Year 7
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

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	
1	7X1	INSET DAY	Computing	Drama		Science	Spanish		RE			
	7X2			English		Science	Spanish			Music		
	7X3				RE	Science	Spanish		Drama	Art	Music	
	7X4				DT	Science		Computing			RE	
	7Y1			Drama		Science						
	7Y2						Art					
	7Y3			DT		Mathematics	RE					
	7Y4		Food	Geography	Computing							
2	7X1			English	Mathematics		Art				History	
	7X2		Art		Mathematics		RE				Geography	
	7X3			English							DT	
	7X4		Music	English	Mathematics		Drama			Spanish	Art	
	7Y1					English	Spanish				History	
	7Y2					English	Spanish			Geography		Computing
	7Y3			Computing	Food	English	Spanish					
	7Y4					English	Spanish			History		
3	7X1						Food			Geography		
	7X2				Food					DT		
	7X3			Mathematics					Computing	History		
	7X4									Geography		
	7Y1		Art		Music	Mathematics		DT		Geography		
	7Y2					Mathematics		History	Food			
	7Y3		Geography			Science		Drama		Art		
	7Y4				Art	Mathematics				Drama		
4	7X1									Music	DT	
	7X2				Computing					Drama	History	
	7X3									Geography		Food
	7X4							Food		History		
	7Y1					Computing		RE		Food		
	7Y2		DT		Drama	Science	RE	Music				
	7Y3			History	Music							
	7Y4			Music	RE	Science		DT				

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.

Home Learning & 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 understand what an autobiography is and why they are written.				
I can understand significant ideas conveyed by Malala Yousafzai in her writing.				
I can understand important ideas expressed by Benjamin Zephaniah in his writing.				
I can support my ideas with evidence, including quotations.				
I can analyse language used by writers.				
I understand the plot of The Bone Sparrow.				
I can use my understanding of a character from across a whole text to create a thesis about them.				
I can analyse the meaning and effect of a range of key quotations.				
I can use context to enhance my analysis of a key character.				
I can write a formal letter to express an opinion.				
I know how to use a range of sentence structures in my letter writing.				

Maths

Key Ideas	Sparx Code	S	O	R	T
I can form and simplify ratios	M885				
I can write ratios and fractions and fractions as ratios	M267				
I can share in a ratio	M525				
I can use a ratio to scale 2 quantities	M478				
I can identify factors	M823				
I can identify multiples	M227				
I can find the HCF & LCM	M698				
I can write a number as the product of its prime factors	M108				
I can identify factors	M823				
I can identify multiples	M227				
I can find the HCF & LCM	M698				
I can calculate probabilities	M655				
I can form and simplify ratios	M885				
I can write ratios and fractions and fractions as ratios	M267				
I can share in a ratio	M525				
I can use a ratio to scale 2 quantities	M478				
I can identify factors	M823				
I can identify multiples	M227				
I can find the HCF & LCM	M698				
I can write a number as the product of its prime factors	M108				
I can write probabilities as fractions	M941, M938				
I can find the probability of mutually exclusive events	M755				
I can find angles on a line and around a point	M818				
I understand vertically opposite angles	M163				
I can find angles in triangles	M351				
I can find angles in quadrilaterals	M679				
I can use properties of quadrilaterals to find angles	M393, M679				
I can calculate with roots	M135				

Personal Learning Checklists

Science

Key Ideas	S	O	R	T
I can describe the effects of forces using examples of contact and non-contact forces				
I can explain the difference between mass and weight				
I can calculate weight, mass and gravity by using formulae				
I can interpret distance-time graphs				
I can calculate pressure				

Science

Key Ideas	S	O	R	T
I can describe the process of photosynthesis				
I can test a leaf for starch				
I can explain the structure and function of a leaf				
I can describe the process of aerobic respiration				
I can understand how toxins accumulate in the food chain				

Personal Learning Checklists

Art

Key Ideas	S	O	R	T
I understand tone, texture, shape, pattern, scale, line and composition.				
I understand how to mix and blend secondary colours.				
I experimented with a range of materials to create primary and secondary colours.				
I can explain how to develop my ideas.				
I can explain how my ideas are linked to Derain, Thomas and Seurat.				
I can explain how to create a Pointillism technique.				
I understand how Seurat used colour and pointillism to create colour and tone.				

Computing

Key Ideas	S	O	R	T
I know how to design a simple Scratch program				
I know what the menu block are and how to select in Scratch				
I understand the computing terms, Sequence and Selection				
I can create and use variables in scratch				
I can create my own blocks to simplify the code				
I can create Scratch code which uses selection.				
I can explain how iteration can be used to improve code using loops.				
I can identify when count control iteration is being used.				

Design Technology

Key Ideas	S	O	R	T
I can use ideas from existing designs as inspiration.				
I can select a material with suitable properties to manufacture my mobile phone holder.				
I can select the correct tool when working to manufacture my design.				
I can use tools safely and with precision.				
I can evaluate my product to identify what went well and areas for improvement.				
I can use ideas from existing designs as inspiration.				

Personal Learning Checklists

Drama

Key Ideas	S	O	R	T
I can use accurate facial expressions and gestures in my performance				
I can project my voice and speak clearly				
I can identify physical and vocal skills and consider which would be appropriate for different characters				
I can stay in role throughout a performance				

Food

Key Ideas	S	O	R	T
I can explain sources of micronutrients in food				
I can explain the term provenance with examples of food labels to identify provenance				
I understand the importance of energy balance.				
I can explain the difference between macronutrients and micronutrients				
I can explain the four conditions bacteria needs to multiply				
I can explain why food should not be kept in the danger zone				

Geography

Key Ideas	S	O	R	T
Describe the processes of erosion				
Describe the processes of transportation				
Describe the processes of weathering				
Describe the processes of mass movement				
Compare the characteristics of constructive and destructive waves				
Explain the stages in the formation of a stack				
Explain the stages in the formation of a headland and bay				
Explain the advantages and disadvantages of coastal defence schemes				
Describe the processes of erosion				

Personal Learning Checklists

Geography

Key Ideas	S	O	R	T
Define the terms weather and climate				
Describe the UK weather patterns				
Explain the effects of air masses upon UK weather				
Explain the factors that influence UK weather				
Define microclimate				
Explain each factor that influence microclimates				
Outline the stages involved in a geographical enquiry				
Explain the stages involved in a microclimate enquiry				
Define the terms weather and climate				

History

Key Ideas	S	O	R	T
I can explain what life was like generally in Tudor England				
I can state examples of African people in Tudor England				
I can explain life for African people in Tudor England				
I can explain life for Tudor women				
I can explain why the civil war began				
I can state examples of Cornwall in the Civil War				
I can explain what the witch craze was				
I can state what happened in England after the Civil War				
I can make judgments on and explain my views of our enquiry questions				

Music

Key Ideas	S	O	R	T
I am able to successfully understand and can play a polyrhythm				
I can follow a cyclic rhythm and am able to explain what it is				
I can perform a call and response rhythm				
I can name a number of West African instruments				
I understand and can teach others what the three main djembe techniques are				
I understand about the cultural and historical significance of West African music				

Personal Learning Checklists

PSHE

Key Ideas	S	O	R	T
I can explain what is meant by the term Democracy				
I can outline some of the ways Democracy developed in the UK				
I can outline the different parts of Parliament				
I can explain what the House of Commons does				
I can explain the role of an MP				
I can explain what we mean by an election				
I can outline how and why people vote				
I can debate my opinions on lowering the voting age				
I can describe the role of the House of Lords				
I can explain the different responsibilities of the House of Lords				
I can explain the term Human Rights				
I can consider the importance of Human Rights				
I can understand the development of rights over time.				
I can explain the term tax				
I can consider how tax is collected and how it is spent				
I can suggest ways I think taxes should be spent				

Religious Education

Key Ideas	S	O	R	T
I can explain how Siddhartha Gautama became the Buddha				
I can outline the Buddha's t4eachings about suffering and morality				
I can explain what it is like to live as a Buddhist monk				
I can outline the origins of Sikhi				
I can explain how Sikhi developed after Guru Nanak's death				
I can explain what it means to be part of the Khalsa				

Spanish

Key Ideas	S	O	R	T
I understand the rules for correct pronunciation				
I can express and justify my opinion				
I can talk / write about my school				
I can talk / write about my freetime activities				
I can talk / write about the weather				
I know how to form regular verbs in the present tense				
I know how to form verbs in the near future tense				
I can talk / write about myself and my family				
I can order food in a restaurant				

English – Autobiography

1. Subject vocabulary

1a= autobiography (noun) an account of a person's life written by that person.
1b = triple (noun) Use of three words in a short list to emphasise your point and support your argument.
1c = emotive language (noun)
Words and phrases that make the reader feel strong emotions e.g. sympathy, anger
1d = protagonist (noun)
the main character in a text
1e = imperative (noun)
a command or an order
1f = repetition (noun) use of a word or phrase more than once to highlight its importance
1g = contrast (noun) description of two different things that highlights their differences
1h = quotation (noun) words or phrases taken directly from a text to support a critical idea and marked out using quotation marks
1i = evidence (noun) Quotations or references to a piece of writing, selected to support a point made when writing analysis.

2. Vocabulary

2a = oppression (noun) a situation in which people are ruled in a cruel way and prevented from having opportunities and freedom
2b = rebellion (noun) action against those in authority, against the rules
2c = founded (verb) to have started something, to have brought something into existence
2d = chanted (verb) to repeat or sing a phrase or song continuously
2e= terrorist (noun) someone who uses – or uses the threat of - violence, serious damage to property or attempts to cause a threat to people's lives, and where they are designed to influence the government, or an international governmental organisation or to intimidate the public, for the purpose of advancing a political, religious, racial or ideological cause.
2f = emerging (verb) coming out of; growing
2g = dignity (noun) the importance and value that a person feels, that makes others respect them or makes them respect themselves
2h = ambitions (noun) strong wishes to achieve something
2i = courage (noun) bravery
2j = independent (adjective) not influenced or controlled in any way by other people or things
2k = empower (verb) to give someone official authority, freedom or motivation to do something
2l = united (adjective) joined together as a group

3. Writers

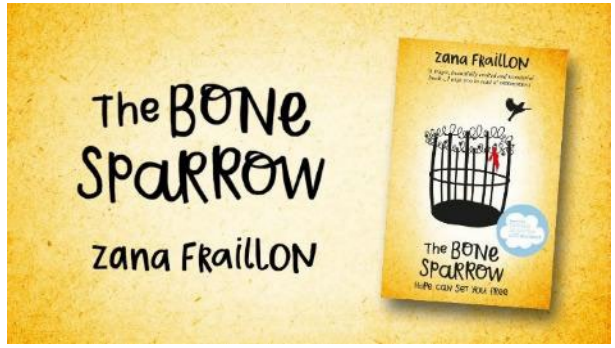
3a = Malala Yousafzai
Malala Yousafzai was born in Pakistan, where girls like her were not allowed to go to school. She spoke out about this unfairness. When she was just 15, the Taliban tried to stop her by shooting her in the head. But she survived and kept on speaking up for girls' education. After the shooting, Yousafzai didn't give up. She traveled around the world, telling everyone that girls deserve the chance to go to school. She even won the Nobel Peace Prize. Now, she runs the Malala Fund, which helps girls get an education.

3b = Benjamin Zephaniah
Benjamin Zephaniah is a famous poet and writer from England. He was born on April 15, 1958, in Birmingham. When he was young, he faced discrimination because of his Jamaican heritage. He used his experiences to speak out through his poetry. Zephaniah became known for his powerful words about equality and justice.
Zephaniah has written poems and other texts that have inspired people all over the world. His words encourage others to stand up for what is right and to never give up hope.

English – The Bone sparrow

1. Plot

1a = Ch 1 - 10	1. We learn about Subhi's life in a refugee detention centre, with his family Maa and his sister Queeny. 2. Life within the detention centre and the harsh conditions are explained, along with the the superstition of the 'deadly' bone sparrow. 3. Jimmie life is described. 4. We read about Eli the tradesman, who delivers secret packages with Subhi to the centre. 5. Subhi gets caught by Beaver. 6. The reader learns about Jimmie's life without her mother. 7. Subhi, disorientated from his fall, spots Jimmie in the distance. 8. Harvey explains Beaver's circumstances. Eli is transferred to the adult section of the centre even though he is only a child. 9. Jimmie's thinks about Subhi's existence and is eager to go back to the centre. 10. Subhi finally meets Jimmie face to face. We learn that Jimmie can't read and wants Subhi to read her mum's story about her family history.
1b = Ch 11-20	11. Subhi reads the first story of Jimmie's ancestors in her mum' journal. 12. Jimmie reflects on the story and hears her mum's voice. 13. The reader learns it is Subhi's birthday in the centre and more about the identity of Nasir. Subhi learns from his mum about his identity. 14. Subhi meets with Jimmie and reads the next part of her mum's story. 15. Jimmie reflects on Subhi's life in the Detention Centre and is frustrated to hear how he lives.. 16. Queenie and Eli take secret pictures of the camp to send to the papers to inform the public about their horrific conditions. 17. Nasir dies and Subhi continues to tell Jimmie's story. 18. A sickness enters the camp. Subhi continues to read Jimmie's story. 19. Subhi is reflecting and discovering his own identity. 20. Jimmie finds a picture of Subhi's living conditions in the local paper.
1b = Ch 21 -30	1. Jimmie brings Subhi a picnic and asks him to help her read. 2. We learn about Jimmie going back to a home in which she is neglected. 3. Eli and Queeny have an argument. Subhi finds a knife buried in the dirt but leaves it hidden in a different location. 4. Jimmie's dad - to make up for his late working hours - gets her a present which reflects her bone sparrow. 5. Hunger strikes and riots develops more seriously in the camp. 6. Jimmie picks up flu and is weak from her sickness. She is unable to walk to meet Subhi. 7. Subhi reads Jimmie's last part of the story while he waits for her. He is unaware of her illness. 8. Huge change in atmosphere as the Jackets try to control the riots happening in the camp using force and brutality. 9. Subhi escapes the centre to find Jimmie unconscious and rings for an ambulance. 10. After a fire erupts In the centre and chaos descends, Eli dies trying to save people from the brutality.
1b = Ch 30 -37	1. We learn about Eli's story about his journey as a refugee. 2. Subhi is in shock after witnessing the death of Eli. Harvey is trying to console him through guilt. 3. We learn more about the about Harvey's being a bystander to Eli's death. Subhi is feeling guilt and angry at Harvey. 4. Subhi learns the truth about his Ba. 5. Jimmie returns to good health and Subhi wants to write about Jimmie's story and his experience. 6. We begin to see change and Subhi reads the final story to Jimmie. 7. Subhi talks about new beginnings in his story to Maa and Queeny.



2. Context

2a = The Bone Sparrow was based on experiences of refugees in Australian detention centres**.** Immigration detention centres in Australia are used to detain people who are found in Australian waters fleeing from their countries. Similarly, people who have stayed longer in the country than their visa allows have also been reported to be seen in there. The centres have been likened to concentration camps by some critics.

2b = In writing this book, Zana Fraillon hopes to draw attention to the plight of asylum seekers. She says she was inspired by stories of real-life refugees in Australia and her horror at the way asylum seekers are treated worldwide.

English – The Bone sparrow

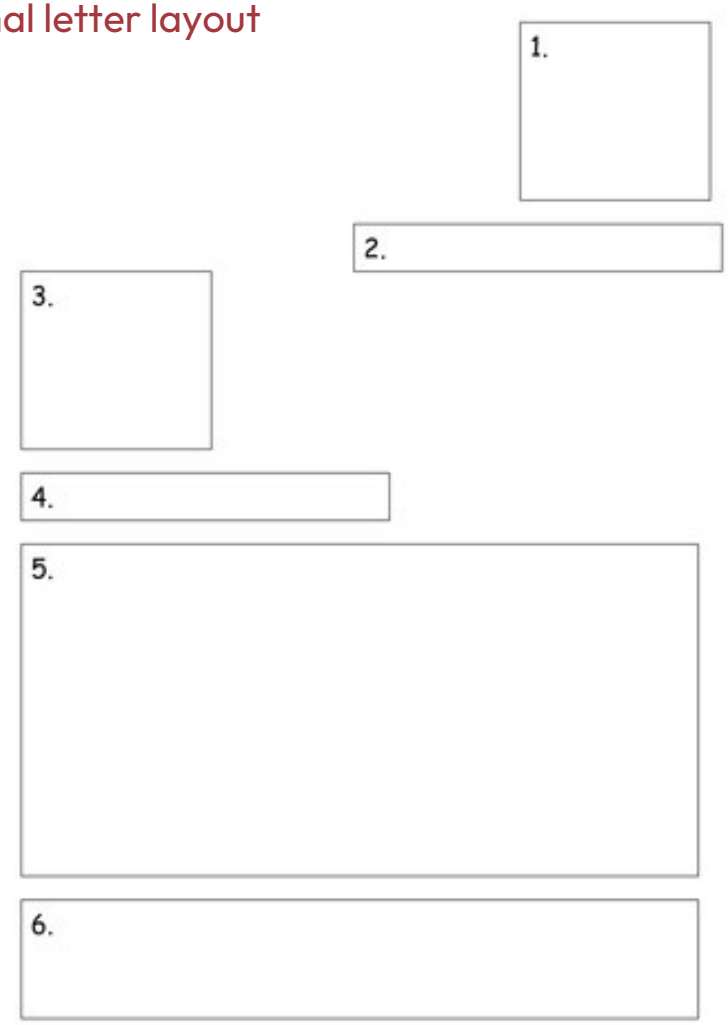
3. Vocabulary

3a = refugee (noun) a person who has been forced to leave their country in order to escape war, persecution or disaster
3b = displace (verb) remove someone from the usual or proper place OR force someone to leave their home because of war or persecution
3c = tragic (adjective) very sad, often involving death and suffering
3d = illiterate (adjective) unable to read or write
3e= generations (noun) groups of people of about the same age within a society
3f = undeniable (adjective) so obviously true that it cannot be said to be wrong
3g = stench (noun) an intensely strong and unpleasant smell
3h = guardian (noun) a person who protects or defends something
3i = imagination (noun) the ability to form mental pictures of people or things, or to have new, creative ideas
3j = meagre (adjective) a small amount OR (of a person) thin and lean
3k = raged (verb) felt or expressed violent, uncontrollable anger
3l = etched (verb) to cut a pattern or picture into a smooth surface, especially on metal or glass

4. Subject vocabulary

4a= language (noun)
Words or methods (techniques) used by writers to present their meanings or create effects.
4b = setting (noun) Where or when the play takes place, usually introduced at the exposition (beginning) of a story.
4c = characterisation (noun) The creation or construction of a fictional character.
4d = narrator (noun) the 'person' in the novel who tells the story; fictional construct the author has created to tell the story through.
4e = first person narrative voice (noun phrase) a story told from the point of view of a character, using pronouns such as 'I' and 'we'
4f = simile comparing one thing to another using the words 'like' or 'as' to highlight qualities shared by the two things being compared
4g = metaphor comparing one thing to another directly, to highlight qualities shared by the two things being compared
4h = personification (noun)
Verbs that express a command or an instruction e.g. 'Sit down' and 'Carry those logs.'
4i = pathetic fallacy (noun)
Giving human feelings and emotions to something not human, particularly the weather or environment, to enhance the mood of the writing.
4i = symbol (noun) a character, object, setting or colour that represents a broader idea, group of people or feeling

5. Formal letter layout



1. Writer's address
2. Date
3. Recipient's address
4. Greeting / salutation
5. Main body
6. Sign-off

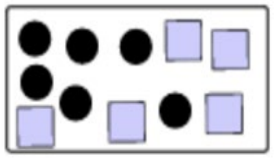
Maths

Prime Number	A number whose only factors are one and itself
Highest Common Factor	The highest number which goes into both quantities given
Lowest Common Multiple	The first number which is a multiple of all of the quantities given
Factor	A number which divides into another e.g 6 is a factor of 12
Quadrilateral	A 4 sided shape
Polygon	Any 2 dimension shape with straight sides
Rhombus	A quadrilateral where all sides are the same and opposite angles are equal
Kite	A quadrilateral with a line of symmetry across one of its diagonals
Parallelogram	A quadrilateral with two pairs of parallel lines and two pairs of equal side lengths
Trapezium	A quadrilateral with one pair of parallel lines
Ratio	A relationship between two quantities
Multiplier	The value which you can multiply a quantity by to get another.
Probability	The chances of an event happening
Mutually Exclusive	Mutually exclusive events are events that can not happen at the same time
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 7 Maths Knowledge Organiser Learning Cycle 3

1 Forming Ratio

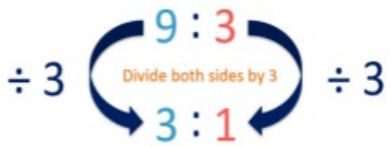
Ratios describe relationship between 2 quantities.
Give the order the values were given.i.e circles first.



Circles : squares

6:5

2 Simplifying Ratios

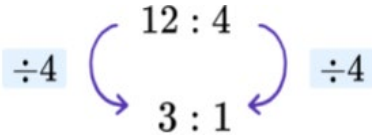


- Look for a common factor

In the numbers which make up the ratio.

- Divide by the common factor.

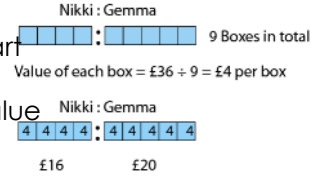
3 Ratio in the form n:1



Simplify the ratio as before, but instead of choosing the common factor divide so you get 1 (sometimes you are asked for 1:n instead)

4 Sharing In a Ratio

- Count the total number of parts.
- Find the value of 1 part By Division.
- Multiply to find the value Of each group.



5 Ratios as Fractions

b : r

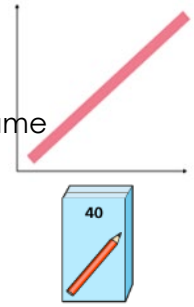
3 : 2

The fraction for blue is 3/(3+2) so 3/5
The fraction for red is 2/(3+2) so 2/5

6 Direct Proportion

- As one quantity increases So does the other by the same Rate. For example:

1 box of contains 40 Pencils so 2 boxes has 80 Pencils.



7 Direct Proportion with Recipes

	Eggs	Flour	Milk
10 pancakes	2	150g	250ml
5 pancakes	1	75g	125ml
15 pancakes	3	225g	375ml

÷2, ×3 (10 pancakes → 5 pancakes)
÷2, ×3 (10 pancakes → 15 pancakes)

8 Combining Ratios

The ratio $a : b$ is 4 : 3
The ratio $b : c$ is 2 : 5
Work out the ratio $a : c$

$a : b =$ 4 : 3 = 8 : 6

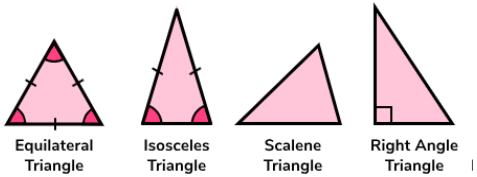
$b : c =$ 2 : 5 = 6 : 15

These ratios are connected by the part 'b', so make these equivalent

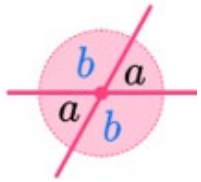
Ratio

Year 7 Maths Knowledge Organiser Learning Cycle 3

1 Types of Triangle



2 Vertically Opposite Angles

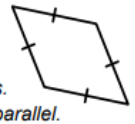


Vertically opposite Angles are equal To each other

3 Naming Quadrilaterals

Quadrilaterals are four sided shapes (**quad** meaning *four*, **lateral** meaning *lines*)

Rhombus



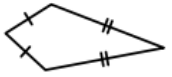
Four equal sides.
Opposite sides parallel.

Trapezium

One pair of parallel sides.

Parallelogram : *Opposite sides are parallel*

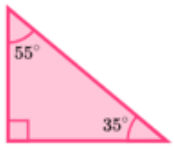
Kite



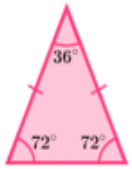
Two pairs of adjacent sides equal.

4 Angles In A Triangle

Angles in a Triangle sum to 180^0

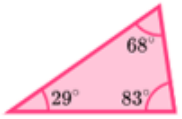


Right angled triangle
One right angle
90 + 55 + 35 = 180°



Isosceles triangle
Two equal sides & angles
72 + 72 + 36 = 180°

Equilateral triangle
hree equal sides & angles
60 + 60 + 60 = 180°



Scalene triangle
All sides & angles different
83 + 68 + 29 = 180°

5 Angles In A Quadrilateral Sum to 360^0

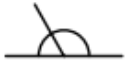
We can prove this using the angle sum of a triangle.

E.g.

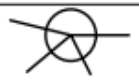
This is the same for all types of quadrilaterals.

8 Angles On a Line and Around a point

Adjacent angles on a straight line add up to 180°



Adjacent angles around a point add up to 360°

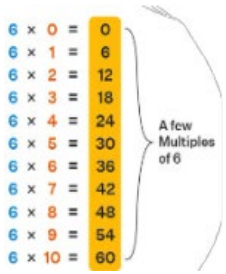


Lines and Angles

Year 7 Maths Knowledge Organiser Learning Cycle 3

1 Multiples

- Multiples are numbers which are in the times tables.
- For example 18 is a multiple of 6



2 Factors

- Factors are numbers that will divide into another number. For example 5 and 6 are both factors of 30

Factors of 30

Factor pairs
1 30
2 15
3 10
5 6

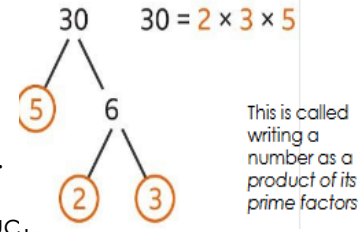
3 Prime Numbers

Prime numbers only have two factors: 1 and itself
(only 2 numbers will divide into it)

2 3 5 7 11 13 17
19 23 29 31 37 41
43 47 53 59 61 67
71 73 79 83 89 97

4 Prime Factor Decomposition

- Break a number down into factor pairs.
- Circle the primes.
- Write the circled numbers as a produc..



This is called writing a number as a *product of its prime factors*

5 Lowest Common Multiple From A List

- LCM means the lowest number
  In both times tables.
- List both times tables and stop when you find a number in both lists.

Example LCM of 4 & 5 is 20

Multiples of 4:
4 8 12 16 **20** 24 28 32 36 **40**

Multiples of 5:
5 10 15 **20** 25 30 35 **40**

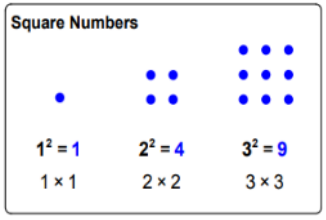
6 Highest Common Factor

- The HCF is the highes number
That goes into both.
For example the HCF of 18 and 27 is 9.

Factors of 18 are:
1 2 3 6 9 18

Factors of 27 are:
1 3 9 27

7 Square Numbers



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

8 Square Roots

$\sqrt{\ }$ is read 'square root'

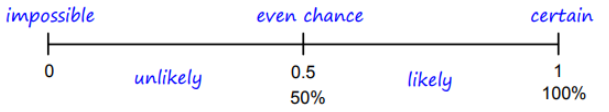
Evaluate $\sqrt{36}$ = 6

Primes, Factors and Roots

Year 7 Maths Knowledge Organiser Learning Cycle 3

1 The Probability Scale

The probability scale describes the chance of something happening:



2 Probability Vocabulary

Probability: **the chance of an event occuring.**
We can describe probabilities in words:
Impossible: will never happen
Unlikely: will happen less than half the time
Even chance: as likely to happen as not
Likely: will happen more than half the time
Certain: will definitely happen

3 Writing Probabilities

More accurately, we can describe probabilities using fractions, decimals or percentages. As a fraction, the probability of an event is:

$$\frac{\text{number of successful outcomes}}{\text{total number of equally likely outcomes}}$$

4 Writing Probability

A bag contains 8 counters.
3 of the counters are red.
Mark the probability of picking a red counter on the number line:

this point represents a $\frac{3}{8}$ chance

5 Mutually Exclusive Events

Mutually Exclusive Events can not happen at the same time. For example 'landing on a 5' and 'landing on a 6' on a dice are mutually exclusive events

6

Twirling a spinner

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

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

7 Probability of an Event Not Happening

A spinner used in a game shows the numbers 1-5. The table shows the probability of it landing on each number. The chance of it landing on the number 4 is double the chance of it landing on 1. Complete the table.

No	1	2	3	4	5
Prob		0.2		0.3	0.1

Since it must land on one of the numbers 1-5, then these probabilites add up to 1.

1 - 0.2 - 0.3 - 0.1 = 0.4
*P(1) = 0.3 ÷ 2 = **0.15***
*P(3) = 0.4 - 0.15 = **0.25***

Probability

Year 7 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

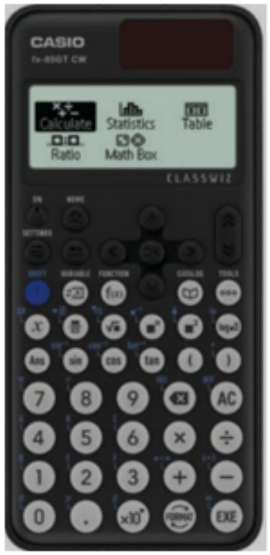


Table (menu 3): This is where you can generate values within a table- useful for plotting graphs and generating terms of a sequence.
Home/table/press f(x) button and scroll to 'define f(x)'. Type in the function using the x button and then it will show the table.

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

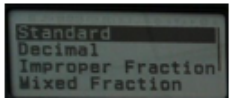
Fraction button: can be used for ay calculations with fractions. Example

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

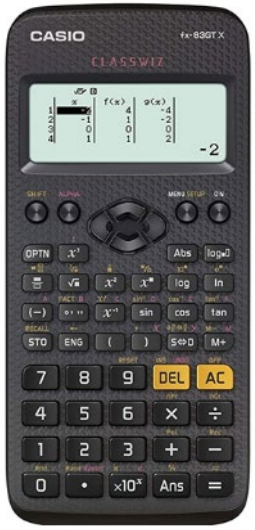
To see the result as a mixed number, press:
FORMAT ▽ ▽ ▽ ▽ to select **Mixed Fraction**
EXE

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

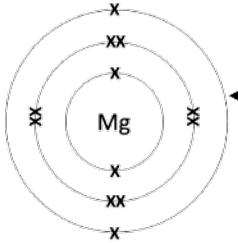
relative atomic mass
atomic symbol
name
atomic (proton) number

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

Non-Metals

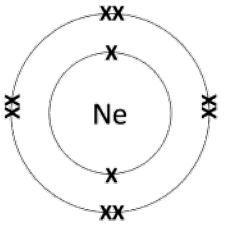
Transition Metals

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

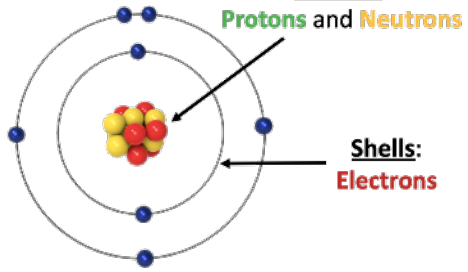


Magnesium (Mg) has **12 electrons** in total. It is in **group 2** so has 2 electrons in its **outer** shell. Mg's electronic configuration is 2,8,2.

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

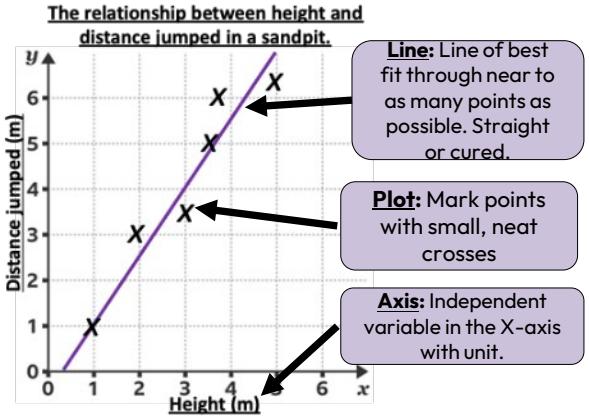
Control variables – I want **keep everything else the same**, e.g., the type of teabag, the volume of water (mL) used, the timer started at the same time, the same end point.

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!

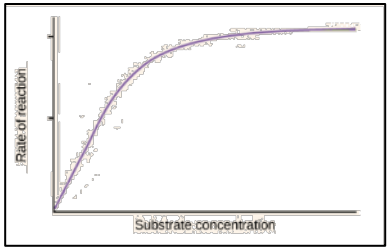
3. Graphs

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.

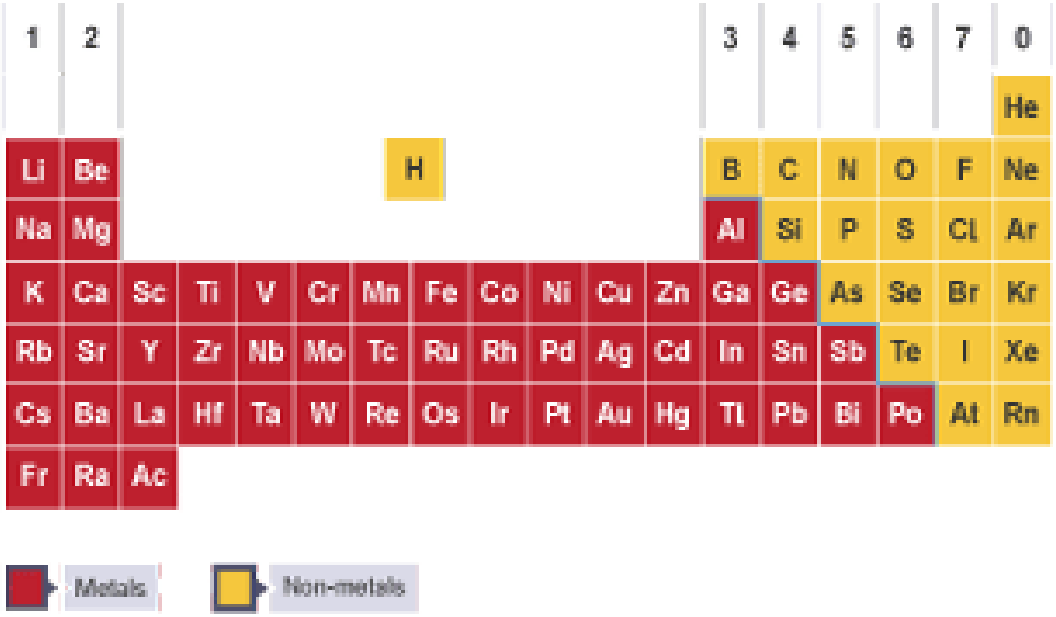


Model Answer: As the substrate concentration increases, the rate of reaction increases. For example… The rate increases more rapidly initially, then increases more slowly until the rate stays the same.

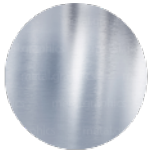
Science – Chemistry -The periodic table

1. Key Words	Definitions
Atom	The smallest part of an element which can exist.
Element	A substance made of only one type of atom.
Compound	A substance made of more than one element, chemically bonded together.
Nucleus	Contains protons and neutrons, has most of the mass of the atom.
Proton	Subatomic particle found in the nucleus of an atom. Has a charge of +1 and a relative atomic mass of 1.
Neutron	Subatomic particle found in the nucleus of an atom. Has no charge and a relative atomic mass of 1.
Electron	Subatomic particle found in the electron shells of an atom. Has a charge of -1 and a relative atomic mass of close to 0/negligible.
Reactive	The ability of matter to combine chemically with other substances, in a chemical reaction, causing a new substance to be formed.
Malleable	Being able to bend or shape easily.
Conductor	A material that allows electric currents (flow of electric charges) to pass through it.
Alloy	A mixture of 2 or more elements, one of which must be a metal.

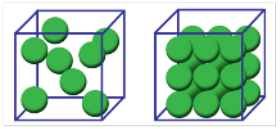
2. The Periodic Table – Metals and Non-Metals



3. Metal properties

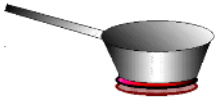


Shiny



High Density

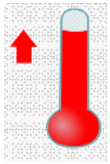
Strong



Good **Heat** Conductor

Malleable

Conduct Electricity



High **melting** and **boiling** point

Usually solid at **room** temperature

Science – Chemistry -The periodic table

1. The periodic table

Look at the periodic table on page ____ of the knowledge organizer.

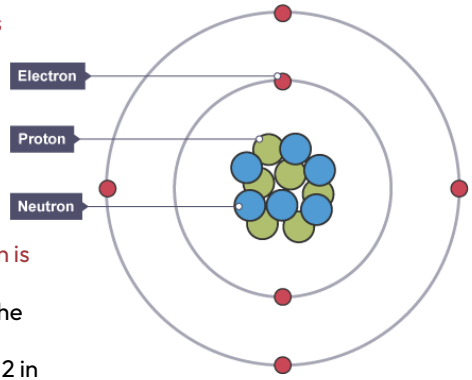
In the modern periodic table:

- The elements are arranged in order of increasing atomic number.
- Metals are found on the left of the periodic table and non-metals on the right.
- The horizontal rows are called periods.
- The vertical columns are called groups.
- Elements in the same group have similar chemical properties.
- All element symbols start with a capital letter, but when a symbol has 2 letters in it the second letter is always lower case. For example, the element symbol of magnesium is Mg, not MG.

2. Structure of the atom

Protons and neutrons are both found in the nucleus.

Electrons are found on the electron shells orbiting the nucleus.



Electron configuration is 2, 8, 8, 2.

2 electrons can fit in the first shell, 8 in the second, 8 in the third, 2 in the fourth.

Subatomic particle	Relative mass	Relative Charge
Proton	1	+1
Neutron	1	0
Electron	Very small	-1

3. Dmitri Mendeleev

Mendeleev arranged the elements in order of increasing atomic mass. When he did this, he noted that the chemical properties of the elements and their compounds showed a periodic trend.

He then arranged the elements by putting those with similar properties below each other into groups.

To make his classification work Mendeleev made a few changes to his order:

- He left gaps for yet to be discovered elements, these gaps meant he could predict the properties of these undiscovered elements.
- He switched the order of a few elements to keep the groups consistent.

4. Properties of metals and non metals

Metal and non-metal elements have different properties:

- Most metals have high melting and boiling points
- Most non-metals have low melting and boiling points

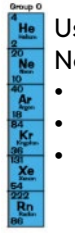
The table shows some other differences in physical properties of metals and non-metal:

Properties of a typical metal (when solid)	Properties of a typical non-metal (when solid)
Good conductor of electricity	Poor conductor of electricity
Good conductor of heat	Poor conductor of heat
Shiny	Dull
High density	Low density
Malleable	Brittle
Ductile	Brittle

5. Group 1, 7 and 0

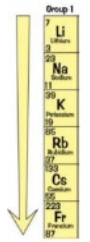
Properties as you go DOWN groups 1, 7 and 0

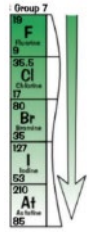
Group 0 – Noble gases	Group 1 – Akali metals	Group 7 – Halogens
Unreactive – has a stable full outer shell	Reactivity increases – 1 electron in outermost shell	Reactivity decreases – 7 electrons in outermost shell
Boiling points increase	Melting and boiling points decrease	Melting and boiling points increase
	Soft	Colour gets darker
	Low density	



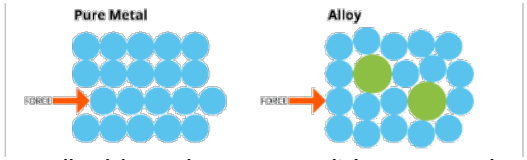
Uses of the Noble gases:

- Neon signs
- Balloons
- Double glazing





6. Alloys



Pure metals are malleable as layers can slide over each other. Alloys are harder than pure metals because they have different sized particles, so it is harder to slide the layers over one another.

7. Further reading and websites

https://www.bbc.co.uk/bitesize/topics/zv9nhcw – Everything you need to know about the periodic table. Includes Physical and chemical properties, developing the periodic table, the modern periodic table, making predictions and metals and non-metals.

Science - Wildlife Science

1. Key Words	Definitions
Sexual reproduction	The production of new organisms by combining DNA from two organisms of different sexes.
Photosynthesis	A chemical reaction in the chloroplast of a plant that makes glucose (sugar) by absorbing energy from the sun. Carbon dioxide + Water ⊠ Glucose + Oxygen
Fertiliser	A substance added to soil that improves the growth of plants.
Aerobic respiration	A chemical reaction inside cells that releases energy from glucose by reacting it in the presence of oxygen.
Anaerobic respiration	A chemical reaction inside cells that releases energy from glucose without oxygen.
Ecosystem	The living organisms in a particular area, together with the non-living components of the environment.
Community	All the organisms that live in a habitat (plants and animals).
Habitat	The place where an organism lives.
Biotic	The living parts of an environment e.g the number of predators.
Abiotic	The non-living parts of an environment e.g. the amount of water.
Bioaccumulation	The gradual build up of substances in an organism e.g. pesticides and heavy metals.

2. Photosynthesis revision

https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zjqfsk7?course=zdcg3j6

3. Factors affecting photosynthesis revision

https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/ztd6xbk?course=zdcg3j6

4. Respiration revision

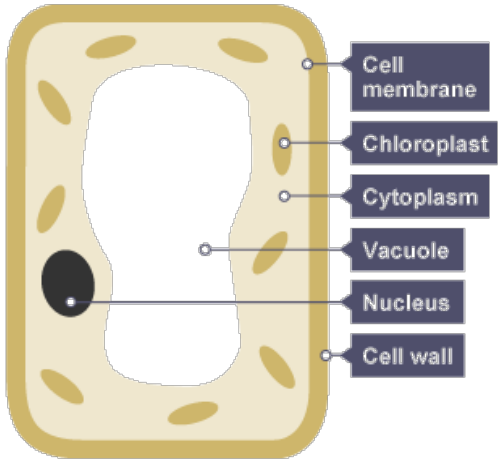
https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zdqx2v4

5. Ecosystems, food chains and bioaccumulation revision

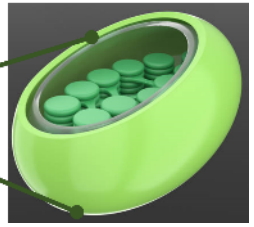
https://www.bbc.co.uk/bitesize/topics/z4brd2p/articles/zvdpf82

Science - Wildlife Science

1. Photosynthesis



- Leaves have lots of chloroplasts
- Chloroplasts contain chlorophyll
- This is a green pigment so leaves appear green!



Photosynthesis occurs only in plant cells, inside their chloroplasts and only in the light so it cannot occur underground (i.e., in root hair cells).

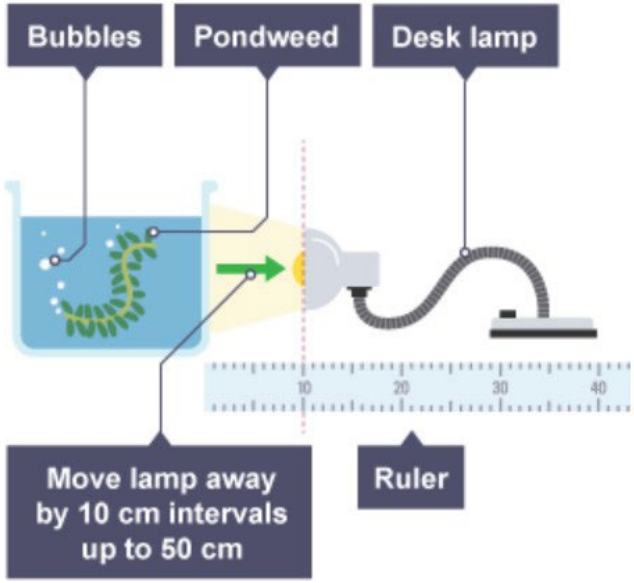
Plants get carbon dioxide from the air through their leaves, water from the ground, and light from the sun!. This produces glucose (food for the plant) and oxygen.

If a plant's leaves cannot undergo photosynthesis, it will die.

Carbon dioxide + water → Glucose + Oxygen

2. Photosynthesis Investigation

We can investigate the rate of photosynthesis (how much is happening) by changing the light intensity (how much light) a plant gets! The number of bubbles produced represents the rate of photosynthesis.



Independent variable: The light intensity (how close the light is)

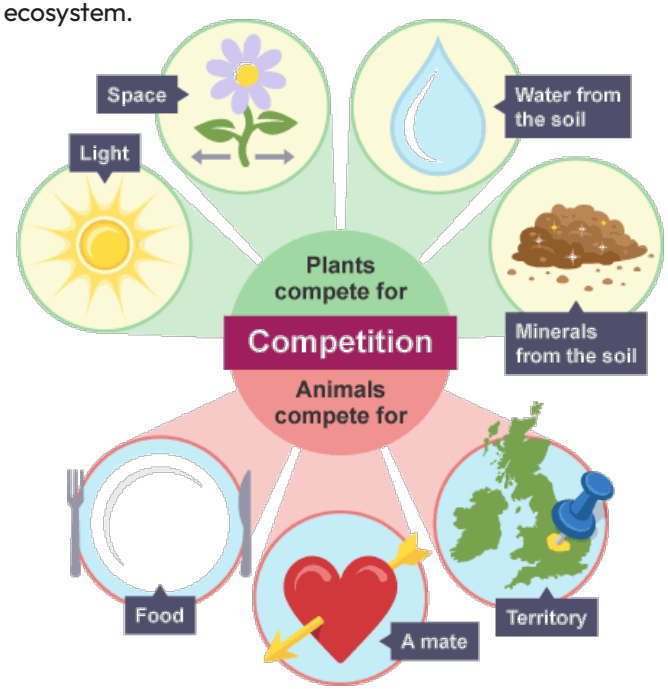
Dependent Variable: the number of oxygen particles produced (representing the rate of photosynthesis)

Control variables: The mass of the pondweed, the volume of water used, the temperature.

3. Ecosystems: Competition and Habitats

An ecosystem is the living (biotic) organisms in a particular area together with the non-living (abiotic) components of the environment, such as soil, air and water.

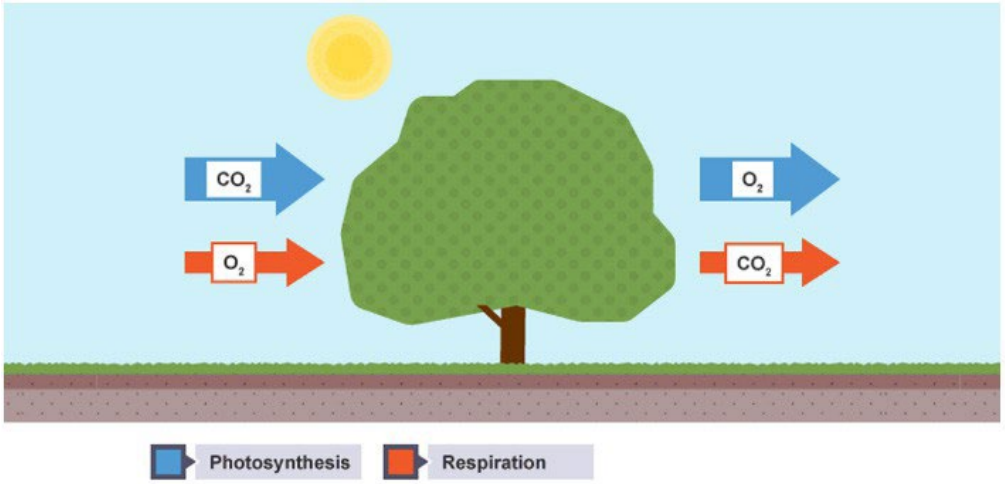
A habitat is a place where organisms live in an ecosystem. A community is the populations of organisms that live in an ecosystem.



Science – Wildlife Science

4. Respiration

Time	Photosynthesis	Respiration	Gases into leaf	Gases out of leaf
Day (Light)	✓	✓	Carbon Dioxide	oxygen, water vapour
Night (dark)	✗	✓	No gas exchange as stomata close at night	No gas exchange as stomata close at night



Photosynthesis cannot occur during the night – it needs light from the sun!
Respiration happens throughout the whole day.

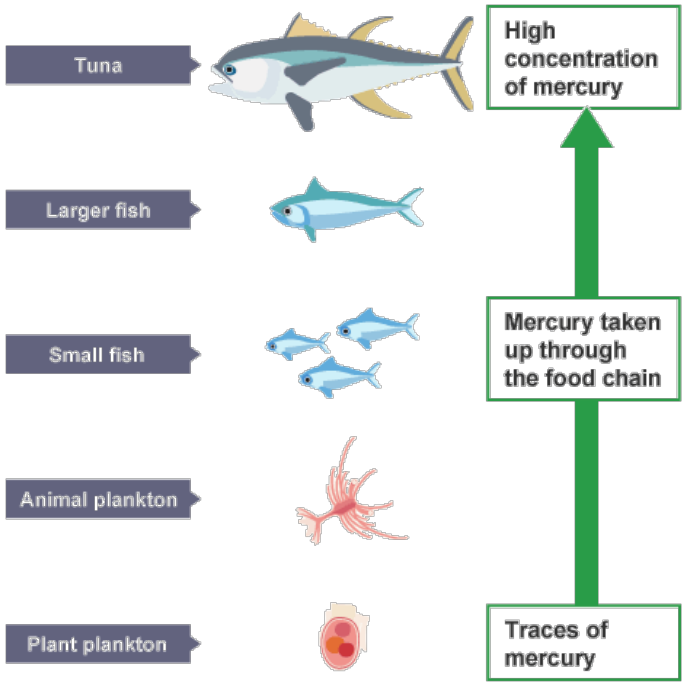
Aerobic Respiration:

Oxygen + Glucose → Water + Carbon Dioxide

5. Bioaccumulation

Bioaccumulation refers to the build up of often toxic substances in an organism over time.

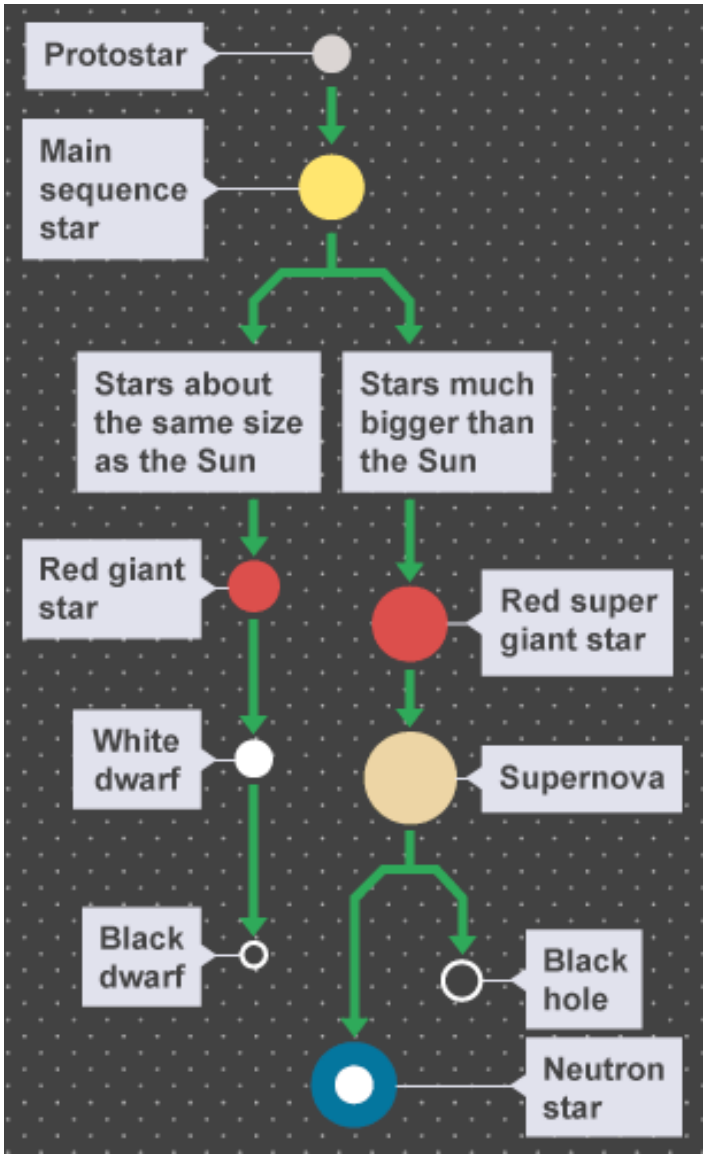
E.g., the toxic build-up of mercury in tuna, or microplastics in whales.



Science – Physics - Space

1. Key Words	Definitions
Planet	A spherical object much smaller than a star, made of rocky or gaseous material (or a combination), which orbits a star.
Solar system	Our solar system consists of The Sun, with planets and smaller objects such as asteroids and comets in orbit around it.
Star	A huge, compared to Earth, sphere of superhot gas undergoing nuclear fusion reactions.
Galaxy	Collections of thousands of millions of stars.
Orbit	When an object travels in a circular motion kept in orbit by gravity around a particular point in space.
Satellite	Any object that is in orbit around a planet. The Moon is a natural satellite of the Earth, but communication satellites are artificial satellites of the Earth.
Seasons (spring, summer, autumn, winter)	Caused by the Earth's position in relation to the Sun. Depending on how the Earth is titled towards the Sun affects the temperatures and climates that different regions experience.
Axis	An invisible line, around which an object rotates or spins.
Earth's Rotation	Earth rotates around its axis, anticlockwise once every 24 hours
Big bang theory	According to the Big Bang. theory, about 13.8 billion years ago the whole Universe was a very small, extremely hot and dense region. From this tiny point, the whole Universe expanded outwards to what exists today.
Aerodynamics	The study of airflow over surfaces to allow the design of surfaces that reduce wind resistance, turbulence, friction and noise generation.

2. Life Cycle of a Start

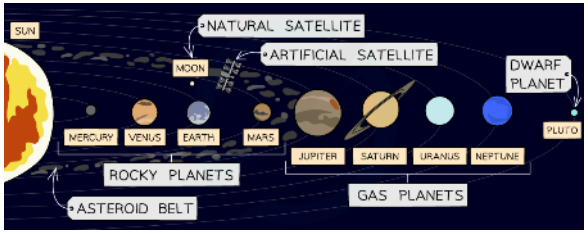


Science – Physics - Space

1. Solar Systems and Planets

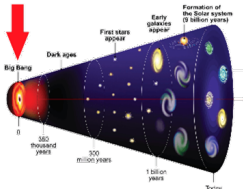
Use this acronym to help remember the order of the planets:

My
Very
Easy
Method
Just
Speeds
Up
Naming



2. The big bang theory

The Big Bang theory is a scientific approach to answering the question of how the world began. In answering this question, the Big Bang theory removes the need for a creator.



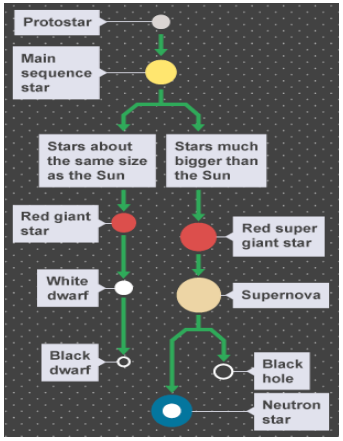
Put simply, the theory states that around 14 billion years ago all matter and energy in the universe was at a point of infinite density and temperature. It then expanded rapidly. Eventually stars, galaxies and planets formed. This expansion was the beginning of time and continues to this day.

Prediction from Big Bang theory	Evidence observed	Does evidence support the Big Bang theory
More distant galaxies should move away faster	More distant galaxies have greater red-shift	Yes
Initial heat from the Big Bang should now be thinly spread across the whole universe	CMBR is everywhere at a temperature of about -270°C	Yes

3. The life cycle of a star

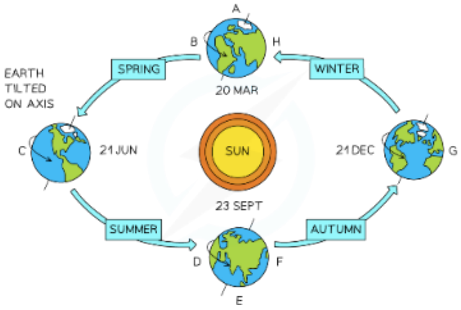
The life cycle for a particular star depends on its size. The diagram shows the life cycles of stars that are:

- About the same size as the sun
- Far greater than the sun in size



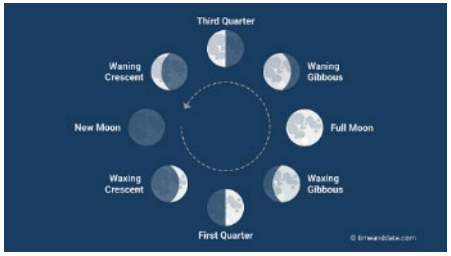
4. Earth's rotation and seasons

- As Earth orbits the Sun, it rotates on its axis. Each rotation of Earth on its axis takes 24 hours
- Earth takes approximately 365 days to orbit once around the Sun.
- As Earth moves through its orbit around the Sun, different parts of the planet are tilted closer or further from the Sun, because of the tilt in Earth's axis.
- This tilt causes the seasons: spring, summer, autumn and winter.



5. The moon

- The Moon is a lot smaller and closer to Earth than the Sun.
- The Moon orbits the Earth. This takes 28 days or one lunar month.
- The Moon reflects light from the Sun and that is why we can see it. It is not a source of light but acts like a mirror.
- The gravitational pull of the Moon and the Sun cause the tides the ocean experiences on Earth.

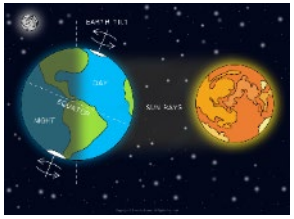


Phases of the Moon.
As the Moon orbits the Earth, we see the Moon from different angles each night. It appears to change shape as we see different parts of the surface lit up. These shapes are called the phases of the Moon.

6. Day and night

The Earth's rotation around its axis creates day and night

- Day is experienced by the half of the Earth's surface that is facing the Sun
- Night is the other half of the Earth's surface, facing away from the Sun



7. Further reading and websites

https://www.bbc.co.uk/bitesize/topics/z8c9q6f - Everything you need to know about space. Includes Features of our solar system, The Sun as a star, days, months, years and seasons, The phases of the moon, Tides and Will a human ever be born on Mars?

Science - How to Approach 6 Mark Questions

1. How to approach 6 mark questions in Science – The periodic table

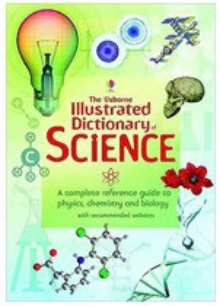
Topic	C2 Periodic table
Question	Explain the arrangement of the first 20 elements in todays periodic table. Identify and explain the changes Mendeleev made to the periodic table. Explain why Mendeleev's periodic table was accepted.
Info	At least one of these questions is likely to come up. The examiner is going to be looking for a clear answer in a logical sequence
Top tip	Be careful that you use key words/phrases accurately (these are in bold in your model answers below).
Model Answer	Explain the arrangement of the first 20 elements in todays periodic table. The elements are arranged in order of their atomic number. Elements in the same group have the same number of electrons in their outermost shell.
Model Answer	Identify and explain the charges that Mendeleev made to the periodi8c table. Mendeleev left gaps for the discovery of new elements. He also rearranged the position of some of the elements so that the properties fitted other elements in the same group
Model Answer	Explain why Mendeleev's periodic table was accepted over time. New elements were discovered that fitted into the gaps that Mendeleev had predicted. Also, when the neutron was discovered, this led to an understanding of isotypes which explained why Mendeleev needed to swap the position of some elements.

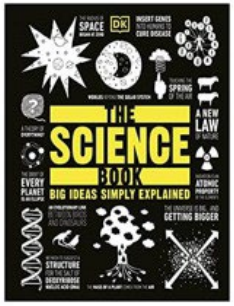
2. How to approach 6 mark questions in Science - Space

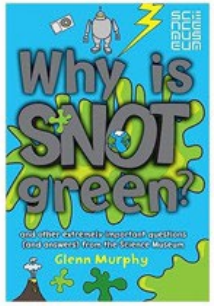
Topic	P16 Space
Question	Describe how our sun formed. Describe how a massive star will change at the end of the main stable period. Explain why the Sun will not undergo a supernova
Info	At least one of these questions is likely to come up. The examiner is going to be looking for a clear answer in a logical sequence
Top tip	Be careful that you use key words/phrases accurately (these are in bold in your model answers below).
Model Answer	Describe how our sun formed. Our sun from dust and gas which were pulled together by gravity. As more mass was pulled together it got very hot. When it got hot enough hydrogen nuclei fused together releasing energy in the form of heat and light. This energy caused expansion which balanced the gravitational pull
Model Answer	Describe how a massive star will change at the end of the main stable period. The star will turn into a red super giant. This red super giant will then become a supernova before then either forming a dense neutron star or shrinking to form a black hole.
Model Answer	Explain why the Sun will not undergo a supernova The sun is not a massive star. It is only massive stars that undergo a supernova. Instead the sun will form a red giant and then a white dwarf before becoming a black dwarf.

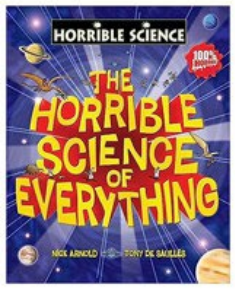
Science

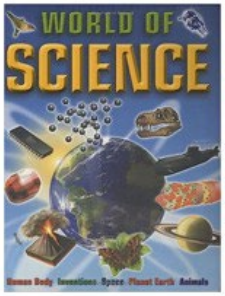
1. Science reading opportunities

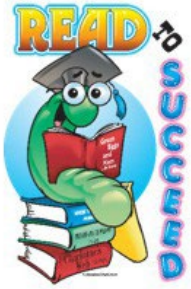




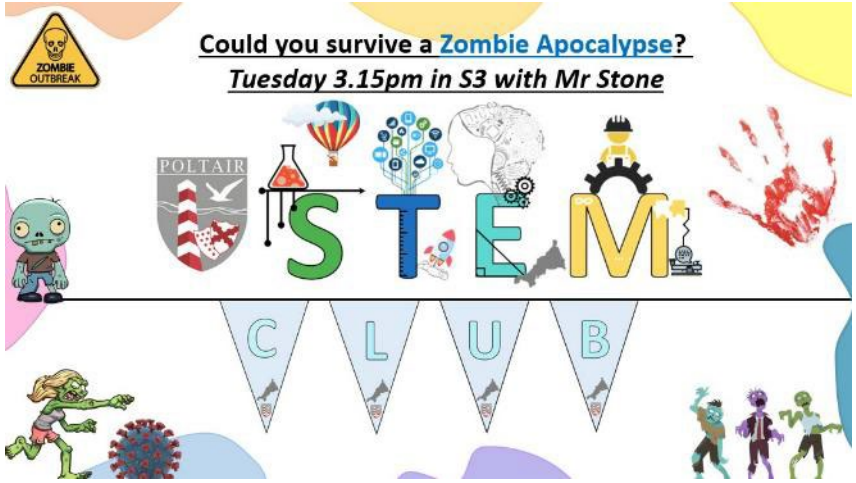








2. STEM club: Science, technology, engineering, Maths



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

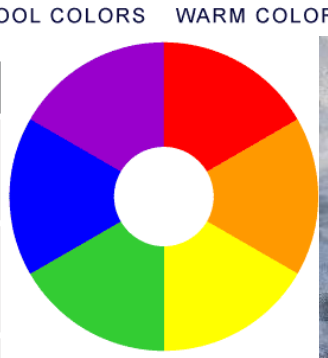
Art – Making Marks

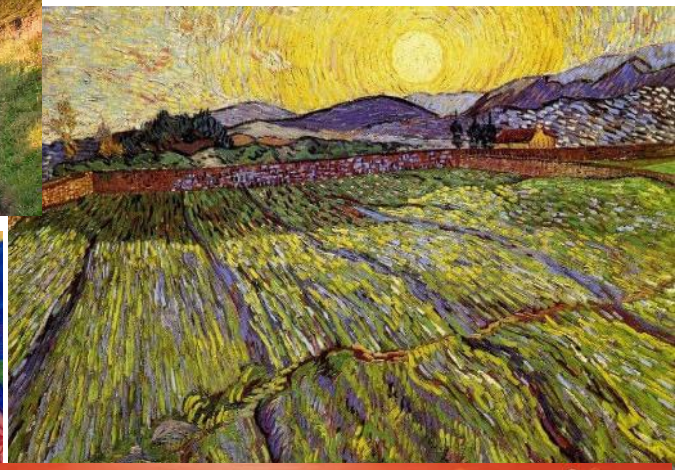
1. Tier Three Vocabulary

Key Words	Definitions
Primary	The first set of colours. Red, Yellow and Blue. They cannot be made
Secondary	The second set of colours. Made by mixing two primary colours together
Complementary	Colour that is opposite on the colour wheel. Colours complement each other. Mixing together produces the Tertiary colours
Tertiary	The third set of colours. Three shades of brown. Made by mixing the complementary colours
Fauves	The wild beasts, An art movement from 1905-1910. Using colour to express detail, light and tone
Pointillism	A technique and art movement which began in 1886. Seurat and Signac were the pioneers of this style

2. Enrichment:

1. Visit Kurt Jackson's gallery in St Just, Cornwall.
2. Visit Tate St Ives, Cornwall.





What will I learn?

What.

You will be introduced to a range of artists that have explored how to use colour in a landscape. We will look at Andre Derain, Fauves, Alma Thomas, Van Gogh, Wilhemina Barnes-Graham, Kurt Jackson and Aboriginal art.

Why?

To develop our understanding and appreciation of our immediate environment. Cornwall but with a global perspective.

How?

Researching, selecting, presenting, experimenting and developing a landscape painting.

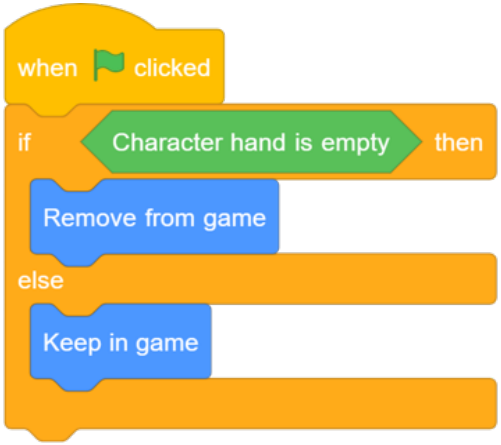
Computing – Scratch programming

1. Sequence & selection

Key Words	Definitions
Algorithm	Logical instructions for carrying out a task -needed to design computer programs.
Sequence	A set of programming instructions that follow on one from another
Variables	A named part of the algorithm that can be given a value. Eg Score
Scratch	A high-level block-based programming language

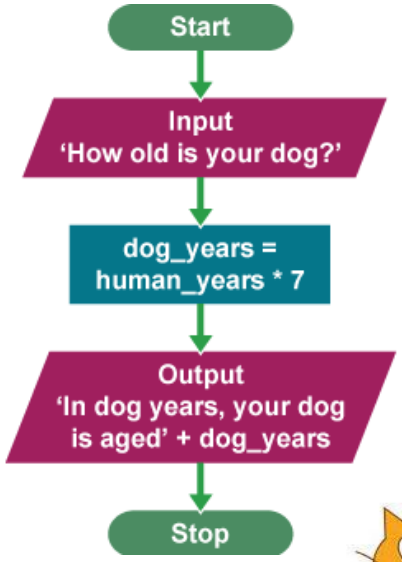
You can select what happens to an object, variable or sprite by using selection statements

If.....then....else



2. Flow diagrams

A Flow Diagram is used to describe what an algorithm is doing

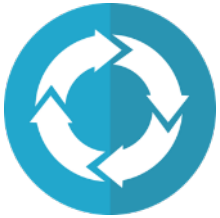


3. Scratch Iteration

Repeating part of the code:

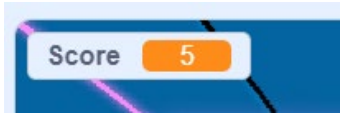
Count controlled iteration	Repeating a section of code for a specific number of times.

Why use Iteration?



It allows algorithms to be simplified by stating that certain steps will repeat. This makes designing algorithms quicker and simpler because they don't need to include lots of unnecessary steps

Scratch Variables



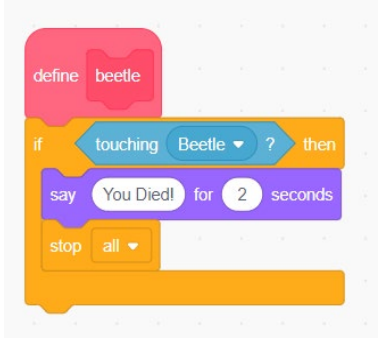
An example of a variable is Score. This changes as a player completes challenges and can make a game more interesting.

4. Scratch Game Design

- A good game is not too difficult to play but also not too easy- this is called Gameplay
- The characters you interact with or take over must appeal to your audience.
- There may be and interesting story line which keeps you coming back for more.
- Game setting - The design of the game is also important too and companies employ designers to create the game worlds.

Scratch My Blocks

Scratch has lots of blocks you can use but you can also create your own code block if you want to simplify your code or reuse code you have written



Design Technology

1. Key Words

Key Words	Definitions
Hegner Saw	A type of machine saw that can be used to cut curved edges in thin materials.
Aesthetics	What a design or product looks like.
Ergonomics	Designing a product to fit the user and be comfortable to use.
Consumer	The person that uses a product.
Isometric	A 3D representation of a design where horizontal lines are drawn at a 30 degree angle.
2 Point Perspective	Uses two vanishing points to create a 3D drawing of an object.
Thermoplastic	A polymer (plastic) that can be made to change shape when heated. On cooling, it stays this shape.
Vanishing Point	A point on a drawing where parallel lines would meet in the distance.
Quality Control	Checks ensuring that the quality of a product is acceptable at different stages of production.
Etch	Using a laser beam or tool to mark the surface of a material without cutting right through it.
Jig	A device used to hold a piece of material in a certain way. This ensures that the same parts can be made more quickly without remeasuring.

4. Using a hegner saw

A Hegner Saw is a machine-operated version of a coping saw. It moves the blade up and down very quickly. It works best with wood as acrylic can melt and fuse around the blade. Remember to place your hands either side of your work and away from the path of the blade. Hold your work down to prevent it 'bouncing' but there is no need to push your work onto the blade – Just feed it gently.

2. Analysing Existing

These mobile phone stands have been made using acrylic. The angles have been formed by softening the acrylic using a line bender and then bending the material into shape. Different angles and sizes could be made for different phone types although there is no easy way to charge the phone on the stand.

This mobile phone stand has been made by cutting two pieces of plywood using a laser cutter. Most phones will fit on the stand and there is a space for the charging cable to pass through. The two pieces can come apart, so the stand can be disassembled to take up less space during storage and transportation.

These phone holders have been made by cutting shaped pieces of the hardwood beech and gluing them together. The same base can be used for each product, but consumers can select which figure they would like to use for their product.

5. Workshop Safety

1. Always wear goggles when using 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. Dust from sawing wood using the Hegner saw or fumes from using the Laser Cutter can be harmful. Always ensure that the LEV is running before using the Hegner saw. The Laser Cutter cannot be operated without the fume extraction on, but remember not to open the lid until the fumes have been extracted after the laser finishes cutting your job.

3. Bending Acrylic

Acrylic is a thermoplastic. This means that heating it causes it to soften. When it softens, it can be bent/shaped. We can do this in the workshop by using a hot wire/ line bender. The acrylic is placed over the hot wire and allowed to soften. Wearing gloves, it can then be bent to shape and held in place until it cools. Once cool, the acrylic retains this new shape, unless heated again.

6. Links and Further Reading

Designing:
https://www.bbc.co.uk/bitesize/guides/z6jkw6f/revision/1

How to bend acrylic
https://www.youtube.com/watch?v=-s1d4xy6uiw&list=PLcvEcrsF_9zIxoGGU59CjuZHciPl9uvGm&index=43

Revise:Mindmap Maker
is.gd/mindmapmaker

Drama - Matilda

1. Key Words

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

2. Plot

Matilda is a little girl with big curiosity, a sharp mind and a vivid imagination - and the worst parents in the world. While her parents content themselves with trashy TV and dodgy money-making schemes, she loves to lose herself in the pages of her beloved books. Where they are loud, selfish and unkind she is a quiet observer, thinking up small and cheeky acts of rebellion and revenge. On meeting her inspirational teacher, Miss Honey, Matilda is encouraged and begins conjuring her own fantastical tales. Excited to attend Crunchem Hall, Matilda is surprised to find the school is an ominous and oppressive place led by the huge and villainous Miss Trunchbull. As well as kind Miss Honey, the bright lights among the meanness are story-loving librarian, Mrs. Phelps and Matilda's newfound school friends. Filled with an overwhelming sense of justice, Matilda dares to take a stand for what is right and teach Trunchbull a lesson she won't forget.

3. Context

Roald Dahl's Matilda The Musical, with a book by Dennis Kelly and music and lyrics by Tim Minchin, is based on the Roald Dahl book, Matilda. A children's novel that was published in 1988, it became notable in years thereafter for a film adaptation in 1996 that starred Danny DeVito and Rhea Perlman. The Royal Shakespeare Company had a desire to bring Dahl's work to the stage in 2009, so they reached out to Kelly, a writer for film and television, and Minchin, a comedian and musician, to work on the show, before beginning to assemble the creative team.

4. Characters

Matilda	An imaginative girl who is clever and wise far beyond her years. She has a thirst for learning that cannot be quenched. Likable and charismatic, honest and unassuming, but with a prankster streak and a strong sense of justice
Miss Trunchbull	Headmistress of Crunchem Hall, the tyrannical headmistress at Matilda's school who despises children. Sly, conniving and cunning
Miss Honey	Matilda's kind-hearted teacher. She is tired of living in fear under Miss Trunchbull. Sweet, honest, caring, and intelligent
Mr Wormwood	Wormwood is Matilda's uncaring father. A slimy, greedy used-car salesman, unintentionally hilarious
Mrs Wormwood	Mrs. Wormwood is Matilda's self-absorbed, negligent mother who is obsessed with amateur ballroom dancing.
Bruce	Bruce is a genuine, kind boy with a fondness for sweets; his spirit is broken by the Trunchbull but he bounces back stronger than ever
Lavender	Matilda's classmate and friend. Loud and wacky - likes to have fun
Amanda	Very sweet girl who is quite shy. Scared of Ms. Trunchbull, but feels safe with Miss Honey

5. Links and Further Reading

RSC Matilda The Musical Production Website

is.gd/matildaproduction

Official West End TrailerRSC Roald Dahl's Matilda the Musical

is.gd/westendtrailer

Filmed Production

Full length musical production performed by the Palatka High School Musical Theatre Department.

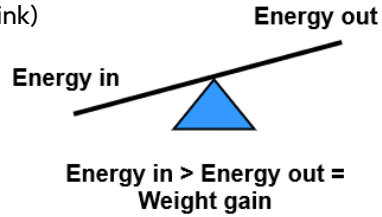
is.gd/filmedproduction

Food - Hygiene, Safety & Balanced Diet

1. Key Terms	Description
Sources	The source of the nutrient, which food is it found in for example meat is a source of protein.
Provenance	The place of origin
Organic	Organic food is the product of a farming system which avoids the use of man-made fertilisers, pesticides; growth regulators and livestock feed additives
Free Range	Livestock (animals) that have had free range in fields for most of their life.
Carbohydrates	Foods such as pasta, potatoes, sugars that give us energy.
Energy Balance	To maintain body weight it is necessary to balance energy intake (from food and drink) with energy expenditure (from activity).
Vegetarian	A person who does not eat meat
Vegan	a person who does not eat or use any animal products, such as meat, fish, eggs, cheese, or leather
Danger Zone	Bacteria multiply between 5-63'C
Cross-contamination	Bacteria transferred from one food to another unintentionally

4. Energy balance

To maintain body weight it is necessary to balance energy intake (from food and drink) with energy expenditure (from activity).



2. Micronutrients

Micronutrients

Vitamins

There are two groups of vitamins:
fat-soluble vitamins, e.g. vitamins A and D.
water-soluble vitamins, e.g. B vitamins (thiamin, riboflavin, niacin, folate, vitamin B12) and vitamin C.

Minerals

Minerals are inorganic substances required by the body in small amounts for a variety of different functions. Examples include: calcium, sodium and iron. Most micronutrients are mostly provided by the diet. An exception is vitamin D which can be synthesised by the action of sunlight on the skin.

5. Food poisoning and cross contamination

Food poisoning

Food poisoning can be caused by:

- bacteria, e.g. through cross-contamination from pests, unclean hands and dirty equipment, or bacteria already present in the food, such as salmonella;
- physical contaminants, e.g. hair, plasters, egg shells, packaging;
- chemicals, e.g. cleaning chemicals.

Bacterial growth and multiplication

All bacteria, including those that are harmful, have four requirements to survive and grow:

- food;
- moisture;
- warmth;
- Time.

Symptoms of food poisoning

The symptoms of food poisoning include:

- nausea;
- vomiting;
- stomach pains;
- diarrhoea.

3. Food provenance

Food provenance is about where food is grown, caught or reared, and how it was produced. Food certification and assurance schemes guarantee defined standards of food safety or animal welfare. There are many in the UK, including:

Red Tractor

RSPCA Assured

British Lion

Marine Stewardship Council

6. Links and Further Reading

Video: Cooking chicken

https://www.healthywa.wa.gov.au/Articles/A_E/Chicken

Article: Provenance
https://ccea.org.uk/downloads/docs/Support/Factfile/2019/Fact%20File%3A%20Food%20Provenance.pdf

Revise:Mindmap Maker

is.gd/mindmapmaker

Geography - Coasts

Types of Erosion	
The break down and transport of rocks – smooth, round and sorted.	
Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Types of Transportation	
A natural process by which eroded material is carried/transported.	
Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

Types of Weathering	
Weathering is the breakdown of rocks where they are.	
Carbonation	Breakdown of rock by changing its chemical composition.
Mechanical	Breakdown of rock without changing its chemical composition.

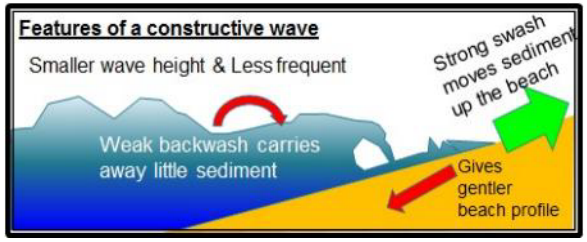
Mass Movement	
A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.	
1	Rain saturates the permeable rock above the impermeable rock making it heavy.
2	Waves or a river will erode the base of the slope making it unstable.
3	Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
4	The debris at the base of the cliff is then removed and transported by waves or river.

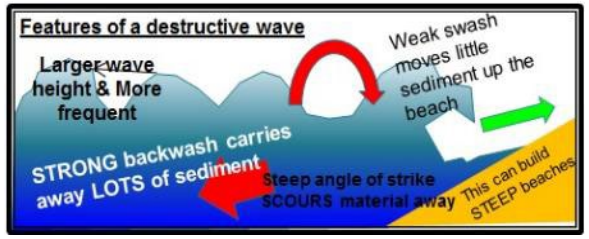
Size of waves

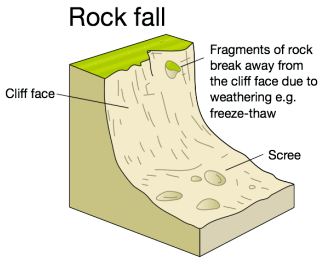
- Fetch how far the wave has travelled
- Strength of the wind.
- How long the wind has been blowing for.

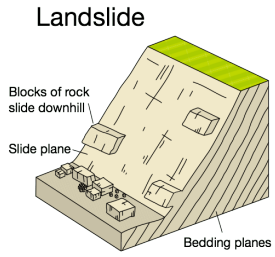
Types of Waves

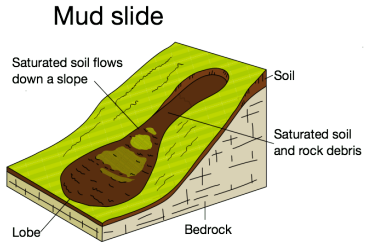
Constructive Waves	Destructive Waves
This wave has a swash that is stronger than the backwash. This therefore builds up the coast.	This wave has a backwash that is stronger than the swash. This therefore erodes the coast.

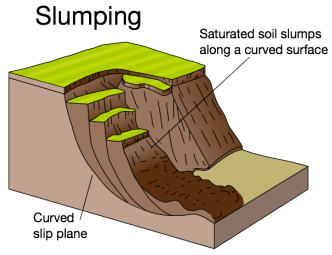






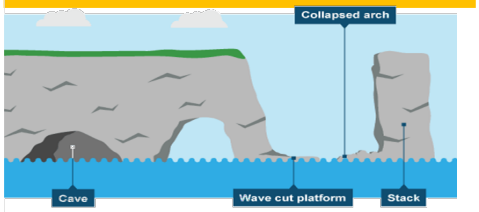






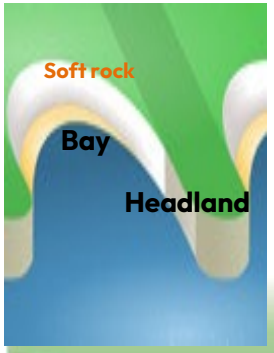
Geography - Coasts

Formation of Coastal Stack

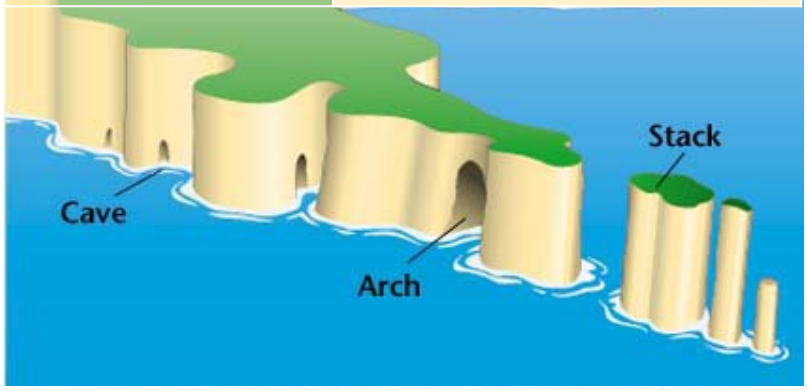


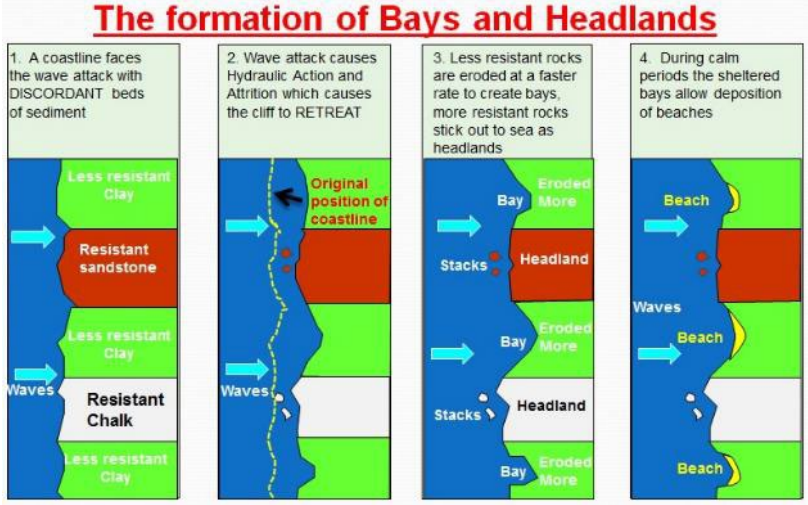
1. Hydraulic action widens cracks in the cliff face over time.
2. Abrasion forms a wave cut notch between HT and LT.
3. Further abrasion widens the wave cut notch to from a cave.
4. Caves from both sides of the headland break through to form an arch.
5. Weather above/erosion below –arch collapses leaving stack.
6. Further weathering and erosion eaves a stump.

Formation of Bays and Headlands



1. Waves attack the coastline.
2. Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
3. More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.





Coastal Defences

Hard Engineering Defences		
Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave . Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.
Soft Engineering Defences		
Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Managed Retreat	Low value areas of the coast are left to flood & erode.	✓ Reduce flood risk ✓ Creates wildlife habitats. ✗ Compensation for land.

Geography – What impacts the weather and climate in the UK

1. Key Terms	Description
Meteorology	the study of the weather
Precipitation	Any form of water that falls to earth (rain, snow, sleet, hail)
Microclimate	the climate of a small area.
Convectional rainfall	when air has to rise over cold air in a depression.
Frontal rainfall	when air has to rise over cold air in a depression.
Relief rainfall	rain caused by air being forced over hills and mountains.
Anticyclone	A weather system with high pressure at its center
Depression	a weather system with low pressure at its center.

Weather is the state of the atmosphere around us. It can change from hour to hour. An example of the weather are rain in the morning and sunshine in the afternoon.
Climate is the average weather in a place, over a long period of time. Climate is a measure of the average rainfall and temperature. Examples would be a desert climate, a tropical climate and a temperate climate (such as the UK).

What is normal weather for the UK?

Four seasons: Summer, Autumn, Winter & Spring. Warm summers and mild winters. Rain occurs all year round. During winter, snow usually falls in Scotland, northern England and upland and mountainous areas.

Predominate wind direction from the South West.

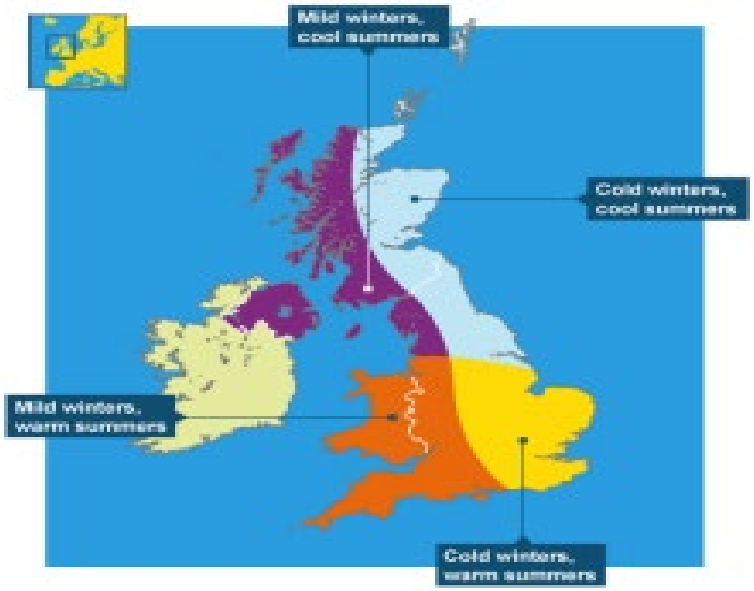
The UK is affected by 4 different air masses

- **Polar** – from the north brings freezing artic air.
- **Tropical** – from the south brings warm air from places from such as North Africa and the Mediterranean.
- **Maritime** – from the west, brings moisture from the Atlantic bringing lots of rain.
- **Continental** – from the east brings dry from Europe and Asia.

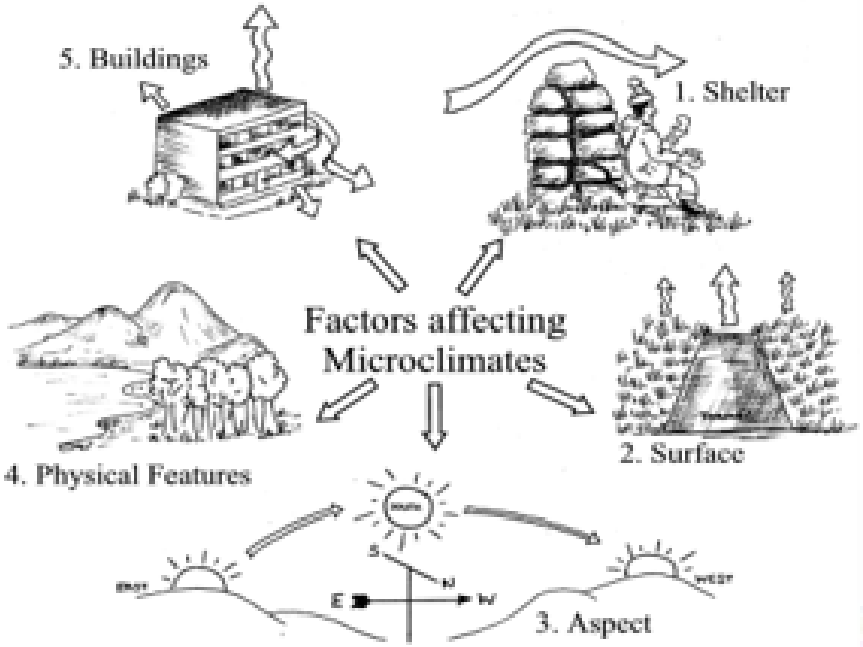
The Jet Steam – A strong wing that can fly across the sky at over 250 miles per hour.
If it heads north, it blocks the polar and maritime air masses bringing, warm dry air to the UK.
If it heads south, its blocks the tropical and continental bringing wetter, colder air.

Reasons for temperature differences across Britain.

1. Wind direction – This is where the air comes from; a North wind will
be colder, a West wind will be wetter.
2. Ocean currents - In winter a warm ocean current coming across the
Atlantic from the Caribbean, called the North Atlantic Drift, warms
west of the UK.
3. Latitude – The further north or south from the equator,
the cooler the temperatures will be because of the decreased intensity of the sun's rays. Therefore the north of the UK is cooler than the south.
4. Altitude – The height above sea level will affect temperatures due to the lower air pressure and fewer air molecules. Temperatures decrease by about 1°C



Geography – What impacts the weather and climate in the UK



Factors affecting Microclimate

1. Temperature: temperature affected by:
    1. Altitude: Air temperature drops 1°C for 100 m rise in altitude during summer and 130 m in winter
    2. Proximity to water: Sea and lakes drops surrounding temperatures
    3. Ground Cover: Natural vegetation tends to moderate extreme temperature (Green roof houses)
    4. Urban development: it raises air temperature because it blocks winds.

The six stages of a fieldwork report are:

1.Introduction - within this section you are required to pose questions about a range of geographical concepts and methods.

2.Data collection - describe and justify the way the data was collected. This should be done in lots of detail, so that someone else could repeat the study using the same instructions. Include a map of sites, approximate timings and detailed explanations of how and where to take each measurement. Be clear on what the main methodological approach used was, eg transects. State whether each data collection technique collects or . Justify the sample size and the sampling technique used.

3.Data presentation - tables are difficult to interpret and so data must be presented in different ways. Graphs and charts are useful as they help to see patterns within data. Choose which types of graph or chart to use. Accurate presentation of data helps to form conclusions to the enquiry. Data that is badly presented is very difficult to understand.

4.Analysis - process the data and discuss patterns. Are there any clear trends or are there ? Quote figures and places and use geographical terminology.

5.Conclusion - this short section should draw together the results to answer the enquiry question.

6.Evaluation - this considers the strengths and weaknesses of the data collection, identifies anomalies and the limitations of the conclusions. It will identify possible improvements, extensions or new questions that have arisen. It is acceptable to talk about weaknesses, as long as improvements can be suggested.

History - Enquiry Question: How equal was Tudor Society?

Historical Skills we will develop in this Enquiry:

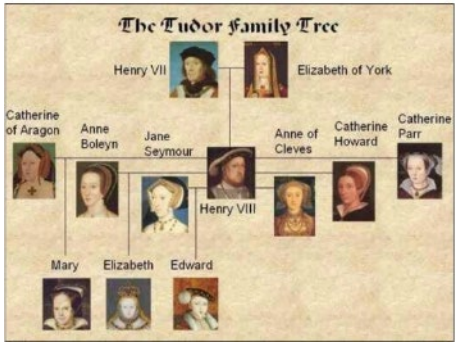
- ✓ Our understanding of similarity and difference
- ✓ Our ability to use sources to explore the past

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, events in the English Civil War etc.)

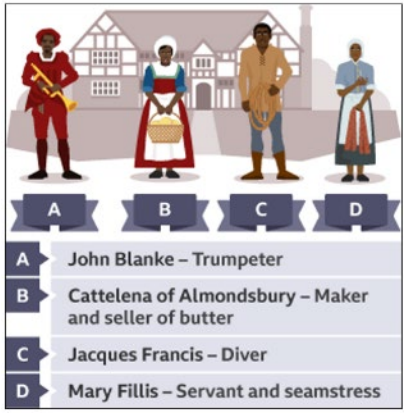
Scan to find out about Henry VIII and lives of the rich in Tudor England: What Was Life Like? | Episode 11: Meet King Henry VIII:

https://www.youtube.com/watch?v=X1ZKbFz7558&list=PLx2QMoA1Th9fVTsHjpl31Vxtiv5709Vwc&index=2



Scan to find out more about life in Tudor England. What Was Life Like? | Episode 7: Tudors - Meet A Tudor Cook:

https://www.youtube.com/watch?v=i1cW6sVbUBg&list=PLx2QMoA1Th9fVTsHjpl31Vxtiv5709Vwc&index=6



Scan to access more information about Africans and their lives in Tudor England:

https://www.bbc.co.uk/bitesize/topics/zwcsp4j/articles/zb84cmn#zrwk96f

1. GLOSSARY TUDOR SOCIETY

Key Terms	Description
Tudor	The last name of the family who held the throne of England from 1485 to 1603
Equality	The state of being equal, especially in status, rights, and opportunities. (fairness/justness)
Society	The sum of people living together in a community
Execution	Carrying out a sentence of death on a person
Catholic	A member of the Roman Catholic Church. Branch of Christianity, following the leadership of the Pope
Protestant	a member or follower of any of the Western Christian churches that are separate from the Roman Catholic Church and follow the principles of the Reformation,
Reformation	The movement in the 1500s to reform the Catholic church and creating the Protestant church as a result
Patriarchy	Means 'the rule of the father'. A social system where positions of dominance and power are held by men.

History - Enquiry Question: How equal was Tudor Society?

Bringing the past back to life at Poltair!

Reading like a historian

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

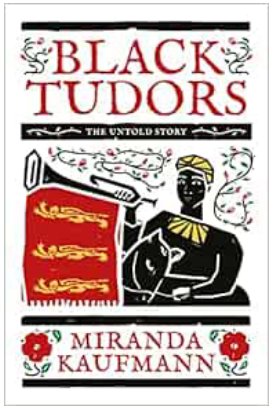
These are **suggestions** of reading that might help boost your history knowledge for the current enquiry.

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!

Brilliant Black British History Atinuke (Author), Kingsley Nebechi (Illustrator)

Historian Amanda Kaufmann



Scan for a video from the National Archives: Filling in the Blankes: The Life of a Black Tudor

https://www.youtube.com/watch?v=Oj7X0Hve4DQ

2. CORE KNOWLEDGE TUDOR SOCIETY

Question	Answer
1 Who were the Tudor monarchs?	Henry VII, Henry VIII, Edward VI, Mary I, Elizabeth I
2 Why did Henry VIII reform the Church?	To get a divorce from Catherine of Aragon and hopefully have a son. To gain wealth and power from the Catholic church by making himself head of the new Church of England
3 What crime did people face if they were the wrong religion?	The crime of heresy. What version of Christianity was considered heresy changed with the monarch!
4 How do we know about the lives of African people in Tudor England?	Historians such as Imtiaz Habeeb, Onyeka Nubia and Miranda Kaufmann have found evidence to suggest many people of African origin lived in Tudor England
5 How many people of African origin in Tudor England have historians found evidence of?	Over 200
6 How did people of African origin arrive in Tudor England?	Some came directly from the continent of Africa as traders or ambassadors. Many were servants and some were craftsmen
7 Did Tudor women get an education?	Yes, but this wasn't the same as the education as men
8 What rights did Tudor women have?	Women were legally subject to their husbands and so couldn't own property, enter into agreements, or make their own will without their husband's consent
9 Were Tudor women expected to marry?	Yes, but how this happened depended on your status in society. Upper/middle class women usually had marriages arranged by their fathers. Whereas lower class women often had more freedom to choose their husbands
10 Roughly what percentage of Tudor women never married?	30%

History - Enquiry Question: Was the world really 'turned upside down' by the English Civil War?

Historical Skills we will develop in this Enquiry;

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

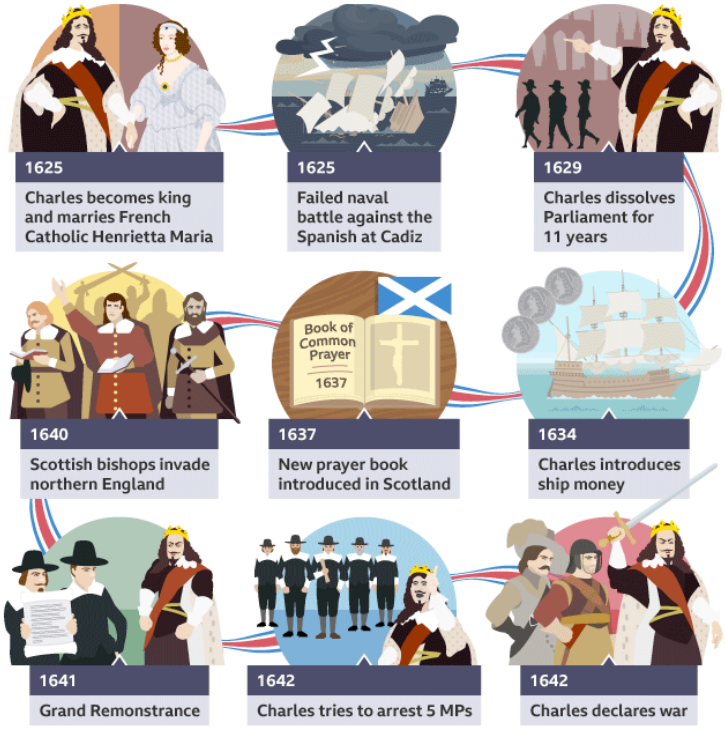
Historical analysis and interpretation:

- Is about argument, interpretation, and consequence
- Involves using suitable evidence, assessing it properly, and making conclusions based on this evidence
- Is the process by which we describe, analyse, evaluate, and create an explanation of past events
- Is based on primary [firsthand] and secondary [scholarly] historical sources
- Moves historical research from being a chronicle of events to providing a larger understanding of why things were as they were in the past
- Tells you about the past and why the past was as it was

The world turned upside down. 1646

Matthew Hopkins, The Witchfinder General, 1645-47

Key events leading up to the outbreak of war in 1642:



Scan to access more information about the English Civil War:

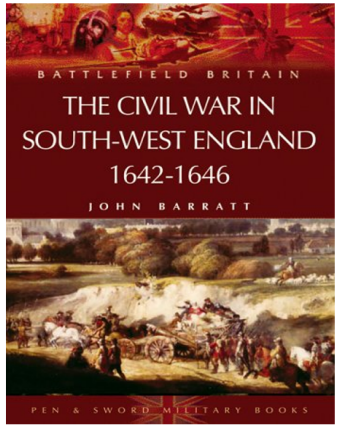
https://www.bbc.co.uk/bitesize/topics/zk4cwmn

1. GLOSSARY CIVIL WAR	
Key Terms	Description
Civil War	A war fought between 2 opposing sides in the same country
Catholic	A member of the Roman Catholic Church. Branch of Christianity, following the leadership of the Pope
Protestant	a member or follower of any of the Western Christian churches that are separate from the Roman Catholic Church and follow the principles of the Reformation,
Puritan	A 'pure' protestant, they believed the Reformation of Henry VIII didn't go far enough
Heresy	Crime against the church (for example being a Catholic when the country was supposed to be protestant
Cavalier	Supporter of the King (Royalist)
Roundhead	Supporter of Parliament (Parliamentarian)

History - Enquiry Question: Was the world really 'turned upside down' by the English Civil War?

Bringing the past back to life at Poltair!

Reading like a historian



The Civil War in South-west England: 1642-1646 John Barratt (Author)

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

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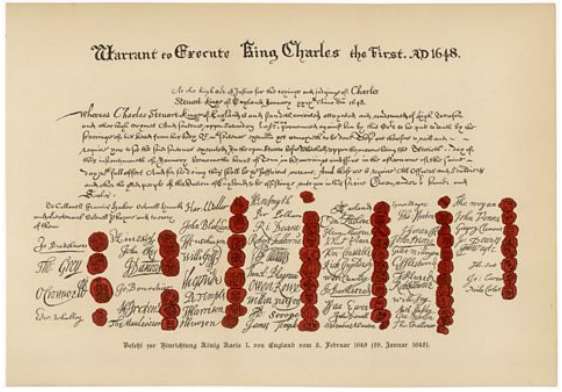
Remember to check out the library; there are some fantastic history books in there too!

2. CORE KNOWLEDGE CIVIL WAR	
Question	Answer
1 How did Charles I upset Parliament?	11 Years rule, illegal ship taxes, marriage to a catholic
2 How did Parliament upset the king?	Issuing the 'Grand Remonstrance', a list of problems it had with the king
3 What was the Divine Right of Kings?	The belief that God chose who should be king
4 What was the short-term cause of the civil war?	The kings attempted arrest of the 5 MPs
5 Who was Oliver Cromwell?	Lead the New Model Army for parliament against the king
6 Who was Matthew Hopkins?	He was the Witchfinder General, 1645-47
7 Why was there a witch craze?	The fear and upset of the civil war allowed peoples fears to intensify and Hopkins played on this to accuse many women of witchcraft
8 What was the biggest loss of the parliamentary Army?	The Battle of Lostwithiel
9 What was the outcome of the civil war?	Parliament defeated the Royalist army and King Charles was executed for treason!
10 What happened after the civil war?	Cromwell led the country as Lord Protector, replaced by his son after his death. Eventually Charles II was called back to England

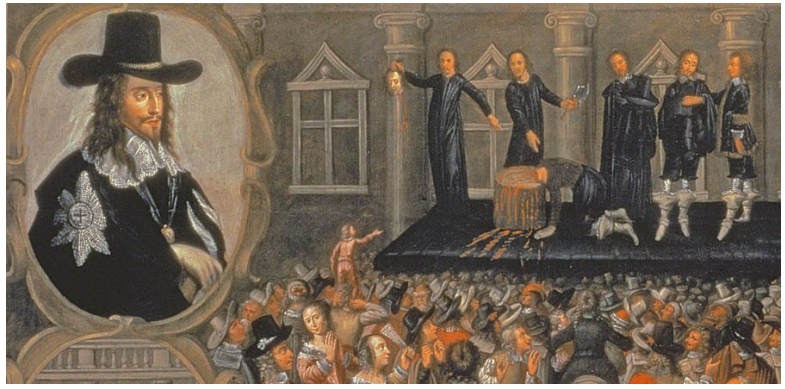


Charles I's death warrant

A statue of Oliver Cromwell outside the Houses of Parliament

Scan to access more information from historians about the English Civil War:

https://www.worldturnedupsidedown.co.uk/



Painting of Charles I's execution, 1649 from eyewitness testimony

Music - Saharan Sounds

1. Key Words

Key Words	Definitions
Rhythm	The pattern of sounds and silences that creates a beat in the music.
Pulse	The regular, steady beat that you feel in music.
Polyrhythm	Two or more rhythms played at the same time as each other.
Cyclic Rhythm	A repeating pattern in music.
Call and Response	A musical conversation between two or more people.
Syncopation	Where the emphasis of the beat is on the weaker beat.
Djembe	A West African drum shaped like a goblet made of goat skin that is played with two hands.
Bass (Drumming Technique)	A drum technique that sounds deep and booming where you use your palm to hit the middle of the drum.
Tone (Drumming Technique)	A drum technique that sounds clear and resonant where you use the bottoms of your fingers on the drum.
Slap (Drumming Technique)	A drum technique that sounds sharp and snapping where you hit the drumhead with your fingers.

4. West African music

West African Music is deeply rooted in African culture and is performed during importance events like weddings, funerals, and harvest festivals. At the heart of this music is drumming, which tells a story and communicate different meanings. The rhythms are complex and layered, with different beats and patterns that interweave to create a rich and varied sound.

2. Drumming techniques

There are three main techniques when playing the djembe: bass, tone and slap. These are shown on the djembe below.

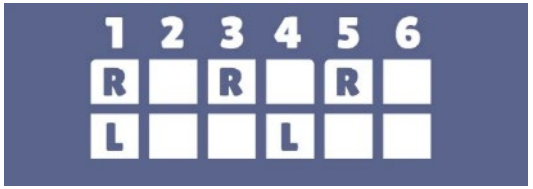
Bass:
Use the palm of your hand to hit the centre of the drum

Tone:
Use the backs of your fingers to hit the outside edge of the skin without hitting the edge.

Slap:
Open your fingers slightly and bounce them off the edge of the edge of the drum.

3.Polyrhythm

Polyrhythm happens where multiple rhythms are played at the same time over one another. This gives the impression that the rhythms are weaving in and out of one another.



The diagram above shows how the right hand is playing on beats 1, 3 and 5, whereas the left hand is playing on beats 1 and 4. So when played together the combination is called a polyrhythm.

5. West African instruments

There are several different instruments from West Africa and each of them have their own unique sounds and way of playing them. Some are listed below:

6. Links and Further Reading

Video:
West African Music
is.gd/westafricanmusic

Lesson:
Polyrhythm: Making Beats
is.gd/polyrhythm

Revise:
Flash Card Maker
is.gd/flashcardmaker

PSHE – Democracy and Me

1. Key Terms	Description
Democracy	When citizens have the right to participate in decision-making for a country, typically through voting where individuals have the freedom of speech.
Parliament	A legislative body responsible for making laws, debating policies and representing the interests of the public.
Election	A process where individuals vote for who they want to be their leader to represent them when making decisions on policies or laws.
House of Commons	Where MPs meeting to debate and make decisions on laws and policies.
House of Lords	Another house of UK Parliament where non-elected members debate laws and policies. Lords can be appointed or hereditary.
Member of Parliament (MPs)	An individual elected to represent an area when debating laws and policies in the House of Commons. These people are voted in by the general public.
Constituency	A geographical area represented by an MP. Each constituency is of equal population so that each MP represents an equal number of constituents.
Tax	A compulsory monetary charge imposed by the Government on individuals and business to fund public services and operations such as health care, military and emergency services.

2. Democracy

Our country is run by democracy and therefore it is important to understand what that means. A democratic country is one where the general public get a vote as to how the country is run in Parliament. Leaders of the country are voted in during elections where people consider each party's values, ethos and promises. The party with the most votes takes the lead of the country until the next election.

3. House of Commons and House of Lords

The House of Commons and House of Lords are chambers of Parliament where legal matters are discussed. The House of Commons is where our Members of Parliament (voted for by the public) gather to debate political issues and proposing new laws such as decisions around taxes and money. The House of Lords members are not voted for by the public and instead have their role inherited from family or chosen due to being an expert in their field. In the House of Lords, there are debates taking place where the outcomes are then passed onto the House of Commons to discuss.

4. Role of an MP

An MP (Member of Parliament) is someone who represents an area in the House of Commons. The area they represent is called their consistuency. MPs take a seat in the House of Commons and there they have their say in debates and votes on all political matters being discussed. MPs will stand up for their constituency and fight for positive progress in their area. The MP for St Austell and Newquay is Noah Law who represents the Labour party.

5. Taxes – what are they for?

Taxes are money that are paid to the Government by individuals or businesses that fund public services like healthcare, education and transport. They can also be used to support people with lower levels of income by sourcing the money used to provide benefits and pensions. The more money you earn, the higher bracket of tax you must pay. It is all calculated by a percentage of your salary once you start working and earning your own money.

6. Links to External Support

BROOK
www.brook.org.uk
0808 802 1234

Childline
www.childline.org.uk
0800 1111

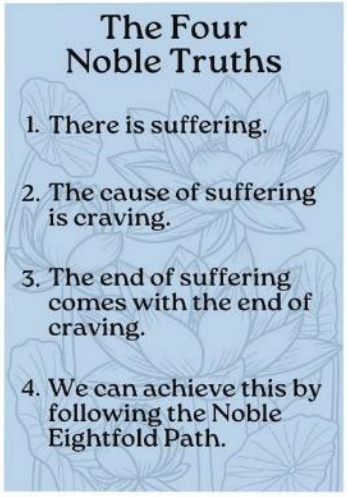
Barnardo's
www.barnardos.org.uk

Religious Education - Buddhism

1. Key Words	Definitions
Buddha	Literally means enlightened or awakened one. The Buddha was a prince called Siddhartha Gautama, who became known as The Buddha after he came to realise the truth about the world.
The Four Sights	The four things that Siddhartha Gautama saw when he first left the palace: Sickness, old age, death and a holy man
Enlightenment	To understand the truth about the world and about suffering
The Four Noble Truths	The Buddha's teachings about suffering, its causes and what can be done to overcome it
The Five Moral Precepts	Five guidelines that the Buddha said people should follow in order to live a good life
The Sangha	The Buddhist community
Buddhist Monks	Male Buddhists who have dedicated their life to their faith and to trying to achieve enlightenment
Buddhist Nuns	Female Buddhists who have dedicated their life to their faith and to trying to achieve enlightenment

2. The Buddha

Siddhartha Gautama was prince who was kept sheltered in the palace for his whole life. When he eventually left the palace, he saw suffering for the first time. Unable to comprehend the suffering, Siddhartha left to live with the holy men in the forest, in the hope that this would help him find the answers. After several years, he realized that this had not made him happy either and left them. He sat under a tree and meditated. Eventually, he realized the truth about life and about suffering – he became enlightened. From this point on, he became known as the Buddha and travelled around teaching what he had realized to others.
Buddha's main teachings can be seen in the Four Noble Truths, which explain his understanding of the origins of suffering and what people can do to overcome it.



3. Five Moral Precepts

The Five Moral Precepts are guidelines that the Buddha said people should try to follow in order to live a good life.

While the precepts are a list of things that people should not do, the expectation for Buddhists is that, in order to achieve enlightenment, they should also actively try to work towards the opposite of these things.
For example, rather than just avoiding taking a life, Buddhists should also work to help save lives where they can.

4. The Sangha

The Buddhist community are known as the Sangha. Most Buddhists live ordinary lives, just like everyone else. However, some Buddhists might choose to become monks or nuns. This means that they give up their old life and dedicate their life to their faith and to trying to achieve enlightenment.

Monks and Nuns do not have any money, rely on donations of food from the lay sangha, shave their heads to show that they no longer care about their appearance and have only a few possessions (a bowl for food, a razor, robes and a belt, needle and thread, a water bottle and a filter).

Watch this video to find out how being a Buddhist affects Amalasiddhi's life.

Religious Education - Sikhi

Important Note:

Sikhism is an English term of the name for the Sikh Faith. Many Sikh people prefer the term Sikhi, which is why this is the term we use.

1. Key Words	Definitions
Waheguru	Wonderful teacher/lord. The Sikh word for God
Guru	Religious teacher
Guru Granth Sahib	Holy book for Sikhs, "eternal Guru"
Gurdwara	Sikh place of worship
Vaisakhi	An Indian harvest festival. Today this is a Sikh festival celebrating the foundation of the Khalsa
Khalsa	The community of initiated Sikhs
Five Ks	Five things that all Khalsa Sikhs wear to show they are members of the Khalsa
Kara	A steel bracelet
Kirpan	A small sword
Kesh	Uncut hair
Kanga	A small comb
Kachera	Cotton underwear
Dastar	The turban worn by many Sikhs

2. Guru Nanak

Nanak grew up in India in the 15th Century. There was a lot of religious divide in India at the time between the Muslims and Hindus. When he was 30, Nanak went to bathe in a river and disappeared. People thought he had died, but he emerged 3 days later claiming to have been with God. He said that God had given him a message that all people were equal and that there was only God's path.
Nanak began to travel around India preaching his message of equality and his followers became known as Sikhs.

3. Sikhi after Guru Nanak

After Nanak's death, there were 9 more Gurus who lead and developed Sikhi. Guru Arjan Dev compiled the Adi Granth which included hymns from the Sikh Gurus, as well as poems from Hinduism and Islam. This would later become the Guru Granth Sahib, the Sikh holy book.
Guru Hargobind trained Sikhs to be warriors who should be prepared to fight to defend others against injustice.
Guru Gobind Singh declared that after him there should be no more human gurus and that the Guru Granth Sahib should become an eternal spiritual guide.

4. The Khalsa

In 1699, at Vaisakhi (a harvest festival), Guru Gobind Singh asked for volunteers to give up their lives for Waheguru. Surprisingly one man volunteered and went into a tent with the Guru. The Guru emerged with a sword covered in blood asking for further volunteers. This went on until 5 men had volunteered their lives. Eventually, the Guru revealed that the men had not been killed, and the Guru declared these men the first members of the Khalsa.
Not all Sikhs are members of the Khalsa, but those who are, wear the 5 Ks to symbolize their membership and their devotion to Waheguru.
The 5 Ks are:
Kara – a bracelet symbolizing the eternal nature of God
Kirpan – a sword, which symbolizes their willingness to fight for justice
Kesh – uncut hair. Hair is seen as a gift from God so should not be damaged
Kanga – a small comb, symbolizing God's ability to help us untangle our lives
Kachera – cotton underwear that symbolises purity, modesty and the need to control sexual desires

Watch this video to find out what a day in the life of a Sikh Granthi is like.

Spanish

1. Week 1

Los pasatiempos	Free time activities
Ir de compras	To go shopping
Ir al cine / al parque	To go to the cinema / park
Ir a la piscina	To go to the pool
Montar a caballo	To ride a horse
Montar en bicicleta	To ride a bike
Cantar	To sing
Ver la televisión	To watch tv
Escuchar música	To listen to music
Bailar	To dance
Leer libros	To read books
Hacer los deberes	To do homework
Hacer deporte	To do sport
Usar mi móvil	To use my mobile
Escribir correos	To write letters
Salir con amigos	To go out with friends
Tocar un instrumento	To play an instrument
No hacer nada	To do nothing
Jugar a los videojuegos	To play videogames

2. Week 2

The present tense Chop and Swap Remove the 'ar/er/ir' from the end of the verb, put a new ending back			
Subject	-ar verbs	-er verbs	-ir verbs
I	o	o	o
You	as	es	es
He /she	a	e	e
We	amos	emos	imos
You (pl)	áis	éis	ís
They	an	en	en
Key verbs - personalisation			
-ar	hablar		
-er	aprender		
-ir	describir		

3. Week 3

El clima	The weather
Hace sol	It is sunny
Hace (mucho) calor	It is (really) hot
Hace frío	It is cold
Hace buen tiempo	It is good weather
Hace mal tiempo	It is bad weather
Hace viento	It is windy
Llueve	It is raining
Nieva	It is snowing
Adjectives	
caliente	hot
rico	delicious
falso	false
ligero	light
perfecto	perfect
sano	healthy
tradicional	traditional
dulce	sweet

4. Week 4

The near future tense Choose the form of the verb 'ir' and then add 'a' and follow with the infinitive Eg: voy a bailar – I am going to dance	
voy	i am going
vas	you are going
va	he / she is going
vamos	we are going
vais	you are going
van	they are going
Examples - personalisation	

5. Week 5

¿Cuándo?	When?
Este fin de semana	This weekend
La semana que viene	Next week
Mañana	Tomorrow
Pasado mañana	The day after tomorrow
Por la mañana	In the morning
Por la tarde	In the afternoon
Por la noche	In the evening
En primavera	In Spring
En verano	In Summer
En otoño	In Autumn
En invierno	In Winter

6. Week 6

Autumn Revision	
Hoy es lunes	Today it is Monday
¿Cuándo es tu cumpleaños?	When is your birthday?
Mi cumpleaños es el..de..	My birthday is the...
Estoy feliz	I am happy
En mi familia hay...	In my family there is/are..
Tengo el pelo rubio.	I have blonde hair
Tiene los ojos marrones	He / she has brown eyes
Mi madre es alta	My mum is tall.
Mis hermanos son bajos.	My brothers are short.
Mi padre se llama Carlos	My dad is called Carlos
Tengo un gato negro	I have a black cat
No tengo mascotas	I don't have pets.
¿A qué hora?	At what time?
A las ocho y media	At half past eight

Spanish

7. Week 7

Spring Revision	
Mi colegio es grande.	My school is big.
Mi insti está en la costa	My school is on the coast
Mi cole se llama Poltair	My school is called Poltair
En mi cole (no) hay	In my school there is (not)
Voy al insti en coche	I go to school by car
(no) estudio el teatro	I (don't) study drama
Me gustan las ciencias	I love science
Odio el inglés	I hate English
Pienso que es difícil	I think that it's difficult
Durante el recreo como	During break I eat
Mi asignatura favorita es	My favourite subject is
Mi profesor de historia	My history teacher
El / la peor / mejor	The worst / best
En mi cole (no) hay	In my school there is (not)

8. Week 8

Key Verbs Revision	
Tener	To have
Tengo / tiene	I have / he has
Ser	To be
Soy / es / son	I am / it is / they are
Hay	There is
Llevar gafas	To wear glasses
Llevo / lleva	I wear / he wears
Hacer	To do
Hago / haces	I do / he does
Jugar	To play
Juego / juega	I play / he plays

9. Week 9

Key verbs revision	
Estudiar	To study
Estudio / estudia	I study / he studies
Me encanta	I love it (them)
Me da igual	I don't mind it (them)
Prefiero	I prefer
Hablar	To speak
Hablo / hablamos	I speak / we speak
Comer	To eat
Como / comemos	I eat / we eat
Beber	To drink
Bebo / bebemos	I drink / we drink
Ir	To go
Voy / vamos	I go / we go

10. Week 10

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

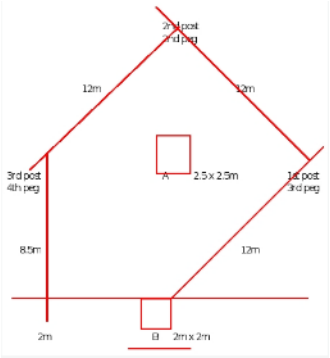
11. Week 11

En un restaurante	In a restaurant
El menú del día	Set 3 course meal
¿En qué puedo servirle?	How can I help you?
Una mesa para cuatro	A table for four
Aquí tiene la carta	Here is the menu
Quisiera...	I would like
voy a tomar ...	I'm going to have
La cuenta	The bill
¿Algo más?	Anything else?
Tener hambre	To be hungry
Tener sed	To be thirsty
¡Qué rico!	How tasty!

12. Week 12

La comida	Food
café	Coffee
té	Tea
leche	Milk
agua	Water
Churros	Fried doughnut sticks
Tortilla	Spanish omelette
pan	Bread
paella	Traditional rice dish
fruta	Fruit
Pastel	Cake
Helado	Ice cream

Sports - Rounders



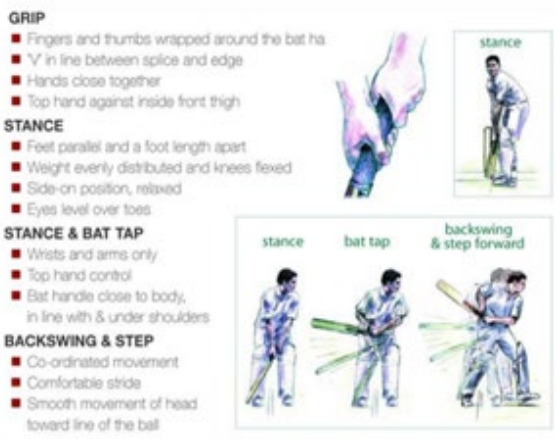
Key Knowledge and Skills

- Ball familiarisation – becoming familiar with the rounders ball in regards to feel, weight, bounce and roll.
- Catching – being able to use the fingers down or fingers up technique to catch the ball that is being hit/thrown towards you.
- Bowling – an underarm bowl is used to reach the batter that must pass them within a head-to-knee boundary and also be away from the bodyline.
- Overarm throwing – the throwing technique used to cover greater distances or to generate more direct power. Usually used in the outfield or going from post to post.
- Batting - the skill of hitting the ball that has been bowled towards you into the outfield. Aiming to find spaces and as far a distance as possible away from fielders.
- Ground fielding – using skills such as the long barrier technique to stop and collect a ball that is rolling along the ground. The smoother we can pick up the ball the sooner we can return it to the bases or bowler.
- Post work - when fielding on the post you must be able to catch the ball and touch it against the post to try and stump out batters.

Rules, Techniques and Strategies

- When you strike (or miss) the ball, you must attempt to run around the 4 posts/bases to score a point (a rounder)
- The batter can hit the ball in any direction
- You are out if your ball gets caught out of the air.
- Batters must run around the outside of the posts – no cutting corners!
- To score a whole rounder the batter must run the whole way around in one go. If they get to 2nd or 3rd and stop to avoid being run out, they score half.
- If you attempt to run to a base and the post fielder puts the ball to the stump, you have been run out.
- You must take the bat with you as you run and must tap the base to declare you are "in".

Sports - Cricket



Key Knowledge and Skills

Catching with cupped hands – Forming a basket with both hands to allow for a greater area for the ball to land in and be caught. Cushion the ball towards the midline to help the ball deceleration.
Overarm/underarm throws - Learning both throwing techniques with an understanding of the advantages/disadvantages of both.
Bat grip - holding the bat with 2 "V's" running in line with the bat spine. Dominant hand at the bottom of the bat.
Batting stance - Standing side on to the bowler with eyes looking forwards watching the ball. Bat ready in front of the stumps to defend/play the ball.
Straight drive - A shot that is hit along the ground straight back past the bowler, played on the front foot.
Forward defence – a defensive shot used to shield the ball from hitting the stumps. A shot that is not used in an attempt to score runs
Long barrier - a fielding technique used to stop a ball that is rolling along the floor, using your leg to act like a wall.
Bowling grip - "bunny ear" grip either side of the ball's seam with the thumb placed below the ball still placed on the seam
Bowling action – a "windmill" type action where your bowling arm remains straight and released the ball at approximately "1 o clock"

Rules, Techniques and Strategies

Common methods of dismissal (Bowled out, caught out, run out, stumped) - if you are out in any of these methods, you/your team will face consequence
Scoring (what is a run, scoring 4s and 6s) - you and your batting partner switching ends without being run out scores a run. Hitting the ball across the boundary along the floor = 4, in the air = 6.
6 balls in an over – 6 deliveries is called one over, at this point the batters switch ends and a new bowler bowls.

Sports - HRE

Fitness Terminology

Warm-Up – Low-intensity exercise that prepares the body for more strenuous activity.
Cool-Down – Low-intensity exercise after activity to help the body return to a resting state.
Aerobic Exercise – Exercises that increase heart rate and stamina, such as running, swimming, or cycling.
Cardiovascular Fitness – The ability of the heart and lungs to supply oxygen to the muscles during physical activity.
Speed – The ability to move quickly across the ground or through the air.

Health Terminology

Hydration – The process of maintaining fluid balance in the body.
Heart rate – the speed at which our heart is beating per minute to move blood around the body.
Breathing rate – the rate at which we breathe to inspire oxygen into our lungs to fuel aerobic exercise.

Sports - Softball

Rules, Techniques and Strategies

Catcher's mitt – The glove worn by fielders to support them in catching the ball.
Diamond pitch – The shape of the playing area used within softball.
Foul ball – An illegal ball which has been bowled by the bowler.
Home run – When a player hits the ball and can run around all bases without stopping.
Infield – The fielders which are closest to the batter close to or on the line of the diamond.
Outfield – The fielders which are furthers way from the batter having to cover lots of distance to recover the ball.
Strike/Strikeout - a strike is when a fair ball is missed by the batter. A strikeout missing a fair ball 3 times during a striking attempt.

Key Knowledge and Skills

Catching with cupped hands – Forming a basket with both hands to allow for a greater area for the ball to land in and be caught. Cushion the ball towards the midline to help the ball deceleration.
Overarm/underarm throws - Learning both throwing techniques with an understanding of the advantages/disadvantages of both.
Bat grip - Holding the bat with your fingers rather than the palms of your hands. This gives you more flexibility and helps generate a quicker swing. Position the handle across the base of your fingers.
Batting stance - Ensuring your legs are shoulder width apart. Standing next to the base with swing path of the bat going over the base.
Long barrier - a fielding technique used to stop a ball that is rolling along the floor, using your leg to act like a wall.
Bowling action – Underarm aiming for the centre of the base in-between the knee and shoulder of the batter.

Sports - Softball

Key Knowledge

Track Events: Running events typically performed on a track. These include sprints, middle-distance, long-distance, and relays.
Field Events: These are events like jumping and throwing.
Combined Events: A mix of track and field events, often performed over multiple days (e.g., decathlon, heptathlon).
Sprints: Short-distance races, such as 100m, 200m, and 400m
Middle Distance: Races like 800m and 1500m
Relays: Teams of 4 runners who pass a baton, typically in 4x100m and 4x400m events.

Rules and Key Terms

Personal Best (PB): The best performance in a specific event.
False Start: Starting before the race begins

Notes Pages

Notes Pages

Notes Pages

Notes Pages