HOME-LEARNING

YEAR 8

HALF TERM 5

"THE BEAUTIFUL THING ABOUT LEARNING IS THAT NO ONE CAN TAKE IT AWAY FROM YOU."

B.B. KING

Core Values

Our school community is built on three important values which underpin all we do.

We believe that great learning comes from:

Politeness

- We treat every person and thing as we want to be treated
- We are respectful, polite and courteous at all times
- We help others at all times

Hard-work

- We never give up
- We remain positive so that we have the strength to persevere with even the hardest work
- We do what it takes, for as long as it takes

Honesty

- We are true to ourselves and others and we do not make excuses
- We look to ourselves to see what needs to be done.

What is learning?

A big part of learning is about getting knowledge to go into your long-term memory and then using this knowledge. Our brains will only remember knowledge in the long term if we think really hard about it. Just reading, or highlighting does not make our brains work hard enough. We must **practise** remembering things – this will feel difficult at the time but worth it in the end.

What is a knowledge organiser?

A knowledge organiser is a document that contains key facts and information. A knowledge organiser will not include every possible fact on a topic; it will include facts needed to understand the main points. Knowledge organisers make knowledge clear. So, even if a learner misses a lesson, they have a constant point of reference.

Why are knowledge organisers good for learning?

Research shows that our brains remember things more efficiently when we know the 'bigger picture' and can see the way that 'nuggets' of knowledge link. Making links helps information move into our long-term memory. A knowledge organiser shows linked facts on a single topic.

Knowledge organisers can be used for retrieval practice (practising remembering things). Regular retrieval of knowledge helps us remember more effectively with our long-term memory. Developing our long-term memory is a vital first step. Without knowledge we have nothing to work with, nothing to think about! Retaining knowledge over time is essential.

To help us understand learning better, Gateacre students and staff have created a series of videos that explain how memory works and what we can do to make it stronger. Follow the QR code or the Learning to Learn link to view them.

How can you best use your knowledge organiser?

There are many ways you can use a knowledge organiser. The most important thing to say, however, is 'use it'. Owning one does not make you remember facts… **you must practise** if you are to improve at anything! There will be mistakes – this is how you learn. Ultimately, the best way to remember things is to try and remember facts that you can't quite remember instantly… practice, practice and practice.

Here are some ways you could try to improve your **long-term memory** – they are all based on making you **think**, getting you to **test your memory**. That way your memory will get stronger:

Hide and seek

Read through a small section of your knowledge organiser (three or four key words), cover the facts and try to write out as much as you can remember. Check your answers and correct them if needed. Then choose your next words or check ones you have already done again.

Quiz

Test your memory by asking someone to quiz you on facts from your knowledge organiser. Write down your answers and see how many you get right. Correct any facts you get wrong.

Teach it!

Teach and explain to someone your key facts – you could even test them!

Back to front

Write down a fact from memory and then compose a question that would lead to that answer.

Sketch it

Draw pictures /diagrams to represent each of the facts or dates (time lines, flow diagrams, or labelled pictures are great ways of remembering parts of a system or orders of events).

Repackage it (from memory)

Create a mind map that brings different facts together under one title. Check that your key words are spelt correctly… or, take a key word and create a sentence that uses it.

Take pride in how you present your work. Each page should be clearly labelled with an underlined date. There should be at least one page of work.

Always check your answers and correct anything you got wrong…. You are allowed to get things wrong… That is how you learn! Getting yourself to think is the key!

Do not just copy a knowledge organiser out – that would not help learning and would only waste your time! Make sure you are having to think!

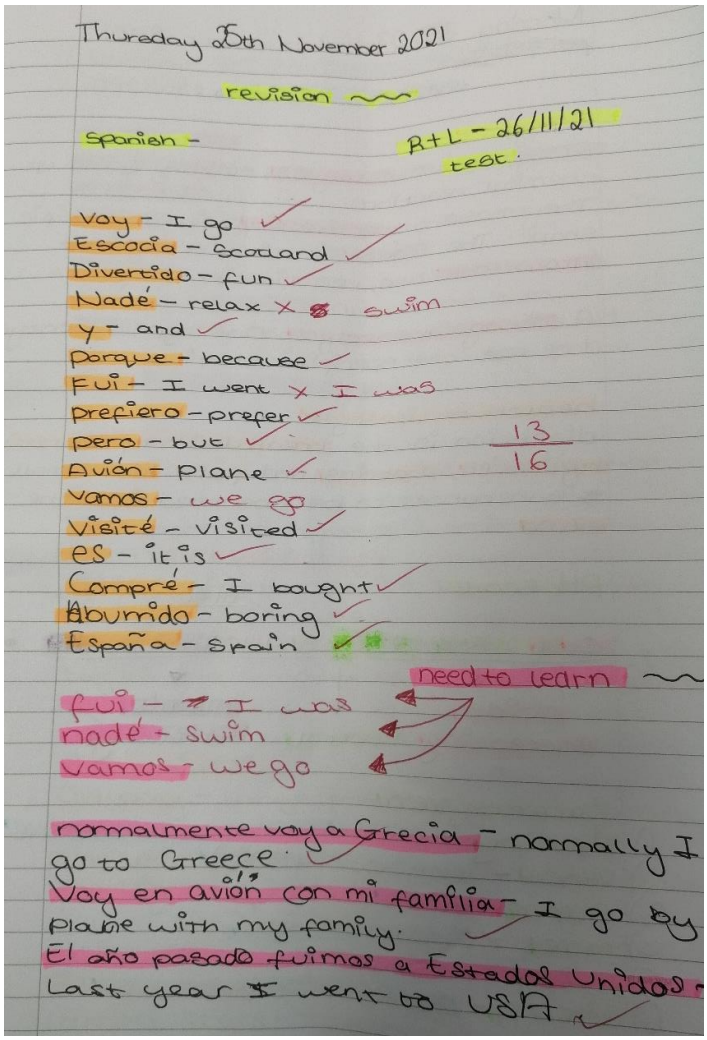
What does effective home-learning look like?

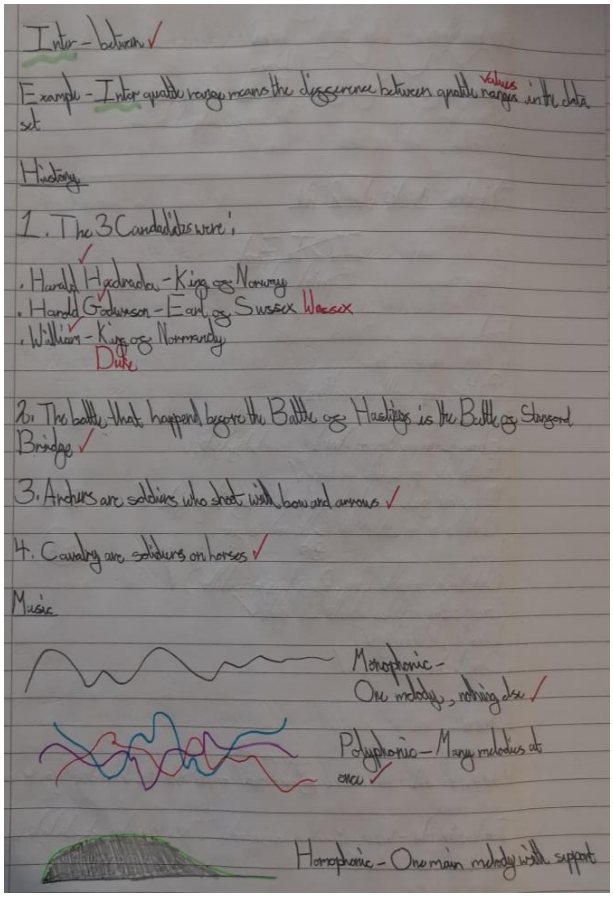
Here are some essential points to remember and some examples to see.

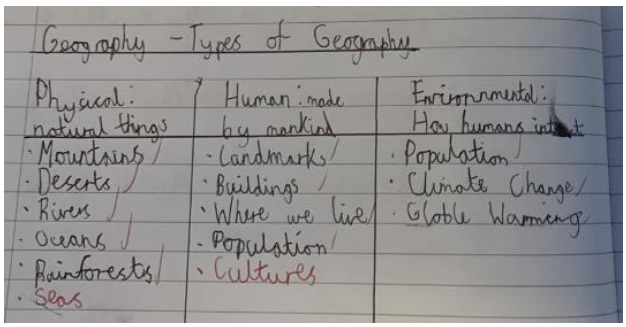
- Long term memories are created when you have to **think**. Simply copying does not help you remember. Testing yourself will make you **think** and remember

- The process of reflection and self-assessment is important if you are to fix mistakes. Do not worry about getting things wrong as long as you check, fix it and try again

All these learners have **read**, **thought**, **tested themselves** and then **checked** their work. They will start to develop long term memory which they can then use in the future.







MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Maths [Hegarty Maths On-Line]	**Computing**	**English** [Supported by Educake Tasks]	**Art**	
History	**Food/Drama**	**Geography**	**Science**	
Music	**Spanish**	**Dt**	**Active Lifestyles/RS**	

Where subjects share a slot it is for **you** to decide which one **you** know less about - which one should **you** revise?

You decide which one to do, or you could, of course, revise both.

Literacy: Do take time to engage with the **Listen Project**. Developing our vocabulary is immensely important if we are to develop as learners. The **listen Project** is an opportunity to listen to interesting ideas, facts and make our vocabulary better. You can do this sh[illegible] point within the week.

Remember, you can always do more. Challenge yourself to be the best you can be!

The 'Listen' Project #1

How to use the 'Listen' Project

Start Here

Being read to is a vital part of learning - hearing words that we are unfamiliar with, ideas that we don't understand yet and thoughts we haven't had a chance to think.

Even simple stories create links from one idea to the next. The fairy tales we heard when we were babies give us the first step to understanding the adventure stories we read in school.

Take time out and listen…

Step 1 – Click the link and listen.

You can follow the text as you are read to or just listen.

Step 2 – Check the text.

Have a look at the texts. There are three pieces of writing.

The first piece may appear to be very simple, maybe even too young for you. These stories are some of the first we hear and often start our journey to understanding more complicated ideas.

The second text may be something you recognise or have read yourself. Is there a link to the first story?

The third is the most complex and may even leave you with a lot of questions.

Step 3 – What's the connection?

The final step is to think about what links these texts and stories together?

Where have you thought about these ideas before?

Do you think about any of these ideas in school?

You can go back and listen to the texts being read as many times as you like.

SCAN ME

The 'Listen' Project #1

The Dreamtime

At the beginning of the Dreamtime, the earth was flat and dry and empty. There were no trees, no rivers, no animals and no grass. It was a dry and flat land.

One day, **Goorialla**, the rainbow serpent woke from his sleep and set off to find his tribe. He crossed Australia from east to west and north to south, stopping to listen for his people. He crossed every part of the dry, flat Australia but found nothing. After searching for a long time, he grew tired and lay down to sleep.

The land he lay down to sleep on was not the same land he had set out to search for his people on, though. As he had looked for his people, his big, long body had cut great gouges into the land. **Goorialla** lay in the sand all alone until he decided to create more life in the world. He called “Frogs, come out!” and frogs rose out of the ground with their bellies full of the water they stored. He tickled the frogs until the water burst from their mouth and filled the gouges in the land. These gouges made the rivers and streams we see today.

As the water flowed over the land, grass and trees began to grow and fill the land with colour.

The God of Dreams…..

Who was Morpheus?
Morpheus was one of the primeval gods, descended from Nyx, the dark goddess of night who was the mother of everything mysterious and anything that was inexplicable, such as death, disease, dreams, ghosts, dreams, witchcraft and enchantments. Morpheus was the eldest son of Hypnos the God of sleep and the leader of the Oneroi. The brothers were triplets and all gods of dreams. Morpheus and the Oneroi are always depicted with wings that conveyed they were gifted with magic and the power of flight. Each of the Oneiroi had a specific area of responsibility in relation to dreams and dreaming:

Morpheus had the ability to take on the appearance of a mortal in dreams. He was the god who relayed messages from the gods and prophecies of the future. He took particular care with the dreams of kings and heroes
Phantasos had the ability to appear in dreams in the form of inanimate objects such as rocks, water, trees. He specialized in strange phenomenon and fantasy
Phobetor (known as Icelus to the gods) was the god to be feared who specialized in bringing nightmares and had the ability to appear in the guise of animals and monsters

Morpheus and the Gates of Horn and Ivory
The Oneroi resided in the 'land of dreams' that was located in the Underworld. Morpheus and his brothers shared the cavernous palace of Hypnos from which they emerged each night like a flock of bats. The nightly route of Morpheus and his brothers passed through one of two gates. One of the gates was made from horn, the second gate was made from ivory. Morpheus would pass through the gates of horn carrying prophetic or true god-sent dreams. Phantasos and Phobetor (Icelus) passed through the gates of ivory carrying false dreams, without true meaning.

Do Robots Dream of Electric Sheep?

Cutie remained motionless before the port, like a steel statue. His head did not turn as he spoke,
"Which particular dot of light do you claim to come from? " Powell searched,
"There it is. The very bright one in the corner. We call it Earth." He grinned, "Good old Earth. There are three billions of us there, Cutie - and in about two weeks I'll be back there with them." And then, surprisingly enough, Cutie hummed abstractedly. There was no tune to it, but it possessed a curious twanging quality as of plucked strings. It ceased as suddenly as it had begun,
"But where do I come in, Powell? You haven't explained my existence. "
"The rest is simple. When these stations were first established to feed solar energy to the planets, they were run by humans. However, the heat, the hard solar radiations, and the electron storms made the post a difficult one. Robots were developed to replace human labor and now only two human executives are required for each station. We are trying to replace even those, and that's where you come in. You're the highest type of robot ever developed and if you show the ability to run this station independently, no human need ever come here again except to bring parts for repairs."His hand went up and the metal visi-lid snapped back into place. Powell returned to the table and polished an apple upon his sleeve before biting into it.
The red glow of the robot's eyes held him. "Do you expect me," said Cutie slowly, "to believe any such complicated, implausible hypothesis as you have just outlined? What do you take me for?"
Powell sputtered apple fragments onto the table and turned red.
"Why, damn you, it wasn't a hypothesis. Those were facts."
Cutie sounded grim,
"Globes of energy millions of miles across! Worlds with three billion humans on them! Infinite emptiness! Sorry, Powell, but I don't believe it. I'll puzzle this thing out for myself. Good-bye."

Dreamtime

Many of the Aboriginal people or Australia have a beautiful and complicated understanding of the way the world began. The time before humans is called the Dreamtime and features spirits, gods and creatures who formed the world that exists now.

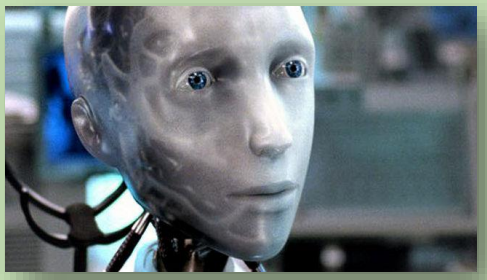
Goorialla is the Rainbow Serpent who formed much of the landscape that we see now with the movement of its body. Aboriginal art is often based around images of the Dreatime and the creation of the world.

The God of Dreams…

The ancient Greeks had a complicated relationship with dreams and sleep, often viewing sleep as a dangerous time when people were vulnerable to the influence of the gods. **Morpheus**, the god of sleep and dreaming, is often depicted as a dark character who brings messages and visions!

Do Robots Dream?……

Perhaps one of the biggest questions we can ask is, what makes us human? **Isaac Asimov**, a Russian Science Fiction writer, asked this question by writing about robots. The robot in the story 'I, Robot' begins to ask questions about its own creation and existence. Asimov began to think about how robots may one day dream like humans.

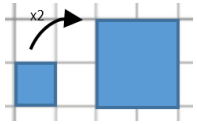
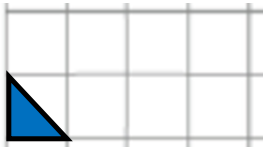
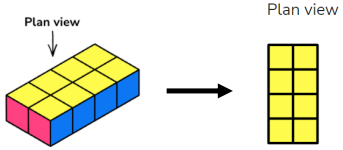
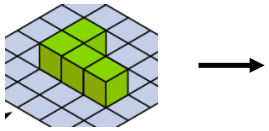
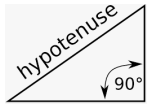
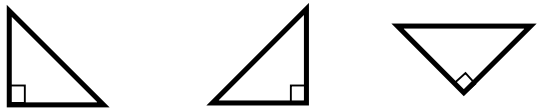


Mathematics

Your Maths Home Learning has two parts:

Part 1 is: Copy the definition of the key word and diagrams into your Home Learning Book, then use these to complete the task

Part 2 is: Access **www.hegartymaths.com** → Watch the video , making notes in your book → Complete the assigned quiz

Week	Key Word	Definition	Task	Hegarty Task
17th April	Enlargement	An enlargement is a type of transformation where we change the size of the original shape to make it bigger or smaller by multiplying it by a scale factor. e.g. The following shape has been enlarged by a scale factor of 2 	Enlarge and draw the following shape by a scale factor of 2 	642
24th April	Bearing	A bearing is the angle in degrees measured clockwise from north. Bearings are usually given as a three-figure bearing. e.g. 30° clockwise from north is usually written as 030°.	Express as a bearing: 50° clockwise from north 20° anti-clockwise from North (remember to measure clockwise)	492
1st May	Plan View	A plan view is a scale drawing showing a 3D shape when it is looked at from above. e.g 	Draw the following plan view of the following shape 	837
8th May	Hypotenuse	The hypotenuse of a right triangle is always <u>the side opposite the right angle</u>. It is the longest side in a right triangle. 	Identify the hypotenuse of the following right angle triangles: 	Memri
15th May	Standard Form	Standard form is a way of writing very big or very small numbers more easily. It is written in the form $a \times 10^b$ a is a number between 1 and 10 e.g. 3,000,000,000 = 3×10^9 or 0.000000032 = 3.2×10^{-8}	Write the following numbers into standard: 40000 = 0.0005 = Write the following in ordinary form: 6×10^5 = 3×10^{-3} =	122
22nd May	Truncate	Truncation simply means to discard some decimals from a number e.g. Truncating to a whole number 3.3 will be 3. Truncating to 1 decimal place 4.85 will be 4.8	Truncate to 1 decimal place 1) 5.13 = 2) 62.34 = 3) 133.55=	134

Year 8 History KNOWLEDGE ORGANISER

Topic: **Should we be proud of the British Empire?**

YEAR 8
HT 5

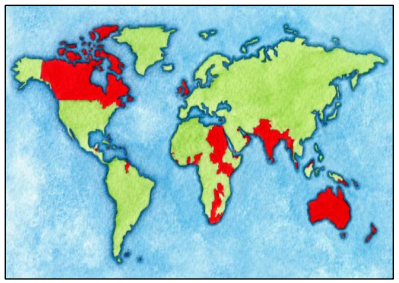
Overview

The British Empire was the largest empire in history. For over a century, it was the world's **strongest power.**

The British Empire was first established as early as 1497, however it **reached its peak in the years between 1815 and 1914.** This time is often referred to as the 'British Century.'

The process through which the British (and other nations of the time) began to spread power beyond its borders is called **imperialism.**

The British Empire was spread as far as New Zealand in the East and Canada in the West. It has **hugely influenced** societies, cultures, industries and the way that people live across the world.



Map showing the approximate extent of the British Empire at its peak. By 1920, the British Empire covered 35,500,000km², around 24% of Earth's land area.

Major Events

Beginnings

During the Middle Ages, the kings of England tried to conquer other countries.
As early as 1169, the Normans invaded Ireland.
In 1277, Edward I conquered North Wales.
In the Hundred Years War (1337-1453), Edward III and Henry V conquered large parts of France.
By 1500, much of the gained land had been lost.

The First British Empire (1497-1783)

Throughout this time, English sailors reached places that Europeans had not previously been. They set up colonies there so that they could trade the resources.
The first English colonies were in North America.
Britain fought wars to protect its empire, including the 7 Years' War with France. Many American territories were lost in the American War of Independence.

The Transatlantic Slave Trade

One of the more horrific parts of the British Empire was its position at the heart of the Transatlantic Slave Trade.
For 400 years from the 15th Century, British slave traders are estimated to have bought or sold around 3 million slaves. Slavery made Britain incredibly wealthy.
Britain banned slave trading in its empire from 1807.

The Second British Empire (1783-1914)

Britain began to look towards other areas of the world, for example Asia and Australia, to fulfil its imperial ambitions.

Areas of India, the Caribbean and New Zealand were added to the Empire, which grew massively. Britons at the time were proud of the Empire and its power, however those living in colonies experienced inequality and a loss of culture & their religion.

Countries and Territories within the British Empire

NORTH AMERICA		North America was the location of the first British colonies. It was known as the 'New World.' From 1775, thirteen colonies in North America combined and fought to be free in the War of Independence. Their success led to the creation of the USA.
CARIBBEAN		Over the course of the 17th and 18th centuries, Britain gained major colonies on the islands of the Caribbean Sea. The climate was perfect for growing sugar and tobacco, so plantations were set up. Britain became very rich from this.
AFRICA		From 1881 to 1902, Britain competed with other European empire-builders in what became known as the 'Scramble for Africa.' By the early 1900s, huge parts of Africa, including Egypt, Kenya and Nigeria, were under British rule.
ASIA		After losing huge parts of its colony in the American War of Independence, Britain turned its attention to parts of Asia in the 18th and 19th centuries, e.g. colonies were formed in the Middle East, Ceylon (Sri Lanka), Hong Kong & Singapore.
INDIA		Areas of India were under British rule for hundreds of years. From the 1600s until 1858 these areas were run by the English East India Company. After 1858 until 1947 they became the British Raj. In 1876, Queen Victoria became 'Empress of India.'
AUSTRALIA and NEW ZEALAND		Australia was a set of British colonies between 1788 and 1901. The first colonies were established as places where criminals were sent to live. Later, free settlers created colonies. From 1840 until 1907, New Zealand was a part of the British Empire.
ANTARCTICA		Antarctica was an area that many of the European colonisers did not begin to claim until much later. In 1908, the British government made a territorial claim including a large portion of Antarctica. British Antarctic territory remains to this day.

Timeline

- pre-1497CE – British rulers attempt to conquer new lands.
- 1497 – John Cabot reaches Newfoundland in search of Asia.
- 1577-1580 – Sir Francis Drake completes his circumnavigation of the world.
- 1600 – The Formation of the East India Company.
- 1607 – First permanent settlement of Americas at Jamestown.
- 1775-1783 – American War of Independence
- 1787 – First shipment of prisoners to Australia.
- 1867 – Canada given 'dominion' (self-governing) status.
- 1876 – Queen Victoria is named the 'Empress of India.'
- Post 1918: Attitudes towards imperialism begin to change.

Key Terms

British Empire: The British Empire comprised of Britain, the 'mother country', and the colonies which were countries ruled to some degree by and from Britain.

Circumnavigation: The action of sailing all the way around the world.

Colony: A country or area controlled politically by a more powerful country that is often far away.

Culture: The way of life of a group of people. For example many people believe modern British culture includes drinking tea and eating fish and chips.

Empire: A large group of countries ruled over by a single monarch.

Exploration: The action of exploring an unfamiliar area.

Imperialism: A policy of extending a country's power and influence through taking control of other countries.

Indigenous: Means coming from a particular place. Used to describe people native to a country e.g. the Maori are the indigenous people of New Zealand.

New World: European explorers referred to North and South America as the "New World".

Trade: The action of buying and selling goods and services.

Tradition: A long-established belief that has been passed on from one generation to another.

Top 10 Facts!

1. At its height, the British Empire was the largest empire that the world had ever seen.
2. In 1922, it covered 24% of the Earth's surface and 23% of the world's population.
3. Of the 3 million slaves that British slave traders bought or sold, around 300,000 did not survive the journey across the Atlantic.
4. There were 26 years between Britain banning slavery and outlawing it altogether.
5. British India was the most populous colony – around 320 million people lived there in 1925.
6. Because there were territories all over the world, the British Empire became known as 'the empire on which the sun never sets.'
7. It included land on every continent.
8. Britain was widely considered to be the world's only superpower between 1815 & 1900.
9. The First World War damaged European economies. Britain was quickly surpassed by the USA as the world's leading power.
10. Handing back Hong Kong to China in 1997 is often seen to be the last action of the Empire.

Tasks

Task 1

Look at the "Overview" section on the page above. Explain why Britain needed a large and strong navy to build its empire.

Task 2

Look at the 'Major Events' section on the page above. Explain why many Britons were proud of the British Empire in the past? Do you think we should be proud of the British Empire today?

Task 3

Look at the 'Major Events' section on the page above. Choose the area you find the most shocking to be a part of the British Empire and explain why you are most shocked by this area being a part of the empire.

Task 4

Create a 10-question quiz based on your knowledge organiser. Use this quiz to test someone you know. If they don't know the answer, teach them!

Task 5

Read through **BBC Bitesize** *The British Empire through time* and complete the 10-question quiz at the end to test your knowledge.

https://www.bbc.co.uk/bitesize/guides/zf7fr82/test

SCAN ME

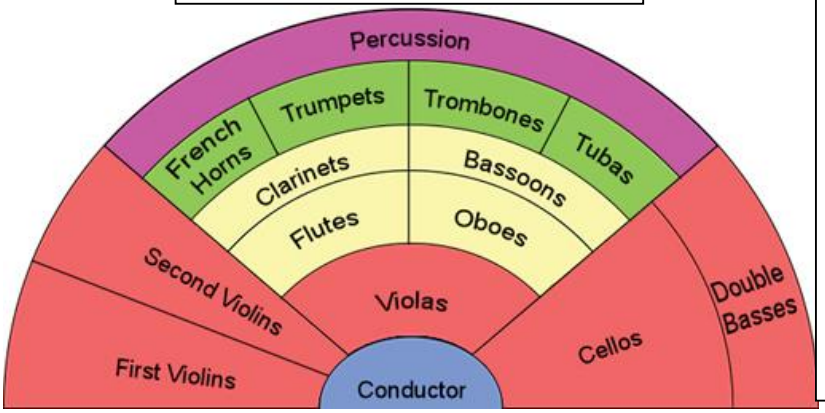
Task 6: Instruments of the Orchestra

INSTRUMENTS

Task 6: Instruments of the Orchestra test

Family	Instrument Names	
Strings	Violin; Viola; Cello; Double bass; Harp Acoustic Guitar; Electric guitar; Bass Guitar	
Woodwind	Flute Oboe Saxophone	Clarinet Bassoon
Brass	Trumpet Trombone	French Horn Tuba
Percussion	Timpani (Kettle Drums) Drum Kit Xylophone (wooden) Glockenspiel (metal)	 Tambourine Piano
Voice	**Female** Soprano (high) Alto (low)	**Male** Tenor (high) Bass (low)
Electronic	Electronic Keyboard Synthesiser (can sound like different instruments) Computer Software	
Keyboard	Piano Harpsichord Synthesizer Electronic Organ (Hammond) Church Organ	

Where the orchestral instruments sit:



Key terms:

Arco: Instruction for a string player to use the bow

Pizzicato: Instruction for a string player to pluck the strings (do not use the bow)

Mouthpiece: the part of a brass or woodwind instrument you blow into.

Slide: the part of a trombone that moves in and out

Valve: the part of a brass instrument that helps to change note. The trumpet has three.

Reed: The thin piece of wood that makes the sound on many woodwind instruments

Orchestra: A large **ensemble** (group) of instruments

Conductor: The person who controls the orchestra

Legato: Instruction to play the notes smoothly

Staccato: Instruction to play the notes short/spikey

Range: What notes an instrument can play – the lowest note to the highest.

Task 1: Learn the Instrument names and families for **strings, woodwind, brass and percussion.**

Task 2: Learn the Instrument names and families for **voice, electronic and keyboard.**

Task 3: Learn the key terms above.

Task 4: Draw a diagram of the orchestra **without the instruments**. After revising where they sit, complete the diagram **from memory – no peeking! Self-assess - fill any gaps in red pen.**

Task 5: Create a 10 mark quiz based on the orchestral instruments (where they sit or which family they are from). Get someone to test you!

Task 6: Watch *The Instruments of the Orchestra* clip (https://www.youtube.com/watch?v=EfedK-dqXWc). Then, complete this *Listening Test* (https://www.youtube.com/watch?v=oHUJz76Z74c).

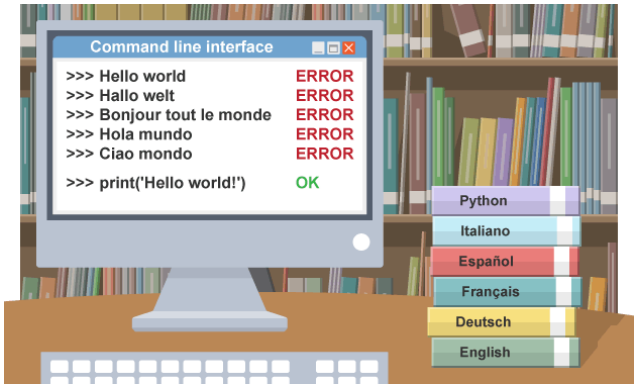
QR codes for the Youtube clips are at the top.

Task 7: Go through your Home Learning work on Instruments. Make a quiz of any words you found tricky. Get someone to test you!

Computing Department Knowledge Organiser: Year 8 Programming in Python

What is programming?

- Programming is writing computer code to create a program, in order to solve a problem. Programs consist of a series of instructions to tell a computer exactly what to do and how to do it.



KEY TERMS

Algorithm	A program created to solve a problem
Variable	Part of the program code created to store data The data can be changed
Constant	Part of the program code created to store data The data is not changed while the program is running
Data Type	The type of data being store in a variable or constant (int, float, bool)
Casting	Changing one type of data into another
Operator	Math (+ - / *) or Logical (> < = !=)
Comment	Using a # to add explanations and annotations to your code
Integer	Number with no decimal places
Floating Point / Real	Number with a decimal place
Boolean	True or False / Yes or No

What is a programming language?

- A programming language is an artificial language that a computer understands. The language is made up of series of statements that fit together to form instructions. These instructions tell a computer what to do.
- Learn how to code:
  - www.w3schools.com/python/default.asp
  - www.bbc.co.uk/bitesize/topics/zhy39j6
  - www.codecademy.com

Computing Department Knowledge Organiser: Year 8 Programming in Python

Python -> English	
`print("hello!")`	Prints a value on screen (in this case, hello!)
`input("")`	Inputs a value into the computer.
`x = input("")`	Inputs a value and stores it into the variable x.
`x = int(input(""))`	Inputs a value into x, whilst also making it into an integer.
`answer = x + y`	Saves the result of x and y added together in a variable named answer.
`print(str(x))`	Prints the variable x, but converts it into a string first.
`print("Hello", "World")`	Prints the two strings concatenated with a space between. This code would output "Hello World".
`age = 12` `print("Age: " + str(age))`	The + joins together two variables when printing. Str has to be used to cast age to be a string. This code will output "Age: 12".
`if name == "Fred":`	Decides whether the variable 'name' ha a value which is equal to 'Fred'.
`else:`	The other option if the conditions for an if statement are not met (eg. name = 'Bob' when it should be Fred)
`elif name == "Tim":`	elif (short for else if) is for when the first if condition is not met, but you want to specify another option.
`# COMMENT`	# is used to make comments in code – any line which starts with a # will be ignored when the program runs. They are used to describe the code to a programmer.
`for i in range(0,10):` `  # WRITE CODE HERE`	Repeats any code indented after this line a set number of times, in this case, 10.
`while x < 10:` `  # WRITE CODE HERE`	Repeats any code indented after this line until a condition is met, in this case x becoming equal to or greater than 10.
`list = ["","",""]`	Creates a variable and makes it an array – a list which can store many values.

Tasks:

1. What is a programming language?
2. Describe what an algorithm is?
3. Describe what a variable is?

Tasks:

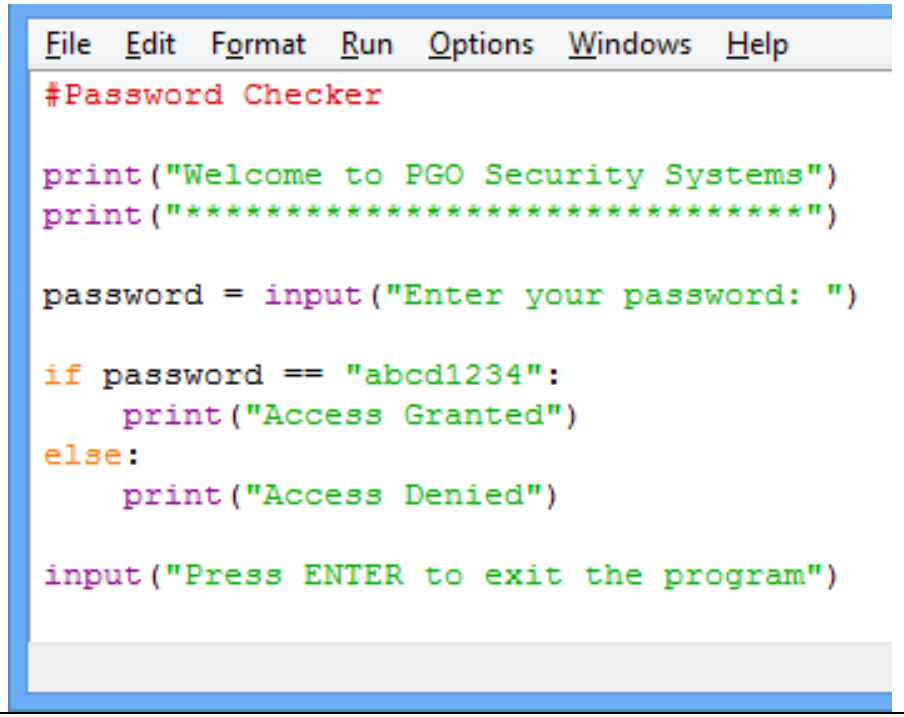
4. Describe what a data type is?
5. Describe what the terms, string, integer and float/Real mean?
6. Describe what the term Boolean means?

Data types		
Data Type	This indicates how the data will be stored. The most common data types are integer, string, and float/real.	Casting code
String	A combination of letters, numbers or characters. (eg, Hello, WR10 1XA)	`str(x)`
Integer	A whole number. (eg. 1, 189)	`int(x)`
Float/Real	A decimal number, not a whole number. (eg. 3.14, -26.9)	`float(x)`
Boolean	1 of 2 values. (eg. True, False, Yes, No)	`bool(x)`
Char	A single character	`char(x)`

Comparative operators	
==	Equal to
!=	Not equal to (or different to)
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to

Arithmetic operators			
Operation	**Symbol**	**Example**	**Output**
Addition	+	2 + 10	12
Subtraction	-	9 – 6	3
Multiplication	*	5 * 4	20
Division	/	5 / 2	2.5
Floor Division	//	7 // 2	3
Remainder	%	7 % 3	1

Computing Department Knowledge Organiser: Year 8 Programming in Python

Coding in Python	Tasks
1. **Writing error-free code** a. When writing programs, code should be as legible and error free as possible. b. Debugging helps keep code free of errors and documenting helps keep code clear enough to read. 2. **Syntax errors** - Syntax is the spelling and grammar of a programming language. In programming, a syntax error occurs when: a. there is a spelling mistake. b. there is a grammatical mistake 3. **Adding Comments** a. Comments are useful to help understand your code. b. They will not affect the way a program runs. Comments appear in **red** and have a preceding # symbol.	**Task 1:** Explain what the Top 3 Tips for Coding in Python are? **Task 2:** Read through the code below and write it out in your home learning book **Task 3**: Can you describe what each line of the code does? **Task 4:** Try writing out the code in Python. **Task 5:** Try writing your own code, you can do this in Python or your home learning book. 

```
File  Edit  Format  Run  Options  Windows  Help
#Password Checker

print("Welcome to PGO Security Systems")
print("*******************************")

password = input("Enter your password: ")

if password == "abcd1234":
    print("Access Granted")
else:
    print("Access Denied")

input("Press ENTER to exit the program")
```

Year 8 - International Cuisine

Cuisine is a style or method of cooking, especially as characteristic of a particular country, region, or establishment.

Some factors that have an influence on a region's cuisine include the area's climate, the trade among different countries, religious or laws and culinary culture exchange. For example, a tropical diet may be based more on fruits and vegetables, while a polar diet might rely more on meat and fish.

Weekly Tasks

Week 1 – Research and make a list of the different meals that make up traditional British or your own native cuisine – you could ask parents and teachers what they ate as children.

Week 2 – Design a three course menu for a dinner party based on Chinese or Indian cuisine – including 2 starters, 2 mains and 2 desserts – include descriptions of each meal.

Week 3 – Draw a spider diagram showing what food you ate yesterday. Alongside each food, identify which national cuisine it belongs to.

Week 4 – Plan a British afternoon tea to include some sweet and savoury items. Design a colourful menu with your ideas.

Week 5 – Create a poster for an international cuisine, include climate, traditional ingredients and dishes.

Week 6 – Research the cuisine of another country – for example, Spain, Japan, France or Mexico.

Key Vocabulary

- **Cuisine**: the food and diet consumed by a particular region, country or religion.
- **Climate**: the weather conditions of a particular place or region, variants include temperature and rainfall.

What is British cuisine?

British cuisine is the specific set of cooking traditions and techniques associated with the United Kingdom.

Traditional foods grown in Britain are:

- vegetables, such as potatoes, onions, leeks, sprouts, peas, beans
- fruit, such as apples, strawberries, plums and rhubarb
- herbs, such as mint, chives and sage.

Traditional foods reared in Britain are:

- meat, such as beef, lamb, poultry and game, pork, bacon and ham
- cheese, such as cheddar, double Gloucester and stilton
- Dairy, such as milk, yogurt butter and cream.

Traditional foods caught in Britain are:

- fish, such as mackerel, cod, haddock and salmon.

What is Italian cuisine?

Different foods are produced in different areas:

- The north is cooler : rice is grown and the land is used to rear animals for meats.
- The south of the country is hotter: crops such as tomatoes, olives and lemons are grown.

Some traditional dishes made in Italy are:

- gnocchi, pizza
- risotto

What is Chinese cuisine?

- Chinese food is quick to make. Food is stir-fried in a wok or steamed in a bamboo steamer – both are healthy ways of cooking.

Some traditional dishes made in China are:

- spring rolls, prawn toast
- chop suey, chow mein
- Szechuan pork or beef
- crispy duck/Peking duck.

What is Indian cuisine?

- India is a mainly agricultural country growing crops.
- In the north of India, wheat is the staple food used to make chapattis.
- In the south, rice and curries with sauce is the staple food.

Some traditional dishes made in India are:

- naan bread, chapattis
- tikkas, kormas
- poppadum, samosas

Gateacre Drama Departments: The Drama Maga-Scene

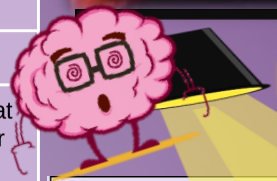
The next scheme of learning is:

Alice in Wonderland

New Skill/Technique **Retrieval**

Knowledge/ skill	Definition
Stimuli	The starting point, idea or inspiration for your devised **drama**. It is what you base your **drama** around.
Sound design	The art and practice of creating sound tracks for a variety of needs in a performance.
Levels	Using different heights or levels onstage creates visual interest. It can also help to ensure that the audience see all of the action. Levels can be used to suggest status - meaning the power or authority one character has over another and can also be used to suggest various locations.
Mime	When an actor performs without the use of dialogue
Costume designer	**The person who designs the costumes for a performance. The costume department of a theatre is often called the wardrobe.**
Slow Motion	Performing in manner whereby the action appears much slower than in real life.
Physical Theatre	Physical theatre is a well-known genre of theatrical performance that encompasses storytelling primarily through physical movement.
Syncronisation	When a group of performers perform the same movements, at the same time aka. 'moving in sync'
Gesture	In acting gesture is defined as a sign that communicates a character's action, state of mind and relationship with other characters to an audience.
Tableaux	An image a group of performers make usually at the beginning of a performance.
Body as Prop	A genre (type) of drama that tells a story using over exaggerated movement. and physicality. Body as Prop Using your body to create props and objects on stage.
Balances/Lifts	Balances/Lifts are an advanced physical theatre technique used in professional theatre performances where one/a number of performers lift another in the air. It takes a lot of group work, patience and maturity to create an effective lift/balance
Characterisation	Developing and portraying a personality through voice and movement.
Promenade theatre	In promenade theatre there is no formal stage, both the audience and the actors are placed in the same space.

THEATRE ETIQUETTE



Key performance terminology:

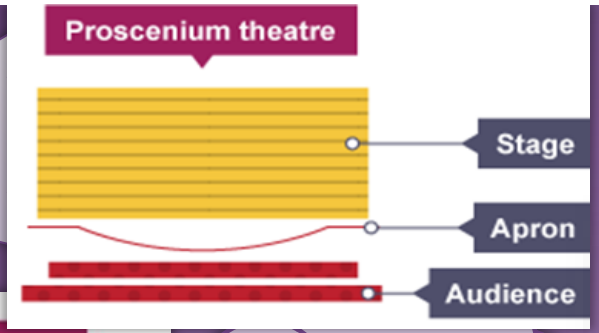
Physical Skills...(Skills that involve using your BODY)

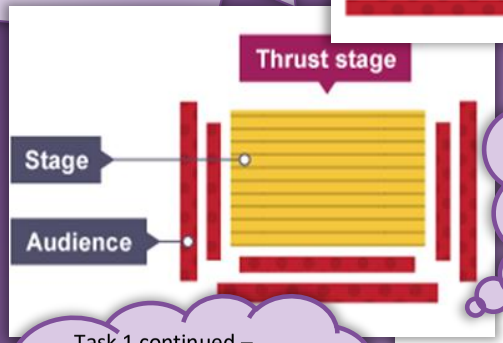
1. Body Language	How an actor uses their body to communicate meaning. For example, crossing your arms could mean you are fed up.
2. Posture	The position an actor holds their body when sitting or standing. For example, an upright posture.
3. Gait	The way an actor walks.
4. Facial Expressions	A form of non-verbal communication that expresses the way you are feeling, using the face.
5. Gestures	A movement of part of the body, especially a hand or the head, to express an idea or meaning.
6. Stance	The way you position yourself when standing to communicate your role. An elderly person would have a different stance to a child!

Vocal Skills...(Skills that involve using your VOICE)

1. Projection	Ensuring your voice is loud and clear for the audience to hear.
2. Volume	How loudly or quietly you say something. (Shouting, whispering)
3. Tone	The way you say something in order to communicate your emotions. (E.g. Angry, worried, shocked tone of voice)
4. Pace	The speed of what you say.
5. Pause	Moments of pause can create tension, or show that you are thinking.
6. Accent	Use of an accent tells the audience where your character is from.
7. Pitch	How high or low your voice is.
8. Emphasis	Changing the way a word or part of a sentence is said, in order to emphasise it. (Make it stand out.) Try emphasising the words in capital letters and see how it changes the meaning: "How could YOU do that?" "How could you do THAT?"

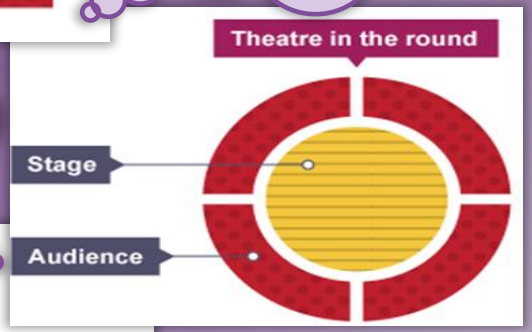
Stage Types & Tasks

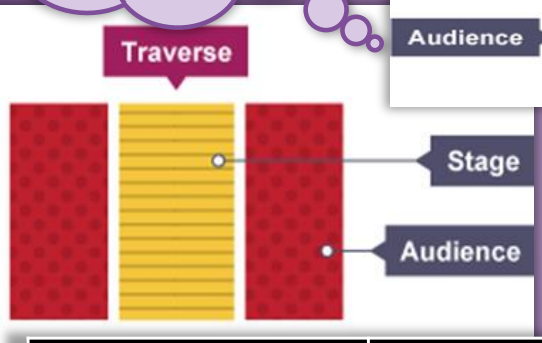




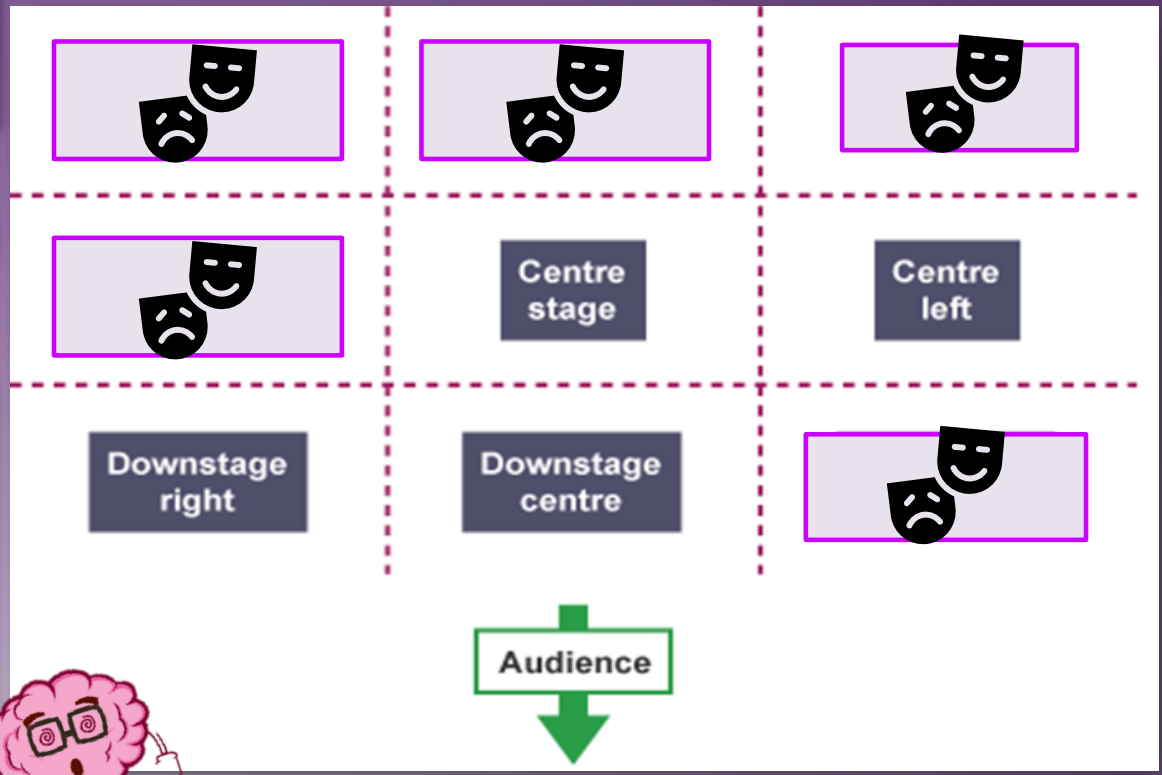
Task 1: Write a list of the pros and cons of a traverse stage

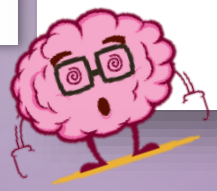
Task 1 continued – Write 3 bullet points of key performative strategies you need to successfully perform in traverse





Stage positioning





Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Watch Alice in Wonderland (Any version!)	Scan the QR Code and read this months The Drama Maga-Scene	Create your own unique costume design for The Mad Hatter	Revise our new knowledge skills for this term and create a knowledge quiz! Play with the family!	Write a monologue as if you are Alice and you have just arrived in Wonderland. What are you thinking, feeling, seeing and wanting to do!?	What stage position are our pesky drama faces covering? Create your own 'Stage Position Puzzle' and test your family!

Spanish

Go to languagenut.com or download the app from the app store/google play store.

Log in with the username and password given to you by your teacher.

Your weekly task will appear in the "assignments" section.

Tuesday 18th April	Complete the assigned tasks practising food vocabulary.
Tuesday 25th April	Complete assigned tasks practising fruit and vegetables vocabulary.
Tuesday 2nd May	Complete assigned task practising restaurant vocabulary.
Tuesday 9th May	Complete assigned reading tasks on food.
Tuesday 16th May	Complete assigned translation task on food.
Tuesday 23rd May	Complete assigned writing task on food.

If you're accessing Languagenut from a tablet or computer, you can browse through other sections and practise other skills.

Click "high school" and either "vocab practice", "exam skills" or "sentences and chunks" and practise away!

You get points for each activity you complete and the Top 10 students in the school with the most points at the end of each month will get a prize off Mrs. Foy!

Paragraph development:

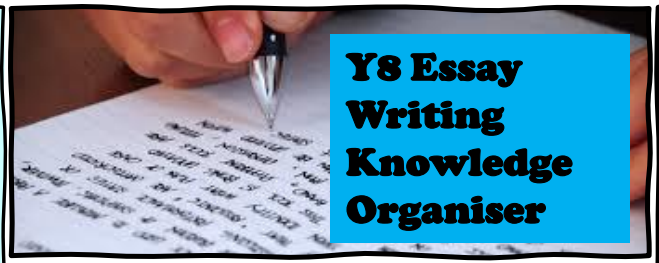
Point (*What* do you know?)

Evidence (*How* do you know? – a quote from the text)

Explanation (*Why* does your chosen quote prove your point?)
Zoom in on words/techniques that create effects. Explore their meaning.
Use subject terminology where appropriate.

Words to use to discuss meaning:

suggests	implies
connotes	indicates
Shows	expresses
demonstrates	symbolises
represents	illustrates
reveals	signifies
intimates	insinuates
typifies	



Y8 Essay Writing Knowledge Organiser

What is an essay?

- Essays are used to assess your understanding of ideas and your ability to explain these in your own words.
- Essays are written in a formal, discursive style that brings together ideas and evidence and follows a clear a line of argument. This is called academic writing.

Organisation

An academic essay has three parts:
1.Introduction: This gives the reader an idea of what they are about to learn by reading the essay. It addresses the question set and presents an argument in the form of a thesis statement (a short summary of the view point you will argue for).
2. Main Body: This provides evidence used to prove the writer's point of view.
3. Conclusion: This summarises the content and findings of the essay.

The Writer's Toolkit: Subject terminology and Definitions

Adjective – words that describe nouns.
Adverb – words that describe verb & adjectives.
Antagonist – the character in a story who causes problems for the main character.
Atmosphere – the feels created in the narrative.
Character - the people in the narrative.
Connotation - the feelings & associations we make with a word.
Didactic narrative – a story with a lesson.
Empathy – identifying with another person's feelings.
Genre – category or type of writing, music or art
Imagery – the mental picture created through writing.
Metaphor – an image made by comparing someone or something to something else by saying it is that 'thing'.
Mood – the feeling created by a piece of writing
Personification – an image created by giving a thing human qualities.
Protagonist – the main character in a narrative.
Repetition – repeating a word or idea for emphasis.
Theme – an idea explored through story telling.
Tone – the attitude conveyed by what is written or spoken.
Simile – a direct comparison using the words *as* or *like*.
Symbolism – the idea that things represent other things. Symbols are usually objects, which are easy to understand, but they represent something more complex.
Verb – words that tell you what action is being carried out.

Y8 Home Learning Tasks – *A Monster Calls* by Patrick Ness

Week 1 – Monsters

This week, you have been thinking about monsters in fiction and what makes them monstrous. Choose a famous monstrous literary figure (E.g. Frankenstein's monster, Lord Voldemort etc.) and research their history, role and what makes them "monstrous".

Week 2 – Yew Trees

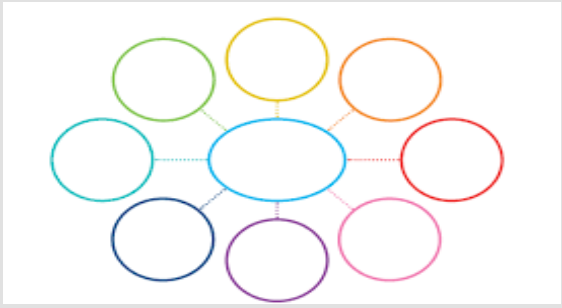
There is a yew tree in the graveyard behind Conor's house. Conor has begun to dream about the tree. Using the internet, research yew trees and find out about their healing properties and symbolism.

Week 3 – Tackling Bullies

Conor is having difficulties with Harry, Anton and Sully at school. Write an advice sheet for students who, like Conor, who are experiencing problems with bullying.

Week 4 - Characters

From what you have read so far in class, produce mind maps about what you have learned about the characters of Conor and Conor's grandma.



Week 5 – Fables

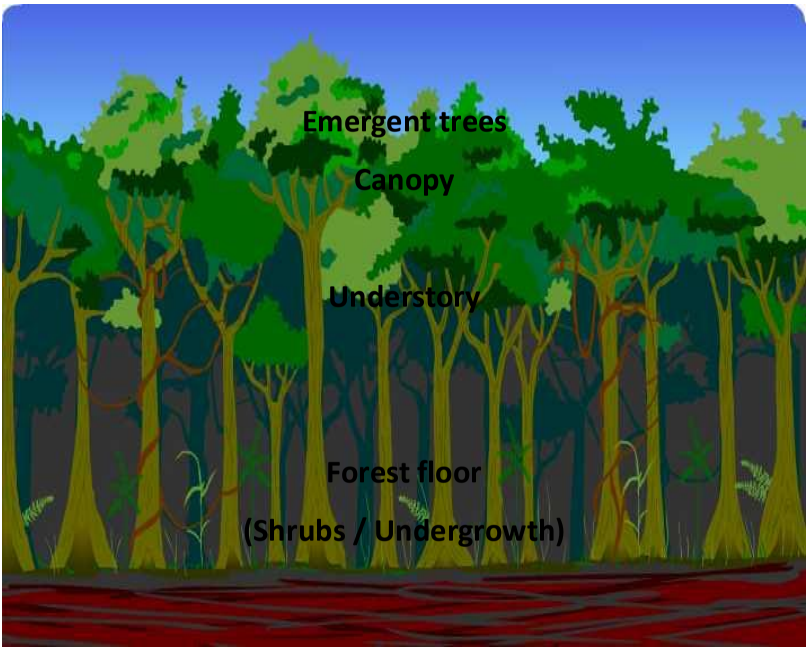
The monster tries to teach Conor to face his feelings by telling him a series of didactic tales. A fable is a type of story that teaches a moral lesson. Fables usually involve animals in place of people. Aesop is the most famous teller of fables. Find out as much as you can about Aesop and his fables.

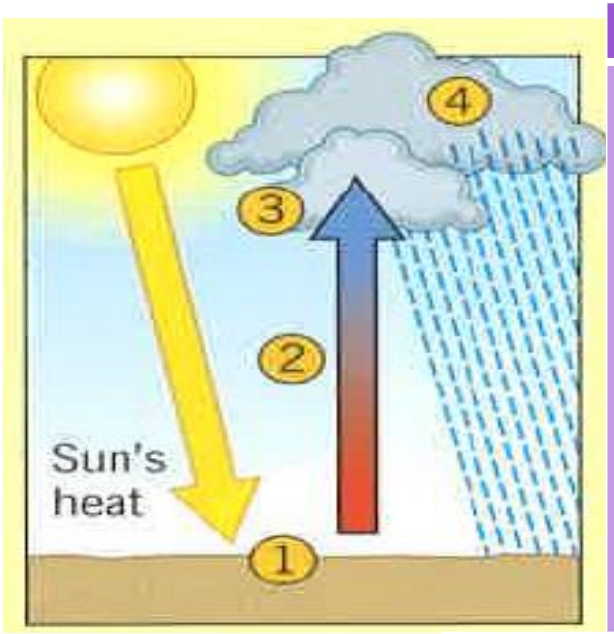
Week 6 – Film review

After watching the film adaptation of *A Monster Calls,* write a short film review for a website aimed at teenagers.

Rainforest structure- definitions

- **Emergent- 50m or taller. Usually supported by buttress roots.**
- **Canopy- A dense layer. Trees are 20-30m high. Many hardwood trees such as Mahogany.**
- **Understory-Dark and humid area containing saplings and shrubs.**
- **Forest floor- Covered with ferns and a deep layer of litter – fallen leaves and branches.**





Convectional rainfall

This precipitation is caused by very HOT WEATHER heating the ground:

1.Sun beats down.

2.The ground becomes very hot and heats the air above it.

3.The hot air rises = evaporates.

4.When it reaches the cool air up in the atmosphere it condenses to form clouds.

5.It rains – usually hard as this is a quick and intense process.

Services- a service or action that the biosphere provides for us e.g. the green lungs.

Year 8 Geography

Goods- things which the biosphere gives us (products) e.g. meat and fruit.

How the rainforest provides us with resources

- **Food-** Bananas, nuts, tea, coffee, palm oil. all originated in the rainforest.
- **Medicine-** Many types of medicine (more than 700) come from plants e.g. malaria (quinine). Heart conditions, diabetes, cancer (rosie periwinkle) etc.
- **Minerals-** Minerals such as gold and silver are found in rocks.
- **Materials-** Building materials such as wood- teak, mahogany.
- **Fuels-** Wood-can be burnt as a source of heat & energy.
- **Recreation-** Increasingly TRFs are exploited by travel companies bringing large groups of tourists. E.g. zip wires.

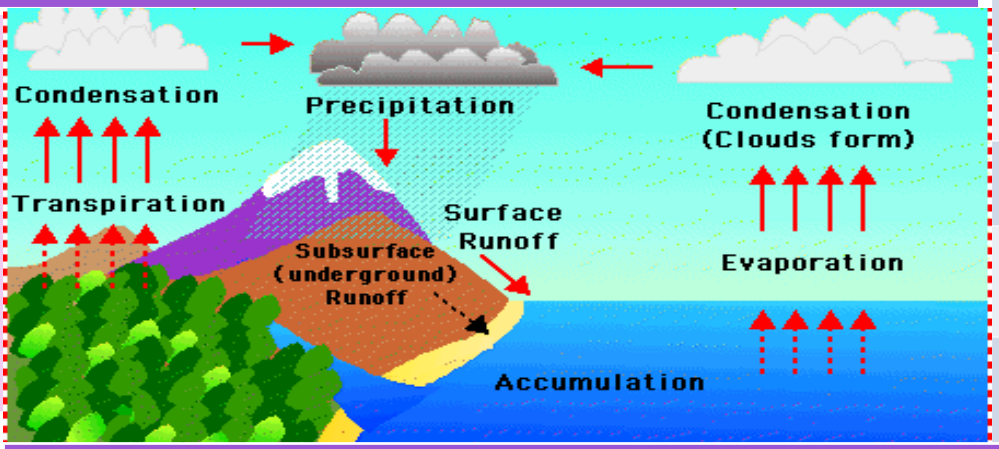
Tasks- if you complete all 5, revisit some or all from memory

Task 1: Revise the diagram of rainforest structure, then cover it and sketch the diagram from memory, (using a pencil) then self assess and add any of the layer names you have missed.
Task 2: Learn the definitions of the names of layers of the rainforest.
Task 3: Revise how the rainforest provides us with resources. Cover and then create a mind map of all the resources you can remember. Check back and add any you have missed in red pen.
Task 4: Learn the key terms for 'services' and 'goods' and then go back to your mind map from task 3 and then use 2 colours to highlight those things that are goods and those that are services. Don't forget to create a key.
Task 5: Create a flow diagram showing the 4 stages in convectional rainfall.

Weather, climate & extreme weather

Weather is a description of the day-to-day conditions of the atmosphere. Climate is the average weather over a long period of time (usually 30 years). Extreme weather is when a weather event is significantly different from the average or usual weather pattern. This may take place over one day or a period of time. A flash flood or heat wave are two examples.

The Hydrological Cycle



Tasks- if you complete all 4 and complete extensions.

Task 1: Revise the key definitions for weather, climate and extreme weather. Cover and try to write your own definitions.
Task 2: Look over the diagram of the hydrological cycle, then cover it and sketch the diagram from memory, (using a pencil) then self assess and add any of the key terms and features you have missed.
Task 3: Look over the sections on microclimate. Using the factor box think about the yard at the back of the school. Choose 2 places, and explain why each is different, linking your explanation to some of the factors.
Task 4: Read over and cover the 'how do we measure the weather?' section and then try to complete each column one-by-one.
Task 5: Extension. Watch the weather on TV after the news or use Google and go to the BBC weather and create a short report on the weather in your own area for the next few days. Focus on the weather terms in the box on the right to help you.
Task 6: Find out about the weather station in school. Where is it located?

Microclimates

A microclimate is the climate of a small area such as a garden, park, and valley. It may differ from the surroundings.

Factors which affect a microclimate

Cause	Effect
Shelter	Trees, hedges, walls, buildings and hills provide a barrier to the wind, reducing its speed and changing its direction.
Surface	The colour of the ground affects warming. Darker ground (e.g. tarmac and soil) warm up more than lighter surfaces (e.g. grass).
Aspect	The direction a place is facing. Places facing the sun will be much warmer than those in shadow.
Buildings	Manmade structures give off heat that has been absorbed during the day. They can both increase and reduce wind speeds depending on position.
Physical features	Trees may provide shade and shelter. Water areas such as lakes and seas may have a cooling effect. Hill tops are cool and windy.

Yr 8 Geography Wild Weather Knowledge Organiser

How do we measure weather?

Weather Term	Means:	Units used:	Using:
Temperature	Exactly how hot or cold it is	In degrees (oC) or F	Thermometer
Air pressure	How heavy the air is	In millibars (mb)	Barometer
Wind speed	How fast the wind is blowing	In mph or kph	Anemometer
Wind direction	Where the wind is blowing from	As a compass point- N, E etc.	Wind vane or wind sock
Precipitation	Water falling from the sky in any form	In mm for rain but cm for snow	Rain gauge

DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

Topic: Cam Toy Project

YEAR 8 DT

My Tool Box

Pin Hammer – Used to knock panel pins and small nail into wood.

Coping Saw – Used to cut curves and internal shapes in wood.

Tenon Saw – Used to cut straight lines in wood.

Bench hook – Used to hold work in place when cutting

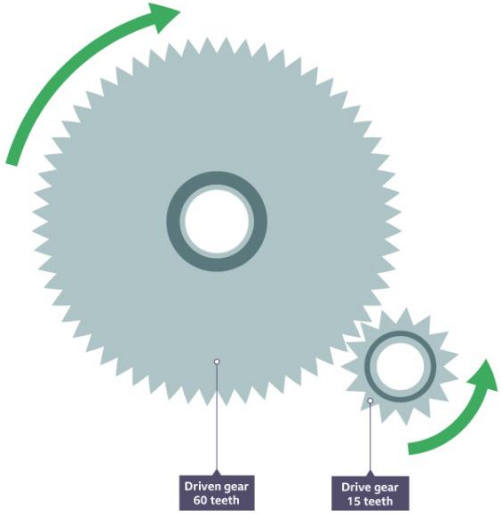
Wood Vice – Used to secure material while working on it (cutting, filing sanding etc.)

Scroll-Saw/Hegner-Saw- Used to cut complicated shapes in thin material.

Pillar/Bench Drill – Used to drill holes into different materials.

Gear trains

Gear trains are when two or more gears are joined together. In a simple gear train, the drive gear causes the driven gear to turn in the opposite direction



Smaller gears with fewer teeth turn faster than larger gears with more teeth. This difference in speed is called the gear ratio.

Gear ratio = number of teeth on driven gear ÷ number of teeth on the drive gear

Example

The driven gear has 60 teeth and the drive gear has 15 teeth.

Gear ratio = 60 ÷ 15 = 4

For each rotation of the drive gear, the driven gear would rotate four times.

Gear ratio = 4:1

This is known as gearing up. If the driven gear had 15 teeth and the drive gear had 60 teeth, the gear ratio would be 4:1 which is known as gearing down.

Key Terms

Aesthetics- how humans perceive and judge objects according to their attractiveness
Softwood - the wood from a conifer (such as pine, fir, or spruce)
Pine wood - an evergreen coniferous tree which has clusters of long needle-shaped leaves.
Manufactured Board – timber sheets which are produced by gluing wood layers or fibers together (such as MDF, Plywood and Chipboard)
Medium-density fibreboard (MDF) – an engineered wood product made from wood fibres and resin binder (glue)
Plywood – is a composite material. It is composed of individual plies/veneers of wood. It is very strong due to the way the plies are put together. The grain of each ply is positioned at ninety degrees to the pieces of ply above and below it.
Ratio - the relation between two amounts showing the number of times one value contains or is contained within the other

Tasks

Task 1: Learn the tool names and their use.
Task 2: Learn the key words and the definition.
Task 3: Create 4 questions that can be answered from the information in the focused topic column.
Task 4: Draw two tools and write what they are for.
Task 5: Create a quiz based on task 1, 2 or 3. Get someone to test you.
Task 6: Create a mind map for the information you remember and red pen anything you've forgotten.
Task 7: Teach it. Create a task that can be used to teach some of the information from here.

To go further:

Introduction to sketchup -3D CAD

Introduction to 3D crating:

ART KNOWLEDGE ORGANISER

Topic: Native American Art and Culture (creating ceramics)

YEAR 8
Term 3a
Native American Ceramics

Context: The History of Pottery

Pottery is the technique used to make ceramics. Clay is the material we use to create this. The most common types of clay are: earthenware, stoneware and porcelain. At Gateacre, we use earthenware clay. This term, you will use red earthenware, which is terracotta in colour. The word ceramic comes from an ancient Greek word for "burned earth". This is because the clay is a natural material: mud and earth, which is burned in a kiln to create ceramics. Pottery objects are made from damp clay mixed with other materials. Once the artwork is created, the work is then fired in a special oven called a kiln at high temperatures. Firing makes the clay hard. The potter may then apply a glaze or stain to the surface of the work, before firing the object again. The fired glaze makes the surface of the pottery shiny, decorative and water-tight. There are different methods of shaping your work: Once the clay is fired, it turns the material from clay to ceramics.

- **A POTTERS WHEEL:** this is called throwing. Considerable skill and experience are required to throw pots of an acceptable standard
- **HAND BUILD:** This is the earliest method known. Pottery can be constructed by hand from coils of clay, combining flat slabs of clay, or pinching solid balls of clay or some combination of these. Parts of hand-built vessels are often joined together with the aid of slip, a liquid solution of clay body and water (used like glue). Hand-building is slower than wheel-throwing, but it offers the potter the ability to create one off works of art.
- **MASS PRODUCTION:** used in industry to create mass ceramics: plates, mugs, bowls, vases etc.

Tasks to complete:

Week 1: Practice key literacy vocab 1-6 – look, cover, write, check, correct x 3. Read the sentences again and check for understanding.

Week 2: Practice key literacy vocab 6-12 – look, cover, write, check, correct x 3. Read the sentences again and check for understanding.

Week 3: create a comic book strip with drawings and writing to show the step by step process of how to roll out clay

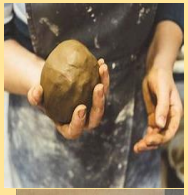
Week 4: Create a drawing in colour of a native American clay tile, using a spirit animal and some native American patterns.

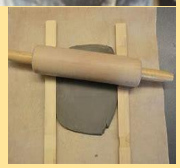
Week 5: Looking at the three subtitles on the left: potter's wheel, Hand build and mass production. Research the ceramic meanings for each one and create an information page to explain what they are.

Week 6: using the vocab words to the right, and select 6 words you are really familiar with. In your own words create a written guide to a beginner on what each word means.

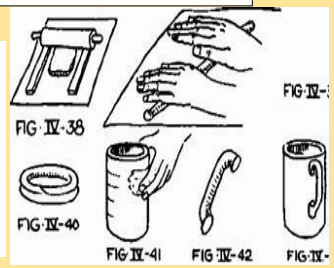
Key Literacy Vocabulary:

1.CLAY the material used to create ceramic vessels. Clay is the material, before entering the Kiln.
2.CERAMIC: something made from clay, then it's fired in the kiln and turns to ceramics. A
3.KILN a furnace or oven for burning, baking, or drying, or firing pottery.
4.SLIP A **slip** is a liquid mixture or slurry of **clay** and/or other materials suspended in water. It is used to glue clay together.
5.SCORE To score a pot or piece of clay means to scratch crosshatch marks on it as part of joining clay pieces together. This is done before brushing on slip and joining the pieces together. The process is often called "score and slip."
6.LEATHER HARD STATE: is the condition of the clay, when it has been partially dried to the point. The texture is similar to that of leather. The leather-hard stage is when the clay is at its most vulnerable.
7.SCULPTURE: a 3D piece of art work.
8.SGRAFFITO: an Italian word for scratched. This art technique can be used to scratch away the surface of paint, clay plaster, card etc.
9.RELIEF: a Latin word which means to raise. This can usually be found on 2D/3D work, to raise the layer or surface. Card on top of card is relief.
10.OPAQUE: when your colour is not transparent and no light can pass through it.
11.PATTERN: an arrangement of repeated or matching symbols or lines.
12 OUTCOME: the personal response you produce which links to the theme of your work.





Week 3 – use the images to the right to help you create the step by step rolling out of clay. Click on the QR code to watch the video.



Week 4 – produce a spirit animal drawing to show your clay ideas. Click on the websites below to help you create your drawing.

Week One

Read your knowledge organiser focusing on **Electromagnetism** for 5 minutes. Then turn the organiser over and write a short summary of the topic.

The summary should include:

1. No more than 40 words
2. And should be written in full sentences.

Week Two

Answer the following questions in full sentences in your home learning workbooks.

1. Draw the circuit symbol for a cell
2. Draw the circuit symbol for an ammeter
3. Draw the circuit symbol for a lamp
4. Draw the circuit symbol for a resistor
5. Define the term 'battery'
6. Define the term 'current'
7. Define the term 'potential difference'
8. Define the term 'resistance'
9. State the units of current
10. State the units of potential difference
11. State the units of resistance.

Week Three

Read your knowledge organiser focusing on **Ecosystem processes** for 5 minutes. Then turn the organiser over and write a short summary of the topic.

The summary should include:

1. No more than 40 words
2. And should be written in full sentences.

Week Four

Pick 4 key words from the knowledge organiser page title **Ecosystem processes.** Using those 4 key words make as many links between the words as you can.

Remember to include:

1. The 4 key words you have chosen
2. The links you have made between the words, these should be written along the arrow that connects them.

Week Five

Using your Home Learning book, make a quiz containing at least 10 questions from the topic **Ecosystem processes.**

Remember to include:

1. Answers to each question written in full sentences,
2. A variation in the type of question, Draw/state/explain etc.

Week Six

Create a food web showing the interactions between the organisms listed below.

- Lion
- Acacia tree
- Hyena
- Dung Beetle
- Cheetah
- Grass
- Giraffe
- Termites
- Baboon
- Zebra

In full sentences, below your food web identify producers and consumers giving examples using your food web.

WE ARE USING

TASSOMAI

Have you completed your 4 daily goals?

Complete 4 daily goals each week to ensure success in Science! 😉

Home learning tips:

1. Answer any questions in full sentences.
2. Take your time reading through your knowledge organiser.
3. Read the task twice.
4. Ask your teacher in your next lesson if you are unsure about anything.
5. Not sure which week to do? Ask your teacher!

8.8 – Electromagnetism

What do I need to be able to do?

•Understand; electric current, measured in amperes, in circuits, in series and parallel circuits,
•Understand; potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current
•Understand the separation of positive or negative charges when objects are rubbed together: transfer of electrons, forces between charged objects
•Describe the idea of electric field, forces acting across the space between objects not in contact.
•Describe magnetic poles, attraction and repulsion
•Understand Earth's magnetism, compass and navigation
•Describe the magnetic effect of a current, use in electromagnets
•Visualise magnetic fields by plotting with compass, representation by field lines
•Apply rules for current, p.d. and resistance in series and parallel circuits to identify missing values

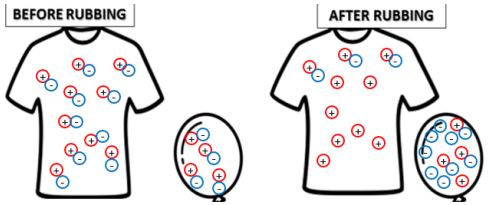
1. Static Electricity

7.4 - Atomic Structure recap

Atoms are composed of the following sub-atomic particles:

- Protons – which are positively (+) charged
- Electrons – which are negatively (-) charged
- Neutrons – which have no charge

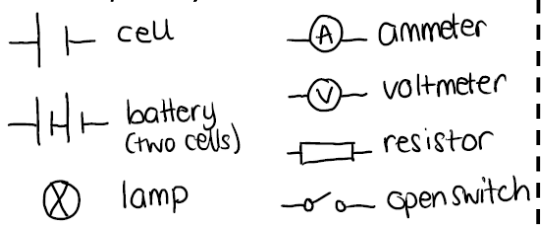
Opposite charges **(+ and -)** attract each other
Like charges **(+ and +, or, – and -)** repel each other



When the balloon is **rubbed** on something like hair or clothes, **friction** causes **electrons** to be transferred from your jumper to the balloon. This makes the balloon overall **negatively** charged. The jumper is now more **positively** charged compared to the balloon. The balloon is then **attracted** to the jumper.
This is static electricity.

2. Circuit Diagrams

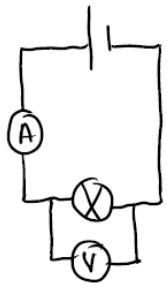
Circuit Component Symbols:



When drawing a circuit diagram, we connect the component symbols with straight lines (use a ruler) to represent wires

An **ammeter** is placed in **series** (in the same loop) to measure the **current through** a component

A **voltmeter** is placed in **parallel** (an additional loop) **across** the component to measure the **potential difference**.



3. Definitions

Current – the rate of flow of electrical charge. In an electrical circuit this will be the rate of flow of electrons. It is measured in **amperes (amps, A)**

Potential difference – a measure of the differences in electrical potential energy between two points in a circuit, usually before and after a component. It is measured in **volts (V)**

The potential difference rating of a cell or battery is a measure of the 'push' it gives the current

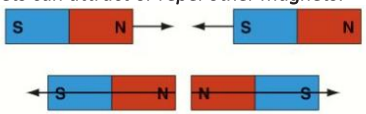
A 12V cell will induce a higher rate of flow of charge than a 6V cell

Resistance – a measure of the difficulty for current to flow. Adding more components increases the resistance in the circuit. It is measured in **ohms (Ω)**

As the resistance increases, the current decreases and the potential difference increases

7. Magnetism

Magnets can attract or repel other magnets:



Magnets will **attract** magnetic materials that contain the elements **iron, nickel or cobalt**.

A magnetic field is the area around a magnet where a magnetic material will experience a force. This is a non-contact force as the object needs only to be brought into the field around the magnet, not to touch the magnet.

When a current flows through a wire, a magnetic field is produced. This is an electromagnet. ***The strength of the magnet can be increased by***:
•increasing the current flowing through the wire
•having more turns in the coil of wire
•coiling the wire around a magnetic metal core

Electromagnets will stop being magnetic if the current is turned off.

6. Calculating Resistance

To find the resistance of a component, you need to measure:

- potential difference across it, in **volts (V)**
- current flowing through it, in **amps (A)**

We can use the following equation to calculate the resistance of a component:

resistance (Ω) = potential difference (V)
÷
current (A)

e.g. 3A flows through a 240V lamp. What is the resistance?

E - resistance = potential difference ÷ current
V - p.d. = 240 V current = 3 A
E - resistance = 240 ÷ 3
R - resistance = 80
Y - resistance = 80 Ω

5. Parallel Circuits

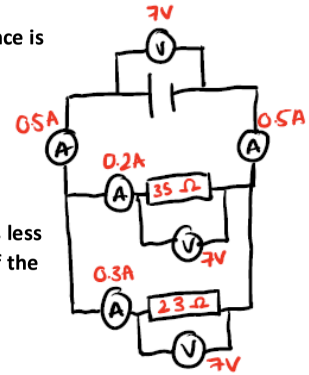
The electrical components are connected on different branches/loops)

If one component breaks, the current has another route to take so all other bulbs in a circuit would stay on.

The current is shared across the branches. The current in the branches will add together to equal the current in the main part of the circuit.

The potential difference is the same across all components

The total resistance is less than the resistance of the least resistor.



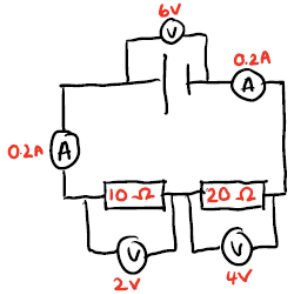
4. Series Circuits

The electrical components are connected one after another in a single loop.

If one component is broken, this creates a gap in the circuit and current cannot flow. This means that if a bulb breaks in a circuit, all others will go out as well.

The current is the same at all points in a circuit

The potential difference of the cell or battery is shared across the components

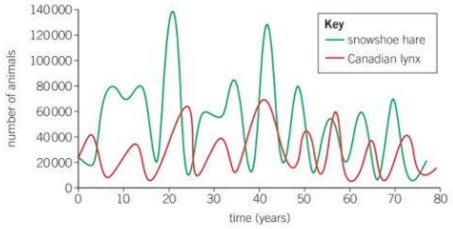


The total resistance is the sum of all resistors in the circuit: 10 Ω + 20 Ω = 30 Ω

8.9 - Ecosystems

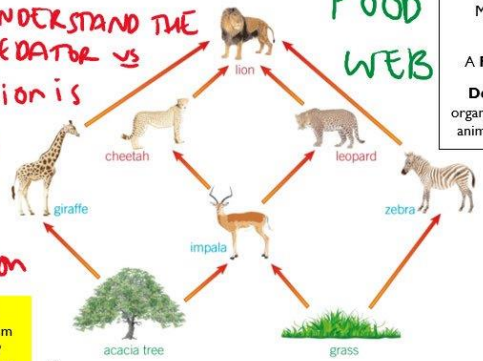
When a predator feeds on just one type of prey, there is an interdependence between the predator population and the prey population. This means that changes in the population of one directly affects the population of the other

- When the prey population (hare) increases, the predators (lynx) have more to eat. The lynx survive longer and reproduce more.
- This increases the number of predators.
- The growing predator population eats more prey. The prey numbers fall.
- Eventually there is not enough food for all the predators so their numbers decrease.
- There are now fewer lynx feeding on the hares. The hare population increases, and the cycle starts again.



YOU MUST UNDERSTAND THE ROLE OF PREDATOR VS PREY, eg- lion is predator to giraffe + giraffe is prey to lion

FOOD WEB



MOST ANIMALS EAT MORE THAN ONE TYPE OF ORGANISM.

A **FOOD WEB** (left) is a set of interlinked food chains.

Decomposers are also found in food webs. These are organisms (bacteria or fungi) that break down dead plant and animal material, releasing nutrients back into the soil/water

What happens if the numbers of one organism change in a food web? What is the overall effect?

Most food chains have **4 or 5** links. If there were more, too little energy would be transferred to organisms at the top of the food chain.

Roughly **10%** of energy is transferred from one level to the next. Energy is lost between levels by:

EXCRETION, EGESTION, RESPIRATION (HEAT ENERGY GIVEN OFF), MOVEMENT, NOT ALL ORGANISM CONSUMED (e.g. bones)

FOOD CHAIN

PRODUCER — PRIMARY CONSUMER — SECONDARY CONSUMER — TOP PREDATOR

ARROWS IN A FOOD CHAIN/WEB INDICATE TRANSFER OF ENERGY!

PREDATOR-PREY RELATIONSHIPS

FOOD CHAINS AND FOOD WEBS

COMPETITION

INTERDEPENDENCE

KEY VOCABULARY

ECOSYSTEMS

FOOD CHAINS AND WEBS

DISRUPTION TO

BIOACCUMULATION

WHAT DO ANIMALS COMPETE FOR?

WHAT DO PLANTS COMPETE FOR?

In a habitat there is a limited supply of resources, such as food, water and space.

Animals compete for:

1. food
2. water
3. space – to hunt and for shelter
4. mates – to reproduce.

Plants also compete for resources in their environment. Plants compete for:

1. light
2. water
3. space
4. minerals – plants do not compete for food, as they produce their own through photosynthesis.

What is an ecosystem?

An **ecosystem** is the name given to the plants and animals that are found in a particular location, and the area in which they live. These plants and animals depend on each other to survive.

A State what is meant by an ecosystem.

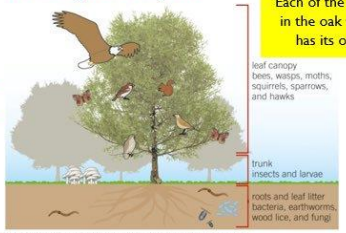
The organisms in an ecosystem are known as a **community**. The area they live in is called a **habitat**. The conditions found in a habitat are known as the **environment**. These include the air, soil, and water.

For example, in a pond ecosystem:

- habitat – pond
- community – water plants, microorganisms, insects, fish, and fish-eating birds.

The plants and animals in a community and a habitat co-exist. This means they live in the same place at the same time.

Co-existing in an ecosystem

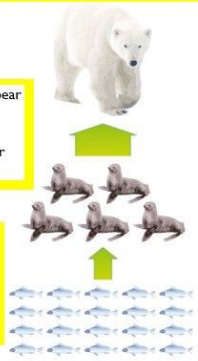


- Roots and leaf litter – microorganisms, woodlice, and earthworms live at the base of the tree. They break down the old leaves, releasing nutrients that the tree can then absorb and use for new growth.
- Trunk – the tree trunk provides food or shelter for a number of insects and caterpillars.
- Tree canopy – many organisms live amongst the branches and leaves of the tree. For example, bees gather pollen and nectar when the tree is in blossom. Fungi may grow on the leaves. Squirrels gather acorns and moths lay their eggs. Small birds, such as sparrows, eat the moth larvae. Sparrow hawks feed on the sparrows.

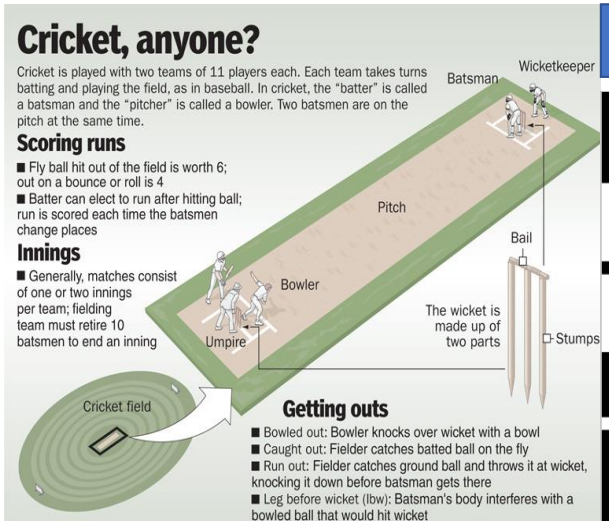
Each of the organisms living in the oak tree ecosystem has its own **NICHE**.

Polar bears eat seals. One polar bear eats a lot of seals and so the insecticide accumulates to a dangerous level inside the polar bear's body.

Some insecticides are washed into rivers and end up in the sea. Fish absorb small amounts of these chemicals and store them in their body. Seals eat the fish and the insecticide build up as one seal eats lots of fish



Key Word	Definition
ADAPTATION	Characteristic that helps an organism to survive in its environment
BIOACCUMULATION	The build-up of toxic chemicals inside organisms in a food chain
COMMUNITY	The collection of the different types of organism present in an ecosystem
COMPETITION	Organisms have to make use of the same limited supply of resources available to them
DECOMPOSER	Organism that breaks down dead plant and animal material so nutrients can be recycled back to the soil or water
ECOSYSTEM	The living things in a given area and their non-living environment
ENVIRONMENT	The surrounding air, water and soil where an organism lives
FOOD CHAIN	Part of a food web, starting with a producer and ending with a top predator. The diagram shows the transfer of energy between organisms
FOOD WEB	A diagram that shows how food chains in an ecosystem are interlinked
HABITAT	The area/place where an organism lives
INTERDEPENDENCE	The way in which living organisms depend on each other to survive, grow and reproduce
NICHE	The place/role an organism has in an ecosystem
POPULATION	A group of the same species living in a particular area
PREDATOR	An animal that eats other animals
PREY	An organism that is eaten by another animal
PRODUCER	Green plant or algae that makes its own food using sunlight by the process of photosynthesis
SAMPLING	The collection of a small amount of data about a population that is used to make estimates about a whole population
SPECIES	A group of living things that have more in common with each other than with other groups. This allows them to mate to produce fertile offspring.
VARIATION	Differences within and between species



Cricket bowl

Batting:

1.Grip the cricket bat properly. If you're right-handed, place your left hand on top of the handle with the right hand under it; left-handers place the opposite way.

2. **Proper stance.** If you're right-handed, stand sideways in the crease (the "safe" area in front of the wicket) with your left shoulder towards the bowler (who "pitches" the ball); left-handed batters do the opposite.

3.**Weight movement.** Shift your weight from your back foot onto your forefront to meet the ball.

4. **Swing the bat properly.** When the ball is pitched, swing the bat backwards in a straight line. The back-swing provides the power for the shot; a good swing clears the top of the wicket.

1

2

Forehand shot

Part 1
- Face sideways with your shoulder and arm pointing towards the opponent.
- The racket arm should be at a 45° angle with the face of the racket at head height.
- Body weight should be on the back foot.
- Keep your eyes on the ball.

Part 2
- When ready to strike the ball, transfer body weight from back to front foot.
- Rotate your body quickly to face forwards.
- Drop the racket head lower as you start to accelerate forwards.
- The forward swing should travel from low to high, aiming to hit the ball at its highest point.
- Keep your eyes on the ball.

Part 3
- Make contact with the ball at around waist height.
- Begin to rotate the racket at impact, so the strings point down towards the ground.
- The racket will follow through, finishing to the left of the shoulder.
- Return back to ready position for the next shot.

3

Tennis serve

TASK 1

Tennis and Cricket

TAP / DRAG TO SELECT WORD

T	B	C	G	E	G	S	T	Y	T
G	Z	Z	G	O	M	M	T	G	E
I	C	G	Y	G	T	H	L	S	C
G	D	R	O	P	S	H	O	T	A
D	B	V	G	A	M	E	V	I	T
T	K	O	M	A	G	Y	E	G	C
B	A	S	W	C	L	D	H	D	H
O	F	I	E	L	D	I	N	G	E
A	V	B	A	T	T	I	N	G	E
S	E	R	V	E	T	A	A	A	D

BATTING
BOWL
CATCH
DROPSHOT
FIELDING
GAME
LOVE
RALLY
SERVE
SET
SMASH

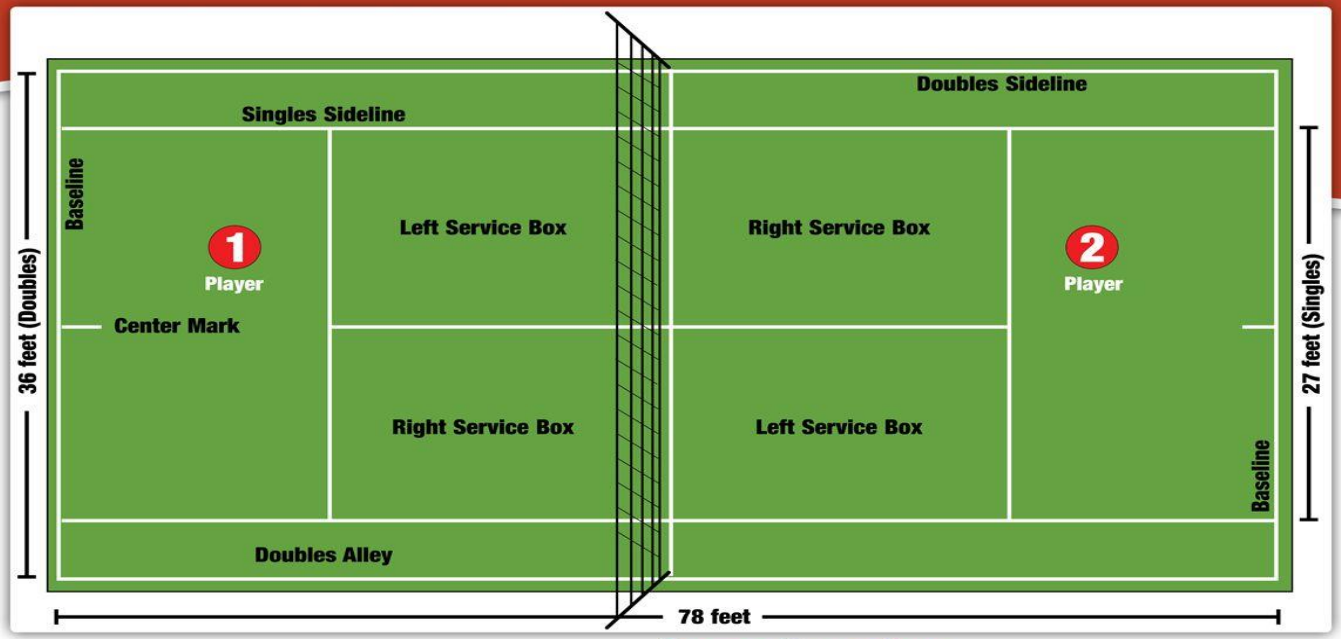
Basic tennis shots
- Serve
- Return
- Forehand
- Backhand
- Slice
- Forehand Volley
- Backhand Volley
- Overhead (or Smash)

Task 2
1) List the 4 ways of getting out in cricket.
2) How many batsmen are on the pitch at the same time?
3) How many players should be on each team?

Task 3
Give a moment in a game when you may use each of the 8 shots in tennis.
For example: I'd play a backhand shot when stretching across court on my weaker side.

4

TENNIS



Scoring

The first number in the score announcement is always the server's score.

'**Game Point**' is announced when the player in the lead only needs one additional point to win. If that one point decides the winner of the set or match, '**Set Point**' or '**Match Point**' are called instead. In an '**Advantage**' situation, it is not necessary to announce Game Point, but it is customary to say, '**Advantage** <Player's Name>', Match (or Set) Point.

From the sixth point on, ties are referred to as '**Deuce**', and the subsequent point is called an 'Advantage'.

'**Game**' is announced when one player has four or more points and leads by two points.

Stroke

Forehand – a ground stroke used when the ball is hit to a player's dominant side.

Backhand – a ground stroke used when the ball is hit to a player's non-dominant side.

Volley – to strike the ball in the air before it hits the ground, typically making contact with the ball while the handle of the racquet is lower than the ball.

The Lob – to hit the ball high and deep to clear your opponent away from the net, but not so far that it lands out of bounds.

QUICK FACT BOX

OBJECT OF GAME: To win points by hitting the ball across the net so that the opposition cannot return it.

DURATION: A minimum of twelve Games in a traditional Match.

OFFICIALS: A Chair Umpire, between three and nine Line Umpires, and a Referee oversee the game.

PLAYERS: One player per side in singles and two per side in doubles.

Game Overview

In this racquet sport, players try to score points by taking shots across the net that their opponent(s) cannot return. Tennis can either be played with two players (singles), one against the other, or four players (doubles), two players versus two players. When playing doubles (two teams of two) the court boundaries are slightly wider than in a singles game.

START OF PLAY: Play begins with one player serving (hitting) the ball over the net to the other. The service often sets the tempo of the game and can easily result in a point, either directly (known as an '**ace**', wherein the served ball is untouched by the opponent) or later in play. To serve, the player stands behind the Baseline and on the right side of the Center Mark and must hit the ball diagonally, across the net into their opponent's Right Service Box. On subsequent points, the server alternates sides. If the serve hits the top of the net, but lands in the correct service box, the serve is re-played with no penalty to the server. Otherwise, the server is charged with a fault. A player who double faults (either by serving inaccurately or by foot faulting – where their foot crosses the Baseline) loses a point.

THE RETURN: The server's opponent must play a properly served ball before it hits the court twice, and the returned shot must land in the appropriate court boundaries (within the Baseline, and either the Singles or Doubles Sideline, depending on the game).

THE RALLY: Once the ball is in play, players continue hitting it back and forth across the net until one of them fails to return it. The last player to successfully return the ball wins the point.

WINNING A MATCH: Matches are divided into Sets, which are further divided into Games.

Games → Sets → Match

To win a Game, a player must gain a minimum of four points, and have a two-point lead. To win a Set, a player must win a minimum of six Games and have a two-Game lead. To win a Match, the player must win a majority of the Sets, traditionally three in number. If after a predetermined amout of games the set is tied, the players will play a tiebreak where each player will take turns serving the ball.

SCORING TABLE

IF THE SCORE IS:		SCORE IS ANNOUNCED AS:
SERVER	RETURNER	
1	0	Fifteen Love 1
0	1	Love Fifteen
1	1	Fifteen All
2	1	Thirty Fifteen
3	1	Forty Fifteen, Game Point 2
3	2	Forty Thirty, Game Point
3	3	Deuce 3
4	3	Advantage <Player Name>
5	3	Game 4

TENNIS POINTS

POINT	NAME
0	Love
1	Fifteen
2	Thirty
3	Forty

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JUDAISM

BACKGROUND

- The Jewish people believe they are a race chosen by God to be his special people.
- Their racial identity is combined with their religious identity
- They believe their ancestor Abraham made a **COVENANT** (agreement) with God and this promise continues through them.

As we study think about…

How do these beliefs help Jews?

How do the beliefs and actions make them feel?

What links can you make with your life?

How do they express their beliefs in everyday life?

What symbols/images do they use? Why?

Can the rules be adapted for the 21st century?

Can a Jew be an atheist (someone who doesn't believe in God)?

KEY WORDS:

COVENANT	The agreement that Jews believe they have with God. He will protect them, they will worship him	TREFAH	Food that does not follow the food rules so cannot be eaten, e.g. pork
ABRAHAM	The 'father of Judaism'. He was the first man to make the Covenant with God	MEZUZAH	A prayer box found on Jewish door frames
SYNAGOGUE	The Jewish place of worship	KIPPAH	A skull cap
TALLIT	A shawl that is worn when praying	SHABBAT (SABBATH)	A day of rest and worship, from sunset Friday to sunset Saturday
KOSHER	Food that is allowed to be eaten as it keeps the Jewish food rules	CIRCUMCISION	The removal of the foreskin to show that a boy is Jewish
PASSOVER	A festival remembering how God freed the Jews from slavery	BAR/BAT MITZVAH	A rite of passage to symbolise and celebrate when a child becomes an adult
SEDER	A plate used to tell the story of Passover	TORAH	The Jewish holy book

SOME TASKS FOR YOU TO COMPLETE

Draw a symbol for each key word

Create a mind map of Jewish worship. Use different colours for home and synagogue

Create a key word quiz or flash cards

Write your answers to 3 reflection questions

Investigate an issue in the media that involves Judaism

Create a poster of Jewish food rules

Make a list of things that make you special

Where do they worship?
IN A SYNAGOGUE:

- A synagogue is a simple but beautiful building used by Jews as a place to pray and also to gather as a community.
- At the centre of the main room is a **Bimah** which is a stand from which the **Torah,** the holy book, is read
- The Torah is stored in an **Ark**, a special cupboard.
- There will be an eternal flame hanging above the Ark called the **Ner Tamid** to reflect God's constant presence
- The synagogue may be decorated with the **Star of David** and other images but no statues as these would offend God
- Prayers and songs are shared in **Hebrew**, the Jewish language

Where do they worship?
AT HOME:

- Jews worship by following God's rules in all aspects of their life
- They keep **Shabbat** by doing no work on that day. Instead they spend the day in worship. To mark the start of Shabbat they have a family meal where two candles are lit and bread is shared.
- Jews also keep a **kosher** house. This means they follow God's laws about food
- They may have a **mezuzah** on their door frame which contains a prayer of God's blessing

The mother prepares the house and lights the candles to represent the start of Shabbat.

During Shabbat, most Jews will not switch on electrical items, drive cars or spend money as they all reflect some form of work.

KOSHER RULES include:

- No meat with blood in it
- No meat from animals without cloven hooves (e.g. pigs)
- No shellfish
- No mixing of meat and milk

It is called 'Passover' because the Angel of Death 'passed over' the Jewish houses

'Seder' means order, as it helps to retell the story

THE FESTIVAL OF PASSOVER

- The Jews were slaves in Ancient Egypt but God sent **Moses** to rescue them and lead them to a Promised Land
- Every year Jews retell their story of freedom in the **Passover** festival
- Jewish families share a meal together and items on a **seder** plate are used to remember what happened.
- The festival encourages Jews that whatever situation they are in God knows and he has a plan to save them

SCAN ME

Learning to Learn

SCAN ME

The 'Listen' Project #1