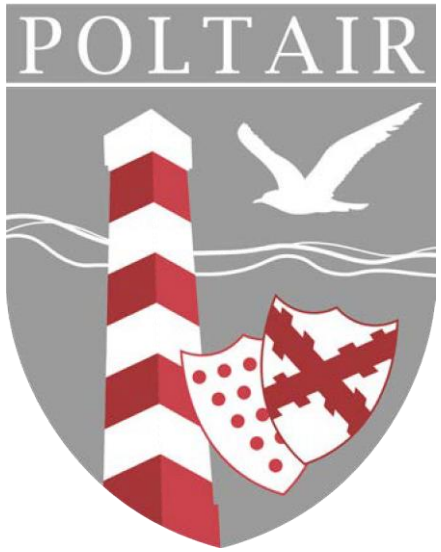


Year 8
Learning Cycle 1

Student Name:_____

Contents

How to Use your Learning Cycle

Planner

Poltair School believe that the Learning Cycle Planner should be used daily for classwork and home learning. The Learning Cycle Planner will inform students and parents of topics that are being covered in class during each learning cycle, enabling all students to extend their learning outside of the classroom.

Students should be using their Learning Cycle Planner as a revision guide for assessments and using their SORT strategies to revise for each subject prior to assessments.

Learning Cycle 1
1/9/24 - 20/12/24

Knowledge check
2/12/24 – 13/12/24

At Poltair we SORT it!

How to Use your Learning Cycle Knowledge Organiser

Poltair School believe that the Learning Cycle Knowledge Organiser should be used daily for classwork and home learning. The Learning Cycle Knowledge Organiser will inform students and parents of topics that are being covered in class during each learning cycle, enabling all students to extend their learning outside of the classroom.

Students should be using their Learning Cycle Knowledge Organiser as a revision guide for assessments and using their SORT strategies to revise for each subject prior to assessments.

What are the SORT strategies?

Select	Organise	Recall	Test
Select your revision materials by topic/subtopic. Traffic light your PLC sheets to identify areas of weakness or gaps (Red/Amber) that need to be prioritised.	Organise and condense any class notes, revision guides and revision.	Use active recall and spaced repetition to memorise your knowledge organisers until you can recall the information e.g.. Look, cover, write or self-testing	Use low stakes online tests/quizzes and answer high stakes past paper/sample questions to check and apply knowledge and understanding
Strategies			
• How to use your PLC • How to schedule your home learning and stick to it! • Hoe to select the correct knowledge to study	• Cornell Notes • Flash cards • Mind mapping • Revision clocks • Dual coding • Summary	• Look cover & test • Leitner system • Blurt it • Transform it	• Low stakes • Self-quizzing • Quiz each other • Online quizzes • High stakes • Exam style questions

How to use SORT

Step 1: Select	Step 2: Organise	Step 3: Recall	Step 4: Test
When you revise for a specific topic use your knowledge organiser, revision guide, website etc to select the key knowledge you need to learn. a. Use the daily planner on page 10 to identify all the times when you will complete your home learning and when you will complete independent revision b. RAG each of the PLCs so you identify your RED topics – the ones that you are unsure of or you do not fully understand c. Write your RED topics into your daily planner for when you will revise that subject.	Organise the knowledge that you have selected using a range of strategies: • Flashcards • Mindmaps • Cornell Notes • Revision Clocks • Summary For more details go to the SORT webpage: https://www.poltairschool.co.uk/sort	Once you have summarized the knowledge, you need to actively memorise it. This is the most important part of the revision process! You could use any of the following strategies to help: • Lietner System • Blurt It • Look, say, cover, write, test	The last step in revision is to be confident that you can recall and retrieve the knowledge. To do this you need to test yourself. Quick and simple ways are to ask someone else to quiz you on the knowledge or to complete an online quiz. You can also answer past exam questions. If you can not confidently recall the knowledge you will need to repeat step 3.

At Poltair we SORT it!

ATTENDANCE FOCUS

POLTAIR

ATTENDANCE FOCUS

POLTAIR

Attendance Reflection Sheet	
What is your current attendance?	
How many sessions have you missed of school?	
How many 'I' coded sessions have you had?	
How many 'M' coded sessions have you had?	
How many 'L' coded sessions have you had?	
How many 'U' coded sessions have you had?	
How many 'O' coded sessions have you had?	
How many days does this equate to so far this year?	
If this attendance continued, how many days off would you have this year?	

To improve my attendance, I commit to the following:	
1.	
2.	
3.	
What attendance do you want to end this term with?	
What is your end of year attendance target?	
What is our minimum expected attendance to be rewarded?	

Possible strategies to REACH MY attendance Goals

- I will make attending school every day a priority.
- I will keep track of my attendance and absences.
- I will set my alarm clock for _____a.m.
- I will attend school everyday unless I am truly sick.
- I will find a relative, friend or neighbour who can take me to school if I miss the bus.
- If I am absent, I will contact my teachers to find out what I missed.
- I will set up medical and dental appointments for weekdays after school. If I must make a medical appointment during the school day, I will try to attend school for most of the day.
- When I am struggling with a challenge that is keeping me from school I will confide in an adult at school and seek help.

Home Learning timetable - when I am going to complete my home learning

	Mon A	Tues A	Weds A	Thurs A	Fri A	Mon B	Tues B	Weds B	Thurs B	Fri B
8X1	Eng /Geog	Ma/MFL	His			Ma	Creative	Eng	Comp/RE	
8X2	Eng/MFL	Ma	Geog/RE		His	Ma	Eng/Creative			Comp
8X3	Eng/RE	Ma/MFL		Geog	Comp	Eng	Ma	His/Creative		
8X4	Eng/Geog	Ma/MFL		Creative	His	Eng/Comp	Ma			RE
8Y1	Ma/His	Eng/MFL		Comp/ Creative	RE	Ma	Eng/Geog			
8Y2	Ma/MFL	Eng/RE	Comp	Geog	Creative	Eng	Ma/His			
8Y3	MFL	Ma/Geog	RE	Eng	His	Creative	Ma		Eng/Comp	
8Y4	MFL/Creative	Eng/Geog		Ma/His			Eng/RE	Comp	Ma	

Expected time home learning will take:

Subject	Homework
English (Eng)	60 minutes (weekly)
Maths (Ma)	60 minutes (weekly)
Science (Biology/Chemistry/Physics)	30 minutes (every two weeks)
Computing (Comp)	30 minutes (every two weeks)
Spanish (MFL)	30 minutes (every two weeks)
Geography (Geog)	30 minutes (every two weeks)
History (His)	30 minutes (every two weeks)
Creative Learning (Music/DT/Art/Performing Arts) – Creative	30 minutes (every two weeks)

My Computer passwords:

Platform	Username	Password

Revision Planner

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Time	Saturday	Sunday
8.30am - 4pm						8.30am - 4pm		
4pm - 5pm						4pm - 5pm		
5pm - 6pm						5pm - 6pm		
6pm - 7pm						6pm - 7pm		
7pm - 8pm						7pm - 8pm		
8pm - 9pm						8pm - 9pm		

Year 8 Learning Cycle 1 Summative Assessment Timetable

Lesson		02/12	01/12	04/12	05/12	06/12	09/12	10/12	11/12	12/12	13/12
		B					A				
		Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri
1	7X1	Drama			RE			Spanish		Art	DT
	7X2	DT			History					Music	
	7X3			Food	Geography	Drama					Drama
	7X4				Drama		English	Spanish	Food		
	7Y1					History		Music			
	7Y2										Food
	7Y3	Music		Science	Food		Spanish				
	7Y4	Art					Spanish	DT			
2	7X1		Music	History	Science		English				
	7X2						English	Food	RE		
	7X3		DT	Art	Science		RE				Music
	7X4										
	7Y1				Geography			English		DT	
	7Y2		RE		Music		Spanish	Art			
	7Y3		Art					DT			
	7Y4		Food		Geography					Drama	
3	7X1					Food	Geography				
	7X2										
	7X3						English	Spanish		DT	
	7X4								Music		
	7Y1						Food		Mathematics		
	7Y2					Geography		English	Mathematics		Drama
	7Y3			Geography		Drama			Mathematics		
	7Y4				History			English		Mathematics	
4	7X1								Mathematics		
	7X2		Art	Geography	Science		Spanish	Drama			
	7X3			History					Mathematics	Mathematics	
	7X4		History	Geography	Science	RE		Art		Mathematics	
	7Y1			Science		Drama		Spanish		Art	RE
	7Y2				Science	History					DT
	7Y3					History	English		RE		
	7Y4		RE		Science		Music				

Year 8 Learning Cycle 1 Personal Learning Checklists

English

Key Ideas	S	O	R	T
What is the mystery genre?				
What are the important points in the plot of The Ruby in the Smoke?				
Who are the key characters in The Ruby in the Smoke and what are they like?				
Can I recall a range of structural methods used by Phillip Pullman?				
How do I use evidence to support my ideas about Pullman's characters?				
How does Victorian context influence Pullman's writing?				
How is Sally presented in the novel?				
How is Mrs Holland presented in the novel?				
What is a thesis introduction?				
How do I write a what, how, why paragraph?				
What is travel writing?				
Can I remember and use a range of sentence structures?				

Mathematics

Key Ideas	Sparx Code	S	O	R	T
I can round numbers to the nearest whole number. ten, hundred, thousand, etc	M111				
I can estimate the solution to calculations	M878				
I can find the area of rectangles, squares and parallelograms	M390, M610, M291,				
I can find the area of compound shapes	M269,				
I can find the volume of a cube, cuboid of prism	M765, M722				
I can shade fractions	M158				
I can convert fractions to decimals	M958				
I can order decimals	M522				
I can convert decimals to fractions	M958				
I can convert decimals and percentages	M264				
I can draw and interpret bar charts, vertical line charts, pie charts and frequency polygons	M460, M738, M140, M183, M574, M165, U840				
I can use a protractor to draw and measure angles	M780, M331				
Can I add and subtract fractions?	M931, M835				
Can I multiply fractions?	M157, M197				
Can I divide fractions?	M110, M265				

Year 8 Learning Cycle 1 Personal Learning Checklists

Science – Sports science

Key Ideas	S	O	R	T
I can identify organs in the respiratory system and describe their structure and function				
I can describe how the respiratory system is adapted for gas exchange				
I can recall word and symbol equations for aerobic and anaerobic respiration				
I can identify organs in the respiratory system and describe their structure and function				
I can explain how and why the respiratory systems respond to exercise				
I can describe the major bones and muscles in the skeletal and muscular system and describe how joints work				
I can identify what nutrients are needed for a healthy balanced diet				
I can describe how the digestive system is adapted for nutrient absorption				
I can explain the role of enzymes in digestion				

Science – Chemical reactions

Key Ideas	S	O	R	T
I can identify signs in a chemical and physical reaction.				
I can identify hazard symbols and state what the pH scale shows.				
I can describe a method for making a neutral solution from an acid and alkali.				
I can use a word equation to show the reaction of an acid with a metal and an acid and metal carbonate.				
I can identify what an exothermic and endothermic reaction is.				

Year 8 Learning Cycle 1 Personal Learning Checklists

Art

Key Ideas	S	O	R	T
I can use tone, texture, line, shape, scale and composition in observational drawing				
I can explain the work of Halima Cassell and Peter Randal-Page and how they create and use texture				
I can explain how to develop my ideas into an abstract 3D form				
I have experimented with a range of materials				
I can refine my work through annotation				

Computing

Key Ideas	S	O	R	T
I know the data protection act protects your personal data from misuse				
I know the meaning of Copyright				
I know how to stay safe online				
I can define the term 'Ethics' and apply to a situation				
I understand that Bias can sometimes affect what people say and do				
I can give examples of computer hardware				
I can give examples of computer software				

Design Technology

Key Ideas	S	O	R	T
I can use tools safely and with precision				
I can design a testing method to find how the position of the arm affects the distance travelled by the object				
I can obtain and display experimental data in an appropriate format				
I can ensure that I have mad a significant contribution within my team				
I can manage and respond appropriately to challenges presented by testing				

Year 8 Learning Cycle 1 Personal Learning Checklists

Drama

Key Ideas	S	O	R	T
I can think about characterisation and how to effectively represent my character				
I can used appropriate facial expressions, gestures, posture, proxemics and pace				
I can worked together as a group successfully where you all have an equal role				
I can perform with confidence and take the performance seriously				

Food

Key Ideas	S	O	R	T
I can explain how to ensure a hygienic and safe kitchen environment				
I understand the importance of a balanced diet				
I can explain the difference between macronutrients and micronutrients				
I know the source, function and deficiency of the five main nutrients				
I can describe the dietary needs of a teenager				
I can describe the process of gelatinisation				

Geography

Key Ideas	S	O	R	T
Define key terms and give examples of case studies				
Describe the distribution of Cornwall's population				
Explain why Cornwall is experiencing a housing problem				
Describe the distribution of the world's population				
Explain how birth and death rates influence population growth and decline				
Explain the impacts of an ageing population in Japan				
Explain the impacts of a youthful population in Nigeria				
Explain the causes and effects of China's one child policy				
Explain the impacts of migration				

Year 8 Learning Cycle 1 Personal Learning Checklists

Geography

Key Ideas	S	O	R	T
Define key terms and give examples of case studies				
Explain the importance of the world's oceans				
Explain how warm and cold ocean currents distribute heat around the world				
Name all the world's oceans				
Explain the causes and effects of ocean plastic				
Explain how ocean gyres transport ocean plastic around the world				
Explain the impacts of ocean plastic pollution upon Henderson Island				
Explain the solutions to ocean plastic pollution				
Explain the impacts of marine pollution upon Kenya's coastline				

History

Key Ideas	S	O	R	T
I can state the difference between a rural and urban society				
I can explain changes that the Industrial Revolution caused in Britain				
I can give features of the working conditions in Industrial Factories				
I can define the key terms Social, Economic and Political				
I can state ways the enslaved resisted slavery				
I can state what abolition means				
I can explain the importance of key events/people in abolition				

Music

Key Ideas	S	O	R	T
I can play all four chords (C major, G major, A minor and F major) on the ukulele, keyboard or guitar				
I have made sure that I have learned the lyrics of at least three songs				
I understand what a chord is				
I know how to find notes on a keyboard/piano				
I am able to understand how to use roman numerals to identify chords				
I can read a chord diagram successfully				
I can perform in time and accurately as part of a larger group				

Year 8 Learning Cycle 1 Personal Learning Checklists

Religious Education

Key Ideas	S	O	R	T
I can explain why there are different denominations of Islam				
I can explain what each of the Five Pillars of Islam are				
I can explain how the Five Pillars impact on a Muslim's life				
I can explain what Islamophobia is and how is impacts on Muslims				
I can outline the contribution made by the media to Islamophobia				
I can explain why there are different denominations of Islam				
I can explain what each of the Five Pillars of Islam are				

Spanish

Key Ideas	S	O	R	T
I understand the rules for correct Spanish pronunciation				
I know my non-negotiable past tense verbs				
I can express my opinion in Spanish				
I can confidently talk about my recent holidays				
I know how to form regular verbs in the preterite tense				
I know how to form regular verbs in the present tense				
I can name and describe different modes of transport				
I know how to make comparisons in Spanish				

Year 8 Learning Cycle 1 English - The Ruby in the Smoke

1. Subject Vocabulary

1a = narrative A piece of writing that tells a story. Novels are the most common type of narrative writing.

1b = genre A type or category of writing (genre comes from the French word 'type') e.g. crime, fantasy.

1c = plot The name given to the main events in a play, novel or film.

1d = setting Where or when a story is set. It is usually introduced at the beginning of a story along with the characters.

1e = character A person, animal or being within a story. Writers use characters to perform the actions and speak, moving the plot along.

1f = minor character A character who doesn't appear as often as a main character but helps to move the plot along.

1g = context The circumstances surrounding writing, including important things in society and historical events.

1h = protagonist The main character in a novel, play or film.

1i = antagonist The principal opponent of the main character.

1j = gothic In literature, writing that creates mystery and fear; characters and settings that are crafted to unsettle the reader.

2. Subject Vocabulary: Structure

2a = structure The way a play, novel or poem is constructed and linked together.

2b = narrative hook A detail in a story that captures the attention of the reader and make them interested in finding out what will happen next.

2c = foreshadowing Details that act as hints or clues to the reader about what will happen later on in the text.

2d = beginning The way a text starts.

2e = zooming in Detailed description of something.

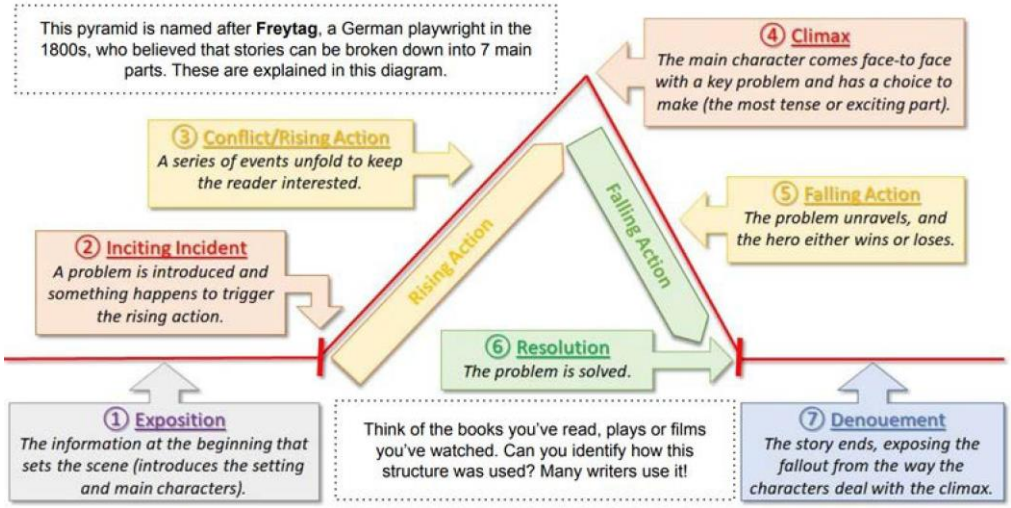
2f = zooming out Showing the reader the bigger picture.

2g = cliffhanger When a story or plotline ends suddenly or a large plot twist occurs and the reader is left uncertain.

2h = shift in focus When the plot or description moves from one things to another.

2i = resolution What happens at the end of a piece of writing.

3. Plot Structure: Freytag's Pyramid



4. The Mystery Genre

4a = Genre Mystery is a genre of literature whose stories focus on a puzzling crime or situation that needs to be solved. Many mysteries revolve around an investigation into uncovering a culprit. There are always a set of suspects who come under suspicion before the crime is resolved at the end.

4b = History Mystery stories appeared in the 1800s. At this time, people began to crowd into cities and there was more crime. As the need for detectives emerged, the mystery genre emerged. Perhaps the most famous mystery writer is Arthur Conan Doyle. He created Sherlock Holmes in 1887.

4c = Plot The mystery story usually begins with a crime or murder. Readers then follow the detective's investigation. The author may hide clues and motives, revealing information as the story progresses. The protagonist will often be a detective who eventually solves the crime. Mystery novels always feature a villain who tries to cover up their crime.

Year 8 Learning Cycle 1 English - The Ruby in the Smoke

5. Victorian Context

The Ruby in the Smoke is a neo-Victorian mystery detective novel, set in 1872. In order to fully understand the plot, setting and characters, it is important to understand the following ideas relating to the Victorian context of the novel.

5a = Women in the Victorian era
Victorian Britain was a patriarchal society. Women were considered the 'property' of their fathers or their husbands. They could not vote. Their role was considered domestic and ornamental.

5b = Class System There was a strict class system in place: upper class, middle class and working class. The working class were thought of as criminals, and many lived in slums. It was rare for the working class to receive help or sympathy. After the 1834 Amendments to the Poor Act the workhouse or prison were considered the correct treatment for poverty.

5c = Workhouses If they could not work and earn enough for their own home, the poorest would live in bleak buildings, working long hours in exchange for food and shelter. Conditions were often very poor.

5d = The Police Force A police force was introduced in Britain in 1829 by Sir Robert Peel. The first policemen were called 'Peelers' or 'Bobbies' after him.

5e = The Industrial Revolution 1760-1840 Britain moved from a mainly rural farming society to an industrialised, urban society. The way people in Britain lived was changed forever. Due to rapid population growth in towns and cities, the number of slums, amount of poverty and crime increased. In the novel, this is witnessed by Sally in London.

5f = The East India Trading Company
A company that bought and sold goods. In the 1800s, It had huge influence and power around the world - even having its own army in India twice the size of the British army - and is associated with a time of past glory when 'Britain Ruled the World'.

5g = Opium A highly addictive drug. In order to trade with China, the Company traded opium grown in India. This had a terrible effect on Chinese society and led to several Opium Wars with China.

5h = Imperialism The British exploited the addiction of millions of Chinese to opium in order to set up a trade deal with China. This is British Imperialism at its worst. The ruby itself could be said to be a symbol of British Imperialism

5h = The Indian Mutiny 1857-1858
A successful rebellion against the ruling East India Trading Company. The Company acted as the ruling power in India on behalf of the British Queen. It began with Sepoys who were in the Company army, then spread across the country. Both sides committed killings, with British women and children being murdered by rebelling Indians - but also whole villages of women and children being destroyed by British reprisals. It led to British Raj and India being governed by the British Government and not the Company. The Company ended in 1874.

6. Authorial Intent

Philip Pullman wrote this novel for a purpose and uses the plot and characters to send a message to his readers...

6a = To intrigue... readers using structural devices to reveal clues and build tension.

6b = To celebrate... strong females who subvert the gender stereotypes of the Victorian era. This encourages readers of young adult literature to see females as strong leading protagonists - not just the submissive Princess waiting to be rescued by a male.

6c = To reveal... the impact of the opium trade and the consequences of drug addiction. This trade was encouraged by the activities of the East Indian Trade Company.

6d = To expose... the injustices of British Victorian society which affected the poor working class and women in particular.

7. Key Characters

7a - Sally Lockhart Sally is not a typical Victorian girl: she has been brought up to be resourceful, independent and astute with figures. She has been trained in the use of guns by her father. She embodies the qualities of a hero, rather than conforming to Victorian stereotypes of the passive female. She finds it hard to show her feelings and is quite reserved.

7b – Frederic Frederick is a bohemian photographer who is also very independent and free-spirited. He has a very likeable personality and people instinctively trust and warm to him.

7c – Mrs Holland Mrs Holland is the main antagonist or villain of the novel, she was a beautiful woman in her younger years but is now a bitter and cruel criminal mastermind. She keeps Bedwell hooked on opium and treats Adelaide very cruelly; she also intends to kill Sally.

Year 8 Learning Cycle 1 English - The Ruby in the Smoke

8. Plot Summary

8a = Chapter 1: The Seven Blessings We meet Sally Lockhart. She visits her dead father's old offices and accidentally kills Mr Higgs. She meets Jim Taylor.

8b = Chapter 2: The Web Major Marchbanks reads about Sally in the newspaper. Mrs Holland discusses the ruby with her lawyer. Sailor Matthew Bedwell returns to London.

8c = Chapter 3: The Gentleman of Kent Sally goes to Kent to visit Major Marchbanks. Mrs Holland is also there—and Sally only escapes thanks to Fred Garland, a photographer.

8d = Chapter 4: The Mutiny On the train back to London, Sally reads through Major Marchbanks' diary. The diary is stolen from her by Mr Hopkins. Sally only has a few scraps of paper left.

8e = Chapter 5: The Ceremony of the Smoke Sailor Matthew Bedwell is in Mrs Holland's lodging house, looked after by little Adelaide. Opium is used to get to his secrets.

8f = Chapter 6: Messages Adelaide sees Jim for help. Sally and Jim realise that Mrs Holland wants the ruby— and needs the diary scraps as a clue. Mrs Holland forces Mr Hopkins to steal the scraps of paper and murdering Sally.

8g = Chapter 7: The Consequences of Finance Mr Hopkins cannot bring himself to murder Sally. Leaving the house, he is murdered by a mugger. Sally leaves Mrs Rees's house. She goes to her lawyer

8h = Chapter 8: The Passions of Art Desperate for somewhere to stay, Sally goes to Fred Garland. She meets Rosa and gets a job as their accountant. They decide that the scraps of paper are a treasure clue to the ruby.

8i = Chapter 9: A Journey to Oxford Fred and Sally go to Oxford to meet sailor Matthew Bedwell's brother, the Reverend Nicholas Bedwell. They decide to find some opium to help Nicholas.

8j = Chapter 10: Madam Chang Sally and Fred go to an Opium Den. Sally smells opium and has a 'nightmare' about murder, Major Marchbanks and her father. She realises it is a memory.

8k = Chapter 11: The Stereographic Repertory Company The Reverend Bedwell and Fred set off to rescue Nicholas. Mrs Holland gets hold of the scraps of paper and the clues to finding the ruby.

8l = Chapter 12: Substitution Fred and the Reverend Nicholas Bedwell rescue Matthew from Mrs Holland. Adelaide runs away to live with Fred, Rosa and Sally

8m = Chapter 13: Lights Below the Water Sally finds out that her father was murdered. She also learns about the deadly society of The Seven Blessings and its evil leaders, Ah Ling.

8n = Chapter 14: Arms and the Girl Sally practises firing her new gun.

8r = Chapter 18: London Bridge Sally takes the ruby to meet with Mrs Holland. She finds out the truth of her own identity then throws the ruby into the river. Mrs Holland kills herself by jumping in after it. Ah Ling turn up in a coach.

8s = Chapter 19: Ah Ling is a drug smuggler who betrayed and murdered Sally's father. He tries to blackmail Sally into joining him; she shoots him.

8t = Chapter 20: Ah Ling mysteriously disappears. Later, Sally finds a letter from Captain Lockhart and a large amount of money.

9. Vocabulary

9a = Nefarious (adjective) wicked, or criminal

9b = Deception (noun) the act of tricking, cheating or lying to someone

9c = Compulsion (noun) an irresistible urge to act or behave in a certain way

9d = Addiction (noun) a craving, habit or dependency on something

9e = Sleuth (noun) a person investigating something

9f = Retribution (noun) a punishment inflicted on someone as a penalty for a wrong act

9g = Intrepid (adjective) fearless or adventurous

9h = Mutiny (noun) an open rebellion against the authorities

9i = Justice (noun) the condition of being morally correct or fair

9j = Wily (adjective) clever or sharp-witted; skilled at gaining advantage.

9k = Patriarchy (noun) a system of society in which men hold the power and women are largely excluded from it.

9l = Subordinate (adjective) of less importance; weaker; inferior

9m = Duplicitous (adjective) to be deceitful and misleading; dishonest or two-faced

9n = Malevolent (adjective) wanting to cause harm or commit evil

Year 8 Learning Cycle 1 English - Travel Writing

1. Vocabulary for setting

☺

Enchanting
Eclectic
Breathtaking
Fascinating
Idyllic
Thrilling
Picturesque
Majestic
Vibrant

☹

Dilapidated
Overcrowded
Chaotic
Unsettling
Unsafe
Uninviting
Disappointing
Mediocre
Unappealing

2. Sentence Structures

3a = Simple sentence A sentence made up of one independent clause.

The air was choked with smog.

3b = Compound sentence A sentence connecting up of two independent clauses, with a coordinating conjunction.

The noise from the omnibuses was deafening and the shouts of the street-sellers added to the din.

3c = Complex sentence A sentence that contains an independent clause with one or more subordinate clauses.

When we turned into Portman Square, I was taken aback by the majestic buildings lining the street.

3d = Independent clause A series of words that can stand alone as a sentence and expresses a complete thought.

The air was choked with smog.

3e = Subordinate clause A series of words that cannot stand alone as a complete sentence; it supports a sentence's independent clause.

After nightfall, **Despite the chaos on the roads,**

3f = Coordinating conjunction Words that link parts of a sentence of equal importance together.

And, but, or.

3g = Subordinating conjunction Words and phrases that connect dependent clauses to independent clauses.

If, despite, as, when, although, while, after, before, until, because.

Year 8 Learning Cycle 1 Mathematics

Key Terms	Description
Integer	Whole number
Estimate	Finding a rough answer to a calculation by rounding each value to 1sf
Area	The amount of 2d space which a shape takes up
Volume	The amount of 3d space which a shape takes up
Tangent	A straight line which touches the circumference of a circle at a single point
Circumference	The distance around the outside of a circle
Arc	A portion of the circumference of a circle
Chord	A straight line with connects one part of a circumference to another, without passing through the center
Diameter	A straight line with connects one part of a circumference to another, passing through the center
Radius	A straight line which goes from the center of a circle to the circumference
Fraction	Part of a group, number of whole.
Numerator	The top part of the fraction
Denominator	The bottom part of the fraction
Vinculum	The line in a fraction, signifying division.
Percentage	An amount out of 100
Multiplier	The number you are multiplying by

Year 8 Learning Cycle 1 Mathematics - Calculations and number

1. Rounding

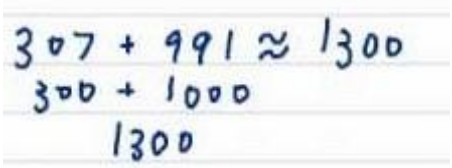
Identify the digit in the column given.

Go to the next digit decide whether to round up

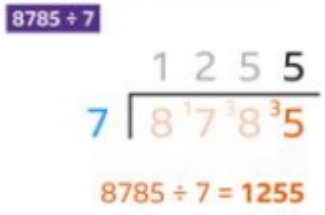
2. Estimating

Round all numbers to 1sf

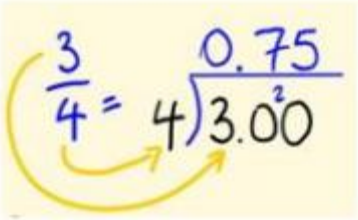
Complete calculation with rounded numbers



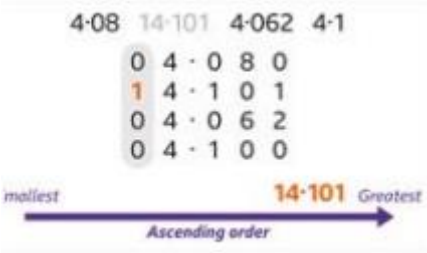
3. Short Division



4. Converting fractions to Decimals (non-calc)

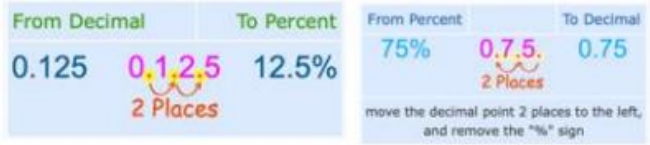


5. Ordering Decimals

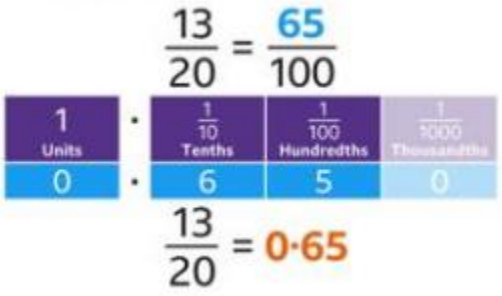


6. Converting decimals to fractions

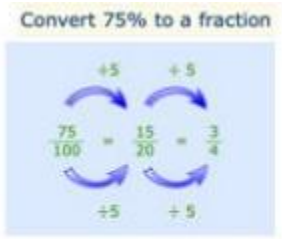
7. Converting between decimals and percentages



8. Converting fractions and decimals



9. Percentages to fractions



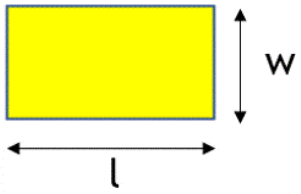
Percent	Decimal	Fraction
1%	0.01	1/100
5%	0.05	1/20
10%	0.1	1/10
12½%	0.125	1/8
20%	0.2	1/5
25%	0.25	1/4
33⅓%	0.333...	1/3
50%	0.5	1/2
75%	0.75	3/4
80%	0.8	4/5
90%	0.9	9/10
99%	0.99	99/100
100%	**1**	
125%	1.25	5/4
150%	1.5	3/2
200%	2	

10. Finding quantities of amounts

11. Percentages link to proportion

Year 8 Learning Cycle 1 Mathematics - Area and Volume

1. Area of squares and rectangles

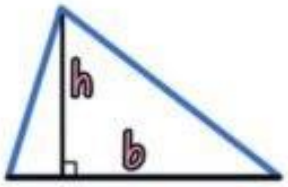


Units will be squared

e.g. cm^2

Area = $l \times w$

2. Area of triangles



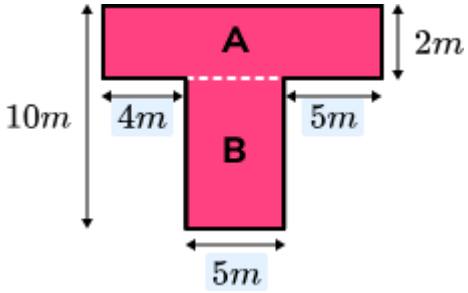
$$\text{Area} = \frac{1}{2} \times b \times h = \frac{bh}{2}$$

3. Compound shapes

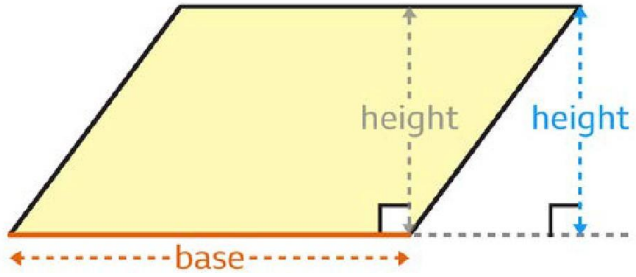
Split into regular shapes.

Find the areas of each.

Add together.



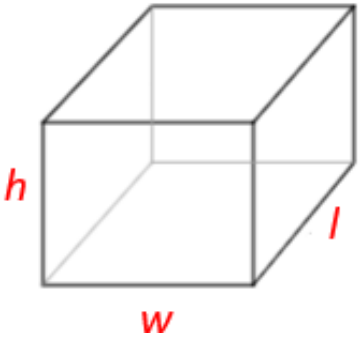
4. Area of parallelograms



Area of parallelogram

base × perpendicular height

5. Volumes of cuboids



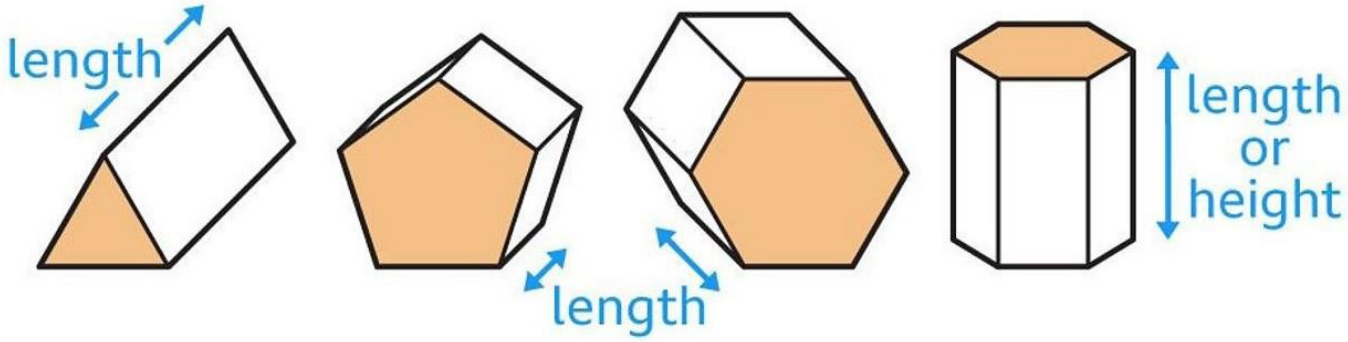
Units will be cubed

e.g. cm^3

Volume = $l \times w \times h$

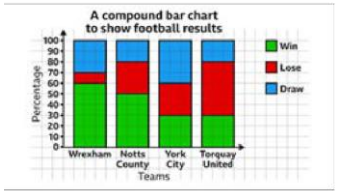
6. Volume of prisms

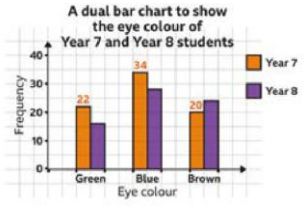
Volume = Area of cross-section × length



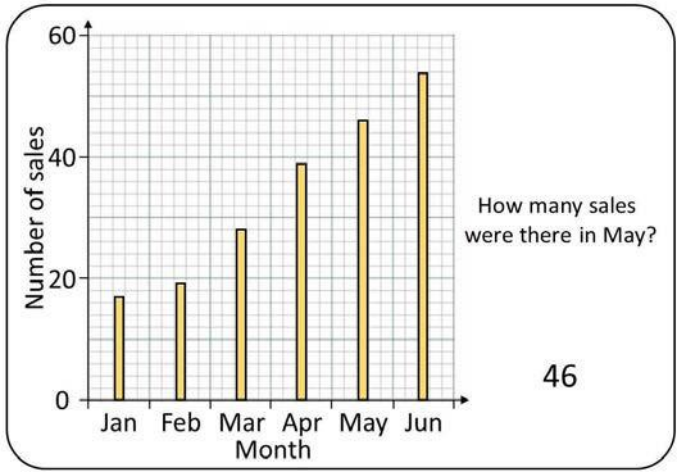
Year 8 Learning Cycle 1 Mathematics - Statistics, Graphs and Charts

1. Bar Charts

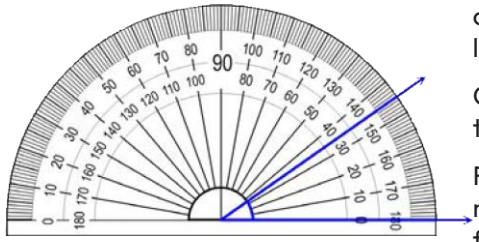




2. Vertical line graphs



3. Using a protractor



Base line goes on one of the straight lines.

Centre point on the vertex.

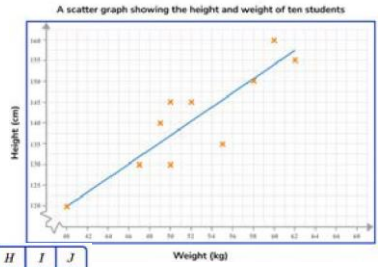
Follow the numbers around from zero, following the arc.

4. Pie Charts

The size of the slice represents the proportion of the data being represented.

5. Bivariate data

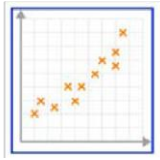
Represents two pieces of information about one thing



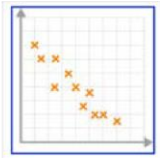
Student	A	B	C	D	E	F	G	H	I	J
Height (cm)	120	145	130	155	160	135	150	145	130	140
Weight (kg)	40	50	47	62	60	55	58	52	50	49

6. Scatter Graphs

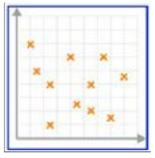
Positive correlation



Negative correlation

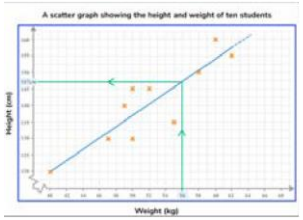


No correlation

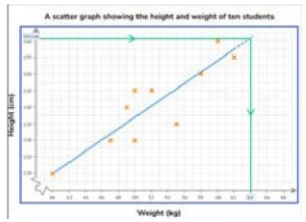


7. Scatter Graphs

Interpolation

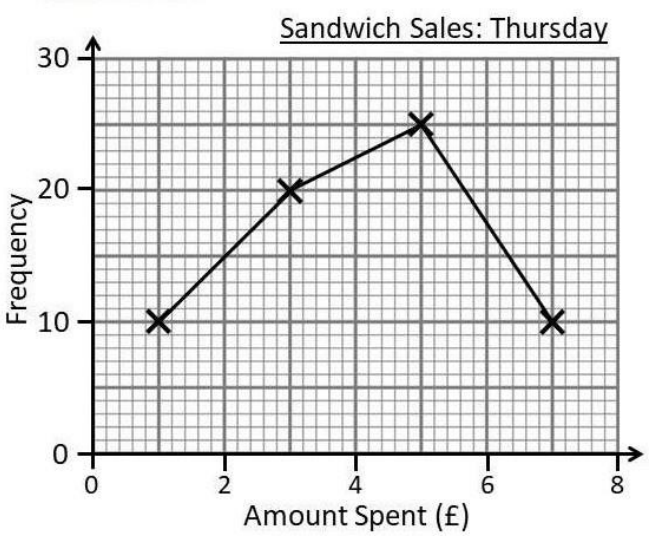


Extrapolation



8. Frequency Polygon

Midpoint plotted against the frequency



Year 8 Learning Cycle 1 Mathematics - Fractions

1. Add and subtract fractions

- Need a common denominator

$\frac{1}{2} + \frac{1}{3}$

$\frac{3}{6} + \frac{2}{6}$

$= \frac{5}{6}$

Different Denominators

$\frac{7\times1}{7\times2} - \frac{3\times2}{7\times2}$

$\frac{7-6}{14} = \frac{1}{14}$

2. Integer multiply fractions

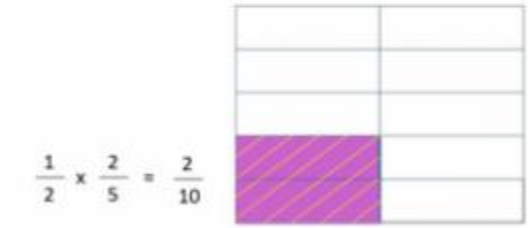
- Multiply integer by numerator
- Just divide the numerators

$5 \times \frac{1}{8} = \frac{5}{8}$

3. Multiply fractions

$$\frac{Top \times Top}{Bottom \times Bottom}$$

$\frac{2}{5} \times \frac{3}{4} = \frac{2\times3}{5\times4} = \frac{6}{20} = \frac{3}{10}$



4. Dividing fractions – common denominator

- Just divide the numerators

$\frac{12}{7} \div \frac{3}{7} = 4$ $\frac{7}{9} \div \frac{2}{9} = \frac{7}{2}$

5. Reciprocal

Number	Reciprocal	The product of the number and its reciprocal is 1
4	$\frac{1}{4}$	$4 \times \frac{1}{4} = 1$
-5	$\frac{1}{-5} = -\frac{1}{5}$	$-5 \times -\frac{1}{5} = 1$
$\frac{1}{6}$	$\frac{1}{\frac{1}{6}} = \frac{6}{1} = 6$	$\frac{1}{6} \times 6 = 1$

6. Dividing fractions – multiplying by the reciprocal

$\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2}$

In order to divide fractions:

1. Flip the second fraction (find its reciprocal)
2. Change the divide sign to multiplication
3. Multiply the fractions together
4. Simplify if possible

Year 8 Learning Cycle 1 Mathematics - Calculator Features

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Square numbers: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

Cube Numbers : 1, 8, 27, 64, 125

Prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47…

Useful features on your calculator:

FACT: this express a number as a product of its prime factors

RATIO (menu 4): this will find missing values within equivalent ratios

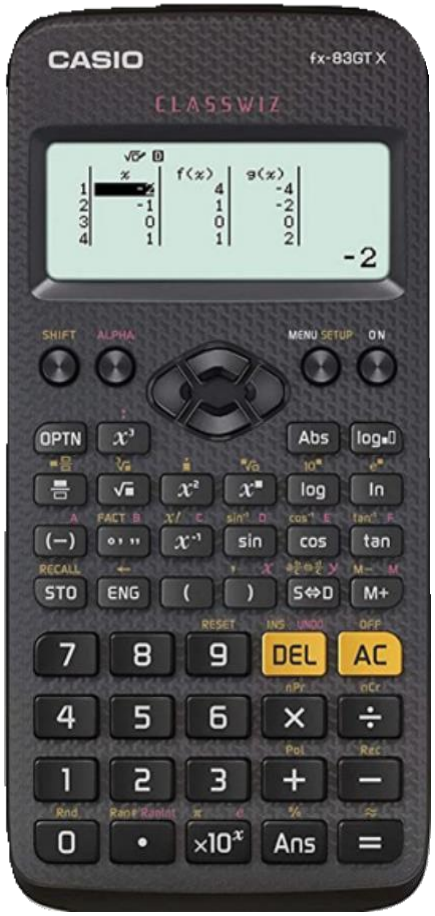
Table (menu 3): This is where you can generate values within a table- useful for plotting graphs and generating terms of a sequence

Statistics (menu 2): this will find all of the averages from a table of data

°‘“: This Is the time button and can do conversion between time units, as well as calculations with different times

Fraction button: can be used for any calculations with fractions

S-D: Converts decimal answers to fractions and vice vera



Sparx Maths

Homework will be set on Tuesdays and will be due on the following Tuesday morning at 7:30am

You must complete 100% of the homework- if you have not got 100% of the questions correct, then you have not done your homework

You will receive a merit for completion of your homework

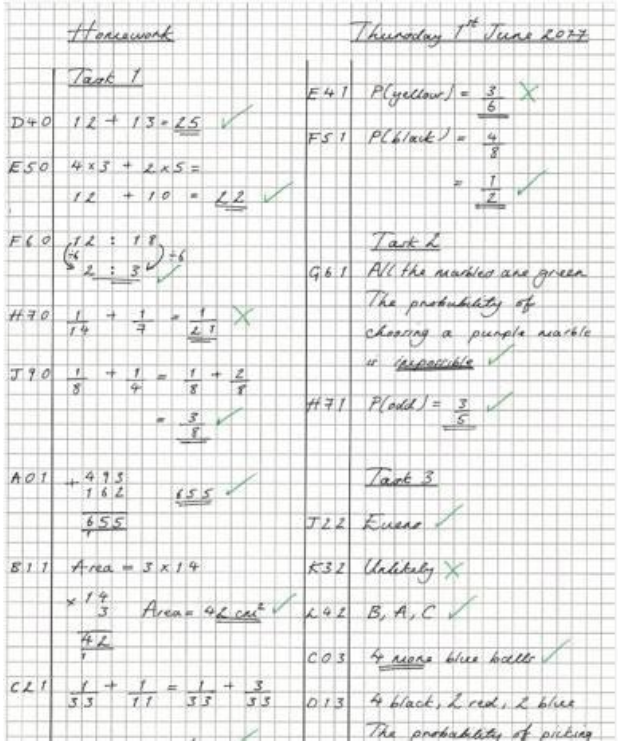
If you complete one of the extra homeworks- XP Boost or Target, you will receive another merit.- they must be 100% complete

Sparx clinics will run Monday, Tuesday, Thursday in Arc 2- a Maths teacher will be on hand to support you, if you are unsure of any of the notes covered

It is your responsibility to seek help BEFORE the deadline, if you get stuck

Your bookwork will be checked in lessons- you must write full workings

You must bring your homework book to the first lesson after Tuesday 7:30am- if you do not have your book, then you have not completed your homework



Year 8 Learning Cycle 1 Science - How can I use the Periodic Table?

Group 1 – **Alkali Metals**

Group 7 – **Halogens**

Group 0 – **Noble gases**

Group number – tells you the number of **electrons** in an elements **outer** shell.

Elements in the **same group** have **similar properties**.

Mass Number = number of **protons** and **neutrons** added together.

Element **symbol**

Element **name**

Atomic / Proton Number = number of **protons** which is the same as the number of **electrons**.

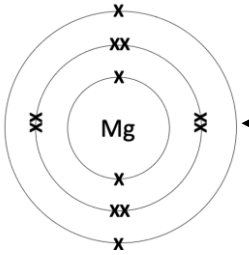
relative atomic mass
atomic symbol
name
atomic (proton) number

Neutrons = Mass number – Atomic number

Non-Metals

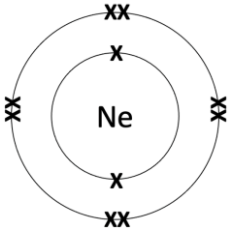
Transition Metals

1	2	3	4	5	6	7	0
1 H hydrogen 1							4 He helium 2
7 Li lithium 3	9 Be beryllium 4	11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12	27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[97] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] Ac* actinium 89	[267] Rf rutherfordium 104	[270] Db dubnium 105	[269] Sg seaborgium 106	[270] Bh bohrium 107	[270] Hs hassium 108	[278] Mt meitnerium 109	[281] Ds darmstadtium 110	[281] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flerovium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[293] Ts tennessine 117	[294] Og oganesson 118

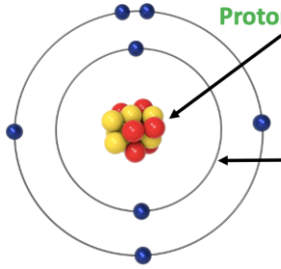


Magnesium (Mg) has **12 electrons** in total. It is in **group 2** so has 2 electrons in its **outer** shell. Mg's electronic configuration is 2,8,2.

Noble gases have a **full outer shell** of electrons E.g., Neon (Ne)



Subatomic Particle	Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	Negligible	-1



Year 8 Learning Cycle 1 Science - Experiments

1. Key Terms	Description
Independent variable	The variable you change in an investigation
Dependent variable	The variable you measure in an investigation
Control variable	The variable you keep the same in an investigation
Hypothesis	A prediction of what will happen in an investigation
Reliability	We use control variables to ensure a reliable experiment
Reproducible	To re-do our experiment and get similar results due to a reliable method
Mean	Doing an experiment 3 times then dividing by 3 to get an average
Fair test	An experiment where only the independent variable changes.
Anomalous result	Result that does not fit with the rest of the data.

2. The Variables

1. ***Repeatable*** – The **same** person gets the **same results** after repeating the experiment using the same method and equipment.
2. ***Reproducible*** – Similar results can be achieved by **someone else** or using a **different method**/piece of equipment.
3. ***Accurate*** – Results are close to the true answer
4. ***Precise*** – data is **close** to the **mean** (or the average!)

For data to be reliable, it must be **repeatable** and **reproducible**

Independent variable – the thing we change!

Independent variable – I want to see if how hot water is increases the rate of diffusion from a teabag. So, I am changing the temperature (degrees Celsius) of water.

Control variables – these are things we **keep the same** to ensure a reliable experiment (one we can repeat and reproduce.

Variable | Example

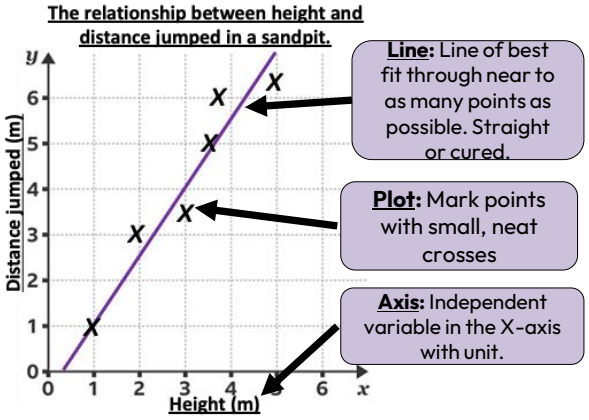
Control variables – I want **keep everything else the same**, e.g., the type of teabag, the volume of water (mL) used, the timer started at the same time, the same end point.

Dependent variable – the thing we are **measuring** overall.

Dependent variable – I want to know if increasing water temperature increases the rate of diffusion from a tea bag. Therefore, I want to **measure** the rate of diffusion!

3. Graphs

Scaling – Even scale
Plot – Small crosses 'x'
Line of best fit – on line graphs
Axis – Titles and units
Title - Appropriate graph title



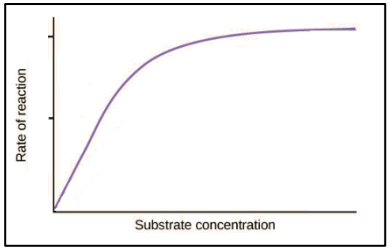
Line: Line of best fit through near to as many points as possible. Straight or cured.

Plot: Mark points with small, neat crosses

Axis: Independent variable in the X-axis with unit.

4. Drawing conclusions from Graphs

1. State the relationship between the independent and dependent variable, e.g., 'as the time increases the product formed increases.'
2. Use statistics to support your answer. 'For example, at 10 minutes there was 50g of product, compared to 160g at 20 minutes'
3. Is the graph the same throughout or does it change? Split it into sections and describe each.



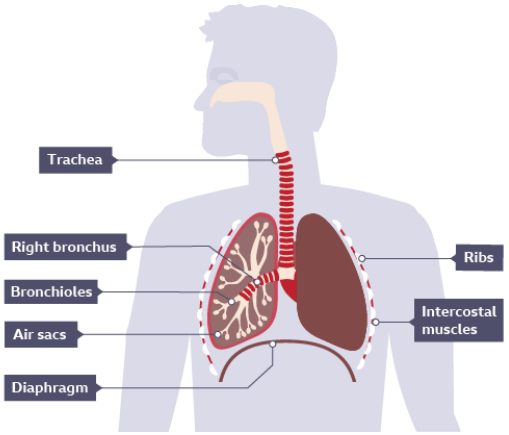
Model Answer: As the substrate concentration increases, the rate of reaction increases. For example... The rate increases more rapidly initially, then increases more slowly until the rate stays the same.

Year 8 Learning Cycle 1 Science – Sports science

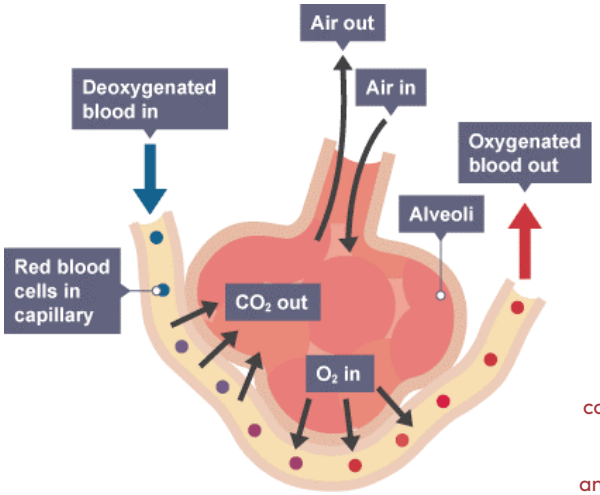
Key Terms	Description
Trachea	Also known as the windpipe – it is the tube that connects the mouth and nose to the bronchus. Rings of cartilage keep the trachea open
Bronchus	Where the trachea branches (splits) into the left and right lungs
Bronchiole	Each bronchus branches again to form many more passageways for air into and out of each lungs
Alveoli	The tiny air sacs at the end of each bronchiole where gases are exchanged into and out of the blood
Diaphragm	A sheet of muscle that contracts (tightens) and relaxes (loosens) to allow air to be breathed in and out
Diffusion	The movement of particles from an area of high concentration to an area of low concentration
Aerobic respiration	A chemical reaction inside cells that releases energy from glucose by reacting it in the presence of oxygen
Anaerobic respiration	A chemical reaction inside cells that releases energy from glucose WITHOUT oxygen
Artery	A blood vessel that carries blood away from the heart
Vein	A blood vessel that carries blood back to the heart
Capillary	A tiny blood vessel that is only one cell thick so that substances can be easily exchanged across it
Oesophagus	Also known as the gullet – It is a tube that connects the mouth to the stomach
Intestine	The part of your digestive system where most substances are absorbed – there is a small and large intestine
Lipids	The scientific name for fats and oils
Enzyme	Chemicals secreted (released) by glandular tissue that help to digest (break down) nutrients (long-chain substances) in the foods we eat

Year 8 Learning Cycle 1 Science - Sports Science

1. The Respiratory System

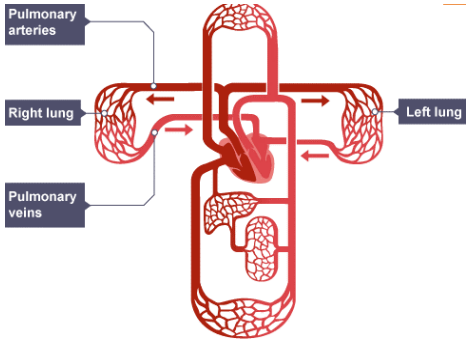


2. Gas Exchange



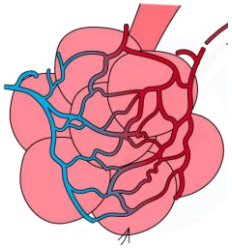
Deoxygenated blood (blood cells blue for purposes of diagram only)

3. The Circulatory System



The circulatory system delivers oxygen and glucose to cells for aerobic respiration.

- Removes waste products like carbon dioxide (cells → lungs) and urea (liver → kidneys)
- This happens in the capillaries (site of gas exchange).
- Made up of the heart and blood vessels



Alveoli Adaptations:

1. One cell thick – optimises gas exchange (short **diffusion** path).
2. ~700 million alveoli – high surface area to optimise gas exchange.
3. Small size - ~300μm in diameter – large SA:V ratio.
4. Moist alveolar walls - gases dissolve in water making diffusion easier.

4. Aerobic Respiration

Aerobic respiration occurs in the mitochondria of every animal and plant cell. Glucose is broken down and energy is released.

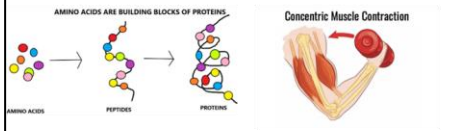
The **word** equation: Glucose + Oxygen → Carbon Dioxide + Water + Energy

The **symbol** equation: $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$ + Energy

TOP EXAM TIPS

! In an exam, never combine the word and symbol equation – make sure you are answering the question

Why might we need aerobic respiration?



1. **Protein synthesis** at the ribosomes.
2. **Muscular contraction.**
3. **Thermo-regulation.**

5. Anaerobic Respiration

Anaerobic respiration occurs in the cytoplasm of animal and plant cells when there is insufficient (not enough) oxygen for aerobic respiration. Glucose is broken down and energy is released.

Anaerobic means without oxygen.

Glucose → Lactic acid + Energy

	Reactants	Products	Rate of Reaction	Energy Released
Aerobic Respiration	Glucose, oxygen	Carbon dioxide, water	Slow	More
Anaerobic Respiration	Glucose	Lactic acid	Fast	Less

6. Further reading

Source: BBC Bitesize

Our Respiratory System

Diffusion in our Alveoli

Cellular Respiration

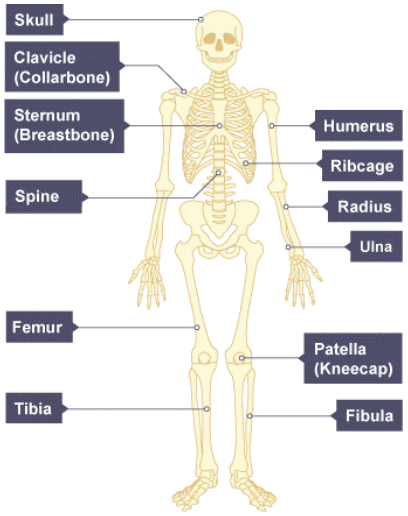
The body's response to exercise

Year 8 Learning Cycle 1 Science - Sports Science

TOP EXAM TIPS

An enzyme is a **biological catalyst made of protein** which **speeds up the rate of reaction, <u>without</u>** being used up itself.

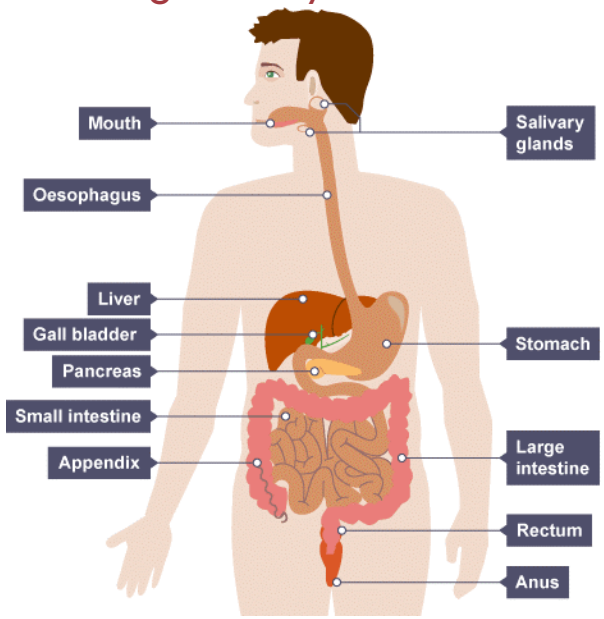
1. The Skeletal System



2. A Healthy Diet

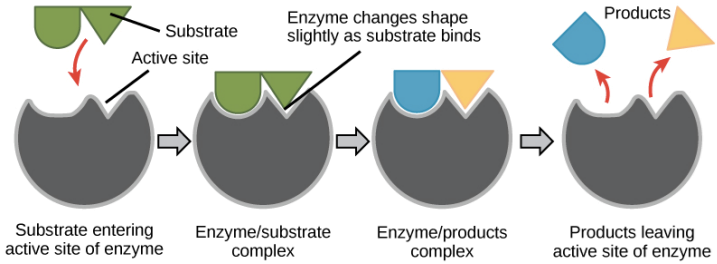
Food Group	Where this is found	Why do we need this?
Carbohydrates	Pasta, Rice, Oats.	Starch is broken down to simple sugars like glucose used in aerobic respiration.
Proteins	Meat, oily fish, nuts, lentils.	Needed for growth and repair of cells.
Fats	Meat, dairy, vegetable oils.	Provide energy to support cell function.
Minerals	E.g., Calcium found in milk and green vegetables.	Regulates many bodily functions, e.g., regulating water balance.
Vitamins	E.g., Vitamin A in eggs, C in citrus fruits.	Fight infections, wound healing, strong bones.
Fibre	Fruit, Vegetables, grains.	Increases gut health.
Water	All foods, liquids, aerobic respiration.	Thermoregulation (regulating water levels)

3. The Digestive System



Digestive Component	Description
Oesophagus	Peristalsis occurs here – pushing the food bolus down. AKA the gullet.
Stomach	Muscular walls pummel food, produces protease enzyme pepsin and produces hydrochloric acid to kill bacteria.
Small Intestine	Produces protease, amylase and lipase. Where most food is absorbed out of digestive system.
Large intestine	Where excess water and electrolytes are absorbed.
Liver	Produces bile which neutralises stomach acid and emulsifies fats.
Gall Bladder	Where bile is stored before its release into the small intestine.
Rectum	Where faeces are stored before being expelled from the body as waste.

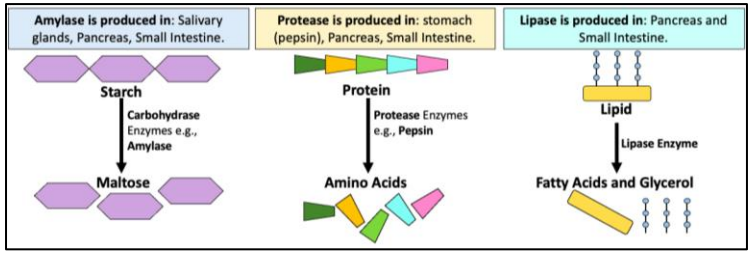
4. Enzymes



The Lock and Key Mode(above):

1. Enzymes are proteins which have an active site with a specific shape complementary to a specific substrate so the substrate can bind into it.
2. The substrate binds to the enzyme's active site to form an enzyme-substrate complex.
3. The enzyme catalyses the breakdown of the substrate into products to form an enzyme-product complex.
4. The products leave the active site of the enzyme which remains unchanged.

Digestive Enzymes

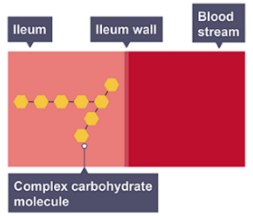


Enzymes are needed in digestion. Without enzymes, food substrates are:

- Insoluble (will not dissolve)
- Too large to enter the bloodstream.

Once substrates are digested by enzymes, products are:

- Soluble (will dissolve)
- Small enough to enter bloodstream



5. Further reading

Source: BBC Bitesize

The science behind lactose intolerance

Digestive systems

What does the world eat?

The body's response to exercise

Year 8 Learning Cycle 1 Science - Chemical Reactions

Key Terms	Description
Chemical reaction	When chemical bonds are broken and made between atoms, so that new substances (compounds or elements) are made.
Reactant	The chemical present at the start of the reaction. E.g., in photosynthesis: Carbon Dioxide + Water.
Product	The chemical which is made in a chemical reaction. E.g., in photosynthesis: Glucose + Oxygen.
Catalyst	A substance that speeds up a chemical reaction. Enzymes are biological catalysts.
Exothermic	When energy is transferred to the surroundings – the temperature of the reaction will increase.
Endothermic	When energy is taken in from the surroundings – the temperature of the reaction will decrease.
Combustion	An exothermic chemical reaction where fuel is burned and reacts with oxygen to release energy.
Thermal decomposition	An endothermic chemical reaction that happens when a compound breaks down when heated.

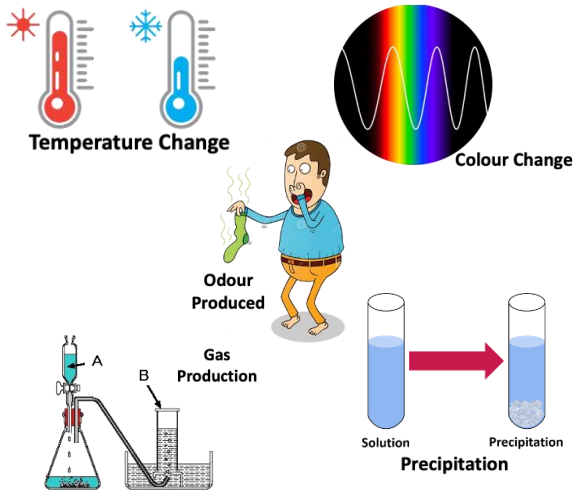
Year 8 Learning Cycle 1 Science - Chemical Reactions

1. Physical and chemical changes

A physical change involves a change in the physical state of a substance.

- Does NOT involve new elements or compounds
- Examples: melting, freezing, evaporating, condensing, subliming

A chemical change involves the formation of a new element or compound. Examples:



5.Further reading

Chemical and Physical Changes

Endothermic and Exothermic Reactions

2. pH

- The pH scale is a number scale from 0 to 14.
- It tells us how acidic or alkaline a substance is.
- The pH scale is used to classify something as acidic (1-6), alkaline (8-14) or neutral (7).

3. Acid Reactions

Acids react with some metals to produce a salt and hydrogen gas.

Metal + acid → salt + hydrogen (M.A.S.H)

Naming the salt from the reaction of a metal and an acid

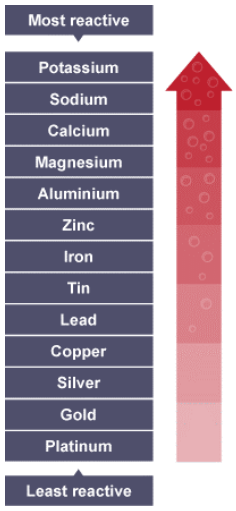
1. The first word is the name of the metal For example, a salt made when magnesium is added to an acid would have magnesium as its first word.

2. The second word of the name is taken from the name of the acid

Hydrochloric acid → chloride

Nitric acid → nitrate

Sulfuric acid → sulfate



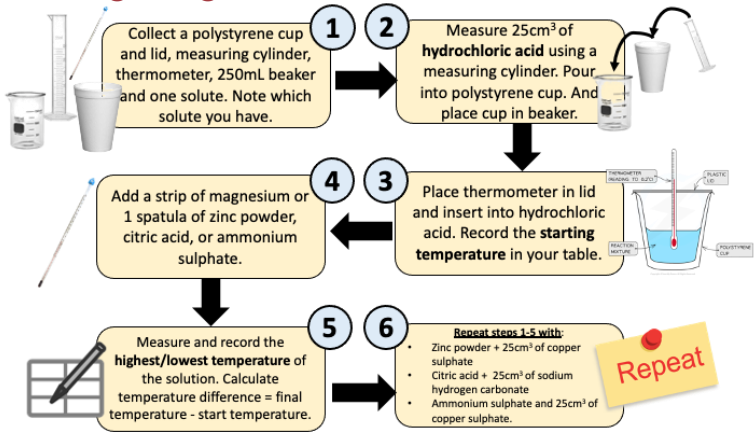
Metal	Acid	Salt name
Magnesium	Nitric acid	Magnesium nitrate
Calcium	Hydrochloric acid	Calcium chloride
Zinc	Sulfuric acid	Zinc sulf

4. Exothermic and endothermic

- Exothermic reactions give out heat.
- Handwarmers - release heat into their surroundings.
- Don't always release heat, sometimes the energy is released as light. For example, glowsticks.
- Reaction mixture temperature increases

- Endothermic reactions absorb energy from the surroundings - surroundings get colder.
- Photosynthesis is an endothermic reaction because plant leaves absorb light energy.
- Thermal decomposition reactions are endothermic because they absorb energy when the chemicals are heated.

Investigating reactions



When writing methods don't forget to include CIDER:

C – Control Variables - What we keep the same
I – Independent Variable – what ONE thing will we change?
D – Dependent Variable – what are we measuring?
E – Equipment you will use
R - Repeat every experiment 3 times to remove anomalies and find a mean.

Year 8 Learning Cycle 1 Science – Extended writing

1. How to approach 6 mark questions in Science - Sports Science

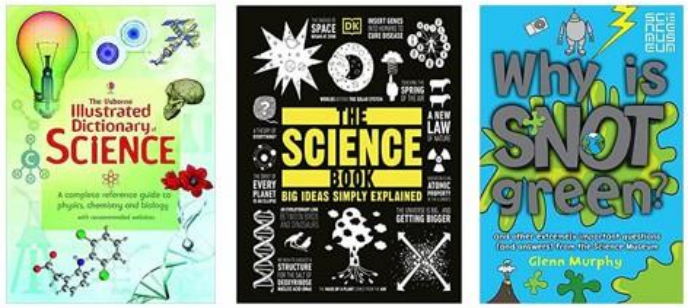
Question	Explain how the change in _____ during excercise halps an athlete
Info	You could be asked to explain why the following changes happen during exercise: • Increased stroke volume • Increased heart rate • Increased breathing rate • Increased breathing depth To answer this question you will need to do the following: 1. Identify the change that has happened 2. Describe what this change involves 3. Explain how this change benefits the athlete
Top tip	If you are explaining why a change happens during exercise use the following phrase: **"This change increases the supply of oxygen, which means that there is more available for aerobic respiration so there is more energy released."**
Model answer	**Explain how the change in stroke volume during exercise helps an athlete.** An increase in stroke volume means that with each heart beat the heart pumps more blood around the body. This means that there is increased supply of oxygen to the muscle cells and so there is more energy available for muscle cells.
Practice	1. Learn and practice the model answer above. 2. Prepare and learn model answers to explain how increased heart rate, increased breathing rate and increased breathing depth benefit an athlete.

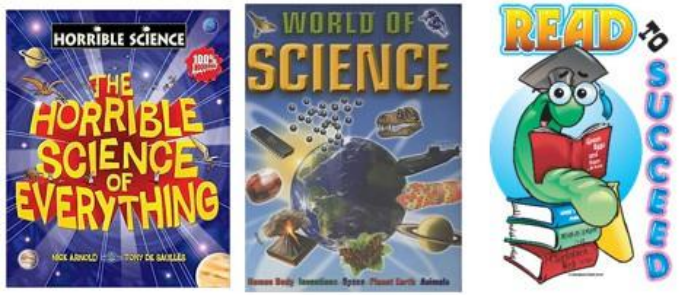
2. How to approach 6 mark questions in Science - Chemical reactions

Question	Explain what you would observe when a metal is added to an acid. Explain what happens when any acid reacts with an akali. Describe how you could deteremine the pH of a substance.
Info	At least one of these questions is likely to come up. The examiner is going to be looking for a clear answer written in logical sequence.
Top tip	Be careful that you use key words/phrases accurately (these are in bold in your model answers below).
Model answer	**Explain what you would observe when a metal is added to an acid.** When a metal is added to an acid, I would observe **bubbles.** This is because when a metal is added to an acid **hydrogen** is produced. I would also expect the container to **feel warm** this is because a metal reacting with an acid is an **exothermic reaction**. Finally, I would expect the metal to disappear over time. This is because it is reacting and making the salt which would disolve.
Model answer	**Explain what happens when any acid reacts with any akali.** When and acid and alkali react the **H^+ ions** from the acid react with the akalis **OH^- ions** to make water.
Model answer	**Describe how you could determine the pH of a solution.** To determine the pH of a solution you could add universal indicator. You would observe the colour that the indicator turned and use the chart to identify the pH. You could alternatively use a pH probe by dipping this into the solution and recording the value on the digital display.
Practice	1. Learn and practice the model answers above.

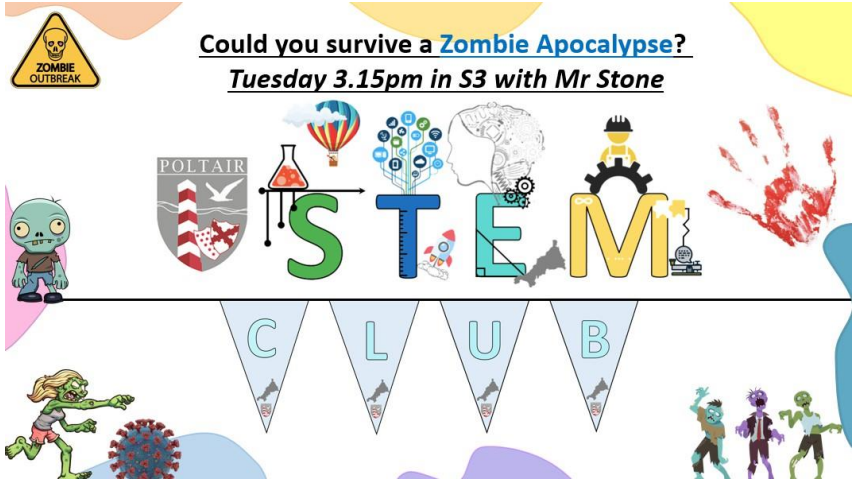
Year 8 Learning Cycle 1 Science - Clubs and Reading

1. Science reading opportunities





2. STEM club: Science, technology, engineering, Maths



3. STEM club

4. Science discovery Websites

Spectacular Science
National Geographic

https://kids.nationalgeographic.com/videos/topic/spectacular-science

Discover Natural History Museum

https://www.nhm.ac.uk/discover.html

Conversations – Eden Project
https://www.edenproject.com/learn/eden-at-home

Cornwall Wildlife Trust

https://www.cornwallwildlifetrust.org.uk/

Year 8 Learning Cycle 1 Art

1. Tier Three Vocabulary

Key Words	Definitions
Design	A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made
Resource Materials	Images, pictures selected by you to develop your ideas.
Maquette	A maquette (a word derived from French) is a scale model or rough draft of an unfinished sculpture. An equivalent term is bozzetto, a diminutive of the Italian word for a sketch.
Idea	A plan of action : intention. my idea is to study law. 2. : something imagined or pictured in the mind : notion.
Specification	A detailed description of the design and materials used to make something.
Creative Industries	Creativity, skill and talent that have the potential for wealth and job creation.

4. Design Brief

You have been commissioned to design a timepiece inspired by the work of an artist, craftsperson or designer. The timepiece can be free standing or hanging. It can be designed for a particular room. You will select, research and develop ideas inspired by the artist, designer or craftsperson of your choice.

2. What will I learn?

What?

The Time in Design project will give you an introduction to the field of design which is the employment side of the arts. You will respond to the design brief and develop and refine your ideas through to a final design that you will make in LC2 in DT.

Why?

The Creative industries account for 2.1 million jobs in the UK, that is 1 in every 11 jobs.

How?

This is a two-part project. Part one is in Art for LC1. You will select, research, develop, design and experiment with materials to arrive at your final design concept. LC2 in DT you will realise your design using 2Design and wood.

5. Links and Further Reading

The Design Museum: London.

https://designmuseum.org/

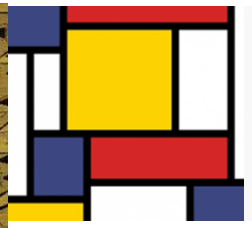
V & A Museum London

https://www.vam.ac.uk/

The Glasgow School of Art

https://themackintoshbuilding.co.uk/

3. Designers, artists and Craftspeople

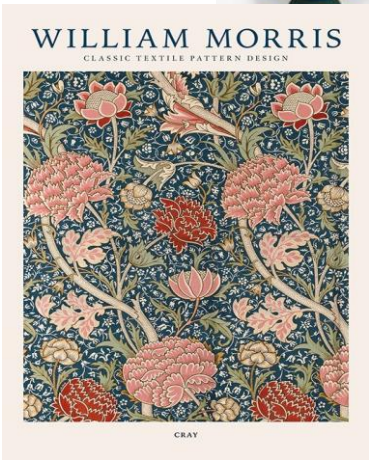


De Stijl

Klimt

Liechtenstein

Kandinsky



Memphis

Year 8 Learning Cycle 1 Computing

1. Computer Laws and Safety

Data Protection Act	The law that governs the protection of personal data in the UK. It says personal data is private and should only be accessible by authorised people.
Copyright law	Gives the creator control over the way it is used.
Ways to stay safe	Keep passwords private and complex Check the age for sites and applications Block, Report and Tell someone if you are concerned.
Hacker	A person who tries to gain unauthorised access to a computer.

2. Truth, Bias and Ethics

Ethics

Having morals and principles and 'doing the right thing', irrespective of profit. Ethical issues in computing include:

- ensuring public safety
- security of data

Bias - information that is written from a particular point of view.

- personal opinion
- a statement that has no factual basis
- prejudiced in favour of or against a person, product, situation or idea

3. Computer History

Early computing machines did not use electricity, and were designed to solve maths problems. By the 1950's computers which could store different programs were created for many more purposes.

Ada Lovelace was the first person to write computer programs. She predicted that one day machines would do more than just maths.

Charles Babbage designed a machine called the Analytical Engine 200 years ago. If it had been built this machine would have been the first modern computer.

Alan Turing created machines during the war. They helped people read secret coded messages.

4. Computer hardware

Hardware	The physical parts of a computer system, eg a keyboard, hard disk drive or CD drive.
Software	The programs, applications and data in a computer system.
CPU	Central Processing Unit – 'the brains' of the computer. Manages the instructions from the software.
Memory	Computers contain two types of memory read only memory (ROM) and random access memory (RAM)
Secondary Storage	Extra storage can be used to store data needed by the computer, eg Solid State (USB) and Optical (DVD, CD)

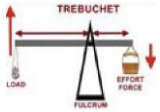
Year 8 Learning Cycle 1 Design Technology – Terrific trebuchets!

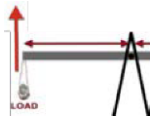
1. Tier Three Vocabulary

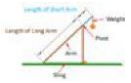
Key Words	Definitions
Lever	A simple machine consisting of a pivot, effort and load
Pivot	A point around which something can rotate or turn
Trebuchet	A type of catapult that uses a long arm to throw a projectile
Projectile	An object that is propelled (moved) by a force
Mathematical modelling	Using data and formulae to predict the outcome for a real-world problem
Reproducible	The same results can be obtained by another team using the same equipment
Linkage	A mechanism made by connecting together rigid links or levers
Mechanical advantage	Increasing the size of a force by using a mechanism such as a lever
Accuracy	How close your object lands to the target
Optimum	The best conditions
Configuration	The settings used for your trebuchet

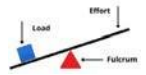
2. Factors that affect trebuchet range

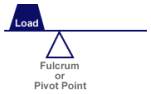
Effort	The greater the force used to turn the arm of the trebuchet, the further the projectile can go
Load	The greater the mass of the load (projectile) being thrown by the arm of the trebuchet, the less distance it will travel
Length of the arm	The longer the arm of your trebuchet, the greater the potential mechanical advantage
Position of the pivot	The further the effort is applied from the pivot, the greater the turning effect of the force
Distance the load is from the pivot	The greater the distance of the load from the pivot point, the more effort will be needed to move it





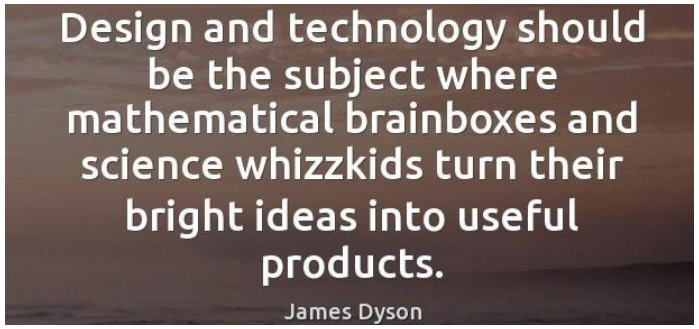






3. Mathematical Modelling

Measuring and using performance data from scaled-down models allows designers to predict how the full-size products will perform. Also, the forces likely to be experienced, so materials with the correct strengths can be selected.



4. Efficient Testing

Think how you might design an investigation in Science...

- Be methodical by planning to select and change only one factor of your trebuchet settings at a time.
- Record your results in a suitable table.
- Consider repeating your results to check to see if they are similar each time before changing another factor.

5. Workshop Safety

1. Leave your bags in the bag space so that people don't trip over them.
2. Never run in a workshop.
3. Don't play with the vice on the workbench as it can easily pinch your skin.
4. Tell the teacher if there is sawdust/metal filings on your workbench – Don't blow them or brush away with your hand.
5. Don't touch tools without permission from the teacher

6. Links and further reading

Modelling:
https://www.bbc.co.uk/bitesize/guides/z6jkw6f/revision/9

Trebuchets:
https://www.youtube.com/watch?v=9-Hwxw4fgqk

Revise:Mindmap Maker
is.gd/mindmapmaker

Year 8 Learning Cycle 1 Drama - Oliver Twist

1. Key Words	Definitions
Still Image	Where the actors freeze onstage in a given moment in order to communicate meaning or mark a moment
Thought Track	When a character steps out of a scene to address the. audience about how they're feeling
Hot Seating	A character is questioned by the audience or students. The actor must answer in role
Tone	The emotional sound of your voice
Pitch	How high or low your voice goes in speech
Facial Expression	How you show emotion on your face
Body Language	How you communicate feeling through the actions of your body
Gait	How your character walks
Gesture	A movement that communicates something

3. Characters

Oliver Twist	The hero and protagonist of the story. He is an orphan, and his true identity is hidden from the reader until the end. An innocent and vulnerable character, who has been treated cruelly by those around him. However, even when he is treated badly, Oliver stays true to himself and is kind to everybody
Artful Dodger	Streetwise, clever and mischievous; he is Fagin's best pick pocketer and also the person who introduces Oliver to Fagin
Fagin	Fagin is the leader of the pick pocketers, taking in orphans and training them to pick pocket for him. He rarely commits crimes himself and instead uses other people, so he does not get caught. In the story, he tries to turn Oliver into a thief
Bill Sykes	The antagonist of the story. Bill Sykes is a professional burglar and a very violent and cruel man. He was also once a pickpocket in Fagin's group and was brought up surrounded by crime. He is always accompanied by his loyal dog 'Bullseye'
Nancy	Nancy was once one of Fagin's pickpockets when she was younger and has since grown up with crime all around her. Despite this, she has a good heart and is one of the noblest characters and a friend to Oliver
Mr Bumble	A church official who worked in the workhouse where Oliver was born. Although he believes that he is righteous and good, he treats Oliver and the other children under his care with cruelty
Widow Corney	A cruel and power-hungry woman that does anything she can to make the orphans livs more of a misery

2. Plot

Oliver! takes audiences on a wild adventure through Victorian England. Young, orphaned Oliver Twist navigates through London's underworld of theft and violence, searching for a home, a family, and - most importantly - for love.

When Oliver is picked up on the street by a boy named the Artful Dodger, he is welcomed into a gang of child pickpockets led by the conniving, but charismatic, Fagin. When Oliver is falsely accused of a theft he didn't commit, he is rescued by a kind and wealthy gentleman, to the dismay of Fagin's violent sidekick, Bill Sikes. Caught in the middle is the warm-hearted Nancy, who is trapped under Bill's thumb, but desperate to help Oliver, with tragic results.

4. Context

Charles Dickens began writing the novel Oliver Twist after the adoption of the Poor Law of 1834, which stopped government payments to the able-bodied poor unless they entered workhouses. Therefore, Oliver Twist became a story clearly aimed directly at the problem of poverty in 19th-century London.

The novel was the first of the author's works to realistically depict the impoverished London underworld and to illustrate his belief that poverty leads to crime.

Oliver Twist was adapted by Lionel Bart as 'Oliver!' a stage musical, and opened in the West End in 1960. The musical film starring Mark Lester came shortly after, in 1968.

Oliver! Is still an extremely popular musical today.

5. Links and further reading

'Consider Yourself' 1968 Film
https://www.youtube.com/watch?v=wZxky51fxCg

Context Summary
https://www.britannica.com/topic/Oliver-Twist-novel-by-Dickens

Video Plot Summary
https://www.youtube.com/watch?v=D0I8QfERkEw

Year 8 Learning Cycle 1 Food - Hygiene & Safety

1. Key Terms	Description
Hygiene	Keeping things clean and germ-free to prevent getting sick from food and maintain a healthy environment
Anaemia	A condition where a person doesn't have enough healthy red blood cells, usually caused by not having enough iron
Hazard	Something that can be dangerous or harmful, especially when it comes to working with food, like sharp objects or spoiled ingredients
Micronutrients	Tiny nutrients that our bodies need in small amounts, like vitamins and minerals, to stay healthy and function properly
Critical Control Point	A specific step in food preparation where it's crucial to take extra care to prevent foodborne illnesses, like cooking meat thoroughly
Carbohydrates	Nutrients found in foods like bread, pasta, and fruits that give us energy to do things
Starch	A type of carbohydrate found in foods like potatoes and rice that provides long-lasting energy
Fats/Lipids/ Oils	Nutrients found in foods like butter, oils, and avocados that provide energy
Coagulation	When a liquid, like egg whites, turns into a solid or semi-solid state, usually through heat or the addition of certain ingredients
Denaturation	Changing the structure of a protein, usually by heat or chemicals, which can affect its texture and properties

2. Nutrition at different life stages

Babies	Babies rely on breast milk or formula as their primary source of nutrition, providing them with essential proteins, carbs, fats and minerals for growth and development
Children	Toddlers require a balanced diet with protein, carbs, fats, vitamins and minerals from varied food sources such a fruit and vegetables, whole grains and dairy. They need to eat from all major food groups
Adolescents	Teenagers experience rapid growth and increased nutrient demand with a focus on protein, carbs, fats, calcium and iron. Intake of calcium for bone health and blood production is particularly important
Adults	Adults require a balanced diet that provides them with the necessary nutrients for energy, maintenance, and overall well-being. A diverse mix of foods that provide the right mix of proteins, carbs, healthy fats and minerals from a diverse range of foods
Elderly	A nutrient-rich diet is essential, focusing on protein intake to maintain muscle mass, calcium and vitamin D for bon health, fibre for digestive function

3. Eatwell guide

The Eatwell Guide is a great way of ensuring that you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

4. HACCP

It's a way that people in the food industry use to make sure the food they make is safe to eat. They look at all the steps involved in making the food and figure out where there could be problems. Then they come up with ways to prevent those problems and check to make sure everything is going well. It helps them keep the food they make as safe as possible for everyone to enjoy.

5. Teenage Diet

6. Links and further reading

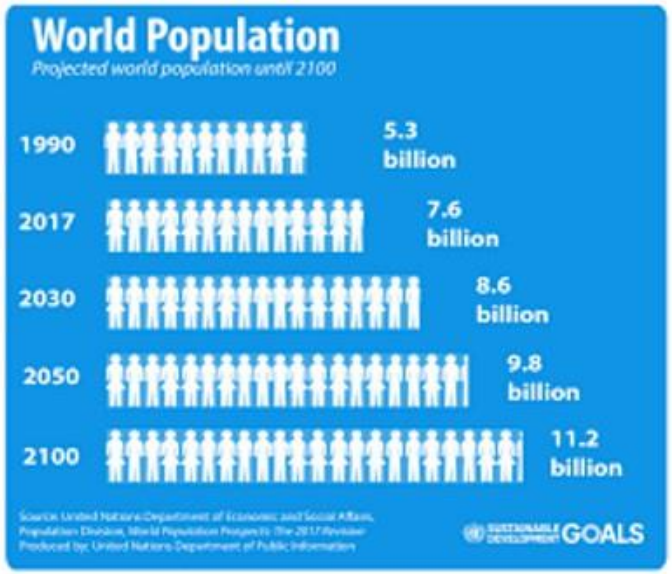
TEDTalk: How the Food You Eat Affects Your Brian
https://youtu.be/xyQY8a-ng6g

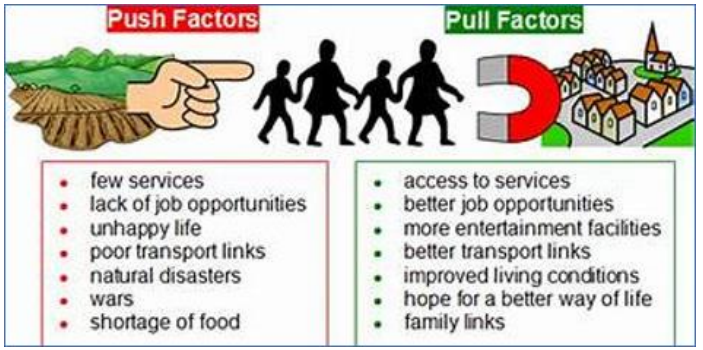
Article:Nutrition needs when you're over 65
https://is.gd/elderlydiet

Revise:Mindmap Maker
is.gd/mindmapmaker

Year 8 Learning Cycle 1 Geography - Is population growth sustainable?

Key Terms	Description
Ageing population	Low birth rate and death rates, resulting in a larger proportion of elderly people
Birth rate	The number of live births per thousand of population per year
Death rate	The number of deaths per thousand of population per year
Demographic	The structure of a population
Immigration	The action of coming to live permanently in another country
Migration	The movement of people from one location to another
Natural Increase	How the population has changed due to birth and death rates. Calculated by the number of people born – the number of people who have died
Population	The number of people living within an area
Pull factor	A factor bringing someone into a location e.g. good healthcare
Push factor	A factor pushing someone away from a location e.g. conflict





Factors impacting on birth rate

- Access to contraception and family planning.
- Reliance on large families in LICs to assist with work.
- Government policies
- Cost of living and raising a child.
- Women working and having children later.

Factors impacting on death rate

- Access to medication and high quality health care.
- Access to vaccinations.
- Access to clean water and nutritious food.
- War and conflict.
- Lower infant mortality rates

Ageing (or greying) – a high proportion of people aged over 65. the UK has an ageing population

Youthful – a high proportion of people aged under 16 – Uganda is an example

Impacts:
- Not enough working population to look after older people in care homes
- More money needed to pay out state pensions from taxes
- more research into older person diseases such as dementia needed

Impacts:
- Population grows meaning a need for more resources such as food or housing
- More money needed for / jobs required in nurseries or schools or child care

Reading

BBC Bitesize - Population - KS3 Geography

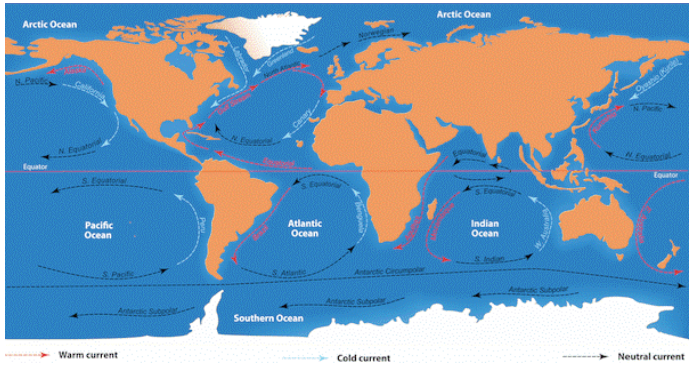
https://www.bbc.co.uk/bitesize/topics/zg7nvcw/articles/zxv4cmn

SCAN ME

Year 8 Learning Cycle 1 Geography - The World's oceans and currents

1. Key Terms	Description
Gyre	A gyre is a large system of rotating ocean currents
Thermohaline circulation	Thermohaline circulation transports and mixes the water of the oceans. In the process it transports heat, which influences regional climate patterns
Global Conveyer Belty	A system of ocean currents that transport water around the world
Biodiversity	All the variety of life that can be found on Earth (plants, animals, fungi and micro-organisms) as well as to the communities that they form and the habitats in which they live
Microplastics	Small plastic pieces less than five millimetres long which can be harmful to our ocean and aquatic life
Coriolis effect	The apparent acceleration of a moving body on or near the Earth as a result of the Earth's rotation
Midnight zone	A layer of the ocean which starts at around 3,300 feet deep and goes to the bottom of the ocean floor. In this zone, there is total darkness and the temperatures here are close to freezing

2. The world's oceans and currents



Ocean gyres circulate large areas of ocean. There are five major gyres which are driven by the Coriolis effect and surface winds. In the northern hemisphere gyres flow clockwise, whereas in the southern hemisphere gyres flow anti-clockwise.

3. The importance of our oceans

The ocean covers about 70% of our planet and does several important things for us that are vital to life on Earth. Oceans also regulate the atmosphere of Earth as it acts as a global climate system. Microscopic plants called phytoplankton grow near the ocean surface and absorb CO2 just like trees. Other sea creatures, such as snails, also absorb CO2 through the creation of their shells. When they die, their shells sink to the deep ocean where they become sediment, or they dissolve in areas of very deep ocean. Also, as surface waters cool and sink far from the equator, they absorb CO2 from the atmosphere and transfer it to the deep ocean where it may take centuries to millennia to return to the surface.

The ocean does an excellent job of absorbing excess heat from the atmosphere. The top few meters of the ocean stores as much heat as Earth's entire atmosphere. So, as the planet warms, it's the ocean that gets most of the extra energy.

4. Henderson Island

Henderson Island is a tiny, uninhabited island in the middle of the Pacific Ocean, 3000 miles from major population centers. Though it is half the size of Manhattan, more than 19 tonnes of litter pollute its white, sandy beaches.

Researchers estimate that it has the highest concentration of debris of any place in the world, for a total of 37 million pieces on the entirety of the small island. For every square metre you walk, you'll find approximately 627 pieces of rubbish.

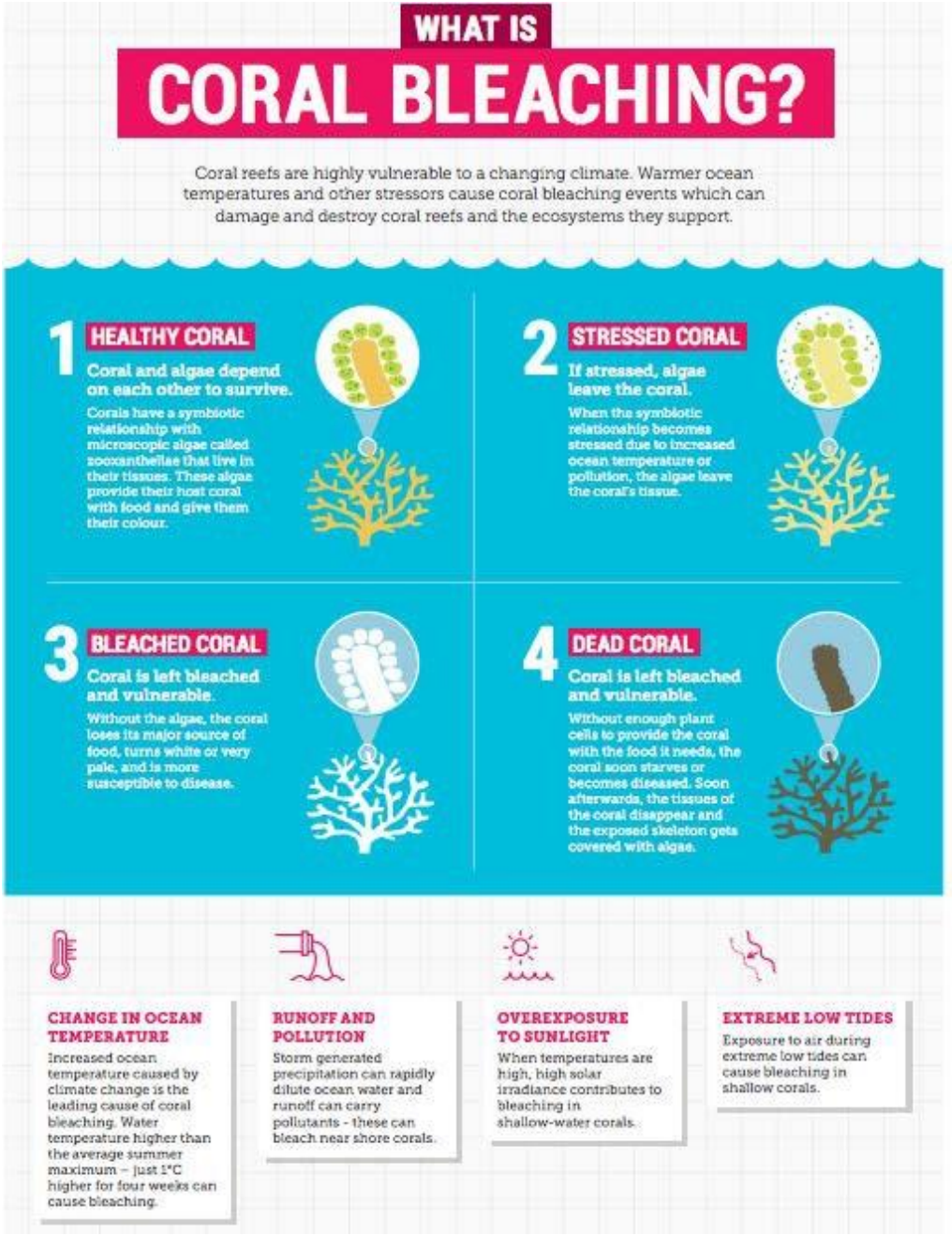
5. What is the plastic problem?

Plastic is a material consistent of a wide range of synthetic polymers that are malleable and so can be moulded into solid objects. Plastic was widely used in manufacturing as it is cheap, lightweight and extremely hard wearing. However, because plastic is so hard wearing, we are now aware of the environmental impact that plastic has. In the ocean, plastic debris injures and kills fish, seabirds and marine mammals including whales.

Year 8 Learning Cycle 1 Geography - Is it too late to save the oceans?

6. We can solve our oceans if we:

- Reduce – use less single use plastic. 90% of the plastic items in our daily lives are used once and then thrown away. The UK government has since banned plastic straws and free carrier bags in shops to reduce the amount of single use plastics.
- Reuse – Find other uses for plastic materials that have already been used e.g. reuse plastic bags for future shops / create containers out of plastic pots etc.
- Recycle – dispose of plastic waste appropriately by recycling instead of throwing away in the bin.
- Rethink – educate people further about the issues of plastic waste and how we can solve the plastic problem.
- Clean up! – take part in local beach clean operations. Look out for organisations such as the 2-minute foundation and get involved where you can!

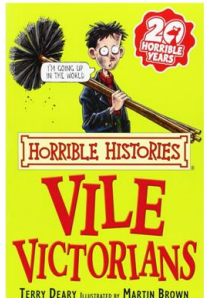


Year 8 Learning Cycle 1 History - Enquiry Question: What were the causes and consequences of the Industrial Revolution?

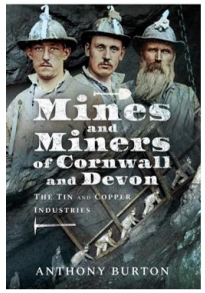
Key Terms	Description
Population	The number of people living in a particular place
Agriculture	The process of producing food, and fibers by farming of certain plants or raising animals
Industry	The process of making products by using machines and factories
Mass production	The production of many products at once. Quicker and for less money. e.g. textiles
Poverty	Lack of basic human needs, i.e. clean water, nutrition, healthcare, education and shelter
Sanitation	System that disposes of waste
Reformer	Someone who wants to change a situation to make it better e.g. Edwin Chadwick
Social	To do with people and the way they live and interact. E.g. The *social* situation in Britain changed dramatically, 1750-1900.
Political	To do with politics and how a country is run. E.g. There were some *political* changes in Britain, 1750-1900.

Historical Skills we will develop in this enquiry:

- ✓ Our understanding of cause and consequence
- ✓ Our use of knowledge to explain



Horrible Histories – Vile Victorians
Terry Deary (author)
Martin Brown (illustrator)

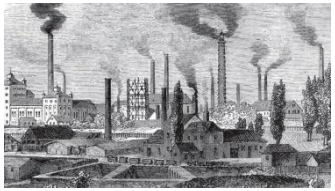


Mines and miners of Cornwall and Devon – the tin and copper industries
Anthony Burton (Author)

These are suggestions of reading that might help boost your history knowledge for the current enquiry. Anything you can read linked to our enquiry questions is amazing and if you tell your teacher what you've been reading and make suggestions to us for books then we will be rewarding Merits!
Remember to check out the library; there are some fantastic history books in there too!

Core Knowledge	
1. What significant invention helped to drive the industrial revolution?	Seam power
2. What was another significant cause of the Industrial Revolution?	The development of the British Empire and new raw materials becoming available
3. What were the big changes of the Industrial Revolution for the landscape of Britain?	Rural to urban living, small village life becomes large towns and cities
4. What were the living conditions like in the new towns and cities?	Dirty, cramped and full of disease
5. What illness had many outbreaks in London due to the awful conditions?	Cholera
6. What sort of housing was found in the big cities?	Back-to-back housing, fitting as many houses into an area as possible
7. What was it like working in a factory 1750-1900?	Very dangerous, huge numbers of serious injury and death, long working hours, low pay
8. What was done to improve factory conditions?	Several Factory Acts (1819, 1833, 1878) were passed. This reduced gradually the age and use of children in factories, there were inspectors to ensure safety and working hours were reduced
9. What was the Cornish experience of the Industrial Revolution?	Cornwall became increasingly significant because of its tin and copper reserves
10. What jobs did women do in the mines?	Women and girls worked on the surface of the mines as Bal Maidens and broke the rock into smaller pieces to help with extracting the tin ore

Bal Maidens at Dolcoath mine c.1890



A typical city during the Industrial Revolution

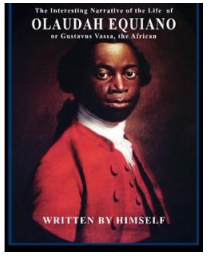
A Court for King Cholera. 1852, *Punch Magazine*

Year 8 Learning Cycle 1 History - Enquiry Question: What were the reasons for the abolition of slavery?

Key Terms	Description
Transatlantic Slave Trade	The trading of enslaved people taken from their homes in countries in Africa across the Atlantic Ocean to the West Indies/America
Enslaved	To have all your rights taken away from you and to become the property of someone else
Economic	Relating to money, how it is made, how much there is. E.g. The *economic* situation in Britain changed dramatically, 1750-1900 largely due to the trade in enslaved people
Dehumanisation	Taking away from a person or group their human qualities
Boycott	To refuse to buy or use a product or service
Resistance	Refusing to accept or comply (go along with) something. The attempt to prevent something happening by actions or arguments
Abolition	Ending of slavery
Abolitionist	Someone who worked to end slavery

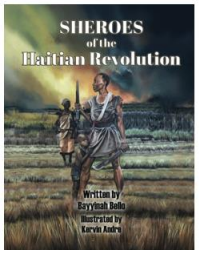
Historical Skills we will develop in this enquiry:

- ✓ Our understanding of cause and consequence
- ✓ Our use of knowledge to explain



The interesting narrative of the life of Olaudah Equiano: or Gustavus Vassa the African Oloudah Equiano (Author)

Sheroes of the Haitian revolution
Bayyinah Bello (author)
Kervin Andre (illustrator)



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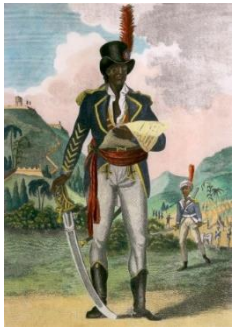
Remember to check out the library; there are some fantastic history books in there too!

Core Knowledge	
1. Who was Mansa Musa?	Emperor of the West African Mali Empire - and the richest person who ever lived.
2. Who was the female ruler who commanded her people and armies against slavery?	Ana Nzinga, Queen of the Ndongo. Also known as Queen Amina
3. How does Cornwall have links to the Slave Trade?	There is evidence of a slave ship docking at Falmouth with Olaudah Equiano aboard. There are examples of adverts to find escaped slaves in Cornish Newspapers. Joseph Emidy a once enslaved man came to settle and live his life as a free man in Truro and Falmouth etc.
4. Who were Nanny and the Maroons?	A Group of escaped slaves on the Island of Jamaica. They were female led; Nanny. The Maroons fought off the British many times and their village lasted around 80 years before being destroyed.
5. What was the French Revolution?	Where the people of France overthrew and executed their monarchy; egalite, liberty, fraternity were the themes of the revolution
6. What was the name of Haiti BEFORE the revolt in 1791?	Saint-Domingue
7. Who was Toussaint L'Overture?	The leader of the Haitian Revolution
8. Why is the Haitian Revolution significant?	It was the only successful slave rebellion and they fought off the French and British armies at different times.
9. Who was Olaudah Equiano?	Olaudah Equiano was taken into slavery at the age of 12 and eventually bought his own freedom. He became a leading part of the UK abolitionist movement.
10. What laws did Britain pass to end slavery?	1807 – The Abolition of the Slave Trade 1833 – The Slavery Abolition Act



Toussaint L'Overture

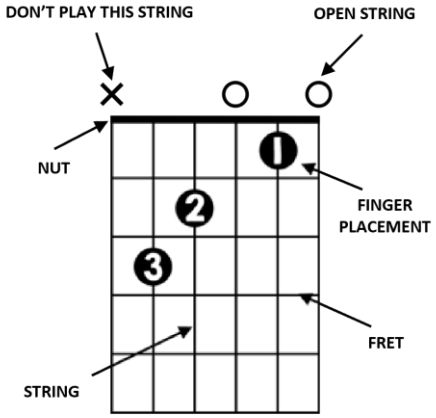
Ana Nzinga, Queen of the Ndongo. Also known as Queen Amina

Year 8 Learning Cycle 1 Music - The Four Magic Chords

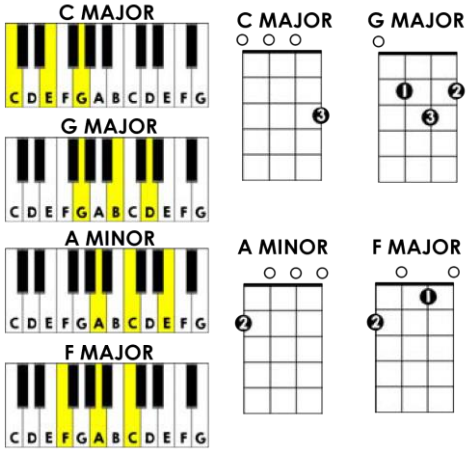
1. Key Words	Definitions
Chord	A chord is a group of notes (usually three or more) played together at the same time
Chord Diagram	A picture or drawing that shows how to place your fingers on an instrument, like a guitar or piano, to play a specific chord
Genre	Different styles or types of music, like pop, rock, jazz, or classical, that have their own unique sound and characteristics
Harmony	When different notes or chords are played together in a way that sounds pleasing
Structure	How a song or piece of music is organised and put together (verse and chorus, or ABA for example.)
Major Chord	A chord that is happy-sounding made up of three specific notes played together
Minor Chord	A chord that is sad or moody-sounding made up of three specific notes played together
Semitone	The smallest distance between two notes. This would be moving immediately up or down from a note
Tone	The distance between two notes that are two semitones apart

2.Chord Diagrams

The picture below shows all the different features of a chord diagram and how to read one.



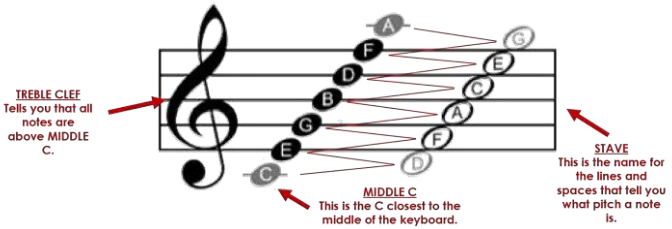
3. Major and Minor Chords



4. Symbols and Pitch Notation

Although the notes go up in alphabetical order, a nice way to remember the notes for the TREBLE CLEF is to separate the notes on a line and the notes in the spaces.

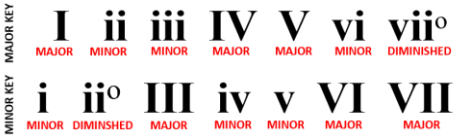
The notes on the lines spell out EveryGoodBoyDeservesFood, and the notes in the spaces spell out the word FACE.



5. Chord Numbers

When music is played, we decide which key we start in. Once we know which key we are in, we describe the chords in that key with roman numerals. For example, in C major, chord 1 would be 'C', chord 2 would be 'D', chord 3 would be 'E' etc. But how do we know whether it is D major or E minor?

If the roman numeral has capital letters it is a major chord, if the roman numeral has lowercase letters, then it is a minor chord. Depending which key you are the order of major and minor chords would be different:



6. Links and Further Reading

How to Read Guitar Chord Charts
is.gd/chordcharts

Article:BBC Concert Orchestra Wows Young Audience
is.gd/orchestraarticle

Revise:Mindmap Maker
is.gd/mindmapmaker

Year 8 Learning Cycle 1 Religious Studies

1.Key Words	Definitions
Five Pillars of Islam	The core practices that all Muslims follow
Shahadah	The declaration of faith
Salah	5 daily prayers
Sawm	Fasting during Ramadan
Hajj	Pilgrimage to Makkah
Zakah	Donating money to help the poor
Sunni	The largest denomination of Islam that makes up around 85% of Muslims around the world
Shi'a	The second largest denomination of Islam, making up around 15% of Muslims
Islamophobia	Hatred and discrimination of someone because they are Muslim, or of things that are associated with Islam
Media	Where we get our news and information from (eg newspapers, TV news, magazines etc)
Stereotype	A widely held, but fixed and oversimplified view of a particular type of person or group

2. Why are there different denominations of Islam?

After the death of Prophet Muhammad, there was disagreement amongst Muslims over who should be his successor. Some believed that it should be Abu Bakr, Muhammad's best friend, others believed it should have been Ali, Muhammad's son-in-law. Abu Bakr became the next caliphate, leader of the Muslim Empire, with those who supported him becoming known as Sunni Muslims. Those who supported Ali, became known as Shi'a Muslims. Whilst both groups have very similar beliefs, there are some differences in their core beliefs and practices.

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3. What are the Five Pillars?

The Five Pillars are five important practices that all Muslims include in their lives. Some of these should be carried out on a daily basis, while others are only obliged to be carried out once in a lifetime.

4. Shahadah

This is the declaration that 'There is no God but Allah and Muhammad is his messenger'. Muslims say the shahadah every time they pray. It is also the first thing that should be whispered into a newborn baby's ear and is hoped to be the last thing a Muslim will hear before they die. Saying the shahadah 3 times in front of witnesses is all that is needed to become Muslim

Reciting the shahadah reminds Muslims of one of the core beliefs of Islam – Tawhid. This is the belief in the oneness of Allah and is fundamental to the Islamic faith.

Important note: Remember when you are making mindmaps/dual coding etc that Muslims consider it very disrespectful to make images of Allah or the prophets.

Year 8 Learning Cycle 1 Religious Studies - Islam

1. Salah

Muslims are obliged to pray 5 times every day.

Prayers take place:

- Before sunrise
- After midday
- Mid afternoon
- After sunset
- Between sunset and midnight

Salah helps Muslims to regularly connect with God and remember their duties as a Muslim.

2. Sawm

Ramadan is the Islamic holy month. It is believed to have been during this month that the Qur'an was first revealed to Muhammad.

Muslims fast from sunrise to sunset during Ramadan. This means that they do not eat or drink anything during daylight hours. In addition to this, Muslims will refrain from any activities that are not considered spiritually enhancing and will focus on developing their faith and their relationship with Allah.

Fasting helps Muslims to feel closer to God by focussing on their faith and not on material things like food. It also helps them to understand what it is like for people who do not have access to adequate food and water.

3. Zakah

Muslims are obliged to donate 2.5% of their disposable income every year to help those in need.

Whilst this is a voluntary contribution, any money spent is considered unclean unless zakat has been paid on it before the end of Ramadan.

The money which is collected in Zakat payments is used to help the poor. In Britain, this is often done by charities such as Muslim Aid.

Many Muslims also choose to give additional donations to charity. This is known as sadaqah.

Zakah ensures that Muslims are always considering others and that the poor are cared for.

4. Hajj

All Muslims who are physically and financially able to are expected to go on a pilgrimage to visit Makkah in Saudi Arabia at least once in their lifetime. Makkah was the birthplace of Prophet Muhammad and is considered the holiest site in Islam.

Whilst on Hajj, Muslims take part in a number of different rituals that remember the life of Muhammad and of the Prophet Ibrahim including:

- Circling the Ka'aba
- Visiting the Zamzam well, which is believed to have appeared when Hagar and Ishamel were lost in the desert without water
- Visiting Mount Arafat where they pray for forgiveness from Allah
- Throwing stones at pillars which represent the devil

Hajj is an incredibly spiritual experience for Muslims that allows them to reaffirm their faith and to walk in the footsteps of important Muslim figures. It also allows them to feel closer to Allah and to be forgiven for their sins.

5. What is Islamophobia?

Some people have blamed all Muslims for recent terrorist attacks carried out by extreme groups who say they follow the religion of Islam. Hating someone or treating them differently because they are a Muslim is called "Islamophobia".

But, many people say those terrorist groups have extreme beliefs of hatred and violence that have little to do with what most Muslims believe.

They say it is important not to blame a big group of people for what a small number of individuals have done.

Islamophobia can result in Muslims being targeted, whether in person or online. They can be badly treated, insulted or even physically hurt.

Islamophobia is often made worse by negative representations of Muslims or Islam in the media. If Muslims are only ever shown in a negative way, then this is the impression that people get of Islam, particularly if they don't know any Muslims in real life. Recent positive representations of Islam on television and through sport (people like Mo Salah) have led to an increased acceptance of Islam.

Year 8 Learning Cycle 1 Spanish

Classroom language

Español	Inglés
¿Cómo se dice…. en español/inglés?	How do you say… in Spanish/ English?
¿Cómo se escribe…?	How do you spell…?
¿Cómo se pronuncia?	How do you pronounce (it)?
¿Me das …. ?	Can you give me…?
¿Puedes repetir?	Can you repeat that?
¿Puedo ir a mi clase de música?	Can I go to my music class?
(No) entiendo	I (don't) understand
Lo siento	I'm sorry
(Casi) he terminado	I have (almost) finished
por favor	please
gracias	thank you
Objetos en la clase	Classroom objects
un bolígrafo	a pen
una regla	a ruler
un cuaderno	an exercise book

Year 8 key prepositions

Español	Inglés
a	at
al final de	at the end of
cerca de	near
lejos (de)	far (from)
durante	during
fuera de	outside/out of
hacia	towards
hasta	until
para	for/in order to
por todas partes	everywhere
por /a través de	through
sin	without
a	at
al final de	at the end of
cerca de	near

Phonics - Sound Symbol Correspondence (SSCs)

These sounds never change!

a = cat e = egg i = feet o = hot u = woo

ca - ce - ci - co - cu

Stick your tongue out like the English /th/ for /ce/ and /ci/ and also z, /que/ = ke - /qui/ = key

ga - ge -gi - go - gu

Soft /g/ sound, except for /ge/ and /gi/ these are pronounced like a Spanish /j/ in the back of your throat. Soft /gue/ = get and /gui/ = geese

h = silent, ll = like an English y, v like an English b, ñ = ny, roll your rs if they come at the beginning of a word, or are a double rr

Year 8 Learning Cycle 1 Spanish

Past holidays

De vacaciones	On holiday
¿Adónde fuiste?	Where did you go?
El año pasado	Last year
El verano pasado	Last summer
fui a ..	I went to ...
España	Spain
las Islas Baleares	The Balearic Islands
1.	
2.	
3.	
las Islas Canarias	The Canary Islands
Me quedé en Inglaterra	I stayed in England
¿Con quién fuiste?	Who did you go with?
Fui con ...	I went with ...
mis amigos/as	my friends
mi clase	my class
mi familia	my family
mis padres	my parents
¿Cómo viajaste?	How did you travel?
Viajé en...	I travelled by...
avión	plane
coche	car
barco	boat/ferry
1.	
2.	

Past activities

¿Qué hiciste?	What did you do?
bailé	I danced
compré	I bought
descansé	I relaxed
monté	I rode
saqué fotos	I took photos
tomé el sol	I sunbathed
visité	I visited
bebí	I drank
comí	I ate
conocí	I met
salí	I went out
vi	I saw

Weather

hizo calor	It was hot
hizo frío	It was cold
hizo sol	It was sunny
hizo viento	It was windy
hizo buen tiempo	It was good weather
hizo mal tiempo	It was bad weather
llovió	It rained
hubo nieve	It snowed
1.	
2.	
3.	

Key verbs

ir (a)	to go (to)
viajar	to travel
descansar	to relax
escuchar música	to listen to music
comer	to eat
beber	to drink
visitar	to visit
tomar el sol	to sunbathe
escribir	to write
bailar	to dance
ver	to see/watch
comprar	to buy
ir de compras	to go shopping
pensar/ creer	to think/ believe
querer	to want
salir	to leave/ to go out
tomar el sol	to sunbathe
pasar	to spend (time)
Volver	to return
ir (a)	to go (to)
1.	
2.	
3.	

Opinions in the past

¿Cómo te fue?	How was it?
Fue guay	It was cool
Me gustó	I liked it
Me encantó	I loved it
¿Por qué?	Why?
Perdí mi pasaporte	I lost my passport
Perdí mi móvil	I lost my mobile
Exclamaciones	Exclamations
¡Qué bien!	How great!
¡Qué bonito!	How nice!
¡Qué guay!	How cool!
¡Qué rico!	How tasty!
¡Qué suerte!	How lucky!
Personalisation	
1.	
2.	
3.	

Year 8 key adverbs

a menudo	often
a veces	sometimes
demasiado	too
en seguida	straight away
más	more
menos	less
no obstante	nevertheless

Year 8 Learning Cycle 1 Spanish

Places in town

En la ciudad	In town
¿Qué hay en tu ciudad?	What's in your town?
hay….	there is….
no hay….	there is(n't)
un castillo	a castle
un parque	a park
un centro comercial	a shopping centre
un campo de fútbol	a football pitch
una biblioteca	a library
una playa	a beach
una piscina	a pool
una plaza	a town square
una tienda	a shop
un mercado	a market
un supermercado	a supermarket
un cine	a cinema
un centro comercial	a shopping centre
el puente	the bridge
la calle	the street
la plaza	the square
1.	
2.	
3.	
4.	
5.	
6.	

Locations

Dónde está?	Where is it?
Está…	It is…
el norte	the north
el sur	the south
el este	the east
el oeste	the west
el suroeste	the southwest
el campo	in the country
las montañas	the mountains
la ciudad	the town
al lado del mar	by the sea
la costa	on the coast
las afueras	the suburbs
1.	
2.	
3.	

Directions

¿Para ir al / a la….?	
¿Por dónde se va al / a la…?	How do I get to…..?
¿dónde está …?	where is…?
está lejos	it is far away
está cerca	it is near
al final de	the end of
a la derecha	to/on the right
a la izquierda	to/on the left
sigue	continue
gira….	turn
toma….	take
pasa…	go past
cruza	cross
coge	catch
la primera calle	the first street
la segunda calle	the second street
la tercera calle	the third street

Description of town

Cómo es tu ciudad?	What's your town like?
contaminado	polluted
histórico	historic
limpio	clean
sucio	dirty
tranquilo	quiet
bonito	pretty
pequeño	small
grande	big
peligroso	dangerous
animado	lively
antiguo	former/old
cercano	close
nuevo	new
1.	
2.	
3.	
4.	
lo bueno	the good thing
lo malo	the bad thing
lo mejor	the best thing
lo peor	the worst thing

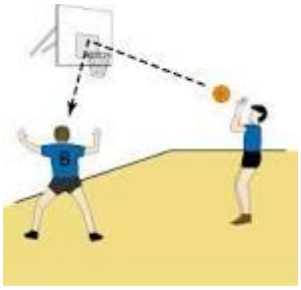
Year 7 Learning Cycle 1 Sports – Basketball

Key Knowledge, Skills and Tactics

1. Passing and receiving - being able to pass a ball backwards and forwards with teammates using a variety of passing techniques whilst static and on the move.
2. Dribbling (pressured) - being able to dribble the ball at speed and under control whilst being under pressure from a defender. Using all dribbling skills to make progress up the court maintaining possession.
3. Jump Shot - combining your set shot technique with an added jump, to try and generate extra momentum and distance in your shot.
4. Rebounding – collecting the rebound after a shot comes off of the backboard or rim, to maintain possession and continue the attack, or alternatively as the defender, regain possession of the ball and begin building your own attack.
5. Lay-up - a shot performed by a player often dribbling towards the basket and bouncing the ball off the back board before it drops into the hoop.

Key Vocabulary

Cool down
Jump shot
Rebound
Offence
Defence
Lay-up
Accuracy
Shoulder pass
Overhead pass



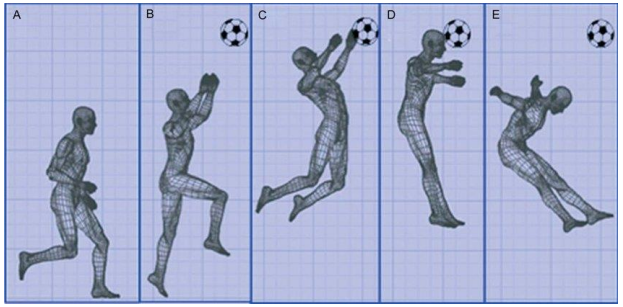
Year 7 Learning Cycle 1 Sports – Football

Key Knowledge, Skills and Tactics

1. Dribbling and turns – how we can move the ball at our feet, whilst it is under control and incorporate a change of direction.
2. Beating a defender/Shielding - Being able to keep the ball in possession and getting beyond a defender into space behind or beside them. Shielding the ball means you use your body positioning to get between the defender and the ball to maintain and protect possession of the ball.
3. Instep and Laces (complex skill) - Being able to use the correct parts of your foot to strike the ball, avoiding toe-punts and using the laces for power or the instep for accuracy and control of passing the ball.
4. Controlling the ball (parts of the body) - Being able to use varied parts of the body (head, chest, legs, feet) to gain control of the ball and get the ball back onto the ground and be ready to dribble/pass/shoot.
5. Shooting (laces) - again, using the correct part of your foot (instep) to strike the ball when shooting to maximise power as well as control of the shot. This will in turn maximise the likelihood of you hitting the target/scoring against a goalkeeper.
6. Tackling/defending - Being able to take the ball off an opponent to regain possession. Understanding when and where to use a standing/sliding tackle and being able to perform these effectively and safely to avoid conceding a foul
7. Games (conditioned) - build up the playing of conditioned games, to introduce the playing of a football match whilst still having an underlying focus that will extend the learning and development of skills.

Key Vocabulary

Replicate
Turns
Fluency
Communicate
Confident
Officiate
Cool down
Space
Movement



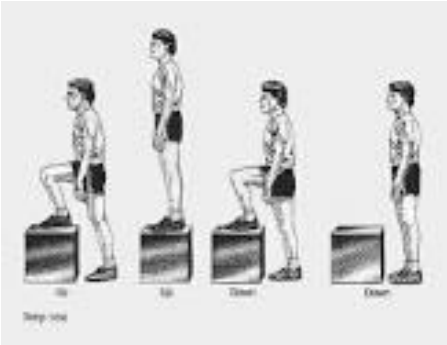
Year 7 Learning Cycle 1 Sports – HRE

Key Knowledge, Skills and Tactics

1. Developing speed – completing training exercises with the aim of developing speed. An increased speed will lead to a reduced time to get across a specified distance.
2. Step test – a fitness test completed by the individual stepping up and down from a fixed height at a given rate for a dedicated period or until exhaustion. Often heart rate is taken alongside this test for data analysis.
3. Fartlek training - Swedish for "speed play" fartlek is a method of training that involves running with varied speeds, inclines and terrains. By altering the incline, speed and terrain (surface underfoot) you alter the level of difficulty of the training.
4. Interval training – training that is completed in intervals, or shorter spells with breaks for rest in between. Often adapted to suit games players as it better replicates a match scenario. Training intensity will be high/low depending on the section of your interval session.
5. Continuous Training – training that has no rest or stop, and is completed at a steady rate or intensity throughout the duration of the session. A session must last at least 20-minutes in order for it to be classed as a continuous training session. Best suited to endurance athletes.
6. Multi-stage Fitness Test (Bleep Test) - a fitness test that monitors cardiovascular endurance by having participants run between 2 cones that are 20m apart. A beep will signify when the athlete can leave cone A. They must reach cone B before the next beep as this is when they must return. This process continues up through levels and stages and the time between beeps gets shorter as the test progresses as this increases difficulty and the importance of battling fatigue.
7. Testing- completing some fitness tests targeting different components of fitness to determine where students sit in relation to normative data for their age and sex. This would help students identify any strengths and weaknesses that they may need to know before compiling any fitness training programmes.

Key Vocabulary

Fartlek training
Interval training
Continuous training
Multistage fitness test
Cooper's run
Mechanics of running
Breathing rate
Intensity



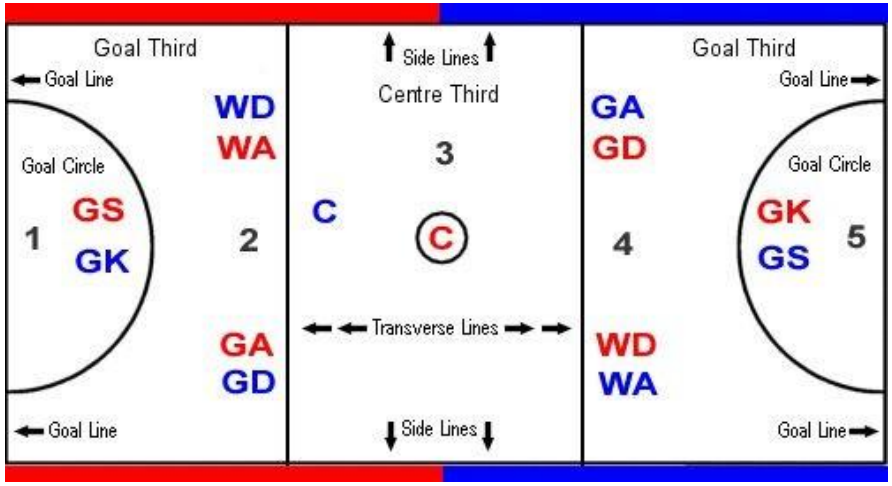
Year 7 Learning Cycle 1 Sports – Netball

Key Knowledge, Skills and Tactics

1. Passing (Overhead) - To build on the chest, bounce and shoulder pass by adding in an overhead pass. Overhead pass – Balls on fingertips with elbow at a right angle to the body, the hand is behind the ball, the opposite foot forward with hand transfer the weight forward and extended arm forward releasing the ball off fingers.
2. Shooting - Students continuing to use and develop correct shooting method. Extend the ankles, knees and elbows. Flex the wrists as the ball is released off the fingers. Straighten your legs by extending the knees at the same time as you release the ball. End the shot standing on tiptoes with your arms extended and fingers pointing towards the ring.
3. One-Handed Shooting - Students to build on shooting in previous year by progressing to one hand. Students to place shooting foot forward, weight on back foot, ball on fingertips and not in palm, position ball at head height, release just before full extension.
4. One-Handed Rebounding – To be able to practice and deliver in a game the rebound skill – Catching a missed shot under the net to allow GA and GS at another shot. GD and GK attempt to grab rebound to move out from the D.
5. Attacking – To use tactics such as dodging to gain space advantages and move the ball up the court. To incorporate acceleration, deceleration techniques and signals to create space.
6. Dodging - To continue to understand the benefit of dodging as an attacking move. Student uses low stance to transfer bodyweight, drop the shoulder, draws defender one way and changes direction to allow player to move into space.
7. Defending – To accurately perform defensive skills. Skills may include – Begin goal side of the attacker, mirror movements of attacker, stay close and anticipate moves.
8. Games For students to carry over all skills used and successfully apply to games.

Key Vocabulary

Re-bounding
Overhead pass
Attacking
Defending
Interception
Positions
Goal-side
Accurately



Year 7 Learning Cycle 1 Sports – Rugby

Key Knowledge, Skills and Tactics

1. Passing- passing the ball backwards to be caught or passed onto teammates. Retrieving the ball from a variety of scenarios within rugby and reacting appropriately. Using prior skills to build into more complex passing such as spin passing and pop passing.
2. Tactical play (attacking)- making decisions and actions based upon the opposition to gain an advantage. Set plays can be created off set pieces (scrums and lineouts to utilise players to give an advantage to the team.
3. Mauling- A maul occurs when the ball carrier is held by one or more opponents and one or more of the ball carrier's team-mates holds on (binds) as well (a maul therefore needs a minimum of three players). The ball must be off the ground.
4. Kicking- this can be used to gain an advantage over the opposition by kicking the ball up the pitch to be chased or into touch to move player further into the opposition's half.
5. Scrums (5 man)- one method to restart the game following an infringement by the opposition.
6. Lineouts (2-3 man)- restart method used when the ball has gone into touch. The lineout uses a selection of forwards from either team, a line from either team will compete to win the ball thrown in by the hooker.
7. Positional play- using the position 1-15 and forwards & backs to suit pupils skillset. Forwards will compete in lineouts and scrums, backs will focus on kicking, speed and agility to avoid the opposition.

Key Vocabulary

Accurately
Switch pass
Overlap
Replicate
Maul
Scrum
Binding
Cool down