Year 8
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	Reading	Sparx Maths XP	Reading	Sparx Maths XP	Reading
Subject 1	Geography	History	Science	Maths	Spanish
Subject 2	RE	Art	Food	English	Computing
	Mon B	**Tue B**	**Wed B**	**Thu B**	**Fri B**
Core Activity	Sparx Maths XP	Reading	Sparx Maths XP	Reading	Sparx Maths XP
Subject 1	Geography	Maths	Science	Spanish	English
Subject 2	Music	History	Drama	DT	

Expected time home learning will take:

Activity	Time
Reading	30 mins each session
Sparx Maths	1 hour a week
All other activities	15 mins each
Sparx XP	30 mins each session

My Computer passwords:

Platform	Username	Password
School System		
Sparx Maths		
Educake		
Memrise		

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	8X1	INSET DAY	Spanish		Art	DT	Drama			RE		
	8X2			Food	Music		DT			History		
	8X3					Drama			Food	Geography		
	8X4		Spanish							Drama	RE	English
	8Y1		Music								History	
	8Y2			Computing		Food						
	8Y3						Music		Science	Food		Spanish
	8Y4		DT				Art		Computing			Spanish
2	8X1							Music	History	Science		English
	8X2			RE								English
	8X3					Music		DT	Art	Science		RE
	8X4		Food									
	8Y1		English		DT					Geography		
	8Y2		Art							Music		Spanish
	8Y3		DT									
	8Y4				Drama			Food		Geography		
3	8X1										Food	Geography
	8X2											
	8X3		Spanish			Computing						English
	8X4			Music	DT		Computing					
	8Y1			Mathematics	Computing							Food
	8Y2		RE	Mathematics		Drama					Geography	
	8Y3			Mathematics				Art	Geography		Drama	
	8Y4		English		Mathematics			RE			History	
4	8X1			Mathematics						Computing		
	8X2		Drama		Mathematics			Art	Geography	Science	Computing	Spanish
	8X3			Mathematics					History			
	8X4		Art		Mathematics			History	Geography	Science		
	8Y1		Spanish		Art	RE			Science		Drama	
	8Y2					DT				Science	History	English
	8Y3			RE						Computing	History	English
	8Y4									Science		Music

Summative Assessment Scores

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.

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 write a 'What, How, Zoom Why' paragraph of analysis.				
I know the key conventions of the dystopian genre.				
I understand and can recall key parts of the plot of 'The Giver'.				
I understand the key characters and the relationships between them.				
I can write about the character of Jonas, supporting my ideas with evidence and analysis.				
I can write about the character of The Giver, supporting my ideas with evidence and analysis.				
I can analyse the setting of the novella, supporting my ideas with evidence and analysis.				
I can analyse how Lowry presents key themes.				
I understand the conventions of dystopian writing.				
I can use a range of vocabulary in my own creative writing.				
I can use structural devices to link my ideas together and ensure my writing is coherent.				
I can use a range of punctuation marks accurately in my creative writing.				

Maths

Key Ideas	Sparx Code	S	O	R	T
What are squared numbers, cubed numbers, and powers of 2?	M135				
I can simplify indices	M608				
I can use fraction powers	U985				
I can use negative powers	M135				
I can use rules of indices with positive powers	M608				
I can read and plot coordinates	M618				
I can find the midpoint of a line segment	M622				
I can read and plot horizontal and vertical lines	M797				
I can plot straight line graphs in the form y=mx+c	M932				
I can find the equation of a straight line	M544				
I can find the gradient of a straight line	U477				
I can find the exterior angles in a polygon	M653				
What are squared numbers, cubed numbers, and powers of 2?	M135				
I can plot an interpret conversion graphs	M771				
I can draw and interpret distance-time graphs	M581, M551				
I can draw and interpret velocity-time graphs	U937				
I know the basic angle facts-angles around a point, vertically opposite angles, angles on a straight line and angles in a triangle	M818				
I know the angles facts in parallel lines- corresponding, alternate and co-interior	M606				
I know the properties of quadrilaterals, including their angles	M276				
I can identify polygons	M276				
I know the difference between a regular and irregular polygon					
I can find the interior angles of polygons	M653				

Personal Learning Checklists

Science

Key Ideas	S	O	R	T
I can describe the different pathway that current takes in series and parallel circuits.				
I can draw series and parallel circuits using symbol components.				
I can define current				
I can define potential difference				
I can define resistance				
I can calculate potential difference using the equation V=I x R				

Science

Key Ideas	S	O	R	T
I can calculate gravitational potential energy				
I can calculate kinetic energy				
I can compare conduction, convection and radiation				
I can identify how waves travel on the electromagnetic spectrum				
I can compare conduction, convection and radiation				
I can identify how waves travel on the electromagnetic spectrum				
I can compare conduction, convection and radiation				
I can identify how waves travel on the electromagnetic spectrum				

Personal Learning Checklists

Art

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

Computing

Key Ideas	S	O	R	T
I know how to run code using the Python				
I can write Python programs which use sequence				
I can describe what sequence means in Computing.				
I can write Python programs which use selection				
I can describe what selection means in computing.				
I can create flow diagrams of code using the correct symbols for input, output, process and selection.				
I can use comments in my code to explain what is happening.				
I know the definition of an algorithm, variable and the purpose of testing.				
I can design and write a game in Python				

Design Technology

Key Ideas	S	O	R	T
I can recall and define the tier three vocabulary in this Unit				
I can select material combinations that are aesthetically pleasing				
I can create a design on paper				
I can use 2D Design to create a design				
I can use hand tools safely and with precision				
I can use a laser cutting machine to accurately produce my components				
I can join materials using an appropriate method				
I can evaluate the finish of my work and link this to how precisely I have used tools				

Personal Learning Checklists

Drama

Key Ideas	S	O	R	T
I can identify the main features of different types of theatre - Ancient Greek, melodrama, Commedia Dell'Arte				
I can use exaggerated physical and vocal skills to characterise stock characters				
I can structure a performance effectively and apply dramatic techniques to good effect				
I can perform with confidence and stay in role				

Food

Key Ideas	S	O	R	T
I can explain how to thicken a white sauce using gelatinisation				
I know how to remove lumps from a white sauce				
I can explain the four conditions yeast needs to be activated				
I understand the importance of kneading bread				
I can give examples of bread from different cultures				
I can explain the importance of presentation				

Geography

Key Ideas	S	O	R	T
Define key terms and give examples of case studies				
Explain the impacts of the UK heat wave				
Explain the causes of the Greece wildfires				
Explain the distribution of tropical storms worldwide				
Name the 3 types of tropical storms				
Explain the stages in the formation of a tropical storm				
Explain the causes of hurricane Katrina				
Explain the effects of hurricane Katrina				

Personal Learning Checklists

Geography

Key Ideas	S	O	R	T
Define key terms and give examples of case studies				
Explain how plants adapt to hot desert climates				
Explain the four main challenges facing hot deserts				
Describe the polar biome physical characteristics				
Explain how plants adapt to a cold desert environment				
Explain how animals adapt to a cold desert environment				
Describe the strategies used to protect fragile desert biomes				

History

Key Ideas	S	O	R	T
I can identify examples of anti-Semitism before Hitler and the Nazis				
I can explain how the Nazis escalated the treatment of groups, especially the Jewish people in Germany				
I can explain why the Holocaust is significant				
I can give examples of groups in Britain who experienced prejudice				
I can state how treatment of certain groups in Britain changed				
I can explain why the treatment of certain groups in Britain changed				
I can make supported judgements about my enquiry questions				

Music

Key Ideas	S	O	R	T
I am able to identify leitmotifs in piece of film music.				
I am able to identify whether a piece of film music is diegetic or non-diegetic.				
I am able to use a DAW (digital audio workstation) effectively to create a piece of film music.				
I understand some of the key film composers that have been influential.				
I am able to use the musical elements effectively to alter the mood of the film music appropriately.				
I am able to understand how to use samples and loops to enhance and create sound effects.				
I understand what a click track is and how to use it to keep me in time.				
I can use my keyboard skills to record in successful MIDI.				

Personal Learning Checklists

PSHE

Key Ideas	S	O	R	T
I can describe and explain what might affect the idea of community				
I can describe what we mean by stereotypes				
I can explain why diversity is important				
I can explain what we mean by freedom of speech				
I can explain why freedom of speech is important				
I can describe feelings you could experience during disagreements and conflict				
I can explain how to manage conflicts constructively to make them beneficial				
I can outline messages about positive communication				
I can identify bullying in all forms and the impact it can have on people involved				
I can describe skills and strategies to prevent bullying				
I can explain how and where to communicate concerns about friendships and bullying, including online.				

Religious Education

Key Ideas	S	O	R	T
I can explain how symbolism is used in religious art				
I can outline why Cornwall is considered to be a spiritual place				
I can explain how religious beliefs in Cornwall have evolved				
I can outline some of the ways that Cornwall has inspired artists				
I can outline some different spiritual Cornish traditions				
I can explain how symbolism is used in religious art				

Spanish

Key Ideas	S	O	R	T
I understand the rules for correct pronunciation				
I can talk / write about my usual and past activities				
I can express and justify my opinion				
I can talk / write about my usual & past holidays				
I can name and describe different aspects of film, tv and social media				
I know how to form regular verbs in the present tense				
I know how to form regular verbs in the preterite tense				
I know how to make comparisons				
I can give and understand directions				
I understand the rules for correct pronunciation				

English – The Giver

1. Plot

1a = Chapter 1 Jonas, the novel's 11-year-old protagonist, is nervous about the upcoming Ceremony of Twelve. Jonas's family engages in the nightly "telling of feelings."

1b = Chapter 2 Jonas's father tries to calm his fears, telling him that people are rarely disappointed in their Assignments. They discuss ceremonies. His father reveals he knows the name of a baby he has become concerned about in his role of nurturer: Gabriel.

1c = Chapter 3 Jonas's father brings home Gabriel, who has pale eyes. Jonas privately recalls when the Speaker made an announcement directed at him, as a consequence of him taking an apple that he thought appeared to change in some way as he threw it back and forth to a friend.

1d = Chapter 4 Jonas joins Asher and their friend Fiona at the House of the Old, where they do their volunteer hours. He bathes an old woman named Larissa, who talks about her friend Roberto, who has been released.

1e = Chapter 5 Jonas shares his dream about Fiona. His parents tell him he has begun to experience stirrings and give him a pill, which he will now take daily.

1f = Chapter 6 Gabriel is given one more year of nurturing. New children are given to families during a ceremony, with names of people who have been released. The elevens worry about their assignments.

1g = Chapter 7 Assignments are given out but Jonas' name is skipped and he is afraid.

1h = Chapter 8 Jonas, she says, has been selected to be the next Receiver of Memory – a position the committee has been waiting to fill for some time. He is told he will experience pain in this role and that he has the Capacity to See Beyond.

1i = Chapter 9 Jonas feels left out and strange as the Twelves discuss their assignments. Jonas' father reveals the last Receiver's name is Not-to-be-Spoken – a great dishonour. Jonas finds out that he is able to ask any question he wishes and is able to lie.

1j = Chapter 10 Jonas meets the Receiver, who tells him that he is going to use his last strength to pass the memories of the entire world onto Jonas.

1k = Chapter 11 The Receiver transmits memories of sledging in snow, sunshine and pain.

1l = Chapter 12 Jonas is unable to reveal anything about his assignment to his family or friends. He sees Fiona's hair change in the same way the apple did – the Giver tells him he has seen a memory of the colour red.

1m = Chapter 13 Jonas is angry that colour has been removed from the world. The Giver tells Jonas that he wishes the Committee of Elders would ask for his wisdom more often. One day Jonas arrives at the Giver's room to find him doubled over in pain.

1n = Chapter 14 Jonas is given the memory of breaking his leg and other painful memories. The Giver says this is to give him wisdom. Jonas wonders where people who are released go. He secretly transmits a positive memory to Gabriel to calm him.

1o = Chapter 15 Jonas is given a terribly painful memory of being an injured solider.

1p = Chapter 16 To try to make amends for the war memory, the Giver gives happy memories of things that no longer exist in the community: birthday parties, camping and grandparents. He tells him this is family and love. Jonas stops taking the pill for his stirrings.

1q = Chapter 17 An unscheduled holiday is announced. Jonas wonders what Elsewhere is like. He realises that he loves Asher and Fiona but knows sadly they can never love him.

1r = Chapter 18 The Giver tells Jonas about Rosemary – the previous receiver – who applied for release without telling the Giver, and how her memories were released to the community, who couldn't cope with them.

1s = Chapter 19 Jonas explains that his interest in release stems from the fact that his father is releasing a twin that morning and is told he can watch the release. He is horrified to see his father inject the lightest twin baby and send it down a chute. He realises that to be released means to be killed.

1t = Chapter 20 Jonas is too upset to go home. The Giver tells him it is the same process to release the Old and criminals. Jonas demands that something is done to stop the community living in ignorance. The Giver and Jonas hatch a plan: Jonas will escape from the community, so that all of his memories will return to the people of the community. The Giver will stay to help people cope with the memories.

1u = Chapter 21 After finding out that Gabriel is to be released, Jonas steals his father's bike and child seat. He rides out of the community. They avoid the planes searching for them.

1v = Chapter 22 Seeing birds, waterfalls and flowers excites Jonas but he is worried they will starve.

1w = Chapter 23 It snows and Jonas is forced to abandon the bike. Jonas and Gabriel are cold and exhausted. They find a hill – the one from Jonas' first memory. At the bottom of the hill, Jonas sees rooms full of coloured lights and singing.

English

1. Dystopian fiction (genre)

2a = Conventions of a Dystopia:

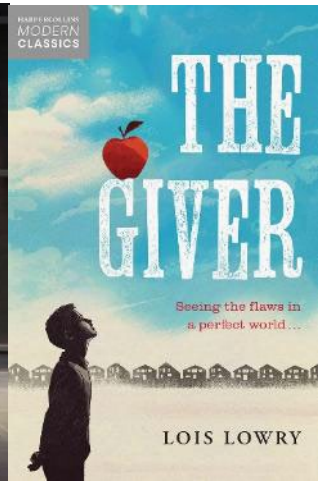
Propaganda is used to control the citizens of society.
Information, independent thought and freedom are restricted.
A leader/concept is worshipped by the citizens of the society.
Citizens have a fear of the outside world.
Citizens live in a dehumanized state.
Citizens conform to uniform expectations. Individuality and dissent are bad because personal freedoms are limited.
The society is an illusion of a perfect utopian world.

2b = A Dystopian Protagonist:

Often feels trapped and is struggling to escape.
Questions the existing social and political systems and attempts to rebel but in a way that is still morally acceptable
Believes or feels that something is terribly wrong with the society in which he or she lives.
Lacks the selfish nature of those in charge.

2c = Typical settings of a Dystopia:

Futuristic, industrial cities
Destroyed natural habitat with little connection to nature
High levels of surveillance
Environments and weather that creates a strong sense of oppression or constraint.



3. Vocabulary

3a = dystopia (noun) A very bad or unfair society in which there is a lot of suffering, especially an imaginary society in the future.
3b = utopia (noun) A perfect society in which people work well with each other and are happy.
3c = disposition (noun) The particular type of character that a person naturally has
3d = placid (adjective) Having a calm appearance or character.
3e = reprieve (noun) An official order that stops or delays the punishment, especially by death, of a prisoner.
3f = assuage (adverb) To make unpleasant feelings less strong.
3g = transgress (verb) To break a law or moral rule.
3h = infringe (verb) To break a rule or law.
3i = prohibit (verb) To refuse to allow something.
3j = shelter (verb) To give protection from weather, danger or attack.
3k = cocoon (noun) The covering made of that surrounds and protects insects during the pupa stage as they develop into adult form OR a safe, warm place.
3l = admonish (verb) To tell someone they have done something wrong.

4. Subject vocabulary

4a = language (noun)
Words or methods (techniques) used by writers to present their meanings or create effects.
4b = structure (noun) The way the writer has organized their writing.
4c = foreshadowing (noun) An indication or hint of what is to come later in the story.
4d = imagery (noun) The use of language to create vivid pictures in the readers' minds.
4e = connotations (noun) A feeling or idea that is suggested by a particular word.
4f = metaphor (noun) Comparing one thing to another directly – as if one thing is another – to highlight their similarities.
4g = simile (noun) Comparing one thing to another using the words 'like' or 'as', to highlight their similarities.
4h = symbolism (noun) The use of characters, events or ideas to represent something broader
4i = euphemism (noun) A mild or indirect word or expression used for one thought to be too harsh or blunt when referring to something unpleasant or embarrassing.
4j = irony (noun) A situation in which something which was intended to have a particular result has the opposite or a very different result.

Year 8 Maths Knowledge Organiser Learning Cycle 3

Key word	Definition
Power	Number of times a number is multiplied by itself
Base	The number to be raised to a power
Index	The exponent, power or order. The small number placed at the upper right of a base number to show the power
Cube	Index or power of 3
Square	Index or power of 2
Root	The inverse (opposite) of squaring
Power of Two	A number calculated by the repeated multiplication of the base number 2
Y-Intercept	Where a graph intercepts (cuts through) the y axis
X-Intercept	Where a graph intercepts (cuts through) the x axis
Quadratic Graph	A graph that's equation contains a squared term, the graph itself takes the shape of a u or n.
Parabola	The graph of a quadratic equation
Root	Solutions to a graph or equation where the graph or equation is set equal to 0
Turning Point	A point on a graph where the gradient is 0
Gradient	A measure of how steep a line is
Parallel	Lines which have the same gradient and are always the same distance apart.
Perpendicular	When lines meet at right angles
Scalene	A type of triangle with all 3 sides and all 3 angles different sizes.
Isosceles	A type of triangle that has 2 equal sides and 2 equal angles.
Equilateral	A type of triangle with all 3 sides the same and all 3 angles are 60^0.

Year 8 Maths Knowledge Organiser Learning Cycle 3

1 Linear Graphs

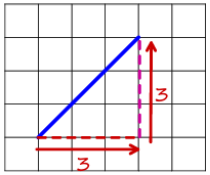
learn by heart

The equation of a straight line graph is given by the equation $y = mx + c$

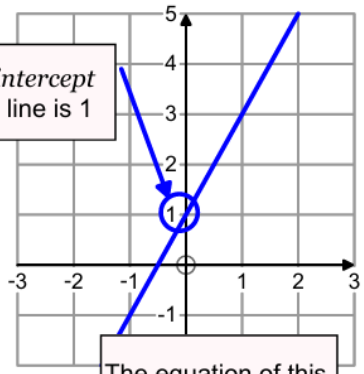
In the equation $y = \boldsymbol{m}x + c$, $\boldsymbol{m}$ is the **gradient** of the line. For example in the line $y = \mathbf{7}x - 2$, the gradient is 7. In the line $y = 3 + \mathbf{4}x$, the gradient is 4. It is the coefficient of x.

In the equation $y = mx + \boldsymbol{c}$, $\boldsymbol{c}$ is the point where the line crosses the y axis, called the ***y*-intercept.**

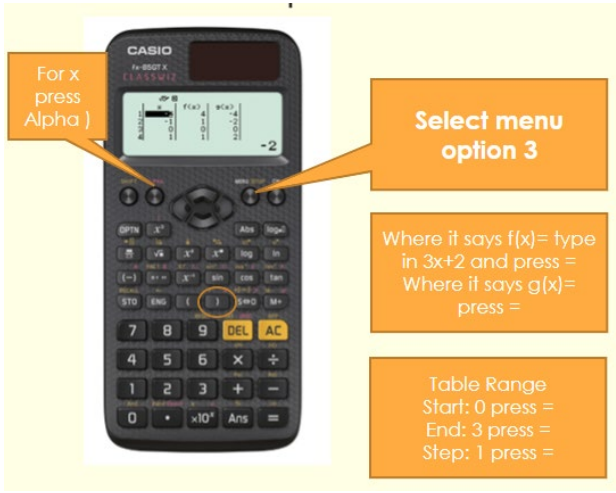
To calculate the gradient of sloping lines we work out $\frac{\text{vertical change}}{\text{horizontal change}}$.



Gradient = $\frac{3}{3} = 1$



2 Plotting Graphs on a Calculator



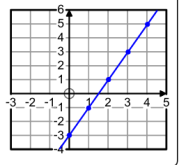
3 Plotting Linear Graphs

To plot y=2x-3 we create a table & choose some x coordinates. We then multiply the x by 2 and take away 3 to get the y coordinate.

example

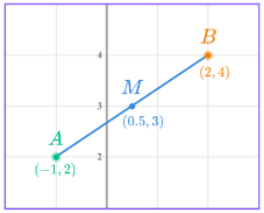
Plot the graph of $y = 2x - 3$

x	y
0	-3
1	-1
2	1
3	3
4	5



this is also the sequence with nth term $2n - 3$

4 Midpoint of a Line



To find the coordinates of the midpoint M, take the averages of the x and y coordinates of the endpoints A and B:

Average of the x coordinates is $\frac{-1+2}{2} = \frac{1}{2} = 0.5$

Average of the y coordinates is $\frac{2+4}{2} = \frac{6}{2} = 3$

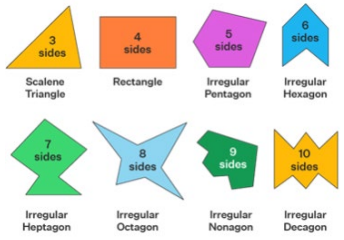
THIRD SPACE

Straight Line Graphs

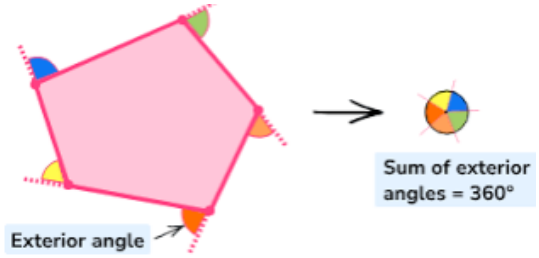
Year 8 Maths Knowledge Organiser Learning Cycle 3

1 What Is A Polygon?

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

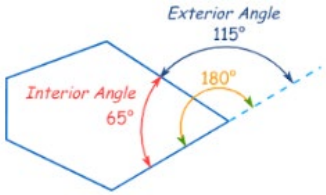


2 Exterior Angles In Polygons



3 Interior Angles of Polygons

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

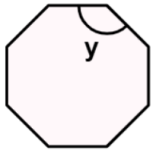


4 Interior Angles of Polygons

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

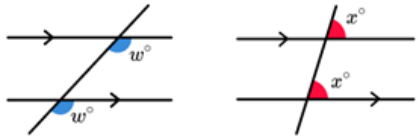
(n-2) × 180 where n is the number of sides.

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



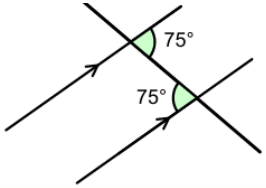
5 Corresponding Angles

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



6 Alternate Angles

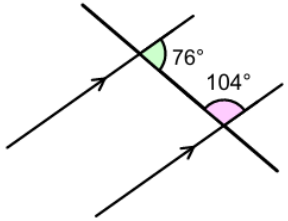
- Alternate angles are equal.



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.



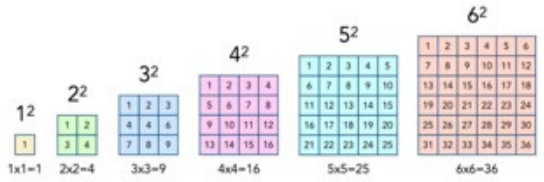
8 Vertically Opposite Angles

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

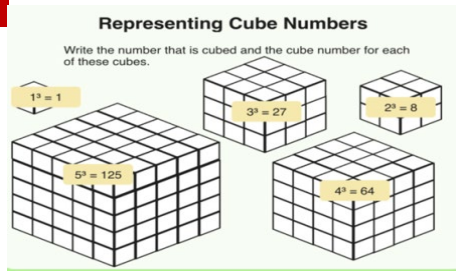
Parallel Lines & Polygons

Year 8 Maths Knowledge Organiser Learning Cycle 3

1 Square Numbers



2 Cube Numbers



3 Roots

Square Roots

eg. What is $\sqrt{16}$?

$4 \times 4 = 16$ so $\sqrt{16} = 4$

Cube Roots

eg. What is $\sqrt[3]{27}$?

$3 \times 3 \times 3 = 27$ so $\sqrt[3]{27} = 3$

4 Laws of Indices-Power Law

When a base is raised to more than one index, multiply the powers.

$(2^3)^5 = 2^{15}$

Laws of Indices-Power Zero

Any number to the power zero is 1.

Evaluate 2^0

$= 1$

5 Law of Indices - Multiplying

When multiplying with the same base, add the indices.

$3^{10} \times 3^2 = 3^{12}$

Write $7^{-2} \times 7^{-4}$ as a power of 7

$= 7^{-2 + -4} = 7^{-6}$

$a^m \times a^n = a^{m+n}$

6 Law of Indices - Dividing

When dividing with the same base, subtract the indices.

Write $\frac{2^4}{2^{-3}}$ as a single power $= 2^{4--3} = 2^7$

$a^m \div a^n = a^{m-n}$

7 Negative Indices

Any negative power tell us to take the reciprocal Of the base and then apply the power.

Evaluate $(5)^{-2}$

$= \left(\frac{1}{5}\right)^2 = \frac{1}{25}$

Evaluate $(3)^{-3}$

$3^3 = 27$, so $3^{-3} = \frac{1}{27}$

$a^{-m} = \frac{1}{a^m}$

8 Fractional Indices

If a number has a fractional power you will need to work out a **root** of the base number.

An index of $\frac{1}{2}$ is the equivalent of square rooting, so $9^{\frac{1}{2}} = \sqrt{9} = 3$

Evaluate $27^{\frac{2}{3}}$ $= (\sqrt[3]{27})^2$ $= 3^2$ $= 9$

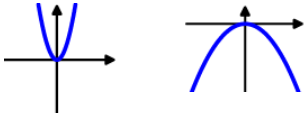
$x^{\frac{1}{n}} = \sqrt[n]{x}$

Indices, Powers, Roots

Year 8 Maths Knowledge Organiser Learning Cycle 3

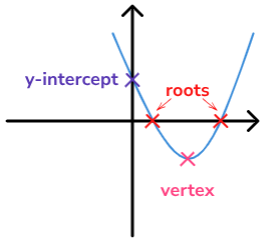
1 What Is A Quadratic Graph?

A quadratic graph is a graph that contains an x^2. For example $y=x^2$ or $y=2x^2+5x+7$ are both quadratic functions. When plotted they produce a curve.



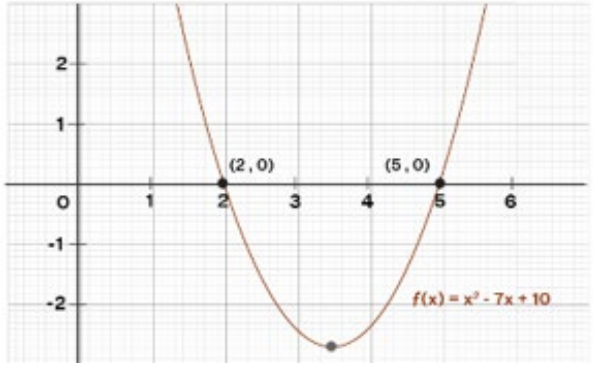
2 Quadratic Graph Vocabulary

- Y-intercept. Where the curve Crosses the y axis.
- Vertex. Minimum or maximum point.



3 Finding Roots of a Quadratic Graph

The roots are the x coordinates of where the curve crosses the x axis. On the graph below the roots are 2 and 5.



4 Plotting a Quadratic Graph

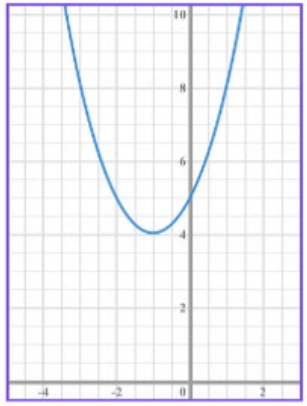
Plotting a Quadratic Graph involves Drawing a table of values for the x and y coordinates of a quadratic function, and then plotting these on a set of axes.

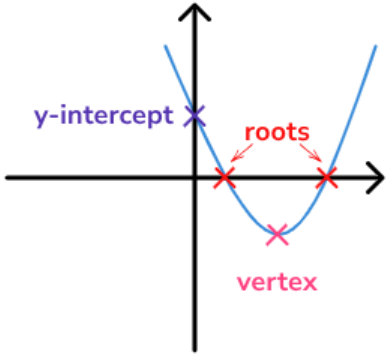
Example

$y = x^2 + 2x + 5$

x	-3	-2	-1	0	1	2
y	8	5	4	5	8	13

Substitute each x value into $x^2 + 2x + 5$ to get the corresponding y value.

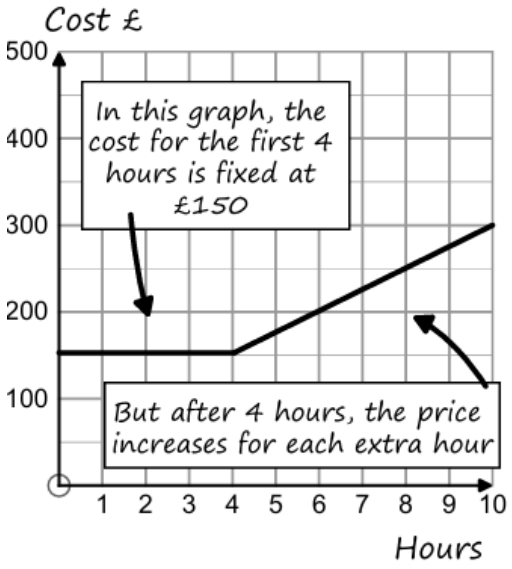




Quadratic Graphs

Year 8 Maths Knowledge Organiser Learning Cycle 3

1 Real Life Graphs?



We can use graphs to display real life relationships between variables.

The gradient of the graph may tell us about the rate and the y-intercept may show us an initial value

2 Distance Time Graphs

The graph shows Lucy's journey from home to the supermarket and back.

a) For how many minutes was Lucy at the supermarket?

09 15 → 09 25

10 minutes

Look for the horizontal part of the graph

b) How far is Lucy from her home at 09 30 ?

4 miles

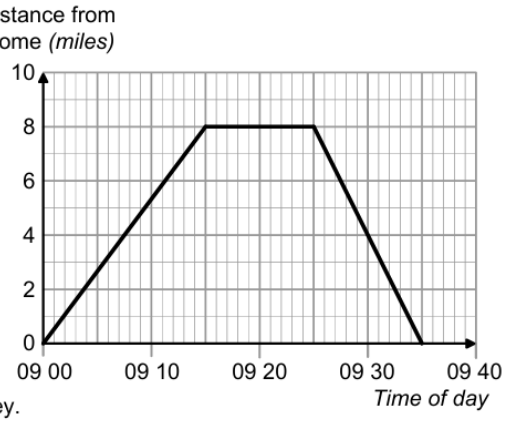
Read up from 09 30 and across to 4

c) Work out Lucy's speed, in mph, for the first 15 minutes of her journey.

15 mins = $\frac{1}{4}$ hour

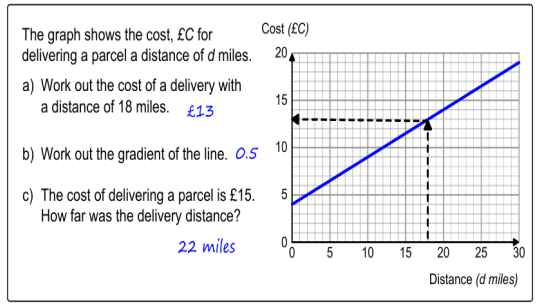
Speed = $8 \div \frac{1}{4}$ = 32 mph

Speed = Distance / Time

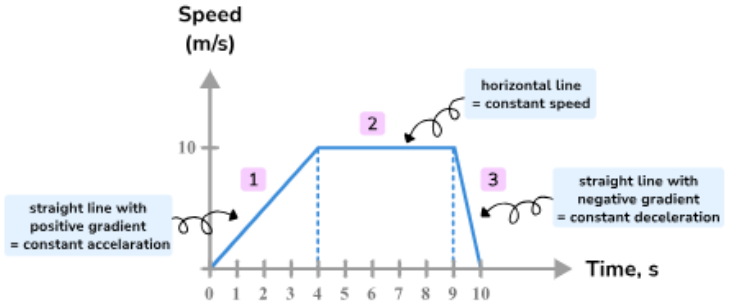


3 Conversion Graphs

- Straight line graph
- Show the relationship between two units
- Can be used to convert from unit to another



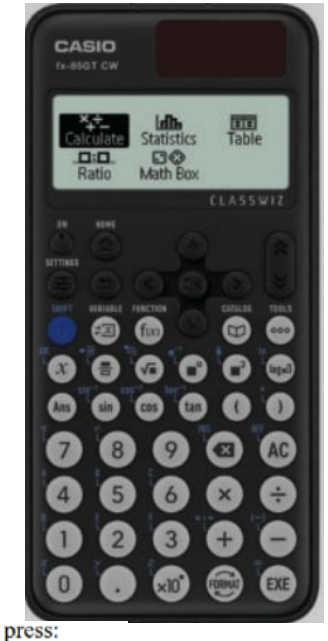
4 Speed-Time Graphs



Real Life Graphs

Year 8 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. Example

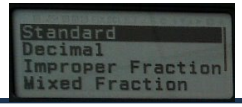
Enter $\frac{217}{15}$ and press EXE.

To see the result as a mixed number, press: FORMAT ▽ ▽ ▽ ▽ ▽ to select **Mixed Fraction** EXE

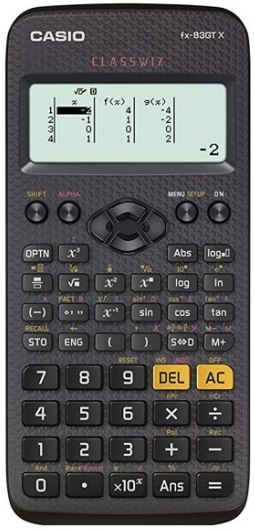
Fractions to Decimals

Use the format key to change to a decimal

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

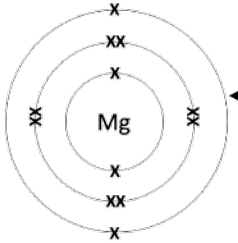
relative atomic mass
atomic symbol
name
atomic (proton) number

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

Non-Metals

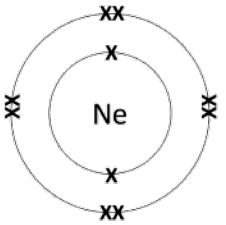
Transition Metals

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

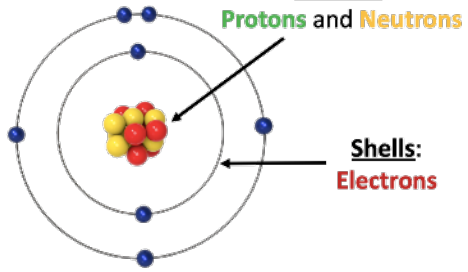


Magnesium (Mg) has **12 electrons** in total. It is in **group 2** so has 2 electrons in its **outer** shell. Mg's electronic configuration is 2,8,2.

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



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



Science – How science works

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

2. The Variables

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

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

Independent variable – the thing we change!

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

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

Variable | Example

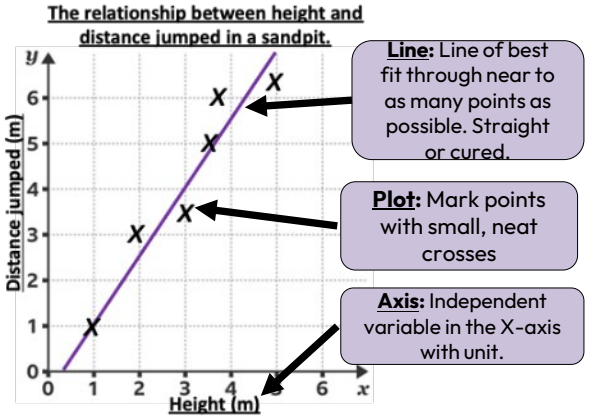
Control variables – I want **keep everything else the same**, e.g., the type of teabag, the volume of water (mL) used, the timer started at the same time, the same end point.

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

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

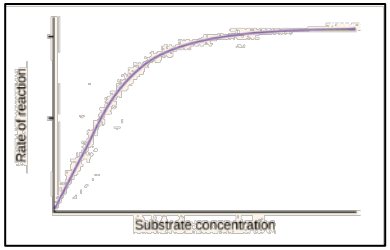
3. Graphs

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



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.

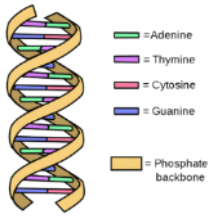
Science – Variation and evolution

1. Key Terms	Description
DNA	A molecule found in the nucleus of humans, containing genes which encode proteins for growth and development of organisms. Made up of base pairs A, C, T and G.
Mutation	A change in the base pair of a molecule of DNA. This might result in a change in the phenotype of an organism.
Phenotype	The physical characteristics of an organism.
Evolution	An unending process by which inherited characteristics within a population change over time through natural selection.
Speciation	Evolution through natural selection which results in the formation of a new species which population is fertile and able to produce fertile offspring.
Biodiversity	The variety of all living things in an ecosystem.
Classification	The arrangement of organisms into taxonomic groups: kingdom, phylum, class, order, family, genus, and species
Adaptation	A biological mechanism by which organisms adjusts to new environmental conditions.
Extinction	The reduction of a species to a population of zero.
Conservation	The protection and management of species and habitats (ecosystems) in a sustainable way.
Selective Breeding	Process by which humans use animal and plant breeding to selectively develop organisms with advantageous characteristics.
Random Sampling	Unpredictable technique where each member of a population is equally likely to be selected in sampling. This can be achieved through a random number generator which prevents bias.

Science – Variation and evolution

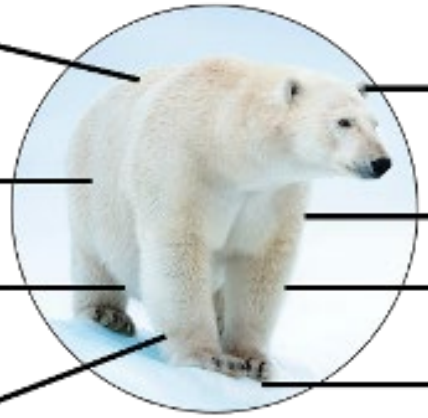
1. Mutations

A change in the base pair of a molecule of DNA. This might result in a change in the phenotype of an organism.



Adenine binds with Thymine,
Cytosine binds with Guanine.

2. Arctic and desert adaptations



Small surface area to volume (SA:V) ratio to conserve heat.

Thick layer of insulating **blubber** to conserve heat

Black skin to absorb more thermal energy from the sun.

Greasy coat with insulation properties

Small ears to decrease the surface area exposed to the cold (conserve thermal energy)

White fur for camouflage.

Translucent fur to allow sun's rays to penetrate to the skin.

Large feet to distribute the weight onto the ice and provide grip.

Thick/thin fur – thick for shade, thin for heat loss.

Ability to survive long periods **without water**.

Tolerate high body temperatures

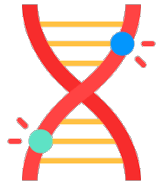
Large surface area to volume (SA:V) ratio to release heat.

Slit-like nostrils and eyelashes to keep sand out.

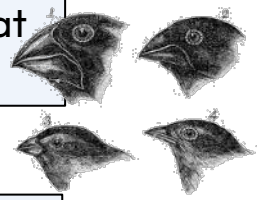
Large feet to distribute the weight onto the ice and provide grip.

3. Evolution by natural selection

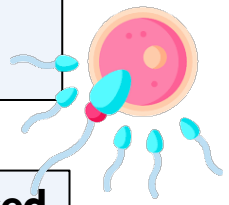
1. A **random DNA mutation** occurs in an individual, resulting in variation.



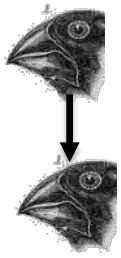
2. This mutation may provide an **advantageous characteristic** for that individual



3. The individual will be more likely to **survive** and **reproduce**



4. So that **allele** is more likely to be **passed onto** that individuals' **offspring**



5. The **frequency** of that allele **increases** in that population **over time**.

4. Further reading

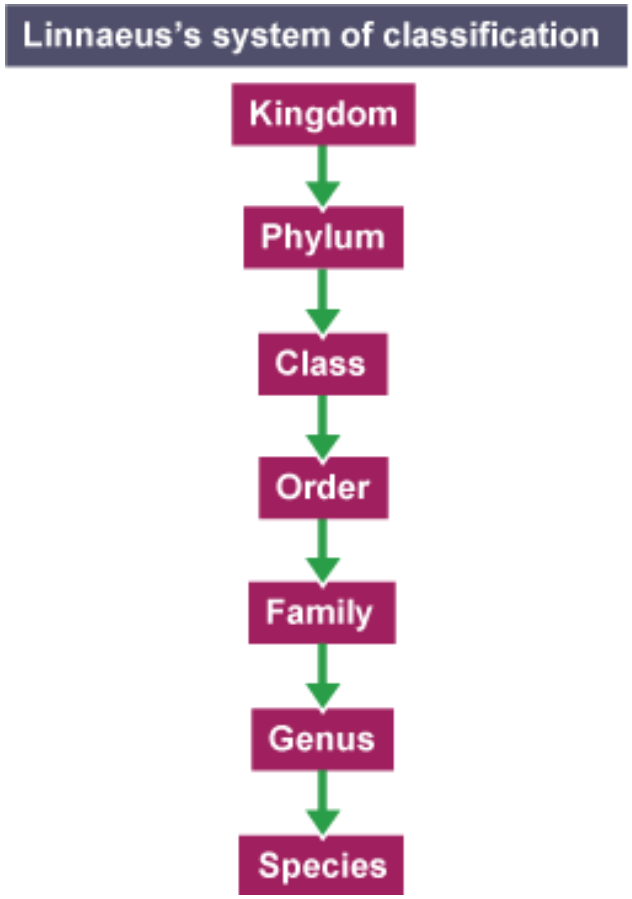
Evolution by Natural Selection

Adaptations and Competition

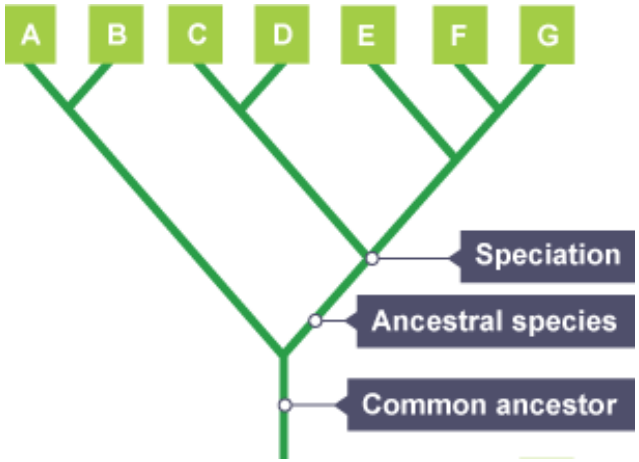
Science – Variation and evolution

4. Classification

Living organisms are classified into groups depending on their structure and characteristics. This system was developed in the eighteenth century by Carl Linnaeus.



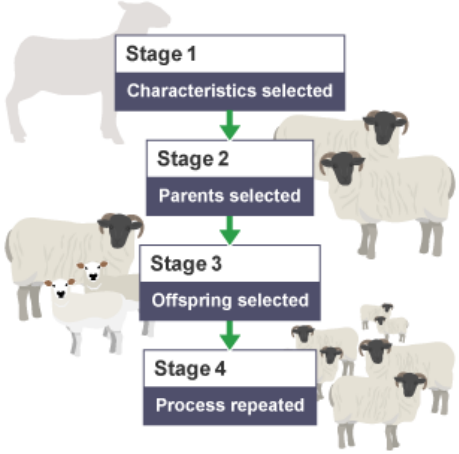
5. Evolution relationships



Evolutionary trees represent relationships between organisms. Branches show places where speciation has occurred (and a new species has evolved).

Here, species A and B share a recent common ancestor so species A is most similar to species B. C and D also share a common ancestor, though this is different from the ancestor of A and B. All 7 species share one common ancestor at the bottom of the tree in the distant past.

6. Selective breeding



1. Decide which characteristics are important enough to select e.g., pest resistance in plants, high milk production in animals.

2. Choose parents that show these characteristics from a mixed population.

3. Breed these parents. Choose the best offspring, with the desired characteristics, to produce the next generation.

4. Repeat the process continuously over many generations, until all offspring show the desired characteristics.

Caution! Selective breeding reduces genetic variation in a population which could cause severe problems like population extinction.

Further reading

Classification and Carl Linnaeus

Evolutionary Trees

Selective Breeding

Science – Variation and evolution

7. Extinction

- Extinction occurs when there are no remaining individuals of a species alive.
- Animals that have not adapted well to their environment are less likely to survive and reproduce than those that are well adapted.
- Extinction has a role in evolution as some species disappear. Others survive and continue to evolve.

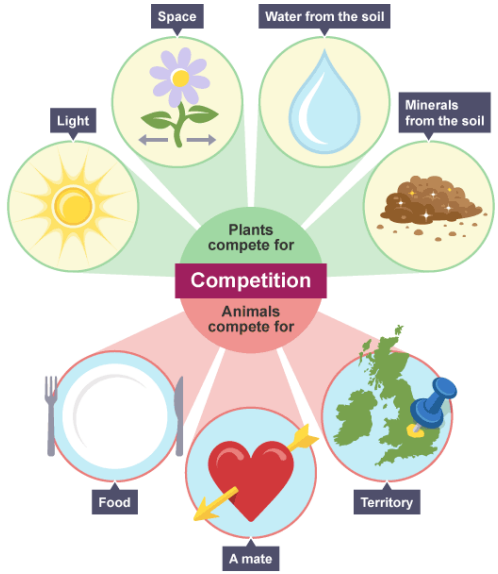
Causes of Extinction:

- new diseases
- new predators
- new, more successful competitors
- changes to the environment over geological time, such as climate change
- a single catastrophic event, such as a massive volcanic eruption or a collision between an asteroid and the Earth

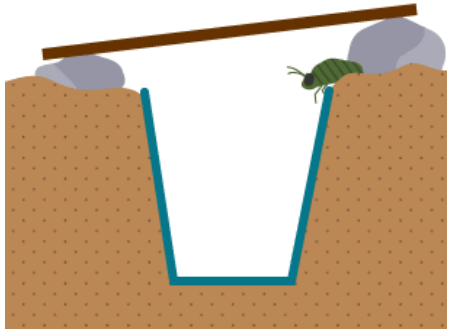
8. Biodiversity and competition

Areas like tropical rainforests have millions of different species and are very biodiverse. Some areas like the Polar Regions have fewer species and are less biodiverse.

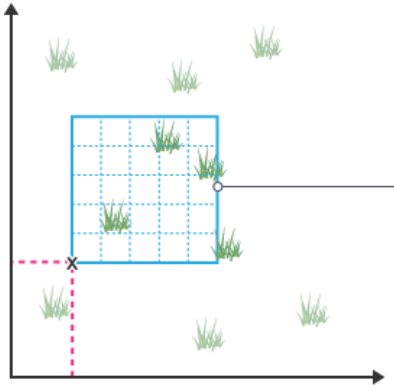
- Biodiversity is the number of different species in an ecosystem. An area with large populations of few species is not biodiverse.
- Organisms compete for resources.



9. Sampling of Populations



Pitfall traps are small areas dug into the ground, often with food inside, to trap small animals to be counted to estimate population size.



Quadrats can be randomly placed in a habitat to estimate population sizes. Greater than 10 data points should be collected at random to reduce bias.

Further reading

Extinction

Sampling Techniques

Science – Variation and evolution

Question	Two new species of bird evolved after they were separated by a mountain. Explain how.
Key Info	This question could be asked in many different ways for different organisms – **the principles remain the same:** • '**Two new species**' indicates **speciation** has occurred • The **mountain** is acting a **physical geographical barrier** – this could be anything! • There might be **different environmental conditions** on different sides of the mountain. • A random mutation may make that species **better adapted** for survival • The alleles of this individual may then be **passed down to their offspring**, increasing the allele frequency in the population.
Top Exam Tips	Break each stage down. Consider **drawing a diagram** when planning your response to help you to visualise the process.
Model Answer	In this case, the mountain is acting as a **geographical barrier** separating the two populations of bird into different **environmental conditions**. A random mutation in the DNA of one bird may have resulted in an **advantageous characteristic**, making that bird more likely to **survive and reproduce** (natural selection). When reproduction occurs, the advantageous allele may be passed down to the bird's offspring meaning the **frequency** of the advantageous allele increases in a population. Eventually two new species emerge which are unable to reproduce to produce **fertile** offspring, thus speciation has occurred.
Practice Questions	Scientists believe that ancestors of the modern Island Fox first colonised what is now Santa Cruz Island during the last Ice Age, approximately 16 000 years ago. At that time, lowered sea levels made the three northernmost islands into a single island and the distance between this island and the mainland was reduced to about 8 km.  **(i) How could the Island Fox have developed into a completely different species from the mainland Grey Fox?**

Use of **key terminology**

Fluent, coherent sentences.

Broken down into simple chunks, sequentially.

Referring back to the question.

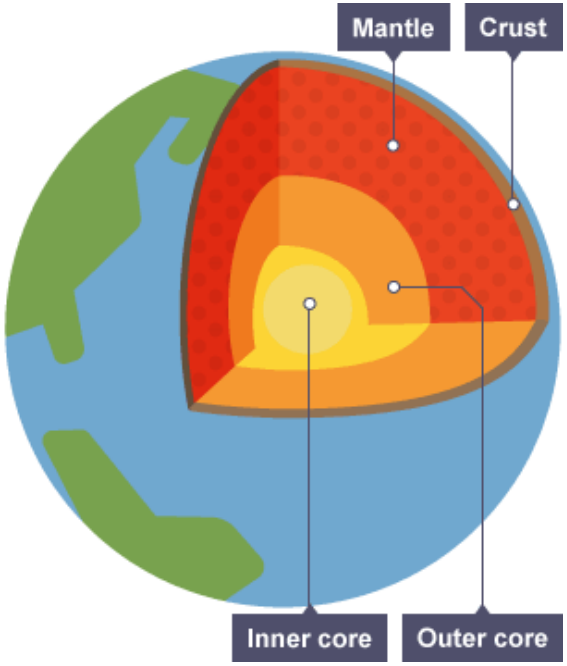
Science – Our planet Earth

1. Key Terms	Description
Mantle	A largest component of the Earth's structure between the core and the crust. Largely solid with viscous (thick) liquid behavior allowing convection currents.
Sedimentary	Rocks formed from pre-existing rocks or pieces of once-living organic organisms which compress over time.
Igneous	Rock formed from molten (liquid) rock that has cooled and solidified.
Metamorphic	Rock formed from other rocks which change due to heat or pressure.
Plate Tectonic Theory	A theory suggesting the crust of the Earth is split into plates the movement of which results in earthquakes and volcanic activity.
Fossil Fuel	A non-renewable resource extracted from the ground which takes millions of years to form. Coal, oil, natural gas.
Deforestation	The process of cutting down trees.
Land Use	The way in which land is being used by a population.
Pollution	Chemicals and substances which are harmful to our health or the natural environment which cause damage.
Biodegradable	A substance which can be broken down into increasingly smaller pieces by bacteria, fungi, or microbes to be reabsorbed into the environment without causing pollution.
Sustainable	The ability for current generations to meet our own need without impeding (preventing) future generations from meeting their needs.
Aquaculture	The rearing of aquatic animals or the cultivation of aquatic plants for food.

Science – Our planet Earth

1. Structure of the Earth

The crust is the Earth's outer layer and is made of rocks. Rocks are solids which are made of grains of minerals which fit together.



Rocks can be classified into three types depending on what minerals they contain and how they are formed.

The three types of rock are:

- igneous
- metamorphic
- sedimentary

2. Rock Types

Igneous rocks are formed from the cooling of molten rock. Molten rock is rock that has been heated to such a high temperature that it melts into a liquid. The basalt which makes up the Giant's causeway is an igneous rock.

Sedimentary rocks are formed by small rock pieces which are transported by rivers and laid down in layers. Chalk is a sedimentary rock.

Metamorphic rocks are formed when another rock is under heat and pressure. Marble is a metamorphic rock, it is highly decorative and used for statues.

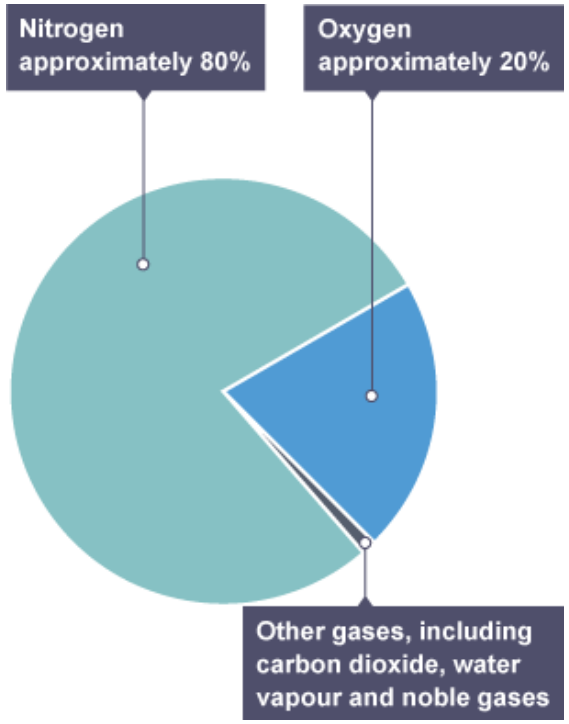
3. Further reading

Earth's Structure and Types of Rock

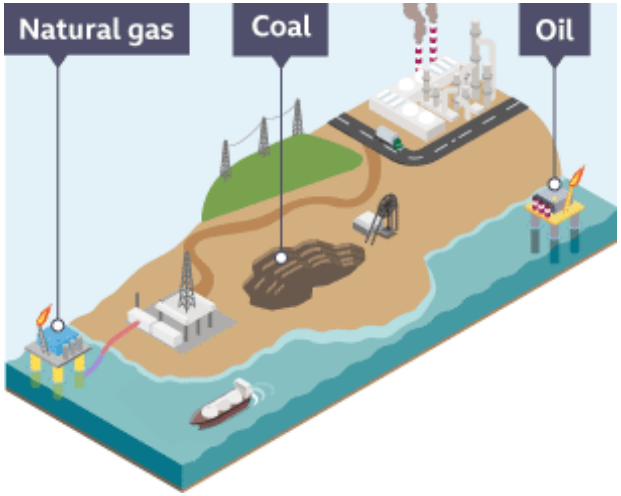
Science – Our planet Earth

4. Atmospheric Composition

For around 200 million years, the proportions of different gases in the atmosphere have been relatively stable. The pie chart below shows the percentages of gases that make up the atmosphere.



5. Fossil Fuels



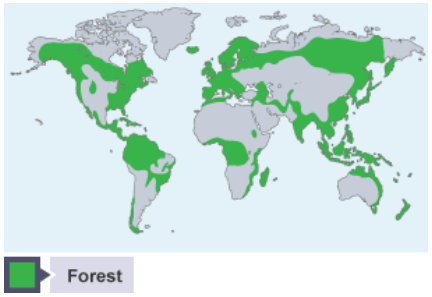
Fossil fuels are a finite resource, meaning that they cannot be replaced once extracted from the ground.

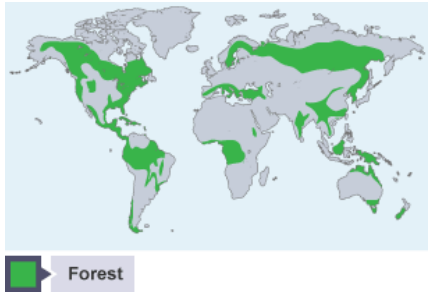
In 2015, 80% of energy consumed in the world came from fossil fuels.

Examples include: coal, oil, and natural gas.

When fossil fuels are combusted (burned) carbon dioxide (a greenhouse gas) is released into the atmosphere contributing to global warming.

6. Deforestation





As a result of land use change, deforestation (the cutting down of trees and woodland) has reached unprecedented levels.

- This decreases CO_2 absorption (so increases global warming)
- Contributed to the extinction of many plant and animal species.

Further reading

Earth's Atmosphere

Deforestation

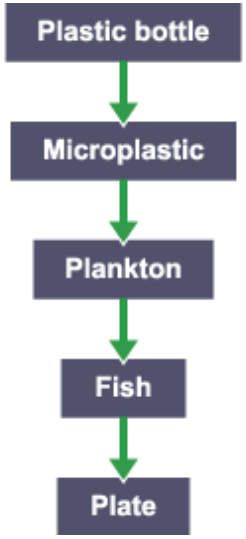
Fossil Fuels

Science – Our planet Earth

8. Plastics

Plastics are useful products.

However, plastic has a number of negative environmental impacts when not disposed of correctly,



Once the plastic makes its way to the sea it decomposes really slowly. The process can take more than 400 years.

The plastic breaks down into tiny particles that can be incredibly damaging to all sorts of sea life. These tiny particles are called microplastics which can make their way to our plate.

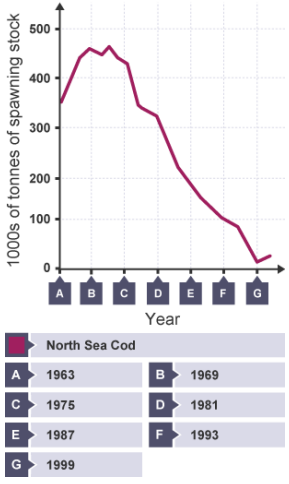
9. Tackling Plastic Pollution

Metals, glass, building materials, clay ceramics and most plastics are made from limited natural resources.

- Some items made from these materials can be reused, and this saves the most energy and reduces the impact on the environment.
- Other products cannot be reused in this way, but they can be recycled.

10. Sustainable Fishing

Sustainable fisheries do not reduce the overall number of fish, because the number of fish that are caught and killed does not ever exceed the birth of new fish.



Overfishing is unsustainable and can cause a critical point in populations that means certain species cannot ever recover and will become extinct.

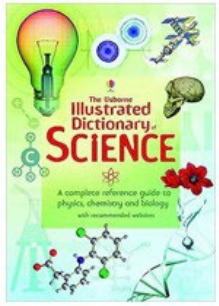
Further reading

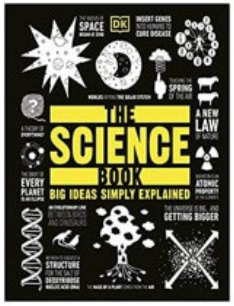
Plastic Pollution

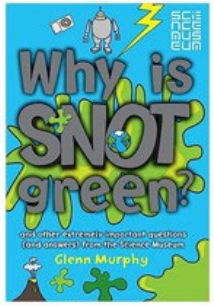
Sustainable Fishing

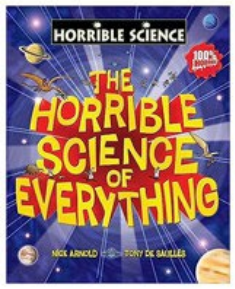
Science

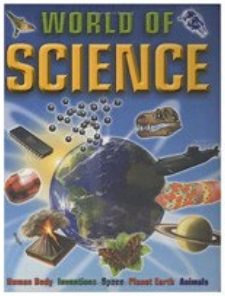
1. Science reading opportunities

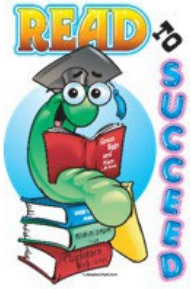




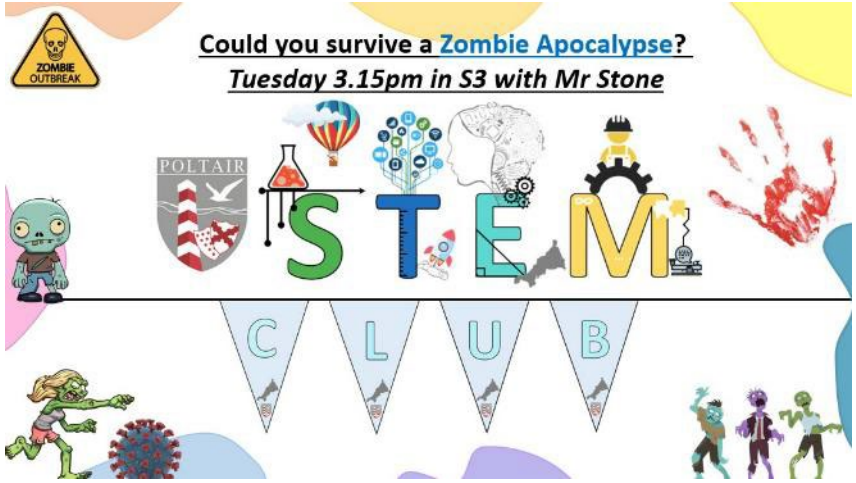








2. STEM club: Science, technology, engineering, Maths



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 - Dreamland

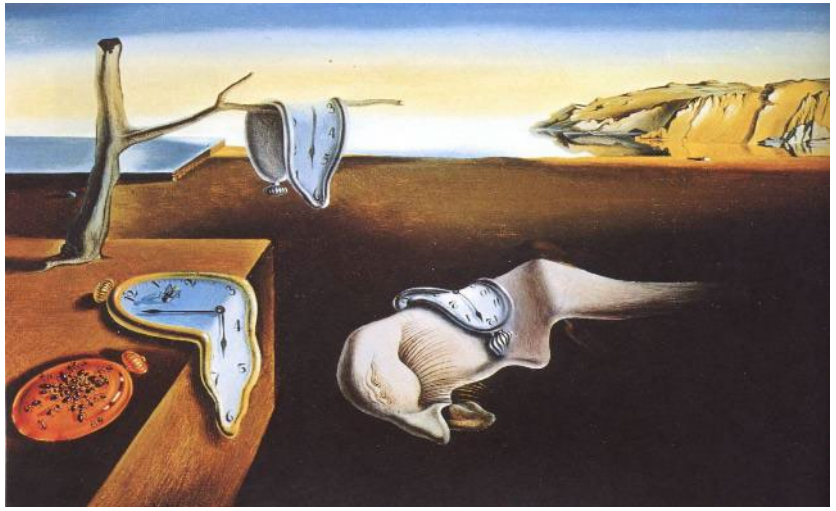
1. Tier Three Vocabulary

Key Words	Definitions
Illustration	An image that accompanies text. Adds to the story telling by visually explaining the image.
Surrealism	A 20th-century avant-garde movement in art and literature which sought to release the creative potential of the unconscious mind, for example by the irrational juxtaposition of images.
Visual Brainstorm	Unpicking imagery from text using drawings rather than words.
Collage	Creating an image with pictures from magazines or newspapers.
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 do I need to know?

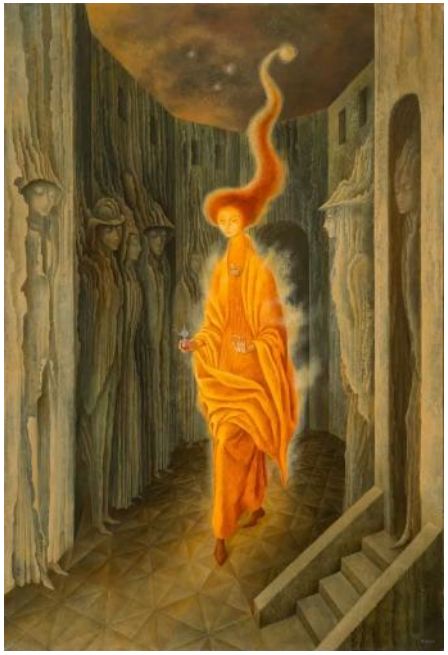
How to select and present information to develop ideas. The use of collage to create surreal landscapes and or portraits. How to use your imagination to create a surreal outcome.

Teesha Moore



Salvador Dali

Rene Magritte



Remedios Varo

3. What will I learn?

You will look at Surrealist artists and understand how and why they created work that has no obvious narrative. You will develop your idea using collage to create a weird and surreal outcome inspired by your imagination.

Computing – Python programming

Key Words	Definitions
Python	A high-level coding language with uses words. This must be translated so the computer can understand it
IDLE	Intergrated development and learning environment is used to write and run Python code
Algorithm	Logical instructions for carrying out a task -needed to design computer programs.
Sequence	a set of instructions that follow on one from another.
Selection	A choice in the code. Uses: If....then...else
Flow diagram (chart)	A Flowchart can be used to describe an algorithm
Variable	A memory location within a computer program where values are stored. The value can be changed during the program. eg Name
Comment	Adding one or more sentences to explain the purpose of a section of code, use # at start of comment.

1. Python variable and sequence

this is a comment.

Comments are useful to help others understand what your code does

MyAge = 13
MyName = "Polly"

#thess are variables

print("My age is:", MyAge)

#this code prints a message to the screen

Name = input("enter your name")

#this code waits for the user to enter information and then adds it to the variable Name

2. Python Selection

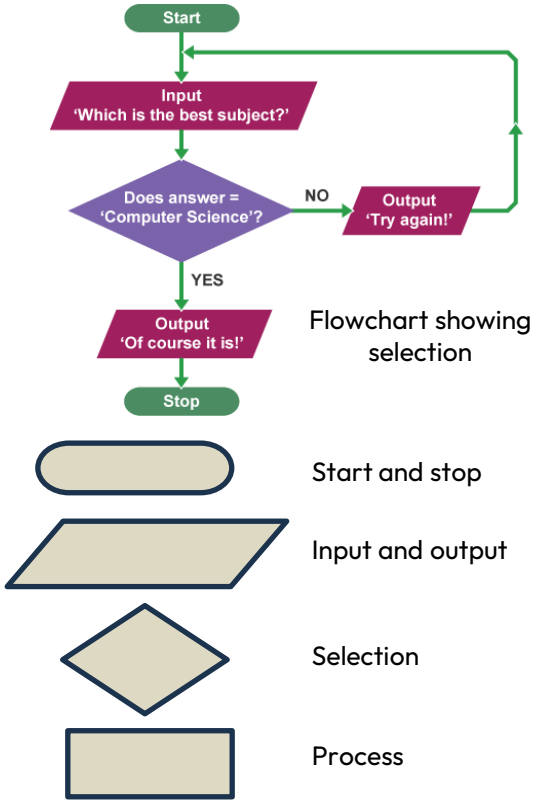
Selection uses the word "if" and allows the code to do different things depending on a variable or input.

More complexity can be achieved using If...elif.. elif...else

```
Name = input("enter your name")
if name == "Drew":
  print("Hello", name)
elif name == "Kay":
  print("Hi", name)
elif name == "Zia":
   print("Hiya", name)
else:
   print("bye")

#this code checks the name and outputs a different message depending on the name given
```

3.Code Design using Flowcharts



4. Creating applications

Errors	**Syntax errors** occur when you write something incorrectly. The IDLE will give you an error message **Logic errors** are when there is a mistake in the design of the code.
Testing	The purpose of testing is to ensure the code meets the design requirements.

Design Technology - Clocks

1. Key Words

Key Words	Definitions
CAD	Computer Aided Design – Using software on a computer to produce 2D or 3D designs
CAM	Computer Aided Manufacturing – Using computer-generated code to control machinery used to make a product
Acrylic	A type of plastic that is available in a variety of different colours
Mechanism	A system of moving parts that work together in a product
Laser Cutting Machine	A tool that uses a narrow laser beam to melt, burn or vaporise materials to cut or etch them
2-D Design	A piece of CAD software used to produce designs on a computer
Target-Market	A group of potential customers that a product is aimed at
Budget	A plan of the total cost of producing a product
Design period	The style of design used for a product, such as Art Deco, Pop Art or Steampunk
User-Centred Design	A design process that focuses on the users and their needs when designing a product

4. Using CAD/CAM

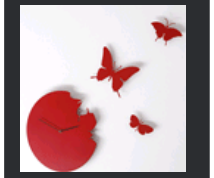
At Poltair School, we use a piece of CAD software called 2-D Design.

Designs can be produced in 2-D Design and then the file exported to be turned into machine code.

Machine code can then be used by a device such as a laser cutting machine to physically cut out or etch the original design using materials like wood or acrylic.

2. Analysing Existing Designs

The face of this clock has been made using blocks of softwood that have then been painted. Unlike hardwoods, softwoods are fast growing and relatively cheap. This makes them a more sustainable resource. The colours can be customised to make personal clocks for different users, but the lack of numbers may make this clock face difficult to read.



The face of this clock has been made using coloured acrylic. Unlike wood, acrylic is NOT a sustainable resource as it is usually made from crude oil that is finite. The shapes have been designed using CAD and cut using a laser cutting machine. Different designs and colours could be made for different users but the small hands and lack of numbers may also make this clock face difficult to read.

The face of this clock has been made using plywood. Unlike hardwoods or acrylic, plywood is a more sustainable resource. The product has been cut using a laser cutting machine. The colours can easily be changed and customised to make clocks to suit the needs of different users.

5. Workshop Safety

1. Always wear goggles when using tools. This includes hand tools as well as machine tools.
2. Do not use a tool unless your teacher has shown you how to use the tool safely. Ask to be shown again if you have forgotten how to use the tool safely.
3. The solvents used to bond acrylic can be harmful. They will only be handled by staff and we will only use them in small quantities in a well-ventilated room. We call these actions Control Measures and they help to ensure that everyone stays safe.

3. Identifying Target Markets

Designers need to collect information about the needs and preferences of the users that they are designing products for. This can include age, gender, favourite colours, hobbies/interests and physical needs.

Once the information has been collected, a designer can create a moodboard of images, colours and ideas based on the user's needs and preferences to help inform their design.

6. Links and further reading

User-Centred Design:
https://www.bbc.co.uk/bitesize/guides/z6jkw6f/revision/2

Identifying Target Markets:
https://www.bbc.co.uk/bitesize/guides/zbn6pbk/revision/2

Revise:Mindmap Maker
is.gd/mindmapmaker

Drama – Physical theatre

1. What is physical theatre

Physical theatre draws inspiration from a variety of performing arts genres, including mime, commedia dell'arte, and contemporary dance.
All forms of physical theatre place a strong emphasis on using the body to communicate stories

2. Levels of tension

Jacques Lecoq developed an approach to acting using seven levels of tension. This encourages the actor to think about the level of tension that they hold in their body on a scale of 1 to 7.

1. Exhausted
2. Laid back
3. Neutral
4. Alert
5. Suspense (is there a bomb in the room?)
6. Passionate (there IS a bomb!)
7. Tragic (the bomb is about to go off!)

3. What is physical theatre

Key Words	Definitions
Stimulus	A starting point or trigger to generate ideas. This could be a poem, theme, object, moment in history, a picture.
Gesture	A movement of the head, hand or other body part to express meaning.
Motif	A repeated pattern—an image, sound, word, or symbol that comes back again and again within a particular story.
Unison	Acting, moving or speaking together, or at the same time.
Canon	Where actors take turns to do the same movement.
Stylised	Using artistic forms and conventions to create effects; not natural or spontaneous.
Abstract	The idea of representing events, situations or feelings rather than acting them out in a realistic manner.
Breaking the fourth wall	The actor breaks the invisible, imaginary wall separates actors from the audience and speaks directly to them.
Verbatim	Verbatim theatre is a form of documentary theatre which is based on the spoken words of real people. Actors use real people's words exclusively, word for word.
Proxemics	How close or near you are to others on stage. This can help to communicate meaning and relationships.

4. Practitioner: Frantic Assembly

Frantic Assembly are a physical theatre company, led by Artistic Director and co-founder Scott Graham.
With a focus on movement and physical theatre to convey story, their unique style, bold, collaborative and dynamic approach has made them an internationally renowned company.

Techniques

Chair duets - a devising technique that uses movement on a chair to help establish the relationship between two or more of the characters on stage'.
Round -by-through -A string of movement material with R-B-T at the centre of each movement choice. E.g. moving round your partner, putting your arm through a space by their arm.
Further Links:
https://www.franticassembly.co.uk/
https://www.youtube.com/watch?v=PB-9LERsyY8
https://www.youtube.com/watch?v=ieWs3hl3O4w

5. Practitioner: The paper birds

The Paper Birds is a UK based devising theatre company.
Formed in 2003 upon graduation from Bretton Hall, The Paper Birds was founded upon friendship and a mutual love of contemporary theatre, and movement
They are recognised as UK leaders in devised verbatim theatre and use many physical theatre techniques in their devising work.

Further Links:
https://www.thepaperbirds.com/

Food – Reduce food waste

1. Key Terms	Description
Cuisine	a style or method of cooking that is characteristic of a country or region.
Fish Slice	a kitchen tool which consists of a flat part with narrow holes in it attached to a handle
Sustainable	producing food but protects land, energy and water resources, to maintain supplies for future generations
Food Waste	When food that is safe and healthy for humans to eat is disposed of,
Maillard Reaction	Reaction between protein and sugar where heat is involved causes meat to brown.
Conduction	Heat transfer through a solid
Convection	Heat transfer through air or a liquid
Radiation	Heat transfer through rays

2. Cuisine

Cuisines evolve over time and are influenced by many different factors.
Often a traditional style of cooking is based around the ingredients that are grown and reared, or available, locally.
Other factors include: preparation and cooking methods; the use of specific equipment; service and presentation of food
Mexican Cuisine
The staple foods of Mexico include corn, beans, squash and chillies. Corn is used to make masa, a dough that is then turned into tortillas and tamales, whereas beans and corn feature prominently in many dishes.
Herbs and spices, particularly chilies are used in many dishes creating strong, earthy flavours.
Mexico's six regions vary considerably in cuisine due to key differences in geography, climate and ethnic makeup.
Specialty dishes include: refried beans, enchilada, mole (traditional sauces), pozole (traditional soup)

3. Food waste

Ways to Reduce Food Waste

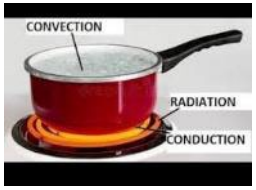
- Deliberately create leftovers – cook extra vegetables and make a soup for lunch later in the week.
- Make double the quantity of your evening meal and take the rest for lunch the next day.
- Don't throw away stale bread – whizz in a food processor to make breadcrumbs and freeze; make a summer pudding with seasonal soft fruit; spray with oil, rub with garlic, cover with tin foil and bake for delicious homemade garlic bread.
- Make extra rice or pasta and make a salad for your lunchbox.
- Freeze unused wraps, pitta and sliced bread.
- If eggs are nearing their date, separate and freeze.
- Freeze tubs of baking fat to prevent it going off before you next want to bake.

4. Maillard Reaction

In 1912, the French scientist Louis Camille Maillard discovered a chemical action between certain amino acids and certain sugars when extreme heat is added (in this case, the heat from your barbecue). This explains why meat browns on the top when it is barbecued, creating intense molecules of flavour. Examples of Maillard Reaction- toast, toasted marshmallows, meat.

5. Heat transfer

The application of heat in the preparation of a food or mixture may: improve digestibility; improve appearance, flavour, odour and texture;
increase the availability of nutrients;
prevent spoilage;
increase keeping qualities.



When cooking food, conduction is the transfer of heat by direct contact with foods on a surface,
Food which is placed in such a liquid or gas (usually in an enclosed space) becomes cooked. This happens because heat from convection currents is transferred from the air or liquid to the outside of the food, then gradually to the centre, via conduction
Radiation is energy in the form of rays. The rays pass through the air until they come into contact with the food For example grilling, microwaving, sun drying.

Links & further reading

Video: Food Waste

https://www.bbc.co.uk/bitesize/articles/zyjytrd#zmryvwx

Article: Maillard Reaction

https://www.sciencefocus.com/science/what-is-the-maillard-reaction

Revise:
Mind map Maker
is.gd/mindmapmaker

Geography - Extreme Weather

1. Key Terms	Description
Heat wave	A prolonged period of abnormally hot weather
Drought	A prolonged period of abnormally low rainfall leading to a shortage of water.
Flooding	Occurs when a river bursts its banks and overflows onto the surrounding land
Flash flood	A sudden localised flood due to a heavy period of rainfall.
Wild or bush fire	Is an uncontrolled fire that burns in the wildland vegetation, often in rural areas.
Tropical storm	Is a hazard that brings heavy rainfall, strong winds and other related hazards such as mudslides and floods.
Monsoon	A seasonal prevailing wind in the region of South and SE Asia, blowing from the south-west between May and September and bringing rain (the wet monsoon), or from the north-east between October and April (the dry monsoon).

2. UK Heatwave 2023

Facts and Figures

July 26, Faversham in Kent saw temperatures reach 35.3C

Causes

Jet stream usually high, bringing warmer air from the South from areas such as Spain.

Impacts

- Fatalities and health issues such as heat stroke and exhaustion.
- Transport disruption, road surfaces melted, and rail lines deformed.
- Crop failures.
- Boosted the UK tourism industry.

Management

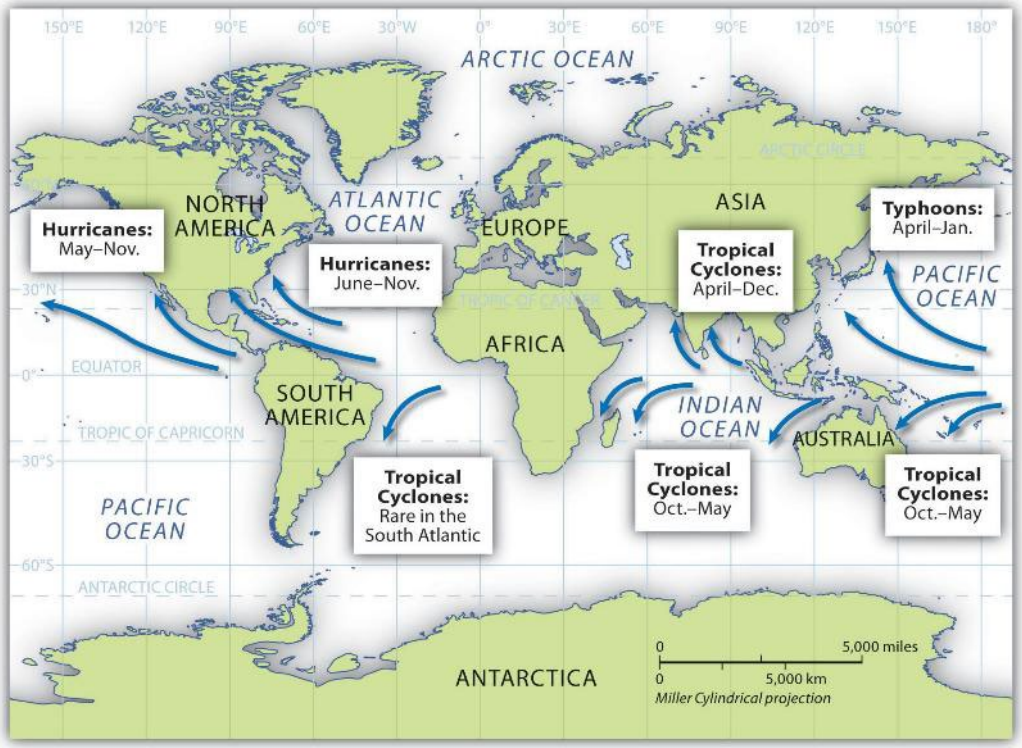
- Hose pipe bans
- Social workers and councils on alert to watch out for elderly and young.
- Advise about staying well on News stations.

3. Causes of Greece's wildfires 2023

There are many ways fires can hurt you. The first is getting caught by the flames. With fast winds and dry plants, a fire can spread faster than you can run from it. Burns are the biggest killer. Heatstroke and dehydration pose a particular problem for firefighters. Many things can spark a wildfire: campfires, cigarettes, lightning, even sunlight. But how far it spreads depends on the weather.

By burning fossil fuels and destroying nature, people have heated the planet by 1.2C – and Europe by 2C – above pre-industrial levels, making the hot, dry conditions in which wildfires thrive more common across the continent.

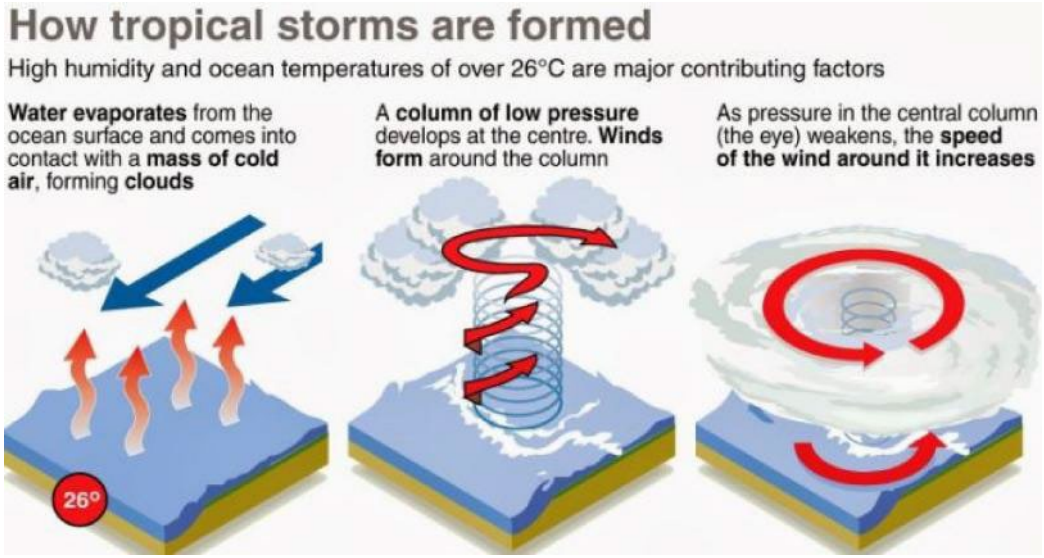
4. Tropical storm distribution



Geography

1. Formation of tropical storms

Formation of Tropical Storms	
1	The sun's rays heats large areas of ocean in the summer and autumn. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27^0, the rising warm moist air leads to a low pressure. This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin
4	When the storm begins to spin faster than 74mph, a tropical storm (such as a hurricane) is officially born
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm
6	When the tropical storm hits land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'



2. Hurricane Katrina

Hurricane Katrina, tropical cyclone that struck the southeastern United States in late August 2005. The hurricane and its aftermath claimed more than 1,800 lives, and it ranked as the costliest natural disaster in U.S. history.

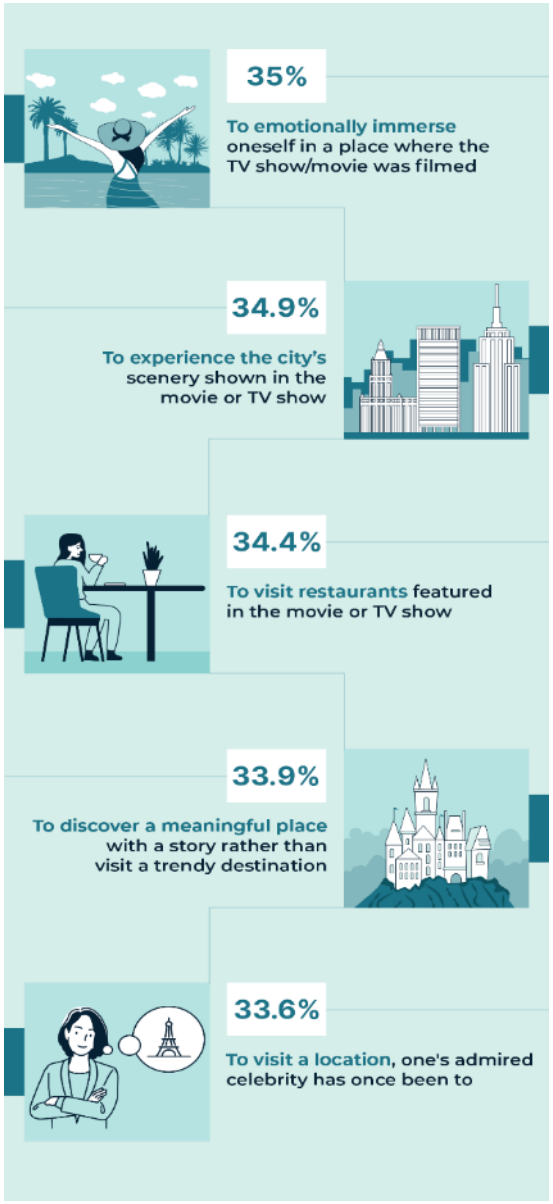
Over 1 million people were told to evacuate for Hurricane Katrina

On August 28, as the storm grew in size, people on the Gulf Coast were told to evacuate. State and local governments did not have enough resources to evacuate everyone and handle the displacement of so many people. Over 1 million people were told to evacuate the Gulf Coast.

Over 1000 people died from Hurricane Katrina

The saddest of all Hurricane Katrina facts is that over 1800 people lost their lives as a result of the storm. Most of these deaths were in Louisiana, where over 1500 people died because of the storm.

Geography – Sustainable tourism



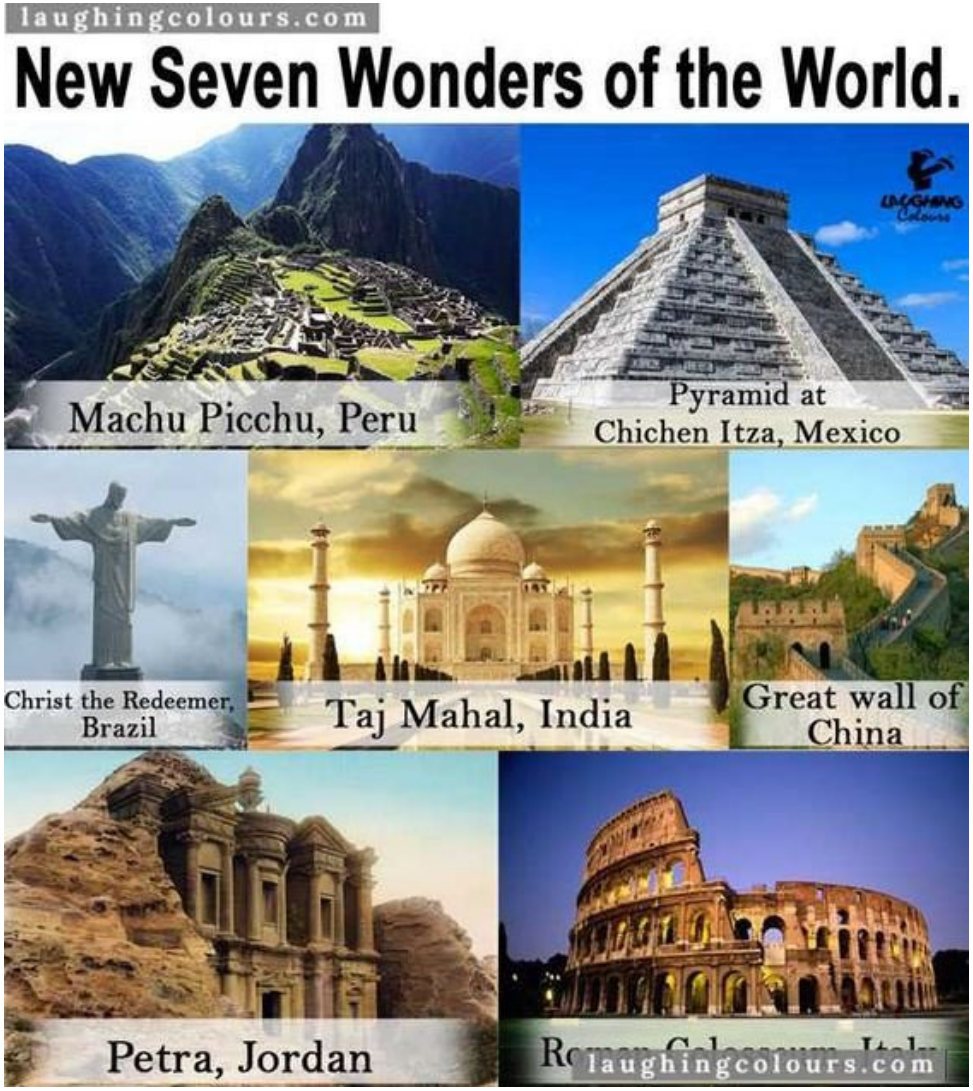
Advantages of tourism in Kenya

1. Provides a major source of income into Kenyan economy – 21% of foreign exchange earnings
2. Provides jobs - 11 percent of paid employment comes from tourism
3. Just under 1 million tourists from Germany, UK, USA provides a market for local goods
4. Helps to protect wild animals & scenery and develops facilities e.g. Bamburi Nature Trail near Mombasa.
5. Promotes understanding of culture
6. Money is used to provide local schools and healthcare
7. Tourism has helped improve other related industries and the infrastructure.

Disadvantages of tourism in Kenya

1. Poorly paid, unreliable, seasonal employment in menial jobs (tourist numbers dropped by nearly 2/3rds between 199-1997)
2. Money goes to big companies not local people (only 15% reaches Kenya from traditional tourism)
3. Environment polluted and natural environments spoiled - boats dropping anchors damages coral, people taking parts of coral reef, wildlife disturbed by trucks, ground damaged & eroded
4. Conflicts between local tribes e.g. Masai Mara and Kenyan government through exploitation of local culture.
5. Local tribal people have been forced to change lifestyle to accommodate tourists, for example Masi people were driven off their land.
6. Nomadic tribes forced of their land
7. Local people can be exploited
8. Overcrowding of game parks & accommodation. 90% tourists visit south & east.
9. Wildlife disturbed - tourist numbers, mini-buses, balloons.
10. Tourists may offend locals e.g. scantily dressed in Muslim areas.
11. Pressure on resources like fresh water.

Geography – Sustainable tourism



Ecotourism

Advantages

1. 45% of the income of ecotourism stays in the UK
2. Endangered species are protected by conservation projects
3. Greater knowledge and involvement in fragile environments such as rainforests can help put pressure on governments to protect them
4. Income can bring benefits such as medical care to people who would otherwise could not afford them
5. Regulations to protect and area for ecotourism also benefits local by protecting their own environment

Disadvantages

1. 55% of income goes abroad
2. Endangered species come into contact with humans, leaving them less wary and more vulnerable to poaching
3. The presence of tourists can put stresses on the environment e.g. the accommodation, heating, water supplies, access routes, rubbish all have negative effects
4. Can disrupt the social and cultural structures of people
5. Regulations can stop local people from using their own resources in order to 'preserve' them and maintain the environment

History – Enquiry question: How should the Holocaust be remembered?

Historical Skills we will develop in this Enquiry;

- ✓ Our understanding of significance
- ✓ Our ability to use our knowledge to explain the past

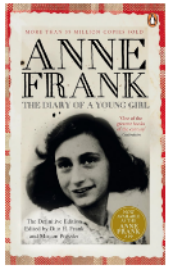
Historical knowledge and explanation:

- Using argument, knowledge, similarity and difference
- Using suitable evidence, assessing it properly, and making conclusions based on this evidence
- Create an explanation of past events using the knowledge and facts of issues, events, groups and how their lives might be the same or different depending on who they are or over time
- Tells you about the past and why the past was as it was

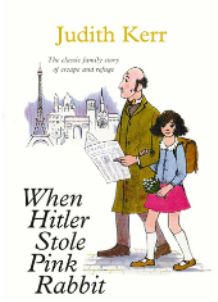
Scan to access a guide to Historical writing: https://uta.pressbooks.pub/historicalresearch/part/thinking-historically/

Bringing the past back to life at Poltair!

Reading like a historian



The Diary of a Young Girl: The Definitive Edition of the World's Most Famous Diary Anne Frank **(Author)**



When Hitler Stole Pink Rabbit Judith Kerr (Author)

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

In this topic I would recommend you only stick to suggested reading as of course it can be a very upsetting topic.

If you tell your teacher what you've been reading and make suggestions to us for books students might enjoy, then we will be rewarding you with Merits!

Remember to check out the library; there are some fantastic history books in there too! Try reading a different topic in the same time period for this enquiry though.

Glossary Holocaust

1. Key Terms	Description
Holocaust	This is a word to describe the actions of Nazi Germany 1933-45 against Jewish people who were targeted, having rights removed and then eventually their lives.
Shoah	Many people use this term to define the events in Nazi controlled Germany against Jewish people. It is the Hebrew word for catastrophe.
Anti-Semitism	Persecution of a person/group of people because they are Jewish
Pogrom	An anti-Jewish riot. Usually carried out by townspeople but often encouraged and supported by governments and police
Scapegoat	A person or group who are given the blame for events/issues
Boycott	Refusing to use a product/service/business
Concentration Camp	A place where criminals/people against the government are forced to go. Essentially a prison with very tough conditions.
Extermination Camp	Places the Nazi Party created to kill Jewish people and other groups of people the Nazis felt were 'undesirable', 1941-45
Final Solution	The decision the Nazis took in January 1942 to kill all Jewish people in Germany and the places the Nazis controlled.
Gestapo	The Nazi secret police
SS	Wore Black uniforms and ran the concentration and extermination camps. They were supposed to be the perfect examples of the Aryan Race
Aryan	Nazis version of the perfect race; blonde hair, blue eyes. In Hitler's view the perfect examples of 'true Germans'

Left: Image of Image of a Jewish Shop in Germany 1933 during the Boycott of Jewish businesses. The word Jude is German for Jew.

Right: Jewish Synagogue burning as a result of Kristallnacht, 1938.

History – Enquiry question: How should the Holocaust be remembered?

What do we mean by the term 'Holocaust'?

The word 'Holocaust' comes from ancient Greek: '*holos*' means 'completely' and '*kaustos*' means 'burnt'. The word was first used to describe religious sacrifices. For this reason, some people have objected to the term 'Holocaust' and prefer to use the Hebrew word 'Shoah', which means 'catastrophe'.

The term 'Holocaust' means different things to different people. However there are several key themes that run through any definition of the word. Below are three definitions of what the Holocaust was. Each has been written by an institution which helps to commemorate and educate about the Holocaust.

"The Holocaust was the systematic murder of Europe's Jews by the Nazis and their collaborators during the Second World War. For the first time in history, industrial methods were used for the mass extermination of a whole people. Between 1933 and 1945, Jews were targeted for discrimination, segregation and extermination. [...] The Nazis enslaved and murdered millions of others as well. Political opponents, Roma and Sinti (Gypsies), homosexuals, prisoners of conscience, people with physical and mental disabilities, Poles, Soviet prisoners of war and others were killed or died in camps as a result of neglect, starvation or disease."

Imperial War Museum, London, UK

"The Holocaust was the murder of approximately six million Jews by the Nazis and their collaborators. Between the German invasion of the Soviet Union in the summer of 1941 and the end of the war in Europe in May 1945, Nazi Germany and its accomplices strove to murder every Jew under their domination. Because Nazi discrimination against the Jews began with Hitler's accession to power in January 1933, many historians consider this the start of the Holocaust era. The Jews were not the only victims of Hitler's regime, but they were the only group that the Nazis sought to destroy entirely."

Yad Vashem, Jerusalem, Israel

"The Holocaust was the systematic, bureaucratic, state-sponsored persecution and murder of approximately six million Jews by the Nazi regime and its collaborators. During the era of the Holocaust, German authorities also targeted other groups because of their perceived "racial inferiority": Roma (Gypsies), the disabled, and some of the Slavic peoples (Poles, Russians, and others). Other groups were persecuted on political, ideological, and behavioural grounds, among them Communists, Socialists, Jehovah's Witnesses, and homosexuals."

United States Holocaust Memorial Museum, Washington, D.C., USA

Core Knowledge Holocaust	
Question	Answer
1 How long have Jewish people been persecuted through history?	Since the Death of Jesus
2 In the medieval period how were Jewish people treated?	Badly, they were expelled from England and during the Black Death they were blamed for poisoning water wells and 10, 000 were burnt at the stake
3 What event in 1881 increased Anti-Semitism in Russia?	The assassination of the Tsar (Emperor) of Russia, Alexander II. A jewish person was blamed and there was violence against Jews so they fled
4 What fake document was created in Russia in 1903 which increased Anti-Semitism?	The Protocols of the Elders of Zion. It claimed there was a Jewish conspiracy to take over the world.
5 How did Hitler encourage people to hate Jewish people?	He used them as a scapegoat – blaming them for Germany's economic problems, losing WWI etc.
6 What year were Jewish businesses boycotted?	1933
7 What year were the Nuremburg Laws passed?	1935
8 Name 2 things the Nuremburg Laws did	Jewish people could not be citizens, could not vote and could not marry German citizens
9 What was Kristallnacht?	Night of the broken glass, 9th November 1938: Night of violence against Jewish people, Jewish businesses and synagogues were burnt down/destroyed (pogrom)
10 What other groups were discriminated against by the Nazis?	Sinti and Roma gypsies, people with disabilities, black people, LGBTQ individuals

History – Enquiry question: How far have we achieved mutual respect and tolerance?

Historical Skills we will develop in this Enquiry;

- ✓ Our understanding of significance
- ✓ Our ability to use sources to explore 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 mutual respect and tolerance

1. Key Terms	Description
Prejudice	A pre-judged opinion on someone or a group of people that is not based on reason or actual experience
Racism	Prejudice or discrimination against a person or people based on their membership in a particular racial or ethnic group
Anti-Semitism	Persecution of a person/group of people because they are Jewish
Empire	A large group of states or countries under the control of a single power
Famine	A widespread scarcity of food (people starving because of lack of food)
Home Rule	Power to rule your own country/area
Sinn Fein	Irish Republican Party, its aim is to end British rule in Ireland
SS Empire Windrush	Passenger liner and cruise ship that was used to bring people to Britain after WWII to work and rebuild
Equality	The state of being equal
Pogrom	An anti-Jewish riot. Usually carried out by townspeople but often encouraged and supported by governments and police

Immigrant Jews in the transit shed at Tilbury (c. 1891). This illustration is captioned "The Alien Invasion".

Empire Windrush arrivals at Tilbury (1948)

Scan to access a guide to Historical writing:

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

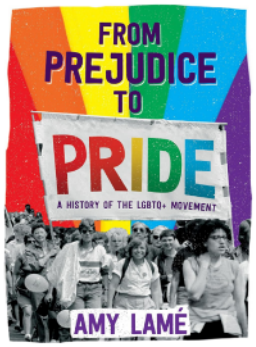
The Equality Act 2010

History – Enquiry question: How far have we achieved mutual respect and tolerance?

Bringing the past back to life at Poltair!

Reading like a historian

Black and British: A short, essential history
David Olusoga (Author)



From Prejudice to Pride: A History of LGBTQ+ Movement
Amy Lamé (Author)

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

Anything you can read linked to our enquiry questions is amazing and if you tell your teacher what you've been reading and make suggestions to us for books students might like then we will be rewarding you with Merits!

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

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

BBC News - Your World, From slavery to Windrush: My family's story

Scan to access a BBC News documentary: The BBC's Amanda Kirton journeys from Britain to Jamaica and uncovers not only her family's hidden past but the dark history of the two islands. She discovers why the Windrush scandal was about more than the politics of immigration.

Core Knowledge mutual respect and tolerance	
Question	**Answer**
1 How did Jewish people try to escape these in the 1800s?	They often fled to other parts of Europe. Many settled in London, particularly Whitechapel
2 What was the Potato Famine?	This was caused by a mould which destroyed the potato crops in the 1840s. Something most of the population relied on for survival. It led to approx. 1 million deaths in Ireland.
3 What's a Fenian?	A member of an Irish nationalist secret society (in Ireland, USA and Britain) during the 1860s. The name comes from the Fianna Eireann, a legendary band of Irish warriors.
4 What were the 'troubles'?	Period of violent conflict in Northern Ireland from around the 1968-1998. This was between Unionists (remain united with Britain) and Nationalists (Ireland should be its own country again)
5 Why were people from the Empire encouraged to come to Britain after WWII?	The country needed rebuilding and the NHS needed staffing; there weren't enough workers in Britain to do this
6 Who were the people on the Empire Windrush?	Many people from the Caribbean (Jamaica in particular) who brought skills to Britain in the hope of achieving a bright future. Many had fought for Britain in WWII.
7 What is the 'Windrush Scandal?	In 2017 after it emerged that hundreds of Commonwealth citizens, many were from the 'Windrush' generation, had been wrongly detained, deported and denied legal rights. This is still an ongoing issue
8 What was Section 28?	Law in place 1988-2003 which stated that local authorities (big impact in schools); "shall not intentionally promote homosexuality or publish material with the intention of promoting homosexuality" or "promote the teaching in any maintained school of the acceptability of homosexuality as a pretended family relationship".
9 Who were some of the LGBTQ+ people we know about from 1800s-1900s?	Anne Lister, Bobby Britt, April Ashley
10 What is the Equality Act 2010?	A UK law that protects people from discrimination and promotes equality of opportunity.

Music – Lights, camera, Music!

1. Key Words	Definitions
Leitmotif	A musical theme that is associated with a particular character, idea or emotion.
Diegesis (Diegetic Music & Non-Diegetic Music)	Diegetic music is must that is part of the scene and story. Non-diegetic music is music that is background music.
Tonality	Tonality describes the mood of the piece and can usually be described as major or minor.
Chords	A group of two or more notes played together.
MIDI	A way of creating music using computer software.
Sound Design	The process of creating and manipulating sound effects, music, and dialogue to enhance a movie.
Dynamics	The loudness and softness in music, use to create contrast and emotion.
Click Track	A series of audio cues to synchronise music with a visual element, like a movie.
Loops	Short sections of music or sound effects that repeat continuously.
Foley	The art of creating sound effects to mimic real-life sounds in movies.

3. Diegesis

Diegesis describes anything inside the story. For music this means whether the music can be heard by the characters and whether it is part of the scene or not. Music can be background music or part of the scene.

DIEGETIC MUSIC
Where the music is part of the scene and can be heard by the characters.

NON-DIEGETIC MUSIC
Where the music is background music and is only for the audience.

2. Musical elements

Tempo	Fast	Excitement, action of fast-moving things (e.g., a car chase scene)
	Slow	Contemplation, rest or slow-moving things (e.g., a funeral procession)
Melody	Ascending	Upward movement, or a feeling of hope (e.g., climbing a mountain)
	Descending	Downward movement, or a feeling of despair (e.g., movement down a hill)
	Large Leaps	Distorted or grotesque things (e.g., a monster)
Harmony	Major	Happiness, optimism success
	Minor	Sadness, seriousness (e.g., a character learns of a loved one's death)
	Dissonant	Scariness, pain, mental anguish (e.g., a murderer appears)
Rhythm & Metre	Strong sense of pulse	Purposefulness, action (e.g., preparations for a battle)
	Dance-like rhythms	Playfulness, dancing, partying (e.g., a medieval feast)
	Irregular rhythms	Excitement, unpredictability (e.g., a fast-moving fight)
Dynamics	Loud	Menace, tension (e.g., the countdown to an invasion)
	Soft	Gentleness, weakness, intimacy, small things (e.g., a new-born lamb)
	Crescendo/Diminuendo	Objects or events getting closer / objects getting further away.

4. Key film composers

The chances are, if you have watched a film, you will have heard music from one of these five famous film composers. These composers have written to famous films like Star Wars, E.T., Harry Potter, The Getaway, The Duchess, Batman, and much more!

Their music is so famous now that their music has become more famous that most songs!

6. Links & Further Reading

Video:
60 Second Guide to Film Music
Diegetic/Non-Diegetic Music
is.gd/diegesis

Lesson:
Beginners Guide to Mixcraft
is.gd/guidetomixcraft

Revise: Flash Card Maker
is.gd/flashcardmaker

PSHE – Community and Belonging

1. Key Terms	Description
Community	A group of people who share common interests, values or goals who may reside in a shared geographic area.
Cohesion	The togetherness of a group of people, possibly in a community, where there is a sense of belonging.
Stereotypes	Generalised beliefs about a group of people based on characteristics such as race, gender, age or religion.
Diversity	The range of differences within a community including factors like race, ethnicity, gender, age, sexual orientation or religious/cultural backgrounds. Can also refer to the socioeconomic backgrounds of people within a community.
Conflict	When people disagree or clash opinions about a certain topic.
Tolerance	The willingness to accept, respect and appreciate differences in others. Being open-minded when opinions may differ.
Bullying	Intentional, repeated harmful behaviour aimed to harm or endanger another individual during an imbalance of power.

2. Community

Community relates to the area, society and people you live in and around. People who share a particular characteristic or trait. Community cohesion is important because that means the population of the community are all thinking alike and will therefore have the same views on any upcoming decision and there should be a lack of conflict.

3. Stereotypes and diversity

Stereotypes are thoughts or opinions that people uphold regarding a certain community or characteristic that are fixed, oversimplified or incorrect. An example of a stereotype would be that blue is a colour for boys and pink is a colour for girls. Diversity relates to the variety of people from different social, ethnic, and economic backgrounds. If a community is diverse, then there are people in the population representing a wide range of genders, races, sexual orientations and religious beliefs. Diversity can link to stereotyping because some people hold prejudiced, and stereotypical thoughts against people from certain cultures or backgrounds.

4. Conflict in relationships

All types of relationships have the potential to involve conflict or differences in opinions. It is important to consider and understand how we can manage relationships and deal with any conflict that may arise whether that be within families, friendship groups or in wider communities. Communication will be important along with increased levels of tolerance, a Fundamental British Value.

5. Bullying in all forms

Bullying can take shape in many forms and can become a common occurrence if relationships have high levels of conflict. Bullying can be verbal, emotional, cyber, physical or psychological, and is when unkind or harmful behaviours are repeated over a period of time. Being able to manage and control conflict in relationships will decrease the likelihood of bullying or a bullying culture. It is important to understand how to deal with bullying should you be the victim and know where to report such behaviour or to seek support. School offers a wide range of opportunities to report and gain support regarding this type of behaviour.

6. Links to External Support

Childline

www.childline.org.uk
0800 1111

Barnardo's

www.barnardos.org.uk

Religious Education

1. Key Words	Definitions
Spirituality	Having a sense of connection with something bigger than ourselves.
The Arts	The different ways that a person can express themselves creatively
Klezmer Music	Traditional Jewish music that is often played at weddings
Symbol	A visual representation of a word, idea or belief
Paganism	The collective term for pre-Christian beliefs that often involve a connection with nature and the Earth.
Methodism	A denomination of Protestant Christianity which spread quickly throughout Cornwall in the 18th Century
Obby Oss	A May Day celebration in Padstow that involves parading 2 hobby horses through the town
Furry Dance	A May celebration in Helston which involves couples dancing through the streets

How do people express their spirituality through art?

Art, music and literature are important forms of expression for many people. Whether they are religious or not, many people believe that human beings have a spiritual existence. There is a wide variety of ideas about what this actually means, but put simply, it means that being human goes beyond what we can experience with our senses, minds and intelligence.

Religious people might say that humans have a soul or some sort of non-physical form which connects them with a higher power, such as God, and which moves on to another life after the body dies.

People who are not religious may also say there is a spiritual dimension because they believe that there is more to being human than just body and mind. But they will usually not think of this as having a soul that is connected to a God.

Throughout history, people have made and used art, music, and literature to express their beliefs and spirituality.

We see this in places of worship, like Orthodox Christian churches which are full of icons and often highly decorated with gold and vibrant colours, designed to give worshippers a glimpse of what heaven may be like. Religious people will often decorate their homes with religious art as well.

Why is Cornwall considered a spiritual place?

Cornwall, is a place where history, nature, and stories blend together to create a unique and often mysterious atmosphere. Cornwall's coastline is dramatic, with high cliffs and crashing waves. Its moorlands are wide and open. These landscapes can make us feel awestruck and connected to something bigger than ourselves, giving Cornwall a spiritual feel. The Celts, ancient people who lived in Cornwall, had a strong belief in the spirit of nature. They saw magic in the land, the sea, and the sky. This connection to nature is still felt in Cornwall today, in its wild landscapes and old traditions. All around Cornwall there are examples of ancient stone circles, like the Merry Maidens, and tall standing stones, like Men an Tol. These ancient monuments were likely used for ceremonies and rituals and show us that people have felt a connection to Cornwall's land for a very, very long time. Cornish legends about creatures such as giants, mermaids and piskies add a layer of fantasy to Cornwall's history making it seem mystical and magical.

How has Cornish Spirituality developed?

Paganism

There is a long history of Pagan traditions in Cornwall. Stone circles, standing stones, and burial mounds suggest ritualistic activities and a deep connection to the land. Celtic beliefs incorporated a belief in nature spirits and the importance of sacred groves and wells.

In recent years, there has been a resurgence of pagan practices in Cornwall, with individuals and groups reconnecting with ancient traditions and celebrating seasonal festivals. Modern pagans in Cornwall often emphasize their connection to the natural environment, finding spiritual significance in the region's rugged coastline, wild moors, and sacred sites.

Christianity

Christianity arrived in Cornwall in the 4th and 5th Centuries. Numerous saints, such as Saint Piran, Saint Petroc, and Saint Michael, played vital roles in spreading Christianity throughout Cornwall. These saints established churches and holy sites, leaving a lasting impact on the region's spiritual landscape.

Early Christianity in Cornwall involved a blend of pagan beliefs alongside Christian practices.

In the 18th century, Methodism, led by figures like John Wesley, became a dominant force in the region, particularly among mining and fishing communities.

What Cornish spiritual traditions are there?

Obby Oss

Obby Oss is a May Day celebration that takes place every year in Padstow. Every 1st of May, the Old Oss and Blue Ribbon Oss are let loose from their stables to roam around Padstow in a tradition that has taken place for centuries. The Ossses are actually hobby horses which are led through the town followed by a crowd of people dressed in white and adorned with spring flowers. The procession is accompanied by the sound of accordions and drums.

Furry Dancy

Helston Flora Day is one of the oldest surviving May customs celebrating the end of winter and coming of spring. A series of dances are performed throughout the day. At the heart of the celebration is the dancing and it is called the Furry Dance. These dances involve processions of people dancing through the streets with participating characters singing about the history of Helston, including the challenge of the Spanish Armada, the English patron saint, St. George and the fight between St. Michael and the devil.

Watch this video to find out how Barabara Hepworth was inspired by different locations in Cornwall

Spanish

1. Week 1 – On my mobile

Actividades en el móvil y la música	
sacar fotos	to take a photo
hablar por skype	to talk on skype
mandar mensajes	to send messages
jugar	to play
leer mensajes	to read messages
descargar aplicaciones	to download apps
chatear con amigos	to chat with friends
compartir vídeos	to share videos
ver películas	to watch films
escuchar música	to listen to music
escuchar de todo	to listen to anything
la música clásica	classical music
un cantante	a singer
una canción	a song

2. Week 2 – Things I like

Opinions and adjectives	
me gusta	I like
le gusta	he / she likes
nos gusta	we like
preferir	to prefer
prefiero	I prefer
prefiere	he / she prefers
mas ... que	more ... than
divertido	fun
aburrido	boring
emocionante	exciting
guay	cool
educativo	educational
nuevo	new

3. Week 3 – TV and film

Programas y películas	
un programa de deportes	a sports programme
un documental	a documentary
una comedia	a comedy
una serie	a series
un programa de tele-realidad	a reality TV show
una película de acción	an action film
una película de amor	a romantic film
una película de aventuras	an adventure film
una película de dibujos animados	an animated film
una película de ciencia ficción	a sci-fi film
una película del oeste	a western
una película de terror	a horror film

4. Week 4 – The advantages of technology

Las ventajas y desventahas	
un ordenador	a computer
las redes sociales	social networks
un móvil inteligente	a smart phone
un videoconsola	a video console
correo electrónico	email
útil	useful
seguro	safe
peligroso	dangerous
caro	expensive
barato	cheap
pesado	annoying
lento	slow
emocionante	exciting
fácil de usar	easy to use

5. Week 5 – Question words

Las preguntas	
qué	what
cómo	how
por qué	why
dónde	where
adónde	where to
de dónde	from where
cuándo	when
cuánto/a	how much
cuántos/as	how many
cuál	which
quién	who
a qué hora	at what time
a la una	at one o'clock
a las dos y media	at half past two

6. Week 6 – Revision – the autumn term

Words you may have forgotten	
el verano pasado	last summer
ir	to go
voy	I go
fui	I went
una playa	a beach
una piscina	a pool
una plaza	a town square
una tienda	a shop
un mercado	a market
un estadio	a stadium
un parque de atracciones	a theme park
me quedé	I stayed

Spanish

7. Week 7 – Revision – the Spring term

Words you may have forgotten	
jugar	to play
juego	I play
jugué	I played
hacer	to do (go + activity)
hago	I do
hice	I did
ver	to see / watch
veo	I see / watch
vi	I saw
un partido	a match
un equipo	a team
miembro	member
el campo de deporte	a sports pitch
la natación	swimming
la vela	sailing
el baloncesto	basketball
el baile	dance

8. 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	

9. 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	

10. 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

11. Week 11 – Asking for directions

¿Dónde está?	
¿dónde está ...?	where is...?
está lejos	it is far away
está cerca	it is near
al final de	the end of
a la derecha	to/on the right
a la izquierda	to/on the left
sigue esta calle	follow this road
gira....	turn
toma....	take
pasa...	go past
cruza	cross
coge	catch
la primera calle	the first street
la segunda calle	the second street
la tercera calle	the third street

12. Week 12 – Shopping related vocab

Vamos de compras	
¿Me puede ayudar?	Can you help me?
Quisiera	I would like
¿Cuánto cuesta?	How much is it?
¿Cuánto cuestan?	How much are they?
¿Puedo probar...?	Can I try...?
este / esta	this
estos / estas	these
jersey	jumper
camiseta	t-shirt
camisa	shirt
vestido	dress
pantalones	trousers
pantalones cortos	shorts
falda	skirt
chaqueta	jacket
sombrero	sunhat

Rounders

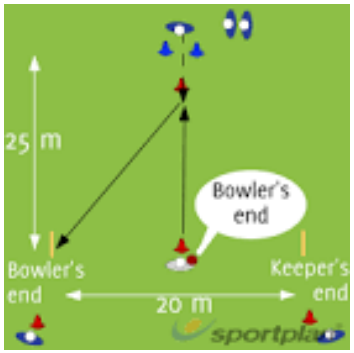
Key Knowledge and Skills

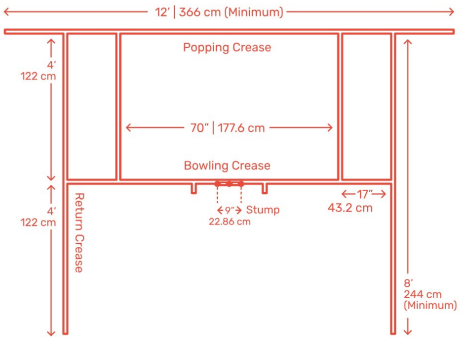
Bowling – developing consistency of bowling performance, using the underarm bowling technique aiming between the head height and knee height levels.
Overarm throwing – developing the distance and power that can be generated by using the overarm throwing technique to minimise running opportunities for batters.
Backstopping – playing the position located behind the batter to collect and catch any mishits or "airshots". Usually able to run out batters by getting the ball to first base. Also able to help the bowler aim their bowl by standing in position.
Batting - learning to aim your shots tactically now you are more confident and competent at striking the ball with success.
Post work – being able to field on a post, able to work with the rest of your team to catch the ball and run out the opposition. Must always remain inside the diamond, obstruction will award opposition a half rounder per incident.
Tactical Development (fielding) - continuing the progression of fielding tactics application to minimise scoring opportunities for the opposition. How fielders can be placed according to their strengths to be most success

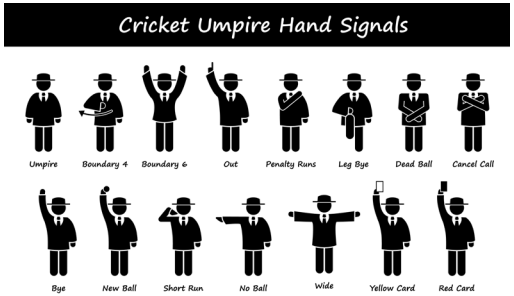
Rules, Techniques and Strategies

- Stealing Bases - occurs when a baserunner advances by taking a base to which he isn't entitled.
- Back hand strike - a way of hitting the ball with the bat when the batter swings the bat from the opposite side of their body, compared to the more common forehand strike. It's typically used when the ball is pitched on the side of the batter that makes a forehand strike difficult or awkward to execute.
- Power hitting - involves striking the ball with enough force and precision to achieve maximum distance or speed, allowing the batter to get to bases more easily and potentially score more runs.
- Touching runner with the ball - a play in which a baserunner is out because a fielder touches him with the ball or with the hand or glove holding the ball, while the ball is live, and the runner is in jeopardy of being put out
- Innings – the end of the batting innings for a team which leads to them becoming the fielding side.
- Backing up - refers to the act of a fielder positioning themselves to support the primary fielder in case of an error or missed throw. It's an essential defensive strategy, as it helps to prevent the opposition from advancing more easily and can help minimize scoring opportunities.

Cricket







Key Knowledge and Skills

Throwing and catching – Enhancing throwing and catching techniques from Year 7, deciding what techniques to use, when and why!
One handed pick up – being able to pick the ball up one-handed and also on the move to maximise the opportunity for running out an opponent.
Leg-side/Off-side – the different sides to the pitch from the batter's perspective (leg side is the side of the pitch your legs are when batting, off-side the side of the bat).
Pull shot – a backfoot attacking shot aiming to hit the ball to the leg side of the batter.
Cut shot- a backfoot attacking shot aiming to hit the ball to the offside of the batter
Swing bowling – a method of bowling where the ball swerves through the air either away from, or into, the batter.
Running between the wickets – maximising speed and effectiveness of running between the wickets. Learning the calls that you and your partner should use to communicate with one another.
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

Rotating the strike – ensuring you are effectively running singles with your batting partner to switch up the batsman is bowling at.
Wides - when bowling, you must bowl the ball down a specified channel. Failure to do so will result in a "wide", runs given to the batting team
No balls – If your ball bounces more than twice before it reaches the batter, or reaches the batter above waist-height without bouncing, this is called a "no ball" and runs are given to the batting team.
Throwing to the right end – when fielding, being able to communicate as a team to get the ball thrown to the correct end to maximise chances of running out a batter (bowler's end or wicketkeeper's end)

HRE

Fitness Terminology

Muscular Strength – The maximum force that a muscle or group of muscles can generate.
Flexibility – The range of motion around a joint or group of joints.
Coordination – The ability to use different parts of the body together smoothly and efficiently.
Reaction Time – The time it takes to respond to a stimulus.
Rest and Recovery – Taking time to allow muscles to repair and rebuild after exercise.
Target Heart Rate – The ideal heart rate zone for effective cardiovascular exercise.

Health Terminology

Nutrition – The intake of food and its effect on health and performance.
Body Composition – The proportion of fat and non-fat mass (muscles, bones, etc.) in the body.

Softball

Rules, Techniques and Strategies

Bunt – A gentle tap of the ball without swinging to make it more difficult for a fielder to get the ball.
Double play – A defensive play in which 2 runners are put to out.
Tag out - a play in which a baserunner is out because a fielder touches him with the ball or with the hand or glove holding the ball, while the ball is live, and the runner is in jeopardy of being put out
Relay throw - occurs when a ball is hit deep in the outfield and your outfielder does not have the arm strength to get the ball to the necessary base from where they field the ball.
Loaded bases - referring to the offensive team when there are runners on. first, second and third base.
Walk - occurs when a pitcher throws four pitches out of the strike zone, none of which are swung at by the hitter.

Key Knowledge and Skills

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Athletics

Key Knowledge

Long Jump: Athlete runs and leaps as far as possible into a sandpit.
Triple Jump: A hop, step, and jump sequence into a sandpit.
Shot Put: Throwing a heavy spherical object (the shot) as far as possible
Running Form: Proper posture, foot strike, arm movement
Jumping Technique: Approach, take-off, flight, and landing for different jumps

Rules and Key Terms

Pacing: Managing speed throughout a race, especially in middle and long distances.
Tempo: Maintaining a consistent pace in middle and long-distance running.
Lane Discipline: Staying within the designated lane during races.

Notes Pages

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