WOOTTON PARK

FOUNDATION FOR GROWTH

'Ipsum quod faciendum est diutius'

Year 9 Knowledge Maps
Term 5 & 6

Your Name	
Your Email Address	

Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision - Writing

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English Language Paper 1 Section B
Descriptive and Narrative Writing

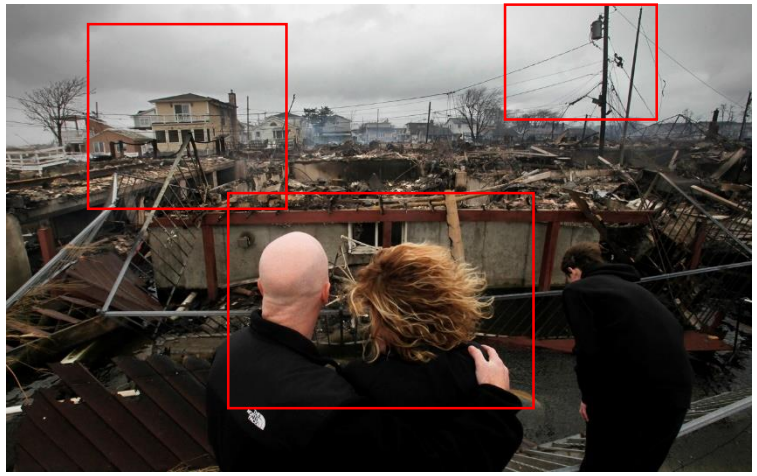
The key to great descriptive and narrative writing is PLANNING! You can use some of these tips to help you plan a great creative response.

1) Structuring a Story

Most fictional (and non-fictional) stories follow a recognisable pattern. One pattern that is familiar to readers is the five-stage story arc. This structure is also used in films and television shows.
A five-stage story arc takes the reader through the following stages:
exposition - an opening that hooks the reader and sets the scene
rising action - builds tension
climax, or turning point - the most dramatic part of the story
falling action - realises the effects of the climax
resolution - the story is concluded
Think back to the last book you read - where were the five points to the story?

2. Box Planning

When exploring the image in the question, you could use box planning to help focus your descriptions or narratives on different elements or focus areas



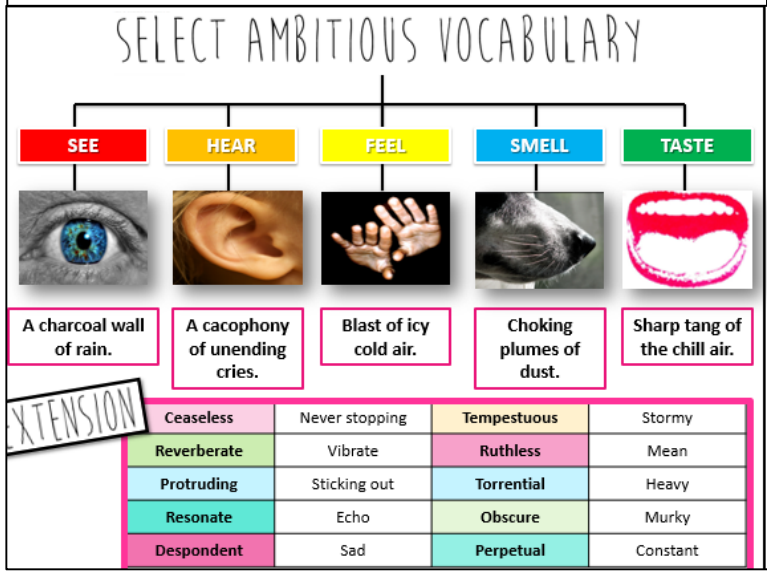
3) Selecting your Vocabulary Carefully

Linguistic Devices:

Metaphor
Simile
Personification
Allusion
Figurative language
Imagery
Sensory detail
Alliteration
Sibilance
Assonance

Structural Devices:

Simple/complex sentences
Foreshadowing
Flashback
Temporal shifts
Macro/Micro focus
Paragraphing for effect



Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision - Writing

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English Language Paper 2 Section B
Discursive Writing

The key to great discursive writing is PLANNING! You can use some of these tips to help you plan a great response.

Introduction to writing non-fiction

Texts that deal with facts, opinions and the real world are usually described as non-fiction. Different text types, or forms of non-fiction have particular **conventions**. These are the typical or expected features of a form and include structure, language and tone. For example, a newspaper article usually has a headline, uses formal language and takes a serious tone. A political speech usually addresses the audience directly, includes persuasive language and often has a rousing tone.

With all writing tasks it is important to consider:

- the conventions of the form
- your intended audience (reader)
- the purpose of your writing

Example Question

Trump has stated that he believes a fifth of teachers should carry weapons and be trained in marksmanship to combat school shootings.

Write a letter to Donald Trump, **arguing your point of view on this statement.**

Success Criteria

- Persuasive techniques
- Interesting structural features
- Matched to the TAP
- Engaging vocabulary
- Engaging writing
- Discourse markers
- Language techniques
- Personality comes through
- Paragraphs

- Sentence starters
- A **range** of punctuation
- Paragraphs
- Variety of sentence types/lengths
- Standard English
- Accurate spelling
- Sophisticated vocabulary

LANGUAGE EXAMPLES	STRUCTURE EXAMPLES
Word classes (verbs, adverbs, adjectives, nouns, pronouns)	**Juxtaposition/ Contrasts**
Imagery (olfactory, gustatory, auditory, visual, tactile, kinaesthetic, colour, nature)	**Tension**
Metaphor	**Narrative Voice**
Simile	**Suspense**
Personification	**Punctuation**
Alliteration	**Paragraphing**
Tense (past, present, future)	**Sentence Types (simple, compound, complex)**
Irony	**Sentence Functions (declarative, interrogative, imperative, exclamative)**
Hyperbole	**Lists**
Dialogue	**Sentence Lengths**
Statistics/Facts	**Semantic Fields**
Emotive Language	**Repetition**
Triplets	**Cliff-hanger**
Anecdotes	**Cyclical structure**
Rhetorical Questions	**Expert Opinions**
Puns	

Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision – Dr Jekyll and Mr Hyde

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'uod faciendum est diutius durant'

Spellings / Vocabulary			Grammar	
Word	**Definition**	**Example**	**Type**	**Example**
Jekyll	A doctor and experimental scientist who is both wealthy and respectable.	Dr Jekyll made a potion to turn into Mr Hyde.	Adjective and Adjectival phrase	Dr Jekyll was a **tall** man. Mr Hyde was an **extraordinary looking** man.
Hyde	A small, violent and unpleasant-looking man; an unrepentant criminal.	Mr Hyde calmly trampled a young girl.	Adverb and Adverbial phrase	Mr Utterson ran **quickly** down the street. Mr Hyde performed the tasks **without care**.
Lanyon	A conventional and respectable doctor and former friend of Jekyll.	Dr Lanyon died of shock from what he had seen.	Dynamic Verb	The girl **sobbed** after Mr Hyde crushed her.
Utterson	A calm and rational lawyer and friend of Jekyll.	Mr Utterson is determined to find out who Mr Hyde really is.	Noun	**Dr Lanyon** lived in a beautiful **house** in the middle of **London.**
Poole	Jekyll's manservant.	Poole rushed to Mr Utterson for help.	Noun Phrase	Dr Jekyll lived in **a grand, old house** in London.
Enfield	A cousin of Utterson and well-known man about town	Mr Utterson was determined to find out the truth.	Preposition	Dr Jekyll carried a cane **in** his right hand.
Carew	A distinguished gentleman who is beaten to death by Hyde.	Danvers Carew was brutally murdered by Mr Hyde.	Pronoun	**She** fainted from the shock.
Duality	Composed or consisting or two different ideas.	Dr Jekyll believed in the duality of man.	Compound sentence	Mr Hyde knocked a girl over **and** trampled her.
Victorian	A person who lived during the Victorian era, when Queen Victoria was on the throne (1937-1901).	Dr Lanyon and Mr Utterson were typical Victorian gentlemen.	Complex sentence	Mr Jekyll works in London, **where he lives.**
Narrative	A story or account of events or experiences- whether fact or fiction.	The narrative is told from the perspective of Mr Utterson, Dr Lanyon and Dr Jekyll.	Minor sentence	Savage.
			Simple sentence	Mr Jekyll made a potion.
Reputation	A widespread belief that someone or something has a particular character acts in a certain way.	Dr Jekyll turned into Mr Hyde to keep his reputation in society.	1st, 2nd and 3rd person	**I** watched Mr Hyde kill Danvers Carew. **You** watched Mr Hyde kill Danvers Carew. **He** watched Mr Hyde kill Danvers Carew.
Traditional	A long established or inherited way of thinking or acting.	Dr Lanyon behaves like a tradition gentleman in society.	Future tense	It **will rain** tomorrow in London.
Secrecy	The act of keeping something secret.	Dr Jekyll's experiments were conducted in secrecy.	Present tense	It **is raining** today in London.
Rational	Based on or in accordance to reason or logic.	Mr Utterson tries to think rationally to come to a logical conclusion.	Past tense	It **rained** yesterday in London.
Deformity	Change of the natural form or shape of something.	Mr Hyde gave the impression of deformity.	**Learn these. Test yourself using the quizzing method.**	

Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision – Dr Jekyll and Mr Hyde

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Key Context	How it is shown in the plot
About RLS and how it's reflected in the novel RLS was born and raised in Edinburgh, giving him the dual identity of being both Scottish and British. Edinburgh was a city of two sides - he was raised in the wealthy New Town area, but spent his youth exploring the darker, more sinister side of town.	▪ Descriptions of London are based on Edinburgh. ▪ London is describe with areas of wealth and poverty.
Victorian London The population of 1 million in 1800 to 6.7 million in 1900, with a huge numbers migrating from Europe. It became the biggest city in the world and a global capital for politics, finance and trade. The city grew wealthy. As London grew wealthy, poverty in the city also grew. The overcrowded city became rife with crime. Gothic and detective literature became more relevant. There were extreme areas of poor and rich within the city.	▪ Jekyll lives in an affluent area of London, whereas Hyde lives in Soho (poor area). ▪ When Mr Hyde is in the novel it is usually night time. ▪ A high crime rate is shown when Hyde brutally kills Danvers Carew.
Reputation and duality Victorian Gentleman had to behave and act in a certain way in public, in order to keep their reputation. They were expected to behave in a certain way and meant to only visit reputable establishments.	▪ Jekyll creates the persona of Hyde in order to do what he wants in society. This means that he keeps his reputation. ▪ Jekyll is the good side, where Hyde is the evil side of his personality.
What it means to be a traditional Victorian Gentleman. Victorian Gentleman were meant show sexual restraint, low tolerance of crime, religious morality and a strict social code of conduct.	▪ Utterson and Lanyon are typical Victorian Gentlemen. ▪ Jekyll does not behave like a Victorian gentleman at all times. This is because he is able to do immoral and criminal acts as Hyde.
Religion vs. science Religious people believed that you should not go against God and what he created but then scientists such as Dr Jekyll manipulated DNA. The implications of ***Darwinism and evolution*** haunted Victorian society. The idea that humans evolved from apes and amphibians led to worries about our lineage and about humanity's reversion to these primitive states.	▪ Lanyon and Jekyll are no longer friends, as Lanyon does not agree with Jekyll's scientific experiments. Lanyon calls Jekyll's work "scientific balderdash". ▪ Mr Hyde behaves like an animal. He is described as one too- "ape like fury". Ultimately, he cannot be controlled.

Punctuation

Type	Example
Full stops	Mr Hyde is a brutal murderer.
Question mark	How do you know Mr Hyde?
Exclamation mark	It is an outrage!
Ellipsis	We had not seen the last of Mr Hyde…
Capital letters	**Mr Utterson** went to **Soho** to find **Mr Hyde**.

Terminology	Definition	Example
Narrative Perspective	Who is narrating the plot or events of a story.	The last chapter in the book is told from the narrative perspective of Dr Jekyll.
Simile	Comparing one thing to another using 'like' or 'as'.	Dr Lanyon was as white as a ghost.
Antithesis	The direct opposite of something.	Mr Hyde is the antithesis of Dr Jekyll
Sibilance	Repetition of ''s' or 'sh' sounds.	A shark sliced through the water, charging towards the shore.
Motif	A narrative element with symbolic meaning that repeats throughout a work of literature. Motifs may come in the form of reoccurring imagery, language, structure, or contrasts.	The motif of violence is repeated throughout the novel.
Imagery	Consists of descriptive language that can function as a way for the reader to better imagine the world of the piece. Imagery draws on the senses: taste, touch, sight, smell, sound.	He could hear the footsteps of doom nearing.
Pathetic fallacy	Using the elements of weather to predict events or show emotion.	A thick layer of fog descended over London.
Oxymoron	A phrase that appears to contradict itself. Usually containing opposite ideas.	It was a deafening silence.

Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision – Dr Jekyll and Mr Hyde

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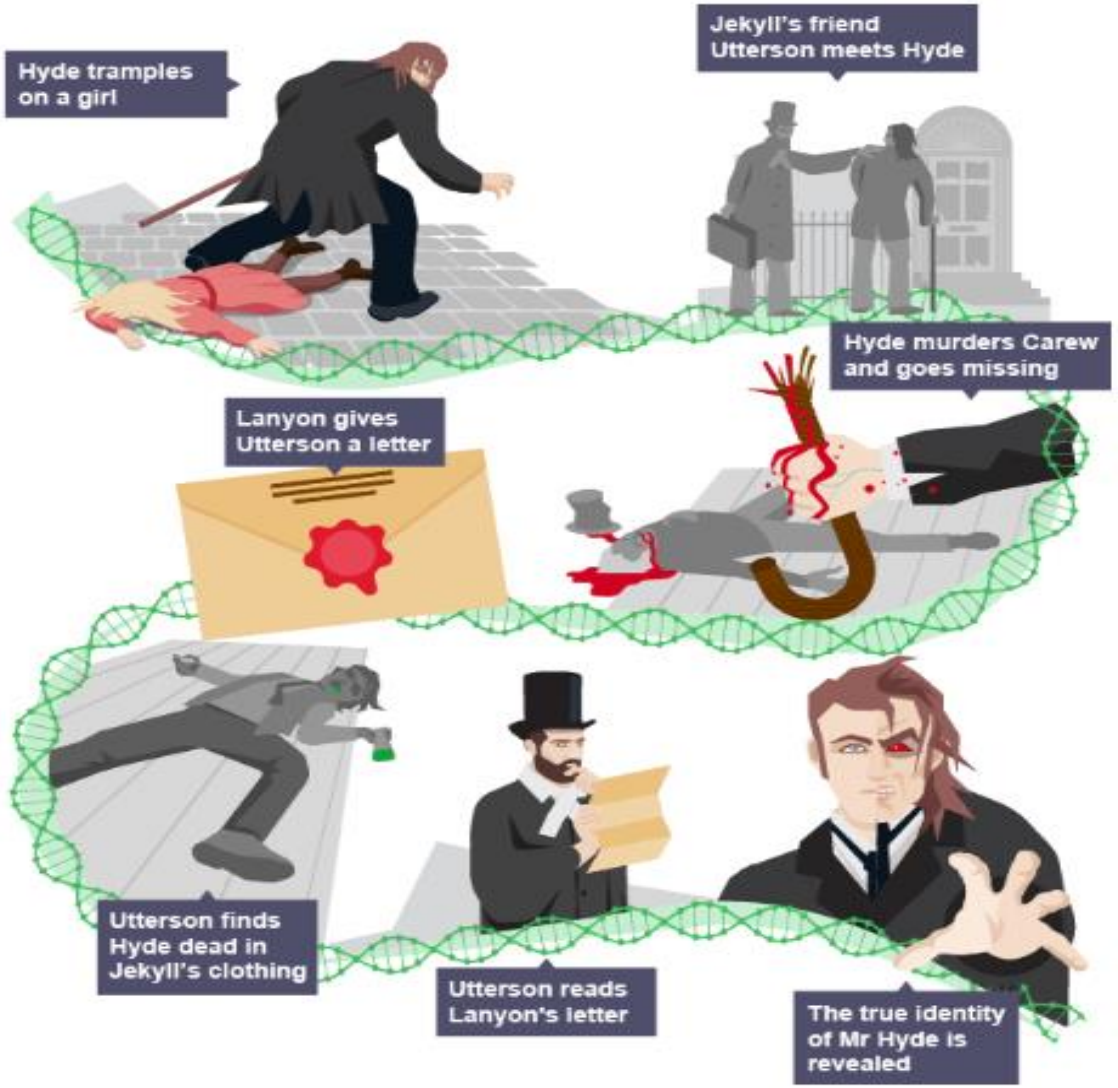
Top quotes to learn

1. "Mr Hyde was pale and dwarfish, he gave an impression of deformity without any nameable malformation." **Mr Hyde**
2. "The rosy man had grown pale." **Dr Lanyon**
3. "man is not truly one, but truly two." **Dr Lanyon**
4. "If he be Mr. Hyde...I shall be Mr Seek." **Mr Utterson**
5. " The rosy man had grown pale....He had his death warrant written legibly upon his face." **Dr Lanyon**
6. "I never saw a man I so disliked, and yet I scarcely know why." **Mr Utterson**
7. "The moment I choose, I can be rid of Mr Hyde" – "I ask you to help him for my sake, when I am no longer here." **Dr Jekyll**
8. "my devil had been long caged, he came out roaring" **Dr Jekyll**
9. "pious work annotated with startling blasphemies" **Mr Utterson**
10. "...like a man restored from death – there stood Henry Jekyll." **Dr Lanyon**
11. "All human beings... are commingled out of good and evil." **Dr Jekyll**
12. "Such unscientific balderdash" **Dr Lanyon**
13. "Dr Jekyll grew pale to the very lips and there came a blackness to his eye."
14. "Ape like Fury" and "'shrank back with a hiss" **Mr Hyde**
15. "I swear to God I will never set eyes on him again... I am done with him in this world. It is all at an end." **Dr Jekyll**

Themes	How it is shown in the plot
Science and the unexplained	The laboratory is the main setting of the mysterious events in the story. It isn't seen as a place of science, but is deserted and strange. Jekyll's goals frighten and disgust the men of science, such as Lanyon, with whom he used to friends. Behind all the action of Jekyll and Hyde in the novel, a fear lurks for all the characters –the threat of madness and the threat of a new world, of new science, new traditions, new disorders that traditional science and reason can't understand or deal with. Hyde is described, quite literally, as being beyond rational description—his most noticeable trait is an unexplainable air of evil or deformity.
Duality	Many contrasts in terms of setting, character and themes including: reality vs appearance, Jekyll and Hyde, light and dark, the good and evil side of someone, upper class London and Soho.
Secrecy and Silence	The novel's secrets come out in parts: -Enfield shares his story with Utterson, but he is only persuaded to share Hyde's name at the end. -When Utterson hears Hyde's name he does not reveal that he has heard it before, in Jekyll's will. -From that point on, most of the story's revelations are through a sequence of letter and documents, addressed, sealed and enclosed in safes, so that they need to be put together like a puzzle at the end. (The dependence on these sheets of paper for the unravelling of the mystery creates a sense of silence and isolation about each character.)
Reputation	Each man seems to be isolated from every other, and there is a sense that this masculine world has been hushed by the need to maintain social reputation. (Keep their secrets) The men in the novel avoid gossip. Through Mr. Hyde, Jekyll believes he can maintain his reputation while enjoying his darker urges.
Religion	Reference to Satan, God religion & charity work. The men discuss various religious works. Mr Hyde's evilness is shown as he defaces Dr Jekyll's favorite religious work. Mr. Hyde is often likened to Satan.
Gothic	The key features of the gothic genre are shown through the: setting e.g. the alleyway, character e.g. the antagonist of Hyde, the plot e.g. the vicious murder of Carew.
Good vs. Evil	Seen through the encounters that Hyde has with other characters, particularly with the murder Danvers Carew. It can also been seen with the differences between Hyde and Jekyll.

Dr Jekyll and Mr Hyde - Key plot details



Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision – A Christmas Carol

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The Plot

Stave 1: Scrooge and Bob are both working late on Christmas Eve. Scrooge turns down Fred's invitation, scorns the charity collectors and reluctantly gives Bob Christmas Day off. Scrooge slowly makes his way home and sees Marley's face in his door knocker. Later that evening, Marley's ghost appears. Marley warns Scrooge that he must change his ways to avoid the same fate. He explains that he'll be visited by three spirits.

Stave 2: The Ghost of Christmas Past appears. Scrooge is taken to the village where he grew up and sees his younger self in school: alone at Christmas. Scrooge then sees happier Christmases: his sister Fan coming to take him home and a party organised by his old boss, Fezziwig. Scrooge is then shown his split from Belle, before being shown Belle's family, who remind Scrooge of missed opportunities

Stave 3: The Ghost of Christmas Present arrives. Scrooge and the Ghost stop at the Cratchit's house on Christmas Day. Scrooge learns Tiny Tim will die. Scrooge and the Ghost see people all over the world enjoying Christmas, in spite of their isolation. They then visit Fred's house. The guests at his party make fun of Scrooge and his attitude towards Christmas. The Ghost reveals two starving children: Ignorance and Want. The ghost warns Scrooge to beware of them.

Stave 4: The Ghost of Christmas Yet to Come collects Scrooge. The Ghost silently shows Scrooge the uncaring reaction of some people to an unknown man's death. Scrooge sees a group of thieves trying to sell the dead man's belongings, including the shirt from his corpse. Scrooge is shown a corpse under a bed sheet and a woman rejoicing that her debt collector is dead. Scrooge and the Ghost visit the Cratchits again. He's upset to find out that Tiny Tim has died. The Ghost takes Scrooge to a graveyard and points to a grave with Scrooge's name on it. Scrooge promises the Ghost that he will honour Christmas and change the course of his life.

Stave 5: Scrooge finds himself back in his own bed on Christmas Day. Scrooge has completely changed. He laughs, dances and wishes passers-by a Merry Christmas. He buys the Cratchits a huge turkey then joins Fred and his friends for Christmas dinner. The next day Scrooge gives Bob a pay rise. We're told that Tiny Tim will survive, and that Scrooge celebrates Christmas for the rest of his life.

AO1: Themes			
Family: -Source of comfort - Full of happiness - Scrooge didn't see the point, at first -Scrooge is isolated and alone to contrast the warmth of families - Scrooge finally embraces his chance for a family	Poverty: -Dickens exposes unfair treatment of poor - Wealthy must take responsibility - Cratchits = Victorian poor - Poverty can be seedy - Not as simple as rich and poor	Redemption: -The reality of the visions changes S - There are hints S will be redeemed - Scrooge's changed behaviour leads to redemption - Scrooge isn't forced to change - Transformed by learning empathy	Christmas: - Brings out the best in people - Involves generosity and kindness - Religious and secular side - Powerful enough to transform Scrooge -Message = all year

Subject: English (Year 9)	Term: 6	Topic: End of Year Exam Revision – A Christmas Carol

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AO3 : Context			
Religion: Society was very religious, and many Victorians feared God's punishment for not abiding to the strict moral code but Dickens believed good Christians should be humble, charitable, faithful and selfless, rather than merely appearing religious. Christmas was becoming more secular; Dickens wanted to spread the message that charity, forgiveness and generosity should be all year round.	Poverty: John Malthus argued that poverty was inevitable and there wasn't enough money to go around. Dickens, in contrast believed that the rich just needed to be more generous. Dickens knew about the plight of the poor, having grown up in poverty, and wanted to raise awareness; hence the sympathetic Cratchits.	Charity / Education: Industrial Revolution created a huge gap between rich and poor; however, it encouraged selfishness from the rich. Dickens believed in collective responsibility and Scrooge's change echoes this. He also thought education could prevent crime, poverty and disease.	Society: Industrial Revolution created jobs and drew large numbers of people together, which resulted in poor living conditions amongst the poor. The population grew rapidly and conditions worsened. Overcrowding, like the slums in Stave 4, led to hunger, disease and crime. The slums were scary places for the rich, like Scrooge. Children suffered the worst and it was very difficult to escape poverty. Dickens aimed to raise awareness for the poor: discouraging the rich's ignorance.

Language and Structure

Things to look out for in Dicken's writing:

Structure- chronological order BUT the spirits are able to manipulate time! Foreshadowing. Repetition and hyperbolic lists, and a circular structure where Scrooge starts and finishes in the same place but as a dramatically different person and his journey to realisation drives the story.

Language- sensory language, questions, omniscient narrator, similes, metaphors, symbolism, juxtaposition and a lot of symbolism.

Subject: Maths – 9D, A & B (Higher)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

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Overview

In these next two terms, learners will be studying three units which will include the topics of graphs, area and volume and transformations.

Key Terms:

Unit 6:

Linear equation
Parabola
Gradient
Midpoint
Distance-time graphs
Velocity-time graphs
Perpendicular
Cubic
Reciprocal
Asymptotes

Unit 7:

Cylinders
Surface area
Volume
Sphere
Cone
Sector
Arc
Lower and upper Bound
π

Key skills:

Graphs
Prior knowledge check
Linear graphs
More linear graphs
Graphing rates of change
Real-life graphs
Line segments
Quadratic graphs
Cubic and reciprocal graphs
More graphs

Area and volume
Prior knowledge check
Perimeter and area
Units and accuracy
Prisms
Circles
Sectors of circles
Cylinders and spheres
Pyramids and cones

Transformations and constructions
Prior knowledge check
3D solids
Reflection and rotation
Enlargement
Transformations and combinations of transformations
Bearings and scale drawings
Constructions 1
Constructions 2
Loci

Websites and further reading

- Pearson Active Learn: http://pearsonactivelearn.com
- Maths Watch: http://mathswatch.co.uk/
- BBC Bitesize: http://www.bbc.co.uk/education/subjects/zqhs34j
- Numeracy and Foundation level practice questions and answers: https://corbettmaths.com/5-a-day/gcse1/
- Maths quiz: http://www.educationquizzes.com/ks3/maths/
- KS3 online tests: http://www.romsey.hants.sch.uk/maths/ks3onlinetests.htm

Subject: Maths – 9D, A & B (Higher)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

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Unit 6:

Key point 1

A **linear equation** generates a straight-line (linear) graph.

The equation for a straight-line graph can be written as $y = mx + c$ where m is the gradient and c is the y-intercept.

Average speed = $\frac{\text{total distance}}{\text{total time}}$

Make sure your units match.

Example 3

Here is the graph of $y = x^2 - 3x - 2$.

Use the graph to solve the equation $x^2 - 3x - 8 = 0$.

Give your answers correct to 1 decimal place.

Rearrange the equation so that one side is $x^2 - 3x - 2$.

$x^2 - 3x - 8 = 0$ (+6)

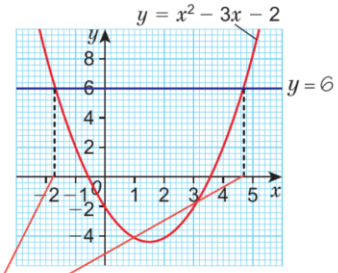
$x^2 - 3x - 2 = 6$ (+6)

$-8 + 6 = -2$

Find where $y = x^2 - 3x - 2$ intersects $y = 6$.

$x = -1.7$

$x = 4.7$



Key point 5

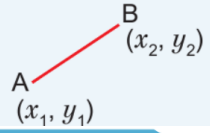
A **distance–time graph** represents a journey.

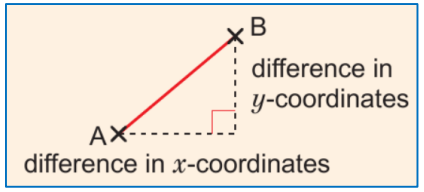
The vertical axis represents the *distance* from the starting point.

The horizontal axis represents the *time* taken.

The coordinates of the **midpoint** of a line segment are

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$





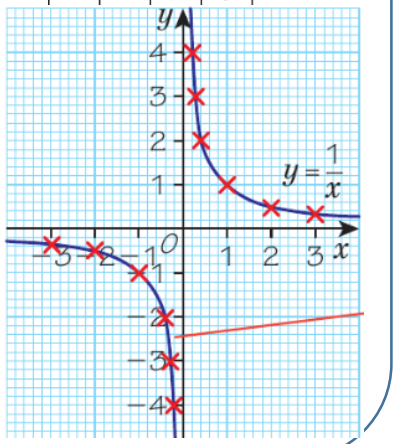
Example 4

Draw the graph of $y = \frac{1}{x}$, where $x \neq 0$, for $-3 \leqslant x \leqslant 3$.

x	-3	-2	-1	$-\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	3
y	$-\frac{1}{3}$	$-\frac{1}{2}$	-1	-2	-4	4	2	1	$\frac{1}{2}$	$\frac{1}{3}$

Make a table with x-values from -3 to 3. Do not include 0.

Work out the y-values and complete the table.



A **velocity–time graph** has time on the x-axis and velocity on the y-axis.

The gradient is the rate of change of velocity, or acceleration.

A positive gradient means an object is speeding up.

$$\text{Acceleration} = \frac{\text{change in velocity}}{\text{time}}$$

The area under a velocity–time graph is the distance travelled.

When two lines are **perpendicular**, the product of the gradients is -1.

When a graph has gradient m, a graph perpendicular to it has gradient $\frac{-1}{m}$.

The x and y axes are **asymptotes** to the curve. An asymptote is a line that the graph gets very close to, but never actually touches.

Subject: Maths – 9D, A & B (Higher)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

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Unit 7:

Example 1

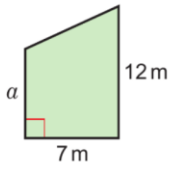
This trapezium has area 70 m².
Find the length of the shorter parallel side.

$70 = \frac{1}{2}(a + 12) \times 7$ — Substitute the values of h, b and A into the formula $A = \frac{1}{2}(a + b)h$

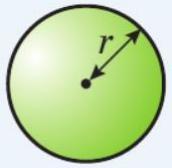
$\frac{70}{7} = 10 = \frac{1}{2}(a + 12)$ — Divide both sides by 7.

$2 \times 10 = 20 = a + 12$ — Multiply both sides by 2.

$a = 8$ cm



For a sphere of radius r
Surface area = $4\pi r^2$
Volume = $\frac{4}{3}\pi r^3$



Key point 2

To convert from cm² to mm², multiply by 100.
To convert from mm² to cm², divide by 100.

Volume of pyramid = $\frac{1}{3}$ area of base × vertical height
Volume of cone = $\frac{1}{3}$ area of base × vertical height
$= \frac{1}{3}\pi r^2 h$

A circle has area 50 m². Find its radius, to the nearest cm.

$50 = \pi r^2$ — Substitute $A = 50$ into the area formula.

$\frac{50}{\pi} = r^2$ — Rearrange to make r^2 the subject.

$\sqrt{\frac{50}{\pi}} = r$ — Square root both sides to find r.

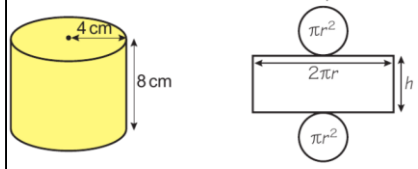
$r = 3.99$ m $= 399$ cm

Key point 6

The upper bound is half a unit greater than the rounded measurement.
The lower bound is half a unit less than the rounded measurement.

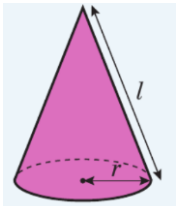
$12.5 \leqslant x < 13.5$
lower bound — upper bound

Calculate the total surface area of this cylinder. Give your answer to 1 d.p.



Sketch a net.
Each circle has area πr^2.
The length of the rectangle is the circumference of the circle, $2\pi r$.
The width of the rectangle is the height of the cylinder, h.

Area of each circle = $\pi \times 4^2 = 16\pi$
Area of rectangle = $2\pi rh = 2 \times \pi \times 4 \times 8 = 64\pi$
Surface area = $2 \times 16\pi + 64\pi$ — Two circles plus rectangle.
$= 32\pi + 64\pi$
$= 96\pi$
$= 301.6$ cm²



Curved surface area of a cone = πrl,

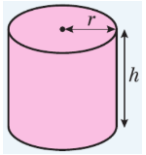
Total surface area of a cone = $\pi rl + \pi r^2$

For any circle
circumference = π × diameter
$C = \pi d$ or $C = 2\pi r$

The volume of a cylinder of radius r and height h is $V = \pi r^2 h$

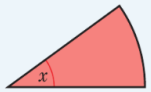
The formula for the area, A, of a circle with radius r is $A = \pi r^2$.

The total surface area of a cylinder is $2\pi r^2 + 2\pi rh$



Key point 15

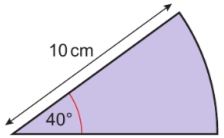
For a sector with angle $x°$ of a circle with radius r
Arc length = $\frac{x}{360} \times 2\pi r$
Area of sector = $\frac{x}{360} \times \pi r^2$



Communication hint
An **arc** is part of a circle.

Example 4

Work out
a the arc length
b the perimeter
c the area of this sector.
Give your answers to 3 s.f.



a Arc length = $\frac{x}{360} \times 2\pi r$
$= \frac{40}{360} \times 2 \times \pi \times 10$ — Write the formula, substitute the angle x and radius.
$= 6.98$ cm (3 s.f.)

b Perimeter = $6.98 + 10 + 10$ — Perimeter = arc length + 2 radii
$= 27.0$ cm (3 s.f.)

c Area = $\frac{x}{360} \times \pi r^2$
$= \frac{40}{360} \times \pi \times 100$ — Write the formula, substitute the angle x and radius.
$= 34.9$ cm² (3 s.f.)

Subject: Maths – 9D, A & B (Higher)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

WOOTTON PARK

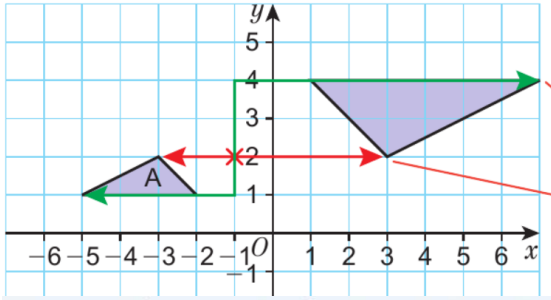
'Ipsum quod faciendum est diutius durant'

Unit 8:

A bearing always has three digits, for example 090°.

Reflections and rotations are types of transformation.
Transformations move a shape to a different position.
To describe a reflection, you need to give the equation of the mirror line.

Enlarge triangle A by scale factor −2 about centre (−1, 2).



Count the squares from the centre of enlargement.

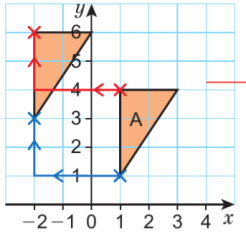
Instead of 1 down, 4 left, go 2 up, 8 right.

Instead of 2 left, go 4 right.

A **negative scale factor** takes the image to the opposite side of the centre of enlargement.

When a shape is enlarged by scale factor k, the area is enlarged by scale factor k^2.

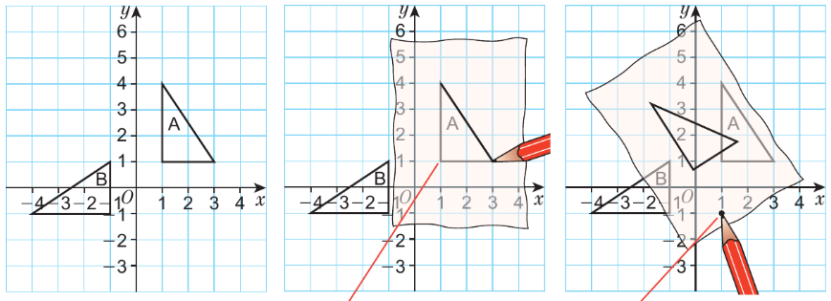
Translate triangle A by the vector $\begin{pmatrix}-3\\2\end{pmatrix}$.



Move each point on the original shape 3 squares left and 2 squares up.

Exam hint
The question is worth 3 marks which means you need to give 3 pieces of information about the transformation.

Describe the rotation that takes shape A onto shape B.



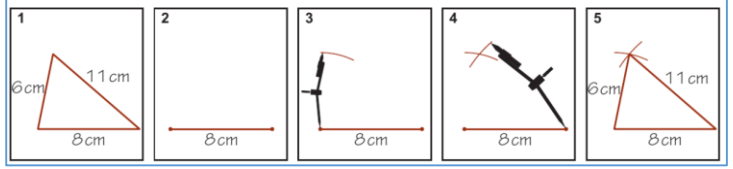
Trace the shape.

Rotate the tracing paper about a fixed point with your pencil. Repeat for different positions until your tracing ends up on top of the image.

Rotation anticlockwise 90° about (1, −1)

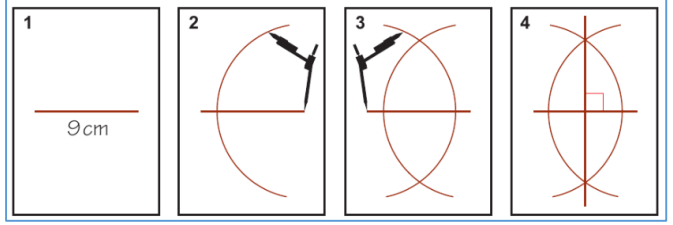
Give the direction, angle and centre of rotation.

Construct a triangle with sides 11 cm, 8 cm and 6 cm.



The shortest path from a point to a line is perpendicular to the line.

Draw a line 9 cm long. Construct its **perpendicular bisector**.



Draw an angle of 80°.
Construct the **angle bisector**.

Subject: Maths – 9C (Foundation)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Terms – Can you add the definitions (meanings)?

Alternative angle: _____

Congruent: _____

Interior angles: _____

Mean: _____

Averages: _____

Websites and further reading

- Pearson Active Learn: http://pearsonactivelearn.com
- Maths Watch: http://mathswatch.co.uk/
- BBC Bitesize: http://www.bbc.co.uk/education/subjects/zqhs34j
- Numeracy and Foundation level practice questions and answers: https://corbettmaths.com/5-a-day/gcse1/

Key Terms – Can you add the definitions (meanings) and complete the formulae?

Volume: _____

Compound shape: _____

Prism: _____

Area of a rectangle =_____

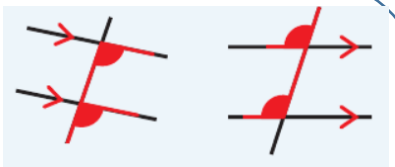
Volume of a cuboid= _____

Subject: Maths – 9C (Foundation)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

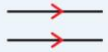
WOOTTON PARK

Unit 6:

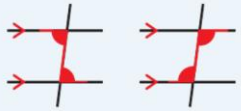
When a line crosses two parallellines it creates an 'F' shape.
Inside the F shape are **corresponding** angles.
Corresponding angles are equal.



Parallel lines are shown with arrows.



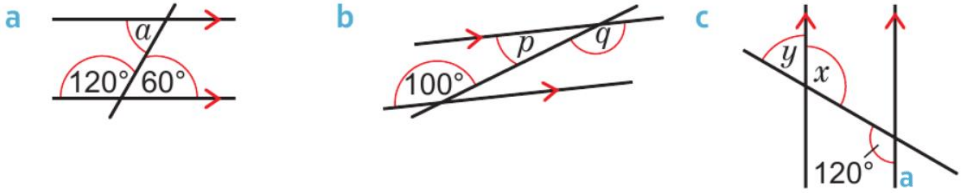
When a line crosses two parallel lines it creates a 'Z' shape.



Inside the Z shape are **alternate angles**.
Alternate angles are equal.
Alternate angles are on different or alternate sides of the line.

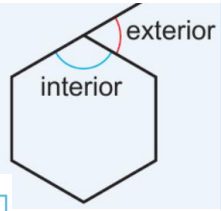
Problem-solving Work out the sizes of the angles marked with letters.

Find the sizes of the angles marked with letters.



The sum of the exterior angles of a regular polygon is always 360°.

You can draw an **exterior angle** of a shape by extending one of its edges.
The exterior angle is between the extended line and the next side of the shape.



Example 2

Work out the size of angle x.
Explain your answer.

Angle EFB = x (corresponding angles)

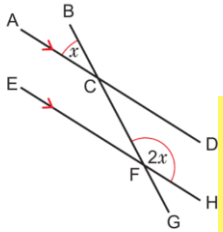
$x + 2x = 180°$ (angles x and $2x$ lie on a straight line)

$3x = 180°$

$x = 60°$

Use the angle facts you know to find the sizes of other angles in the diagram.

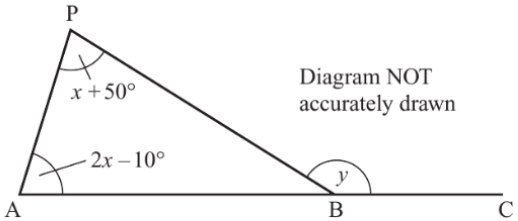
Write an equation and solve it to find x.



Reason 1 Angles about a point add up to 360°.
Reason 2 Angles on a straight line add up to 180°.

Exam hint
'Show that' means you need to write down all of your working and explain your reasons as you go along. You can

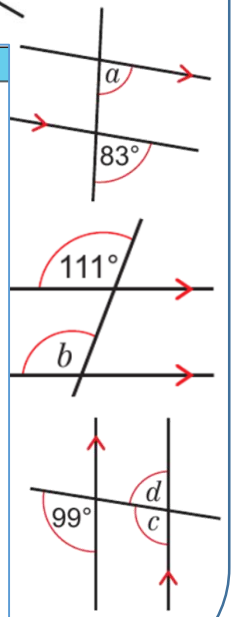
Exam-style question



All angles are measured in degrees.
ABC is a straight line.
Angle APB = $x + 50$
Angle PAB = $2x - 10$
Angle PBC = y

a Show that $y = 3x + 40$
Give reasons for each stage of your working.

b Given that $y = 145$,
i work out the value of x
ii work out the size of the largest angle in triangle ABP.



Subject: Maths – 9C (Foundation)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

WOOTTON PARK
'Ipsum quod faciendum est diutius durant'

Unit 7:

Key point 1

The mean of a set of values is the total of the set of values divided by the number of values.

Example 1

Work out the mean of 3, 6, 7, 7 and 8.

$3 + 6 + 7 + 7 + 8 = 31$ — Add the values first to find the total.

$\frac{31}{5} = 6.2$ — There are 5 values, so divide the total by 5.

The mean is 6.2

Example 4

The test scores given in **Q2** have been grouped in this table.

Score	Frequency
1–5	5
6–10	6
11–15	9
16–20	10

Add a column to calculate the midpoint of each class. Use this as an estimate of the scores, because you don't know the exact values in each class

Work out an estimate for the mean.

Score	Frequency, f	Midpoint of class, m	$m \times f$
1–5	5	3	15
6–10	6	8	48
11–15	9	13	117
16–20	10	18	180
Total	**30**	**Total**	**360**

Add a column, $m \times f$, to calculate an estimate of the total score for each class.

Estimate of mean $= \frac{360}{30} = 12$ — Divide the total of the $m \times f$ column by the total frequency.

Key point 2

To compare two sets of data, compare an average (mode, median or mean) for each set of data and compare the range of each set of data.

Key point 8

In a survey, a **sample** is taken to represent the **population**. A sample that is too small can **bias** the results.

Key point 3

The median is the middle value when the data is written in order.

Example 2

This stem and leaf diagram shows the times, in seconds, for a group of swimmers to swim 100 m. Find the median and the mode.

55	2 3 6
56	3 3 7 8
57	0 2 6 6 6 7
58	4 4 5
59	3

Key
55|2 means 55.2 seconds

Count the number of values; 17.

The median is the $\frac{n+1}{2}$ th value. There are 17 values, so $n = 17$.

$\frac{17+1}{2} = 9$

The median is the 9th value.

In a stem and leaf diagram the data is in order. So count up to the 9th value.

The median is 57.2 seconds.

The mode is 57.6 seconds.

Look for repeated values in the rows.
57| 0 2 **6 6 6** 7

Copy and complete the table by putting one boxed statement in each blank position.

May not change if a data value changes.

Every value makes a difference.

Easy to find; not affected by extreme values, and can be used with non-numerical data.

There may not be one.

Not affected by extreme values.

Affected by extreme values.

Average	Advantages	Disadvantages
Mean		
Median		
Mode		

Ed has 4 cards.
There is a number on each card.

12	6	15	?

The mean of the 4 numbers on Ed's cards is 10.
Work out the number on the 4th card.

Key point 9

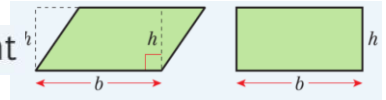
In a **random sample**, every member of the population has an equal chance of being included.

Subject: Maths – 9C (Foundation)	Term: 5&6	Topic: Year 9 Units 6, 7 & 8

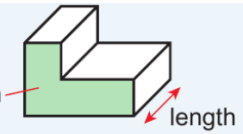
WOOTTON PARK
'Ipsum quod faciendum est diutius durant'

Unit 8:

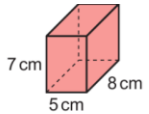
Area of parallelogram = base length × perpendicular height



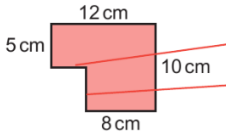
Volume of a prism = area of cross-section × length



Work out the surface area of this cuboid.



Calculate the perimeter and area of this compound shape.

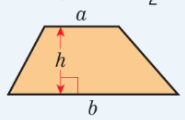


Sketch the shape. Work out the missing lengths.
12 cm − 8 cm = 4 cm
10 cm − 5 cm = 5 cm

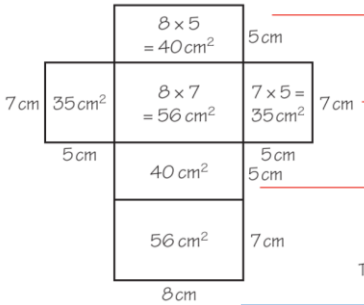
Perimeter = 12 + 10 + 8 + 5 + 4 + 5 = 44 cm²

Add all the lengths around the shape to work out the perimeter.

Area of a trapezium = $\frac{1}{2}(a+b)h$



Area of a triangle = $\frac{1}{2}bh$

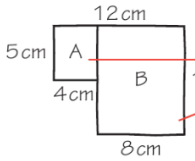


Sketch the net.

Label the lengths.

Work out the area of each face.

Total surface area = 40 + 56 + 40 + 56 + 35 + 35
= 262 cm²



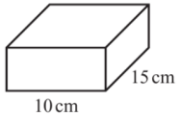
Divide the shape into two rectangles A and B.

Area of A = 5 × 4 = 20 cm²
Area of B = 8 × 10 = 80 cm²
Total area = 100 cm²

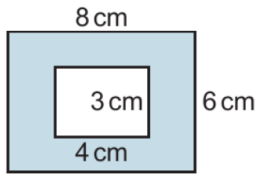
Work out the area of each.

Exam-style question

This cuboid has volume 600 cm³.



Work out its surface area. **(4 marks)**

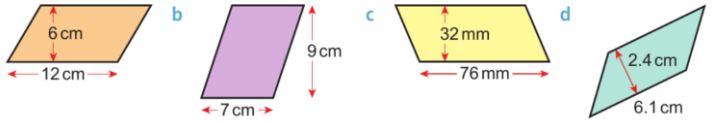


Work out the area of card in the frame.

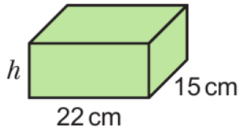
Convert these areas into the units given.

a 5 m² to cm²
b 2.2 m² to cm²
c 20 000 cm² to m²
d 7200 cm² to m²

Calculate the area of each parallelogram.



This cuboid has volume 2640 cm³.
Work out its height.



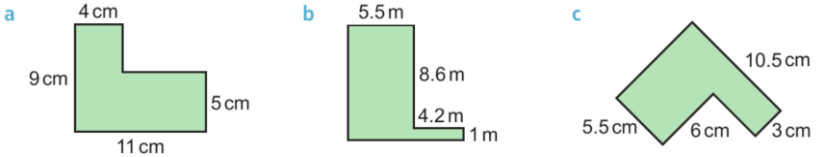
Volume = $l \times w \times h$ — Write down the formula.

$2640 = 22 \times 15 \times h$ — Write in the values you know.

$2640 = 330 \times h$

$h = \frac{2640}{330} = 8$ cm — Solve the equation to find h.

Calculate the area and perimeter of these compound shapes.



Subject: Science	Term: 5	Topic: Year 9 Chemistry – Chemical calculations

WOOTTON PARK
'Ipsum quod faciendum est diutius durant'

Topics Covered

Chemistry – Chemical calculations

Chemistry Separates only in italics!!

Code	Topic
C4.1	Relative mases and moles
C4.2	Equations and calculations
C4.3	From masses to balancing equations
C4.4	*The yield of a chemical reaction*
C4.5	*Atom economy*
C4.6	Expressing concentrations
C4.7	*Titrations*
C4.8	*Titration calculations*
C4.9	*Volumes of gases*

4.1 Relative masses and moles

Instead of using actual masses of atoms, we use relative masses (compared with Carbon which has a mass of exactly 12).

Relative atomic mass (A_r) – The average mass of an atom of an element compared to Carbon-12.

Relative formula mass (M_r) – The total of the relative atomic masses of a substance (added up in the ratio shown in the chemical).

Examples:

H_2O (A_r Hydrogen = 1, A_r Oxygen = 16) M_r = (2 x 1) + 16 = 18	**Al_2O_3** (A_r Aluminium = 27, A_r Oxygen = 16) M_r = (2 x 27) + (3 x 16) = 102

Mole – The amount of substance in the relative atomic or formula mass of a substance in grams.

Avogadro constant – The number of atoms, or ions in a mole of any substance (6.02×10^{23} per mol)

<u>Calculating moles</u>

Number of moles = mass (g) / A_r

Or

Number of moles = mass (g) / M_r

Examples

Q: How many moles of helium atoms are there in 0.02g of helium? **A**: Moles = Mass / A_r = 0.02 / 4 = 0.005 moles	**Q:** How many moles of sulphuric acid are there in 19.6g of sulphuric acid (H_2SO_4)? **A**: M_r of H_2SO_4 = (2x1) + 32 + (4x16) Moles = Mass / M_r = 19.6 / 98 = 0.2 moles

4.2 Equations and calculations

Chemical equations tell us how reactants combine to form products.

Balanced equations tell us the number of atoms of each elements present in the reactants and products. These number of atoms in the reactants and products must be the same.

Example: $H_2 + Cl_2 \rightarrow HCl$ Not balanced

$H_2 + Cl_2 \rightarrow 2HCl$ Balanced

We can use balanced symbol equations to calculate the masses of reactants and products in a chemical reaction.

Worked example 2

Sodium hydroxide reacts with chlorine gas to make bleach. This reaction happens when chlorine gas is bubbled through a solution of sodium hydroxide. The balanced symbol equation for the reaction is:

$$2NaOH + Cl_2 \rightarrow NaOCl + NaCl + H_2O$$

sodium hydroxide, chlorine, bleach, salt, water

If you have a solution containing 100.0 g of sodium hydroxide, what mass of chlorine gas do you need to convert it to bleach?

Solution

A_r values: hydrogen = 1, oxygen = 16, sodium = 23, chlorine = 35.5

Mass of 1 mole of	
NaOH	Cl_2
= 23 + 16 + 1 = 40 g	= 35.5 × 2 = 71 g

The table shows that 1 mole of sodium hydroxide has a mass of 40 g.

So 100.0 g of sodium hydroxide is $\frac{100}{40}$ = 2.5 moles.

The balanced symbol equation tells you that for every 2 moles of sodium hydroxide you need 1 mole of chlorine to react with it.

So you need $\frac{2.5}{2}$ = 1.25 moles of chlorine.

The table shows that 1 mole of chlorine has a mass of 71 g.

So you will need 1.25 × 71 = 88.75 g of chlorine to react with 100.0 g of sodium hydroxide.

The answer 88.75 g is given to 4 significant figures. This is to be consistent with the data supplied in the question, as you started with 100.0 g of sodium hydroxide.

The number of significant figures to which the relative atomic masses are quoted does not need to be taken into account in chemical calculations.

Subject: Science	Term: 5	Topic: Year 9 Chemistry – Chemical calculations

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4.3 From masses to balancing equations

You can deduce balanced equations from the masses of substances involved in a chemical reaction.

Worked example 1

Sodium nitrate, $NaNO_3$, decomposes on heating to give sodium nitrite, $NaNO_2$, and oxygen gas, O_2.

When 8.5 g of sodium nitrate is heated in a test tube until its mass is constant, 6.9 g of sodium nitrite is produced.

a What mass of oxygen must have been given off in the reaction?

b Find the ratio of reactants and products involved in the reaction, and show how these can be used to produce the balanced symbol equation for the decomposition of sodium nitrate:

(A_r values: Na = 23, N = 14, O = 16)

Solution

a You know that the total mass of reactants = total mass of products (from the Law of conservation of mass). So if the mass of oxygen is x g:

sodium nitrate → sodium nitrite + oxygen

8.5 g = 6.9 g + x g

(8.5 – 6.9) g = x g

1.6 g = mass of oxygen

b From the masses given in the question and our answer to part **a**, you can work out the numbers of moles of each reactant and product:

First of all, you will need to calculate the relative formula masses M_r of the reactants and products using the A_r values provided:

M_r of $NaNO_3$ = [23 + 14 + (16 × 3)] = 85

M_r of $NaNO_2$ = 69

M_r of O_2 = 32

Then use the equation from Topic C4.1 to convert masses to moles:

$$\text{number of moles} = \frac{\text{mass}}{M_r}$$

moles of $NaNO_3$ = $\frac{8.5}{85}$ = 0.1 mol

moles of $NaNO_2$ = $\frac{6.9}{69}$ = 0.1 mol

moles of O_2 = $\frac{1.6}{32}$ = 0.05 mol

Then find the simplest whole-number ratio of the numbers of moles of $NaNO_3 : NaNO_2 : O_2$

moles of $NaNO_3 : NaNO_2 : O_2$

0.1 : 0.1 : 0.05

Dividing the ratio by the smallest number gives:

2 : 2 : 1

So the balanced equation is:

$$2NaNO_3 \rightarrow 2NaNO_2 + O_2$$

4.3 Cont..

The reactant that gets used up first in a reaction is called the limiting reactant. This is the reactant that is NOT in excess.

This then means, the amounts of products formed in a chemical reaction are determined by the limiting reactants.

Worked example 2

If you have 4.8 g of magnesium ribbon reacting in a solution of dilute hydrochloric acid containing 7.3 g of HCl, which reactant is the limiting reactant?

(A_r values: Mg = 24, H = 1, Cl = 35.5)

Solution

The balanced equation for the reaction is:

$$Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$$

You are only interested in the reactants in this question.

$$\text{number of moles} = \frac{\text{mass}}{A_r} \text{ or } \frac{\text{mass}}{M_r}$$

You start with 4.8 g of Mg, which is $\frac{4.8}{24}$ moles = 0.2 mol

and 7.3 g of HCl, which is $\frac{7.3}{(1 + 35.5)}$ moles = $\frac{7.3}{36.5}$ = 0.2 mol

From the balanced equation, you see that 1 mole of Mg will react with 2 moles of HCl.

Therefore 0.2 mol of Mg will need 0.4 mol of HCl to react completely.

In this case, we have not got 0.4 mol of HCl – we only have 0.2 mol – so the dilute hydrochloric acid is the limiting reactant (and the magnesium is in excess).

4.4 The yield of a chemical reaction

The yield of a chemical reaction describes how much product is made.

The percentage yield of a chemical reaction tells you how much product is made compared with the maximum amount that could be made (100%).

The following equation can be used to calculate percentage yield:

$$\text{percentage yield} = \frac{\text{actual mass of product produced}}{\text{maximum theoretical mass of product possible}} \times 100\%$$

Factors which affect the yield of a product of a chemical reaction include product left behind in the apparatus, reversible reactions not going to completion, some reactants may produce unexpected reactions, and losses in separating the products from the reaction mixture.

4.5 Atom economy

It is important to maximise atom economy in industrial processes to conserve the Earth's resources and minimise pollution.

The atom economy of a reaction can be calculated using the equation below:

$$\text{percentage atom economy} = \frac{\text{relative formula mass of the desired product from equation}}{\text{sum of the relative formula masses of the reactants from equation}} \times 100\%$$

Subject: Science	Term: 5	Topic: Year 9 Chemistry – Chemical calculations

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4.6 Expressing concentrations

The concentration of a solution can be calculated using the equation below. You may need to concert volumes from cm^3 to dm^3 (dividing by 1000).

$$\text{concentration (g/dm}^3) = \frac{\text{amount of solute (g)}}{\text{volume of solution (dm}^3)}$$

To calculate the mass of solute in a certain volume of solution of known concentration:

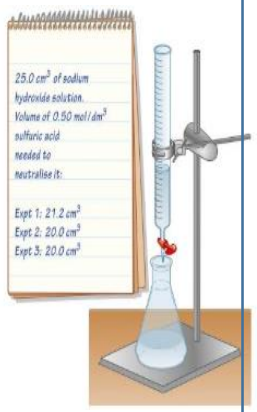
1. Calculate the mass (g) of the solute in $1dm^3$ ($1000\ cm^3$) of solution.
2. Calculate the mass (g) of solute in $1cm^3$ of solution.
3. Calculate the mass (g) of solute there is in the given volume of the solution.

A more concentrated solution has more solute in the same volume of solution than a less concentrated solution

4.7 Titrations

Titration is used to measure accurately what volumes of acid and alkali react together completely.
The point at which a reaction between an acid and alkali is complete is called the end point of the reaction.
You use an acid/base indicator to show the end point of the reaction between an acid and alkali.
To calculate the concentration of a solution in mol/dm^3, given the mass of solute in a certain volume:

- Calculate the mass (g) of solute in $1cm^3$ of solution.
- Calculate the mass (g) of solue in $1000cm^3$ of solution.
- Convert the mass (g) to moles (where moles = mass/M_r)



4.8 Titration calculations

You can use titrations to find the unknown concentration of a solution.
To do this, you need to know the accurate concentration of one solution, then once the end point is established, the balanced equation gives you the number of moles in a certain volume of solution. This value is multiplied up to give the concentration in mol/dm^3.

4.9 Volumes of gases

A certain volume of gas always contains the same number of gas molecules under the same conditions.
The volume of 1 mole of any gas at room temperature and pressure is 24 dm^3.
You can use the molar gas volume and balanced symbol equations to calculate the volumes of gaseous reactants or products.

$$\text{number of moles of gas} = \frac{\text{volume of gas (dm}^3)}{24\ \text{dm}^3} = \frac{\text{volume of gas (cm}^3)}{24\,000\ \text{cm}^3}$$

Worked example: Calculating volume of a gas

One make of car has an air-bag that is inflated by 70.0 g of nitrogen, N_2, when activated.
What volume would the nitrogen gas occupy at room temperature and pressure?
(A_r of N = 14)

Solution

First of all you have to find out how many moles of nitrogen gas are in 70.0 g of N_2.
You have seen in Topic C4.1 that:

$$\text{number of moles} = \frac{\text{mass}}{\text{relative formula mass (in g)}}$$

The relative formula mass of $N_2 = (14 \times 2) = 28$.
So the number of moles of N_2 gas $= \frac{70.0}{28} = 2.5$ mol.
To find the volume that 2.5 mol of N_2 gas will occupy, you need to rearrange the equation:

$$\text{number of moles of gas} = \frac{\text{volume of gas (dm}^3)}{24\ \text{dm}^3}$$

To get:

$$\text{volume of gas (dm}^3) = \text{no. of moles} \times 24\ \text{dm}^3$$

So the volume of nitrogen gas $= 2.5 \times 24\ dm^3 = 60.0\ dm^3$.

4.8 Titration calculation cont..

Worked example: Concentration from titrations

In a titration experiment, 20.0 cm^3 of the potassium hydroxide solution was placed in a conical flask. A few drops of phenolphthalein were added to indicate the end point of the reaction. It was titrated against dilute hydrochloric acid with a concentration of 1.00 mol/dm^3. The titration was repeated until two concordant results (within 0.1 cm^3 of each other) were obtained.
In the experiment it was found that the potassium hydroxide solution reacted completely with exactly 12.5 cm^3 of the dilute hydrochloric acid added from a burette.
What was the concentration of the potassium hydroxide solution in mol/dm^3?

Solution

The balanced symbol equation for this reaction is:

$$KOH(aq) + HCl(aq) \rightarrow KCl(aq) + H_2O(l)$$

This equation tells you that 1 mole of KOH reacts with 1 mole of HCl.
The concentration of the HCl is 1.00 mol/dm^3, so:

- 1.00 mole of HCl is dissolved in 1000 cm^3 of the dilute acid
- $\frac{1.00}{1000}$ moles of HCl are dissolved in 1 cm^3 of acid

Therefore $\left(\frac{1.00}{1000}\right) \times 12.5$ moles of HCl are dissolved in 12.5 cm^3 of acid.
So there are 0.0125 moles of HCl dissolved in 12.5 cm^3 of the dilute acid.
The balanced equation tells you that the KOH and the HCl react together in the ratio 1 : 1. So in this titration 0.0125 moles of HCl will react with exactly 0.0125 moles of KOH.
So there must have been 0.0125 moles of KOH in the 20.0 cm^3 of solution in the conical flask originally.
Now you can calculate the concentration of KOH in the solution of unknown concentration in the flask.
You need to calculate the number of moles of KOH in 1 dm^3 (1000 cm^3) of solution.
0.0125 moles of KOH are dissolved in 20.0 cm^3 of solution, so:

- $\frac{0.0125}{20}$ moles of KOH are dissolved in 1 cm^3 of solution

Therefore, there will be $\left(\frac{0.0125}{20}\right) \times 1000$ moles of KOH dissolved in 1000 cm^3 of the solution.
The concentration of the potassium hydroxide solution is 0.625 mol/dm^3. (The answer is given to 3 significant figures.)

Subject: Science	Term: 6	Topic: Year 9 Physics – Atomic structure

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Topics Covered

Physics – Atomic structure

Code	Topic
P7.1	Atoms and radiation
P7.2	The discovery of the nucleus
P7.3	Changes in the nucleus
P7.4	More about alpha, beta and gamma radiation
P7.5	Activity and half-life
P7.6	*Nuclear radiation in medicine*
P7.7	*Nuclear fission*
P7.8	*Nuclear fusion*
P7.9	*Nuclear issues*

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7.1 Atoms and radiation

Three types of radiation:

- **Alpha radiation, α** is stopped by paper
- **Beta radiation, β** is stopped by aluminium
- **Gamma radiation, γ** is stopped by many centimetres of lead

Substances emit radiation because they have an unstable nucleus. They become more stable once radiation has been emitted. When an unstable nucleus is emitting radiation we describe it as decaying.

Investigating radioactivity

You can use a Geiger counter to detect radioactivity. This is made up of a detector called a Geiger–Müller tube (or Geiger tube) connected to an electronic counter (Figure 2). The counter clicks each time a particle of radiation from a radioactive substance enters the Geiger tube.

Figure 2 *Using a Geiger counter*

Safety: Avoid touching and inhaling radioactive material.

7.2 The discovery of the nucleus

Ernest Rutherford discovered that alpha and beta radiation is made up of different types of particles. Rutherford conducted many experiments with the assistance of Geiger and Marsden.

Rutherford's nuclear model of the atom was accepted because it:

- Agreed with the measurements of Geiger and Marsden
- Explained radioactivity in terms of changes that happen to an unstable nucleus when it emits radiation
- Predicted the existence of the neutron, which was later discovered

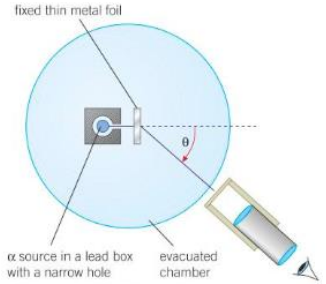

Figure 1 *Alpha (α) particle scattering*

7.3 Changes in the nucleus

The **atomic number** of a nucleus is the number of protons in it. It has the symbol Z. Atoms of the same element have the same number of protons.

The **mass number** of a nucleus is the number of protons plus neutrons in it. It has the symbol A.

Isotopes are atoms of the same element with different numbers of neutrons. The isotopes of an elements have nuclei with the same number of protons but a different number of neutrons.

α emission – is made up of 2 protons plus 2 neutrons. It is usually represented by the symbol $^{4}_{2}\alpha$. When an unstable nucleus emits an α particle:

- Its atomic number goes down by 2, and its mass number goes down by 4
- The mass and the charge of the nucleus are both reduced

β emission – is an electron created and emitted by a nucleus that has too many neutrons compared with its protons. When an unstable nucleus emits a β particle:

- The atomic number of the nucleus goes up by 1, and its mass number is unchanged
- The charge of the nucleus is increased, and the mass of the nucleus is unchanged

γ emission – a γ-ray is electromagnetic radiation from the nucleus of an atom. It is uncharged and has no mass. So its emission does not change the number of protons or neutrons in a nucleus. So the mass and the charge of the nucleus are both unchanged.

Subject: Science	Term: 6	Topic: Year 9 Physics – Atomic structure

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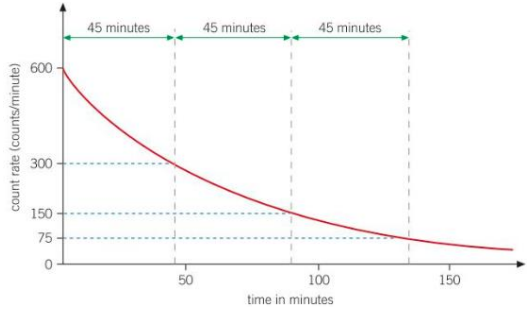
7.4 More about alpha, beta and gamma radiation

Radiation can knock electrons out of atoms. The atoms become charged because they lose electrons. The process is called **ionisation.** When an object is exposed to ionising radiation it is said to be **irradiated**, but does not become radioactive.

Type of radiation	Absorber materials	Range in air
alpha α	Thin sheet of paper	about 5 cm
beta β	Aluminium sheet (about 5 mm thick) Lead sheet (2–3 mm thick)	about 1 m
gamma γ	Thick lead sheet (several cm thick) Concrete (more than 1 m thick)	unlimited – spreads out in air without being absorbed

7.5 Activity and half-life

The **activity** of a radioactive source is the number of unstable atoms in the source that decay per second. The unit of activity is the Becquerel (Bq), which is 1 decay per second. The **Geiger** counter can monitor the activity of a radioactive sample. You need to measure the **count rate** from the sample. The count rate is the number of counts per second. This is proportional to the activity of the source.



The average time taken for the count rate to fall by half is always the same. This time is called the **half-life**. The half-life shown on the graph is 45 minutes.

7.6 Nuclear radiation in medicine

Some examples that describe how nuclear radiation is used in medicine:

- *Radioactive tracers are used to trace the flow of a substance through an organ. The tracer contains a radioactive isotope that emits gamma radiation as it can be detected outside the system. E.g. doctors can find out if a patients kidney is blocked.*
- *Gamma cameras are used to take images of internal body organs.*
- *Gamma radiation can be used to destroy cancerous tumours.*
- *Radioactive implants are used to destroy cancer cells in some tumours.*

7.7 Nuclear fission

Energy is released in a nuclear reactor because of nuclear fission.

In induced fission, the nucleus of an atom is struck by a neutron, causing the nucleus to split into two smaller fragment nuclei of roughly equal size and to release several neutrons. When fission occurs it releases:

- *2/3 neutrons at high speeds*
- *Energy*

Chain reactions can release several neutrons, which can cause other fissionable nuclei to split.

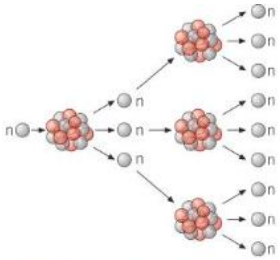
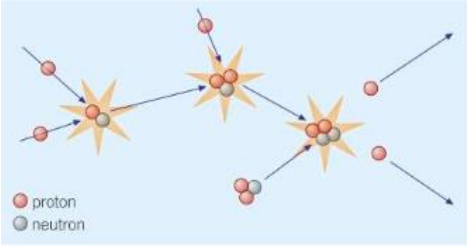


Figure 2 *A chain reaction in a nuclear reactor*

7.8 Nuclear fusion

*Two small nuclei release energy when they are fused together to form a single larger nucleus, this is called **nuclear fusion**. Some f the mass of the small nuclei is converted to energy. Some of this energy is transferred as nuclear radiation from the large nucleus that's formed.*



- *When two protons fuse together, they form a 'heavy hydrogen' nucleus, ${}^{2}_{1}He$.*
- *2 more protons collide separately with two ${}^{2}_{1}He$ nuclei and turn them into heavier nuclei.*
- *The 2 heavier nuclei collide to form the helium nucleus ${}^{4}_{2}He$*
- *The energy released at each stage is carried away as the kinetic energy of the product nucleus and other particles emitted*

7.9 Nuclear issues

Radioactive substances are found naturally around us and this can be known as background radiation. Background radiation in the air is caused mostly by radon gas that seeps through the ground from radioactive substances in rocks deep underground.

Nuclear waste

Used fuel rods are hot and very radioactive. After they are removed from a reactor they are stored in big tanks of water for up to a year. Then the fuel rods are opened up and uranium and plutonium are removed chemically, then stored in sealed containers so they can be used again.

Table 2 *Risks of α, β, and γ radiation*

	α radiation	β and γ radiation
inside body	**very dangerous** – affects all the surrounding tissue	**dangerous** – reaches cells throughout the body
outside body	**some danger** – absorbed by skin, damages skin cells, retinal cells	

Subject: Science	Term: 6	Topic: Year 9 Chemistry – Chemical changes

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Topics Covered

Chemistry – Chemical calculations

Code	Topic
C5.1	The reactivity series
C5.2	Displacement reactions
C5.3	Extracting metals
C5.4	Salts from metals
C5.5	Salts from insoluble bases
C5.6	Making more salts
C5.7	Neutralisation and the pH scale
C5.8	Strong and weak acids

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5.1 The reactivity series

Ores are rocks from which it is economical to extract the metals they contain.

Most metals in ores are chemically bonded to other elements in compounds. Many of these metals have been **oxidised**. So to extract the metals from their oxides, the metal oxide must be **reduced**. To understand how this is done, you need to know about the **reactivity series**.

We can use the reactivity of metals with water and acid to put together the order of reactivity.

Order of reactivity	Reaction with water	Reaction with dilute acid
potassium	fizz, giving off hydrogen gas, leaving an alkaline solution of metal hydroxide	explode
sodium		
lithium		
calcium		fizz, giving off hydrogen gas and forming a salt
magnesium	very slow reaction	
aluminium		
zinc		
iron		
tin	slight reaction with steam	react slowly with warm acid
lead		
copper	no reaction, even with steam	no reaction
silver		
gold		

5.2 Displacement reactions

A more reactive metal will displace a less reactive metals from an aqueous solution of one of its salts. E.g.

Magnesium + copper sulphate → magnesium sulphate + copper

$$Mg_{(s)} + CuSO_{4(aq)} \rightarrow MgSO_{4(aq)} + Cu_{(s)}$$

An **ionic equation** shows only the atoms and ions that change in a reaction:

$$Mg_{(s)} + Cu^{2+}{}_{(aq)} \rightarrow Mg^{2+}{}_{(aq)} + Cu_{(s)}$$

In this displacement reaction Copper has been reduced as it has gained 2 electrons and Magnesium has been oxidised as it lost 2 electrons.

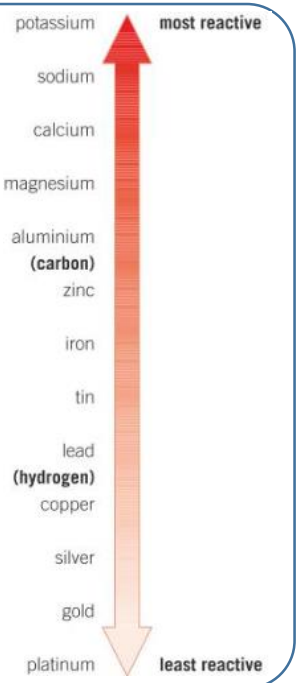
Remember, Oil Rig; Oxidation Is Loss, Reduction Is Gain

5.3 Extracting metals

Metal ores are rock that contains metal. Whether it is worth extracting depends on:

- How easy it is to extract it from its ore
- How much metal the ore contains
- The changing demands for a particular metal

Any metal below hydrogen in the reactivity is so unreactive that they are found, alone, in the ground. The metals between Hydrogen and Carbon are extracted by reducing the metal oxide with carbon. Above carbon the metals can be extracted using hydrogen or electrolysis.



Subject: Science	Term: 6	Topic: Year 9 Chemistry – Chemical changes

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5.4 Salts from metals

Metals + Acid → Salt + Hydrogen

Iron + Hydrochloric acid → Iron chloride + Hydrogen

$Fe_{(s)} + 2HCl_{(aq)} \rightarrow FeCl_{2(aq)} + H_{2(g)}$

Pure crystals of salt (iron chloride) can be obtained from the solution. We can do this by evaporating water from the solution by heating until crystallisation is reached.

The acid provides the negative ions present in all salts:

- The salts formed when you react a metal with hydrochloric acid, HCl, are always *chlorides* (containing Cl^- ions)
- Sulphuric acid, H_2SO_4, makes *sulphates* (containing SO_4^{2-} ions)
- Nitric acid, HNO_3, always makes *nitrates* (containing NO_3^- ions)

5.5 Salts from insoluble bases

When you react an acid with a base, a salt and water are formed. The general equation which describes this **neutralisation** reaction is:

Acid + Base → Salt + Water

Hydrochloric acid + Solid Iron → Iron chloride + Water

$6HCl_{(aq)} + Fe_2O_{3(s)} \rightarrow 2FeCl_{3(aq)} + 3H_2O_{(l)}$

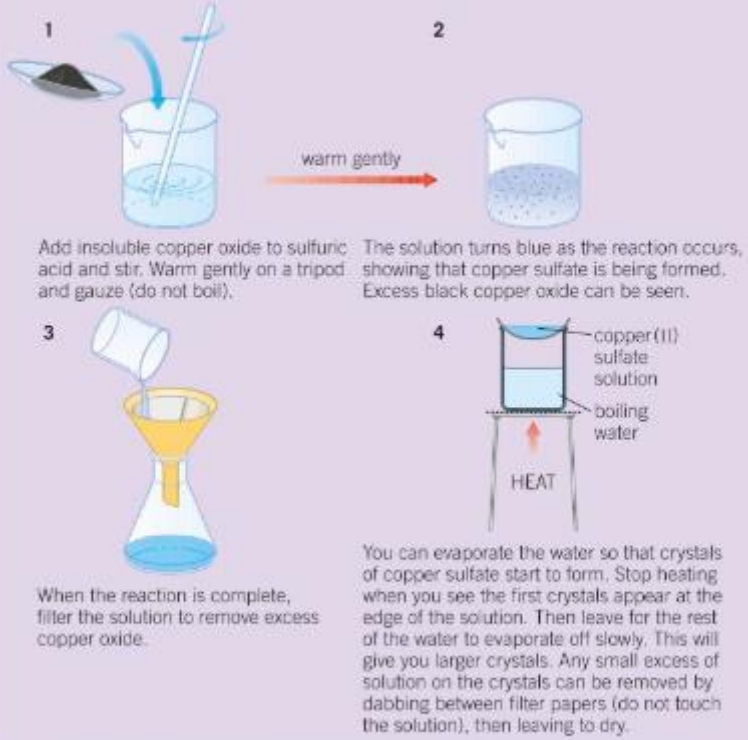
The charges on common positive ions	The charges on common negative ions
ions of Group 1 metals = +1 (e.g., Li^+, Na^+, K^+)	ions of Group 7 non-metals = −1 (e.g., F^-, Cl^-, Br^-, I^-)
ions of Group 2 metals = +2 (e.g., Mg^{2+}, Ca^{2+})	nitrate ions = −1, NO_3^-
aluminium ion = +3, Al^{3+}	sulfate ions = −2, SO_4^{2-}
ammonium ion = +1, NH_4^+	
transition metals = variable (size of positive charge given by the roman numeral in the name, e.g., copper(II) ion, Cu^{2+}, or iron(III) ion, Fe^{3+})	

Making a copper salt

You can make copper sulfate crystals from copper(II) oxide (an insoluble base) and sulfuric acid. The equation for the reaction is:

sulfuric acid + copper(II) oxide → copper(II) sulfate + water

$H_2SO_4(aq) + CuO(s) \rightarrow CuSO_4(aq) + H_2O(l)$



1. Add insoluble copper oxide to sulfuric acid and stir. Warm gently on a tripod and gauze (do not boil).
2. The solution turns blue as the reaction occurs, showing that copper sulfate is being formed. Excess black copper oxide can be seen.
3. When the reaction is complete, filter the solution to remove excess copper oxide.
4. You can evaporate the water so that crystals of copper sulfate start to form. Stop heating when you see the first crystals appear at the edge of the solution. Then leave for the rest of the water to evaporate off slowly. This will give you larger crystals. Any small excess of solution on the crystals can be removed by dabbing between filter papers (do not touch the solution), then leaving to dry.

- What does the copper sulfate look like? Draw a diagram if necessary.

Safety: Wear eye protection. Chemicals in this practical are harmful. Make sure you only warm the acid gently – do not boil it!

Higher

Explaining the reaction between a metal and an acid

In the reaction between magnesium, Mg, and dilute sulfuric acid, H_2SO_4, hydrogen ions will be displaced from solution by magnesium. This happens because magnesium is more reactive than hydrogen. Magnesium has a stronger tendency to form positive ions than hydrogen has, so the following reaction takes place:

$$Mg(s) + H_2SO_4(aq) \rightarrow MgSO_4(aq) + H_2(g)$$

You can summarise this reaction as an ionic equation (see Topic C5.2):

$$Mg(s) + 2H^+(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$$

The sulfate ions in the solution, $SO_4^{2-}(aq)$, do not change in the reaction, so are not included in the ionic equation. They are called spectator ions.

Then you can look more closely at the ionic equation by dividing it into two half equations (see Topic C5.2). You can see what happens to the magnesium atoms when they change into positive magnesium ions:

$$Mg(s) \rightarrow Mg^{2+}(aq) + 2e^-$$

A magnesium atom loses its two electrons from its outer shell. It gives these electrons to two hydrogen ions from the acidic solution, $2H^+(aq)$, forming two H atoms. These bond to each other (sharing a pair of electrons in a covalent bond) to make a molecule of hydrogen gas, H_2:

$$2H^+(aq) + 2e^- \rightarrow H_2(g)$$

In Topic C5.2, you found that oxidation is loss of electrons and that reduction is gain of electrons (remember OILRIG). So you can conclude that electrons have been transferred from magnesium atoms to hydrogen ions in the reaction:

- The magnesium atoms have lost electrons, so magnesium atoms have been *oxidised* in the reaction.
- The hydrogen ions have gained electrons, so hydrogen ions have been *reduced* in the reaction.

The reaction of a metal with an acid is always a redox reaction, because the metal atoms always donate electrons to the hydrogen ions, displacing hydrogen as a gas and leaving the metal ions in the solution.

Subject: Science	Term: 6	Topic: Year 9 Chemistry – Chemical changes

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5.6 Making more salts

There are two other important reactions you can use to make salts:

- Reacting solutions of an acid and an alkali together
- Reacting an acid with a carbonate (usually added as the solid)

Acid + Alkali → Salt + Water

Hydrochloric acid + Sodium hydroxide → Sodium chloride + Water

$$HCl_{(aq)} + NaOHl_{(aq)} \rightarrow NaCl_{(aq)} + H_2O_{(g)}$$

When you react an acid with an alkali, you need to be able to tell when the acid and alkali have completely reacted. It is not obvious by just observing the reaction. No gas is given off during the reaction, also there is no excess insoluble base visible in the reaction mixture when excess has been added so you need to use an acid/base indicator to help to decide when the reaction is complete.

To complete a pure, dry sample of crystals of the salt you would:

- Carry out the titration with the indicator added to see how much acid reacts completely with the alkali
- Run that volume of acid into the solution of alkali again, but this time without the indicator
- Then crystallise and dry the crystals of salt from the reaction mixture

Acid + Carbonate→ Salt + Water + Carbon dioxide

Hydrochloric acid + Calcium carbonate → Calcium chloride + Water + Carbon dioxide

$$CaCO_{3(s)} + 2HCl_{(aq)} \rightarrow CaCl_{2(aq)} + H_2O_{(l)} + CO_{2(g)}$$

5.7 Neutralisation and the pH scale

Soluble hydroxides are called **alkalis**. Their solutions are alkaline. E.g. Sodium Hydroxide solution.

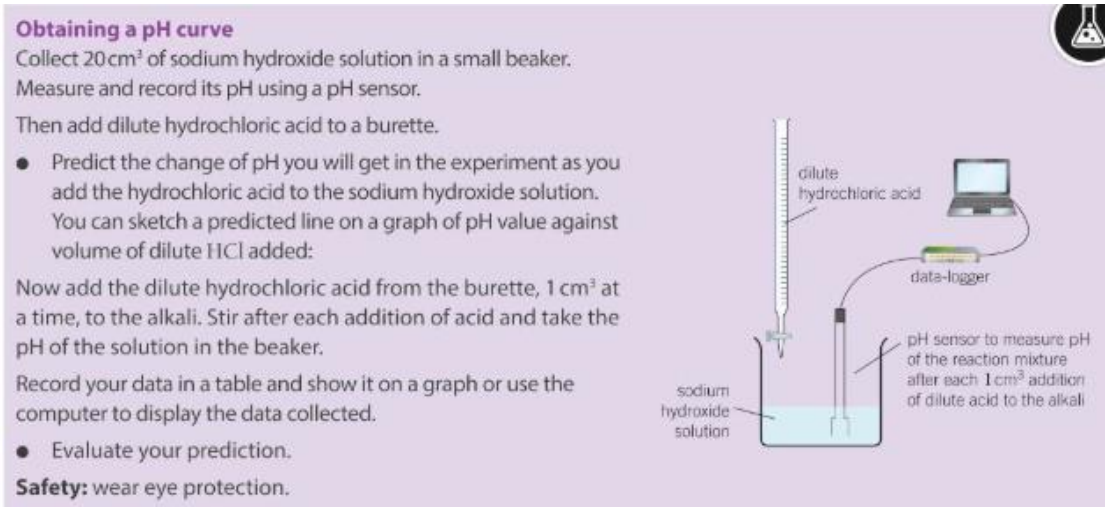
Bases, which include alkalis, are substances that can neutralise acids. E.g. Metal oxides and metal hydroxides.

Acids, include citric acid, sulphuric acid and ethanoic acid.

Pure water is **neutral**; it is neither acid nor alkaline.

We use indicators that change colour when added to acids and alkalis. Litmus is a well-known indicator.

We use the **pH scale** to show how acidic or alkaline something is. Alternatively, a pH meter can be used.



Obtaining a pH curve

Collect 20 cm³ of sodium hydroxide solution in a small beaker. Measure and record its pH using a pH sensor.

Then add dilute hydrochloric acid to a burette.

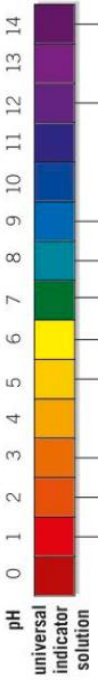
- Predict the change of pH you will get in the experiment as you add the hydrochloric acid to the sodium hydroxide solution. You can sketch a predicted line on a graph of pH value against volume of dilute HCl added:

Now add the dilute hydrochloric acid from the burette, 1 cm³ at a time, to the alkali. Stir after each addition of acid and take the pH of the solution in the beaker.

Record your data in a table and show it on a graph or use the computer to display the data collected.

- Evaluate your prediction.

Safety: wear eye protection.



5.8 Strong and weak acids

Weak acids include ethanoic acid, citric acid and carbonic acid.

Strong acids include hydrochloric acid, nitric acid and sulphuric acid.

Acids must dissolve in water before they show their acidic properties. That is because in water all acids ionise (split up). Their molecules split up to form $H^+_{(aq)}$ ions and negative ions. For example:

$$HCl_{(aq)} \rightarrow H^+_{(aq)} + Cl^-_{(aq)}$$

Strong acids ionise *completely* in solution, but weak acids do not.

The concentration of an acid is to do with the amount of solute within a volume of solution. More solute in a particular volume means it is more concentrated, but not necessarily stronger.

Subject: Geography Year 9

Term: 5 & 6

Topic: Natural Hazards

Structure of the Earth

- There are 4 layers – inner core, outer core, mantle, crust
- Crust is divided into plates
- 2 types of plate – oceanic (thinner and denser) and continental (thicker and less dense)
- Plates move on convection currents in the mantle
- Places where plates meet are plate boundaries / plate margins

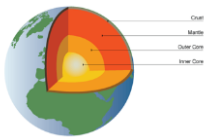
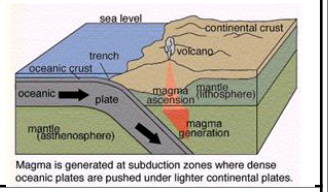
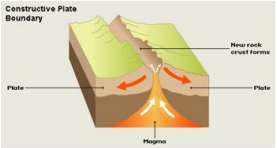


Plate boundaries

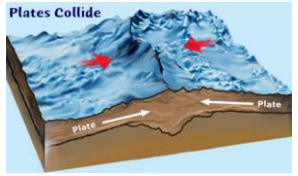
Destructive boundary :
- Oceanic crust and continental crust move together
- Oceanic crust is forced down because it is denser than continental crust
- oceanic crust is destroyed at a subduction zone
- earthquakes and volcanoes can occur as the pressure increases e.g Kobe Earthquake



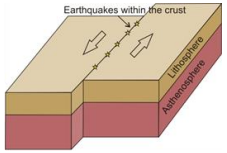
Constructive boundary :
- Convection currents in the upper mantle cause two plates to move away from each other
- magma rises to the surface
- Volcanoes and new crust are formed
- E.g. the Mid Atlantic Ridge



Collision boundary :
- Two continental plates move together
- neither can be destroyed so the crust is pushed upwards
- pressure increases causing fold mountains and earthquakes
- e.g. Himalayas, Asia

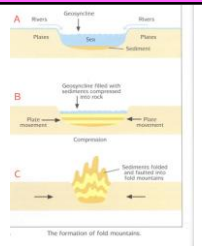


Conservative boundary :
- Plates slide past each other in the same or opposite direction
- Sometimes the lock and pressure builds up until it is released



Fold Mountains

Form-ation



Use of the Andes

Farming : Best land on the valley floors. Terraces dug into valley sides. Crops - potatoes, soya, maize, rice and cotton. Transport : Llamas are used for transportation and to carry goods. Alpaca have been used for wool.
Mining : Large deposits of Coal, oil and natural gas, iron ore, gold, silver, tin, copper, phosphates and nitrates and Bauxite (for aluminium) within the Andes mountains. Yanacocha gold mine in Peru is largest gold mine in the world.
Hydroelectric power : deep valley and rivers give huge potential to produce hydroelectric power. Narrow valleys are ideal to dam and steep relief increases water velocities allowing electricity generation.
Tourism : Peru has the Inca Trail which covers 50km of old pathways linking together old Inca settlements. It is South America's best known trek and is one of only 23 World Heritage Sites

Volcanic Hazards

Primary hazard - occur as a direct result of the earthquake or volcanic eruption e.g. buildings collapsing; roads cracking;

Secondary hazard - occur because of a change in the environment following an earthquake or volcanic eruption. E.g. severe fires due to explosion from escaping gas and difficulties in putting out fires.

Montserrat Eruption

Primary effects :
- 23 people died
- Pyroclastic flows burned buildings and trees
- Ash buried over 2/3 of the island
- 60% of housing was destroyed in the capital city Plymouth
- The airport was buried in ash and roads were destroyed

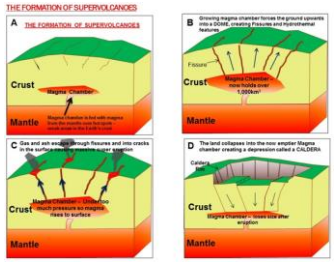
Secondary effects :
- Hospitals and schools closed
- Farming was impossible due to the ash covering the fields
- Coral reefs were destroyed by ash being washed into the sea

Responses :
- The volcano has not erupted for 400 years so there were no plans in place
- People were evacuated to the north of the island
- 8000 left Montserrat as refugees
- The UK gave £55 million in aid
- Little farmland is useable in the south
- Plymouth remains a ghost town – the new capital is Little Bay in the north
- Tourism is slowly returning as the volcano becomes an attraction

Monitoring :
- Remote sensing – satellites monitor volcano temperature and gas emissions
- Seismometers – these measure the increase in earthquake activity that occurs before an eruption
- Tiltmeters – these monitor changes in the shape of the volcano
- Gas emissions – increased emissions indicate increased risk especially sulphur dioxide and carbon dioxide
- Ultrasound – used to detect movement of magma

Supervolcanoes

Causes
1.Magma rises to form large magma basin below the surface. Pressure causes bulge on surface 2.The bulge cracks creating vents. Lave erupts as does ash and rock
3. As magma basin empties the bulge is no longer supported so it collapses – spewing up more lava
4. When the eruption finishes it leaves a caldera where the bulge collapses.



Effects if Yelolowstone erupts :
- magma would be flung 50km up into the atmosphere
- virtually all life up to 1000km away would be killed by falling ash, lava flows and the force of the explosion (87, 000 people)

- 1000km3 of lava would come out – enough to cover whole of USA with 12.5cm layer
- cool the global climate so crops wouldn't grow and people would starve
- economies would collapse

Measuring earthquakes

Mercall scale : measures effects . Scale I - XII

Richter scale : measures energy released using seismometer. Logarithmic

San Francisco Earthquake	Haiti Earthquake
• Occurred Loma Prieta (56 miles south San Francisco) • of San Andreas fault • 17th October 1989 at 17:04, lasted 20 secs	• Haiti, Port-Au-Prince 16km west of Port-Au-Prince • 80% in poverty • 12th January 2010 at 16:53
• Conservative boundary • Pacific plate moved 1.9m North West and the North American plate moved 1.3m • Magnitude 6.9	• Conservative plate boundary • Caribbean plate and North American plate • Lasted 35 seconds • Magnitude 7
• 63 deaths • 3757 injured • 12,053 homeless • 18,306 homes damaged • 963 homes lost • Transport links broken	• 316,000 deaths • 300,000 injuries • 1 million homeless • 92,294 homes lost • 188,383 damaged • Transport links destroyed (airport) • 50+ hospitals lost
• Direct damage costing $6.8 billion • 2575 businesses damaged • 147 businesses lost • Nimitz highway collapsed • Bay bridge collapsed	• Direct damage costing $2.8 billion • 60% of government buildings damaged • $14 billion cost • 20% of buildings collapsed, 80% serious damage
• Rubble from 1906 filled the Marina district (liquefaction) • Pipes broken (gas and water) – huge fires	• Outbreak of cholera, e-coli and water pollution • Poor sanitation • Agricultural industry destroyed
• Building codes followed • Community drills practised • Well prepared and trained	Very poor country • Don't have the technology like MEDC's to build buildings with earthquake proof features

Subject: Geography Year 9	Term: 5 & 6	Topic: The Challenge of Natural Hazards

WOOTTON PARK

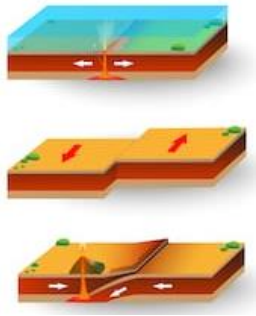
Key question: What are natural hazards?

There are a huge range of natural hazards. These include:
-volcanic eruptions
-earthquakes
-storms
-tsunami (huge waves caused by earthquakes
-landslides
-floods

Natural hazards are naturally occurring physical events that are caused by tectonic, atmospheric, geomorphological or biological factors, these events can pose a threat to humans.

Key question: Why is there a pattern of earthquakes?

Tectonic plates:
-The Earth's crust is split into a number of plates about 100km thick.
-There are two types of crust – dense, thin oceanic crust and less dense, thick continental crust.
-Plates move in relation to each other due to convection (heat) currents from deep within the Earth. Gravitational pull may play a part.



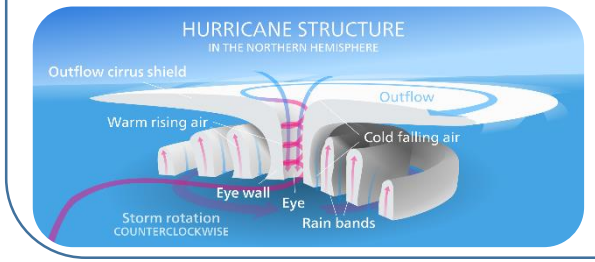
Constructive margin – two plates move apart

Conservative margin – two plates rub together

Destructive margin – two plates move together

Key question : What is a tropical storm?

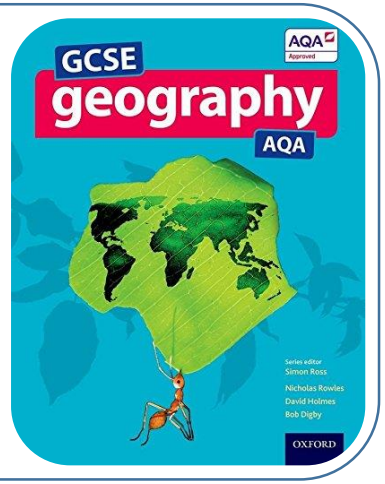
A **tropical storm** is a huge storm that develops in the Tropics. In the USA and Caribbean these are called **hurricanes.** In south-east Asia and Australia they are called **cyclones**, but in Japan and the Philippines they are called **typhoons**.



Case Study: Typhoon Haiyan
In November 2013 'Super' Typhoon Haiyan – a category 5 storm on the Saffir-Simpson scale – hit the Philippines killing around 6300 and displacing over 600,000.

Websites and further reading:

- https://www.bbc.co.uk/bitesize/guides/zpxgk7h/revision/1
- https://www.internetgeography.net/aqa-gcse-geography/the-challenge-of-natural-hazards/
- http://www.coolgeography.co.uk/gcsen/challenge_natural_hazards.php
- https://www.kerboodle.com/



Key vocabulary to define and learn:

Tropical storm Saffir-Simpson Effect Response Immediate Long-term

Hazard Distaster Monitor Mitigate Climate Change

Subject: History Year 9 (GCSE AQA)	Term: 5 and 6	Topic: America Opportunity and Inequality 1920-1973

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key concept 1: American people and the Boom

1. **The Boom**
   - Mass production – Ford
   - Benefits of the Boom
   - Inequalities in Wealth
2. **Social and Cultural Developments**
   - Entertainment
   - Women and flapper culture
3. **Divided Society**
   - Organised Crime and Prohibition
   - Causes of racial tension
   - Immigration
   - KKK
   - Red Scare

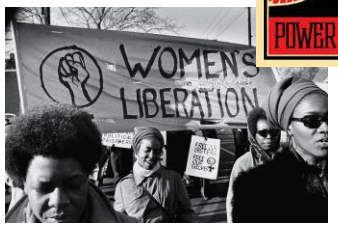

Chicago Sunday Tribune
FINAL EDITION
JURY CONVICTS CAPONE
omas A. Edison Dies in Sleep at 84
GANG MONARCH GUILTY ON 5 TAX FRAUD COUNTS
DEATH PROMISES FOR MAN WHO LIGHTED WORLD

Key concept 2: Bust – Americans' experience of the Depression and New Deal

1. **American society during the Depression**
   - Unemployment for farmers and businessmen
   - Hoover's responses and unpopularity
   - Roosevelt's election
2. **The effectiveness of the New Deal on different groups in society**
   - Successes/Limitations of the New Deal
   - Opposition from supreme court
   - Republicans and Radicals
   - Roosevelt's contribution as president
   - Popular culture
3. **Impact of the Second World War**
   - Economic recovery
   - Social Development (African Americans and Women)

Key concept 3: Post-War America

1. **Post-War American society and economy**
   - Consumerism and causes of prosperity
   - The American Dream
   - McCarthyism
   - Rock and Roll and Television
2. **Racial Tension and developments in the Civil Rights campaigns in 1950s and 60s**
   - Segregation laws
   - Martin Luther King Jr (Peaceful Protest)
   - Malcom X (Black Power Movement)
   - Civil Rights Acts 1964/68
3. **America and the 'Great Society'**
   - Social policy (Kennedy and Johnson)
   - Women's Movement (fight for equality)



Websites and further reading:

http://www.bbc.co.uk/schools/gcsebitesize/history/tch_wjec/usa19101929/2riseandfall1.shtml
https://www.bbc.com/bitesize/topics/zq2mn39/resources/1
AQA (1-9) Revision Guide America Opportunity and Inequality
AQA (1-9) Student book America Opportunity and Inequality
https://www.history.com/topics/great-depression/new-deal

Key vocabulary to define and learn:

Boom Bust Mass Production Social Development Flapper Organised Crime Prohibition Immigration Red Scare Ku Klux Klan Communism Prosperity McCarthyism Segregation American Dream Civil Rights Depression Republican Democrat Economy Okies Hobo Consumerism Black Power Bible Belt Supreme Court Congress

Subject: Spanish (Y9)	Term: 5 & 6	Topic: Viva GCSE; Módulo 3

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Content 1 – Mi gente *(My people)*

Talking about family members

Using TENER and SER (to have and to be) to describe physical and personality attributes

Using other parts of the verb to say what youf family and Friends do.

Possessive Adjectives

Key Content 2 – ¿Cómo es? *(What is he/she/it like?)*

Describing photographs

Describing other people

Agreeing different adjectives.

Key Content 3 – ¿Qué haces con tu móvil?*(What do you do with your phone?)*

Describing phone apps and activities

Saying what you do online and when

Giving advantages and disadvantages of social media

Key Content 4 – ¿Qué estás haciendo?*(What do are you doing?)*

Using the present continuous

Making arrangements for the near future

Key Content 5 – ¿Te gusta leer?*(Do you like reading?)*

Genres of Reading material

Discussing opinions on Reading

Saying whether you prefer reading on paper or in digital format

Key Content 5 – ¿Te llevas bien con tu familia?*(Do you get on well with your family?)*

Describing personal relationships

Understanding problems and solutions

Activities *(you may complete some or all of these…)*

- Creating a family tree
- Describing a set of photographs
- Creating a safety guide to social media
- Writing a book review

Websites and further reading:

Search on www.quizlet.com for 'Viva GCSE, M3'

Use the third module in your textbook and on www.pearsonactivelearn.com

Mi familia, mis amigos y la tecnologia

Key Vocabulary (See Textbook pages 64/65) *For revision you need to be able to understand all the texts on the double pages*

Practise vocabulary at home and/or with a friend at school

Tick off the modules above as you complete them, and make sure you can still do these topics for the End of Unit test. Look over your learning and complete anything missing at home each week:

Look, cover, write, check…

You need: **Family members**□ **Friends** □ **Adjectives for people**□ **Physical Description**□ **The present continuous**□ **TENER/SER/ESTAR** □ **Tecnhnology Vocab**□ **Advantages & Disadvantages**□ **Reading**□

High Frequency Words: *Estoy (I am), Tengo (I have), Soy (I am), Leo (I read), Prefiero (I prefer), Hay (There is/are), Me llevo bien con (I get on well with), Una (des)ventaja es (a (dis)advantage is)*

Subject: French (Y9 **d**)	Term: 5/6	Topic: Studio GCSE F; Module 3 – Jours ordinaires, jours de fêtes!

Key Content 1 – La vie saine – Manger et boire *(Healthy living - eating and drinking)*

Knowing food and drink items

Talking about healthy and unhealthy eating

Describing meals and menus

Role plays and giving advice

Key Content 2 – Les vêtements *(Clothes)*

Describing outfits and fashion

Saying what you wore and are going to wear

Shopping for clothes, prices, opinions, problems and role-play

Using emphatic pronouns and demonstratives

Key Content 3 – La routine quotidienne *(Daily routine)*

Describing a normal day

Planning the weekend

Using modal verbs

Using reflexive verbs

Using time

Key Content 4 –C'est la fête! *(Party time!)*

Talking about festivals and customs

Describing a party

Discussing cultural differences

Talking about traditions

Key Content 5 – On va manger?*(Shall we eat?)*

Forming questions

Describing/reviewing a restaurant

Using present and future

Talking about shopping for ingredients

Using weights, measures and prices

Talking about shopping online

Key Content 5 – Félicitations! *(Congrats!)*

Describing life events

Talking about family celebrations – birthdays, Christmas, marriages & parties

Using several tenses together

Activities *(you may complete some or all of these…)*

Coming up with healthy eating plans

Designing healthy lifestyle advice

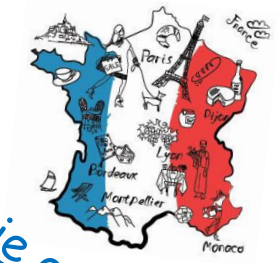
Creating a routine diary

Acting out shop, restaurant and conversation role-plays

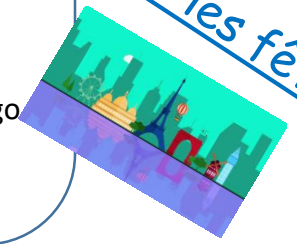
Researching and writing about cultural traditions

Websites and further reading:

Search on www.quizlet.com for 'Studio GCSE, M3'
Use the third module in your textbook and on www.pearsonactivelearn.com
Use www.linguascope.com to play games – login: wootton p/word: wpssch00l
Use www.languagesonline.org and go to the French Grammar section to practise



La vie et les fêtes!



Key Vocabulary (See Textbook pages 70 & 71) *For revision you need to be able to understand all the texts on the double pages*

Practise vocabulary at home and/or with a friend at school

Tick off the points above as you complete them, and make sure you can still do these topics for the Assessment Point. Look over your learning and complete anything missing at home each week:

Look, cover, write, check…

You need: **Food and drink**□ **Question words**□ **Clothing**□ **Using verbs 'pouvoir' and 'devoir'**□ **Festivals and celebrations**□ **Emphatic pronouns**□ **Routine verbs - reflexives**□

High Frequency Words: *Je voudrais (I would like), On doit (one must), On peut (one can), Je peux (I can), Je dois (I must), On devrait (one should), Je vais (I am going…), Un avantage est…. (an advantage is…)*

VOCABULARY

Year 9 French T5 & 6

La nourriture et les boissons / Food and drink

du beurre/du fromage	*butter/cheese*	de la viande	*meat*
du lait/du pain	*milk/bread*	de l'eau (f)	*water*
du poisson/du poulet	*fish/chicken*	des bananes/des fraises	*bananas/strawberries*
du yaourt	*yoghurt*	des œufs/des pêches	*eggs/peaches*
de la confiture	*jam*	des poires/des pommes	*pears/apples*
de la glace	*ice cream*	des pommes de terre	*potatoes*

Les repas / Meals

Qu'est-ce que tu prends pour le petit-déjeuner?	*What do you have for breakfast?*	Comme dessert, …	*For dessert …*
		Je prends/je mange …	*I have/I eat …*
Qu'est-ce que tu manges à midi?	*What do you eat at lunchtime?*	des céréales	*cereal*
Qu'est-ce que tu manges comme casse-croûte?	*What do you have as a snack?*	du pain grillé	*toast*
		un sandwich	*a sandwich*
Qu'est-ce que tu manges le soir?	*What do you eat in the evening?*	des chips/des biscuits	*crisps/biscuits*
Qu'est-ce que tu bois?	*What do you drink?*	des pâtes	*pasta*
Pour le petit-déjeuner, …	*For breakfast …*	de la salade	*salad*
À midi, …	*At lunchtime …*	de la glace au chocolat	*chocolate ice cream*
Comme casse-croûte, …	*As a snack …*	Je bois du jus d'orange.	*I drink orange juice.*
Le soir, …	*In the evening …*		

Les quantités / Quantities

un kilo de …	*a kilo of …*	un pot de …	*a jar/pot of …*
deux cent cinquante grammes de …	*250 grams of …*	une boîte de …	*a tin/can of …*
un litre de …	*a litre of …*	une bouteille de …	*a bottle of …*
un paquet de …	*a packet of …*	quatre tranches de …	*four slices of …*

Les vêtements / Clothes

Je porte …	*I wear/am wearing …*	une chemise/une écharpe	*a shirt/a scarf*
un blouson/un chapeau	*a jacket/a hat*	une mini-jupe/une montre	*a mini-skirt/a watch*
un costume	*a suit*	une robe/une veste	*a dress/a jacket*
un imperméable	*a raincoat*	des baskets (de marque)	*(designer) trainers*
un jean (moulant)	*(a pair of) (skinny) jeans*	des boucles d'oreille	*earrings*
un manteau/un pantalon	*a coat/(a pair of) trousers*	des bottes	*boots*
un polo/un pull	*a polo shirt/a jumper*	des chaussettes	*socks*
un sac à main/un short	*a handbag/(a pair of) shorts*	des chaussures	*shoes*
un sweat à capuche	*a hoody*	des gants	*gloves*
un tee-shirt	*a T-shirt*	des lunettes de soleil	*sunglasses*
une casquette	*a cap*	en laine/en cuir	*woollen/leather*
une ceinture	*a belt*	rayé(e)(s)	*striped*

Les couleurs / Colours

blanc(he)(s)	*white*	orange	*orange*
bleu(e)(s)	*blue*	rose(s)	*pink*
gris(e)(s)	*grey*	rouge(s)	*red*
jaune(s)	*yellow*	vert(e)(s)	*green*
marron	*brown*	clair	*light*
mauve(s)	*purple*	foncé	*dark*
noir(e)(s)	*black*	multicolore(s)	*multi-coloured*

La vie quotidienne / Daily life

J'ai cours tous les jours sauf …	*I have lessons every day except …*	Le samedi,/Le dimanche, …	*On Saturdays/Sundays …*
Les jours d'école, …	*On school days …*	je peux rester au lit	*I can stay in bed*
je dois me lever tôt	*I have to get up early*	je peux retrouver mes copains/copines en ville	*I can meet up with my friends in town*
je dois quitter la maison à (7h30)	*I have to leave the house at (7.30)*	je dois ranger ma chambre	*I have to tidy my room*
Le soir, …	*In the evening …*	je peux écouter de la musique	*I can listen to music*
je dois faire mes devoirs	*I have to do my homework*		
je dois aider ma mère	*I have to help my mother*		
je peux regarder un peu la télé	*I can watch a bit of TV*		

Au magasin de vêtements / In the clothes shop

la taille	*size*	trop grand(e)(s)	*too big*
la pointure	*shoe size*	cassé(e)(s)	*broken*
les cabines d'essayage	*changing rooms*	Il/Elle ne marche pas.	*It is not working/doesn't work.*
une taille moyenne	*medium size*	Je voudrais …	*I would like …*
Il y a un trou.	*There's a hole (in it).*	échanger (la jupe/le pantalon, etc.)	*to exchange (the skirt/trousers, etc.)*
Il y a une tache.	*There's a stain (on it).*	un remboursement	*a refund*
Il/Elle est/Ils/Elles sont …	*It is/They are …*		
trop petit(e)(s)	*too small*		

Faire les magasins ou faire du shopping en ligne? / Go to the shops or shop online?

Je préfère …	*I prefer …*	je peux demander l'opinion de mes ami(e)s	*I can ask my friends' opinion*
faire les magasins	*to go to the shops*	il y a trop de monde dans les magasins	*there are too many people in the shops*
faire mes achats en ligne	*to make my purchases online*	on peut trouver des vêtements moins chers	*you can find cheaper clothes*
parce que/qu' …	*because …*	c'est plus facile/plus rapide	*it's easier/faster*
c'est mieux d'essayer les vêtements dans un magasin	*it's better to try clothes on in a shop*		

Les fêtes / Festivals

Noël	*Christmas*	Chez moi,/nous, …	*At my/our house …*
la veille de Noël	*Christmas Eve*	on fête (Noël/Divali, etc.)	*we celebrate (Christmas/Diwali, etc.)*
Pâques	*Easter*	on boit du champagne	*we drink champagne*
Divali	*Diwali*	on décore le sapin de Noël	*we decorate the Christmas tree*
Hanoukka	*Hanukkah*	on s'offre des cadeaux	*we give each other presents*
Aïd-el-Fitr	*Eid al-Fitr*	on ouvre les cadeaux	*we open the presents*
le 6 janvier/la fête des Rois	*Epiphany*	on chante des chants traditionnels	*we sing traditional songs*
le premier avril	*April Fool's Day*	on allume des bougies	*we light candles*
la Chandeleur	*Candlemas*	on cherche des œufs dans le jardin	*we look for eggs in the garden*
le Nouvel An	*New Year*	On prépare/mange …	*We prepare/eat …*
la Saint-Sylvestre	*New Year's Eve*	de la dinde rôtie	*roast turkey*
la Saint-Valentin	*Valentine's Day*	des légumes	*vegetables*
la fête des Mères	*Mother's Day*	une bûche de Noël au chocolat	*a chocolate Yule log*
le 14 juillet/la fête nationale française	*Bastille Day, 14 July*	des crêpes	*crêpes*
		une galette des Rois	*tart eaten for Epiphany*
On est chrétiens.	*We are Christian.*	toutes sortes de bonnes choses	*all sorts of good things*
On est juifs.	*We are Jewish.*	des choses sucrées	*sweet things*
On est musulmans.	*We are Muslim.*		

Un repas spécial / A special meal

Je vais/On va apporter …	*I am/We are going to bring …*	une laitue	*a lettuce*
du jambon/du pâté	*ham/pâté*	des tomates/des oignons	*tomatoes/onions*
du saucisson	*salami*	des poivrons	*peppers*
des baguettes	*baguettes*	des champignons	*mushrooms*
des biftecks	*steaks*	des abricots	*apricots*
des saucisses	*sausages*	des framboises	*raspberries*
des salades composées	*mixed salads*	du raisin	*grapes*
une salade de riz	*a rice salad*	des mini-gâteaux	*mini-cakes*
du concombre	*cucumber*	une tarte aux fruits	*a fruit tart*

Les magasins / Shops

le marché/le supermarché	*market/supermarket*	la charcuterie	*pork butcher's/delicatessen*
la boucherie	*butcher's*	la pâtisserie	*cake shop/pastry shop*
la boulangerie	*bakery/baker's*	l'épicerie (f)	*greengrocer's*

Fêter le 14 juillet / Celebrating Bastille Day

On va aller au bal.	*We're going to go to the dance.*	On va s'amuser.	*We're going to have fun.*
On va regarder le feu d'artifice.	*We're going to watch the fireworks.*	On va inviter …	*We're going to invite …*

Félicitations! / Congratulations!

l'anniversaire (m)	*birthday*	Mon frère s'est pacsé avec son compagnon.	*My brother entered into a civil partnership with his partner.*
le mariage	*wedding/marriage*	Il y avait …	*There was/were …*
la fête	*party*	beaucoup d'invités	*lots of guests*
C'était mon anniversaire.	*It was my birthday.*	un gâteau spécial	*a special cake*
J'ai reçu beaucoup de cadeaux.	*I received lots of presents.*	C'était …	*It was …*
Ma sœur a eu son premier bébé.	*My sister had her first baby.*	génial	*great*
Je suis allé(e) au mariage de (ma cousine).	*I went to (my cousin)'s wedding.*		

Les mots essentiels / High-frequency words

avec	*with*	en ce moment	*at the moment*
pour	*for*	en été	*in summer*
donc, alors	*so, therefore*	avant-hier	*the day before yesterday*
car/parce que	*for/because*	il y a (trois) jours	*(three) days ago*
malheureusement	*unfortunately*	Je suis désolé(e).	*I'm sorry.*
sinon	*if not, otherwise*	bien sûr	*of course*
parfois	*sometimes*	quel/quelle/quels/quelles …?	*which …?*
quelque(s)	*some/a few*	ce/cet/cette/ces	*this/these*
beaucoup de	*lots of*		

YEAR 9 TERM 5 & 6 (FOUNDATION)

¿Qué aplicaciones usas?	What apps do you use?		
Uso… para…	I use… (in order) to…	divertido/a	fun
subir y ver vídeos	upload and watch videos	peligroso/a	dangerous
compartir fotos	share photos	práctico/a	practical
pasar el tiempo	pass the time	rápido/a	quick
organizar las salidas con mis amigos	organise to go out with my friends	fácil de usar	easy to use
contactar con mi familia	contact my family	popular	popular
descargar música	download music	útil	useful
chatear	chat	gratis	free
aprender idiomas	learn languages	adictivo/a	addictive
controlar mi actividad física	monitor my physical activity	mi red social preferida	my favourite social network
publicar mensajes	post messages	una pérdida de tiempo	a waste of time
Es / No es…	It is / It isn't…	la mejor app	the best app
cómodo/a	handy / convenient	Estoy enganchado/a a…	I am hooked on…

¿Qué estás haciendo?	What are you doing?		
Estoy…	I am…	leyendo	reading
tocando la guitarra	playing the guitar	durmiendo	sleeping
hablando por teléfono	talking on the phone	escribiendo	writing
jugando con mi móvil	playing on my phone	pensando en salir	thinking of going out
comiendo pizza	eating pizza	actualizando mi página de Facebook	updating my Facebook page
tomando el sol	sunbathing	editando mis fotos	editing my photos
esperando a…	waiting for…		
viendo una peli	watching a film		

¿Quieres salir conmigo?	Do you want to go out with me?		
No puedo porque…	I can't because…	quedarme en casa	to stay at home
está lloviendo	it's raining	dar una vuelta	to go for a wander
tengo que…	I have to …	¡Qué pena!	What a shame!
visitar a (mi abuela)	visit (my grandmother)	¿A qué hora quedamos?	What time shall we meet?
cuidar a (mi hermano)	look after (my brother)	¿Dónde quedamos?	Where shall we meet?
quiero…	I want…	En la plaza Mayor.	In the main square.
subir mis fotos	to upload my photos	Vale	OK

¿Qué te gusta leer?	What do you like reading?		
los tebeos / los cómics	comics	las novelas de amor	romantic novels
los periódicos	newspapers	las historias de vampiros	vampire stories
las revistas	magazines	las biografías	biographies
las novelas de ciencia ficción	science fiction novels		

¿Con qué frecuencia lees?	How often do you read?		
todos los días	every day	una vez al año	once a year
a menudo	often	nunca	never
de vez en cuando	from time to time	un ratón de biblioteca	a bookworm
una vez a la semana	once a week	un(a) fan del manga	a manga fan
dos veces al mes	twice a month		

¿Qué es mejor, e-books o libros en papel?	What is better, e-books or paper books?		
Los e-books…	E-books…	Las páginas…	The pages…
cuestan menos que los libros tradicionales	cost less than traditional books	no tienen números	don't have numbers
son más…	are more…	una ventaja	an advantage
transportables	portable	una desventaja	a disadvantage
ecológicos	environmentally-friendly	Leer en formato digital…	Reading in digital format…
cansan la vista	tire your eyes	protege el planeta	protects the planet
usan batería	use battery	es más barato	is cheaper
		depende de…	depends on…
		la energía eléctrica	electricity

La familia	Family		
el padre	father	el primo	male cousin
la madre	mother	la prima	female cousin
el padrastro	step-father	el sobrino	nephew
la madrastra	step-mother	la sobrina	niece
el hermano	brother	el marido	husband
la hermana	sister	la mujer	wife
el hermanastro	step-brother	el hijo	son
la hermanastra	step-sister	la hija	daughter
el abuelo	grandfather	el nieto	grandson
la abuela	grandmother	la nieta	granddaughter
el tío	uncle	mayor / menor	older / younger
la tía	aunt		

¿Cómo es?	What is he/she like?	Tiene…	He/She has…
Tiene los ojos…	He/She has… eyes	pecas	freckles
azules	blue	Lleva…	He/She wears…
verdes	green	gafas	glasses
marrones	brown	barba	a beard
grises	grey	bigote	a moustache
grandes	big	Es…	He/She is…
pequeños	small	alto/a	tall
Tiene el pelo…	He/She has… hair	bajo/a	short
moreno	dark-brown	delgado/a	slim
castaño	mid-brown, chestnut	gordito/a	chubby
rubio	blond	gordo/a	fat
rojo	red	calvo/a	bald
corto	short	moreno/a	dark-haired
largo	long	rubio/a	fair-haired
rizado	curly	castaño/a	brown-haired
liso	straight	pelirrojo/a	red-haired
ondulado	wavy	No es ni gordo/a ni delgado/a	He/She is neither fat nor thin

¿Cómo es de carácter?	What is he/she like as a person?		
Como persona, es…	As a person, he/she is…	tímido/a	shy
optimista	optimistic	divertido/a	fun
pesimista	pessimistic	serio/a	serious
trabajador(a)	hard-working	gracioso/a	funny
perezoso/a	lazy	generoso/a	generous
hablador(a)	chatty	fiel	loyal

¿Te llevas bien con tu familia y tus amigos?	Do you get on well with your family and friends?		
Me llevo bien con…	I get on well with…	Me divierto con…	I have a good time with…
No me llevo bien con…	I don't get on well with…	Me peleo con…	I argue with…

¿Cómo es un buen amigo / una buena amiga?	What is a good friend like?		
Un buen amigo / una buena amiga es alguien que…	A good friend is someone who…	te hace reír	makes you laugh
		te dice la verdad	tells you the truth
te ayuda	helps you	Conocí a…	I met…
te apoya	supports you	mi mejor amigo/a	my best friend
te conoce bien	knows you well	hace (cuatro) años	(four) years ago
te acepta	accepts you	tenemos mucho en común	we have a lot in common

YEAR 9 TERM 5 & 6 (HIGHER)

¿Qué aplicaciones usas?	What apps do you use?		
Uso … para…	I use … (in order) to…	una red social	a social network
ver mis series favoritas	watch my favourite series	amplio/a	extensive
organizar las salidas con mis amigos	organise to go out with my friends	cómodo/a	convenient
controlar mi actividad física / las calorías	monitor my physical activity / my calorie intake	divertido/a	fun
contactar con mi familia	get in touch with my family	necesario/a	necessary
chatear con mis amigos	chat with my friends	peligroso/a	dangerous
La tengo desde hace … meses.	I've had it for … months	práctico/a	practical
Es una aplicación buena para…	It's a good app for…	rápido/a	quick
buscar y descargar música	looking for and downloading music	fácil de usar	easy to use
pasar el tiempo / el rato	passing the time	popular	popular
sacar / editar / personalizar fotos	taking / editing / personalising photos	útil	useful
compartir / subir fotos	sharing / uploading photos	gratis	free
estar en contacto	keeping in touch	un canal de comunicación	a channel / means of communication
conocer a nueva gente	meeting new people	una pérdida de tiempo	a waste of time
subir y ver videos	uploading and watching videos	Soy / Es adicto/a a…	I am / He/She is addicted to…
chatear y mandar mensajes	chatting and sending messages	Estoy / Está enganchado/a a…	I am / He/She is hooked on…
Es / No es…	It is / It isn't…	Lo único malo es que…	The only bad thing is that …
		te engancha	it gets you hooked

¿Qué estás haciendo?	What are you doing?		
Estoy…	I am…	está lloviendo	it's raining
actualizando mi página de Facebook	updating my Facebook page	tengo que…	I have to…
editando mis fotos	editing my photos	salir	go out
Estás / Está / Están…	You are / He/She is / They are…	visitar a (mi abuela)	visit (my grandmother)
escuchando música	listening to music	cuidar a (mi hermano)	look after (my brother)
esperando a (David)	waiting for (David)	hacer los deberes	do homework
descansando	relaxing	quiero…	I want to…
pensando en salir	thinking about going out	subir mis fotos a…	upload my photos to…
preparando algo para merendar	preparing something for tea	quedarme en casa	stay at home
repasando para un examen	revising for an exam	¡Qué rollo!	What a pain!
tomando el sol	sunbathing	¿A qué hora quedamos?	What time shall we meet?
haciendo footing	jogging	¿Dónde quedamos?	Where shall we meet?
haciendo el vago	lazing about	en la Plaza Mayor	in the main square
leyendo	reading	debajo de	underneath
viendo una peli	watching a film	detrás de	behind
escribiendo	writing	delante de	in front of
¿Quieres salir conmigo?	Do you want to go out with me?	enfrente de	opposite
No puedo porque…	I can't because…	al lado de	next to

¿Qué te gusta leer?	What do you like reading?		
los blogs	blogs	las novelas de ciencia ficción	science fiction novels
los tebeos / los cómics	comics	las novelas de amor	romantic novels
los periódicos	newspapers	las historias de vampiros	vampire stories
las revistas	magazines	las biografías	biographies
las poesías	poems		

¿Con qué frecuencia lees?	How often do you read?		
cada día / todos los días	every day	una vez a la semana	once a week
a menudo	often	dos veces al mes	twice a month
generalmente	generally	una vez al año	once a year
de vez en cuando	from time to time	nunca	never

La familia	Family		
el padre / la madre	father / mother	el primo / la prima	male cousin / female cousin
el padrastro / la madrastra	step-father / step-mother	el sobrino / la sobrina	nephew / niece
el hermano / la hermana	brother / sister	el marido / la mujer	husband / wife
el hermanastro / la hermanastra	step-brother / step-sister	el hijo / la hija	son / daughter
el abuelo / la abuela	grandfather / grandmother	el nieto / la nieta	grandson / granddaughter
el bisabuelo / la bisabuela	great grandfather / great grandmother	mayor / menor	older / younger
el tío / la tía	uncle / aunt		

¿Qué es mejor, leer en papel o en la red?	What is better, reading paper books or online?		
Leer en formato digital…	Reading in digital format…	no ocupan espacio	don't take up space
protege el planeta	protects the planet	Una desventaja es…	One disadvantage is…
no malgasta papel	doesn't waste paper	el uso de batería	the battery use
cansa la vista	tires your eyes	Me gusta / prefiero…	I like / I prefer…
depende de la energía eléctrica	relies on electricity	tocar las páginas	to touch the pages
te permite llevar contigo miles de libros	allows you to take thousands of books with you	pasar las páginas a mano	to turn the pages by hand
cuesta mucho menos	costs a lot less	escribir anotaciones	to write notes
fastidia porque no hay numeración de páginas	is annoying because there is no page numbering	leer horas y horas	to read for hours and hours
Los libros electrónicos / Los e-books…	Electronic books / E-books…	un ratón de biblioteca	a bookworm
son fáciles de transportar	are easy to transport	un fan del manga	a manga fan
son más ecológicos / baratos	are more environmentally-friendly / cheaper	un libro tradicional	a traditional book
		un libro de verdad	a real book

¿Cómo es?	What is he/she like?		
Tiene los ojos…	He/She has … eyes	bigote	a moustache
azules / verdes / marrones / grises	blue / green / brown / grey	Es…	He/She is…
grandes / pequeños / brillantes	big / small / bright	alto/a / bajo/a	tall / short
Tiene el pelo…	He/She has … hair	delgado/a / gordito/a / gordo/a	slim / chubby / fat
moreno / rubio / castaño / rojo	dark brown / blond / mid-brown / red	calvo/a	bald
corto / largo	short / long	moreno/a	dark-haired
rizado / liso / ondulado	curly / straight / wavy	rubio/a	fair-haired
fino / de punta	fine / spiky	castaño/a	brown-haired
Tiene…	He/She has…	pelirrojo/a	a redhead
la piel blanca / morena	fair / dark skin	español / española	Spanish
la cara redonda / alargada	a round / oval face	inglés / inglesa	English
los dientes prominentes	big teeth	peruano / peruana	Peruvian
pecas	freckles	Mide 1,60.	He/She is 1m60 tall.
Lleva…	He/She wears / has…	No es ni alto ni bajo.	He/She is neither tall nor short.
gafas	glasses	(No) Nos parecemos físicamente.	We (don't) look like each other.
barba	a beard		

¿Cómo es de carácter?	What is he/she like as a person?		
Como persona, es…	As a person, he/she is…	enérgico/a / animado/a / tranquilo/a	energetic / lively / calm
optimista / pesimista	optimistic / pessimistic	pensativo/a	thoughtful
simpático/a / antipático/a	nice / nasty	comprensivo/a	understanding
trabajador(a) / perezoso/a	hard-working / lazy	honesto/a	honest
generoso/a / tacaño/a	generous / mean	alegre	cheerful
hablador(a) / callado/a	chatty / quiet	molesto/a	annoying
divertido/a / gracioso/a / serio/a	fun / funny / serious	ambicioso/a	ambitious
fiel / infiel	loyal / disloyal	egoísta	selfish
feliz / triste	happy / sad	Está feliz / triste.	He/She is happy / sad.
ordenado/a / caótico/a	tidy / chaotic		

¿Te llevas bien con tu familia?	Do you get on well with your family?		
(No) Me llevo bien con…porque…	I (don't) get on well with… because…	Me divierto con…	I have a good time with…
me apoya	he/she supports me	Me peleo con…	I argue with…
me acepta como soy	he/she accepts me as I am	Nos llevamos superbién.	We get on really well.
nunca me critica	he/she never criticises me	Nos llevamos como el perro y el gato.	We fight like cat and dog.
tenemos mucho en común	we have a lot in common	Nos divertimos siempre.	We always have a good time.

¿Cómo es un buen amigo / una buena amiga?	What is a good friend like?		
Un buen amigo es alguien que…	A good friend is someone who…	Conocí a mi mejor amigo/a…	I met my best friend…
te apoya	supports you	Nos conocimos	We met / got to know each other
te escucha	listens to you	Nos hicimos amigos	We became friends
te conoce bien	knows you well	Nos hicimos novios	We started going out
te acepta como eres	accepts you as you are	convivimos	we lived together
te quiere mucho	likes / loves you a lot	nos casamos	we got married
te da consejos	gives you advice	Es el amor de mi vida.	He/She is the love of my life.
te hace reír	makes you laugh	Tenemos … en común.	We have … in common.
no te critica	doesn't criticise you	nos gustan (las mismas cosas)	we like (the same things)
nunca te juzga	never judges you	nos encantan (las películas)	we love (films)

Subject: Drama	Term: 5	Topic: Application of Theatrical Skills

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Concept 1: Devising Drama

When you stage a performance, identify the purpose of your work and the target audience. Choose a suitable style and stage layout. Remember that rehearsals allow you to fine tune your piece.

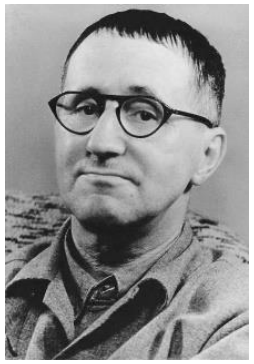
1) **Working with a stimulus**
2) **Discussion and planning: Purpose, aims and intentions**
   (Target audience, style and setting/ Research and Practical Exploration)
3) **Narrative and Plot**
4) **Rehearsal and Performance**

Key Concept 2: Raising Awareness of a Social Issue

Developing your understanding of how to use Drama to raise awareness of issues young people may face in modern society.

Practitioner Style: Brechtian
Physical Skills: body language, posture, gesture, co-ordination, stillness, timing, control; facial expression; eye contact, listening, spatial awareness; interaction with other performers

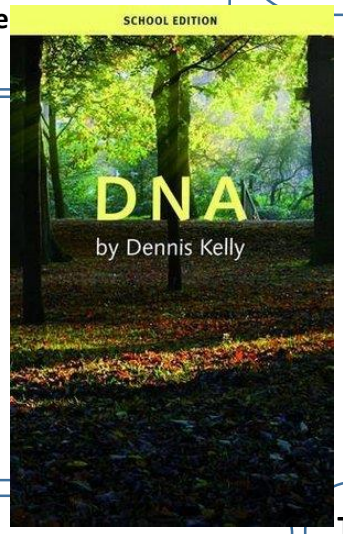
Vocal Skills: pace, pause, timing, tone, accent and projection



Key Concept 3: DNA by Dennis Kelly

Developing and applying your knowledge and understanding of theatrical skills to a set text.

Storyline: The play follows the silent yet intimidating, 16 year old Phil, and his fearful following of misfits as they come to terms with the consequences of a practical joke that ends in tragedy.



Websites and further reading:

BBC Bitesize: Physical and Vocal Skills
Use of Body
https://www.bbc.co.uk/bitesize/guides/zpfk6sg/revision/1
Use of Vocals
https://www.bbc.co.uk/bitesize/guides/z3c2yrd/revision/1

Devising a Performance
https://www.bbc.co.uk/bitesize/guides/zg9x34j/revision/1

Key vocabulary
body language, posture, gesture, co-ordination, stillness, timing, control, facial expression; eye contact, listening, spatial awareness, pace, pause, timing, tone, accent, projection.
Brechtian Techniques : Breaking the fourth wall, direct address, narration, multi-role, re-order, slow motion.

Term 5 Challenge: To watch a live theatre production and produce an evaluation. Your evaluation should include the following; Describe the topic or theme of the performance, explain how the theme was presented to the audience, draw and annotate two costumes used in the performance. Explain with examples how props or set enhanced your understanding of the theme/ narrative.

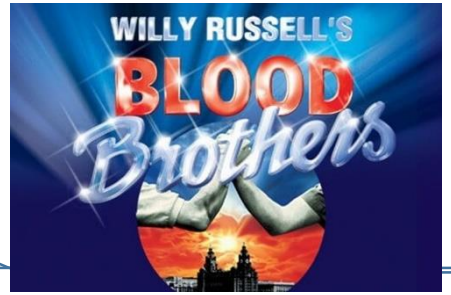
Subject: Drama	Term: 6	Topic: Live Theatre Evaluation

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Text: Blood Brothers by Willy Russell

Storyline: Blood Brothers is a musical with book, lyrics, and music by Willy Russell. The story is a contemporary nature versus nurture plot, revolving around fraternal twins Mickey and Eddie, who were separated at birth, one subsequently being raised in a wealthy family, the other in a poor family.



Key Characters:

Edward Lyons
Mickey Johnstone
Mrs Johnstone
Mrs Lyons
Sammy Johnstone
Linda

Live Theatre Evaluation

What is Live Theatre Evaluation?

Live Theatre Evaluation is when you analyse and evaluate professional work. You will explore the themes, decisions and intentions of the director as well as exploring roles within production (behind the scenes) such as lighting design, set design, costume design, and other elements which allow you to understand in more detail the dramatic intentions of the performance.

Theatre Roles and Responsibilities

You are going to be exploring the roles within a theatre company to gain knowledge and understanding of performance and production elements.

To create a production there are many people involved.
Can you add to the list below?

Director, Actor, Lighting Technician, Set Designer, Sound Engineer

Websites and further reading:

BBC Bitesize: Physical and Vocal Skills
Use of Body
https://www.bbc.co.uk/bitesize/guides/zpfk6sg/revision/1
Use of Vocals
https://www.bbc.co.uk/bitesize/guides/z3c2yrd/revision/1

Devising a Performance
https://www.bbc.co.uk/bitesize/guides/zg9x34j/revision/1

Key vocabulary

Command Words: Analysis, Define, Evaluate, Compare, Justify, Interpretation, Describe, Explain.
You will learn key vocabulary related to: Stage Directions, Types of Staging, Types of Lighting, Costume materials, Musical Instruments, Dance and Drama terminology

Term 6 Challenge: To create a job profile for each of the jobs listed in the Theatre Roles and Responsibilities box. Key Information to be included; Job role, Salary, Qualifications required, Key responsibilities

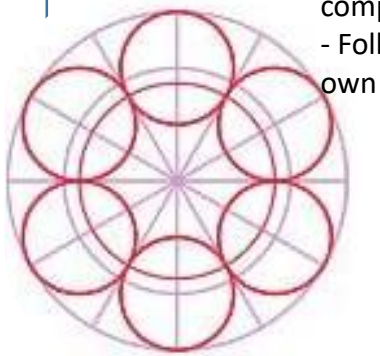
Subject: Art and Design	Term: 5	Topic: AO2 and AO4- Designing a final outcome based on influences from a culture

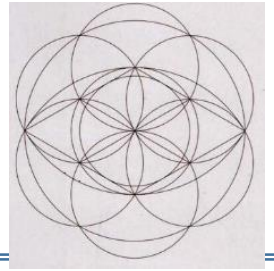
WOOTTON PARK

Key question 1: How to Draw and Islamic Pattern?

Islamic Patterns are made up of simple geometric shapes repeated and rotated.

- Can you reproduce one of these images using a ruler and compass.
- Follow the link and watch the video to help you design your own Islamic inspired pattern; https://youtu.be/vpB4VAqOduo



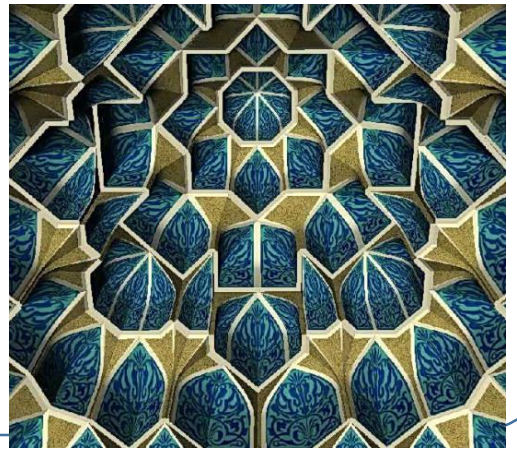


Key question 2: What is Islamic art?

- Islamic Art is mostly made up of geometric shapes repeated and overlapped to create complex patterns
- It is almost instantly recognisable because of its unique Mathematical qualities
- The most common motif (reoccurring decorative image) used is the 8-pointed star.
- Islamic artist tend to avoid drawing images of people.

They have inspired many western artists and designers over the years.

Islamic art is mainly used for decoration and can be found in architecture, furniture, carpets, tiles, stain glass windows and ceramics.



Key question 3: How does Islamic art influence design?

Islamic patterns inspires artists and designers to develop their ideas further.

Islamic designs are very mathematical and by using this, a lot of designers around the globe apply it in their work to create a very modern twist of an age old art.

Websites and further reading:

BBC Bitesize:

Pinterest: Search “Islamic art patterns” and “Hindu Mandala patterns”

Youtube: Geometric Drawing Tutorials
https://www.youtube.com/watch?v=bSgdw3VPy-Q

Key vocabulary to define and learn

Symmetry Geometric Repeat Pattern
Rotation Intricate
Composition Layers

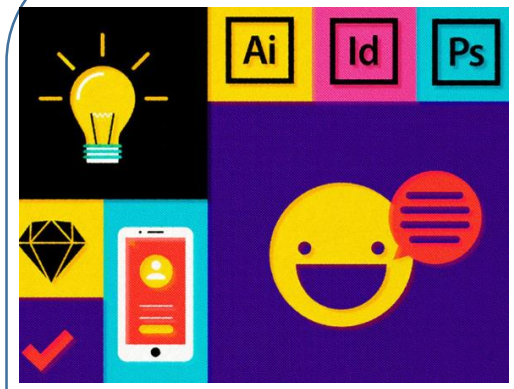
Design Challenge:

Create a colouring page design inspired by Islamic/ Mandala patterns. Winners will have work photocopied and used as part of a wellbeing club activity. This must be submitted by the last day of term to Miss Garrett.

Subject: Art and Design	Term: 6	Topic: Graphic Design

WOOTTON PARK

Key question 1: What is Graphic Design?



Graphic Design definition: effective visual communication of an idea or concept

Most people have a vague idea of what a graphic designer does. Creating logos for businesses? Fixing up images in Photoshop? Making magazine ads? Yes—designers do these things—but they're only elements of a much bigger picture.

Look around. Design is everywhere—from your morning cereal box to a music festival poster to the process of ordering an Uber. Merging creativity with strategy, communication with brand savvy and aesthetic with logic, design is just about everywhere you look—and it matters. There are endless opportunities for graphic designers to make their mark.

Design Brief

Save Our Planet -
Sir David Attenborough stated: 'Few people will protect the natural world, if they don't first love and understand it'

Design Brief: aim
Countless species are endangered, at risk of extinction, or have been made extinct due to our impact on the planet.

- The Natural History Museum is working closely with Sir David Attenborough to drive forward a powerful message to attempt to educate people, in hope that we address and reverse the negative impact we are having on our planet.
- The Natural History Museum wants to refresh its marketing, to try to encourage more people to explore the exhibitions, and to gain more support for their important work.

In your lessons, you must select 1 of the following exhibits to create a solution for the brief.

Ocean life
Insects
Plant life
Birds

NATURAL HISTORY MUSEUM

Key question 3: What is Typography?

Whether it's on our phones, in books or on websites, we're constantly digesting written words. From instruction booklets to shop fronts, type is all around us. We often reflect on the power of the written word, but rarely do we consider the designer's role in emulating the tone of the word or sentence.

Typography is the art and technique of arranging type to make written language legible, readable, and appealing when displayed.

Key vocabulary to define and learn

Design	Typography		Layout	Juxtaposition
Font	Design Brief	Aesthetic	Augment	

Subject: Computer Science 9	Term: 5	Topic: Binary and data representation

WOOTTON PARK

Key topic 5: Binary and data representation

5.1 Introduction to binary

5.1.1 The binary number system – what is a digital 'bit' and how is it reflected in the actions of a transistor, encoding binary, the colossus machine.
5.1.2 How bits make up a byte. Other classifications for combinations of bits including, 'nibble' 'kilobyte', 'megabyte', 'gigabyte', 'terabyte' and their associations.
5.1.3 The difference between binary and denary; binary and denary place values.
5.1.4 Converting binary to denary and vice versa using various methodologies.
5.1.5 Bit number patterns.

5.2 Numbers and binary addition

5.2.1 The difference between integers and floating point numbers.
IP addresses and how they use 8bit, 16bit, 32 bit, 64bit number combinations.
5.2.2 Adding binary numbers and overflow using an 8bit overflow example.
5.2.3 Using sign and magnitude with integers to create negative binary numbers
Database uses, advantages and disadvantages over other data storage.
5.1.3 Explaining the difference between data, information and knowledge.

5.3 Hexadecimal and character sets

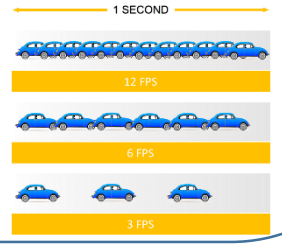
5.3.1 Understanding how hexadecimal sets can simplify binary
5.3.2 Exploring how hexadecimal colours are represented on computers
5.3.3 Converting hexadecimal to binary
5.3.4 Character sets, understanding how global standards are used; Character sets ASCII and Unicode

5.4 Encoding images

5.4.1 Understanding pixels and resolution of an image and its associated consequences with memory use.
5.4.2 Bitmap images, Jpeg, Gif and Png files and how they are stored in binary. Vector graphics and how they differ. How are vector graphics used in society.
5.4.3 Colour depth and binary code.
5.4.4 Image metadata; filename, file format (.jpg/.gif/.png) dimensions, resolution, colour depth, time and date it was last taken, camera setting when the photo was taken, GPAS location.
5.4.5 Compressing images and how it changes attributes of the image file; file type, resolution, dimension, bit depth, lossy and lossless compression.

5.5 Encoding audio and video

5.5.1 Encoding digital audio; digital audio quality.
5.5.2 How sample rate affects the quality of the recording.
5.5.3 Bit depth; Uncompressed high quality recordings and their file formats. (PCM, WAV or AIFF)
5.5.4 Bit rates; calculating bit rates,
5.5.5 Audio file compression and its benefits to streaming and downloading. Lossy or Lossless compression
5.5.6 Digital video; frames per second (fps).
Video compression
5.5.7 Codecs and how they use algorithms to compress video



Key vocabulary and acronyms to define and learn:

For key vocabulary visit the glossary at:
https://www.bbc.com/bitesize/guides/zwsbwmn/revision/1

Websites and further reading:

BBC bitesize database revision: https://www.bbc.com/bitesize/topics/zd2xsbk
Teach ICT: http://www.teach-ict.com/gcse_computing/ocr/212_computing_hardware/binary_logic/miniweb/index.php

Subject: Computer Science 9	Term: 6	Topic: Programming

WOOTTON PARK
'Ipsum quod faciendum est diutius durant'

Key topic 6: Programming

6.1 Programming software and the IDE (integrated development environment)
6.1.1 Programming languages; human or machine readable, high level or low level.
6.1.2 Assemblers, compilers and interpreters; identify the roles of.
6.1.3 The difference between a process virtual machine and a system virtual machine.
6.1.4 The functions of an IDE; Code editor, other IDE tools
6.1.5 Programming errors; runtime errors, syntax errors, semantic errors. Debugging.

6.2 Introducing algorithms
6.2.1 What is an algorithm and how are they used in society
6.2.2 How to design an algorithm. Identifying and considering variables.
6.2.3 Using bubble sort to order sequential number list.
6.2.4 What is pseudocode and a flow chart and how and when is it used?
6.2.5 Syntax definition and how syntax errors can occur. Statements and expressions.

6.3 Algorithms and control flow
6.3.1 How control flow is used in algorithms
6.3.2 Sequence in algorithms
6.3.3 How to make IF, THEN and ELSE queries.
6.3.4 Iteration in an algorithm; infinite loops, count and condition controlled loops.

6.4 Constants, variables and data types
6.4.1 Identifying fixed and variable data values in an algorithm
6.4.2 Data types used in an algorithm
6.4.3 Numbers used in an algorithm; integers, floating point.
6.4.4 Character sets and strings used in algorithms
6.4.5 Assignment scope and declaration

6.5 Boolean logic
6.5.1 Logic gates in with true or false responses. Truth tables.
6.5.2 Using Boolean algebra. Drawing AND OR and NOT gates for an algorithm.

6.6 Data structure
6.6.1 The difference between static and dynamic data structures
6.6.2 How an array can be used to store data in an organised structure
6.6.3 2 (and 3) dimensional arrays and their use in game programming
6.6.4 +/- of Python compared to other programming languages.
6.6.5 Grouping together related items of data in python using dictionaries (record)

6.7 Functions procedures and modules
6.7.1 Understanding how modules are used within algorithms to compartmentalise sections
6.7.2 Customising modules within an algorithm and using parameters in programming

6.8 Development and testing
6.8.1 Software development life cycle; Requirements, Design, Implementation, Testing

6.9 BBC Micro:bit
6.9.1 Solving a problem by programming a microprocessor
6.9.2 Wearable technology incorporating microprocessors; LED jewellery, GPS jacket, tie that detects sound and lights up

SAMSUNG
BBC micro:bit
Microsoft

Key vocabulary and acronyms to define and learn:

Variable, Micro:bit, compass, Bluetooth, repetition, data, information, accelerometer, processor, USB, connector, execute.

Websites and further reading:
BBC bitesize: https://www.bbc.com/bitesize/topics/zq6hvcw
BBC Micro:bit.org: https://microbit.org/
Coding key words glossary: https://code.org/curriculum/docs/k-5/glossary

Subject: PE – Year 9	Term: 5 and 6	Topic: Athletics

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

GCSE Track events
Core skills, to include:
- Starting
- Finishing
- Posture
- Leg action
- Arm action
- Head carriage

Advanced skills, to include:
Learners should follow an appropriate technical model which leads to effective performance in the chosen event.
- Starting:
- Use of Blocks (where relevant)
- Leg action:
- Foot strike
- Cadence
- Bend running (where relevant)
- Stride pattern/pacing
- Hurdling with either leg (where relevant)

GCSE Jumping events
Core skills, to include:
- Approach
- Synchronisation of arm and leg action
- Take off/pole plant
- Flight
- Landing

Advanced skills, to include:
Learners should follow an appropriate technical model which leads to effective performance in the chosen event.
- Approach: • Hitting appropriate speed for take off
- Efficient transition between technical phases of the movements • Flight:
- Appropriate elevation • Landing • movement of the body beyond initial point of contact (long jump and triple jump)

Leadership in Athletics - Leadership will continue to be an integral part of the Year 9 curriculum for learners at WPS. Leadership might broadly be considered the behavioural process of influencing individuals and groups towards set goals. In sport and exercise, leadership includes; making decisions, motivating participants, giving feedback, establishing interpersonal relationships, and directing the group or team confidently. Leadership will be developed in Athletics through learners taking on different roles such as; coaches, umpires, timers and measuring.

GCSE Throwing events. Core skills, to include:
- Initial stance, • Grip, • Throwing action, • Release phase, • Recovery phase/follow through

Advanced skills, to include: Learners should follow an appropriate technical, model which leads to effective performance in the chosen event.
- Travel: • use of cross step/glide (where applicable) • rotational throws (where applicable) • Release phase: • Appropriate angle of release • Efficient transition between technical phases of the movements

Subject: PE – Year 9	Term: 5 and 6	Topic: Cricket

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

GCSE Core skills, to include:

Batting:
- Footwork
- Defensive shots off front foot
- Drives
- Cut
- Pull
- Running between the wickets

Bowling:
- Repetition of action for **one** style of bowling
- Fast, medium or spin
- Line, flight and length of bowl

Fielding: (outfield, infield and close)
- Stopping the ball
- Catching
- Pick up and throw – underarm and overarm

Wicket Keeping:
- Positioning in relation to pitch and type of bowler
- Stance
- Low and high takes
- Catches
- Run outs

GCSE Advanced skills, to include:

Batting:
- Defensive shots off back foot
- Square cut
- Hook shots
- Off or on drive
- Sweep

Bowling:
- Variation in delivery in terms of line, flight, speed and length of bowl

Fielding: (outfield, infield and close)
- Pick up and throw for a run out – underarm and overarm
- Pick up and throw on the run

Wicket Keeping: • Leg side takes and catches, • Stumping

Leadership in Cricket - Leadership will continue to be an integral part of the Year 9 curriculum for learners at WPS. Leadership might broadly be considered the behavioural process of influencing individuals and groups towards set goals. In sport and exercise, leadership includes; making decisions, motivating participants, giving feedback, establishing interpersonal relationships, and directing the group or team confidently. Leadership will be developed in Cricket through learners taking on different roles such as; coaches, umpires, motivators and organisers.

•

GCSE Decision making and tactical awareness, to include: • Awareness and application of team strategies/ tactics • Selection of appropriate shot • Understanding and use of positions and roles in batting and fielding • Principals of attack and defence • Applying different systems of play in different situations e.g. switching bowling styles to keep the opposition guessing • Effective decision making for running between wickets • Awareness of the rules and regulations of the sport and their application

Subject: PE	Term: 5 and 6	Topic: Rounders Year 9

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Skills

- Batting – forehand, backhand
- Fielding – throwing, catching, long barrier
- Bowling

Websites, further reading and local information.

http://www.roundersengland.co.uk/

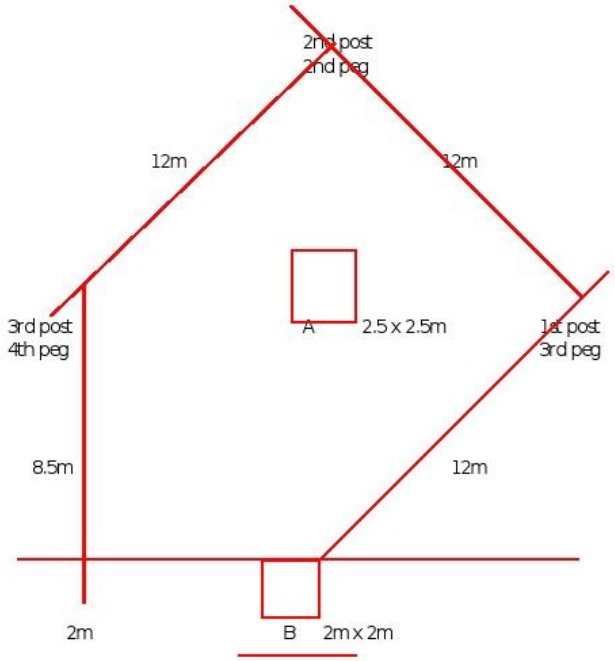
http://www.simplerounders.co.uk/rules-of-the-game/

http://www.bbc.co.uk/sport/get-inspired/24066823

The Game of Rounders

Rounders is a striking and fielding game played between two teams of 9 players. The batter must strike at a good ball and attempt to run a rounder in an anti-clockwise direction around the first, second, and third base and home to the fourth, though they may stay at any of the first three. The aim of the batting team is to score as many rounders as they can in their innings whilst the fielding team try to stop them scoring or get them out. The winning team is the team with the most rounders after the allotted number of innings.

The Rounders Pitch



Key Words

Batting

Fielding

Bowling

Long Barrier

Subject: PE – Year 9	Term: 5 and 6	Topic: Softball

WOOTTON PARK

'Ipsum quod faciendum est diutius durant'

Key Skills

- Hitting – Grip, Hand Position, Stance, Stride, Swing, Contact, Follow-Through.
- Pitching – Grip, Stride, Rotation, Follow-Through.
- Fielding – Catching, Throwing, Positions.
- Umpiring - Rules

The Game of Softball

Softball is a variant of baseball played with a larger ball on a smaller field. It was invented in 1887 in Chicago, Illinois, United States as an indoor game. It was at various times called indoor baseball, mush ball, playground, softball, kitten ball, and because it was also played by women, ladies' baseball. The name *softball* was given to the game in 1926, because the ball used to be soft.

There are three types of softball. In the most common type, **slow-pitch softball**, the ball, which can measure either 11 or 12 inches in circumference depending on gender and league, must arch on its path to the batter, and there are 10 players on the field at once. In **fast-pitch softball**, the pitch is fast, there are nine players on the field at one time, and bunting and stealing are permitted.

Leadership in Softball - Leadership will continue to be an integral part of the Year 9 curriculum for learners at WPS. Leadership might broadly be considered the behavioural process of influencing individuals and groups towards set goals. In sport and exercise, leadership includes; making decisions, motivating participants, giving feedback, establishing interpersonal relationships, and directing the group or team confidently. Leadership will be developed in Softball through learners taking on different roles such as; coaches, umpires, motivators and organisers.

Websites, further reading and local information.

Softball UK - http://www.baseballsoftballuk.com/

Rules of Softball - http://www.baseballsoftballuk.com/uploads/_documents/Files/Rules/Beginners_Guide_Softball.pdf

Milton Keynes Softball - https://www.mksoftball.co.uk/

Softball Best Plays - https://www.youtube.com/watch?v=f6pNE-mT8_8

Key Words

Fly Ball Drive Pop Fly Base Bunt Foul Ball Home Run Obstruction Steal Tag