Name:_____

BROADOAK ACADEMY

Knowledge Organisers

Terms 5-6
Year 7

Contents

BROADOAK ACADEMY

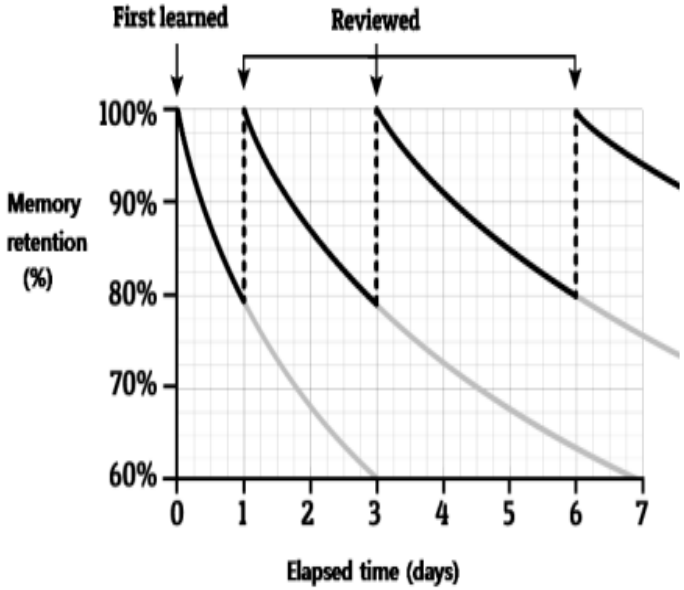
How to learn over time

Successful Learning Takes Place Over Time

It's rare for anyone to be completely comfortable with something they learn for the first time. This could be a new piece of music, dance move, language or chemistry. We all have to practice. In most instances, the aim is to be at your optimum on the day it matters, e.g. the performance, race or exam. Everything leading up to this point is part of the process of improving. It's about the long-term rather than the short-term, which also means there are no quick fixes. During this period, it's okay to make mistakes; it's okay to feel frustrated. What matters is what you do about it.

Space out your learning on a subject

Spacing out your learning over time is far more effective than last-minute cramming. This is based on research into how we forget and how we remember. The speed at which we forget something will depend on many factors such as the difficulty of the material, how meaningful it was to us, how we learned it and how frequently we relearn or remember it. The last factor tells us that when we learn something for the first time, we need to review it quickly afterwards. The more times we force ourselves to remember something, the longer the gap between reviews, which the diagram below illustrates nicely. The Leitner system and Cornell Notes mentioned earlier provides a wonderful way of achieving this, but the principle applies to all of the learning strategies mentioned in this booklet.



Revision Strategies

List It

This is a simple free recall task that is very versatile. It can feel challenging, but this is a good thing, and it provides clear feedback on what you do and don't know. Choose a topic, set yourself a time limit and…

- List as many keywords as you can
- List as many facts as you can
- List as many key events/quotes/individuals as you can
- List as many causes of X as you can
- List as many consequences of Y as you can

Flashcards

Flashcards have the potential to be a powerful learning aid. However, how successful this is will depend on the thought you put into making them in the first place and then how they're used. It's very important to remember that they're for testing, not summarising.

Mapping

Mapping is a brilliant way of organising and learning information, demonstrated on various pages in this booklet. It helps you break down complex information, memorise it, and see the connections between different ideas.

Self-testing

Research has shown that every time you bring a memory to mind, you strengthen it. And the more challenging you make this retrieval, the greater the benefit. Self-testing improves the recall of information, transfer of knowledge and making inferences between information. Equally, there are many indirect effects, such as a greater appreciation of what you do and don't know, which helps you plan your next steps.

Flashcards

Flashcards are small sheets of paper or card with matching pieces of information on either side. They are a useful tool for learning facts and allow you to quickly check whether you have remembered something correctly.

When making and using flashcards:

Do:		Don't:	
✓	…make flashcards quickly.	X	…spend more time making flashcards than actually using them.
✓	…put a single piece of information of each flashcard.	X	…put lots of information onto each flashcard.
✓	…sort your flashcards according to your confidence with them (see below).	X	…revise the flashcards in the same order every time that you use them.
✓	…test yourself on the flashcards from memory.	X	…only read through flashcards.

1861	groynes	osmosis	Where is the pharmacy?
Pasteur published his paper about germ theory.	A low wall on the coastline which slows longshore drift	Net movement of water from a high concentration to low concentration across a partially permeable membrane	Où est la pharmacie?

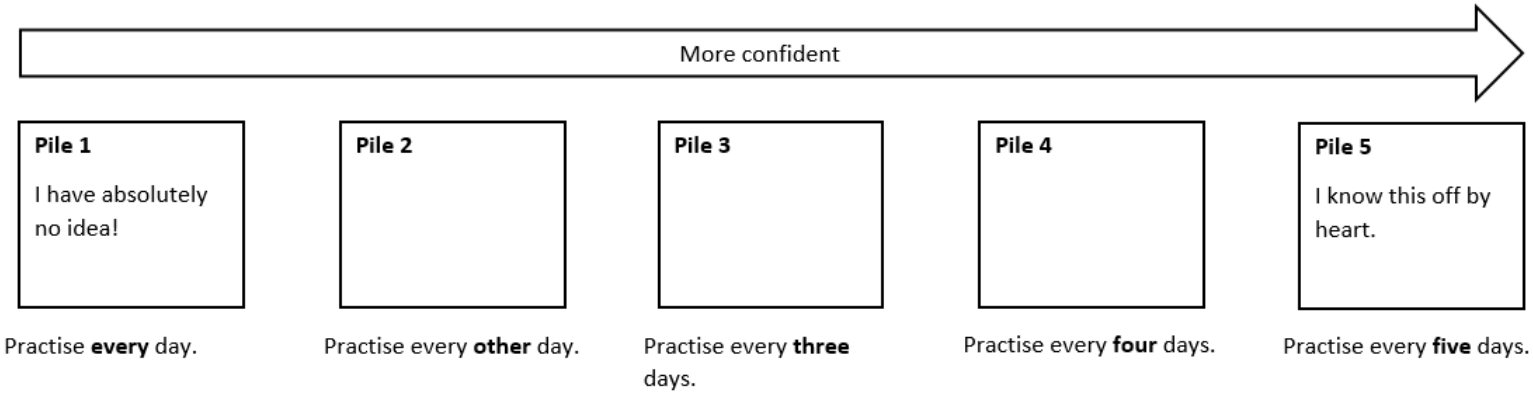
How to make flashcards:

- You can by a set of flashcards or use a free website such as Quizlet.
- Find the information you want to put onto flashcards using your existing revision resources (e.g. a knowledge organiser).
- Fold a piece of A4 paper into 10.
- Write the questions on the top half of the paper.
- Write the answers on the bottom half of the paper.
- Cut the paper along the dotted lines shown here.
- Fold the strips of paper so that the writing is on either side.

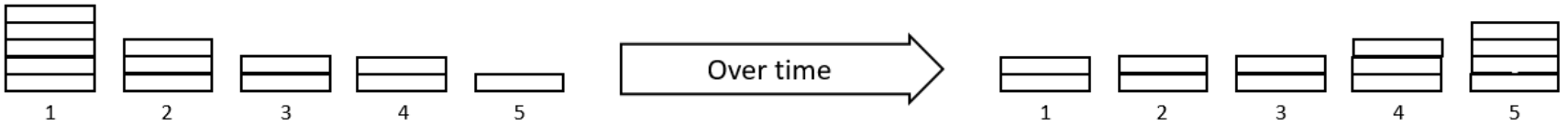
Definition 1	Definition 2	Definition 3	Definition 4	Definition 5
Answer 1	Answer 2	Answer 3	Answer 4	Answer 5

How to use flashcards:

1. Test yourself using the flashcards.
2. As you test yourself, sort the flashcards into up to five piles according to how confident you are with the content.
3. Put the piles into numbered envelopes (1-5).
4. Test yourself on the different piles on different days (see below):



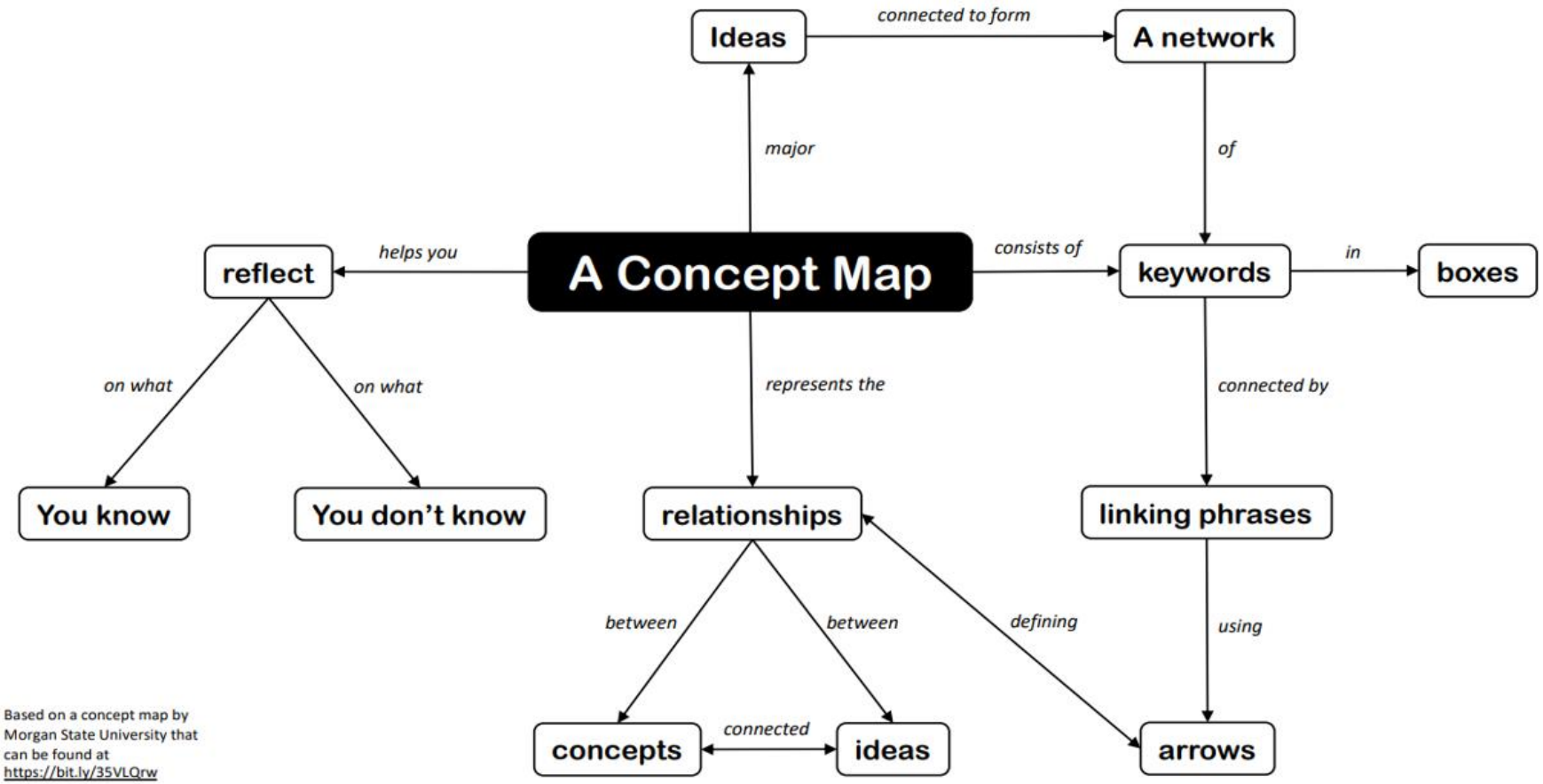
5. As you test yourself on the different piles, move the cards into different piles as you become more confident.



Useful resources:

www.quizlet.com – This free website allows you to quickly create flashcards which you can print, use on a computer, or use on your phone.

Mapping



Based on a concept map by Morgan State University that can be found at https://bit.ly/35VLQrw

BROADOAK ACADEMY

English

Great Expectations

Key Words 1	
Protagonist: central character, usually a hero	**Antagonist**: central character, usually the enemy of the protagonist
Apprentice: a person who is learning a trade from a skilled employer:	**Benefactor**: a person who gives money or other help to a person or cause. 
Deceptive: giving an appearance or impression different from the true one; misleading.	**Malicious**: characterized by malice; intending or intended to do harm.
Tyrannical: exercising power in a cruel way.	**Malevolent**: having or showing a wish to do evil to others.
Sinister: giving the impression that something harmful or evil is happening or will happen 	**Impoverished**:(of a person or area) made poor. 
Maturity: a sign/behaviour which shows growing up; seriousness	**Justice**: fair behaviour or treatment 

Techniques

Metaphor: A comparison between two things where one thing is identified as something else E.g. 'The moon is a ghostly galleon'	**Personification:** Where an inanimate object is described as having human characteristics E.g. The trees danced in the breeze	**Symbolism:** Where an image represents an idea E.g. the dawn of a new day represents hope	**Imperative verbs**: Words which are used to issue commands

Reading Terms

Inference: An inference that comes from identifying clues in a text 	**Deduction:** An understanding based on clues in a text 
Connotation: An idea or meaning suggested by a word. Sometimes there may be several connotations to a word	**Prediction:** Clues in the text suggest a possible ending or next step 

BROADOAK ACADEMY

English

Great Expectations

The plot	
1-6	Christmas Eve, afternoon: Pip meets the convict (Abel Magwitch) who asks him to steal a file and wittles for him. Joe and Mrs Joe are introduced. Joe is lovely and Mrs Joe is shown to hit Pip for no reason. Guns signal escaped convicts; Pip steals food and equipment and suffers from "wild fancies" caused by his guilt. When Magwitch is caught fighting with Compeyson, he confesses Pip's crime.
7-13	Pip and Joe's limited education is compared. Miss Havisham requests Pip to visit. Mr Pumblechook takes Pip to meet Miss Havisham. He then meets Estella and falls in love. Estella bullies Pip and makes him cry. She highlights his poor breeding by calling him "a common l abouring boy". Pip starts an apprenticeship with Joe which he resents. Estella is sent away to learn how to be a lady. Pip confesses to Biddy that he wants to become a gentleman.
14- 19	Pip is shown to look down on Joe and his lack of education. Joe is shown to be kind and thoughtful towards Pip. Mrs Joe is as saulted by Orlick which results in Joe fighting and Mrs Joe being disabled. She becomes a nicer person and Biddy moves in to care for her. Jaggers invites Pip to become a gentleman in London with "great expectations" from a secret benefactor.
20-26	Pip lives with Herbert Pocket, Miss Havisham's nephew and learns how to be a gentleman. He thinks Miss Havisham is his secret benefactor. He learns Miss Havisham's wedding story. Jaggers shows Pip, Molly his housekeeper as a bullied, low woman he saved. Pip doesn't realised Molly is Estella's mother.
27-33	Biddy writes to Pip asking if Joe can visit him in London. Pip is condescending to Joe and looks down on him in front of Henr y. Pip starts to think that Pumblechook is his patron. He visits Miss Havisham and declares his love for Estella. He waits for Estella in London where she is visiting.
34-39	Pip and Herbert accumulate large debts. Mrs Joe dies. Pip comes of age (November) and becomes responsible for his finances. P ip escorts Estella to Miss Havisham where he learns of her engagement to Bentley Drummond. He quarrels with Miss Havisham and Estella then leaves broken hearted. Pip is now 23. Magwitch returns and reveals he is Pip's benefactor.
40-44	Magwitch stays with Pip under the name Provis to disguise his identity. Jaggers confirms that Magwitch is the benefactor. Her bert advises Pip to get Magwitch out of the country. They learn about Magwitch's life. Pip declares his love for Estella again, but she is set to mar ry Drummond.
45-50	Pip feels he is being watched. Pip dines with Jaggers and learns that Estelle is married. Wemmick explains that Molly is Estella's mother, and that Magwitch is her father. Pip reminded Magwitch of Estella which his why he decided to help him. Miss Havisham confesses all and is killed in a fire at her house.
51-59	Jaggers explains Estella's adoption and advises Pip to keep it a secret. Magwitch's escape is thwarted. Compeyson is drowned and Pip is reconciled to his benefactor. Pip's wealth is forfeited to the crown. Magwitch is convicted and sentenced to death. Pip tells him of Estella. P ip becomes ill and is arrested for debt but rescued by Joe. Joe marries Biddy. Eleven years later Pip returns to Miss Havisham's house and finds Estella.

BROADOAK ACADEMY

English

Great Expectations

The characters 1

Pip Pirrip 	The Bildungsroman's protagonist, an orphan who serves as an apprentice to a gentle blacksmith, Joe. When he unexpectedly comes into a fortune, Pip grows haughty and extravagant in pursuit of a lifestyle genteel enough to meet the refined standards of Estelle. Confusing personal integrity with public reputation, Pip is cruelly disloyal to Joe and Biddy, avoiding them because of their lower class. Still, Pip learns to judge people on their internal rather than superficial standards and redeems himself by repenting sincerely and reforming his personal values.	**Magwitch** 	The escaped convict that Pip meets in the churchyard as a young boy. Inspired by Pip's kindness as a young boy, Magwitch devotes his life savings to Pip. Cruelly swindled by Compeyson, he has lived in and out of prison. His criminal record is largely due to unfortunate circumstances, not character. He is kind, good-hearted and generous.
Joe	Joe is the father figure for Pip. Married to Pip's harsh sister. Joe has no formal education but possess a deep sense of integrity and an unfailing moral compass. Joe is loyal, generous and kind. He acts lovingly to Pip, even when he is ungrateful.	**Mrs Joe**	Mrs Joe is fiery, tyrannical and false. Obsessed with social status and reputation. Attacked by Orlick for being vile, her temperament changes and she becomes patient and docile.

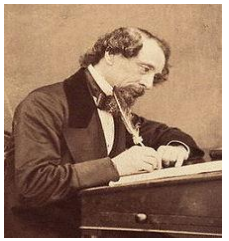
The characters 2

Mr Jaggers	A famous lawyer in London, Mr Jaggers is Pop's guardian and middle man between him and is patron. Mr Jaggers also works for Miss Havisham. He is rational, sharp-minded and intimidating. He prides himself on neither expressing nor responding to human emotion.	**Miss Havisham** 	The wealthy daughter of a brewer, Miss Havisham was abandoned on her wedding day by her fiance (Compeyson) and, traumatized. She preserves herself and her house in wedding regalia, shutting out the world for over twenty years. To exact her revenge on men, Miss Havisham adopts and raises Estella to be beautiful and desirable but completely heartless. Miss Havisham is capricious, manipulative, bitter and until the novel's end unable to recognise anyone's pain but her own.
Estella	The adopted daugher of Miss Havisham, Estella is proud, refined, beautiful, and cold, raised by Miss Havisham to "wreak revenge of the male sex". Miss Havisham has raised her to lack a true human heart and she is unable to love.	**Biddy**	An orphan Pip meets at the village school. Biddy moves into the forge to look after Mrs Joe after the attack. Later she becomes a school teacher. She is humble, kind, moral and fiercely intelligent, absorbing knowledge without any formal education. She is also sharply perceptive and sees through everyone's pretensions, calling Pip out on his delusions and snobbery long before Pip can recognise them.

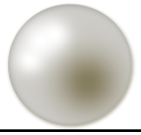
BROADOAK ACADEMY

English

Great Expectations



Key Words 2

Atmosphere: the mood or tone of a place 	**Lustre**: a gentle sheen or soft glow 
Penned: to be caged in a place 	**Penitent**: feeling or showing sorrow and regret for having done wrong; repentant.
Bildungsroman: a novel which deals with the issue of growing up	**Audacious**: showing a willingness to take surprisingly bold risks.
Naive: showing a lack of experience, wisdom, or judgement.	**Opulence**: great wealth and luxury 
Dilapidated: a building in a state of disrepair 	**Disparaging**: expressing the opinion that something is of little worth 
Haughty: behaving in an arrogant or superior way to others 	**Insolent:** rude or lack of respect

Context

- Charles Dickens was born on February 7, 1812, and spent the first nine years of his life living in the coastal regions of Kent, a county in southeast England.
- Dickens's father, John, was a kind and likable man, but he was incompetent with money and piled up tremendous debts throughout his life.
- When Dickens was nine, his family moved to London.
- When he was twelve, his father was arrested and taken to debtors' prison.
- Dickens's mother moved his seven brothers and sisters into prison with their father, but she arranged for the young Charles to live alone outside the prison and work with other children pasting labels on bottles in a blacking warehouse (blacking was a type of manufactured soot used to make a black pigment for products such as matches or fertilizer).
- Dickens found the three months he spent apart from his family highly traumatic.
- After his father was released from prison, Dickens returned to school. He eventually became a law clerk, a court reporter, and finally a novelist.
- His first novel, *The Pickwick Papers,* became a success when Dickens was only twenty-five. He was considered a literary celebrity until death
- *Great Expectations* is set in early Victorian England, a time when great social changes were sweeping the nation.
- The Industrial Revolution of the late eighteenth and early nineteenth centuries had changed society.
- The divisions between rich and poor remained nearly as wide as ever.
- London, lit by gas lamps at night and darkened by black clouds from smokestacks during the day, formed a sharp contrast with the nation's sparsely populated rural areas.
- More and more people moved from the country to the city in search of jobs.
- Throughout England, the manners of the upper class were very strict and conservative: gentlemen and ladies were expected to have thorough classical educations and to behave appropriately in social situations.

BROADOAK ACADEMY

English

Great Expectations

Themes

Ambition and self-improvement
The theme of *Great Expectations* is quite simple: affection, loyalty, and conscience are more important than social advancement, wealth, and class.

Social Class
Dickens explores the class system of Victorian England, ranging from the most wretched criminals (Magwitch) to the poor peasants of the marsh country (Joe and Biddy) to the middle class (Pumblechook) to the very rich (Miss Havisham).

Crime, guilt and innocence
The theme of crime, guilt, and innocence is explored throughout the novel largely through the characters of the convicts and the criminal lawyer Jaggers.

Education
Education allows for personal growth in the novel. Joe and Biddy show how education can be a good thing. Pip receives an education that allows him to advance into a new social position, but Pip's education improves his mind without supporting the growth of his character.

Family
Although Pip and Estella both grow up as orphans, family is an important theme in the novel. Pip grows up with love and support from Joe, but fails to see the value of the unconditional love Joes gives him. He eventually makes up with Joe after understanding his errors. Estella is exposed to damaging values from her adopted mother, Miss Havisham, and gradually learns from experience what it means to care about someone.

Key Quotes

Magwitch	"Hold your noise!" called a terrible voice, as a man started up from among the graves at the side of the church porch. "Keep still, you little devil, or I'll cut your throat!" A fearful man, all in coarse grey, with a great iron on his leg. A man with no hat, and with broken shoes, and with an old rag tied around his head.
Estella	Though she called me "boy" so often, and with a carelessness that was far from complimentary, she was about my own age. She seemed much older than I, of course, being a girl, and beautiful and self-possessed; and she was as scornful of me as if she had been one-and-twenty, and a queen.
Miss Havisham	"Look at me," said Miss Havisham. "You are not afraid of a woman who has never seen the sun since you were born?"
Joe Gargery	"It ain't that I am proud, but that I want to be right, as you shall never see me no more in these clothes. I'm wrong in these clothes. I'm wrong out of the forge, the kitchen, or off th'meshes. You won't find half so much fault in me of you think of me in my forge dress, with my hammer in my hand, or even my pipe."
Pip	I took the opportunity of being alone in the courtyard, to look at my coarse hands and my common boots. … They had never troubled me before, but they troubled me now, as vulgar appendages.

Maths

Scales

Metric conversions

When we express a quantity, we need to use the appropriate units.
We can convert between units by multiplying or dividing by powers of ten.

kilo (k) = thousands

km		m
1	:	1000

(× 1000 from km to m; ÷ 1000 from m to km)

Convert **1.4km** into **m**
$1.4 \times 1000 = 1400m$

Convert **32.1m** into **km**
$\frac{32.1}{1000} = 0.0321km$

centi (c) = hundred**ths**
(century)

m		cm
1	:	100
0.01	:	1

(× 100 from m to cm; ÷ 100 from cm to m)

Convert **34.1m** into **cm**
$34.1 \times 100 = 3410cm$

Convert **4.5cm** into **m**
$\frac{4.5}{100} = 0.045m$

milli (m) = thousand**ths**
(millennium)

m		mm
1	:	1000
0.001	:	1

(× 1000 from m to mm; ÷ 1000 from mm to m)

Convert **0.89m** into **mm**
$0.89 \times 1000 = 890mm$

Convert **182mm** into **m**
$\frac{182}{1000} = 0.182m$

There are 10mm in 1cm

cm		mm
1	:	10
0.1	:	1

(× 10 from cm to mm; ÷ 10 from mm to cm)

Convert **47.8cm** into **mm**
$47.8 \times 10 = 478mm$

Convert **9.3mm** into **cm**
$\frac{9.3}{10} = 0.93cm$

There are 100,000cm in 1km

km		cm
1	:	100,000
0.00001	:	1

(× 100,000 from km to cm; ÷ 100,000 from cm to km)

Convert **32km** into **cm**
$32 \times 100{,}000 = 3{,}200{,}000cm$

Convert **400,000cm** into **km**
$\frac{400{,}000}{100{,}000} = 4km$

Alternatively, we can convert between units by moving the decimal point to the appropriate column.

Convert 2.3cm into m

kilo *k*			*m*		centi *c*	milli *m*
					2	3
			0	0	2	3

Convert 1.56km into cm

kilo *k*			*m*		centi *c*	milli *m*
1	5					
1	5	6	0	0	0	

BROADOAK ACADEMY

Maths

Scales

Using scales

A **scale** is the ratio of the length in an image to the length on the real thing.
We use scales to draw things that are too big or too small for the paper.

A **dimensionless scale** is the ratio of the length in an image (or model) to the length on the real thing in its **simplest form**.
A dimensionless scale can be converted into a scale with units by doing the appropriate conversions.

$$1 : 250{,}000$$

1cm in the **image** corresponds to 250,000cm in **real** life.

$$1cm : 250{,}000cm$$

$$1cm : 2{,}500\ m$$

$$1cm : 2.5\ km$$

By using a drawing with the scale $1 : 200$ we can find the actual width of the bedroom: as the bedroom is 1.3cm wide in the image, it is 2.6m in real life.

$$1 : 200$$

1cm in the **image** corresponds to 200cm in **real** life.

$$1cm : 200cm$$

$$1cm : 2\ m$$

$$1.3cm : 2.6\ m$$

By using a drawing with the scale $1 : 30{,}000$ we can find the actual distance between WHA and Haywood Village Academy: as they are 5cm apart in the image, it is 1500 m in real life.

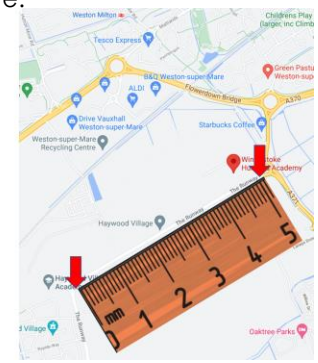
$$1 : 30{,}000$$

1cm in the **image** corresponds to 30,000cm in **real** life.

$$1cm : 30{,}000cm$$

$$1cm : 300\ m$$

$$5cm : 1500\ m$$



Maths

Coordinates

A **coordinate axis** is a number line.

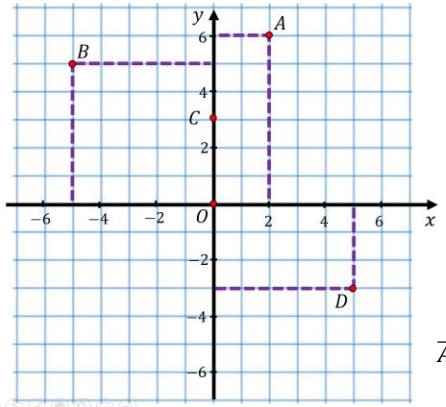
The **horizontal** number line is called x axis.
The **vertical** number line is called y axis.
We can uniquely identify a point by giving its x and y coordinates (in this order!).

$$(x, y)$$

The x and y axes meet at the point of coordinates
$O(0,0)$
This point is called the **origin**.

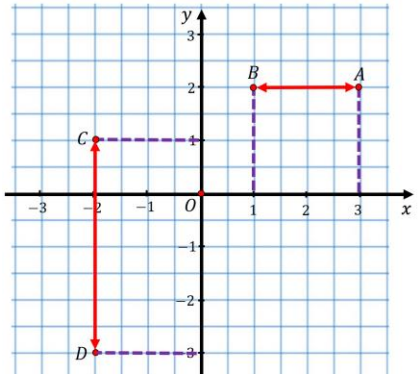
The *horizontal distance* (**change in x**) between two points is the **difference** between their x-coordinates.

The *vertical distance* (**change in y**) between two points is the **difference** between their y-coordinates.



$A(2,6)$
$B(-5,5)$
$C(0,3)$
$D(5,-3)$

$A(3,2)$
$B(1,2)$
$\overline{AB} = 3 - 1 = 2$



$C(-2,1)$
$D(-2,-3)$
$\overline{CD} = 1 - (-3) = 4$

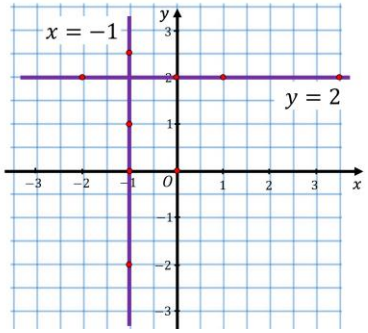
Maths

Coordinates

The x and y coordinates can be related by rules.
Rules can be expressed as equations: equations tell us what to do to x in order to find y.

Horizontal lines are made of points with the same y-coordinate. Their equation (rule) tells us what the y-coordinate is.

Vertical lines are made of points with the same x-coordinates. Their equation (rule) tells us what the x-coordinate is.

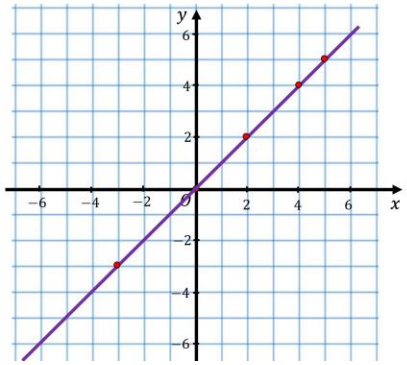


All points on the **vertical** line have the x -coordinate equal to -1. The equation of this line is

$$x = -1$$

All points on the **horizontal** line have the y-coordinate equal to 2. The equation of this line is

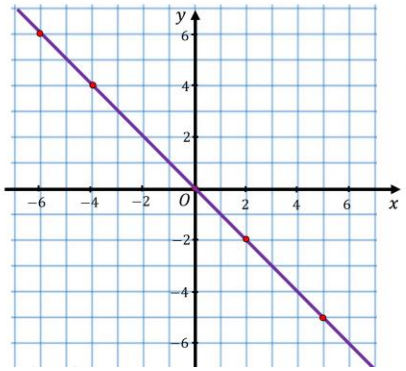
$$y = 2$$



Rule:
The y-coordinate is equal to the x-coordinate

Equation:
$y = x$

$(2,2)$
$(5,5)$
$(-3,-3)$
$(4,4)$



Rule:
The y-coordinate is the opposite of the x-coordinate

Equation:
$y = -x$

$(2,-2)$
$(5,-5)$
$(-4,4)$
$(-6,6)$

Maths

Properties of shape

Basics

A straight line does not have a starting point, nor an end point (we indicate this with arrow-heads or dots "…").

A portion of a line between two points is called **line segment**. A **line segment** is the shortest path between two points. A line segment has a length we can measure.

One can draw **infinitely many** straight lines passing through a single point.

One can draw **only one line** passing through two points.

The **distance of a point from a straight line** is the length of the shortest line segment connecting the point and the line. The shortest line segment is **perpendicular** to the line.

Two lines are **parallel** if all the points on one line are at the same distance from the other line.

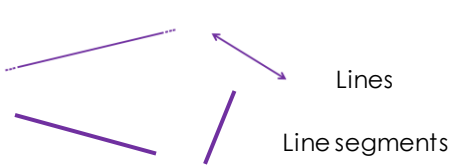
Two line segments are **parallel** if their lines are.

We indicate that two lines are parallel with the same number of arrow-heads in their middle.
Similarly, we indicate that two line segments have the same length with the same number of dashes on each.

Two shapes are **congruent** if they are *identical* regardless of their orientation.

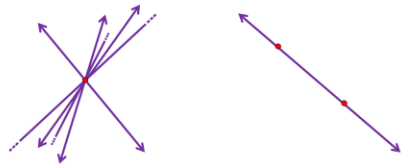
An **angle** is a measure of turn between two *lines* or two *line segments* with a point in common called **vertex**.
Angles are measured in degrees °

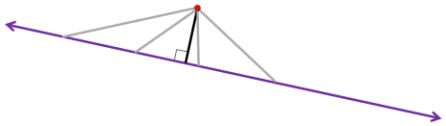
To indicate the angle between two line segments, we draw a "hat" on the vertex.

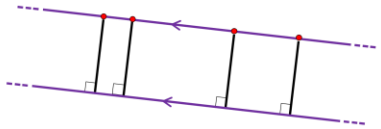


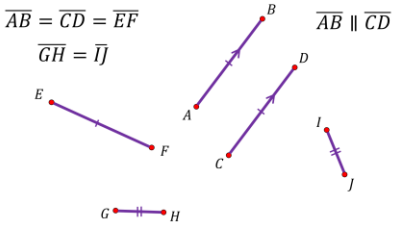
Lines

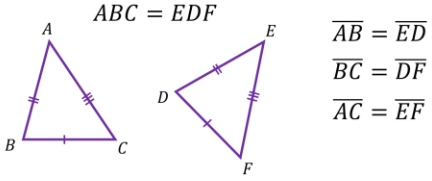
Line segments

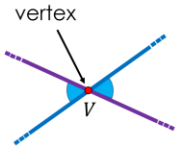




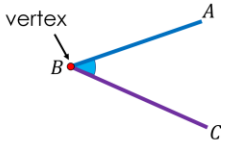








Angle: $\hat{V}$

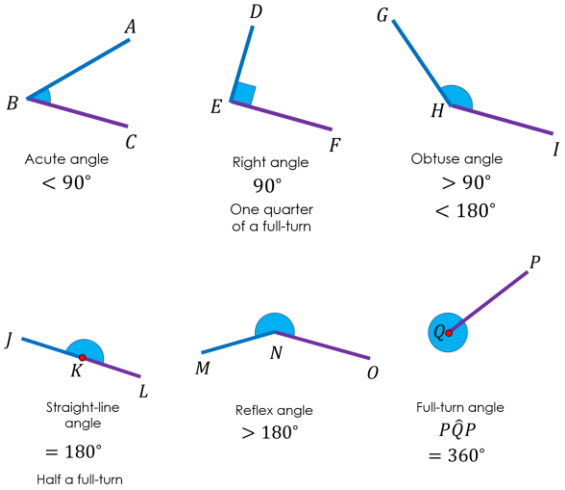


Angle: $A\hat{B}C$

Maths

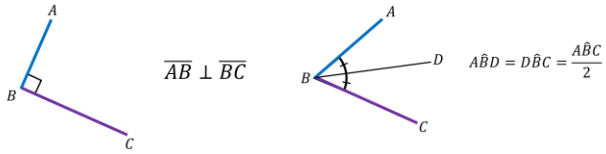
Properties of shape

Angles classification



Two lines or line segments that meet at a right-angle are said to be **perpendicular**.

Angles can be divided into equal angles.
The line dividing an angle into **two** equal parts is called **angle bisector.**

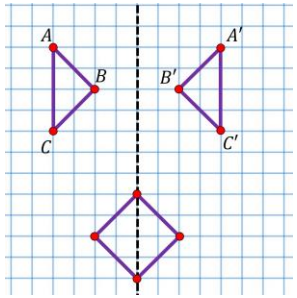


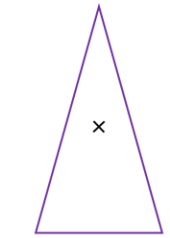
Symmetry

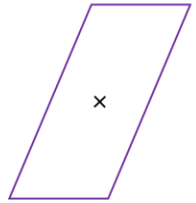
A **symmetry line** acts like a mirror, reflecting an image onto the other side at the same exact distance.

An object is **symmetric** if after a reflection or a rotation it looks exactly the same.

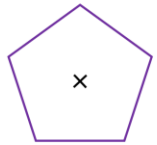
The **order of rotational symmetry** tells us how many times the shape looks identical to the original in a full turn.

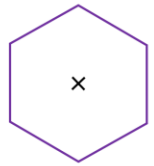



Order 1 rotational symmetry


Order 2 rotational symmetry


Order 4 rotational symmetry

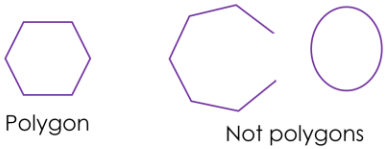

Order 5 rotational symmetry


Order 6 rotational symmetry

Maths

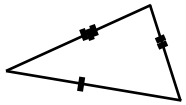
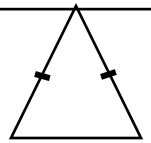
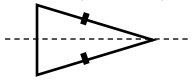
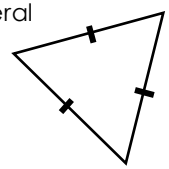
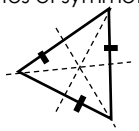
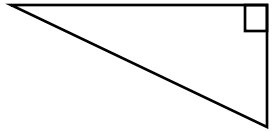
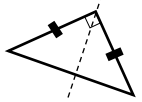
Properties of shapes

A **polygon** is any closed 2D-shape formed by straight line segments.



Triangles are three-sided polygons.

They have three sides and three angles.

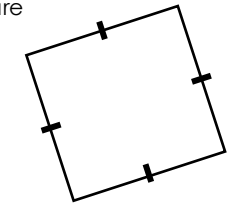
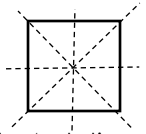
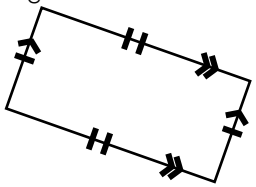
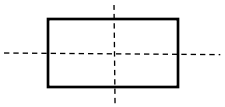
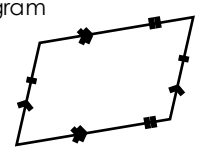
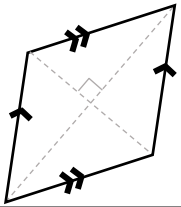
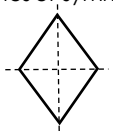
	Shape	Properties	Symmetries
	Triangles		
1	Scalene 	- Three different length sides - Three different angles	No lines of symmetry. Order 1 rotational symmetry.
2	Isosceles 	- Two equal length sides - Two equal angles	- One line of symmetry.  - Order 1 rotational symmetry.
3	Equilateral 	- Three equal length sides - Three equal angles, each of 60°	3 lines of symmetry.  Order 3 rotational symmetry.
4	Right Angled 	- One right-angle	0 lines of symmetry **unless isosceles**:  Order 1 rotational symmetry.

Maths

Properties of shapes

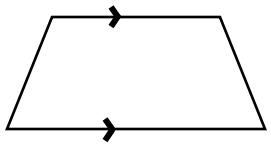
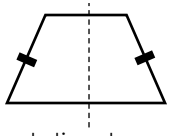
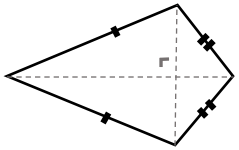
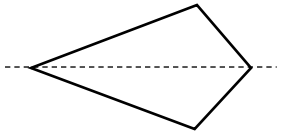
Quadrilaterals are four-sided polygons.

They have four sides and four angles.

	Shape	Properties	Symmetries
	Quadrilaterals		
5	Square 	- Two pairs of parallel sides - Four equal length sides that meet at right angles - A regular rectangle	4 lines of symmetry  Order 4 rotational symmetry
6	Rectangle 	- Two pairs of parallel sides that meet at right angles - Two pairs of equal length sides - A parallelogram with 90° angles	Two lines of symmetry.  Order 2 rotational symmetry
7	Parallelogram 	- Two pairs of parallel sides - Two pairs of equal length sides	No lines of symmetry. Order 2 rotational symmetry.
8	Rhombus 	- Two pairs of parallel sides - All four sides of equal length - Perpendicular diagonals	Two lines of symmetry.  Order 2 rotational symmetry.

Maths

Properties of shapes

9	Trapezium 	- One pair of parallel sides	0 lines of symmetry **unless isosceles**:  Order 1 rotational symmetry.
10	Kite 	- Two pairs of equal length sides with perpendicular diagonals	One line of symmetry.  Order 1 rotational symmetry.
	Polygons		Symmetries of regular polygons
11	Pentagon	A five sided polygon	5 lines of symmetry. Order 5 rotational symmetry.
12	Hexagon	A six sided polygon	6 lines of symmetry. Order 6 rotational symmetry.
13	Heptagon	A seven sided polygon	7 lines of symmetry. Order 7 rotational symmetry.
14	Octagon	An eight sided polygon	8 lines of symmetry. Order 8 rotational symmetry.
15	Decagon	A ten sided polygon	10 lines of symmetry. Order 10 rotational symmetry.
16	Dodecagon	A twelve sided polygon	12 lines of symmetry. Order 12 rotational symmetry.

A polygon is **regular** if all its angles and sides are equal.

BROADOAK ACADEMY

Maths

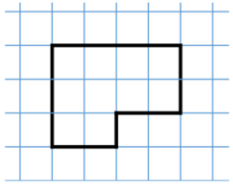
Perimeter and area

Perimeter and area

The **perimeter** P of a shape is the total length around the shape.

The **area** A of a shape is how much flat space the shape occupies.

To measure the area of a shape we count how many **square units** we need to cover it.



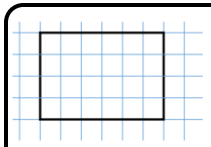
$P = 14\ units$

$A = 10\ units^2$

Rectangles

The perpendicular sides of a rectangle are called **base** b and **height** h.

$$A_{\square} = bh$$



base

$b = 6\ units$

height

$h = 4\ units$

$P = 2b + 2h =$

$= 2 \times 6 + 2 \times 4 =$

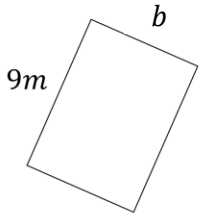
$= 12 + 8 =$

$= 20 units$

$A = bh =$

$= 6 \times 4 =$

$= 24 units^2$



$h = 9m$

$A = 45m^2$

$A = bh$

$45 = b \times 9$

$b = \frac{45}{9} = 5m$

$P = 2b + 2h$

$= 2 \times 5 + 2 \times 9$

$= 10 + 18$

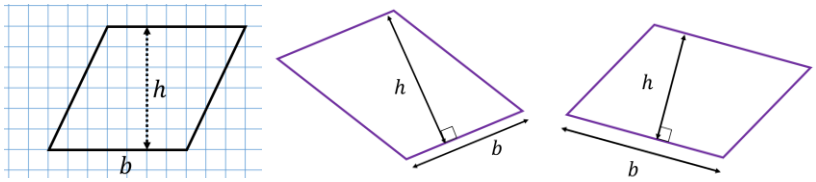
$= 28m$

Maths

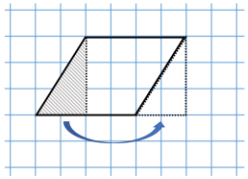
Perimeter and area

Parallelograms

The **height** h of a parallelogram is the distance between the base and its parallel side.



$$A_{\parallel} = bh$$



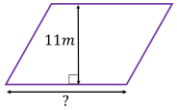
$b = 4\ units$

$h = 3\ units$

$A = bh =$

$= 4 \times 3 =$

$= 12 units^2$



$A = 55m^2$

$h = 11m$

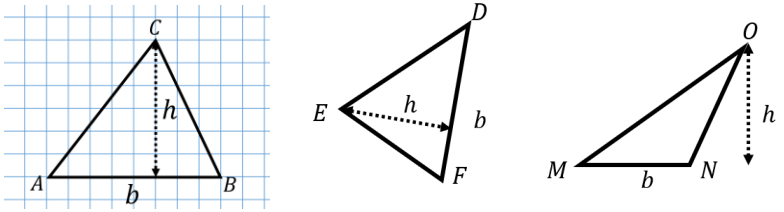
$A = bh$

$55 = b \times 11$

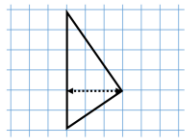
$b = \frac{55}{11} = 5m$

Triangles

The **height** h of a triangle is the distance between the base (any of the three sides) and its opposite vertex.



$$A_{\triangle} = \frac{bh}{2}$$



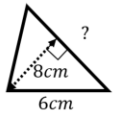
$b = 6$ units

$h = 3$ units

$A = \frac{bh}{2} =$

$= \frac{6 \times 3}{2} =$

$= \frac{18}{2} = 9$ units^2



$A = 20$ units^2

$b = ?$

$h = 8$ units

$2A = bh$

$2 \times 20 = b \times 8$

$40 = b \times 8$

$b = \frac{40}{8} = 5$ units

BROADOAK ACADEMY

Maths

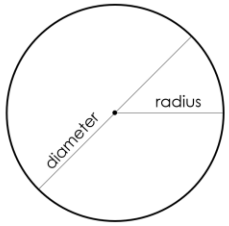
Circles

Circles

A circle is the shape closed by a curved line called **circumference**, whose points are **at the same distance** from the centre.

The **radius** is the distance from the centre to the circumference.

The **diameter** is the distance from one point on the circumference to another, passing through the centre.



$d = 2r$

π

Reads "pi".

It is an *irrational* number related to circles.

NOT terminating NOR recurring

$\pi \sim 3.1415$

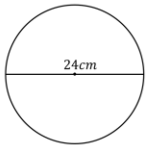
Circumference and area of a circle

The **perimeter** of a circle is the length of the **circumference**.

To construct the circumference, C, it takes π lots of the diameter.

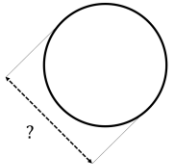
$$C = \pi d$$

Calculate the circumference. **Truncate** your answer to 3d.p.



$d = 24cm$

$C = \pi d =$
$= \pi \times 24 =$
$= 24\pi =$
$= 75.39822369 \ldots cm$
$= 75.398cm$



$C = 47.1239m$

$C = \pi d$

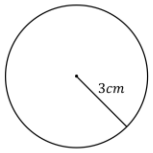
$47.1239 = \pi \times d$

$d = \frac{47.1239}{\pi} = 15m$

The **area** of a circle is equal to π lots of the radius squared:

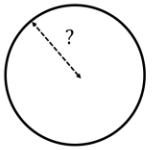
$$A_{\bigcirc} = \pi r^2$$

Calculate the area. **Truncate** your answer to 2d.p.



$r = 3cm$

$A = \pi r^2 =$
$= \pi \times 3^2 =$
$= 9\pi =$
$= 28.27433388 \ldots cm$
$= 28.27cm^2$



$A_{\bigcirc} = 201.0619cm^2$

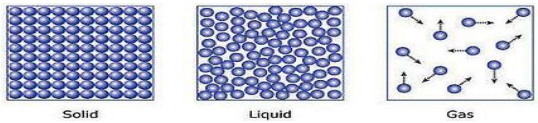
$A_{\bigcirc} = \pi r^2$

$201.0619 = \pi \times r^2$

$r^2 = \frac{201.0619}{\pi} = 64 \qquad r = 8cm$

1. Particle Theory

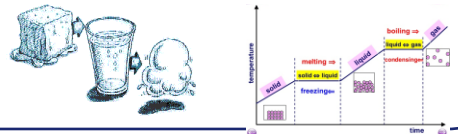
All matter is made up of particles.



- Solids - arranged in a regular pattern and can only vibrate in a fixed position.
- Liquids - arranged randomly but are still touching each other, can move.
- Gases, particles are far apart and are arranged randomly.

2. Physical Changes

In a physical change, the matter's physical appearance is changed, but no chemical bonds are broken or formed. For example, when water is heated from liquid water to gaseous steam, only the appearance of water is changed – both steam and liquid water have the chemical formula H_2O.



3. Chemical Changes

- Chemical reactions create **new** substances.
- Chemical reactions can also be used to **transfer energy** by burning fuels.
- In a chemical reaction the atoms **rearrange** themselves and then **join back together** in a different way.

4. Conservation of Mass

The Law of Conservation of Mass states that mass cannot be created or destroyed.
Therefore, mass stays the same before and after a change of state. For example, 10g of ice melts into 10g of water and 10g of water evaporates into 10g of water vapour. The same applies to other substances.

5. Conservation of mass in chemical change

No **atoms** are created or destroyed in a chemical reaction. Instead, they just join together in a different way than they were before the reaction, and form **products**. This means that the total **mass** of the products in a chemical reaction will be the same as the total mass of the **reactants**.

KS3 Science

Physical and Chemical Change

BROADOAK ACADEMY

6. Diffusion

Diffusion is the movement of particles from a higher concentration to a lower concentration.

Diffusion will stop when particles spread themselves evenly. Diffusion occurs in liquids and gases but not in solids, because particles in a solid are not free to move.

7. Factors affecting Diffusion

There are 2 factors affecting the rate of diffusion:

- Temperature: When temperature increases, particles gain more energy. They can then move and spread out at a higher rate.
- Concentration: When concentration increases, the rate of diffusion increases because there is a steeper concentration gradient.

8. Brownian Motion

Particles in fluids (liquids and gases) move randomly. This is called Brownian motion. They do this because they are bombarded by the other moving particles in the fluid. Larger particles can be moved by light, fast-moving molecules.
Brownian motion is named after the **botanist Robert Brown**, who first observed this in 1827. He used a microscope to look at pollen grains moving randomly in water. At this point, he could not explain why this occurred.

KS3 Science
Acids & Alkalis

BROADOAK ACADEMY

1. Safety


Irritant


Corrosive

- When handling acids and alkalis in the lab we need to take safety precautions, for example wearing goggles.
- Concentrated Acid is corrosive, and will destroy skin cells.
- Dilute acids have lots of water added, they are an irritant and cause redness or blistering of the skin.

2. Acids (pH 1-6)

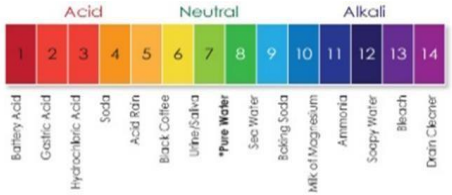
- **Acids** are a family of chemicals, examples are lemon juice, vinegar and Coca Cola. There is also acid in our stomach.
- Acids contain Hydrogen (H^+) ions.
- **Strong acids** like hydrochloric acid are very corrosive this means they destroy skin cells and cause burns.
- **Weak acids** like vinegar are safe to eat but are still irritant to sensitive parts of the body.

3. Alkalis (pH 8-14)

- Alkalis, are a family of chemicals that have a soapy feel, they are also corrosive, examples of these are toothpaste, soap and oven cleaner.
- Alkalis contain Hydroxide (OH^-) ions.
- Alkalis are bases that dissolve in water. Therefore not all bases are alkalis.

4. pH Scale

- The pH scale measures the strength of acids and alkalis, it runs from 0-14
- neutral solutions are pH 7 exactly
- acidic solutions have pH values less than 7
- alkaline solutions have pH values more than 7
- the closer to pH 0 you go, the more strongly acidic a solution is
- the closer to pH 14 you go, the more strongly alkaline a solution is



5. pH Indicators

- **Indicators** are chemicals that show whether a substance is an **acid or an alkali**
- There are many different indicators, for example **litmus paper and universal indicator**
- There are also natural indicators such as **red cabbage**


Litmus Paper

Litmus Paper turns Red when dipped in an Acidic Solution

Litmus Paper turns Blue when dipped in an Alkaline Solution

6. Neutralisation

- A chemical reaction happens if you mix together an acid and a base. The reaction is called **neutralisation**. A neutral solution is made if you add just the right amount of acid and base together.
- Neutralisation reactions form **salts** the name of the salt depends on the name of the acid, and the metal in the base
- Hydrochloric acid makes **"chlorides"**, Nitric acid make **"nitrates"**, Sulphuric acid makes **"sulphates"**

General equations for neutralisation reactions:

Acid + Metal Hydroxide → Salt + Water

Acid + Metal Oxide → Salt + Water

Acid + Metal Carbonate → Salt + Water + Carbon dioxide

Farmers use lime (calcium oxide) to neutralise acid soils.

Your stomach contains hydrochloric acid, too much of this causes indigestion. Antacid tablets contain bases to neutralise the extra acid.

Wasp stings are alkaline, they can be neutralised using vinegar.

KS3 Science

Electricity and Circuits

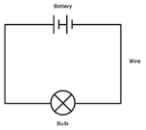
BROADOAK ACADEMY

1. Electric current

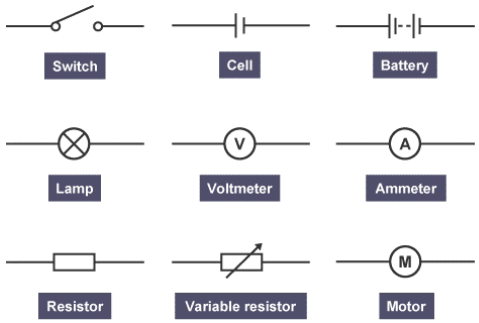
An **electric current** is a flow of charge, and in a wire this will be a flow of electrons. We need two things for an electric current to flow:

- something to transfer energy to the electrons, such as a battery or power pack
- a complete path for the electrons to flow

To do something useful with the electric current, you need to put an electrical component into the circuit (such as a lamp), that can use the current in a useful way

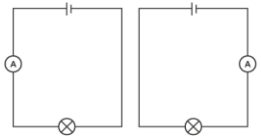


2. Circuit symbols



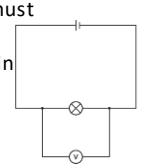
3. Current

Current is a measure of how much electric charge flows through a circuit. The more charge that flows, the bigger the current.
Current is measured in amperes (amps), the symbol is A.
To measure the current flowing through a component in a circuit, you must connect the ammeter **in series** with it.
Current is not used up in a circuit



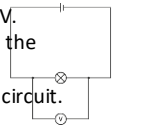
4. Potential difference

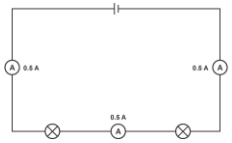
Potential difference is a measure of the difference in energy between two parts of a circuit. The bigger the difference in energy, the bigger the potential difference.
Potential difference is measured in **volts**, the symbol is V.
Potential difference is measured using a device called a **voltmeter**, unlike an ammeter, you must connect the voltmeter **in parallel** to measure the potential difference across a component in a circuit.



5. Series circuits

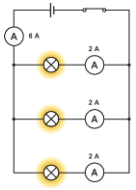
A series circuit contains components connected one after the other, like the episodes of a series on TV.
In series circuits, if one component fails, all the components stop working.
Current is the same everywhere in a series circuit.
Current is shared between the Components in a series circuit.
Series circuits use less wire than parallel circuits.





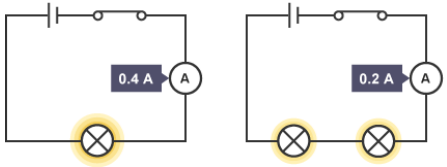
6. Parallel Circuits

Components in parallel circuits are connected on different branches of the circuit.
If one component connected in parallel fails, the other components are not affected.
Current is shared between the components in a parallel circuit.
Parallel circuits are useful if you want to switch components on and off independently, our homes are wired this way.



7. Resistance

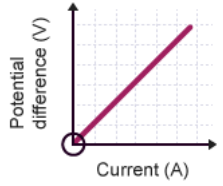
The wires and the other components in a circuit reduces the flow of charge through them. This is called resistance.
The unit of **resistance** is the **ohm**, and it has the symbol Ω
Resistance increases if you add more components to a circuit.



8. Calculating resistance

The equation for calculating resistance is:
Resistance = current x potential difference

If you plot a graph of current against potential difference for a wire, you get a straight line.



1. Magnetic Materials

Most materials are not **magnetic**, but some are. A magnetic material can be magnetised or will be attracted to a magnet. These metals are magnetic:

- Iron
- Cobalt
- nickel

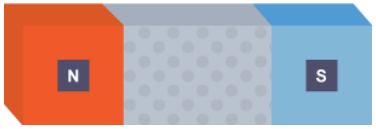
Steel is mostly iron, so steel is magnetic too.

26	27	28
Fe	Co	Ni
Iron	Colbalt	Nickel

2. Permanent magnets

A bar magnet is a **permanent magnet**. This means that its magnetism is there all the time and cannot be turned on or off. A bar magnet has two magnetic poles:

- **north pole** (or north-seeking pole)
- **south pole** (or south-seeking pole)



3. Attract or repel?

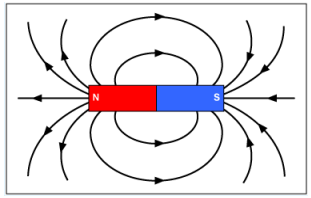
Magnets have two poles, a North pole (N) and a South pole (S).

- **opposite poles attract** (N and S)
- **like poles repel** (N and N, OR S and S)

How can you test if a piece of metal is actually a magnet? Seeing if it sticks to a magnet is not a good test, because unmagnetised iron, steel, cobalt and nickel objects will also do this. So you can only show that an object is a magnet if it **repels a known magnet**.

4. Magnetic fields

A magnet creates a **magnetic field** around it. You cannot see a magnetic field, but you can observe its effects. A force is exerted on a magnetic material brought into a magnetic field. The force is a **non-contact force** because the magnet and the material do not have to touch each other.



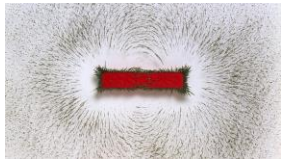
KS3 Science
Magnetism

BROADOAK ACADEMY

5. More Magnetic Fields

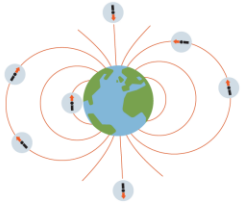
Although we cannot see magnetic fields, we can detect them using iron filings and plot them with a plotting compass

- field lines point from north to south pole
- field lines are more concentrated at the poles.
- The magnetic field is strongest at the poles, where the field lines are most concentrated.



6. The Earth's Magnetic Field

The Earth behaves as if it contains a giant magnet. It produces a magnetic field in which the field lines are most concentrated at the poles. This magnetic field can be detected using magnetic materials or magnets.



7. Navigating with a compass

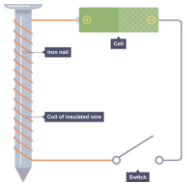
A compass comprises:

- a magnetic needle mounted on a pivot (so it can turn freely)
- a dial to show the direction

The north pole (north-seeking pole) of the compass needle points towards the Earth's north pole. If the needle points to the N on the dial, you know that the compass is pointing north. This lets you navigate outdoors using a map.

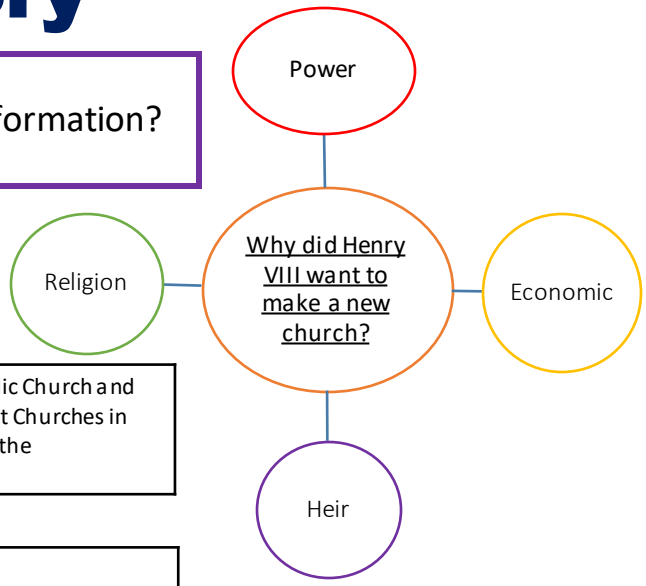
8. Electromagnets – extra content

When an electric current flows in a wire, it creates a magnetic field around the wire. This effect can be used to make an **electromagnet**. A simple electromagnet comprises a length of wire turned into a coil and connected to a battery or power supply.



BROADOAK ACADEMY History

Enquiry: What changed in the Reformation?



Summary

1	**The reformation**	Attempts to reform the Catholic Church and the development of Protestant Churches in western Europe are known as the Reformation.

Key Events

2	**1509 –** Henry VIII becomes King of England
3	**1517** - **Martin Luther** nailed 95 problems with the Catholic church to a church doors parking the **Protestant Reformation**.
4	**25th January 1533** – Henry VIII secretly married Anne Boleyn.
5	**23 May 1533** – Henry VIII marriage to Catherine of Aragon was annulled, they were divorced.
6	**1536-1540** – The closure of English Monasteries by Henry VIII.

Key People

7	**Martin Luther**	A German monk that thought that the Catholic Church had too much power and was corrupt he set up the new Protestant church.
8	**Pope Clement II**	The head of the Catholic Church that refused to give Henry VIII a divorce.
9	**Henry VIII**	King of England from 1509-1547. Head of the Church of England.
10	**Thomas Cromwell**	Henry VIII put him in charge of getting rid of the monasteries.

PEE Paragraphs

To write a paragraph you explain your points in history we use PEE.

Point: Make your point to answer the question.
One reason Henry VIII made a new church was because he needed money.
Evidence: Give facts that support your point.
He didn't have any money because…
Explain: Give reasons why this evidence backs up your point.
By making a new church Henry VIII knew he would be able to gain money as…

Key Terms

11	heir	Next in line to the throne.
12	Roman Catholic	The Christian church of which the Pope, or bishop of Rome, is the supreme head.
13	Protestant	Someone who follows the principle of Christianity using beliefs developed from the Reformation.
14	Break with Rome	Henry VIII decided to do this when the Pope would not authorise his divorce from Catherine of Aragon. He decided to break away from the Catholic Church and become head of the Church of England.
15	Dissolution of the Monasteries	The monasteries that were run by the Catholic Church and were homes for Monks and Nuns were closed down. They also provided hospital care and charity to the local people.

Six Wives of Henry VIII

BROADOAK ACADEMY **History**

How should we remember African Kingdoms?

Timeline of The Mali Empire:

1200

1200s: Rise of the Mali Empire under Sunjata Keita (c. 1230), who defeats Sumanguru Kante of the Sosso

C. 1310s, the 9th Mansa of Mali, Abu Baqr II, may have equipped an expedition to the Americas

1324-5: Mansa Musa of Mali goes on pilgrimage to Mecca

1325: Work begins on the mosque of Djinguereber built at Timbuktu, in which an architect from Al-Andalus (Es-Sahili) was involved

1336: Timbuktu accepts Mali's rule

Early 1400s: Songhay begins to break away from Mali

1433-4: Mali loses control of Timbuktu to the Tuareg

1464-92: Sonni Ali's reign, Ruler of Songhay

1468: Songhay takes Timbuktu from Mali

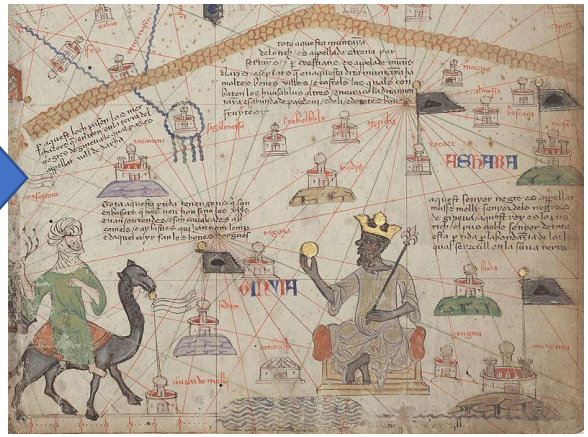
1472: Songhay takes Djenné from Mali

1493: Askia Mohammed takes power of Songhay and inaugurates the Askia title of Songhay

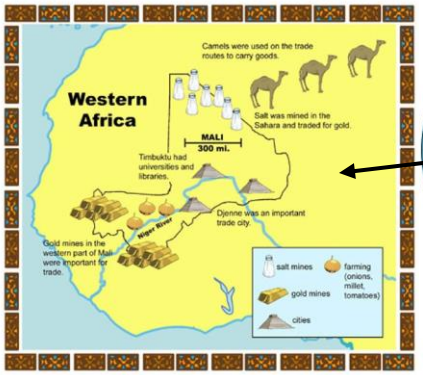
1591: Songhay overthrown by an army from Morocco

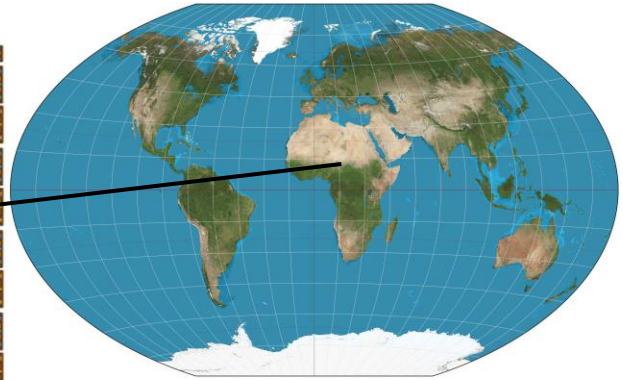
1591

Image of Mansa Musa. Described by some as the wealthiest man alive.



Mansa Musa invested time and money to transform Timbuktu into the heart of the empire and a centre of trade, culture and learning





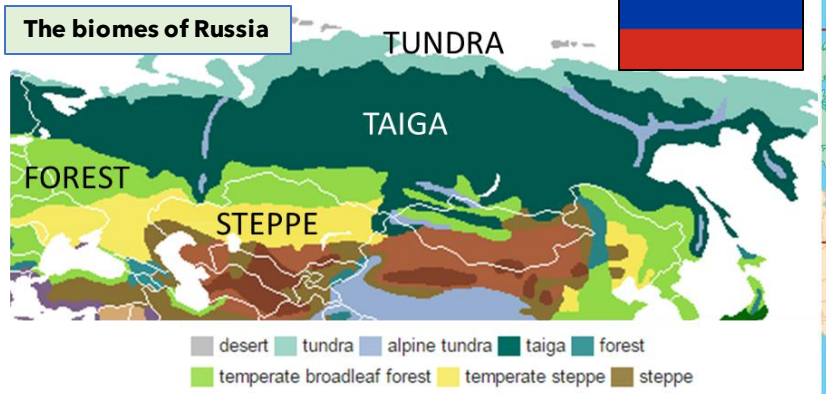
Key words	Meaning
Songhay	Songhay was a state in the same region as Mali, it came to dominate in 15th and 16th centuries.
griots	A West African historian, storyteller, praise singer, poet or musician.
Sunjata Keita	Also spelt Sundiata Keita – ruler of Mali, born c. 1217 to c.1255
Mansa Musa	Ruler of Mali born c. 1280-c.1337
pilgrimage	The Hajj to Mecca that every Muslim is supposed to make once in his or her life
Mecca	A city in Saudi Arabia, the site of Muhammad's first revelation of the Quran.
caravan	A group of people, especially traders or pilgrims, travelling together across a desert in North Africa.
pluralism	A system in which the members of minority groups with different ideas, religions and beliefs maintain their independent cultural traditions.
mandé	Large groups of peoples of West Africa.
Kora bafalon	Kora - a West African musical instrument shaped like a lute. Bafalon – a West African wooden percussion instrument (like a xylophone).
autocratic	A ruler with absolute power.
Koranic institutes	Centres of study and education focused on the study of the Koran (Quran) – the central religious text of Islam.
Inflation	An increase in the price of something – in this case, gold. Mansa Musa gave so much away that he flooded the market, which caused the price to drop.

Geography

Russia

Keyword	Definition
Arctic circle	Line of latitude at 66 degrees north of the equator
Biome	A large community of plants and animal found
Climate	The average weather conditions over a long period of time
Climate graph	A graph showing the temperature and rainfall for a location over a year
Biodiversity	The number of different plant and animal species in an area
Adaptation	How plants and animals have changed to survive in a particular environment
Permafrost	A layer of permanently frozen ground
Population distribution	The number of people on average in a given area (usually 1 square km)
Sparsely populated	Few people live there
Densely populated	Lots of people live there

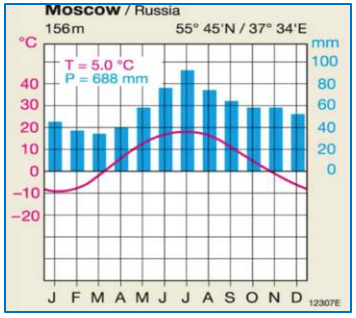
The biomes of Russia

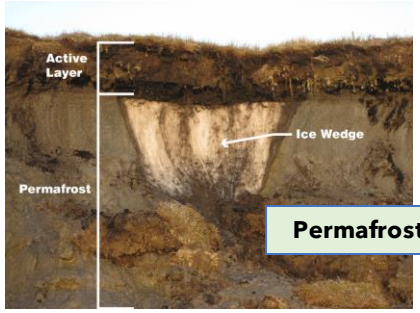


Russia's population density on a map

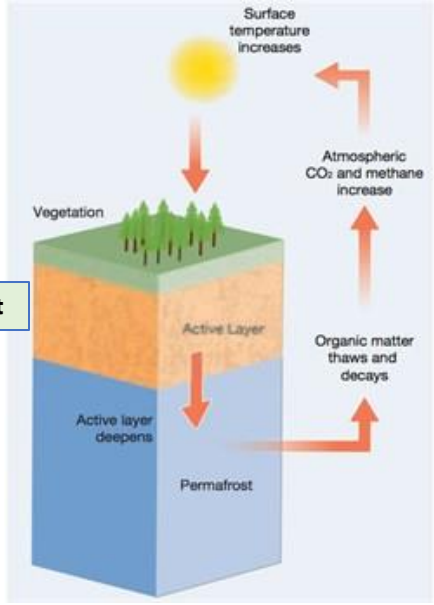
Covering 17 million square kilometres, **Russia is the largest country in the world**. It is 70 times the size of the UK and twice the size of the USA. Russia borders 14 nations and spans 11 different time zones.

Moscow's climate graph





Permafrost



Tundra biome

- Tundra comes from the Finnish 'tunturia', which means barren or treeless land.
- Trees do not grow in the tundra because the ground is permanently frozen 25-100cm down.
- Tundra is a biome where the ground stays frozen for most of the year and there is very little precipitation.
- Tundra environments are found in the Northern hemisphere surrounding the Arctic Circle – where temperatures stay below 0°C most of the year.

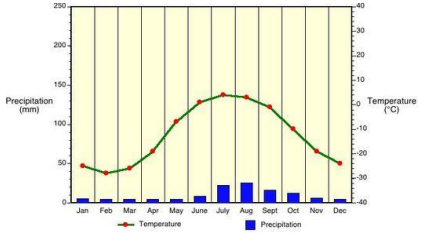
Is the Geography of Russia a benefit or a curse?

Location

- Vast country that spans 2 continents (Europe and Asia), divided by the Ural Mountains
- Arctic Ocean to the north and Pacific to the west
- 14 bordering countries, including Mongolia, Kazakhstan, Ukraine and Finland

Climate

- The climate in Russia varies as it is so large.
- We can describe the different climates using climate graphs, The X axis (bottom line) shows the months of the year. The red line shows temperature and the blue bars show rainfall.



In this climate graph of the Tundra, temperatures are very low, but fluctuate (vary) between -30°C and 0°C. Rainfall is low (below 20mm) all year round.

Biome	Description
Tundra	Freezing temperatures and permafrost (frozen ground). This means little can survive.
Temperate forest	Mild (warm) temperatures, high rainfall and trees that drop their leaves in winter. High biodiversity/
Steppe	Grasslands that have some rainfall and warm temperatures. Animals include rabbits, foxes, deer
Desert	Dry areas that have high temperatures and little life
Taiga	Coniferous forest (trees with needles), cold temperatures, low rainfall.

Adaptations to the Tundra

- Life must adapt (change to survive) to the freezing conditions, lack of rainfall and permafrost.
- Arctic moss does this by having small, waxy leaves like needles (this reduces water loss) and have shallow roots so they can avoid the permafrost.
- Reindeer adapt by having a chamber in their nose to warm each breath as they breathe in and they have a thick fur coat for warmth and protection

Biomes

- A biome is a large area that shares the same characteristics, plants and animals
- Russia has 5 biomes: Tundra, Temperate Forest, Steppe, Desert and Taiga
- These biomes are important because they provide habitats for lots of different species, including endangered ones like the Siberian Tiger.

Population

- The most dense population is in the west of Russia in the European side.
- This is because the climate is comfortable and allows crops to be grown.
- Most of the rest of Russia is sparsely populated due to its extreme landscapes and climate

Is the geography of Russia a curse or a benefit?

Benefit	Curse
Russia's diverse landscapes create many opportunities, such as varied natural resources and high biodiversity (including important endangered species)	Russia's extreme climate and landscapes make much of the country inhospitable (difficult to live there). It is also difficult to trade due to frozen oceans and lack of infrastructure in remote areas.

Religion & World Views

Dharmic Faiths

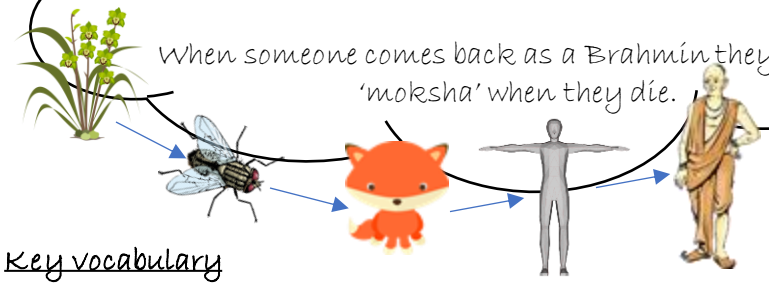


Reincarnation

People believe that after death people are born again. This is based on their actions in life.

The lowest chain of rebirth is plant life, then insect life, then animal life, then human life and finally life as a Brahmin (Hindu priest).

When someone comes back as a Brahmin they achieve 'moksha' when they die.



Brahman

One God
No gender
Appear in different forms

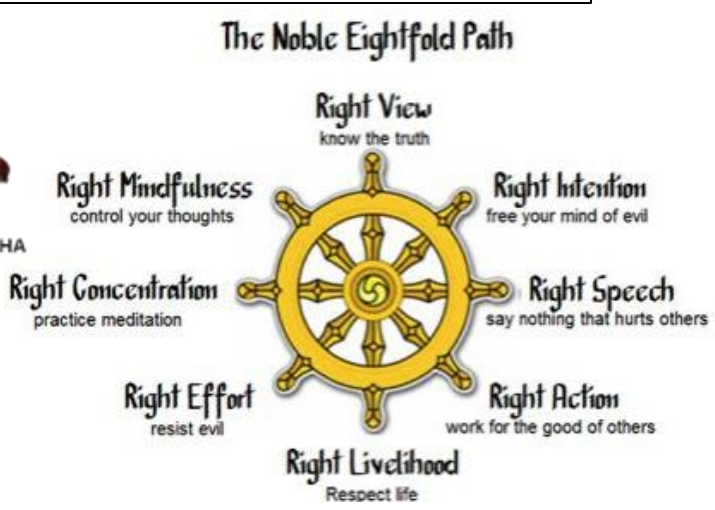
The Four Noble Truths

1. There is suffering -> 2. Suffering has a cause -> 3. Suffering can come to an end -> 4. There is a way to end suffering

Buddha teaches that we can and must overcome these in order to become enlightened and reach nirvana.

Key vocabulary

Trimurti – 3 main gods in Hinduism that together make Brahman
Moksha – being free from the cycle of birth, death and rebirth
Eternal – lasts forever
Puja – form of worship
Mandir – Hindu temple
Reincarnation – being born as something or someone else when you die
Karma – total of a person's actions that will decide their future
Murti – images of the god/goddess
Guru Granth Sahib – Sikh holy book
Khalsa – baptised Sikhs
Gurdwara – Sikh temple
Three Jewels – key Buddhist beliefs
Dharma – teachings of Buddha



BROADOAK ACADEMY **Languages**

Family and Pets Year 7 Spanish ARE 2 Knowledge Organiser

Describe yourself (appearance and personality). Family, friends (describing others), pets.

Pronouns	**Ser – to be**	**Tener – to have**
yo (I)	**soy** - I am	**tengo** - I have
tú (you)	**eres** – You are	**tienes** – you have
él (he), **ella** (she)	**es** - He is/she is	**tiene –** he/she has
Nosotros/nosotras (we)	**somos** – we are	**tenemos** – we have
Vosotros/vosotras (you) (pl)	**soís** – you are (pl)	**tenéis** - you have (pl)
ellos/ellas (they)	**son**– they are	**tienen** – they have

Comparisons

más	- more	Juán es más interesante que Pablo
menos	- less	Pablo es menos interesante que Juan
tan...como	- as...as	Pablo es tan interesante como Juan

Superlative

El/la más	– the most	Juan es el más inteligente
El/la menos	– the least	María es la menos simpática

To say "my" in Spanish we must change how we say it to match the noun (whether it is singular or plural).

My (masculine) = e.g. mi padre
My (feminine) = e.g. mi madre
My (plural) = e.g. mis padres

	Singular	Plural
my	mis	mis
your	tu	tus
his/her	su	sus

To say "I like" in Spanish we must change how we say it to match the noun (whether it is singular or plural)

For singular nouns = **me gusta** e.g. me gusta mi madre

For plural nouns = **me gusta<u>n</u>** e.g. me gustan mis padres

This is the same for the verb 'I love'

For singular nouns = **me encanta** e.g. me encanta mi abuelo

For plural nouns = **me encanta<u>n</u>** e.g. me encantan mis hermanos

BROADOAK ACADEMY Languages

7.2 People around me Spanish Vocab List

¿Qué piensas?	What do you think?
Me encanta	I love
Me gusta	I like
No me gusta	I don't like
Odio/detesto	I hate
En mi opinion	In my opinion
Pienso que	I think that
Creo que	I believe that
Según yo	According to me

¿Cómo eres?	What are you like?
Tengo /Tiene	I have… He/she has…
El pelo	hair
Largo	long
Corto	short
Liso	straight
Rizado	curly
Ondulado	wavy
Afro	afro
Rubio	blond
Castaño	light brown
Los ojos	eyes
Azules	blue
Marrones	brown
Verdes	green
Oscuros	dark
Negros	black
Grises	grey
Soy…	I am…
Él es / ella es…	He/she is…
Alto/a	tall
Bajo/a	short
Gordo/a	fat
Delgado/a	Thin

¿Cómo eres? Describete	What are you like? /Describe yourself
Soy	I am…
Amable/simpático/a	Kind
Agradable	Pleasant
Contento/a	Happy
Hablador/a	Chatty
Guapo/a	Beautiful
Divertido/a	Fun
Fuerte	Strong
Mono/a	Cute
Bonito/a	Pretty/Handsome
Joven	Young
Perfecto/a	Perfect
Rápido/a	Fast
Rico/a	Rich
Sabio/a	Wise
Tímido/a	Shy
Trabajador/a	Hard working
Triste	Sad
Viejo/a	Old
Aburrido/a	Boring
Pesado/a – molesto/a	Annoying
Serio/a	Serious
Difícil	Difficult
Estricto/a	Strict
Feo/a	Ugly
Ruidoso/a	Noisy
Maleducado/a	Rude
Horrible	Horrible/Awful
Perezoso	Lazy
Goloso/a	Greedy
Deportivo/a	Sporty
Emocionante	Exciting

Extra detail	Extra detail
Llevo	I wear
Tengo	I have
Gafas	glasses
Piercings	piercings
El hiyab	a hijab
Lentillas	contact lenses
Pecas	freckles
Una cicatriz	a scar
Una barba	a beard
Un bigote	a moustache

Cuál es tu nacionalidad?	What is your nationality?
Soy	I am…
Inglés/a	English
Francés/a	French
Belga	Belgian
Suizo/a	Swiss
Alemán/a	German
Español/a	Spanish
Somalí	Somalian
Polaco/a	Polish
Portugués/a	Portuguese
Bangladesí	Bangladeshi
Chino/a	Chinese
Italiano/a	Italian
Galés/a	Welsh
Paquistaní	Pakistani
Escocés/a	Scottish
Irlandés/a	Irish
Americano/a	American

Connectives	Connectives
Pero	But
Sin embargo	However
Tambien	Also
Además	Furthermore
Porque	Because
Y	And

Intensifiers	Intensifiers
Muy	very
Bastante	quite
Un poco	a bit
Demasiado	too
Extremadamente	extremely
Realmente	really

BROADOAK ACADEMY

Languages

7.3 AR verbs

Year 7 Spanish ARE 3 Knowledge Organiser

Cabot Learning Federation

(1) Pronouns

yo	*I*
tú	*you (singular)*
él	*he*
ella	*she*
nosotros	*we*
vosotros	*you (plural)*
ellos	*they (m or m/f)*
ellas	*they (f only)*

(2) THE RULES : Regular verbs

1. Write down the infinitive (bailar/comer/vivir)
2. Chop off the ending AR/ ER/ IR.
3. Write down what's left (the stem).
4. Add the correct ending. Use the boxes below to find the correct ending

(3) AR verbs

yo	-o
tu	-as
él/ella	-a
nosotros	-amos
vosotros	-áis
ellos/ellas	-an

(4) ER verbs

yo	-o
tu	-es
él/ella	-e
nosotros	-emos
vosotros	-éis
ellos/ellas	-en

(5) IR verbs

yo	-o
tu	-es
él/ella	-e
nosotros	-imos
vosotros	-ís
ellos/ellas	-en

(6) Time Expressions

Los fines de semana	*On the weekend*
Los lunes/martes…	On Monday/Tuesday
Después del colegio	*After school*
Durante el recreo	*At break*
Durante la semana	*During the week*
Normalmente	*Normally*
A veces	*Sometimes*
Raramente	*Rarely*
Nunca	*never*
Todos los días	*everyday*
Siempre	*always*

(7) Irregular verbs

tengo	*I have*
soy	*I am*
estoy	*I am (location)*
voy	*I go/am going*
hago	*I do/make*
salgo	*I go out*
juego	*I play*
quiero	*I want*
pienso	*I think*
prefiero	*I prefer*

(8) Regular AR verbs

Andar	*to walk*
Ayudar	*to help*
Bailar	*to dance*
Buscar	*to look for*
Charlar	*to chat*
Caminar	*to walk*
Cantar	*to sing*
Comprar	*to buy*
Descargar	*to download*
Dibujar	*to draw*
Enseñar	*to teach*
Escuchar	*to listen*
Estudiar	*to study*
Esperar	*to wait/hope for*
Ganar	*to win/earn*
Hablar	*to speak*
Llegar	*to arrive*
Llevar	*to carry/wear*
Nadar	*to swim*
Necesitar	*to need*
Practicar	to practice
Sacar	*to take (photos)*
Tocar	*to play (instrument)*
Trabajar	*to work*
Usar	*to use*
Viajar	*to travel*
Visitar	*to visit*

(9) ER verbs

Aprender	*to learn*
Comer	*to eat*
Beber	*to drink*
Comprender	*to understand*
Responder	*to respond*
Vender	*to sell*
Creer	*to believe*
Leer	*to read*
Correr	*to run*
Pretender	*to pretend*

(10) IR verbs

Escribir	*to write*
Recibir	*to receive*
Describir	*to describe*
Descubrir	*to discover*
Abrir	*to open*
Permitir	*to allow*
Vivir	*to live*
Consumir	*to consume*
Discutir	*to discuss*
Compartir	*to share*

(11) Key Phrases

¿Qué haces?
What do you do/are you doing?

¿Qué haces en tu tiempo libre?
What do you do in your free time?

es / no es	*It's / It's not*
muy	*very*
bastante	*quite*
un poco	*a (little) bit*

¡Está chupado! It's a piece of cake/easy!

No es mi tema	*It's not my thing*
No es de mi interés	*It's not my thing*

BROADOAK ACADEMY

DT

Resistant Materials

Year 7 D&T – Gumball Machine Project

Analyse the above Gumball Machines using ACCESS FM.

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

A is for **Aesthetics**

C is for **Cost**

C is for **Customer**

E is for **Environment**

S is for **Size**

S is for **Safety**

F is for **Function**

M is for **Material**

Aesthetics means **what does the product look like?**
What is the: *Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?*

Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

Environment means **will the product affect the environment?**
Is the product: Recyclable? Reusable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Refurb / Reduce / Refuse

Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

Target Market

A **target market** is the market segment (group of potential customers) which a particular product or service is marketed (advertised) to.

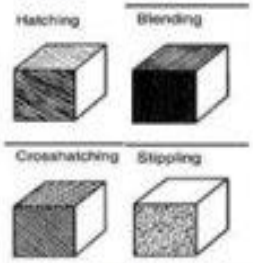
It's better to use materials from renewable resources — ones that are replaced naturally as fast as we use them up. For example, pine from well-managed plantations is quite a sustainable choice. (But if the timber has to be transported a long way that'll probably use up a lot of fossil fuels.) Natural fibres used for textiles (e.g. cotton) are all renewable.

Using recycled materials means that fewer new resources are needed, and often less energy is used. For example, recycling old food cans takes much less energy than mining and processing new metal.

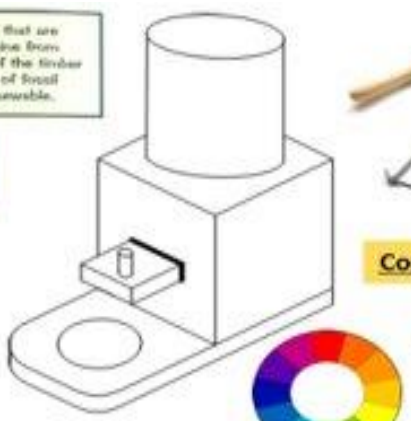
1 km = 1000 m

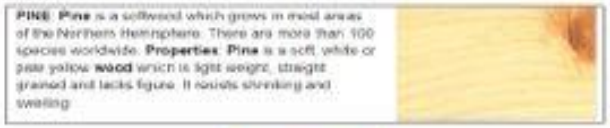
1 m = 100 cm

1 cm = 10 mm



ACCESS FM - Helpshee





PINE: Pine is a softwood which grows in most areas of the Northern Hemisphere. There are more than 100 species worldwide. **Properties: Pine** is a soft, white or pale yellow **wood** which is light weight, straight grained and lacks figure. It resists shrinking and swelling

Evaluation

Designers evaluate their finished products or prototypes in order to test whether they work well and if the design can be corrected or improved. Whatever you have designed it is important to evaluate your work constantly during the project.
Evaluation can take a variety of forms:

- General discussion with other pupils, staff and others.
- Questionnaires / surveys carried out at any time during the project.
- Your personal views, what you think of existing designs.
- Most important of all - what do you think of your designs, prototypes and finished products ?
- Can you think of any other ways of evaluating your work ?

Remember to always suggest improvements when evaluating!

Testing

Testing a prototype / developed design is a very important part of the design and manufacturing process. Testing and evaluation, simply confirms that the product will work as it is supposed to, or if it needs refinement.

In general, testing a prototype allows the designer and client to assess the viability of a design. Will it be successful as a commercial product? Testing also helps identify potential faults, which in turn allows the designer to make improvements.

File

Coping Saw

Tri-Square

Tenon Saw

Bench Hook

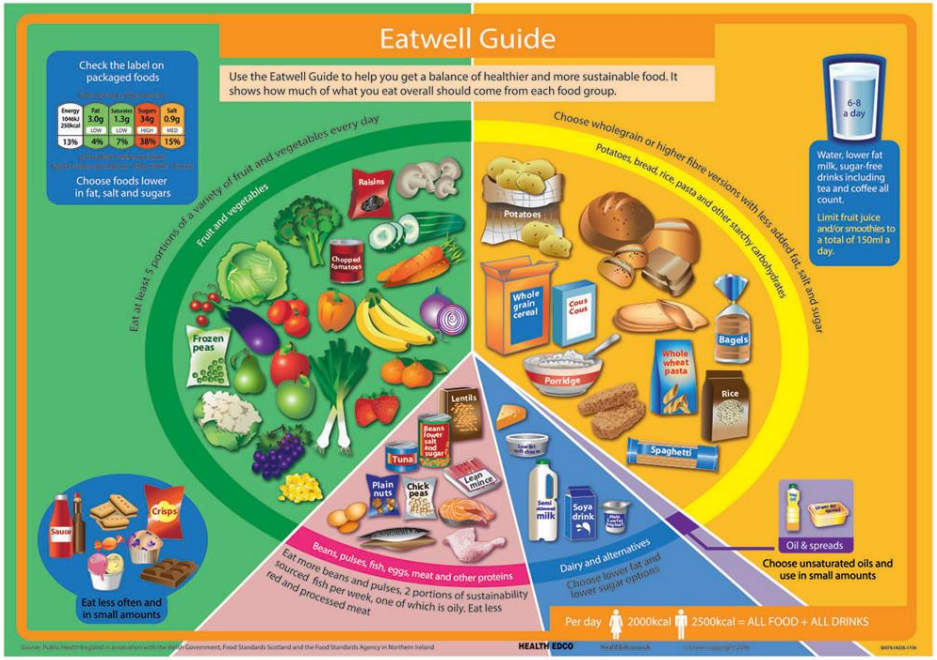
Pillar Drill

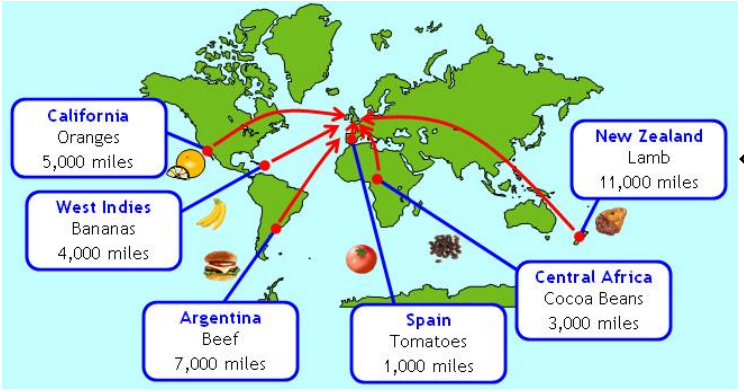
Vertical Sander

BROADOAK ACADEMY

DT

Food Tech





Food Miles

All food makes a journey from where it is grown or produced to your plate.

How far food has travelled is known as its food miles.

We should be aiming for as few miles as possible. Choosing foods with fewer food miles helps reduce pollution and protect our Planet.

We can reduce food miles by eating food that is in season, and buying food that is produced locally.

Cooking Processes

Radiation
Heat from an oven or grill.

Denaturation
When the protein in cheese unravels (melting).

Gelatinisation
When starch granules swell.

Mis-en-place
A French word to describe preparing Ingredients and getting everything ready for cooking.

Convection
The scientific process that occurs when liquids boil in a pan.

Stock
The juice from cooked meats, fish, and vegetables.

Enzymic Browning
A reaction that occurs in some fruit and vegetables when left to react with air.

Gluten
The protein particles contained in flour.

Shortening
Rubbing flour and fat together to make a crumbly mixture.

Dextrinisation
A chemical process that turns food brown/black when cooking.

BROADOAK ACADEMY

DT

Food Tech

Health and Safety

Carry knives pointing down.

Wash up with hot water and washing liquid.

Clean surfaces and equipment to kill bacteria.

Wash hands with soap after touching raw meat.

Wipe up spills straight away to avoid slips.

Chopping board colour coding

- Red - Raw meat
- Blue - Raw fish
- Yellow - Cooked meat
- Green - Salad and fruit
- Brown - Vegetables
- White - Bakery and dairy

Knife Skills

- Always carry knives pointing downwards
- Always pass knives by the handle
- Never run or fight with knives
- Keep the knife blade away from your fingers when cutting
- Never cut towards yourself
- Never leave a knife in the sink
- Never try and catch a knife if it falls

When using a knife there are TWO techniques we can use to ensure knife safety when cutting ingredients.

Claw grip

Arch grip

Bacteria

Bacteria are a micro-organisms that multiply in certain conditions.

Where can bacteria be found?
Everywhere!

Are all bacteria bad?
No some are good and essential for normal bodily function.

How can you reduce the risk of bacteria?

- Storing food separately
- Storing and cooking foods at the correct temperatures

The 4 C's

- Cleaning - wash your hands properly.
- Cooking - make sure you cook food properly or you could make someone very ill.
- Chilling - keep it chilly silly.
- Cross contamination - keep raw meat and cooked food apart.