Year 9
Learning Cycle 3

Student Name:_____

Contents

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

	Mon A	Tue A	Wed A	Thu A	Fri A
Core Activity	1 hour of reading for pleasure 1 hour of SPARX Maths XP and target practice				
Subject 1	Maths	English	History	Science	Geography
Subject 2	DT	Food	Drama	Spanish	Music
	Mon B	**Tue B**	**Wed B**	**Thu B**	**Fri B**
Core Activity	1 hour of reading for pleasure 1 hour of SPARX Maths XP and target practice				
Subject 1	Maths	English	History	Science	Geography
Subject 2	Computing	Art	RE	Spanish	

Expected time home learning will

Activity	Time
Reading	30 mins
Sparx Maths	30 mins a goal
All other activities	15 mins each

My Computer passwords:

Platform	Username	Password
School System		
Sparx Maths		
Educake		
Memrise		

2 Summative Assessment Timetable

Lesson		23/06/25	24/06/25	25/06/25	26/06/25	27/06/25	30/06/25	01/07/25	02/07/25	03/07/25	04/07/25	07/07/25
		A					B					A
		Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri	Mon
1	9X1	INSET DAY		Science	History							
	9X2		History	Science		RE				Geography		
	9X3			Science						Computing		
	9X4			Science								
	9Y1		RE	English				Music				DT
	9Y2			English				DT				Drama
	9Y3			English				Art		RE		Food
	9Y4			English	RE			Food				Art
2	9X1				RE		DT		Geography			
	9X2						Music	Computing				
	9X3						Drama					
	9X4		History				Food	Spanish		Computing		
	9Y1			Drama	History				Food		Art	Mathematics
	9Y2			Art	History			Spanish	Music		Food	Mathematics
	9Y3			Music				Geography	DT		Drama	Mathematics
	9Y4			DT	Computing				Drama		Music	Mathematics
3	9X1		Food	Drama					Art	Computing		Mathematics
	9X2		Art	Food					DT			Mathematics
	9X3		DT	Art					Music	Geography		Mathematics
	9X4		Music	DT					Drama	Geography		Mathematics
	9Y1						Computing					
	9Y2					RE						
	9Y3											
	9Y4				History							
4	9X1					Music		Spanish				English
	9X2					Drama		Spanish				English
	9X3		RE	History		Food		Spanish				English
	9X4					Art			RE			English
	9Y1		Science					Geography		Spanish		
	9Y2		Science		Computing					Geography		
	9Y3		Science		History			Computing		Spanish		
	9Y4		Science					Geography		Spanish		

Summative Assessment Timetable

Subject	Summative Score	Next Steps		Subject	Summative Score	Next Steps
English				Art		
Mathematics				Computing		
Science				Drama		
Geography				Design Technology		
History				Music		
Spanish				Religious Education		

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?

Summarise	Organise	Recall	Test
Summarise and condense any class notes, revision guides and revision.	Organise 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.	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			
• Cornell Notes • Flash cards • Mind mapping • Revision clocks • Dual coding	• How to use your PLC • How to schedule your home learning and stick to it!	• 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: Organise	Step 2: Summarise	Step 3: Recall	Step 4: Test
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	When you revise for a specific topic use your knowledge organiser, revision guide, website etc to summarise the key knowledge you need to learn. Use any summarizing strategy, such as: • Flashcards • Mindmaps • Cornell Notes • Revision Clocks 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.

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Educake		
Memrise		

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		

Personal Learning Checklists

English

Key Ideas	S	O	R	T
I can understand a key character in Jekyll and Hyde.				
I can understand a key character in Frankenstein.				
I can develop my analysis of a key character using themes and context.				
I understand the plot of Lord of the Flies.				
I can explain how Golding presents the the themes of violence, power and human nature using characters and events in the novel.				
I can support my ideas using judicious quotations.				
I can analyse language used by Golding.				
I can analyse structure methods used by the writer.				

English

Key Ideas	S	O	R	T
I can use 'big ideas' and concepts from the novel to inspire my own ideas and opinions.				
I can plan an extended opinion text.				
I can establish a clear argument in my writing and continue this strong line of argument as a 'thread' throughout my extended opinion writing.				
I can use pathos, ethos and logos to support my purpose.				
I can use a range of sophisticated vocabulary to present a point of view.				
I can use a range of punctuation accurately in my opinion writing.				
I can use a range of sentence starters and structures in my opinion writing.				

Personal Learning Checklists

Maths

Key Ideas	Sparx Code	S	O	R	T
I can solve worded direct proportion problems	M478				
I can solved worded inverse proportion problems	U357/M472				
I know the facts about angles in parallel lines.	M606				
I can find the sum of interior/ exterior angles in a polygon.	M654				
I can find exterior angles of any polygon	M653				
I can calculate the probabilities of single events.	M938, M755				
I can calculate the probability of combined events.	M718, M299 (H)				
I can convert between fractions, decimals and percentages.	M264				
I can calculate a percentage of an amount, increase and decrease.	M437, M905, M476, M533				
I can solve problems with reversed percentages.	M528				
I can find a percentage change.	U278				
I can translate a shape using a vector.	M139				
I can enlarge a shape using a scale factor.	M178				
I can reflect a shape over a mirror line.	M290				
I can rotate a shape given an angle and a point.	M910				
I can describe transformations.	M881				

Science

Key Ideas	S	O	R	T
The composition of Earth's modern atmosphere – including the percentages of each gas				
The development of Earth's modern atmosphere – how carbon dioxide decreased, and water increased				
The process of the greenhouse effect, and the effect that humans are having				
How to make sustainable choices to reduce our carbon footprint				
The name, source and effects of atmospheric pollutants – carbon monoxide, carbon particulates, nitrogen oxides and sulphur dioxide				
How to test for common gases – oxygen, carbon dioxide, chlorine and hydrogen				
How polymers are formed, and their uses				
The water cycle				

Personal Learning Checklists

Science

Key Ideas	S	O	R	T
State the frequency and potential difference of mains electricity				
Describe the difference between alternating and direct current				
Describe the national grid and explain why transformers are important				
Explain how a 3 pin plug works, referring to live, neutral and earth wires.				
Name energy resources and identify them as finite or renewable				
Compare energy sources, referring to their advantages and limitations				
Choose the best energy sources to meet demand in certain areas, and justify your choices				
Perform calculations relating to power: $E=pt$, $P=VI$ and $P=I^2R$				

Art

Key Ideas	S	O	R	T
I can understand and explain the meaning of the 7 observational drawing key words, tone, texture, shape, scale, line and composition.				
I can discuss and compare the work of Quentin Blake, Gerald Scarfe and Hogarth.				
I can understand what a morality tale is?				
I understand how to research and select information to develop ideas.				
I understand how to develop my ideas using the work of political cartoonists to design and create a final outcome.				
I understand how to use my chosen materials with skill and flair.				

Computing

Key Ideas	S	O	R	T
I can explain what a network is.				
I can explain the difference between the WWW and the Internet				
I can identify the parts of a web page				
I can identify the genre and purpose of a website				
I can define the term accessibility and explain how this can be achieved in web design				
I understand the design choices for different audiences				
I can recognise HTML key words				
I can design and plan a webpage to meet customer needs				

Personal Learning Checklists

Design Technology

Key Ideas	S	O	R	T
I can recall and define the tier three vocabulary in this Unit.				
I can describe the benefits of using reclaimed wood.				
I can contribute to part of a team effort.				
I can use hand and machine tools safely and with precision to complete my space for nature.				
I can use data to ensure that the size of my space for nature is correct for the intended wildlife.				
I can select appropriate materials or finishes to make a product that will survive being outside all the time.				

Drama

Key Ideas	S	O	R	T
I am able to structure a performance thinking about how a story can be told.				
I can describe what a stimulus in Drama and would know how to use one to generate ideas.				
I can work effectively with my group to share and explore ideas.				
I can use a range of dramatic techniques when devising.				
I can think about the style of my performance and therefore what devices and techniques are appropriate.				
I can use physical skills effectively in my performance.				
I can use vocal skills effectively in my performance.				

Food

Key Ideas	S	O	R	T
I can create a dovetailed time plan with three ingredients.				
I can explain the terms dextrinisation, coagulation, denaturation and coagulation with examples				
I can discuss why recipes may need to be adapted or ingredients substituted.				
I can explain why it is important to know your BMR, BMI and PAL				
I can discuss how to adapt a pasta dish				
I can explain how our tongue uses taste receptors to taste.				

Personal Learning Checklists

Geography

Key Ideas	S	O	R	T
Define ecosystem				
Name the components of an ecosystem				
Name and locate global biomes				
Explain the causes of uneven development				
Locate and describe the tropical rainforest biome				
Describe the climate and location of the Amazon rainforest				
Explain how plants and animals adapt to the rainforest				
Explain the causes of deforestation				
Explain the effects of deforestation				

Geography

Key Ideas	S	O	R	T
Name and countries and regions with conflicts				
Describe the location of types of conflicts by region				
Explain the advantages and disadvantages of dams				
Locate Somalia on a world map				
Describe the causes of Somalia pirates				
Explain the effects of the Somalian pirates				
Name the causes and effects of the blood diamond trade				
Name regions of child soldiers in Africa				
Explain how heroin is transported around the world				
Explain the causes and effects of the world trade in heroin and how it can be stopped				

History

Key Ideas	S	O	R	T
I can state what Crime and Punishment was like at different periods in time				
I can explain what influence the Church had on Crime and Punishment in the Medieval and Early Modern periods				
I can explain the influence the government and monarch have had on Crime and Punishment				
I can explain examples of corporal and capital punishment and why we no longer use these				
I can state specific facts and examples of Crime and Punishment from medieval to present day				
I can explain the importance of National Events for the site of Bodmin Jail				
I can retell the narrative of Bodmin Jail and its uses over time				
I can make judgements about and explain my views of our enquiry questions				
I can state what Crime and Punishment was like at different periods in time				

Personal Learning Checklists

Music

Key Ideas	S	O	R	T
I am able to understand what different structures and forms are and can explain them to others.				
I am able to understand how lyrics can be used to tell a story.				
I can work out chords on an instrument using my knowledge of what they are.				
I understand the difference between a major and a minor chord and can hear the differences.				
I understand what a melody is and how it uses harmony to enhance it.				
I can create a simple and catchy melody using an instrument.				

PSHE

Key Ideas	S	O	R	T
I can explain why some people believe life continues after death				
I can explain what Christians believe happens after we die				
I can explain what Muslims believe happens after we die				
I can explain what reincarnation is				
I can explain how these beliefs might impact on the lives of the people who hold them				
I can define all the key terms for this unit				

Religious Education

Key Ideas	S	O	R	T
I can explain why some people believe life continues after death				
I can explain what Christians believe happens after we die				
I can explain what Muslims believe happens after we die				
I can explain what reincarnation is				
I can explain how these beliefs might impact on the lives of the people who hold them				
I can define all the key terms for this unit				

Personal Learning Checklists

Spanish

Key Ideas	S	O	R	T
I understand the rules for correct pronunciation				
I can use connectives to develop and link my phrases				
I can talk / write about my family life and relationships				
I can talk / write about my school life				
I can talk / write about the weather				
I know how to form regular verbs in the simple tense				
I know how to form verbs in the near future tense				
I can talk / write about holidays				
I can talk / write about youth and global issues				

English - Monsters and Men The Strange case of Dr Jekyll and Mr Hyde by Robert Louis Stevenson

1. The text

1a =Plot A narrative about the complexities of science and the duplicity of human nature. Dr Jekyll is a kind, well-respected and intelligent scientist who meddles with the darker side of science, as he wants to bring out his 'second' nature.
He does this through transforming himself into Mr Hyde - his evil alter ego who doesn't repent or accept responsibility for his evil crimes and ways. Jekyll tries to control his alter ego, Hyde, and for a while, Jekyll has the power. However, towards the end of the novel, Hyde takes over and this results in their deaths.
1b = Gothic Genre A literary genre originating from the 18th century, which describes a sinister, grotesque or mysterious atmosphere. Such novels are often set in dark places or ruined buildings.

2. Themes

2a = Scientific development In the Victorian era, religion was important to communities and individuals. Many people believed that God created the universe and he was the sole creator, therefore the principles and the word of the Bible must be followed. Due to the society's interest in religion, people were afraid of scientific developments and feared what this would do to mankind.

2b = Good vs Evil (the Duality of human nature) Stevenson writes about the duality of human nature – the idea that every single human being has good and evil within them. Stevenson describes how there is a good and an evil side to everyone's personality, but what is important is how you behave and the decisions you make. The choices people make determine whether a person is good or not.
2c = Nature and the Supernatural Jekyll's experiment is his desire to change the natural course of his being through science.
The idea of the supernatural is evident in the release of Mr Hyde into the world.

3. Vocabulary

3a = Misbegotten (adjective) coming from a bad or immoral place or background
3b = Physiognomy (noun) the supposed art of judging character from facial characteristics.
3c = detestable (adjective) deserving intense dislike
3d = ferocity (noun) the state of being frightening and violent

English - Monsters and Men The Strange case of Dr Jekyll and Mr Hyde by Robert Louis Stevenson

1. Mary Shelley & Context

1a = Mary Shelley is considered to be the first science fiction writer. She wrote Frankenstein in 1818 as part of a short story competition between friends.

1b = Genre: Romanticism Elements of Romanticism in Frankenstein are the power of nature, the isolated hero, intense feelings and wild and rugged landscapes

1c – Genre: Gothic Elements of Gothic in Frankenstein are the monster, the setting, females in danger and extreme emotions

1D- structure In *Frankenstein*, Mary Shelley starts with a framing narrative (Walton's letters to his sister), before moving to the main narrative (Victor's story) and then contained within this is the Monster's story of survival and how he learns from the De Lacey family.

There are three separate narrators.

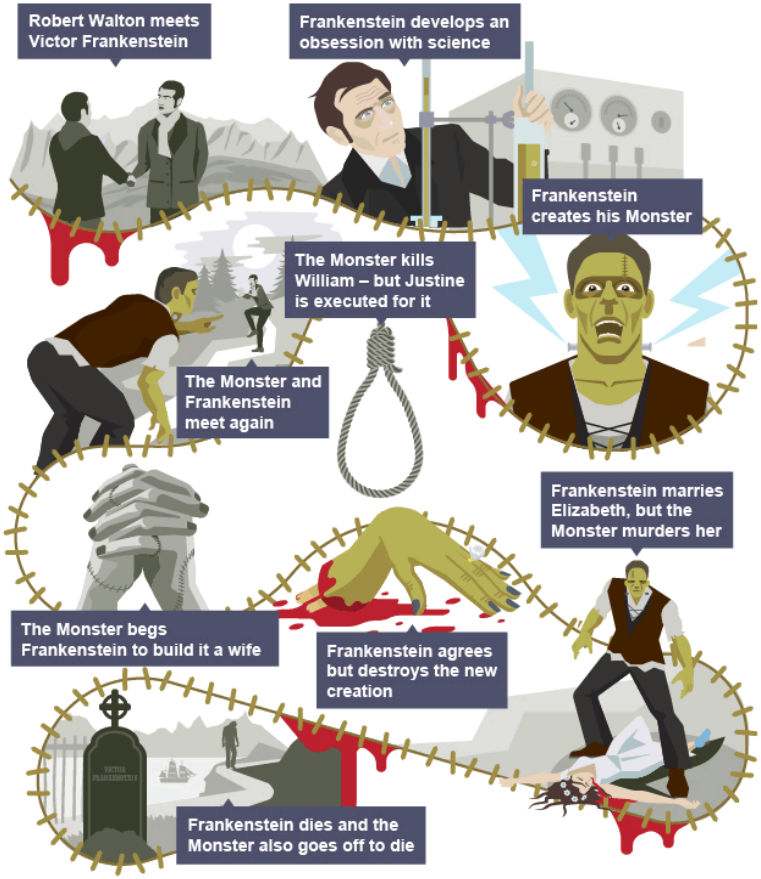
2. Themes

2a = Knowledge and discovery Written at a time when the boundaries of scientific knowledge, geographical discovery and technological change were being challenged, *Frankenstein* looks at the key question of whether mankind can have too much knowledge and, therefore, too much power.

2b = Justice the legal system – shown to be less than perfect after the wrongful arrest of 2 of the characters personal justice – Victor abandons the monster, who seeks personal justice in the form of a companion collective justice – sometimes the needs of a group must outweigh the needs of an individual.

2c = Prejudice Prejudice and its effects are traced by Shelley in the novel and are centred on the experiences of the Monster. Rejected by his creator and everyone else he encounters, the Monster soon finds itself despised and alone in the world. It withdraws into a state of isolation and utter misery but this in turn leads to the development of an intense hatred and a desire for revenge.

3. Frankenstein– Plot Overview



Frankenstein tells the story of gifted scientist Victor Frankenstein who succeeds in giving life to a being of his own creation. However, this is not the perfect specimen he imagines that it will be, but rather a hideous creature who is rejected by Victor and mankind in general. The Monster seeks its revenge through murder and terror.

4. Vocabulary

4a = Galvanism (noun) electricity produced by chemical action. 18th- and 19th-century scientific theory that life is made up of "animal electricity," or electric currents that result in life.

4b = Convulsive (Adjective) when muscles contract and relax quickly and cause uncontrolled shaking of the body.

English - Lord of the Flies – William Golding

1. William Golding & context

1a = Golding served in the British Navy during the Second World War (1939-1945) and believed that wars were more about human nature than politics.
1b = Golding worked as a schoolteacher before and after his navy career, and noticed how cruel children could be to each other.
1c = *Lord of the Flies* was published in 1954, less than 10 years after the end of World War Two. Throughout the 1950s, when Golding was writing, people were terrified that another war would mean the whole world being destroyed by nuclear bombs.
This fear is reflected in *Lord of the Flies* as the fictional world is at war, which explains why the boys' plane was shot down. Piggy even thinks an atomic bomb has gone off and they won't be rescued at all.

2. Themes

2a = Violence Away from *civilisation* and free from rules, the boys quickly begin to turn to violence and cruelty.

Under Jack's leadership, they hunt and kill pigs. By the end of the novel, they are hunting and killing each other.
The characters who resist violence, like Simon, Piggy and Ralph, become victims. It is only when the adults return that the violence stops.

2b = Power The novel centres around the power struggle between Ralph and Jack. They have different leadership styles: Ralph represents the kind of power that comes from a democracy when people vote freely to choose their leaders and rules. Jack represents the kind of power that comes from dictatorship when one person takes complete power and keeps that power through fear and violence.
2c = Human Nature In *Lord of the Flies*, Golding explores the idea that basic human nature is violent and selfish. He questions whether human beings would still behave in a civilised way without rules. For example: Early in the novel, the boys play when they should be working and choose which rules to obey. As the novel continues, they give in to their fear of an imaginary monster, lose their self-control and increasingly turn to violence.

3. Timeline

English - Lord of the Flies

4. Characters

3a = Ralph - chosen by the boys to be their leader and tries to create a fair society with clear rules. He is reasonable and decisive.
3b = Piggy - Piggy becomes Ralph's most loyal friend and follower. He wears glasses, suffers from asthma and is overweight. He is clever but most of the other boys can't see his strengths and don't respect him.
3c = Jack - He is strong-willed, cruel and proud. He is used to being in charge as he is the Head Boy of his school and leads the boys' choir. Jack wants power and becomes obsessed with hunting and violence.
3d = Simon - Simon is a shy boy and often spends time alone. He has fainting fits and experiences hallucinations. Simon stands up for others and bravely tries to find out more about the mysterious beast. He is the only one who understands that the beast is not real.
3e = Roger Introduced as a quiet and intense older boy, Roger eventually becomes a sadistic and brutal terrorist over the course of *Lord of the Flies*.
3f = Sam and Eric - Sam and Eric are twin older boys on the island who are often referred to as one entity, Samneric. Sam and Eric are easily excited, regularly finish one another's sentences, and exist within their own small group of two.

5. Plot

After their plane is shot down, a group of English schoolboys are stranded on a deserted island in the Pacific Ocean. There are no adults to look after the boys, who range from six to 12 years old. At first, they work together to survive. They vote that Ralph, one of the older boys, should be 'chief' and choose Jack to oversee hunting. They create and follow rules, hold meetings and use a *conch shell* to show whose turn it is to speak.
They create a signal fire, using a boy called Piggy's glasses, but it burns out of control. Jack becomes obsessed with hunting the pigs on the island and his group of hunters fail to keep the signal fire going when a ship goes past.
The smaller boys become increasingly frightened by the idea that there is a "beastie" on the island. One night, a dead parachutist gets caught in a tree and the boys think that it is the beast coming to attack them.
Jack and Ralph argue. Jack leaves the group and the hunters follow him. They kill a pig, leaving the head as an offering to the beast.
A quiet boy called Simon has a strange vision where he thinks the pig's head is talking to him. He faints. When he appears out of the shadows, covered in blood, the boys kill him in a wild frenzy.
Jack's hunters attack Ralph and his group, smashing the conch, killing Piggy and setting fire to the island. Ralph narrowly misses being killed by the hunters' spears and runs to the beach where he is surprised by a naval officer. A passing naval ship had seen the fire on the island and launched a boat to investigate. The officer assumes that the boys have been up to "fun and games". The boys stop fighting and begin to cry. They have been rescued.

6. Vocabulary

6a = covert (adjective) not openly acknowledged or displayed
6b = conflict (noun) a serious disagreement or struggle between two people groups or forces
6c = usurp (verb) take a position of power illegally or by force
6d = clamour (noun) a loud and confused noise, especially that of people shouting
6e = solemn (adjective) having or showing serious purpose and determination; very serious or formal in manner or behaviour
6f = mankind (noun) all human beings
6g = mercy (noun) compassion or forgiveness shown towards someone who you could punish or harm
6h = inscrutable (adjective) difficult or impossible to understand
6i = cower (verb) Crouch down in fear
6j = scornful (adjective) Expressing extreme contempt
6k = recrimination (noun) An accusation in response to someone else's.
6l = furtive (adjective) Secret and sly
6m = ludicrous (adjective) Inviting ridicule, foolish, out of place.

7. Subject vocabulary

7a = allegory (noun) - a story with a hidden meaning
7b = Symbolism (noun) the use of symbols to represent ideas or qualities
7c = Structure (noun) How a text is organised by the writer
7d = Contrasts (noun) a thing or person having qualities noticeably different from another
7e = language (noun) Words or methods (techniques) used by writers to present their meanings or create effects.
7f = setting (noun) Where or when the play takes place, usually introduced at the exposition (beginning) of a story.
7g = characterisation (noun) The creation or construction of a fictional character.
7h= Form (noun) Lord of the Flies is an Adventure Novel.
7i = pathetic fallacy (noun) Giving human feelings and emotions to something not human, particularly the weather or environment, to enhance the mood of the writing.
7j= imperative verbs (noun) Verbs that express a command or an instruction e.g. 'Sit down' and 'Carry those logs.'
7k – Foreshadowing (verb) a warning or indication of (a future event)

8. What, How, Why Paragraphs

WHAT is the writer saying about character/ theme/ setting?	The character Ralph confronts the central theme of humanity versus savagery. Golding writes, "What are we? Humans? Or animals? Or savages?" Through Ralph's question, the reader ponders the innate duality within human nature. By juxtaposing the boys' civilized upbringing with their descent into primal instincts and violence, Golding skillfully reveals the fragility of societal norms and the potential for cruelty within every individual.
HOW are they revealing information and creating effects for the reader? Quotation? Language methods? ZOOM in on key parts of the quote.	
WHY have they chosen to do this? Purpose?	

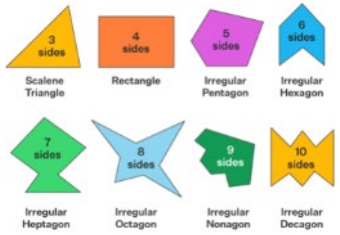
Year 9 Maths Knowledge Organiser Learning Cycle 3

Key word	Definition
Polygon	A 2-D shape with straight sides
Regular Polygon	A polygon where all sides are the same length and all the angles are the same.
Pentagon	A five sided shape
Hexagon	A six sided shape
Heptagon	A seven sided shape
Octagon	An eight sided shape
Nonagon	An eleven sided shape
Decagon	A ten sided shape
Enlargement	A type of transformation which changes the size and it's distance from a fixed point(centre of enlargement)
Translation	A type of transformation which moves a shape using a vector
Reflection	A type of transformation which sees each vertex of a shape reflected across a mirror line.
Rotation	A type of transformation where a shape is rotated around a fixed point
Percentage	When a number is express as 'parts per hundred'
Numerator	The number above the line in a fraction
Denominator	The number below a line in a fraction ; the divisor
Mutually exclusive event	Events that can not happen at the same time. For example rolling a 6 and a 3 at the same time on a dice
Proportion	If two things increase at the same rate they are said to be proportional to each other. For example, one apple costs 40p so two apples cost 80p.
Probability	The chance of an event happening
Sample Space	A type of diagram used to show the possible outcomes from two events.

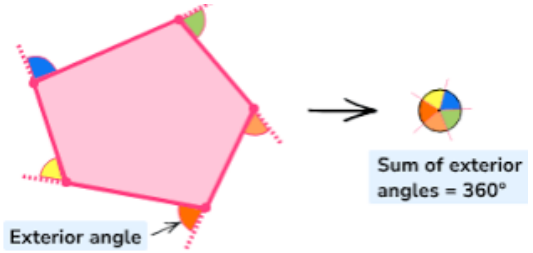
Year 9 Maths Knowledge Organiser Learning Cycle 3

1 What Is A Polygon?

- A polygon is any 2D shape with straight sides.
- A regular polygon has all equal sides & angles.

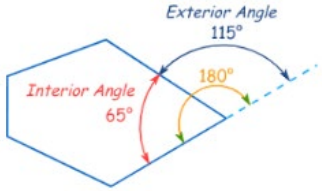


2 Exterior Angles In Polygons



3 Interior Angles of Polygons

- The interior & exterior angles of a polygon lie on a straight line so add to 180^0.

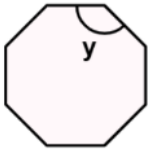


4 Interior Angles of Polygons

- The sum of the interior angles of a polygon is:

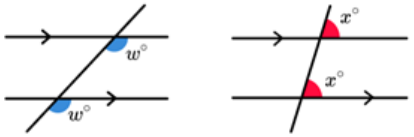
$(n-2) \times 180$ where n is the number of sides.

Angle sum =
6 × 180
= 1080°
1080 ÷ 8 = 135°



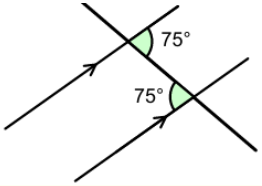
5 Corresponding Angles

- Parallel lines are indicated by arrows.
- Corresponding angles are equal.



6 Alternate Angles

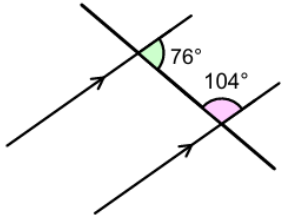
- Alternate angles are equal.



You might find it helpful to visualise these angles as being tucked into the corners of a Z shape

7 Co-Interior Angles

- Co-interior angles add up to 180^0.



8 Vertically Opposite Angles

- When 2 lines cross the angles that are opposite each other are equal.

Lines and Angles

Year 9 Maths Knowledge Organiser Learning Cycle 3

1 Convert Fractions,Decimals,Percentages

Decimals and Percentages:

Percentage = Decimal x 100

Decimal = Percentage ÷ 100

Convert **60%** to a decimal

60% = 60 ÷100 = 0.6

So **60% = 0.6**

2 Fractions and Percentages

Per cent means "out of 100".

Convert 3.5% to a fraction.

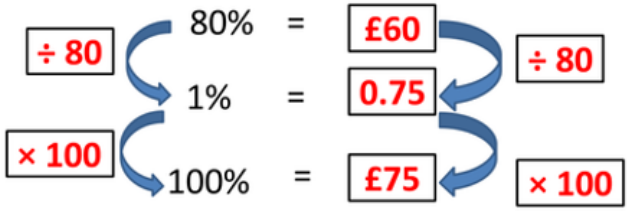
$$3.5\% = \frac{3.5}{100} = \frac{7}{200}$$

3 Reverse Percentages

John pays £60 for a bag after getting 20% discount. How much did it originally cost ?

Remember: Original price is always equal to 100%

Sale price = 100% - 20% = 80%



4 Convert Fractions to Decimals

You can use short division

$\frac{3}{5} = 3 \div 5$

$$5 \overline{)3 \cdot {}^{3}0} \quad 0 \cdot 6$$

$\frac{3}{5} = 0{\cdot}6$

5 Percentage Change

Percentage change is calculated by dividing the difference between the two amounts by the original amount.

For example, find the percentage change from 25 to 18

Difference = 25 – 18 = 7

Percentage change = $\frac{7}{25} \times 100 = 28\%$.

7 Percentages of Amounts

1% = $\frac{1}{100}$	5% = $\frac{1}{20}$	10% = $\frac{1}{10}$	20% = $\frac{1}{5}$	25% = $\frac{1}{4}$	50% = $\frac{1}{2}$

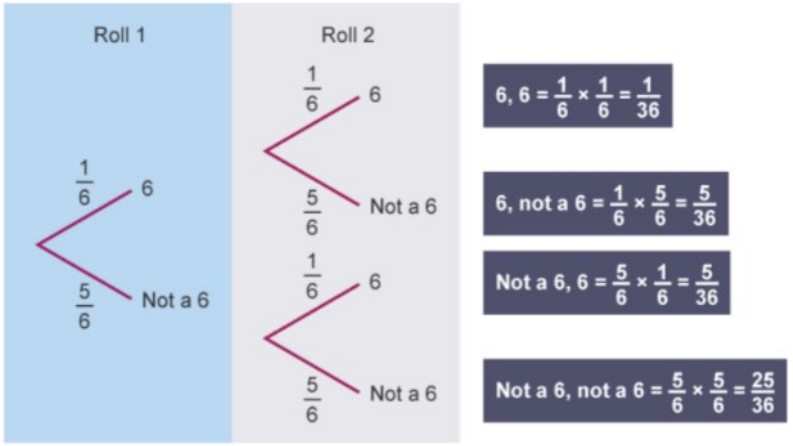
To find 50%:	To find 10%:	To find 1%:	To find 20%:	To find 3%:
divide by 2	divide by 10	divide by 100	find 10%, multiply by 2	find 1%, multiply by 3

FDP and Percentages

Year 9 Maths Knowledge Organiser Learning Cycle 3

1 Tree Diagrams with Independent Events

As you go along a tree diagram you multiply the branches (AND rule).



In this case, P(at least one 6) = $\frac{1}{36} + \frac{5}{36} + \frac{5}{36} = \frac{11}{36}$..

2 And, Or and Not Rules

$$P(A) = \frac{\text{Number of favorable outcomes to A}}{\text{Total number of possible outcomes}}$$

Twirling a spinner

$$P(\text{blue}) = \frac{\text{number of blue sectors}}{\text{total number of sectors}}$$

$$P(\text{blue}) = \frac{2}{3}$$

AND Rule:
If A and B are independent, then P(A and B) = P(A) x P(B).

OR Rule:
If A and B are mutually exclusive, then P(A or B) = P(A) + P(B).

NOT Rule:
Probabilities add up to 1. Therefore, P(A') = 1 – P(A), where A' is the event of A not happening.

3 Expected Outcomes

To find the expected outcomes, multiply the probability by the number of trials.

Expected number of heads = P(head) x number of flips
= 0.5 x 40
= 20

4 Listing Outcomes

Outcomes

Raspberries and cherries	RC
Raspberries and apples	RA
Raspberries and strawberries	RS
Blueberries and cherries	BC
Blueberries and apples	BA
Blueberries and strawberries	BS

$$P(\text{both berries}) = \frac{2}{6} = \frac{1}{3}$$

Probability

Year 9 Maths Knowledge Organiser Learning Cycle 3

1 Translations

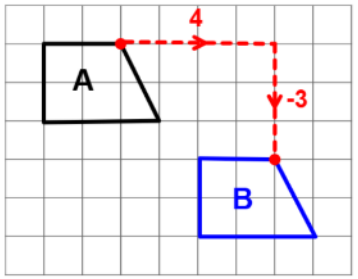
When a shape is **translated**, it is **moved to a different position**, without being turned or flipped.

Vectors such as $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$ are used to describe translations.

The **top** number is the **horizontal** movement:
← ***left if negative*** *or* ***right if positive*** →

The **bottom** number is the **vertical** movement:
↓ ***down if negative*** *or* ***up if positive*** ↑

Translate shape A by the vector $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$

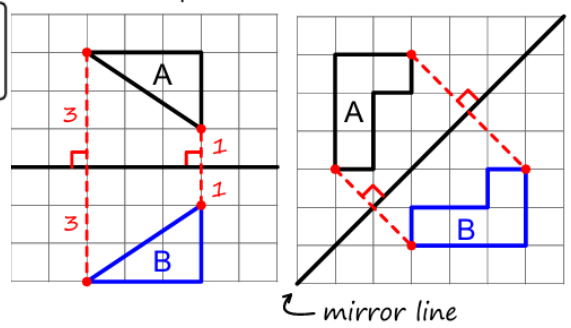


2 Reflections

When a shape is **reflected** in a **mirror line**, the shape is **flipped**.

The **perpendicular distance to the mirror line is the same** for each point of the original shape and the reflected shape.

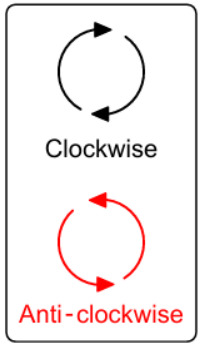
Reflect each shape in the mirror line.



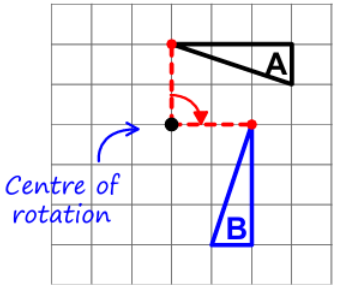
3 Rotations

To describe a **rotation** of a shape, three things are required:

1. The centre of rotation
2. The angle of turn
3. The direction: clockwise or anti-clockwise



Rotate shape A 90° clockwise about the point.



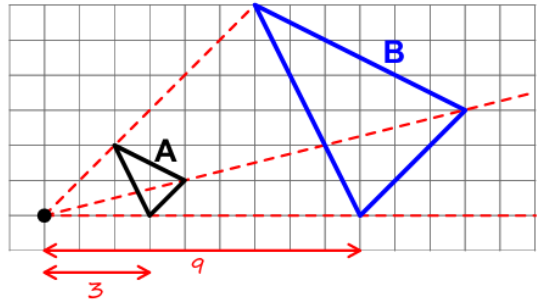
4 Enlargements

An **enlargement** is a change in size by a given **scale factor**.

Ray lines can be drawn from the **centre of enlargement**. through each vertex of the shape.

The **distance from the centre** to each point is **multiplied by the scale factor** to give the point on the enlarged shape.

Enlarge shape A by scale factor 3 about the point.



Transformations

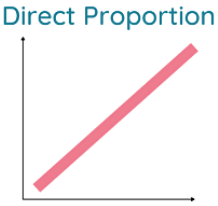
Year 9 Maths Knowledge Organiser Learning Cycle 3

1 Direct Proportion

Direct proportion means that as one value increases, so does the other. It produces a straight line graph passing through (0,0)

x	5	10	20
y	3	6	12

÷2 X2 ÷2 X2



2 Inverse Proportion

As one value increases, The other decreases
When you multiply both values, you will always get the same result

p	24	12	6
q	2.5	5	10

X2 ÷2 ÷2 X2

3 Direct Proportion Example

As the number of Yogurts is divided by 4 then so does the cost.

16 yoghurts cost £14.
How much do 20 yoghurts cost?

Draw a table & find the cost of a smaller 'unit'

No. of Yoghurts	Cost (£)
16	14
4	3.50
20	17.50

÷4 ÷4

Multiply the smaller unit up to get the cost of 20 yoghurts
= £17.50

× 5 × 5

4 Inverse Proportion Example

If two quantities are inversely proportional, when one of the quantities is multiplied by a value, the other is divided by the same value.

Machines in a factory are being used to make an order of scarves.
With 5 identical machines working, the order will be completed in 30 minutes.

a) How long would it take to complete the order if 10 machines were used?

5 machines would take 30 minutes
10 machines would take 15 minutes
×2 ÷2

b) How long would it take to complete the order if 2 machines were used?

5 machines would take 30 minutes
1 machine would take 150 minutes
2 machines would take 75 minutes
÷5 ×5
×2 ÷2

75 minutes ($1\frac{1}{4}$ hours)

Proportion

Year 9 Maths Knowledge Organiser Learning Cycle 3

Useful features on your calculator:

Product of Prime Factors (FACT on old calc)

Type in the number, EXE, Format, Scroll to Prime Factor

EXE

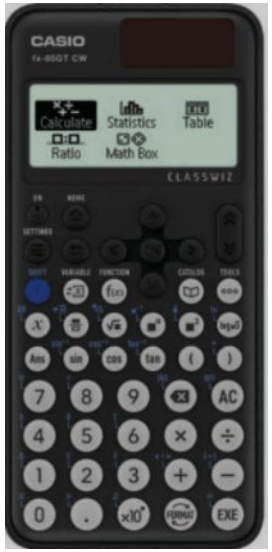


Table (menu 3): This is where you can generate values within a table- useful for plotting graphs and generating terms of a sequence. Home/table/press f(x) button and scroll to 'define f(x)'. Type in the function using the x button and then it will show the table.

°'": 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 ay calculations with fractions

Enter $\frac{217}{15}$ and press EXE.

To see the result as a mixed number, press:

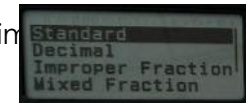
SHIFT ▽ ▽ ▽ ▽ to select **Mixed Fraction**

EXE

Fractions to Decimals

Use the format key to change to a decim

Scroll to Decimal/ EXE

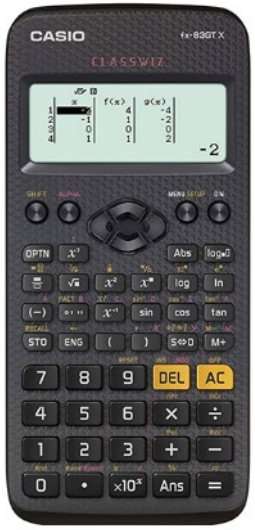


Useful features on your calculator:

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



°'": 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 ay calculations with fractions

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

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.

Element **symbol**
Element **name**

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

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

Neutrons = Mass number – Atomic number

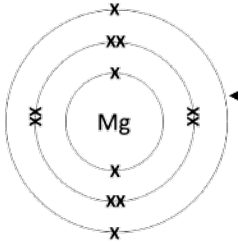
relative atomic mass
atomic symbol
name
atomic (proton) number

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

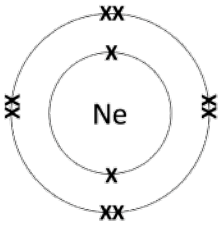
Non-Metals

Transition Metals

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

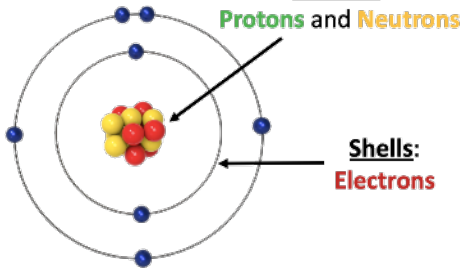


Magnesium (Mg) has **12 electrons** in total. It is in **group 2** so has 2 electrons in its **outer** shell. Mg's electronic configuration is 2,8,2.



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

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



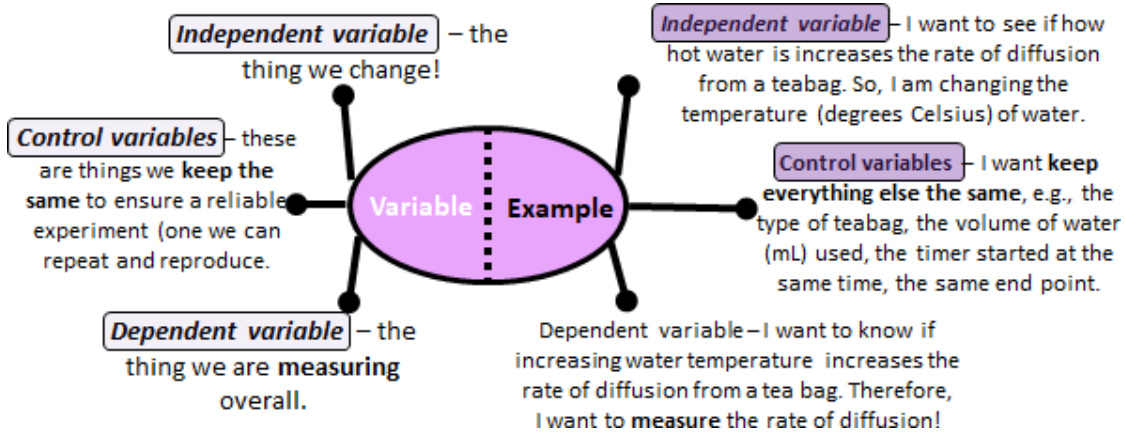
Science - Experiments

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

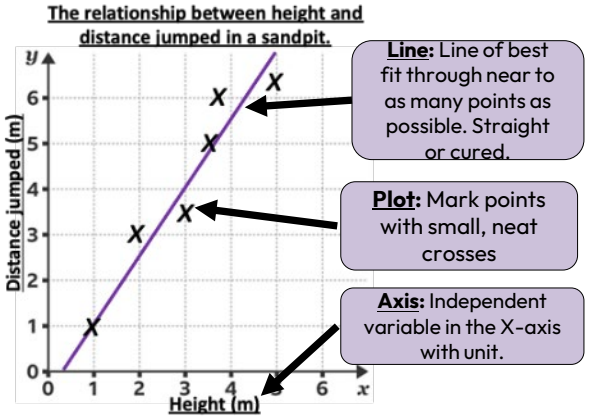
1. ***Repeatable*** – The **same** person gets the **same results** after repeating the experiment using the same method and equipment.
2. ***Reproducible*** – Similar results can be achieved by **someone else** or using a **different method**/piece of equipment.
3. ***Accurate*** – Results are close 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**



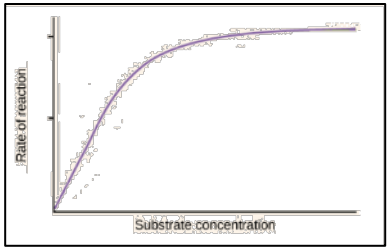
3. Graphs

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



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.

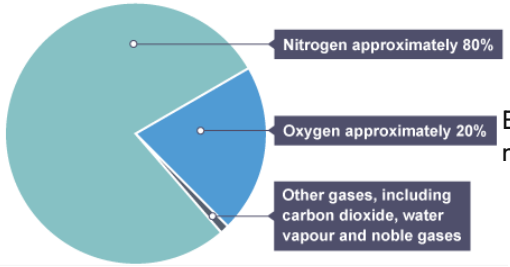
Science – Our changing planet

1. Key Terms	Description
Atmosphere	The envelope of gases which surrounds a planet
Abundant	Most common
Greenhouse effect	the process through which heat is trapped near Earth's surface by substances known as greenhouse gases
Global warming	The rise in the average temperature of Earth's atmosphere and oceans
Fossil fuel	Coal, oil and natural gas. An energy-dense fuel made from the pressurized remains of ancient organisms
Incomplete combustion	Burning fuels in the presence of insufficient (not enough) oxygen
Complete combustion	Burning fuels in the presence of sufficient (enough) oxygen Fuel + oxygen -> carbon dioxide + water
Sustainability	Using resources in a way which meets the needs of the present generation, without negatively affecting future generations
Carbon footprint	The volume of carbon dioxide released into the atmosphere during the life-cycle of a product, service or event
Atmospheric pollutant	Contamination of the air by a chemical, physical or biological agent which can cause harm
Polymer	A very long molecule, made of individual subunits called monomers

Science - Our changing planet

1. Earth's atmosphere

The Earth formed approximately 4.6 billion years ago. In this time, the atmosphere was mostly carbon dioxide and water vapour. There was no oxygen.



Earth's modern atmosphere is mostly nitrogen and oxygen.

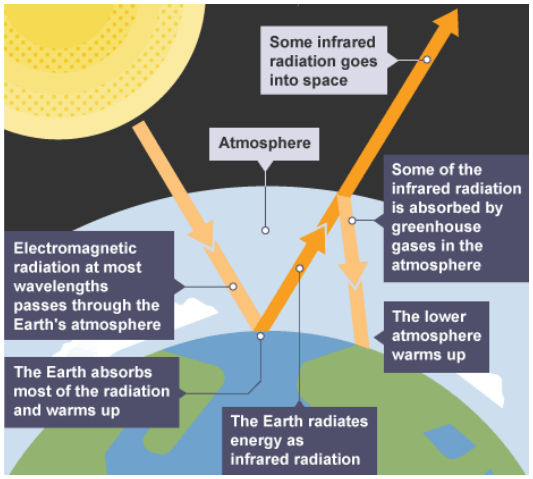
2. Development of Earth's atmosphere

Oxygen increased because algae and plants evolved. They carry out photosynthesis.

Carbon dioxide decreased because it:

1. Dissolved in the oceans to form limestone and shells
2. Was absorbed by plants for photosynthesis
3. Was locked away as fossil fuels: coal, oil and natural gas

3. The greenhouse effect



4. Atmospheric pollutants

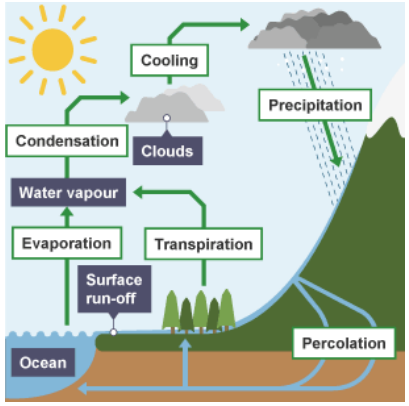
Pollutant	Source	Effects
Carbon monoxide (CO)	Incomplete combustion of fuels	Toxic gas
Carbon particulates		Respiratory issues; global dimming
Nitrogen oxides (NOx)	Nitrogen and oxygen react at very high temperatures in engines	Respiratory issues Acid rain: damages buildings, reduces biodiversity, acidifies waterways
Sulphur dioxide (SO_2)	Sulphur impurities in fuels react with oxygen	

5. Gas tests

Test	Observation	Inference
Glowing splint held in a test tube	Splint relights	Oxygen is present
Lighted splint held in a test tube	Pop sound heard	Hydrogen is present
Gas bubbled through limewater	Limewater turns milky or cloudy white	Carbon dioxide is present
Damp litmus paper held in a test tube	Paper turns white	Chlorine is present

6. The water cycle

Water is a key compound for life on Earth. All living organisms need water. Water is constantly cycled.



7. Further reading and websites

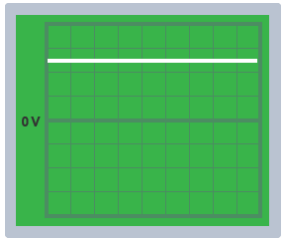
https://www.bbc.co.uk/bitesize/topics/zysvv9q
Everything you need to know about chemistry of the atmosphere.
https://www.bbc.co.uk/bitesize/guides/zswfxfr/revision/1
Everything you need to know about using Earth's resources sustainably

Science – Energy resources

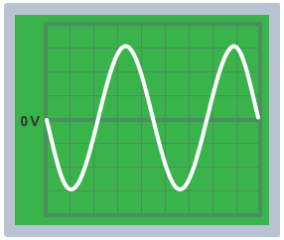
1. Key Terms	Description
Direct current	A direct current flows in only one direction.
Alternating current	An alternating current regularly changes direction.
The national grid	A network of cables and transformers which transport electricity from where it is produced to where it is consumed
Step-up transformer	Increases potential difference and decreases current
Step-down transformer	Decreases potential difference and increases current
Renewable resources	A resource which is replenished at a greater rate than it is being used
Finite resources	A resource which is used at a greater rate than it is being replenished
Live wire	Coated in brown plastic; carries the 230V alternating current from the power supply
Neutral wire	Coated in blue plastic; completes the circuit from the appliance back to the supply. Potential difference is 0V
Earth wire	Coated in yellow and green stripes; a safety feature providing a path for the current to flow from the device to the ground if there is a fault.
Energy demand	How much energy is required at a given time

Science - Energy resources

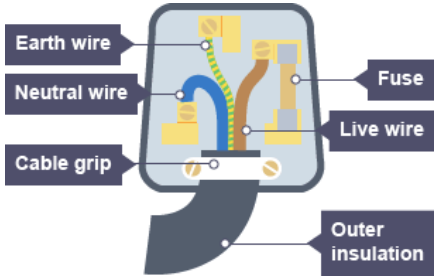
1. Mains electricity



Direct current (DC)



Alternating current (AC)

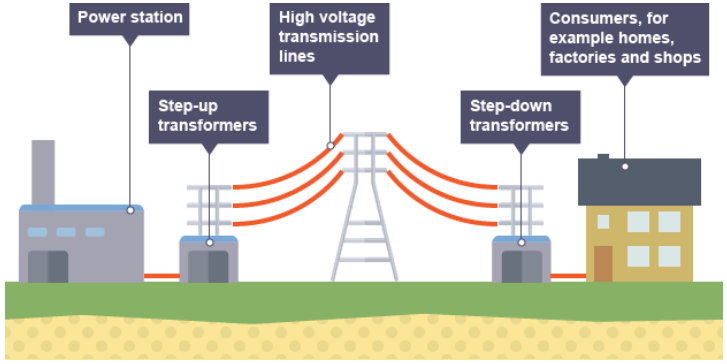


Frequency: 50Hz

Potential difference: 230V

2. Transporting electricity

A network of cables and transformers which transport electricity from where it is produced to where it is consumed.



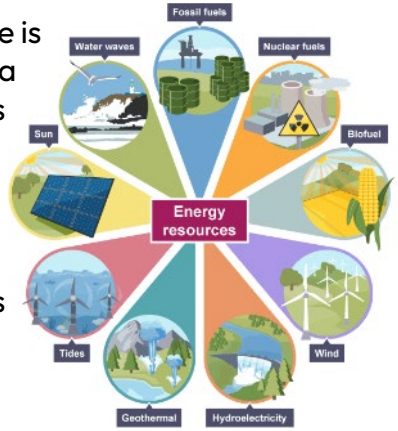
3. Energy resources – limitations and advantages

Energy	Energy store	Renewable or non-renewable	Impact or environment
Fossil fuels (oil, coal and natural gas)	Chemical	Non-renewable	Releases CO_2 (causes global warming)
Nuclear fuels	Nuclear	Non-renewable	Radioactive waste (needs to be disposed of safely)
Wind	Kinetic	Renewable	Take up large areas that could be used for farming, people say windmills spoil their view

4. Energy resources

A renewable resource is being replenished at a greater rate than it is being used.

A finite resource is being used at a greater rate than it is being replenished



5. Useful equations

energy = power × time

$$E = P \times t$$

power = potential difference × current

$$P = V \times I$$

power = current^2 × resistance

$$P = I^2 \times R$$

- energy (E) is measured in joules (J)
- power (P) is measured in watts (W)
- time (t) is measured in seconds (s)
- current (I) is measured in amps (A)
- resistance (R) is measured in ohms (Ω)
- potential difference (V) is measured in volts (V)

6. Further reading and websites

https://www.bbc.co.uk/bitesize/guides/zw8n2nb/revision/1
Everything you need to know about mains electricity and transporting electricity
https://www.bbc.co.uk/bitesize/guides/z2wfxfr/revision/1
Everything you need to know about energy resources and their limitations

Science - How to Approach 6 Mark Questions

1. How to approach 6 mark questions in Science – Our changing planet

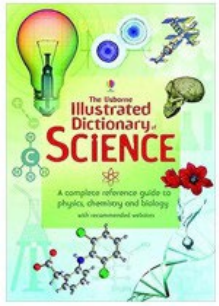
Question	Identify and explain the changes that have occurred since the Earth's early atmosphere
Info	This question (or part of it) is a frequent long response question found on a Chemistry paper 2. The examiner may provide charts or diagrams to interpret as part of the question. You may need to use the data they give; however, this question will ostly be looking for you to apply your knowledge: 1. Describe and explain how the atmosphere today is different from the atmosphere of billions of years ago. 2. Describe and explain how the surface of the early Earth and its atmosphere have changed to form the surface of the Earth and its atmosphere today. 3. Explain what has happened to most of the water vapour in the Earth's early atmosphere. 4. Describe how the evolution of planets changed the Earth's atmosphere. 5. Describe 2 processes which reduced the proportion of carbon dioxide in the Earth's atmosphere over the period of 3 billion years. 6. Suggest what has caused the main gases in the Earth's atmosphere of millions of years ago to change to the present day atmosphere.
Top tip	Use clear structure in your answer. Identify a gas in the Earth's early atmosphere, identify if there is now more or less in the atmosphere and explain why. Repeat this for each as.
Model answer	Describe and explain how the atmosphere today is different from the atmosphere of billion of years ago. In today's atmosphere there is less carbon dioxide. This is because it has been absorbed by plants during photosynthesis and become locked in fossil fuels. It has also dissolved into oceans and become locked in ice. Today there is much more oxygen in the atmosphere. This is because when plants evolved and started to photosynthesise oxygen was released. Today there is also much more nitrogen. This has been produced by the decay of organisms and the breakdown of ammonia. Nitrogen is unreactive and so has accumulated over time. Today there is less water vapour. This is because when the Earth cooled the water vapour condensed and formed oceans.

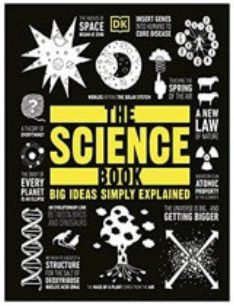
2. How to approach 6 mark questions in Science – Energy resources

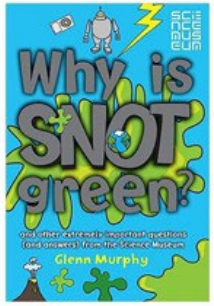
Topic	P3 Energy resources
Question	Evaluate the use of _____ to generate electricity
Info	You could be asked to evaluate any of the energy resources that you learned about in the topic including fossil fuels, nuclear, biofuels, wind, solar, hydroelectric, geothermal, wave and tidal To answer this question, you need to: 1. Describe the process used to generate electricity for the energy resource in one clear sentence. 2. Describe the advantages 3. Describe the disadvantages
Top tip	When discussing the advantages and disadvantages consider the reliability of the energy resource, if it is renewable or not as well as its impact on the environment
Model answer	Evaluate the use of fossil fuels to generate electricity. 1. In a fossil fuel power station, a fuel is bunred, this turns water into steam which turns a turbine to generate electricity. 2. The advantages of a fossil fuel power station include that it has a high energy output and it is a reliable energy source. 3. The disadavntages of using fossil fuels include that it uses a non-renewable energy resource, and it produces carbon dioxide which is a greenhouse gas.

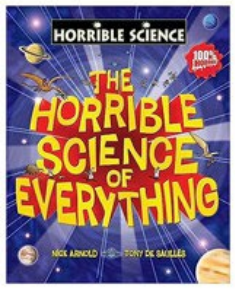
Science - Clubs and Reading

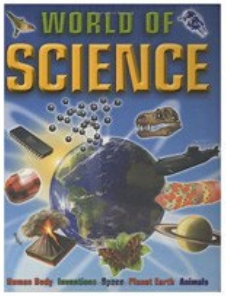
1. Science reading opportunities

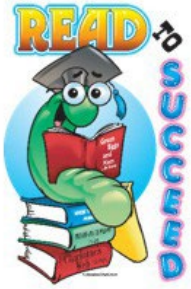




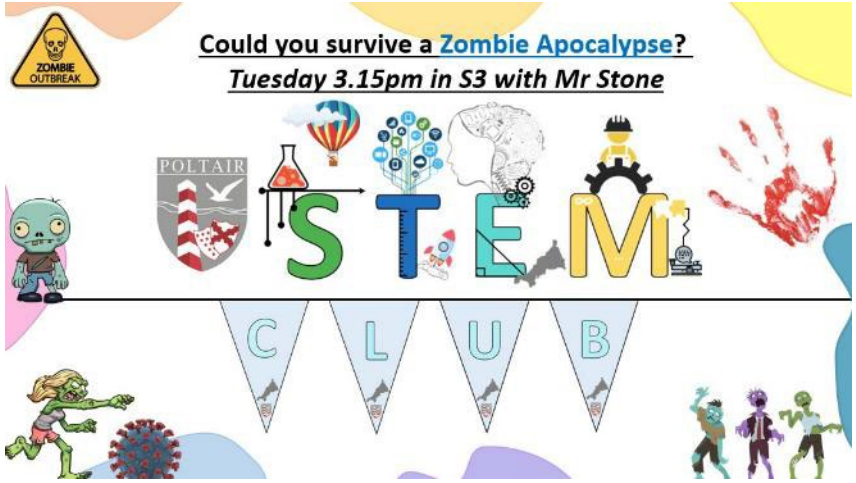








2. STEM club: Science, technology, engineering, Maths



4. Science discovery Websites

Spectacular Science
National Geographic

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

NATIONAL GEOGRAPHIC KIDS

Discover Natural History Museum

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

Natural History Museum

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

eden project

Cornwall Wildlife Trust

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

Cornwall Wildlife Trust

Art

1. Tier Three Vocabulary

Key Words	Definitions
Illustration	An image that accompanies text. Adds to the story telling by visually explaining the image
Nursery Rhyme	A rhyme or song that help develop language skills in children
Visual Brainstorm	Unpicking imagery from text using drawings rather than words
Political Cartoon	Cartoon like illustration that makes comment on a current political story
Ink	Vibrant liquid used by artists for its spontaneous qualities
Idea Development	Drawings, plan, ideas for the final outcome. This will be refined through experimentation of materials.
Contextualisation	The message, meaning or story behind the idea.
Resource Materials	Images from newspapers, magazines, internet or photographs that are collected to develop ideas from

2. What will I learn?

You will select text that will inform your idea development, research and contextualisation. You will look at artists and techniques to extend and develop your knowledge. The key skill for this project is CONTEXTUALISATION. You will learn what this is and then use it to develop a high-quality final outcome.

Teesha Moore

3. What do I need to know?

How to select and present information to develop ideas. The use of tone, texture, line, shape, colour and pattern to create an outcome inspired by the written word.

Gerald Scarfe

Sheperd Fairey

Quentin Blake

Computing – Networks and HTML

1. The history of the website

Key Words	Definitions
Network	A group of connected computers or devices **WAN** – Wide Area Network (eg. the internet) **LAN** – Local Area Network (eg. The school) **PAN** – Personal area Network (eg Bluetooth)
Internet	A global network of computers. All computer devices that are connected to the internet form part of this network.
Websites	Websites consist of webpages which allow you to see information. Websites are accessed using a web browser.
World Wide Web (WWW)	The part of the internet that can be accessed through websites.
HTML	**HyperText Markup Language** (HTML). The language used to write and display web page documents. Developed by Sir Tim Bernes-Lee

2.Developing website

Genre describes the different types of website eg, shopping, gaming, education
Purpose - A website will have a specific purpose eg to entertain or to inform.
Target Audience - who a website is aimed at
Stakeholders - any person, group of people or other organisation that has an interest in the activities of a business.
Codes and conventions: a website contains a header, sub-heading, menu, information and images.
Marketing – meeting customer needs (price, quality and choice)

3. Using HTML

HTML can be written using a text editor but must be saved with the extension .html It uses **tags** to format information.

```
<html>
  <body>
    <h1>Hello world</h1>
    <p>This is my first webpage </p>
  </body>
</html>
```

Hypertext Transfer Protocol (HTTP) a request/response standard. Web browsers send requests and websites or servers respond to requests.

4. Accessibility in websites

How to make digital services, websites and apps accessible to everyone, including

- vision
- hearing
- mobility
- thinking and understanding

5. Computers in Society

Computers and internet access have transformed the way many people work, shop, and socialise:

- **Businesses** use less paper because most communication is by email
- **Employees** with laptops or smartphones can work from home or while they travel
- **Shopping** can be done from home. Many stores now have scan your own shopping.
- Friends can be made online, you can **communicate** with people all over the world

Design Technology – Making space for nature

1. Key Words	Definitions
Reclaimed Wood	Reusing timber for a new purpose
Salvaged Wood	Timber harvested as a by-product of other activities
Project Management	Ensuring that all parts of your project are completed on-time and within budget
Budget	The total cost of designing and making a product
Marketing	A combination of promotional activities used to build customer awareness of a product to increase sales
Hibernacula	The space where an animal can hibernate
Sustainable	Being sustainable means doing little or no harm to the environment. Sustainable materials can be sourced for a long time with little danger of running out.
Composite Material	A material made by bonding two or more other materials together to make a material with different properties
Woodcrete	A composite material made by mixing wood and concrete

2. Why do animals need spaces

Many animals rely on particular spaces to nest and hibernate at different times of the year. This helps them to avoid being eaten by predators and ensure that their population sizes remain healthy.

Birds nest in boxes to lay their eggs	 
Mammals, reptiles and amphibians hibernate over Winter in hibernacula or nest in boxes	 
Bug hotels provide shelter for insects	 

3. Sizes for openings

Animals use the space as protection from the weather and predators. This means that the opening at the entrance to the space needs to be large enough for them to enter, but too small for predators to enter.

For example, different bird and bat species require different sized holes as shown below:

The spaces between each layer can be between 15mm and 25mm but no larger.

2. Benefits of using reclaimed wood

Obtaining new timber involves cutting down trees and then processing the wood into planks and lengths using sawmills. Trees absorb carbon dioxide as they grow. Although more than one tree can be planted for each tree that is chopped down, older trees often absorb more carbon dioxide and provide more of a habitat for wildlife due to their size. Reclaiming timber from products made from trees that have already been cut down prevents further deforestation and helps to reduce the impacts climate change. Reusing materials also makes the cost of projects cheaper.

5. Woodcrete and timber safety

1. Check the wood for nails and sharp edges that might cause splinters.
2. Use a sander connected to the LEV to smooth edges that are rough to prevent injury to yourself or the wildlife.
3. Cement is corrosive when wet. Wear goggles and gloves when casting your box shapes and avoid touching them until they are dry.

6. Links and further reading

Choosing materials:

https://www.bbc.co.uk/bitesize/topics/zh4cqyc/articles/zmgrdnb#zt49qyc

What is Woodcrete?

https://www.wildcare.co.uk/blog/what-is-Woodcrete/

Revise: Mindmap Maker

is.gd/mindmapmaker

Drama – Devising theatre

1. Key Words	Definitions
Devising	Creating your own theatre from scratch. It could involve improvisation and still images to generate performance material.
Stimulus	Something that inspires the creation of a piece of theatre. This could be – pictures, poems, music, articles, artefacts and paintings.
Improvisation	Making up a performance without rehearsal or planning the narrative or events in advance.
Structure	The order of events in a performance.
Role play	A short scene created by a group of actors.
Still Image	A frozen moment in time to mark a moment.
Cliff hanger	When the events end without a resolution, leaving the audience wondering what is going to happen next.
Unexpected Ending	An ending that catches the audience by surprise.
Tension	A feeling that the story is building up towards something exciting happening.
Split Stage	The stage is split and there are two scenes happening at the same time.
Flashback/ Flashforward	A scene set in a time earlier or later than the main story, added into the narrative to add information.
Theme	A theme is a recurring idea that's present throughout the work.
Target Audience	Who your performance is aimed at.

2. Structuring a performance

1. The exposition – setting the scene
2. The encounter – a meeting of some kind
3. The conflict or complication – the problem
4. The climax – moment of tension – point at which all strands are pulled together
5. The resolution – the moment when all the events are resolved

3. Brecht

Bertolt Brecht (1898- 1956)

A German theatre practitioner who was closely linked with the Epic theatre style. He used non naturalistic performance techniques and his performances had a strong political message and were designed to really make the audience think.

Techniques

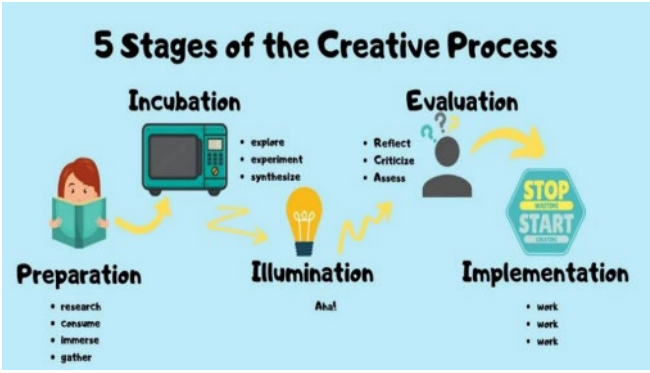
Direct address- The actors speak directly to the audience, sometimes in the form of questions. This reminds them that what they are seeing isn't real and forces them to think about what they are watching.

Multi role-play- The actors play more than one part in a performance.

Placards- Signs held up to tell the audience the title of the scene and even what was going to happen in them.

Further Links:
https://www.youtube.com/watch?v=c7fqMPDcKXM

4. Creative process



5. Links and further reading

Devising Strategies
https://www.bbc.co.uk/bitesize/topics/z4vm2sg
Building blocks for Devising -https://www.youtube.com/watch?v=gUqZPfGIX6U
Devising Process National Theatre -
https://www.youtube.com/watch?v=7mJ02mSvbEM

Food – Dovetail a time plan

1. Key Terms	Description
Dovetail	Dovetailing a time plan allows for a number of dishes to be finished at the same time by planning
Mise-en-place	Preparation of your area prior to cooking such as collecting ingredients, equipment, preparing food handler,
Allergies	A group of foods that cause an allergic reaction to people.
Basal Metabolic Rate (BMR)	The rate at which a person uses energy to maintain the basic functions of the body eg. breathing
Estimated Average Requirement	An estimate of the average requirement of energy or a nutrient needed by a group of people.
Adaptation	Ability to adapt a recipe to improve the dish or meet needs of the customer
Taste Receptors	Our tongues are covered with taste buds, which are designed to sense chemicals in the mouth.
Umami	Savoury taste, often known as the fifth taste.

4. Adaption of recipes

Deciding on what to cook or eat, whether for yourself or someone else, requires making a number of decisions, which may cause you to adapt a recipe, including; beliefs and values; consumer information; food preferences; food provenance; health and wellbeing; social and economic considerations; who, what, when and where.

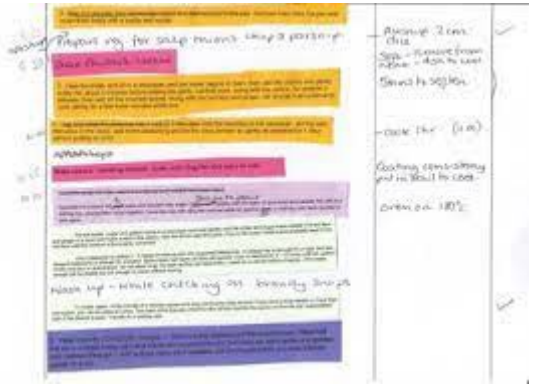
Allergy and intolerance

There are 14 ingredients (allergens) that are the main reasons for adverse reactions to food. People who are allergic, or intolerant, to these ingredients should take care to avoid eating them. The 14 allergens are:

2. Dovetailing for a Time Plan

What is a time plan in food?

In order to ensure that food is cooked and served promptly good time planning is essential. It involves all the stages and time required to prepare, cook and serve food.



5. Celebrations

Religious factors can have a major influence on what foods we buy.

For example, Muslims will not eat meat such as beef or lamb that has not been slaughtered by the halal method, while those of the Jewish religion will only eat foods that are Kosher.

Where we are from, and our culture will also influence our food purchases.

For example, Polish or Chinese consumers will tend to purchase foods they are familiar with.

3. Food science

Dextrinisation

When foods containing starch are heated they can also produce brown compounds due to dextrinisation.

Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins which produce a brown colour.

Caramelisation

When sucrose (table sugar) is heated above its melting point it undergoes physical and chemical changes to produce caramel.

Denaturation

Denaturation is the change in structure of protein molecules. The process results in the unfolding of the protein's structure. Factors which contribute to denaturation are heat, salts, pH and mechanical action.

Coagulation

Coagulation follows denaturation. For example, when egg white is cooked it changes colour and becomes firmer (sets). The heat causes egg proteins to unfold from their coiled state and form a solid, stable network.

6. Links and Further Reading

Video: Time plan

https://www.youtube.com/watch?v=oVpeifuR46A

Article: Food Allergy and Intolerance

https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/food-allergy-and-intolerance

Revise:Mindmap Maker

is.gd/mindmapmaker

Geography – Resource management

Unit 2c
The Challenge of Resource Management

Resource Challenges

Resources are things that humans require for life or to make our lives easier. Humans are becoming increasingly dependent on exploiting these resources, and as a result they are in high demand.

Significance of Water

Resources such as food, energy and water are what is needed for basic human development.

FOOD

Without enough nutritious food, people can become **malnourished**. This can make them ill . This can prevent people working or receiving education.

WATER

People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products.

ENERGY

A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for industry.

Demand outstripping supply

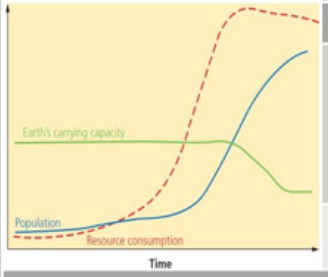
The demand for resources like food, water and energy is rising so quickly that supply cannot always keep up. Importantly, access to these resources vary dramatically in different locations

1. Population Growth

- Currently the global population **is 7.3 billion**.
- Global population has risen **exponentially** this century.
- Global population is expected to reach **9 billion by 2050**.
- With more people, the **demand** for food, water, energy, jobs and space **will increase**.

2. Economic Development

- As **LICs** and **NEEs** develop further, they require **more energy** for industry.
- **LICs** and **NEEs** want similar lifestyles to **HICs**, therefore they will need to **consume more resources**.
- Development means **more water is required** for food production as diets improve.



Resource Reliance Graph

Consumption – The act of using up resources or purchasing goods and produce.
Carry Capacity – A maximum number of species that can be supported.

Resource consumption exceeds Earth's ability to provide!

3. Changing Technology and Employment

- The demand for resources has driven **the need for new technology** to reach or gain more resources.
- More people in the **secondary and tertiary industry** has increased the **demand for resources** required for electronics and robotics.

Food in the UK

Growing Demand

- The UK imports about 40% of its food. This increases people's **carbon footprint**.
- There is growing demand for greater choice of **exotic foods** needed all year round.
- Foods from abroad are more affordable.
- Many food types are unsuitable to be grown in the UK.

Impact of Demand

Foods can travel long distances (food miles). Importing food adds to our carbon footprint.
+ Supports workers with an income
+ Supports families in LICs.
+ Taxes from farmers' incomes contribute to local services.
- Less land for locals to grow their own food.
- Farmers exposed to chemicals.

Agribusiness

Farming is being treated like a large industrial business. This is increasing food production.
+ Intensive faming maximises the amount of food produced.
+ Using machinery which increases the farms efficiency.
- Only employs a small number of workers.
- Chemicals used on farms damages the habitats and wildlife.

Sustainable Foods

Organic foods that have little impact on the environment and are healthier have been rising.
Local food sourcing is also rising in popularity.

- **Reduces emissions** by only eating food from the UK.
- **Buying locally sourced** food supports local shops and farms.
- A third of people **grow their own food**.

Energy in the UK

Growing Demand

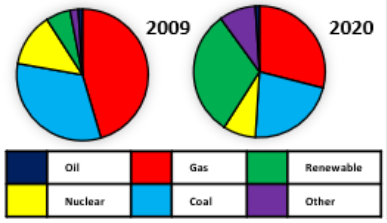
The UK **consumes less energy** than compared to the 1970s despite a smaller population. This is due to the **decline of industry**.

Energy Mix

The majority of UK's energy mix comes from **fossil fuels**. By 2020, the UK aims for 15% of its energy to come from **renewable sources**. These renewable sources do not contribute to **climate change**.

Changes in Energy Mix

- 75% of the UK's oil and gas has been used up.
- Coal consumption has declined.
- UK has become too dependent on imported energy.



Water in the UK

Growing Demand

The average water used per household has risen by 70%. This growing demand is predicted to increase by 5% by 2020.
This is due to:

- A growing UK population.
- Water-intensive appliances.
- Showers and baths taken.
- Industrial and leisure use.
- Watering greenhouses.

Deficit and Surplus

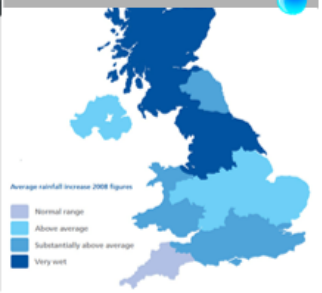
The north and west have a **water surplus** (more water than is required).
The south and east have a **water deficit** (more water needed than is actually available).
More than half of England is experiencing **water stress** (where demand exceeds supply).

Pollution and Quality

Cause and effects include:

- Chemical run-off from farmland can destroy habitats and kills animals.
- Oil from boats and ships poisons wildlife.
- Untreated waste from industries creates unsafe drinking water.
- Sewage containing bacteria spreads infectious diseases.

Water stress in the UK



Management

UK has **strict laws** that limits the amount of discharge from factories and farms.
Education campaigns to inform what can be disposed of safety.
Waste water treatment plants remove dangerous elements to then be used for safe drinking.
Pollution traps catch and filter pollutants.

Water Transfer

Water transfer involves moving water through pipes from areas of surplus (Wales) to areas of deficit (London).
Opposition includes:

- Effects on **land and wildlife**.
- High maintenance **costs**.
- The **amount of energy** required to move water over long distances.

Energy in the UK (continued)

Significance of Renewables

+ The UK government is investing more into low carbon alternatives.
+ UK government aims to meet targets for reducing emissions.
+ Renewable sources include wind, solar and tidal energy.
- Although infinite, renewables are still expensive to install.
- Shale gas deposits may be exploited in the near future

Exploitation

Nuclear

New plants provide job opportunities.
Problems with safety and possible harm to wildlife.
Nuclear plants are expensive.

Wind Farm

Locals have low energy bills.
Reduces carbon footprint.
Construction cost is high.
Visual impacts on landscape.
Noise from wind turbines.

Geography – Resource management

Option 1: FOOD

Food Security is when people at all times need to have physical & economic access to food to meet their dietary needs for an active & healthy life. This is the opposite to Food Insecurity which is when someone is unsure when they might next eat.

Human

- **Poverty** prevents people affording food and buying equipment.
- **Conflict** disrupts farming and prevents supplies.
- **Food waste** due to poor transport and storage.
- **Climate Change** is affecting rainfall patterns making food production difficult.

Physical

- The **quality of soil** is important to ensure crops have key nutrients.
- **Water supply** needs to be reliable to allow food to grow.
- **Pest, diseases and parasites** can destroy vast amounts of crops that are necessary to populations.
- **Extreme weather** events can damage crops (i.e. floods).

Increasing Food Supply

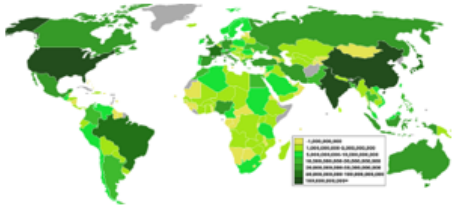
Hydroponics - A method of growing plants without soil. Instead they use nutrient solution.
New Green Revolution - Aims to improve yields in a more sustainable way. Involves using both GM varieties and traditional and organic farming.
Biotechnology - Genetically modified (GM) crops changes the DNA of foods to enhance productivity and properties.
Irrigation - Artificially watering the land so crops can grow. Useful in dry areas to make crops more productive.

Sustainable Food Supply

This ensures that fertile soil, water and environmental resources are available for future generations.

Organic Farming - The banned use of chemicals and ensuring animals are raised naturally.
Permaculture - People growing their own food and changing eating habits. Fewer resources are required.
Urban Farming - Planting crops in urban areas. i.e. roundabouts.
Managed Fishing – Includes setting catch limits, banning trawling and promoting pole and line methods.

Food Supply



This map shows the amount of **food produced** in different countries. Whilst Asia and **North America** have **high** production outputs, **Africa** and **Central America** have **low** production outputs.

C.S. Thanet Earth

Located in Kent, the site involves four huge greenhouses using hydroponics.

Advantages
- **Supports more than 500 jobs.**
- **Produces food all year round.**
- **Provides UK with food security.**

Disadvantages
- **Money generated mostly goes to large companies not community.**
- **Requires a lot of energy.**
- **Causes visual & light pollution.**

C.S. NEE- Indus Basin Irrigation System

Largest irrigation scheme in the world. Involves large and small dams. Thousands of channels provides water to supports Pakistan's rich farmlands.

Advantages
- **Improves food security by adding 40% more land for farming.**
- **Increased yield & range of foods.**

Disadvantages
- **Few take an unfair share of water**
- **Water is wasted and demand is rising due to population growth.**
- **High cost to maintain reservoirs.**

What is an Ecosystem?

An ecosystem is a system in which organisms interact with each other and with their environment.

Ecosystem's Components

Abiotic	These are **non-living**, such as air, water, heat and rock.
Biotic	These are **living**, such as plants, insects, and animals.
Flora	**Plant life** occurring in a particular region or time.
Fauna	**Animal life** of any particular region or time.

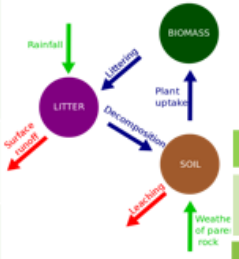
Food Web and Chains

Simple **food chains** are useful in explaining the basic principles behind ecosystems. They show only one species at a particular trophic level. **Food webs** however consists of a network of many food chains interconnected together.

Nutrient cycle

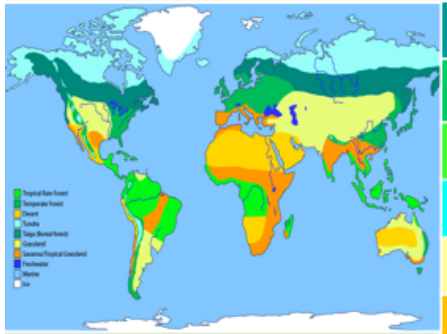
Plants take in **nutrients** to build into new organic matter. Nutrients are taken up when animals eat plants and then returned to the soil when animals die and the body is broken down by **decomposers**.

Litter	This is the **surface layer** of vegetation, which over time breaks down to become **humus**.
Biomass	The total **mass of living organisms** per unit area.



Biomes

A biome is a **large geographical area of distinctive plant and animal groups**, which are adapted to that particular environment. The climate and geography of a region determines what type of biome can exist in that region.



- Coniferous forest
- Deciduous forest
- Tropical rainforests
- Tundra
- Temperate grasslands
- Tropical grasslands
- Hot deserts.

The **most productive biomes** – which have the greatest biomass- grow in climates that are **hot and wet**.

Biome's climate and plants

Biome	Location	Temperature	Rainfall	Flora	Fauna
Tropical rainforest	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
Tropical grasslands	Between latitudes 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/year)	Grasslands with widely spaced trees.	Large hoofed herbivores and carnivores dominate.
Hot desert	Found along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
Temperate forest	Between latitudes 40°-60° north of Equator.	Warm summers + mild winters (5-20°C)	Variable rainfall (500-1500m /year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
Tundra	Far Latitudes of 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/ year)	Small plants grow close to the ground and only in summer.	Low number of species. Most animals found along coast.
Coral Reefs	Found within 30° north – south of Equator in tropical waters.	Warm water all year round with temperatures of 18°C	Wet + dry seasons. Rainfall varies greatly due to location.	Small range of plant life which includes algae and sea grasses that shelters reef animals.	Dominated by polyps and a diverse range of fish species.

Unit 1b

The Living World

Tropical Rainforest Biome

Tropical rainforest cover about **2 per cent** of the Earth's surface yet they are home to **over half of the world's plant and animals**.

Interdependence in the rainforest

A rainforest works through **interdependence**. This is where the plants and animals **depend on each other** for survival. If one component changes, there can be **serious knock-up effects** for the entire ecosystem.

Distribution of Tropical Rainforests

Tropical rainforests are **centred along the Equator** between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, central Africa and South-East Asia. **The Amazon** is the world's largest rainforest and takes up the majority of northern South America, encompassing countries such as Brazil and Peru.

Rainforest nutrient cycle

The **hot, damp conditions** on the forest floor allow for the **rapid decomposition** of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots. However, as these nutrients are in high demand from the many fast-growing plants, they do not remain in the soil for long and stay close to the surface. If vegetation is removed, the soils quickly become **infertile**.

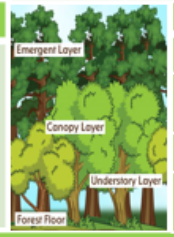
Climate of Tropical Rainforests

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

CASE STUDY: UK Ecosystem: Epping Forest, Essex

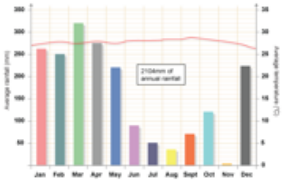
This is a typical English lowland deciduous woodland. **70% of the area** is designated as a **Site of Special Scientific Interest (SSI)** for its biological interest, with **66 %** designated as a **Special Area of Conservation (SAC).**

Components & Interrelationships		Management
Spring	**Flowering plants** (producers) such as bluebells store nutrients to be eaten by consumers later.	- Epping has been managed for centuries. - Currently now used for **recreation** and **conservation**. - Visitors **pick fruit** and berries, helping to **disperse seeds**. - Trees cut down to encourage **new growth for timber.**
Summer	Broad tree leaves grow quickly to **maximise photosynthesis**.	
Autumn	Trees shed leaves to **conserve energy** due to sunlight hours decreasing.	
Winter	Bacteria **decompose** the leaf litter, releasing the nutrients into the soil.	



Layers of the Rainforest

Emergent	Highest layer with trees reaching **50 metres.**
Canopy	Most life is found here as It receives **70% of the sunlight** and **80% of the life.**
U-Canopy	Consists of trees that reach **20 metres high.**
Shrub Layer	Lowest layer with **small trees** that have adapted to living in the **shade.**



History – Enquiry question: How have crimes and punishments changed over time?

Historical Skills we will develop in this Enquiry;

- ✓ Our understanding of change and continuity
- ✓ Our ability to use our sources to explore and explain the past

Historical analysis and sources:

- *Newspapers* - Report on daily events and show public opinion. They can be really useful for getting a 'feeling' of the time and what people were thinking about certain events
- *Diaries and letters* - These are very personal to those writing them. People would share views, ideas and emotions that they may not say out loud to others, so it gives us a real 'insider' view on what people really thought or felt.
- *Original photographs* - These capture a snapshot of the past. They obviously are only useful for the exact moment and not the before or after, but they can be useful for showing the exact view of an event/person/place etc.
- *Statistics* - Statistics are great for giving us specific data on a 'bigger picture' of something. E.g. How many people died during a battle or the number of people working in certain professions etc.
- *Government reports* - These are usually confidential when they are created so they should give us a true reflection of how the government thought about a particular issue and their reasons for doing something
- *Original paintings, drawings, sketches* - These can be useful to show us attitudes about people at the time; e.g. cartoons drawn about events or issues like those that might end up in the newspaper. They are also useful to show us how people like Queen Elizabeth I wanted to be viewed and even just what they looked like. They are even useful to show us what an event like a key battle might have looked like at a time when there was no photography (think Battle of Hastings, evets in the English Civil War etc.)

Glossary crime and punishment

1. Key Terms	Description
Blood Feud	Anger and revenge that carries on between families after a serious injury or death committed
Tithing	A group of 10 men aged 12 and over acting as local law enforcers
Corporal punishment	Serious injury for a crime (whipping/burning/fingers or hand removed etc.)
Capital punishment	Death penalty for a crime
Stocks/pillory	Public humiliation as punishment feet/head and hands put into a wooden stand in the middle of town for you to be seen by all for your crime (drunk and disorderly/selling poor quality good etc.)
Treason	Crime against the king/government

Public humiliation using the pillory as a punishment in the 1500s

Public execution as a punishment for the gunpowder plotters in the 1600s

Scan to access a guide to Historical writing:

https://uta.pressbooks.pub/historicalresearch/part/thinking-historically/

Scan for a *History Today* article about 'What is History?'

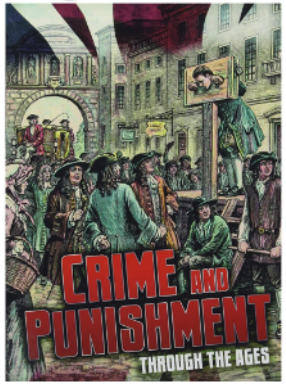
https://www.historytoday.com/archive/head-head/what-history

History - Enquiry question: How have crimes and punishments changed over time?

Bringing the past back to life at Poltair!

Reading like a historian

Aspects of British History Beyond 1066: Crime and Punishment Through the Ages Ben Hubbard (Author)



These are **suggestions** of reading that might help boost your history knowledge for the current enquiry.

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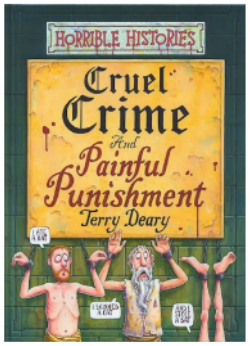

Cruel Crime and Painful Punishment (Horrible Histories) Terry Deary (Author)

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

The design of the new 'ideal' prison, Pentonville Prison.

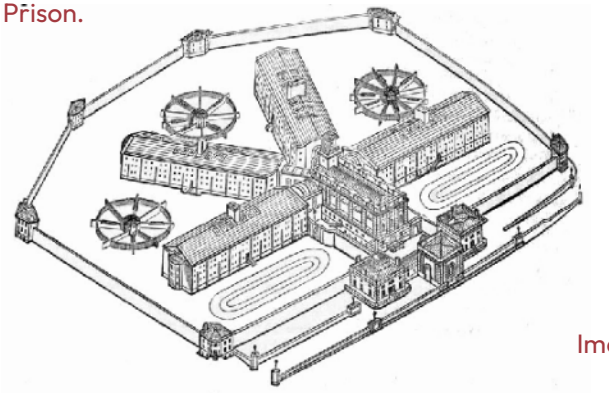

Image depicting a MET police officer, 1829

2. Core knowledge

Question	Answer
1 What was trial by Ordeal?	Where the outcome would be decided by God. (Trial by hot iron if the wound heals God has judged you as innocent)
2 What was the Wergild?	A fine paid by the person guilty of serious injury/death to someone. This was to try and stop blood feuds between families.
3 What were the early forms of policing in medieval England?	Hue and Cry – everyone had to be responsible for raising the hue and cry. Especially in their area.
4 How were beggars in Tudor England punished?	Whipped through the streets and branded with a hot iron
5 What were the big crimes of the 18th and 19th Centuries?	Highway robbery and smuggling
6 What was the Gaols Act of 1823?	To improve conditions in Prisons
7 What was the new prison that was to be a model to all?	Pentonville Prison
8 When was a Police Force finally created and by who?	1829 Sir Robert Peel
9 Why was the Death Penalty eventually ended?	High profile cases like Derek Bentley, Timothy Evans and Ruth Ellis
10 What were the technological advances that helped the police force?	Fingerprinting, DNA, ANPR (automatic numberplate recognition) CCTV

History - Enquiry question: How do national events impact historical sites?

Historical Skills we will develop in this Enquiry;

- ✓ Our understanding of significance
- ✓ Our ability to use our sources to explore and explain the past

Historical analysis and sources:

- *Newspapers* - Report on daily events and show public opinion. They can be really useful for getting a 'feeling' of the time and what people were thinking about certain events
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Photo of Bodmin Jail site now

Glossary Bodmin Jail

1. Key Terms	Description
National Event	Something that happens that impacts the whole country- this can also have smaller impacts on local areas
Local	A specific place
Reform	To change something
Historical Site	A place/building/monument that can show us something about the past
Jail	Where people are held BEFORE they go to trial
Prison	Where people are held AFTER they are sentenced as guilty
Trial (law)	When evidence is looked at to see if someone is guilty or innocent.
Primary Source	Evidence from the time period. E.g. diaries/newspapers/items
Secondary Source	Evidence that is second hand. These sources use primary sources to support their interpretation.

Scan to access the Bodmin Jail website:

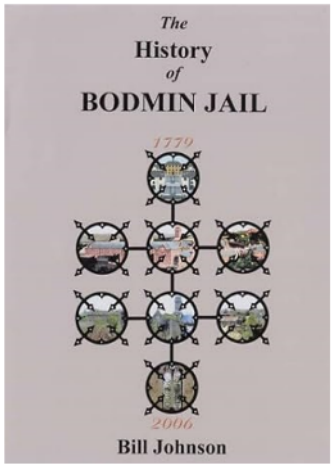
https://www.bodminjail.org/

BODMIN JAIL

History - Enquiry question: How do national events impact historical sites?

Bringing the past back to life at Poltair!

Reading like a historian



The History of Bodmin Jail: 1779 - 2006 Bill Johnson (Author)

These are **suggestions** of reading that might help boost your history knowledge for the current enquiry.

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

Scan for more information on the History of Bodmin Jail from their website:

https://www.bodminjail.org/discover/about-bodmin-jail/history/

Scan to read arguments about why historical sites matter:

https://www.historynewsnetwork.org/article/why-preserving-historical-places-and-sites-matters

Core knowledge Bodmin Jail

DATE	EVENT
1777 (National event)	John Howard published an article about how Prisons need to be reformed. In 1779 Cornwall County Jail is built and opened following these guidelines.
1815 (National event)	The Napoleonic Wars create a national crime wave. More criminals mean that the prison is extended.
1850	Bodmin Jail is called unfit for purpose and 220 new cells are added.
1868	The last public execution- after this point all executions take place within the prison walls not in the town.
1909	The last execution at Bodmin Jail, William Hampton, aged 24. He is the last person to be hanged in Cornwall.
1911	The female wing of the prison is closed. Now a male only prison.
1915 (National event)	The male civil prison is closed and the prison guards go off to fight in World War One.
1918-1919 (National event)	The prison is used to store the Domesday Book, Government papers and the Crown Jewels.
1927	The Jail is formally closed.
1960s	The Jail opens as a nightclub
2008-present	The jail opens as an exhibition and museum.

Music - Songwriting

1. Key Words	Definitions
Songwriting	The process of creating a song, including lyrics, melody and chords.
Structure	The organisation of a song, including its sections (verse, chorus, bridge)
Strophic Form	A structure of music that has a section that repeats (usually a chorus).
Binary Form	A structure that has two clear sections (usually A and B).
Ternary Form	A structure of music that has three sections, but the first and third section are the same (e.g. A, B, A).
Rondo Form	A structure of music where a main theme happens and then alternates with different parts (A, B, A, C, A, D...)
Melody	The main tune of the music – this is typically what the lyrics would go to.
Chord Progression	A series of chords played in a certain order to create the foundation of a song.
Tonality	The overall key or mood of the piece of music. It can make a song sound happy (major) or sad (minor).
Hook	A hook is a catchy and memorable part of a song that usually gets stuck in your head!

2. Lyrical content

Lyrics are a crucial element of songwriting because they are the words that convey the message or story that a songwriter wants to tell. They can express a wide range of emotions and ideas and can connect with the listener on a deep and personal level.

3.Structure

Music must always have a clear and identifiable structure in place otherwise the music is just random chaos.

In music, we sometimes represent each section of music (such as a verse) as a letter. There are few structures/forms we need to remember:

BINARY FORM A B

TERNARY FORM A B A

RONDO FORM A B A C A D...

STROPHIC FORM Verse, Chorus, Bridge etc.

4. Chords

Chords are three or more notes played together. They are used to create harmony in a song. The most common chords are major (happy) or minor (sad).

There are many ways to play different chords and it is important to play what you think sounds good. Some chords tend to work better with others, and it is down to experimenting to try and find which ones fit best! Try to combine a mixture of major and minor chords in a song to make the music sounds like it progresses.

is.gd/pianochordshelp

5. Melody and harmony

The melody is the tune of the song and is usually the most memorable and catchy part. It is often the main focus of the song and can be created by singing or playing an instrument.

The harmony refers to the chords and what chords are used within the song. The harmony always accompanies a melody. The harmony creates a musical backdrop for the melody and can add depth and emotion to the song.

6. Links and Further reading

Video:
How To Write a Song
is.gd/howtowriteasong

Lesson:
Writing Lyrics
is.gd/writinglyrics

Revise:
Flash Card Maker
is.gd/flashcardmaker

PSHE – Body image, the media and me

1. Key Terms	Description
Body Image	Someone's perception, thoughts and feelings about their physical appearance.
Mental Wellbeing	The emotional, psychological and social health that a person experiences. Their levels of positivity and stress are a big factor of this.
Social Media	Online platforms and applications allowing users to share content with others online as well as communicating and collaborating with others.
Influencer	Someone who has the ability and status to impact opinions and behaviours of others. Typically use social media as their platform for reaching an audience.
Screen Time	The time an individual spends engaging with a screen such as a mobile phone, TV, computer or tablet.
Harmful Content	Online material that could have a negative impact on an individual's well-being, safety or mental health.
Cosmetic Body Enhancements	Procedures or treatments that alter, improve or enhance someone's physical appearance for aesthetic reasons.
Insecurities	Feelings of uncertainty or a lack of confidence in one's ability, appearance or quality.

2. Body Image and Mental Wellbeing

Body image refers to how we view ourselves, whether that be how we feel or see our bodies. Body image can impact mental health, and it can be influenced by things around us such as social media, culture and social pressures, We need to look after our mental wellbeing and ensure we remain as positive as possible by being realistic in our expectations and aspirations.

4. Screen Time and Harmful Content

Screen time is the time spent using screens such as TVs, phones, laptops and tablets. The longer we spend on screens, the increased likelihood of being exposed to harmful content. Harmful content could include dangerous material, sexual material or extremist material. Accessing these kinds of online content could result in people being guided into poor decision making that could increase the risks of being put into danger or finding yourselves in trouble. Therefore, managing, monitoring, and limiting screen time could result in being protected and experiencing safer online interactions.

3. Role of online influencers

The role of an influencer in the online world is to try and gain a viewing audience to maximise their interactions, whether that be advertising themselves, a business or a product. Influencers are trying to manipulate their audience to engage in activities or purchases that will benefit them. Influencers use online platforms like social media to reach an audience worldwide with trends and viral content. Brands or businesses may pay influencers to promote their product on their channels or accounts to advertise them to their audiences to boost sales and revenue.

5. Cosmetic Body Enhancements

Cosmetic body enhancements, such as Botox, can change the physical appearance of a person. Sometimes, these procedures are for medical reasons to help the rehabilitation of a patient following medical issues. Cosmetic enhancements can also be chosen, and people could pay for enhancements to alter their appearance. Reasons as to why people could undergo cosmetic enhancements include medical procedures, to improve mental health and personal body image perceptions and to reduce insecurities.

6. Links to External Support

BROOK
www.brook.org.uk
0808 802 1234

Childline
www.childline.org.uk
0800 1111

NHS
www.nhs.uk

Barnardo's
www.barnardos.org.uk

Religious Education – What happens after we die?

1. Key Words	Definitions
Resurrection	Coming back from the dead
Reincarnation	To be reborn into a new life after death
Soul	The part of the person that some people believe continues after the body has died
Spirit	A supernatural being or essence, such as a ghost.
Immortality	The ability to live forever
Afterlife	Continued existence after death
Heaven	Belief that after death Christians can enter a state of being with God for eternity.
Hell	Belief in a place of eternal suffering, or a state after death of being in separation from God.
Akhira	Belief in an afterlife in Islam
Barzakh	Waiting in the grave until the Day of Judgement (Muslim belief)
Day of Judgement	The belief that on a certain day, Allah will end the world and resurrect everyone who has ever lived to judge whether they should go to heaven or hell
Jannah	The Islamic word for Heaven. Believed to be a paradise where those who have been faithful to Allah will be rewarded
Jahannam	The Islamic word for Hell. Believed to be a place of fiery torment where those who have sinned will be punished
Karma	The belief that our actions have consequences in the next life
Samsara	The cycle of birth, life, death and rebirth
Moksha	For Hindus, the escape from Samsara a reunion with Brahman (God)
Nirvana	For Buddhists, the escape from Samsara through achieving Enlightenment

Why do people believe in an afterlife?

There are lots of different beliefs about what happens after we die. Some people think that there is no afterlife and when we die, that is the end, however many others believe that our existence continues after the death of our bodies. Some people believe we go to Heaven or Hell, others believe we are reincarnated into another life, and some believe we continue to exist as ghosts or spirits.

There are many different reasons that people may believe that there is an afterlife, including:

- Many people claim to have experienced ghosts/spirits
- Religious texts and teachings state that there is an afterlife
- Some people claim to be able to remember past lives
- Some people claim to have had near-death experiences
- There must be more to this life than just the short physical existence that we have
- Belief in an afterlife helps people to feel better about the idea of death

Scan the QR code to watch Norwegian musician TorbjØrn Dyrud discuss why he finds the idea of near-death experiences comforting (Please note the video contains discussion of cancer and chemotherapy).

As you watch think about the following questions:

- Are accounts of near-death experiences proof of an afterlife?
- Could there be another explanation for the phenomenon?
- Does belief in an afterlife only exist to make people less scared about death?

Christian beliefs about life after death

For Christians, Jesus's resurrection proves that there is an afterlife, and the sacrifice of his death makes it possible for people to access this afterlife through their relationship with him. ('*For God so loved the world that he gave his only son, that whoever believes in him shall not perish, but have eternal life*' John 3:16)

Christians believe that if someone believes in Jesus and lives a good life then they will be rewarded with an eternal life in Heaven. For many Christians, Heaven is not necessarily a physical place, rather it is a state of being united with God.

Belief in Heaven allows Christians to not fear death since they believe that it is not the end and they will be with God in the afterlife. It can also provide them with comfort when someone dies since they may believe that person is with God and they will be reunited with them in the future.

If someone does not lead a good life, or does not have a relationship with Jesus, many Christians believe that they will go to Hell after they die. Some Christians believe this is a literal place where people will be punished for their sins, however many Christians believe that if there is a Hell it is more metaphorical and is a state of separation from God.

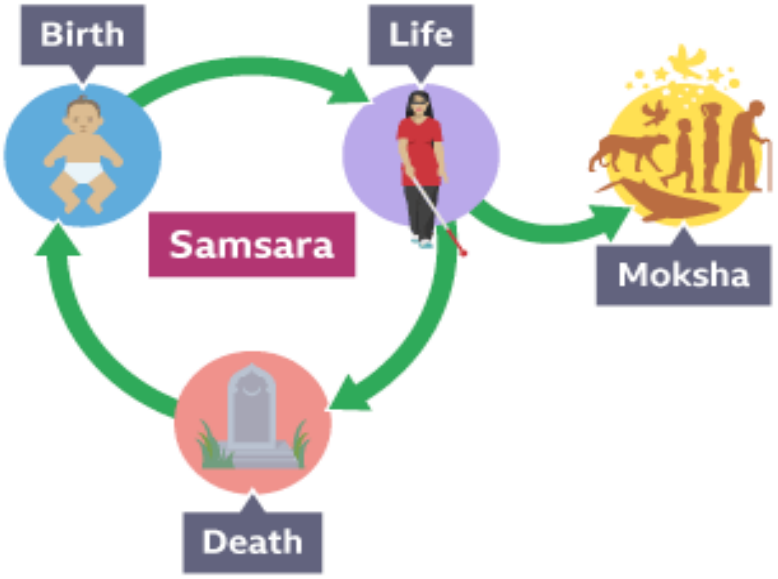
Some Christians do not accept the idea of Heaven since they do not believe that a loving God would punish people in this way, whereas others would argue that God is just and fair and it is therefore right that someone should face punishment for their actions as this ensures justice.

Religious Education – What happens after we die?

Muslim beliefs about life after death

Belief in life after death and the Day of Judgement is a fundamental belief for all Muslims meaning it has an important impact on their lives. Muslims believe that this life is a test and that their life after death is the most important life, therefore their actions on earth should help them to achieve a positive afterlife. For Muslims, because the Qur'an describes heaven and hell as physical places, this is what they believe they are, because they take the Qur'an literally as it is considered the word of Allah.

Muslims believe that when someone dies, they enter a state of barzakh. This is a period of waiting in the grave. At some point in the future, Allah will bring about the end of the world and all people will be resurrected from their graves to face the Day of Judgement. On this day, people will be judged based on their actions. If the good deeds they have done during their lifetime outweigh the bad, they will go to heaven. If the bad deeds outweigh the good, they will go to hell.



Reincarnation

Hindus, Buddhists and Sikhs believe in the cycle of Samsara: the cycle of birth, life, death and rebirth into a new life. When a person dies, their soul, or essence, is born again as another living thing. The actions that a person has carried out in their lifetime contribute towards their karma and it is a person's karma that determines what their next life will be. If someone has led a good life, there is more chance of them being reborn as a human with a good life. If someone has led a bad life, there is more chance of them being reborn as an animal (and therefore being unable to gain positive karma) or as a human with a difficult life.

The ultimate aim for followers of the dharmic faiths is to achieve escape from samsara. If someone lives a good enough life then it is believed to be possible to escape the need for reincarnation. For Hindus, this means moksha – returning to Brahman and for Sikhs this would be a return to Waheguru. For Buddhists, since they do not necessarily believe in an eternal god, achieving enlightenment and escaping samsara means their energy returns to the universe.

Spanish

Week 1 – Young people in action

Los derechos de los niños	
Tengo derecho a...	I have the right to...
la educación	education
la libertad de expresión	freedom of expression
un medio ambiente sano	a healthy environment
No puedo...	I cannot...
dar mi opinión	give my opinion
salir solo/a	go out alone
tengo que ganar dinero	I have to earn money
hay mucha violencia	there is a lot of violence
tengo que trabajar	I have to work
no es justo porque...	It isn't fair because...

Week 2 – Helping globally

¿Qué se debería hacer para proteger el medio ambiente?	
Para proteger el medio ambiente,	In order to protect the environment,
Se debería...	You/We should...
ahorrar energía en casa	save energy at home
apagar la luz	turn off the light
conservar el agua	save water
ir en bici(cleta)	go by bike
reciclar el papel / el plástico / el vidrio	recycle paper / plastic / glass
No se debería...	You/We shouldn't...
tirar la basura al suelo	throw rubbish on the ground
usar bolsas de plástico	use plastic bags

Week 3 – Around town

¿Cómo era tu ciudad antes?	
Antes...	Before...
Ahora...	Now...
es / era	it is / was + characteristic
está / estaba	it is / was + condition / location
hay / había	there is / there was
tiene / tenía	it has / had
peligroso	dangerous
sucio	dirty
limpio	clean
basura	rubbish
barrio	neighbourhood
cosas para los jóvenes	things for young people
red de transporte	public transport network

Week 4 – Developing our writing

Making your work stand out	
más... (=que)	more... (than)
menos... (que)	less... (than)
lo mejor	the best thing
lo peor	the worst thing
a partir de ahora	from now on
además	furthermore
aunque	although
no obstante	however
nunca	never
ni...ni	neither...nor
por eso	because of this
según	according to
por un lado...por otro lado...	on the one hand... on the other hand...
para	in order to / for

Week 5 – Holiday plans

Las vacaciones	
la semana que viene	next week
durante las vacaciones	during the holidays
primero	first
luego	then
después	after that
voy a	I'm going to
va a	he / she is going to
vamos a	we are going to
ir	to go
viajar	to travel
quedarse	to stay
iré	I will go
visitaré	I will visit

Week 6 – Revision – the autumn term

Words you may have forgotten	
mayor que	older than
menor que	younger than
llevarse bien / mal	to get on well / badly
me llevo	I get on
nos llevamos	we get on
apoyar	to support
conocer	to meet/ know
dar consejos	to give advice
hacer reír	to make laugh
cuidar	to look after
juzgar	to judge
divertirse	to have fun
casarse	to get married
pelearse	to fight
parecerse	to look like

Spanish

Week 7 – Revision – the spring term

Words you may have forgotten	
a pie	on foot
empezar	to start
acabar / terminar	to finish
asignatura	subject
el recreo	break time
el comercio	business studies
el dibujo	art
los idiomas	languages
duro	hard / difficult
fácil	easy
el edificio	a building
un alumno	a pupil
el comportamiento	behaviour
las reglas	the rules
no se permite	it is not permitted
amenazar	threaten
grabar	record

Week 8 – Independent study

Personalised revision list	
During your revision lessons this week, compile a list of words that you need to revise ahead of the test	

Week 9 – Independent study

Personalised revision list	
During your revision lessons this week, compile a list of words that you need to revise ahead of the test	

Week 10 - Phonics

Phonics – Sound Symbol Correspondences
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

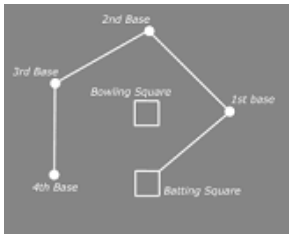
Week 11 – Visiting a Spanish town

¿Qué vamos a hacer?	
Vamos a ...	We are going to ...
Hay que...	You/We have to...
Tenemos que...	We have to...
buscar	look for
coger	take / catch
comer	eat
comprar	buy
guardar	keep
ver	see
un cuadro	a painting
la entrada	the ticket
el parque más grande	the biggest park
la tienda más famosa	the most famous shop

Week 12 – Holiday planss

Durante las vacaciones	
primero	first
luego	then
después	afterwards
más tarde	later
finalmente	finally
(o) tal vez	(or) perhaps
donde	where
Si...	if...
hace buen/mal tiempo	it's good / bad weather
hace frío/ sol/ viento	it's cold / sunny / windy
llueve	it's raining
iré	I will go
compraré recuerdos	I will buy souvenirs
daré una vuelta	I will go for a walk
haré muchas cosas	I will do lots of things

Rounders



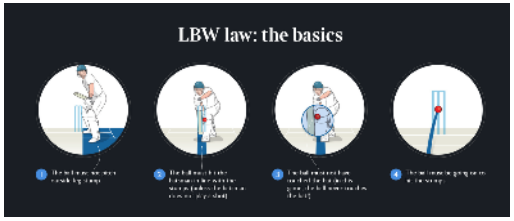
Key Knowledge and Skills

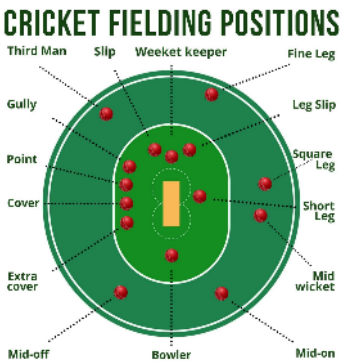
Post running – improving the ability to run effectively between posts to ensure you remain in and safe as a runner. Getting to the post fast enough without overrunning the post so that you must continue.
Obstruction - As a post fielder, you must remain within the striking diamond. Leaving the diamond and interfering with a runner will result in a penalty half-rounder being awarded to the opposition.
Tactical development (batting)
Tactical development (bowling)

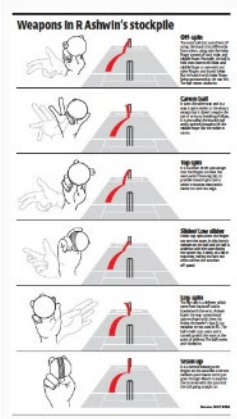
Rules, Techniques and Strategies

- Bunt to advance - used by the batter to make contact with the ball lightly, without attempting a full swing. The goal is to direct the ball into a specific area (usually toward the infield or a weak spot in the defense) to allow the batter to advance to a base, usually while minimizing the risk of getting out.
- Variation - refers to the use of different strategies, techniques, and tactics that can be employed by both batters and fielders to outsmart the opposition and gain an advantage.
- Wind-up - in Rounders refers to the motion a bowler makes before delivering the ball to the batter. It's the initial phase of the bowling action, during which the bowler gathers momentum and prepares to release the ball.
- Switching roles - players may switch roles during the course of a match. This can happen due to various reasons such as strategy, player substitutions, or when teams rotate through different phases of the game.

Cricket







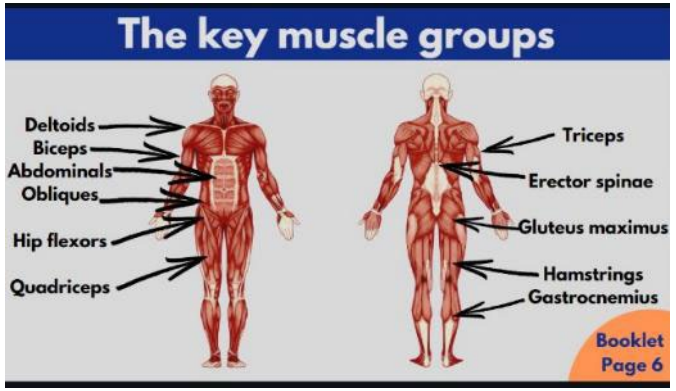
Key Knowledge and Skills

Attacking the ball – when fielding, moving as fast as possible towards the ball to collect it and return it to the stumps as fast as possible to try and run out an opponent.
Throwing to the correct end – communicating with your team to return the ball to the bowler/wicketkeeper's end to run out opponents. This decision being made depending on the distance the batters are away from the crease and how fast they will get there.
Leg spin bowling - bowling method that consists of rotating the wrist in an anti-clockwise direction, where the ball will spin from right to left from the bowler's view.
Off spin bowling - bowling method that consists of rotating the wrist clockwise where the ball will spin from left to right from the bowler's view.
Backfoot drive - a shot played on the backfoot but hit along the ground in a straight direction. Played from shorter pitched deliveries.
Lofted drives – an aggressive, attacking shot looking to lift the ball over fielders that are in close, or even trying to hit the ball for 6.
Wicketkeeping - the role of the player who stands behind the stumps next to the batter in case they miss the ball when they try to hit it.

Rules, Techniques and Strategies

LBW – stands for Leg Before Wicket, a form of dismissal when batting. The ball must pitch no further wide than the leg stump on the leg side, but as far on the offside as you would like. The ball must then not hit the bat and hit the pads of the batter in line with the stumps. If the ball were to have carried on past the pad, it needs to have been hitting the stumps in order to have been given out.
Bowling variations – choosing which type of delivery to bowl depending on your strengths, your opponent's weaknesses and where your fielders are placed.
Field manipulation – as a batter, can you select your shot placement depending on the placement of the opposition's fielders. This will then make the other team move their field and open new gaps for you to hit into and score runs in.

HRE



Fitness Terminology

Muscular Endurance – The ability of a muscle or group of muscles to sustain repeated contractions or continue to perform a movement over time.
Agility – The ability to change direction quickly and control body movements.
Power – The ability to exert maximum force in the shortest amount of time (combination of strength and speed).
Circuit Training – A combination of different exercise stations to work various muscle groups, often in a set sequence.
HIIT (High-Intensity Interval Training) – Short bursts of intense exercise followed by periods of rest or lower intensity.
Plyometrics – Exercises involving explosive movements like jumping to increase power.
Metabolism – The process by which the body converts food into energy.
FITT Principle – A guideline for exercise programs, standing for Frequency, Intensity, Time, and Type.

Health Terminology

Quadriceps (Quads) – The large muscles on the front of the thigh.
Hamstrings – The muscles on the back of the thigh.
Biceps – The muscles on the front of the upper arm.
Triceps – The muscles on the back of the upper arm.
Gluteals (Glutes) – The muscles in the buttocks.
Abdominals (Abs) – The muscles of the stomach region.
Calves – The muscles at the back of the lower leg.

Softball

Rules, Techniques and Strategies

Stealing bases - occurs when a baserunner advances by taking a base to which he isn't entitled.
Full Count - The number of balls and strikes is called the "count". The number of balls is always given first, as 2 and 1, 2 and 2, and so on. A count of 3 and 2 is a "full count" since the next ball or strike will end the batter's turn at the plate unless the ball goes foul.
Intentional walk - occurs when the defending team elects to walk a batter on purpose, putting him on first base instead of letting him try to hit.
Base path - an imaginary line three (3) feet to either side of the path established by the runner.
Zone hitting - the volume of space above home plate and between the batter's knees and the midpoint of their torso.

Key Knowledge and Skills

Bowling variations – choosing which type of delivery to bowl depending on your strengths, your opponent's weaknesses and where your fielders are placed.
Field manipulation – as a batter, can you select your shot placement depending on the placement of the opposition's fielders. This will then make the other team move their field and open new gaps for you to hit into and score runs in.

Athletics

Key Knowledge

Hurdles: Events like the 110m (men) or 100m (women) hurdles.
High Jump: Athlete jumps over a bar set at a certain height
Javelin Throw: Throwing a spear-like object as far as possible.
Stride Length and Frequency: Key for sprinting and middle-distance running.
Start Techniques: Blocks for sprinters, pacing for distance runners.
Throwing Technique: Stance, grip, and release for throwing events
Aerobic and Anaerobic: Types of exercise related to the presence or absence of oxygen in muscle activity.

How to train beyond PE

Strength Training: Improves speed and power for sprints and throws.
Endurance Training: Helps with the longer distances and races.
Flexibility: Improves performance in all events, especially jumping.
Speed Work: Sprints and interval training for improving race times.
Recovery: Importance of rest, hydration, and nutrition for optimal performance.

Notes Pages

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