f/revision/5>

Inherited Variation
Variation in characteristics that is a result of genetic information from parents.

- Examples include:
- Eye colour
 - Hair colour
 - Lobed or lobeless ears
 - Ability to roll your tongue.



Environmental Variation
Characteristics of animal and plant species can be affected by factors such as climate, diet, accidents, culture and lifestyle.

If you eat too much food then you will become heavier.

Variation caused by the surroundings is called environmental variation. Examples include your language and religion.



Evolution
Change in the inherited characteristics of a population over time through a process of natural selection, which may result in the formation of a new species.

The theory of evolution by natural selection states that all species of living things have evolved from simple life forms that first developed more than three billion years ago.

Natural selection of variants that give rise to phenotypes best suited to their environment.

- Variation (mutation)
- Adaptation
- Survival & Reproduction



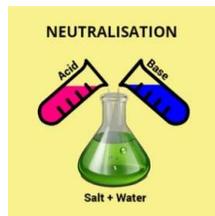
Extinction
The permanent loss of all the members of a species



- Reasons for extinction:**
- Introduction of a NEW disease
 - Introduction of a NEW competitor
 - Introduction of a NEW predator / overhunting
 - Lack of food / prey
 - Environmental change (temp., rainfall, loss of habitat etc.)
 - Natural disaster

Science: Acids and Alkalis

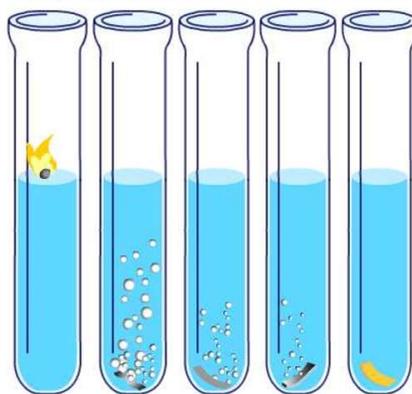
Key Word	Definition
Acids	Contains hydrogen ions (H ⁺), it will generally taste sour – has a pH lower than 7
Alkalis	Contains hydroxide ions (OH ⁻), it generally feels soapy to touch – has a pH higher than 7. A base that is soluble in water
Base	A substance that reacts with an acid to neutralise it and produce a salt
Neutral	Neither acid nor alkali – has a pH of 7
pH scale	This scale is used to show what colours indicate substances that are acidic, alkaline or neutral
Indicator	These turn different colours in acids, alkalis and neutral solutions
Neutralisation	When an acid and an alkali react to form a neutral solution
Dilute	A small number of acid or alkali particles are present in the solution per unit volume
Concentrated	A large number of acid or alkali particles are present in the solution per unit volume
Displacement	During a displacement reaction the metal in a compound is replaced with a more reactive metal to form a new compound.
Ore	Ores are naturally occurring rocks that contain metals or metal compounds in sufficient amounts to make it worthwhile extracting them. The method used to extract a given metal from its ore depends upon the reactivity of the metal and so how stable the ore is.



In a neutralisation reaction an acid reacts with a substance that cancels it out. The pH gets closer to **7 (neutral)**.

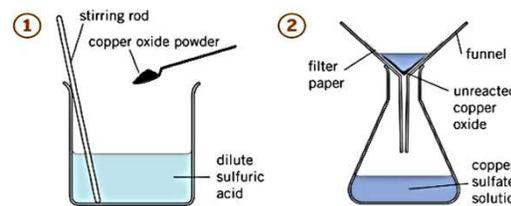
USES:

- Soil for crops: Can add base (alkali) to the soil to neutralise some of the soil acid. This makes it suitable to grow crops, like tea.
- Your stomach contains hydrochloric acid, and too much of this causes indigestion. Antacid tablets contain bases such as magnesium hydroxide and magnesium carbonate to neutralise the extra acid.
- Bee stings are acidic. They can be neutralised using baking powder, which contains sodium hydrogen carbonate.



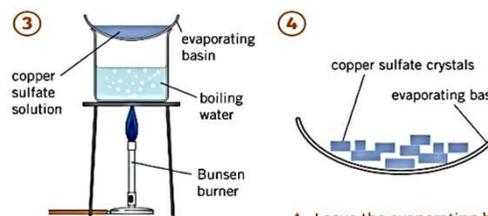
How can you make crystals of salts?

The reactions of acids with metals or bases make salt solutions. Removing water makes salt crystals. The diagrams show how to make copper sulfate crystals.



▲ Add copper oxide powder (a base) to dilute sulfuric acid. Keep adding until some copper oxide is left over. All the acid has now reacted.

▲ Filter to remove the copper oxide that has not reacted.

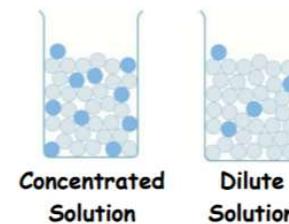


▲ Heat the copper sulfate solution in an evaporating basin until most of the water evaporates.

▲ Leave the evaporating basin in a warm place. The rest of the water evaporates. Copper sulfate crystals remain.

Name of Acid	Formula	Name of salt
Hydrochloric	HCl	...Chloride
Sulfuric	H ₂ SO ₄	...Sulfate
Nitric	HNO ₃	...Nitrate

● = Acid particle
○ = Water particle



Some metals are more reactive than others (remember gold in water is fine, sodium in water is not) We can order the reactivity of the metals, from most reactive to least

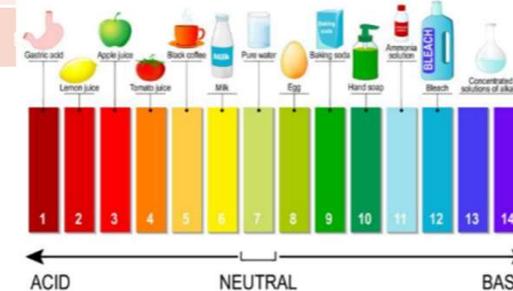
K	Potassium	↑ Most reactive
Na	Sodium	
Ca	Calcium	
Mg	Magnesium	
Al	Aluminium	
C	Carbon	
Zn	Zinc	
Fe	Iron	
Sn	Tin	
Pb	Lead	
H	Hydrogen	↓ Least reactive
Cu	Copper	
Ag	Silver	
Au	Gold	
Pt	Platinum	
C H	added for comparison	

Reactivity Series of Metals

Indicators - Litmus indicator solution turns red in acidic solutions and blue in alkaline solutions. It turns purple in neutral solutions.

pH Scale – Indicated whether a substance is acidic, alkali or neutral

Neutral solutions = pH 7 exactly
Acidic solutions have pH values < 7
Alkaline solutions have pH values > 7



Science: Motion and Pressure

Key Word	Definition
Acceleration	How quickly an object's speed increases
Deceleration	How quickly an object's speed decreases
Density	The mass per unit volume. How tightly packed together the particles are
Fluid	A liquid or a gas
Force	Something that affects the motion or shape of an object
Moment	A turning effect caused by a force applied about a pivot
Pressure	Force per unit area
Relative motion	The speed of an object from the perspective of another moving object
Speed	How fast an object is travelling
Stationary	An object which is not moving
Upthrust	The difference in pressure caused by a fluid pushing up on the object
Velocity	How fast an object is travelling in a particular direction

Relative motion is the apparent speed of an object from a different perspective. If you are sat on a moving train, a train travelling in the same direction will appear to go past twice as fast as it is actually moving.

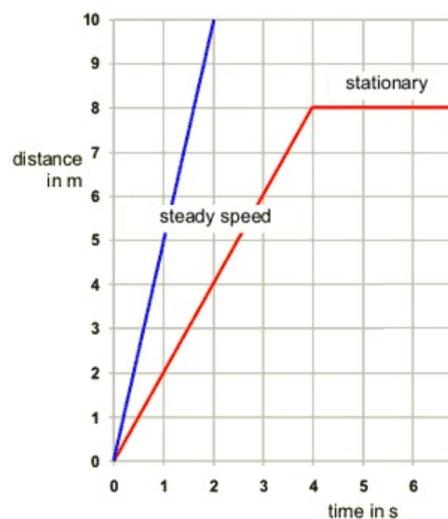
Similarly, if you are in a car being overtaken, the speed of the over taking car will appear to be lower than its actual speed.

Speed is a way of measuring how fast something is being measured by taking the distance an object moves and dividing it by the time taken to move that distance. In science, speed is usually measured in metres per second (m/s).

$$\text{Speed} = \text{Distance} \div \text{time}$$

A distance time graph allows you to plot a journey. A diagonal line shows constant speed. A steeper line (blue) shows that the object covers a greater distance in the same time or the same distance in less time, so the object is moving faster.

A horizontal line shows no change in distance over a period of time. This means the object is not moving, it is **stationary**.



Speed in given direction is called **velocity**.

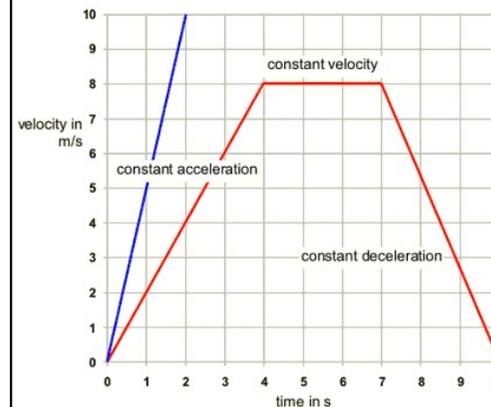
Pressure is the force per unit area. Increasing the surface area that a force is applied on will decrease the pressure.

$$\text{Pressure} = \text{Force} \div \text{Area}$$



Unbalanced forces can cause your speed to change. How quickly your speed changes is called **acceleration** and is measured in m/s^2 . Acceleration is used to describe an increase in speed, a decrease in speed is called **deceleration** but it is still measured in m/s^2 . This sometimes may be given as a negative acceleration.

A velocity time graph can be used to plot a journey. A diagonal line sloping upwards shows acceleration, a slope going downwards shows deceleration. A horizontal line shows that the velocity does not change so they have a constant velocity. The steeper the line, the greater the acceleration, so the difference between the forces must be greater.



In a fluid (liquid or gas) the pressure increases with depth.

Upthrust is the difference in pressure of the liquid responding to the pressure caused by the weight of an object by pushing it back upwards.

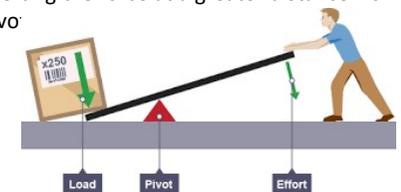
Density describes how tightly packed together particles are in a substance. If an object is more dense than the fluid it is placed in, it will sink. If it is less dense, it will float.

$$\text{Density} = \text{mass} \div \text{volume}$$

A force applied about a fixed pivot creates a turning effect. This is called a **moment**.

$$\text{Moment} = \text{Force} \times \text{distance}$$

Levers can be used as force multipliers. A greater turning effect can be produced by exerting the force at a greater distance from the pivot.



Y8 French Term 3: Mon talent

Quel est ton talent ?	A	What is your talent?
Mon talent c'est chanter.	1	My talent is singing .
Je veux être chanteur/euse professionnelle car	2	I want to be a singer professional because
j'ai déjà gagné un concours de chant .	3	I've some talent and I've a bit of experience.
J'ai déjà gagné un concours de chant , bien que je danse comme un éléphant.	4	I've already won a competition of singing , although I dance like an elephant.
Par contre je ne veux pas travailler avec les enfants parce que ça demande trop d'efforts .	6	However I don't want not to work with children because that requires too much effort .
Qu'est-ce que tu dois faire pour réussir ?	B	What must you do to succeed?
Pour réussir dans la vie tu dois travailler dur et tu dois répéter tous les jours bien que ce soit fatigant quelquefois.	8	To succeed in life you have to work hard and you have to practice everyday although it is tiring sometimes.
Ne sois pas parasseux/se ! Aussi, il faut avoir confiance en toi .	11	Don't be lazy ! Also, you must have confidence in yourself .
Qui est ton modèle et pourquoi ?	C	Who is your role model and why?
Pour moi, la meilleure chanteuse c'est Zaz parce qu' elle est la plus sûre d'elle bien qu' elle n'ait pas la plus belle voix. Je pense qu'un bon modèle doit être toujours ambitieux/se et jamais arrogante .	13	For me, the best singer is Zaz because she is the most sure of herself even though she doesn't have the most beautiful voice . I think that a good role model must be always ambitious and never arrogant .
Qu'est-ce que tu veux faire à l'avenir ?	D	What do you want to do in the future?
Je vais continuer à chanter comme passe-temps mais mon ambition a changé et maintenant je voudrais être médecin à l'avenir parce que c'est un emploi gratifiant et bien payé . On doit avoir des bonnes notes donc je vais faire plus d'efforts au collège . Je suis certaine que je peux le faire !	18	I am going to continue to sing as a hobby but my ambition has changed and now I would like to be a doctor in the future because it is a job rewarding and well paid . You must have good grades so I am going to make more effort at school . I am certain that I can do it !

Modal verbs (irregular & always followed by an infinitive)

POUVOIR (to be able to - can)	VOULOIR (to want to)	DEVOIR (to have to - must)
je peux (I can/am able to)	je veux (I want)	je dois (I have to)
tu peux (you can/are able to)	tu veux (you want)	tu dois (you have to)
il/elle/on peut (he/she/we can/are able to)	il/elle/on veut (he/she/we want)	il/elle/on doit (he/she/we have to)
nous pouvons (we can/are able to)	nous voulons (we want)	nous devons (we have to)
vous pouvez (you pl./formal can/are able to)	vous voulez (we want)	vous devez (we have to)
ils/elles peuvent (they can/are able to)	ils/elles veulent (they want)	ils/elles doivent (they have to)

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

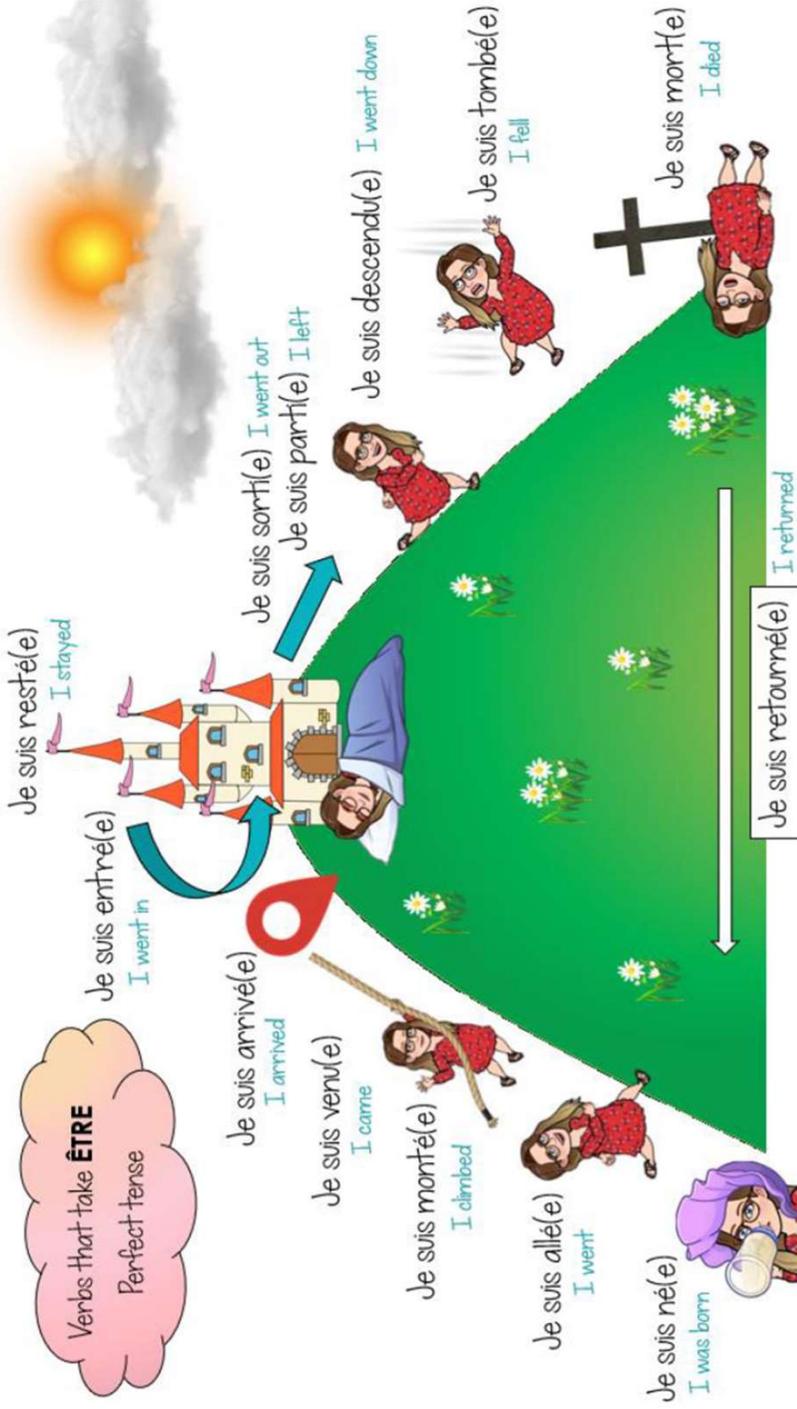
Part 3: the past participle is the ending of the main verb in the sentence. Because most verbs in French end in –ER, **most past participles end in 'é'**.

Forming the past participle:

TYPE OF INFINITIVE	WHAT TO DO	EXAMPLE
-ER verbs	take off -er , add -é	manger → mangé
-IR verbs	take off -ir , add -i	finir → fini
-RE verbs	take off -re , add -u	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.



THE NEAR FUTURE TENSE

To form the near future tense, you need the present tense of the verb 'aller' (to go).

Step 1: Choose the correct form of *aller*

Step 2: Add an infinitive verb.

ALLER (to go)		+	infinitive jouer regarder visiter manger aller faire
je	vais		
tu	vas		
il/elle/on	va		
nous	allons		
vous	allez		
ils / elles	vont		

Infinitives

- 1) -ER (e.g. jouer = to play)
- 2) -IR (e.g. choisir = to choose)
- 3) -RE (e.g. vendre = to sell)

Examples:

Je **vais** jouer au tennis. - I am going to play tennis.
Elle **va** regarder la télé. - She is going to watch TV.

hier	yesterday
le week-end dernier	last weekend
la semaine dernière	last week
l'année dernière	last year

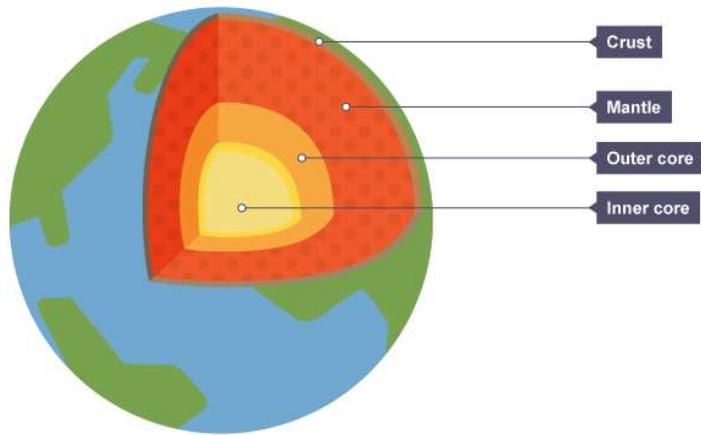
demain	tomorrow
ce week-end	this weekend
la semaine prochaine	next week
l'année prochaine	next year
ce soir	this evening
cet après-midi	this afternoon
lundi soir	Monday evening

'The 4 Js': 3 tenses!!

- 1) J'aime + infinitive (present) *I like to...*
- 2) J'ai décidé de + infinitive (past) *I decided to...*
- 3) Je vais + infinitive (near future) *I am going to...*
- 4) Je voudrais + infinitive (future) *I would like to...*

PRESENT	PERFECT PAST TENSE	NEAR FUTURE
je joue (I play)	j'ai joué (I have played)	je vais jouer (I am going to play)
je regarde (I watch)	j'ai regardé (I have watched)	je vais regarder (I am going to watch)
j'écoute (I listen)	j'ai écouté (I have listened)	je vais écouter (I am going to listen)
je mange (I eat)	j'ai mangé (I have eaten/ate)	je vais manger (I am going to eat)
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 did/have done)	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)
j'ai (I have)	j'ai eu (I have had)	je vais avoir (I am going to have)
je suis (I am)	j'ai été (I have been/was)	je vais être (I am going to be)
je vais (I go)	je suis allée (I went)	je vais aller (I am going to go)
je sors (I go out)	je suis sortie (I went out)	je vais sortir (I am going to go out)
je reste (I stay)	je suis restée (I stayed)	je vais rester (I am going to stay)

Illustration showing the structure of the earth:



Explanation of Convection Currents:

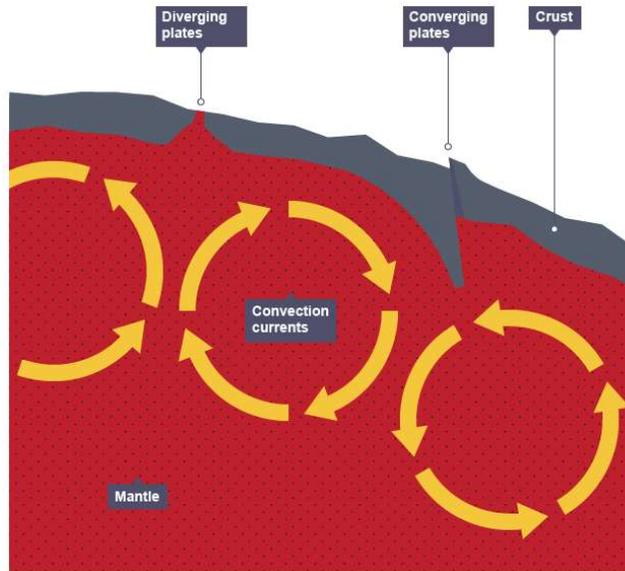
Convection Currents	
The crust is divided into tectonic plates which are moving due to convection currents in the mantle.	
1	Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2	When lower parts of the mantle molten rock (Magma) heat up they become less dense and 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.

Where convection currents **diverge** near the Earth's crust, plates move apart. Where convection currents **converge**, plates move towards each other.

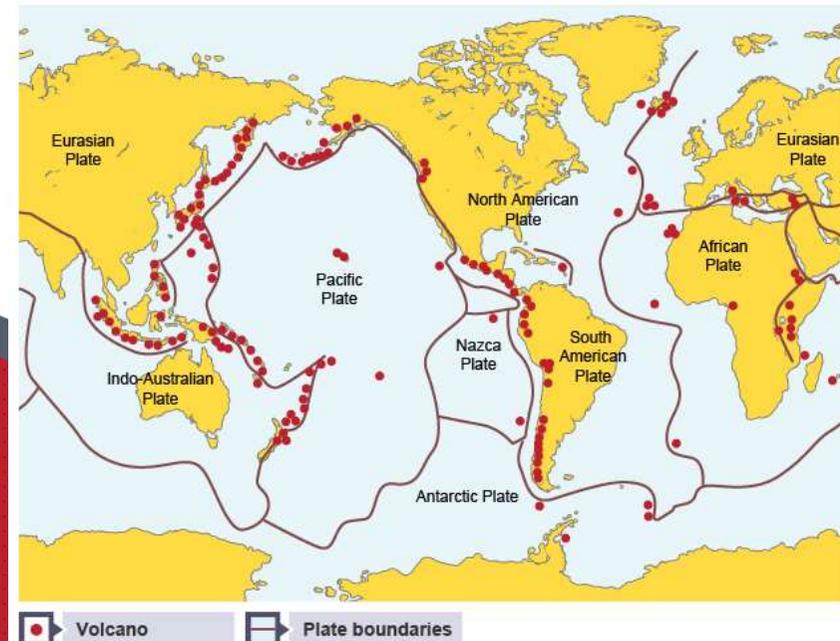
The movement of the plates, and the activity inside the Earth, is called **plate tectonics**. Plate tectonics cause **earthquakes** and **volcanoes**.

Keyword(s)	Definition
Crust	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.
Mantle	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.
Core	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.
Convection Currents	Movement within the earth's mantle caused by the heat of the core.
Oceanic Plate	Oceanic plates makes up the sea floor. It is made of basalt and is heavier than the continental crust.
Continental Plate	Continental plates form large land masses. It is lighter than the oceanic plate and cannot be renewed or destroyed.

Diagram showing Convection Currents:

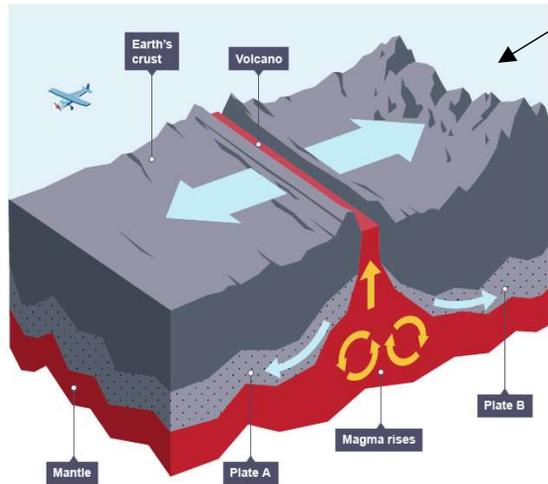


World map showing the location and names of tectonic plates:

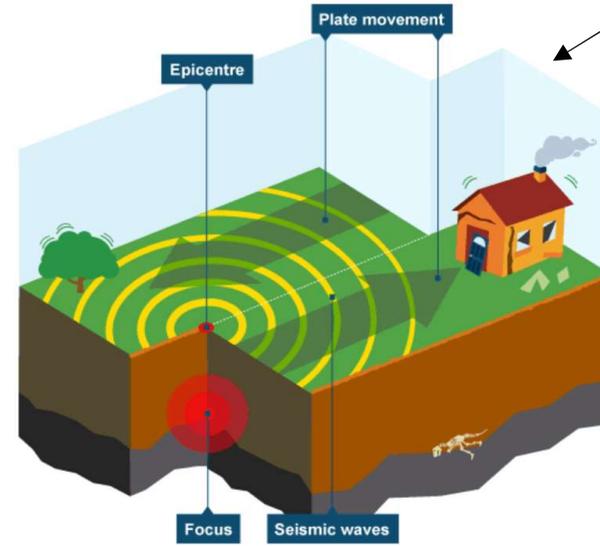


Keyword(s)	Definition
Plate Boundary	The region where two or more tectonic plates meet. It is a zone of intense seismic activity i.e. frequent movements of the earth such as earthquakes occur at plate boundaries.

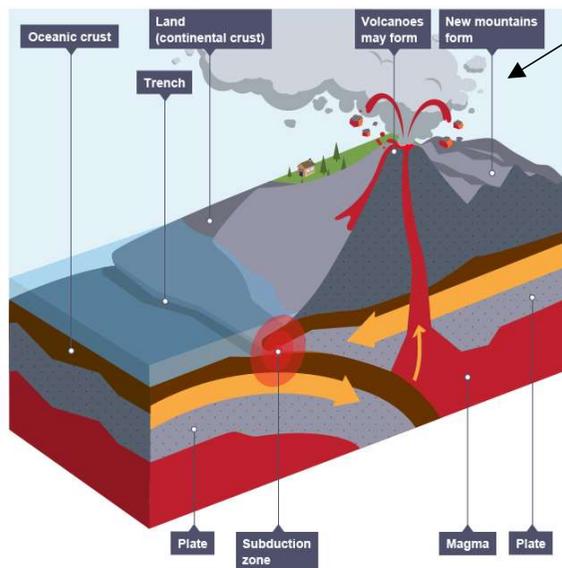
Diagrams showing the different types of plate margin:



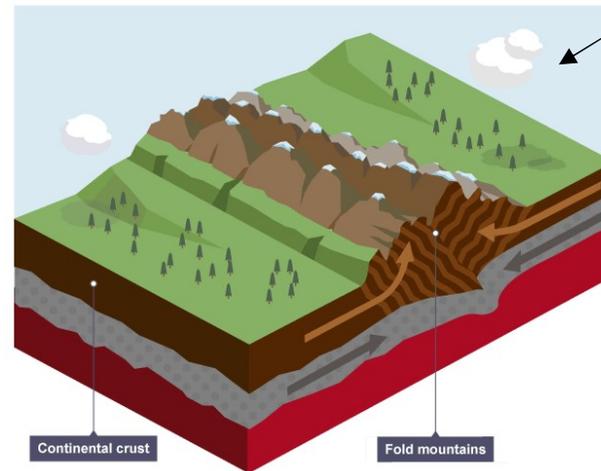
Constructive Plate Margins: Here two plates are **moving apart** causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic Ridge**.



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.



Destructive Plate Margins: When a denser plate subducts 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**.



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.



Geography

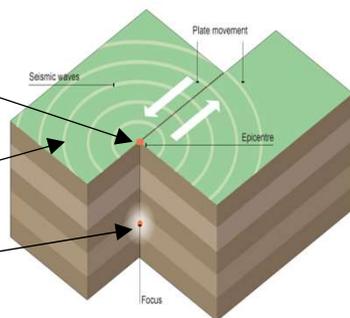
Causes of Earthquakes

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:

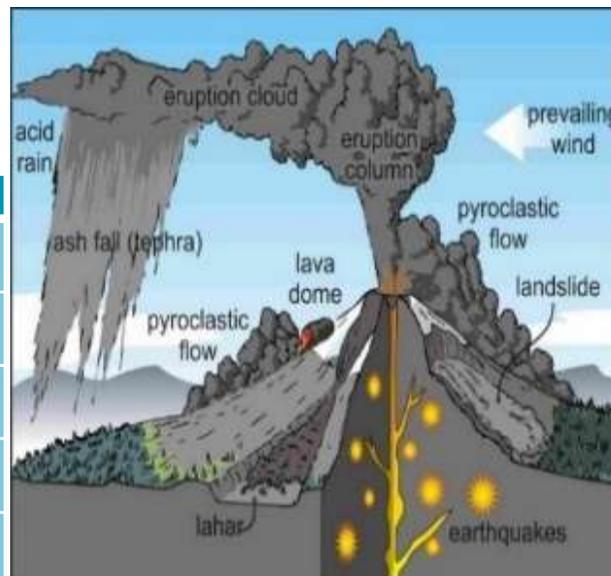
- 230,000 people died and 3 million affected. Millions left homeless.
- 250,000 homes collapsed or were damaged.
- Rubble blocked roads and shut down ports.

Volcanic Hazards

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

Geography

China:



Keyword(s)	Definition
Location	A particular place on the earth. To help describe a location we would use information such as: the continent it is in, surrounding countries, compass points, northern/southern hemisphere and other geographical information e.g. China is located in the Southern Hemisphere in the Continent of Asia. It is located to the west of Japan, to the North East of India and south of Mongolia and Russia. It's surrounding seas are the South China Sea, the East China Sea and Yellow Sea, which are all part of the Pacific Ocean.
Asia	The largest of the 7 continents by land size and population. Approximately 60% of the world's population lives here and the land mass is approximately 1/3 of the world's surface area.
Human Feature	Human features are man-made such as buildings, roads and bridges.
Physical Feature	A natural feature of the world such as water, mountains and deserts.
Population	In Geography, this almost always relates to the number of people living in a particular area.
Dam	A barrier that stops or restricts the flow of water. Often used to create a reservoir and/or to generate hydro-electric power.
Reservoir	A large natural or artificial lake used as a source of water supply.
Hydroelectric Power	A form of energy created by harnessing the power of water in motion, such as water flowing over a waterfall, to generate electricity.
Turbine	A machine for producing continuous power in which a wheel or rotor is made to revolve by a fast-moving flow of water, steam, gas, air, or other fluid.

The Three Gorges Dam, China:



Benefits of the Three Gorges Dam:	Negatives:
<ul style="list-style-type: none"> • Reduced risk of flooding for home, farms and factories along the Yangtze River. • Water stored behind the dam is available for irrigation (water for crops). • Hydroelectric power (HEP) is generated by turbines in the dam. It is the worlds largest HEP station. The electricity it produces means China saves 31 million tonnes of coal each year and their overall greenhouse gas emissions have reduced as a result. • The river is deeper and navigable for large ships, improving transport and trade. 	<ul style="list-style-type: none"> • Good quality farmland has been lost because of the enormous reservoir created behind the dam. • Over 1.3 million people were forced to move their homes as towns and villages disappeared under water. • Important cultural and archaeological sites were lost. • There is an increased risk of landslides in some areas. • The project was very expensive at approximately US\$22.5 billion. • Important wetland areas have been destroyed.

Keyword(s)	Definition
Secondary Industry	Focused on transforming natural resources into manufactured goods e.g. turning cotton into clothes.
Manufacturing	The making of goods that upon completion are sold to a customer. Usually this is on a large scale through the use of industrial factories.
Export	Sending goods to another country for sale.
Sustainability	To develop a sustainable future, you need to think about meeting today's needs and protecting the environment and resources for future generations.
Air pollution	Where harmful or poisonous substances are introduced into the air. This can be natural e.g. ash from a volcanic eruption, or man-made e.g. release of carbon monoxide from motor vehicle exhausts.
Land pollution	Damage caused to the earth's land surfaces, often directly or indirectly as a result of human activity e.g. deforestation, mining or fly-tipping (dumping rubbish).
Water pollution	Damage caused to water sources e.g. rivers, lakes or oceans, often directly or indirectly as a result of human activity e.g. plastic pollution in the oceans, dumping sewage straight into rivers.

Land Pollution in China:



Water Pollution in China:



Air Pollution in China:





History

Year 8 History Knowledge Organiser- The Industrial Revolution

Changes in Britain between 1750 & 1900

1750

Population: 11 million
80% of people lived in the countryside
Hand power or waterwheels used to power machinery
Most children didn't go to school

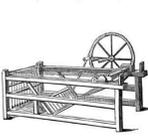
1900

Population: 42 million
70% of people lived in towns & cities
Steam power was used in factories
All children aged between 5 - 12 had to go to school

Flying shuttle



Spinning Jenny



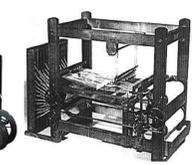
Water Frame



Spinning Mule



Power Loom



Cotton Gin



Inventions - the production of cloth moved from the being made at home (the **domestic system**) to factories. This was because of a range of inventions which needed more space, waterwheels to power them & more people to operate them. Key inventions included the **Spinning Jenny** was invented by James Hargreaves & could spin 8 threads at once. The **Water Frame** was invented by Richard Arkwright & made a stronger thread.

Richard Arkwright: businessman who built a factory at Cromford in Derbyshire. He was one of the first to build factories to put new machinery like his Water Frame in. He employed many people but no children under 6 years old. He was a kind employer, giving his workers 2 weeks off a year!

Robert Owen: factory owner who wanted to improve conditions for his workers. He refused to employ children under the age of 10, introduced shorter working days and free healthcare.

Working conditions in factories

- Children worked long hours
- The machinery had no guards on & there were no safety rules. People were frequently injured, losing limbs or even being killed.
- The dust from the cotton damaged people's lungs & covered their food.
- Workers lived in poor housing, with no **sanitation** & rats

Key Terms

Definitions

Industrial Revolution	The period between 1750-1900, when Britain underwent a quick change in how things were made. This was mainly due to the introduction of steam power in factories
Population	The amount of people living in an area
Sanitation	Toilets, baths & running water
Domestic system	When cloth was made at home, normally the whole family was involved
Monarchy	When a country is ruled by a king or queen

Derby's place in the revolution

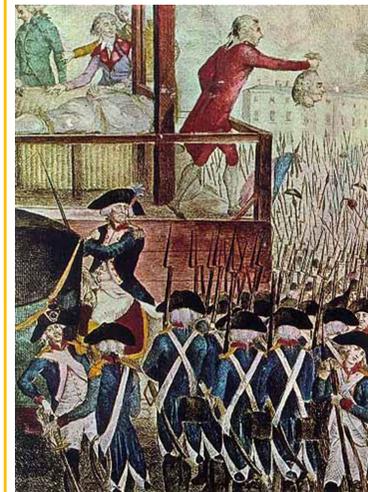
Lombe's silk mill is thought to be the first factory in the world. Lombe started producing silk from 1717 & soon became a popular tourist attraction.

Derby was also the centre of the railway industry. Most major railway lines in the Midlands were controlled through Derby. Many of the developments which appeared first in Derby were copied throughout the rest of the country.

Was the Industrial Revolution similar to other revolutions?

French Revolution (1789). The French peasants rose up against the ruling classes and the **monarchy**. A new government was set up, which allowed over half of the male population to vote. The land of the upper classes was sold off which gave the lower and middle classes the opportunity to buy it.

American Revolution (1775-83). Britain's North American colonies went to war with Britain to gain their independence. Britain lost the war and the colonies declared themselves to be 'free & independent' states. They became known as the United States of America.



The British Empire



British Empire: Good?

- Britain helped to build roads, schools & railways.
- Britain became rich from trading with the colonies & taking their natural resources.
- The **empire** gave British people the opportunity to make their fortune.

British Empire: Bad?

- Land was taken from the native people
- Local customs, traditions & religions were ignored or wiped out.
- Britain kidnapped people and sold them as **slaves**



The Middle Passage

- Slaves were chained up & only allowed on deck for exercise 1-2 times a week.
- Many died from diseases such as dysentery. Slaves either went to toilet where they were lying or in a bucket which quickly overflowed.
- Slaves who rebelled might have a hand or foot chopped off or be thrown overboard.

The Slave Trade Triangle

Auctions: When the slaves arrived in the Caribbean or American they were sold. Younger, healthier slaves cost more than older, sicker slaves or children. Family groups were often split up & bought by different owners

1807: the slave trade was **abolish**. People could no longer be kidnapped & sold into slavery & current slaves could not be sold to another owner.

1833: It became illegal to own a **slave**.

Key Terms	Definitions
Empire	When one country rules over a group of others
Colony	A country which is ruled by another
Slave	A person who is owned by another & isn't paid for their work
Middle Passage	The journey from Africa to the Caribbean or America. Slaves were carried on the ships during this journey.
Plantation	A large farm, which grew sugar, tobacco or cotton
Abolish	To end something

Working On A Plantation

- Life was very hard on a **plantation**. **Slaves** worked either in the fields or as a house **slave** for 9-10 hours a day.
- **Slaves** lived in basic wooden huts, sometimes 10 to a one roomed hut.
- **Slaves** had no rights, they owned nothing & had to ask the master's permission to marry. They were not allowed to practise their own religion or speak in their own languages. If they were caught they would be punished.
- Punishments were brutal. **Slaves** could be whipped or even have a hand or foot cut off.

The Campaign To Abolish Slavery Many different individuals & groups worked to end slavery. Key ones were:
Olaudah Equiano: a former slave who wrote a book describing his experiences. It was a bestseller & helped to publicise the horrors of slavery.

Thomas Clarkson: visited slave ships to investigate conditions on them. He realised that pictures & artefacts had more of an impact on people, so he used these in his campaign.

William Wilberforce: a member of Parliament who introduced anti-slavery laws.

Toussaint L'Ouverture: led a successful slave rebellion in the West Indies. The French colony declared itself independent & banned slavery

Year 8
Summer Term
Places of Worship and Religious Art

Knowledge Organiser

Key Terms

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.



Year 8
Summer Term
Places of Worship and Religious Art

Knowledge Organiser

Key Questions

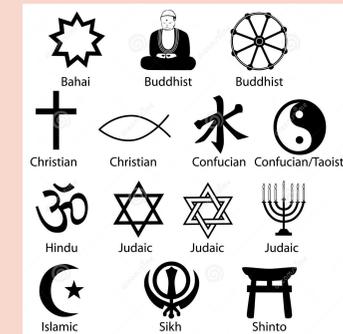
What are places of worship like?

- 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?

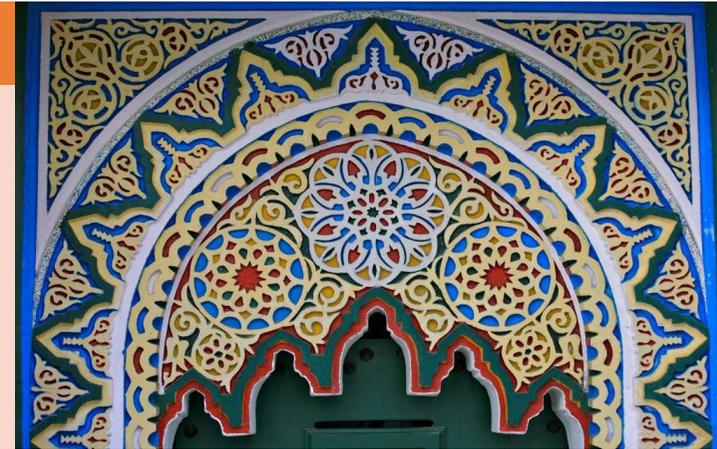


How did Michelangelo represent Christian beliefs in his frescoes?

- 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.



Year 8 Summer Term

Buddhism

Knowledge Organiser

Key Terms

Siddhartha Gautama: Born to an important Indian leader, Siddhartha later became Buddha, the founder of Buddhism

White Elephant: Siddhartha's mother, Maya, had a dream that a white elephant carrying a lotus flower danced around her three times and entered her womb through her side

Lotus: A beautiful plant and flower important to the Buddhist tradition

Sage: A wise man who examined Siddhartha when he was born and proclaimed he would become the universal leader of man

The Four Sights: Siddhartha's father made him live in captive luxury, protected from the outside world. One day, he left the compound and saw four things

Buddha: 'The enlightened one'. Siddhartha Gautama became Buddha, the founder of Buddhism

Vision: An image which helps to explain something

Meditation: A form of deep thinking where the follower tries to focus their mind on something (for example, their God or a big question)

Middle Way: The way Buddha sought enlightenment. Not through the life of riches, not through the life of poverty, self sacrifice and hunger, but the middle way

Temple: The prayer house for Buddhists

Stupa: A type of temple which represents the five elements – earth, water, fire, air and space

Incense: A substance which is burnt to produce a scented smoke

Mandala: A symbolic image of the universe upon which followers focus in order to achieve enlightenment and deeper understanding

Cycle of Life: The belief that people are born, live, die and reborn.

Reincarnation: Part of the cycle of life, the belief that death is not the end, the soul is re-born in another bodily or spiritual form

Karma: Kind of a point score, the better Karma you get, the more points you get, so the better life you will be reborn into. You get more good karma through living a positive life in your present form

Vegetarianism: Many Buddhists do not eat meat or fish. They try not to hurt living animals as they may be reborn as one in a future life

'Part of Nature': The Buddhist belief that humans are part of what makes nature, and not the controllers of it. Therefore, humans have no right to damage nature or take advantage of it



Year 8 Summer Term

Buddhism

Knowledge Organiser

Key Questions

Who was Siddhartha Gautama?

- Born in 563BC in Lumbini, modern day **Nepal**
- His mother had a dream that she was impregnated by a **white elephant** holding a lotus flower that entered her womb through her side
- It was interpreted that she would give birth to a great **leader**, when her was born, **Siddhartha** was examined by a **sage** who predicted he would become a **Buddha** (enlightened one)
- His rich father kept him locked in a luxury compound away from the worries and trauma faced by normal people for the first 29 years of his life
- Siddhartha eventually left and saw the **four sights** which made him ask lots of questions

What did the four sights teach Siddhartha Gautama?

- Siddhartha chose to leave the compound, and saw four things which he questioned **Channa** (his chariot driver) about. The **four sights** were:
 - An old man
 - An ill man
 - A dead man
 - A holy man
- Siddhartha had never had to contemplate **suffering** or **death** and so was very confused with what he saw. He set out to seek the answers to questions about what he saw
- Siddhartha knew that his life in the compound was not a 'real' life and so he left his life of luxury to find the '**truth**'

What happened to Siddhartha Gautama after he left the compound for good?

- He decided to give up his wealth and power (the **great renunciation**) and live a life of poverty:
 - He became a **monk** in the hope that this would help him find the meaning of suffering
 - He studied **meditation** (but this did not provide him with any answers)
 - He gave up all pleasures and ate little food (but he nearly died)
 - One day he had a vision of the **middle way**
- After following the middle way, a life neither rich nor of poverty, he found **enlightenment** whilst meditating under a tree – he was thus given the title 'Buddha'
- He had overcome desire and broken free of the cycle of rebirth

How and where do Buddhists worship?

- In a temple – Buddhists visit the temple whenever they can!
- Temples come in many different shapes and sizes:
 - Some are large and ornate and look like sitting Buddhas
 - Some are shaped like mounds and are called stupas
 - Some have many tiers and ornate roofs and are called pagodas – popular in China and Japan
- The temple is often elaborately decorated with gold, precious stones and carvings.
- People often make offerings to Buddha, there are usually candles and flowers and incense is burnt.
- Buddhists remove their shoes before entering
- Worshipers usually sit on the floor facing an image of Buddha and chant religious texts, pray or meditate
- Believers also recite mantras – words or short phrases which are repeated. They use prayer beads to count the number of times they have said each phrase

What do Buddhists believe about the cycle of life?

- That everyone is born, lives, dies and is reborn
- The better you live your present life, the more likely you are to be reborn as something 'good' or better in the next life – this is called earning good karma
- If you do bad things in your present life, you earn bad karma and may suffer in the next life.
- The aim is not to be reborn as something better, but to escape the cycle of death and rebirth by achieving enlightenment.
- Buddhists call the escape of the cycle Nirvana

What can Buddhists teach us about the environment?

- There is no strong distinction between humans and nature in Buddhism. They believe we are all **part of nature**.
- Buddhists believe that environmental problems are a result of human actions and can bring bad karma
- Buddhists believe in sustainability – they think it is wrong to take more resources than we need as this will leave less for future generations – remember they believe they will be reborn into future generations!
- Vegetarianism is not an essential part of Buddhism, but many Buddhists feel it may result in bad karma
- Plants are also respected. Many trees have been ordained as Buddhist monks in order to protect them from being destroyed

Music -Ukulele



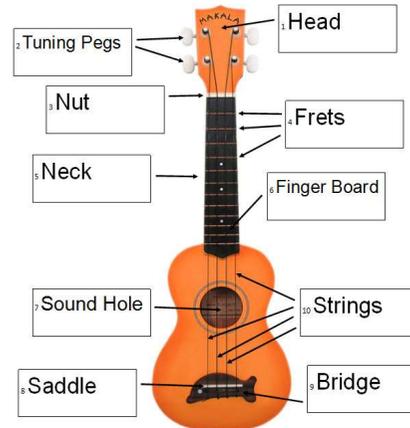
There are many free virtual ukulele apps
APPLE – REAL UKULELE



ANDROID –
MY UKULELE

These are the main parts of the Ukulele.

Try and learn the names and remember them if you can.



The Flying Thumb...

The Flying Thumb is used for strumming all four strings of your ukulele in pieces like '[1,2,3 Shush!](#)' It is a free-flowing, unattached downwards movement. You should try and strum near the end of the finger board, over the sound hole...



The Held Thumb...

The Held Thumb is used for playing tunes on a single string like '[All Elephants!](#)' Use your fingers to hold onto the ukulele and your thumb to play the single strings needed for the tune...

'How to Hold the Ukulele'

Most of the time when you play your ukulele you will be seated on the floor. Always sit cross legged.

Remember - there are three steps to getting a **GREAT** playing position...

'Back on your Belly!' - Get the back of the ukulele flat against your stomach...

'On your pocket!' - The ukulele should sit on your pocket area, not in your lap...

'Hold it up!' - Make sure the end of the ukulele where the tuners are is held at a diagonal angle, nice and tall...

'Wave!' - Move your left hand up the next to the white piece of plastic at the top of the finger board called the 'Nut.' Your thumb should be on one side, *all* your fingers on the other. Try and use your fingers to wave, moving them away from the strings at first.

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

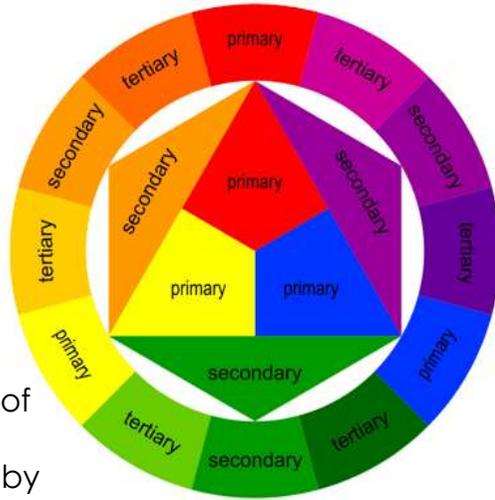
Harmonious colours are next to each other on the colour wheel

Complementary colours are opposite each other on the colour wheel

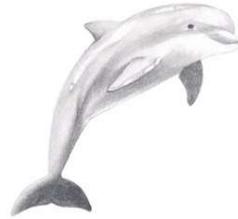
Tint – when you add white to a colour to make it lighter



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	
Media/Medium	The materials and tools used by an artist to create a piece of art
Technique	The way an artist uses tools and materials to create a piece of art
Composition	Where you place objects on the page
Highlight	The bright or reflective area on an object or piece of art, this area is closest to the light source
Shadow/Shade	The darker areas within a piece of art or object
Proportion	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.



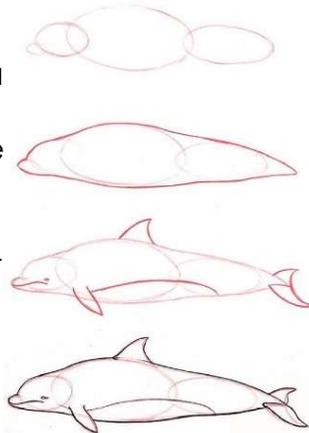
Activist art is a term used to describe art that is grounded in the act of 'doing' and addresses political or social issues.

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

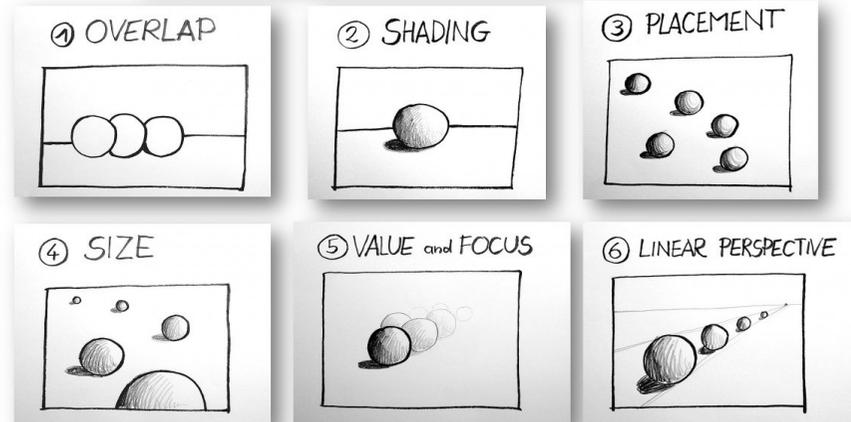
Constructing a drawing

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

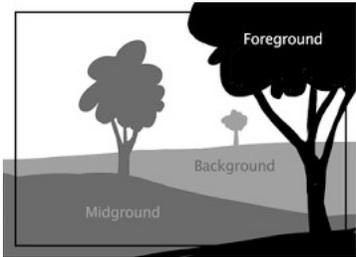
1. Plot out rough shapes (to ensure everything is in proportion) start with the bigger structures,
2. Refine line work (put the correct lines in)
3. Add details and smaller shapes
4. Plot out and apply shading or mark making



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



Art - Insects

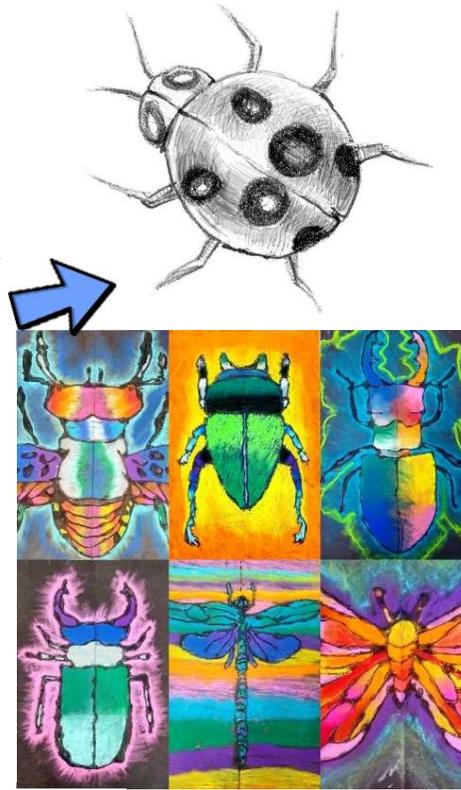


It is important to be able to identify the different layers in an image. When creating your own piece you will be building from background to middleground to foreground.

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

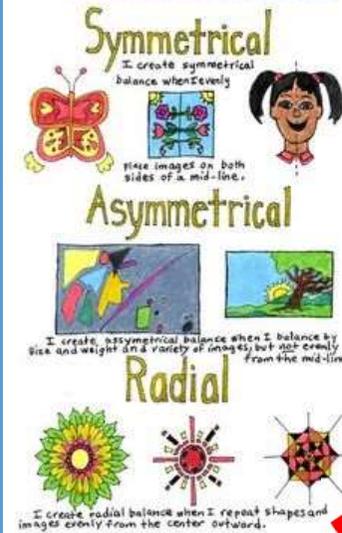
- **How to Draw Almost Everything: An Illustrated Sourcebook** – Chika Miyata
- **Keys to Drawing** – Bert Dodson
- **Drawing for the Absolute Beginner: A Clear & Easy Guide to Successful Drawing (Art for the Absolute Beginner – Mark and Mary Willenbrink**

YouTube Tutorials

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

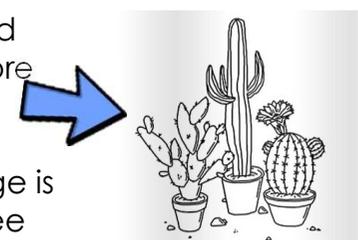
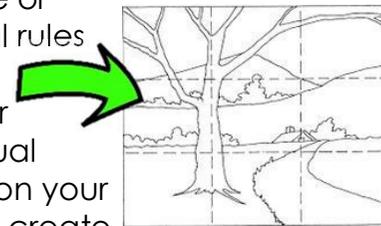
Oil Pastel are a new medium we will be using during this project. They are like wax crayons and produce a rich bright colour, they can be a little tricky to blend.

BALANCE



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

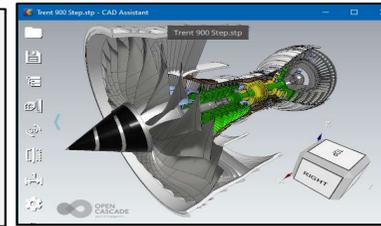
- **Rule of thirds:** You divide your paper horizontally and vertically into 9 equal sections, and by placing the focus on your image where the lines intersect you create a balanced composition.
- **The Rule of odds** suggests that an odd number of subjects in an image is more interesting to look at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

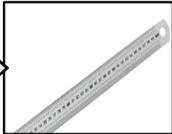
CNC means Computer-Numerical-Control



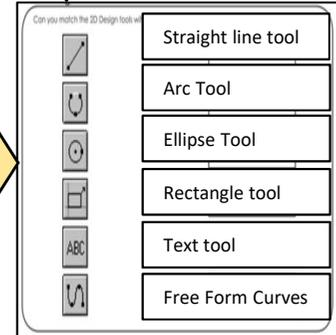
Net of a cube!

Tools and Equipment Graphical tools

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

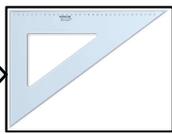


2D Design Tools Explained! These are the most common tools you will use in 2D Design

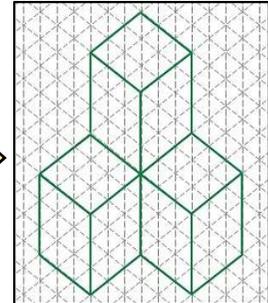


Hazard- Something that has the potential to cause harm, untidy cables between work spaces is a good example

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		
ALL DIMENSIONS IN MM		
<p>3rd ANGLE PROJECTION</p>		
DO NOT SCALE		

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

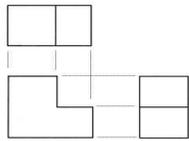


A Bug Hotel

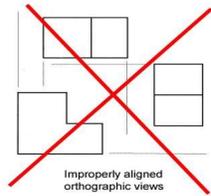
Scaled Drawings- Why
use scaled drawings?
A **drawing** that shows a
real object with accurate
sizes reduced or enlarged.
We cant design a building
as big as the Eifel tower
so we have to draw it
smaller. This is called a
scaled drawing.

Orthographic Projection

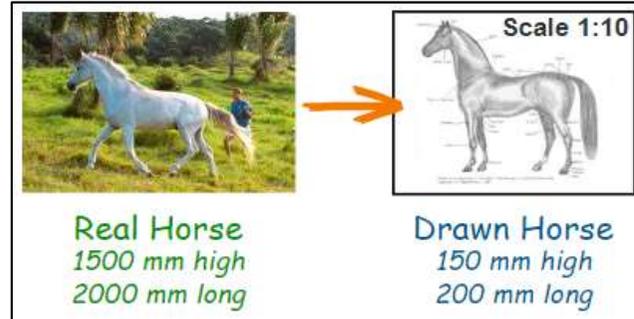
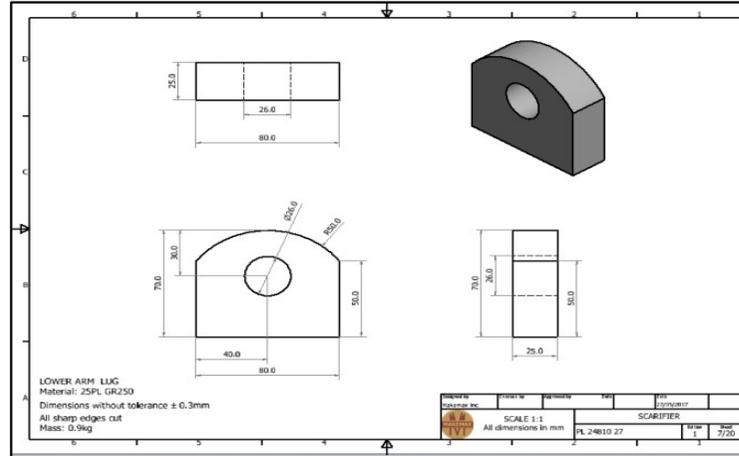
Views are aligned with one another (features
project from one view to the next)



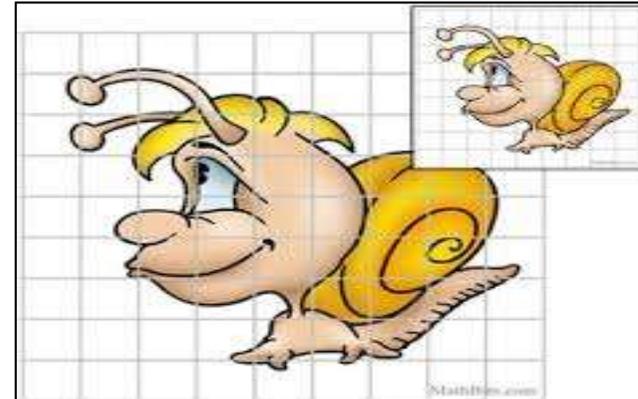
Properly aligned
orthographic views



Improperly aligned
orthographic views



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?

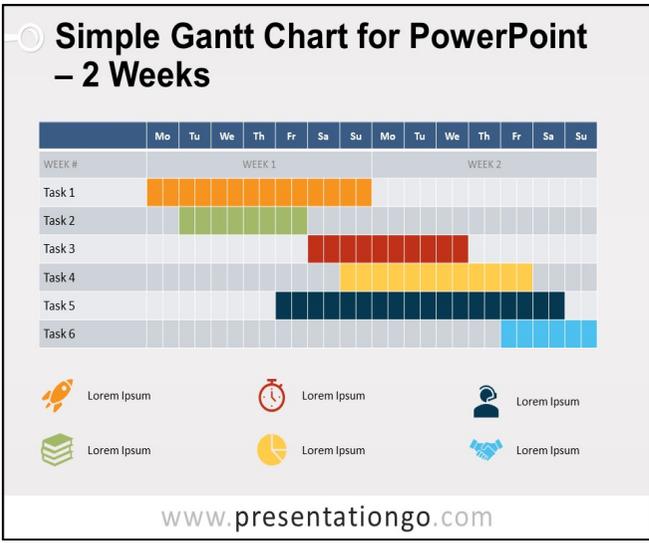
Materials- Describe the materials, What is the product made of? Are the materials suitable?

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

Project Planning Tools

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.

Project Planning Tools



Sustainability



Design and Technology Knowledge Organisers – Bee Box.

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



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
Aeration	Adding air/gas to a mixture, e.g. by whisking.
Blind Baking	A method of baking pastry without any filling to dry it out.
Coagulation	When liquid protein foods are cooked and turn from liquid to solid. E.g. egg in quiche.
Convenience Foods	Ready made foods that can be used to save time. E.g. puff pastry. More expensive than making from scratch though.
Glazing	Brushing with egg or milk before baking to give a shine. E.g. scones, pastry.
Simmering	When water or food in a saucepan bubbles gently (stays below boiling point).
Kneading	Working bread dough with the hands to stretch the gluten so it is elastic (helps the yeast to make bread rise).
Lamination	Thin layers of fat and dough in puff/flaky pastry. These separate when baked to form the flaky layers.
Proving	Leaving bread dough to develop and rise.
Yeast	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
Macronutrients - We need these in large amounts.		
Starchy Carbohydrates	Cereals, bread, rice, potatoes, pasta etc.	Give us slow release energy. (wholegrain versions are higher in fibre).
Protein	Meat, fish, eggs, nuts, seeds, pulses, lentils.	Growth, repair and maintenance of muscles.
Fat	Butter, lard, margarine, sunflower oil, olive oil etc.	Insulates our vital organs (heart, lungs etc) and keeps us warm.
Micronutrients - We need these in small amounts.		
Vitamins	Fruits and vegetables.	Help our immune system fight off illnesses and help us release energy from other foods.
Minerals		
Other Essential Nutrients		
Dietary Fibre (NSP)	Wholegrain cereals, fruit/vegetables, nuts/seeds etc	Helps our digestive system remove waste and avoid constipation.
Water	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

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

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
Ambient Foods	Foods that can be safely stored at room temperature.
Aeration	Adding air to a mixture to help it rise (e.g. cakes, batters, yorkshire puddings).
Bacteria	A micro-organism that grows on food. Some of these are harmless but pathogenic bacteria can cause food poisoning.
Coagulation	When heat is applied to a liquid protein food making it become solid. E.g. Egg.
Cross Contamination	When bacteria passes from one food to another or from people to food. Can lead to food poisoning.
Food Spoilage	When bacteria causes food to decay. Food will start to smell, lose texture or flavour.
Food Poisoning	Caused by eating food infected with bacteria. Symptoms include sickness, fever and diarrhoea.
High Risk Foods	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.
Mould	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>Use By</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>Best Before</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.



Keyword	Definition
Drive	The part of the race where the athlete keeps low and has short powerful strides.
Maximal	The largest amount possible.
Pace	The speed at which someone moves.
Power	The speed at which strength can be used.
Angle	The direction something is released at.
Stride	The length of step.
Relay	To send something from one person to another.
Performance	The way in which an activity is completed.

Sprinting technique

The sprint start:
 'On your marks' – set feet with lead leg in front
 'Set' – move forward with weight on shoulders raising hips
 'Go' – push out off lead leg driving legs and arms forward
 Keep head down and body at 45 degree angle
 Sprint technique
 Running on toes and lifting knees high
 Use of 'drive' when getting out of the blocks
 A straight arm action
 Stand tall after 'drive' phase



Middle distance and long distance

Middle distances such as 800m and 1500m and long distance e.g. 500m and 100m usually focus on pacing
 Pacing is where you don't set off too fast in order to have enough energy to finish the race strongly.

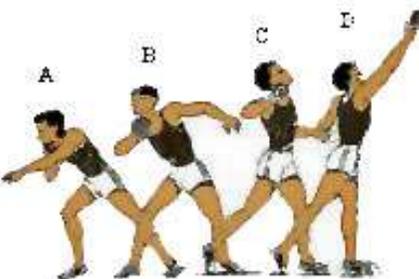
Throwing

Javelin technique
 Grip the javelin in the middle
 Turn sideways and extend arm backwards
 The javelin tip should be next to your cheek
 To throw, bring arm forwards so javelin moves in a straight line
 Lean back and rotate chest
 Release at 45 degree angle



Throwing

Shot putt technique
 Hold shot in fingers against your neck 'clean palm, dirty neck'
 Face backwards
 Align toe, knee and chin, and have a high elbow
 Rotate, opening out chest, releasing at 45 degrees



Athletics

Jumping

Long jump technique
 Mark out your run up to stop your stuttering
 Jump of lead leg [strongest leg]
 Use arms to project body forward
 Stretch legs as if jumping over a box
 Push forwards on landing



Jumping

High jump technique
 The Fosbury Flop is the most effective way to complete the high jump:
 Approach on a curve
 Take off outside leg, driving the other leg as high as you can
 Rotate in the air to land on your back with feet facing the ceiling



Softball Y7

Knowledge Organiser



Keywords: Arm action: pitching motion: official: Athletic stance: Attack the ball: Backhand:;

Scoring System: The aim of the game is to score more RUNS than the opposition, and a run is scored when a player on the batting team advances around all three bases and back to the home base (called HOME PLATE) from whence she started. Unless you hit the ball so far that you can run around all the bases before it's returned (a HOME RUN), you'll probably have to stop at one or more bases on your way around and wait for the next batter to hit the ball so you can advance further. Team with the most runs wins the game.

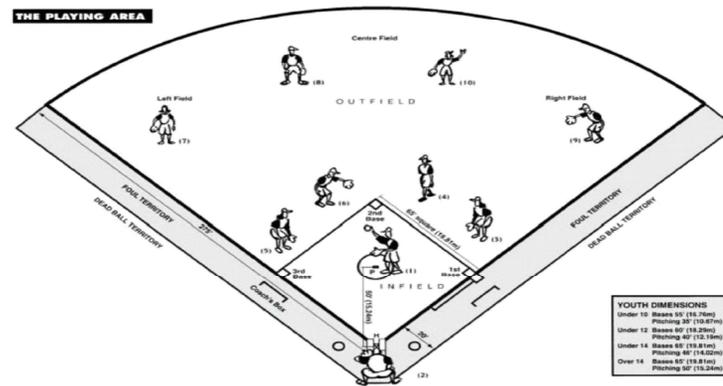
Players:

Most slowpitch softball is played by mixed teams, where men and women play together, usually in a 5:5 ratio. However, this ratio sometimes varies, and slowpitch is sometimes played by single-sex teams as well.

How to get someone out

1. If the ball the batter has just hit is caught without first bouncing.
2. The ball is thrown to a base before a runner gets there.
3. A player running between bases is tagged by the ball (touched by the ball or the glove of the defending player).
4. If three strikes are called by the umpire.
5. They run more than 3ft (0.9m) out of the base line to avoid being tagged.

Softball playing area: A softball playing area is contained within a 90-degree angle, and is usually called a DIAMOND, because the central part of the playing field – the INFIELD - is diamondshaped. The OUTFIELD extends outward from the infield to a boundary, either actual or notional.



Skills and Techniques

Catching: The right catching skills allow a player not only to catch the ball without getting hurt but also to position. T.P's; Bring hands to chest as you catch, eyes on ball, cushion catch. Pairs to experiment with low and high catches

Throwing: Throwing is one of the two most important defensive skills a player must learn in softball.

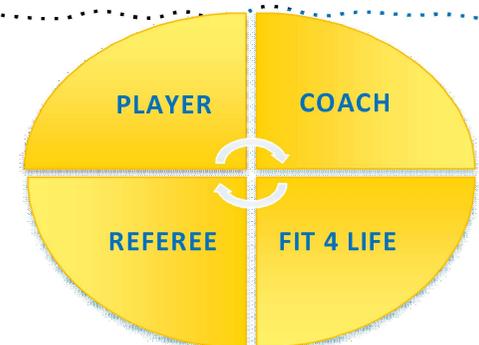
Batting: Hitting is probably the most challenging and enjoyable skill to learn in softball. Teaching points; Stance & Grip, bat back in preparation, follow through

Fielding Tactics: To understand the fielders roles and base responsibilities. To perform and replicate a combination of skills to outwit opponents in a game situation

Pitching: Teaching points; grip, step into bowl, must pass between shoulder and knee

Rules:

1. Two teams (of nine players) alternate turns at batting and fielding (often called defense).
2. The aim for the team batting is to advance a runner around all bases to the home plate to score runs.
3. The defending team tries to defend its bases by getting three outs and not allowing the batting team to score.
4. The team that scores the most runs in seven innings wins. (A tiebreaker procedure comes into play if the scores are tied after the seventh innings.)
5. Each team's innings ends when three of its batters have been ruled out and then the team that was defending goes in to bat.



Knowledge Organiser

Rounders



What is Rounders?

- A sport with two teams with a maximum of **15 players**. No more than 9 players on the field at any one time.
- Games are played on a square shaped pitch, divided by posts and boxes.
- Score points by hitting the ball. One point or half a point (Rounder) depending on where the player gets to in the field.
- The bowler bowls the ball to the batter who hits the ball forward on the Rounders Pitch. The batter then runs to as many posts as possible before the fielders return the ball to touch the post the batter is heading for.
- Players are assigned "positions".
- If the batter reaches the 2nd or 3rd post in one hit, the batting team scores $\frac{1}{2}$ a Rounder. If the batter reaches 4th post in one hit, the batting team scores a Rounder
- Games are usually played over 2 innings with the aim of the game to score the most rounders. This is normally 30 "good balls".
- The play should be recorded on an accompanying scoresheet.



Health and Safety

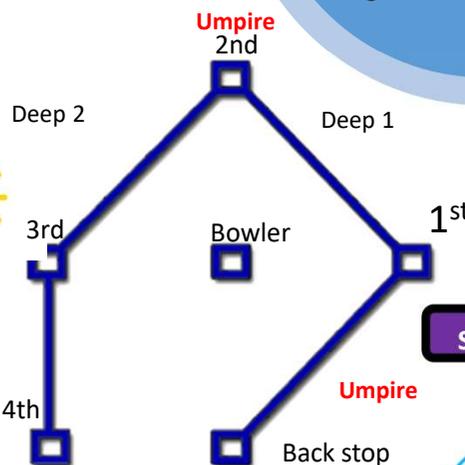
Before a game, the **umpire** will check not only the pitch but also the players to make sure that:-

- All shoe laces are tied- to stop the player from tripping over
- All hair is tied back- so that no hair gets in the way of your face which could result in you being unable to see.
- All jewellery is removed (including earrings and piercings)- to stop a risk of injury such as piercings being pulled out or necklaces getting caught round necks
- The pitch is safe. No water or rubbish. The posts are secure.
- The ball and the bat, are the right specification.
- Spiked footwear is prohibited. But football boots and astro shoes can be worn.
- Gum shields, shin pads and fingerless gloves CAN be worn.
- It is common to wear rounders uniform, including a skort and matching top.
- You might need to apply sun cream in warm weather.



Running Totals and final scoring

Pitch Layout



TOP TIP
Bats and balls should be kept dry, to maintain a good grip.

The game is split into two innings

You can play in an adult team at age 13!

FAB FACTS!

You can play with three types of bats.
Wooden, aluminum and plastic.

Invented in Tudor times.

Scoring Card

Scoring for individuals

Score Sheet

Team	Players Name	No	Performance	Score
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			

Good balls

30	29	28	27	26
25	24	23	22	21
20	19	18	17	16
15	14	13	12	11
10	9	8	7	6
5	4	3	2	1

Players Out

9	8	7	6
5	4	3	2
1			

RUNNING TOTALS

Balls remaining

Players Out

Key Words

- Batting Team**– This is the team who are batting, normally 9 players.
- Fielding Team**–This is the team who are in field, normally 9 players.
- “OUT”** – This means you have been caught or stumped out.
- “IN”** –This means the umpire has deemed you are in.
- Obstruction** – This is where a player gets in the way of another player, normally in field. The player who is obstructed get $\frac{1}{2}$ rounder.
- Wait at first** –You have hit the ball backwards, you have to wait at first post.
- Ball** – These can be hard or softer, you need to catch the ball to get someone out.
- Bat** –There are three types of batt you can use. This is used to hit the ball.
- Post** – These are normally white and used to ‘stump’ the ball.
- Stump**: This is the motion of the ball touching the base or post.
- Rounder**- This means you have scored 1 (point) called a rounder.
- Half a Rounder**-This means you have scored $\frac{1}{2}$ (point) called a rounder.

Exit Routes and Club Information

Solihull Outdoor/Indoor Rounders League
Location: West Midlands
Lead Contact: Clair Andrews
Email: clairandrews@leagues4you.co.uk

Rounders England
PO Box 4458
Sheffield
S20 9DP
T: 0114 248 0357
E: enquiries@roundersengland.co.uk



At My Best – The way we treat others/ Puberty

Aim: 1. To think about how we treat others and explore different forms of discrimination. 2. Explore physical and emotional changes that occur during puberty.

Word	Definition
Racist	A person who is prejudiced against people on the basis of their membership of a particular racial or ethnic group.
Culture	The ideas, customs, and social behaviour of a particular people or society.
Discrimination	The unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability
Society	A society is a group of individuals involved in persistent social interaction
Homophobia	Dislike of or prejudice against LGBTQ people.
Disability	A physical or mental condition that limits a person's movements, senses, or activities.
Additional Need	If your child has a health or developmental condition that is impacting on their everyday life, this is often referred to as an additional need.
Friendship	The emotions or conduct of friends; the state of being friends
Influence	The capacity to have an effect on the character, development, or behaviour of someone or something, or the effect itself.
Characteristics	A feature or quality belonging typically to a person, place, or thing and serving to identify them.
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.



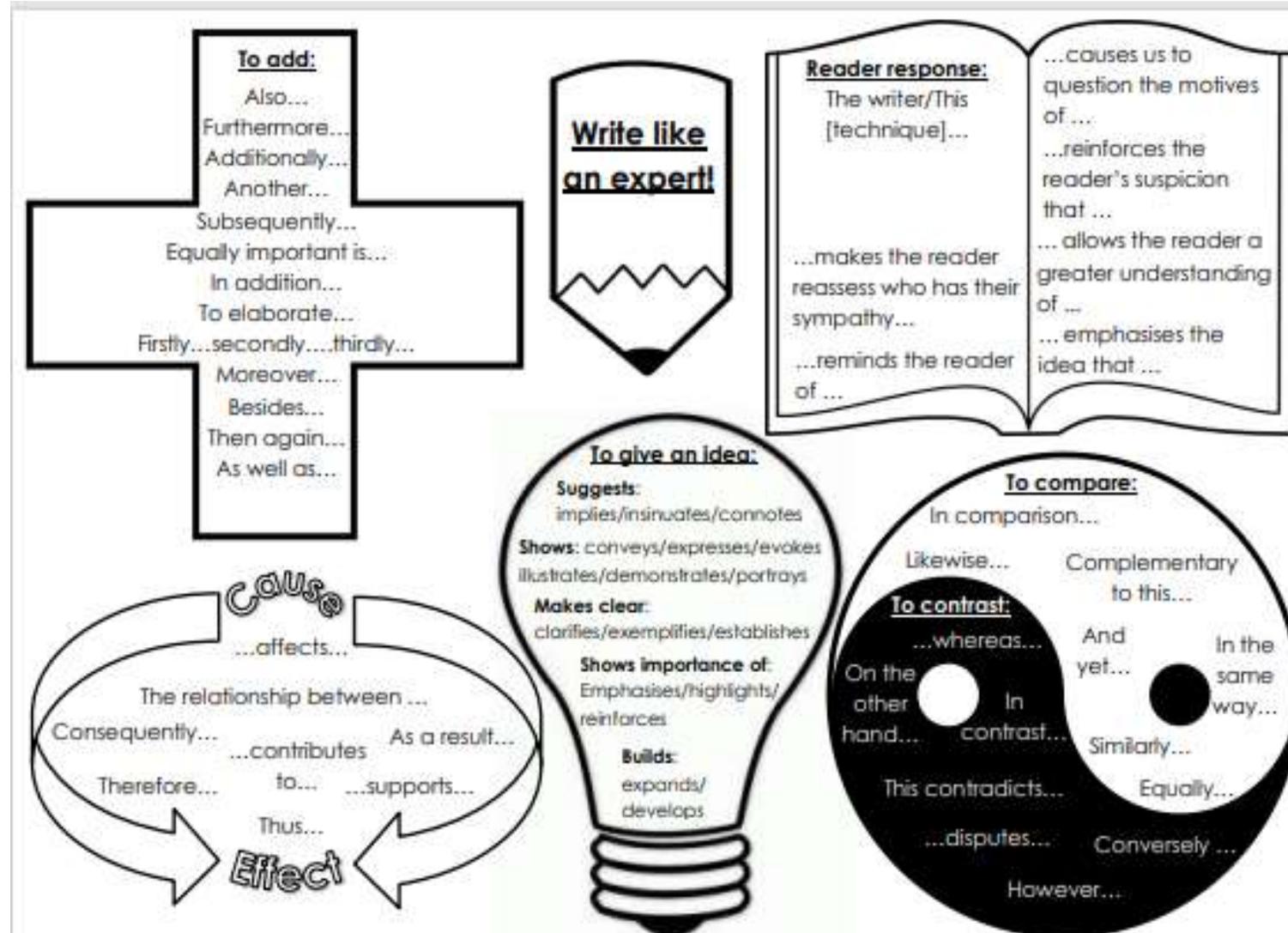
Write

Writing needs the following to also be effective:

- Be precise
- Well structured
- Choice of vocabulary



- Punctuation
- Written in the correct style and format
- Grammatically correct



Sentence Types Knowledge Organiser

Key terminology	Definition
Main clause	A group of words which contains a verb and makes sense on its own.
Subordinate/ dependent clause	A clause which does not make sense on its own (it is reliant on the main clause).
Co-ordinating conjunction	Link words or phrases that join two equal clauses.
Subordinating conjunction	Link words or phrases that join clauses where one is dependent on the other.
Sentence Types	Definition
Simple	A sentence containing one main clause.
Complex	A sentence containing a main clause and at least one subordinate/dependent clause.
Compound	A sentence containing two main clauses joined by a conjunction.
Complex compound	A sentence containing two main clauses and one or more subordinate or dependent clauses.
Minor	A word, phrase or a clause which is an incomplete sentence but functions as a sentence.



Subject	Verb	Object
The cat	chased	the dog.
Subject	Verb	Compliment
Mumbai	Is	big
Subject/Verb	Adverbial	Object
It is	after all	a small world

Sentence Functions	Definition
Declarative	A statement.
Imperative	A command.
Interrogative	A questions.
Exclamations	An expressive or emotive exclamation.



Voice	Definition
Active Voice	Where the subject/ agent performs the action expressed by the verb.
Passive Voice	Where the subject is filled by a patient who receives the action expressed by the verb. The agent is omitted or placed later in the clause.



Noun Type	Description	Example
Proper	Refers to names of people or places.	James, England
Abstract	Refers to states, feelings and ideas which do not have a physical existence.	Love, anger, justice
Concrete	Refers to objects with a physical existence.	Table, chairs
Collective	A noun that identifies a group of individuals	Government, family, community

Pronouns	Description	Example
Personal	Can replace a noun and identify in terms of person.	I, you, she, he, they
Demonstrative	Orientates the reader/ listener to an idea either nearby or further away.	This, these, that, those
Indefinite	Refers to a person or object that is non specific	Someone, anybody, everything

Verbs	Description	Example
Dynamic/ material	Shows actions or events	Hit, jump, wash
Stative/ Relational	Identifies states of being	Be, appear, seem, become
Auxiliary	A verb that forms tense or mood of other verbs	Be, do, have
Modal auxiliary	A verb that shows degree of certainty, probability or possibility	Should, must, might, could, will

Adjectives	Description	Example
Base	The basic form of an adjective	Big, interesting, happy
Comparative	A form used to compare two instances by adding -er	Bigger, more interesting, happier
Superlative	Identifies the best example	Biggest, most interesting, happiest

Determiners	Description	Example
Articles	Shows if something is definite or indefinite	The (definite) a/an (indefinite)
Possessives	Shows ownership	My, her, your, our
Quantifiers	Shows either specific or non specific quantities of a noun	One, some, any a few

Adverbs	Description	Example
Manner	Answer the question 'how?'	Carefully, quickly
Place	Answer the question 'where?'	Here, outside
Time	Answer the question 'when?'	Yesterday, today,
Frequency	Answer the question 'how often?'	Daily, always, usually, seldom

Conjunctions	Description	Example
Co-ordinating	Links words, phrases or clauses together where equal	And, but, or yet
Sub-ordinating	Links clauses where one is dependent on the other	Because, although, while, for