Bottisham Village College

KNOWLEDGE ORGANISER

YEAR 8 TERM 3

Bottisham Village College

At Bottisham Village College, we are striving to create a five-year curriculum plan that builds effective revision strategies into homework and lessons, to ensure that students are able to place powerful knowledge into their long-term memories. Additionally, we hope that this will help build effective learning strategies from early in their time here at the college.

Based on evidence, we know that regular recall activities are the best way of achieving this goal and committing powerful knowledge into the students' memories.

At the start of each term, we shall publish all the knowledge organisers that students will require for their studies in each curriculum area. These will cover a range of aspects: facts, dates, characters, quotes, precise definitions and important vocabulary. We are clear: if this fundamental knowledge is secured, students can then develop their higher-level skills of analysis and critical understanding with greater depth.

They will be given an electronic A4 Knowledge Organiser (KO) booklet for each term containing all of the knowledge required. In lessons, Bottisham staff will be regularly testing this fundamental knowledge, using short-quizzes or even more formal "Faculty Knowledge Tests".

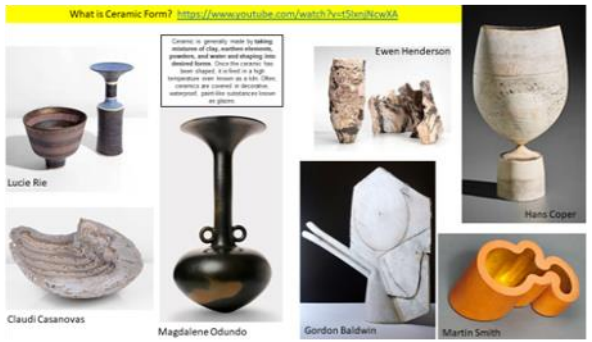
The best way to use these organisers at home, is to follow a simple mantra:

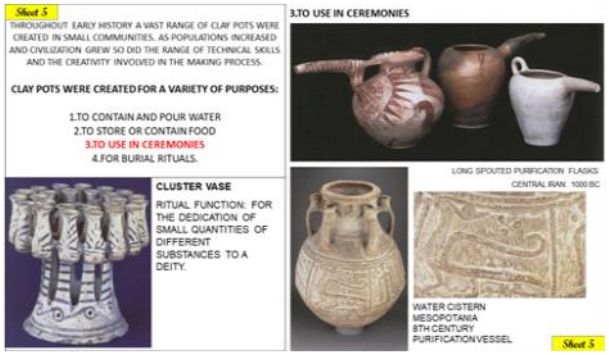
1. Look at a certain aspects of a particular knowledge organiser
2. Cover up part of their knowledge organiser
3. Write it out from memory
4. Check and correct any spelling mistakes, missing bits or mistakes

So simple but so effective.

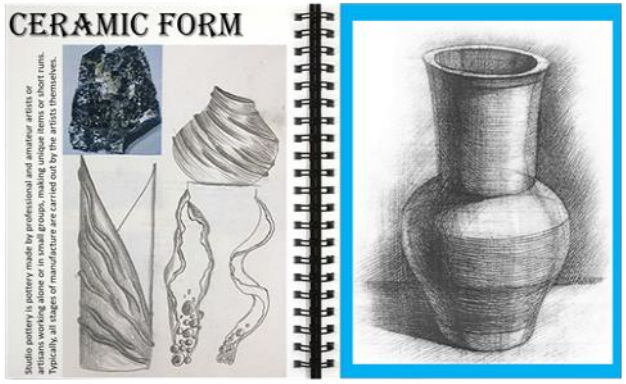
ART

You will learn about Ceramics, its history and purpose

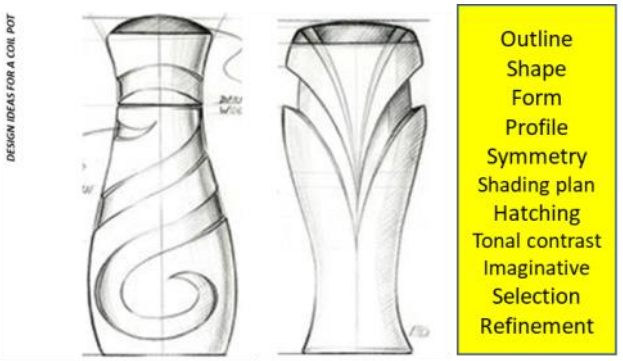




You will apply your knowledge and understanding and consolidate your preferences whilst creating a double page of research

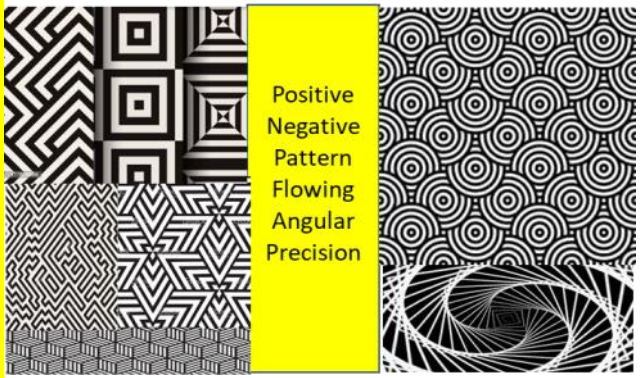


You will learn how to draw design ideas with a sense of three dimensional form



Outline
Shape
Form
Profile
Symmetry
Shading plan
Hatching
Tonal contrast
Imaginative
Selection
Refinement

You will learn how to create designs inspired by geometric and or flowing shapes



Positive
Negative
Pattern
Flowing
Angular
Precision

You will learn how to coil and develop this technique to create a successful piece of ceramics

Coil, interior/exterior, base, body, rim, smooth/compress, edges, height, proportion, structure.

You will learn how to create geometric and or flowing shapes on the surface of your ceramic form.

COMPUTING

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

Media & Fake News

Keywords

ICT and the Media

ICT: information communication technology

Media: the main means of mass communication (broadcasting, publishing, and the internet) regarded collectively.

Data/Information: Data is a value with no obvious meaning, eg 9. Information is data with meaning, eg the average man's shoe size is 9.

Tabloids: A type of popular newspaper with small pages that has many pictures and short, simple reports.

Platforms: A media platform is a service, site, or method that delivers media to an audience eg magazines, newspapers, radio, television, news websites, adverts, and social media.

Manipulating Data

Data: eg text or an image

Image: a picture.

Manipulaton: presenting of data in a way that may lead to false information.

Photoshop: image-editing software.

Influence: the power to have an important effect on someone or something.

Deepfake: a video of a person in which their face or body has been digitally altered so that they appear to be someone else.

Toolbar: a strip of icons that can be clicked to perform certain functions.

Filters: a way to alter the appearance of an image e.g. make a photograph look like a hand drawn sketch.

Privacy Settings: allow you to control who sees information.

Fake News

Fake: false information distributed deliberately, usually for political or commercial purposes.

Real: a news item that has passed 'real checks'.

Influence: the power to have an important effect on someone or something.

Manipulaton: the presenting of data in a way that may lead to false information.

Target Audience: a particular group of people at which a product is aimed e.g. a film.

REALchecks

Real - ask "is this real?"

Evidence - What's the source? author, publication, web address, date & time, including pictures.

Add it all up - Ask around, use own knowledge, other's knowledge, the story detail and a little research.

Look around - any other sources carrying the story?

COMPUTING

Media & Fake News

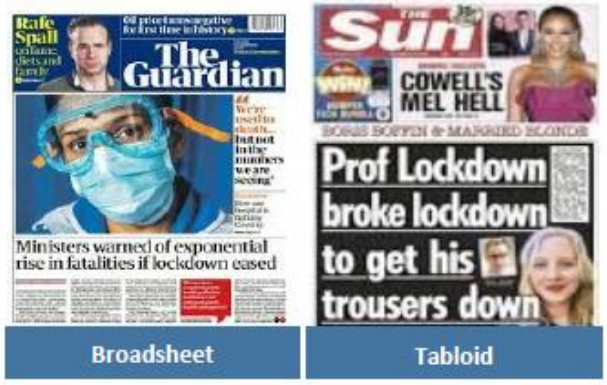
ICT and the Media

There are three types of media

Print: eg magazines, newspapers (broadsheet and tabloid)

Broadcast: eg radio (news), and tv (news)

Internet: news websites, adverts, social media



Deepfake

A video of a person in which their face or body has been digitally altered so that they appear to be someone else, typically used maliciously or to spread false information.

Media

Advantages: information can be dispersed quickly, people can learn about other cultures

Disadvantages: can spread of misinformation and the development of bad values.

Influence: providing false information which may skew an individual's views and effect their actions eg voting a certain way. Some media messages reinforce an existing belief.

Data Types

Text: publishing software to allow the use of images and text together eg Microsoft Publisher, Google Slides.

Images: can be edited (including photos), created with software eg Photoshop.

Videos: video editing programs enable snipping, videos as well as adding effects, and filters.

Audio file: these are digital sound recordings. Software, eg Audacity, can be used to record, snip, add effects, and combine audio files.

Statistics: e.g. graphs and tables.

COMPUTING

Media & Fake News

Fake News

What is 'fake news'?

REAL

Real - ask "is this real?"

Evidence - What's the source? author, publication, web address, date & time, including pictures.

Add it all up - Ask around, use own knowledge, other's knowledge, the story detail and a little research.

Look around - any other sources carrying the story?

BBC's definition: False information distributed deliberately, usually for political or commercial purposes

⇒ Made up stories and information

⇒ Meant to be widely shared—perhaps to shock or scare

⇒ To make money from advertising—clickbait

⇒ It's purpose is to persuade people to think a certain way, or vote a certain way

Fake news: meets REAL criteria

Not fake news: a mistake

Not fake news: a joke

COMPUTING

Computer Systems

Keywords

Computer Systems

CPU: central processing unit, the main processor (the brains of the computer).

Data: values that the computer understands represented in binary.

Hard drive: the primary storage where your music, videos, games, work, and other data is stored.

Input: data (letters, numbers, sounds, videos, images) gets put IN to the computer.

Motherboard: a printed circuit board like a road map between the components of the computer

Output: what comes OUT of a computer eg text, sound.

Process: the computer manipulates data to produce meaningful information.

System: a set of things working together as part of a mechanism or an interconnecting network

Binary, Bits, and Bytes

Addition: adding together two or more numbers

Binary: a number system that only uses two digits (0 and 1)

Bit: a single binary digit (1 or 0)

Byte: 8 binary digits eg 10001101

Denary: a number system that uses 10 digits: 0-9. This is the number system that we use to count.

Nibble: 4 binary digits eg 1100

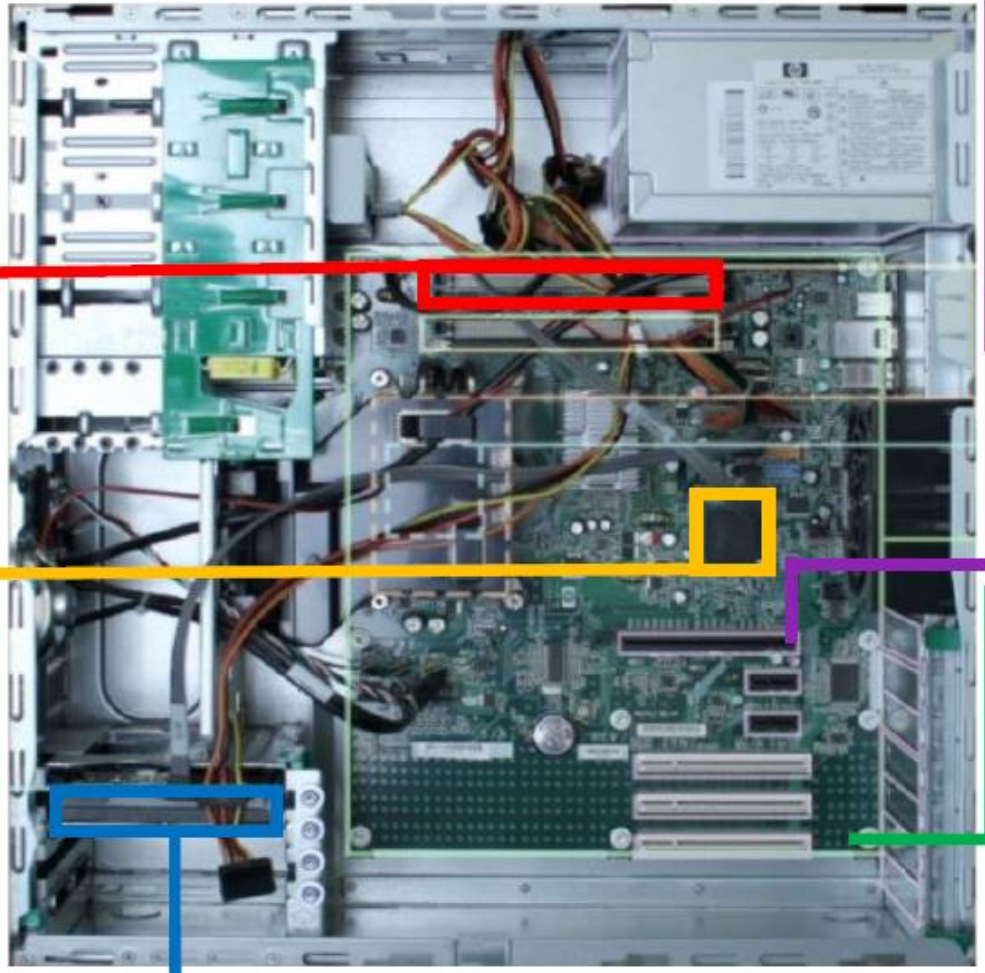
Subtraction: taking away one number from another

COMPUTING

Computer Systems

Inside a computer

RAM (random access memory): is fast. The data needed by the processor is temporarily stored in RAM while a program is running. The data is volatile which means that when the program is closed, the data is deleted.



ROM (read only memory): is data that cannot be changed by the user. It is non-volatile which means that even when the computer is turned off the data remains.

CPU (central processing unit): the processor is the part of the computer system that handles the instructions used to ensure that hardware and software respond as expected.

Motherboard: this is the green board that all the other parts sit on and connect through the copper pathways.

Hard drive: this stores programs and files long term, even when they

COMPUTING

Computer Systems

Binary

INPUT: data goes into the computer via an input device eg keyboard, mouse, microphone

STORAGE: data is stored in memory

PROCESSING: data is translated into instructions and carried out

OUTPUT: data comes out of the computer via an output device eg screen, speaker

Data is stored as binary digits called bits. Bits can be represented in different types:

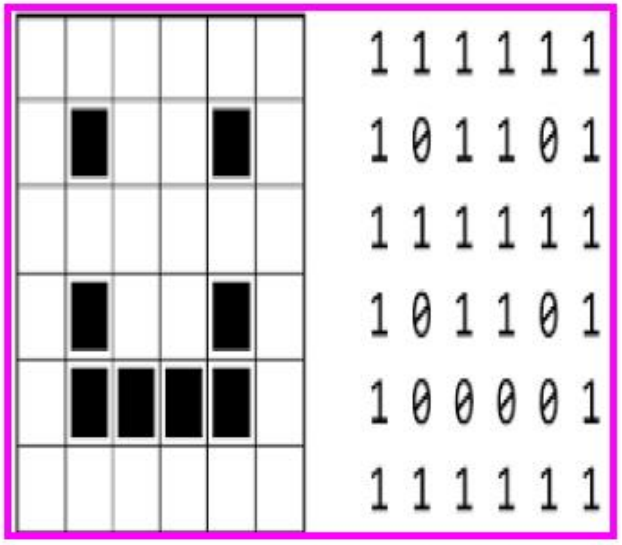
numbers (0 or 1, called binary)

Lights (on or off)

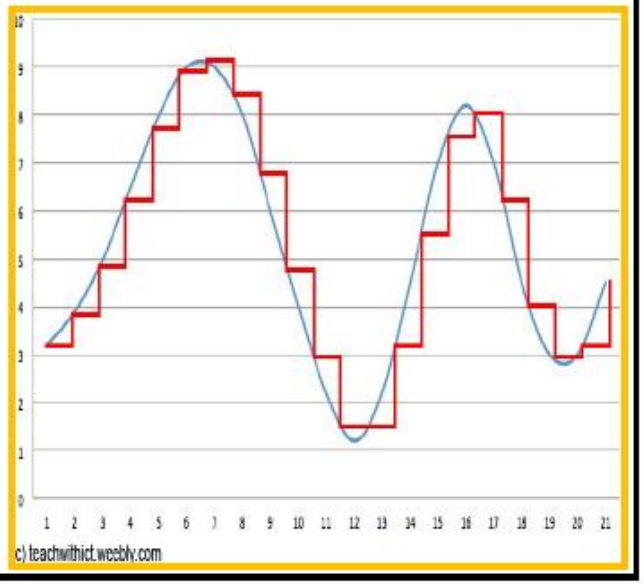
True or false

Yes or no

Pictures and sounds can be represented by binary by simply assigning a number to a colour or a sound, and converting that number to binary.



http://computerscience.chemeketa.edu/



COMPUTING

Computer Systems

Binary

Binary is a number system that only uses the two digits 1 and 0. Computers use the binary number system to store data. Like the denary number system (the number system that we use everyday) the binary placeholders start with a 1 in the furthest right placeholder, but whereas denary placeholders multiples by 10 to find the value of the next column, binary multiplies by 2.

Denary placeholders

x10 1000 x10 100 x10 10 x10 1

Binary placeholders

x2 8 x2 4 x2 2 x2 1

How to convert binary to denary

Binary placeholders

8	4	2	1

Binary number

1	1	0	1

0 x 8 = 0 0 x 4 = 0 1 x 2 = 2 0 x 1 = 0

128 + 64 + 0 + 16 = Denary number 210

How to convert denary to binary

Denary number: 12

The first placeholder column is 8. The denary number (12) does not fit into 8, so put a 0 in the column. Subtract 8 from 12 which leaves 4 remaining.

The next placeholder column is 4. The remaining denary number is 4 which does fit into 4, so put a 1 in the column. Subtract 4 from 4 which leaves 0 remaining, so we just put 0s in the rest of the columns.

Binary placeholders

8	4	2	1

Binary number

0	1	0	0

COMPUTING

Programming

Keywords

Computational Thinking

Computation Thinking: a systematic approach to solving problems

Decomposition: breaking problems down into smaller, more manageable parts

Abstraction: removing unnecessary information and focusing on the important details

Pattern Recognition: patterns or similarities that parts of a problem share

Algorithms: a precise step-by-step solution to a problem

Debugging: correcting mistakes in a computer program

Edublocks

Module: a small piece of code ready to be used in a computer program

FOR loop: a loop (iteration) that is called a set number of times

print: output the data to the screen

Variable: a memory location that is given a name and is used to store data (like a storage box). The data stored can be overwritten by new data. If the contents of the variable needs to be used, you must call it by it's name.

Selection: code that chooses from two or more options

Iteration: a loop

WHILE loop: code that tells the computer to keep doing something while a condition is true eg WHILE the glass is not full, keep pouring the drink

Input: a word used in code to tell the computer to accept data input from the user eg type in your name

!=: not equal to

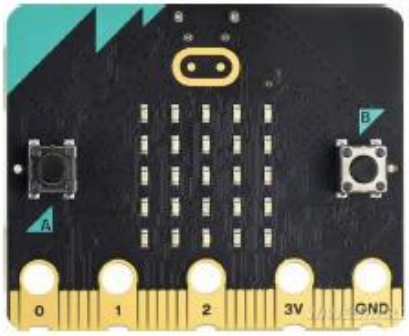
/: divide

Pen Up: when the turtle moves not line will be drawn

Pen Down: when the turtle moves a line will be drawn

Turtle: an image of a turtle who follows instructions in the code

micro:bit



micro:bit: small computer system of software and hardware working together

blocks: block-based programming uses a drag-and-drop environment like that used in Scratch

Input: the micro:bit has A and B buttons, or sensors that detect being shaken

Output: the micro:bit has an LED light display

Selection: code used to choose from two or more options

IF/ELSE: a statement of the two choices available in selection

ELSE IF/elif: can be used as many times as necessary if more that two choses are available

COMPUTING

Programming

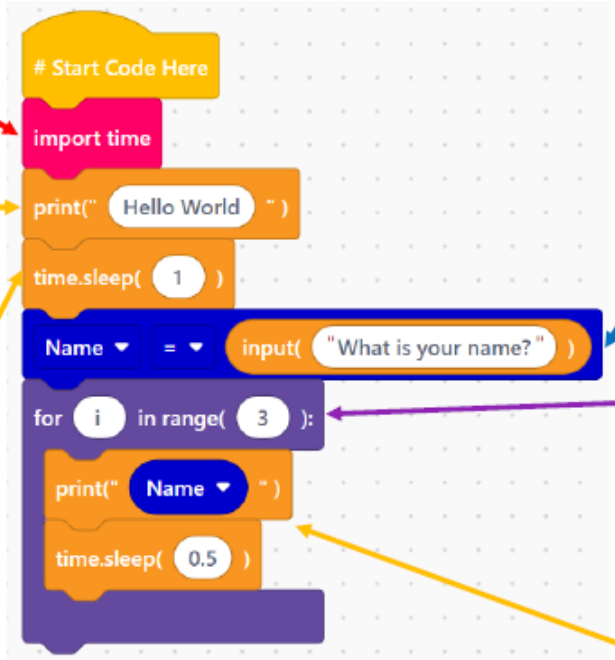
Edublocks

This EduBlocks program will print 'Hello World' to the screen, pause for 1 second, ask the user their name, then print their name to the screen 3 times.

The **module** 'time' is import-ed.

The string 'Hello World' is output to the screen.

The 'time' function is set to 1. This will cause the program to pause for 1 second.



A **variable** called 'Name' has been created. The string 'What is your name?' is output to the screen. The user will input their name with their keyboard. There name will be stored in

A **FOR loop** is set to **iterate** (loop) 3 times.

These two lines of code are in the **FOR loop** so for 3 times the contents of the **variable** 'Name' will be output to the screen, and then there will be a pause for 1/2 second.

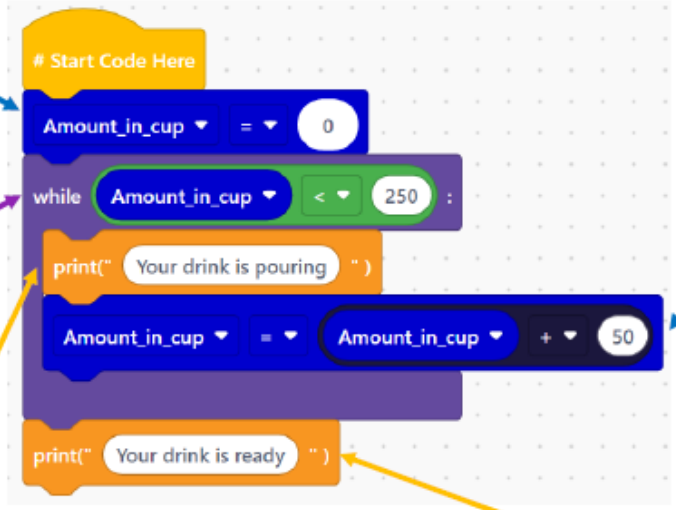
Programming

Edublocks

This EduBlocks program will let a user know that their drink is pouring, and when it is full (250ml) it will let the user know that their drink is ready.

Set contents of the **variable** 'Amount_in_cup' to 0

A **WHILE loop** is set to keep **iterating** (looping) **while** the contents of 'Amount_in_cup' is less than 250



50 is added to the contents of the **variable** 'Amount_in_cup'

The string 'Your drink is pouring' is output to the screen.

The string 'Your drink is ready' is output to the screen.

COMPUTING

COMPUTING

Programming

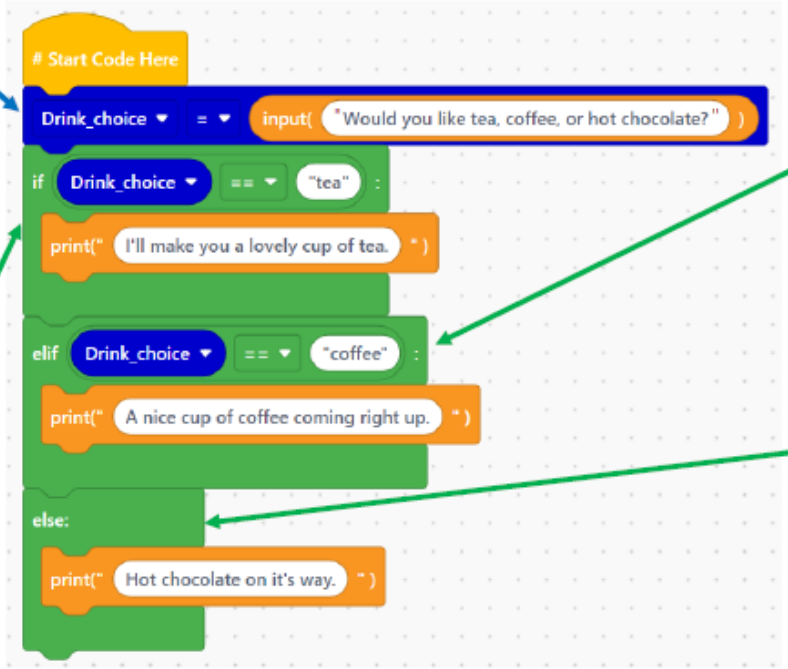
Edublocks

This EduBlocks program will ask the user what drink they would like, and depending on their choice a string is output to the screen. Selection is used

Output the string 'Would you like tea, coffee, or hot chocolate? to the screen. The choice that the user **selects** is stored in the **variable** 'Drink_choice'.

IF the data stored in the **variable** 'Drink_choice' is the same as the string 'tea', then print 'I'll make you a lovely cup of tea.' to the screen.

With **selection** you can only have one **IF**.



ELSE IF the data stored in the **variable** 'Drink_choice' is the same as the string 'coffee', then print 'A nice cup of coffee coming right up.' to the screen.

With **selection** you can have as many **ELSE IF**s as you need.

ELSE print 'Hot chocolate on it's way.' to the screen.

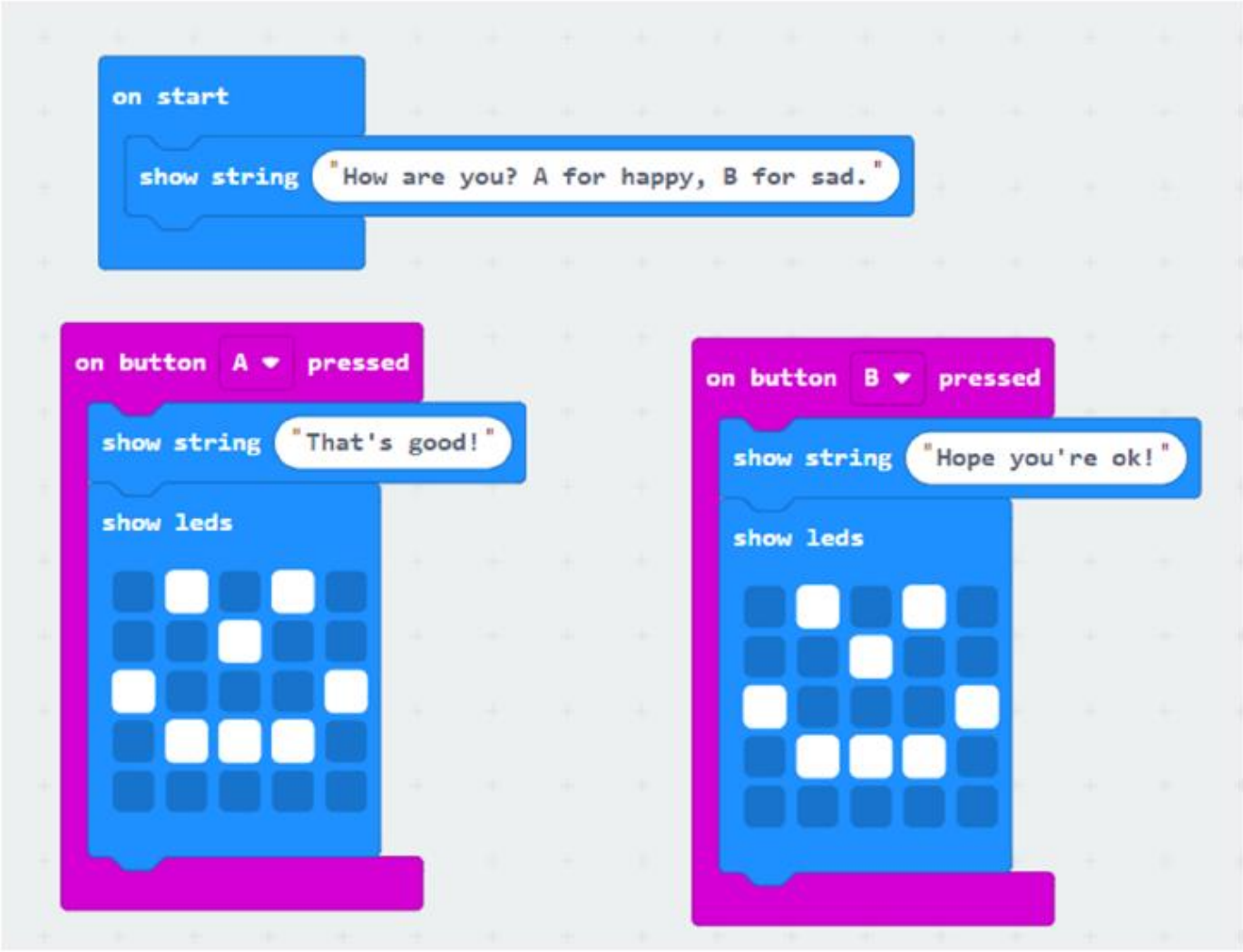
With **selection** you can only have one **ELSE**. It is **selected** if the user inputs anything other than the conditions for the **IF** or any **ELSE IF**s.

COMPUTING

Programming

Micro:bit

This micro:bit code uses **selection** so the user can press the A button **if** they are happy which will output a happy face to the screen, and the B button **if** they are sad which will output the sad face to the screen.



DANCE & DRAMA (PERFORMING ARTS)

Presenting & Performing Text

Unit outline

In this unit of work you will be learning and performing an extract of script from a set text. You will be choosing one play out of the four offered to you. You will be working in groups of 2-4
The expectations of you in this unit of work, is to learn your words off by heart, perform in front of an audience, complete three written tasks and work collaboratively with a group

Skills and techniques

- Script analysis
- Learning of words of by heart
- Character development
- Performance development
- Writing about a key text, the playwright and creative intentions
- Conducting effective research

Pre learning

To watch or read the four (or one of the key texts that interest you the most) key texts.

1. **Goodnight Mr Tom** - : https://www.youtube.com/watch?v=PhautLscL10
2. **The Demon headmaster** - https://www.youtube.com/watch?v=RlXuLhVevJQ you can also watch the CBBC tv episodes on youtube
3. **Alice in Wonderland** - https://www.youtube.com/watch?v=3DXiWsMvnCQ
4. **The boy in the striped pyjamas** - https://www.youtube.com/watch?v=CorXMLdWy

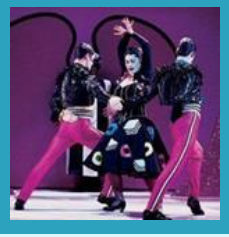
Key Vocabulary

- To block
- Improvise
- Role play
- Performance development

DANCE & DRAMA (PERFORMING ARTS)

Context:

Music/ Aural Setting: Tchaikovsky
Choreographers of Classical Nutcracker: Petipa & Ivanov
Choreographer of modern Nutcracker: Sir Matthew Bourne OBE
Matthew Bourne https://www.youtube.com/watch?v=_Ofysvpgv7o – NYC Ballet Whole Classical Performance
https://www.youtube.com/watch?v=1jIeSq2FFhs&t=3627s&disable_polymer=true – The Nutcracker, Bourne version.

Liquorice Allsorts	Marshmallow Girls	Gobstopper Boys
		
Action: Matador Arms **Space:** Straight Pathways Moving Downstage **Dynamics:** Strong, Dramatic **Relationship:** Complementary **Choreographic Devices:** Manipulation of Number	**Action:** Flicking Feet **Space:** Large Circular Pathways **Dynamics:** Bouncy **Choreographic Devices:** Repetition	**Action:** Windmill Arms **Space:** Dramatic changes in level **Dynamics:** Aggressive **Choreographic Devices:** Unison

Choreographic Devices

- Unison
- Canon
- Motif development
- Highlights
- Climax
- Repetition
- Contrast
- Manipulation of number

Key words:

- Mood of dance
- Motif
- Characterisation

DESIGN & TECHNOLOGY

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

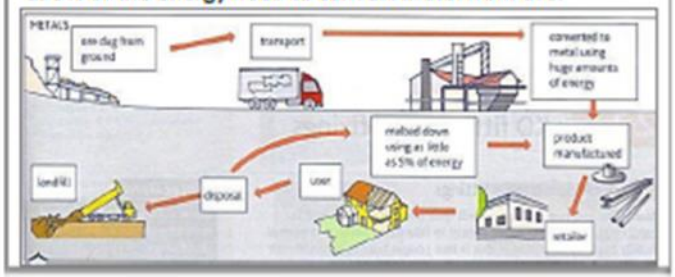
Year 8 Design Technology Knowledge Organiser- Pewter casting

Categories of metals.
Ferrous metals contain iron. **Steel** is the most common.

Non- ferrous metals do not contain iron. **Aluminium** is the most common.

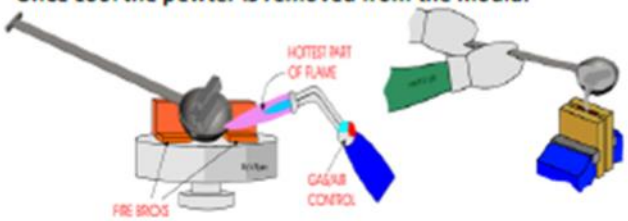
Alloys are mixtures of metal and another element(s) which improves on the properties of the metal. **Pewter** is and alloy of tin and antimony. Pewter has a low melting point compared to most other metals at 225ºc to 240ºc.

Environmental impact of metals. Metals are made from ore. **Ore** is mined. Ores use a huge amount of energy to be converted to metal. All metal can be **recycled** using as little as 5% of the energy need to convert metal from ore.



Personal Protective Equipment
Face visor
Leather apron
Leather gloves
Leather shoes

Pewter Casting
The **mould** is clamped between two pieces of **MDF** and placed in a **vice**
Pewter is heated with on the hot plate until molten.
A **Casting ladle** is used to pour the molten pewter into the mould.
The pewter is allowed to cool.
Once cool the pewter is removed from the mould.



A lapped joint is used to increase the gluing area on the joints of your box.

The box is **dry assembled** to test if it is square.
A try square is used for this **quality control check.**

Tools for working with metal

CAD/CAM- A mould is designed using CAD- computer aided design and cut with a laser cutter (CAM- computer aided manufacture) from MDF

Advantages of CAD/CAM	Disadvantages of CAD/CAM
Designs can be altered and edited easily and can be sent anywhere in the world instantly	High initial set up cost and some running costs
Machines do not need breaks, holidays, pensions and are never sick	Staff may need training
Products are accurate, repeatable, consistent, made quickly with a minimum of error and fewer safety issues	May lead to fewer skilled jobs and higher unemployment

Private Peaceful

Students will study **EITHER** Private Peaceful **OR** The Graveyard book

Context – *Private Peaceful* was written by Michael Morpurgo and was first published in 2003.

Michael Morpurgo – Michael Morpurgo is an author, poet and playwright who is predominantly known for his children's novels such as *War Horse* (1982) and *Private Peaceful* (2003). His skill in 'magical story-telling' and vivid description has often been commended, most notably his depictions of World War I conditions and the Cornish coastline. Morpurgo served as the Children's Laureate from 2003 until 2005. Morpurgo has revealed that his fireside conversations with World War I veterans in Devon informed his writing of *Private Peaceful.*

World War I – World War I, also known as the 'Great War', was a global war originating in Europe that took place from July 1914 to November 1918. It involved all of the world's major powers, opposing the Allies (including Russia, France, UK, and USA) against the Alliance (Germany, Austro-Hungary, the Ottoman Empire) Over 9 millions armed forces and 7 million civilians were killed in the war. Many more returned injured. The winter of 1916-17 was so cold that many lost fingers & toes to frostbite - trenches offered no protection.

Trench Warfare – The use of trench warfare significantly influenced the high death toll. Both sides dug deep defensive lines in the soil called trenches. Attacks involved going across No Man's Land (in the middle) where attackers were open to machine gun fire, mines, and shells. Even if successful, casualties were huge – No Man's Land was littered with bodies. Life in the trenches were awful, with disease and exposure rife. Men would often spend weeks at a time on the front line, where they would need to sleep, eat, and defecate close to the trenches.

'Desertion' and 'Cowardice' in WWI - Soliders were expected to stand and follow orders (even die for their country) irrespespective of their own beliefs/ ideas. As the war, however, quickly became the bloodiest in history, for many, the horror proved too much. Shellshock and insanity ran rife, and some abandoned their posts. Throughout World War I, the British military executed 306 of their own soldiers for desertion and cowardice. In 2006, the British government announced that all 306 soldiers will receive posthumous pardons.

Morpugo's Language Devices	
Varied Verbs	*"My eyes are stinging. My lungs are burning. I am coughing, retching, choking."*
Simile	*"A gas mask is like God, son. It'll work bloody miracles for you, but you've got to believe in it."*
Interesting Adjectives	*"blurred and weeping eyes."*
Metaphor	*"For a moment we are frozen with panic."*

The Writer's Influences

"As I grew up, I soon learned how war had torn my world apart. I lived next to a bombsite, played in it...But I soon learned that much more than buildings was destroyed by war. My parents had split up because of it. I knew my uncle Pieter, killed in 1940 in the RAF, through a photograph, through the stories I heard of him, through the grief my mother, his sister, lived every day of her life. All I knew was what I'd been told, that he'd given his life for our freedom. War continues to divide people, to change them forever, and I write about it both because I want people to understand the absolute futility of war, the "pity of war" as Wilfred Owen called it." The Guardian, 2nd March 2011.

ENGLISH

ENGLISH

Private Peaceful

Main Characters – Consider what Morpurgo intended through his characterisation of each of the below...

Thomas 'Tommo' Peaceful – Tommo is the young narrator and central character in the novel. As he narrates, he is an underage soldier, fighting in France in WWI. He is scared and alone. He looks back on his earlier childhood memories, in which he has relied on his brother for guidance and protection. They have a joint-love of their childhood friend: Molly. It appears Tommo may have early PTSD or shellshock.

Quote: *"I am so proud of him for that. I have the bravest brother in the world"*

Charlie Peaceful – Charlie is Tommo's older brother, and also acts as his protector. As a child, he has always looked out for his brother, and he now continues to do so as a soldier. By putting family loyalty first, Charlie faces the death sentence through a military court. Charlie is tough, yet strong, brave and righteous, caring for others (such as Molly and Tommo) before himself. He deserves better than the fate he is given.

Quote: *"He sees the tears in my eyes and knows how it is. Charlie always knows how it is."*

Mrs Peaceful – She is the mother to the three sons, and does this job alone (after her husband's death) very well. She stands up for her boys at numerous times in the novel, and takes hard jobs to ensure that they are provided for.

Quote: *Mother said that now she was home she wouldn't stand for it any more."*

Big Joe – Big Joe, the eldest Peaceful brother, has learning difficulties which stemmed from early childhood meningitis. He is highly sensitive and unable to adequately communicate his thoughts. His brothers adore him and help to care for him.

Quote: *" gazing up at the tower and singing Oranges and Lemons at the top of his voice"*

Molly – Molly is the girl with whom Charlie and Tommo have grown up. As a young girl, she is a bit of a tomboy, and engages in all of the activities that the boys do. She is thrown out of her house by her parents when she becomes pregnant by Charlie, which forces her to grow up quickly. She seems to hold strong feelings for both of the Peaceful brothers.

Quote: *"From that moment on Molly became one of us. It was as if she had suddenly joined out family and become our sister."*

Sergeant Hanley – Hanley demonstrates all that is wrong with the outlook and attitudes of many people at war. He lacks empathy or sensitivity, and his bullying of Tommo becomes even worse when he realises that Tommo is underage. When Charlie addresses this with him, he is written up for subordination, rather than ceasing his behaviour.

Quote: *"Sergeant Hanley had done what all the bloody attrition in the trenches had never done. He had...destroyed our hope."*

Themes – A theme is an idea or message that runs throughout a text.

The Futility of War– Morpurgo aims to capture the harshness of war and the terror faced by the soldiers. Through Tommo and Charlie's experiences, a generation of young men are pressurised into enlisting, trained inadequately, and sent off to face horrors of which the world had never seen before. Morpurgo makes clear that the reasons for fighting in the war were lost at the front lines, as progressively younger men are wiped out.

Relationships – Despite the cruelties and inequalities that the Peaceful family face, they remain resolute in their togetherness and their care for one another. Tommo quickly learns that he cannot truly trust anyone except his family, and in particular Charlie. In a world that seems determined to divide and break them, the brothers remain sheltered by their relationships with one another. In the end, Charlie pays the ultimate price for this, as he puts his family bonds ahead of military commands. Tommo tries to ensure that his bravery is not forgotten.

ENGLISH

Private Peaceful

Chapter-by-Chapter Summary – Alongside key quotations.

Five Past Ten	The narrator, 'Tommo' Peaceful is young, alone and determined to stay awake whilst shells explode around him. He begins to recollect his childhood experiences, beginning with his first day at school. Charlie, his older brother, protects him. Big Joe, his eldest brother, is different in some way. Tommo explains how he feels responsible for his father's death.	'I won't dream it away. I mustn't, because every moment of it will be far too precious...Tonight, more than any other night of my life, I want to feel alive.'	
Twenty to Eleven	In the present, Tommo has food, but doesn't want it. He reminisces about Big Joe's kind nature, despite his disabilities. Molly, a school friend, becomes like a member of the family. The house they live in is tied to the Colonel's estate, so their mum works at his house. A mean vicious lady called Grandma Wolf looks after them whilst she is away.	'when it's Charlie's turn, all we hear are the whacks, and then the silence in between. I am so proud of him for that. I have the bravest brother in the world.'	
Nearly Quarter Past Eleven	Tommo continues to recollect about his and Charlie's battles with Grandma Wolf. Their mother then loses her job at the Colonel's house - the family go hungry. Miraculously, the Colonel gives her another job. Molly, who they both care about deeply, falls ill with scarlet fever.	'then Charlie would be there beside me, and everything would be all right again. Charlie always made things all right again.'	
Ten to Midnight	In the present, Tommo ponders the existence of God/an afterlife. He then tells how they got caught poaching, and had to clean out the Colonel's kennels until xmas as a sanction. They become fond of a hound called Bertha. Molly returns, looking more grown up. They see an aeroplane for the first time. Charlie steals Bertha to prevent her being shot.	'Charlie could have left me there. He could have made a run for it and got clean away, but Charlie's not like that. He never has been.'	
Twenty Four Minutes Past Midnight	Tommo refers to 'no man's land' – it is clear that he is a WWI soldier. In his recollections, mother negotiates with the Colonel and pays sixpence for Bertha. However he must now work on Cox's Farm, so Tommo sees less of him. Tommo hears for the first time about the impending war. Charlie and Molly's relationship is revealed. Bertha is shot by the Colonel.	I couldn't believe what he was saying. They hadn't told me. They'd been meeting in secret and neither of them had told me.'	
Nearly Five to One	Tommo recalls how Big Joe went missing after Bertha was shot, and the whole village looked for him. Eventually they found him at the top of the church bell tower (he associates it with heaven) asleep.	'we both knew enough hurt had been done already, that more would only widen the rift between us and neither of us wanted that.'	
Twenty Eight Minutes Past One	In the present, Tommo thinks of the decimated church steeples all around him. He remembers how, just before war broke out, Molly was kicked out of her home as she was pregnant with Charlie's baby. The two were quickly married and she moved in. Tommo and Charlie were both heavily pressurised into signing up to fight in the war.	'I was going to fight in the war with Charlie. Nothing and no one could stop me now.'	
Fourteen Minutes Past Two	Tommo recalls the awful trip to France and the bullying that he received from Sergeant Hanley in training – when he realised that Tommo is underage, he bullied him. Charlie stands up to Hanley and receives a brutal punishment as a result. Tommo feels immensely proud of him. Charlie is warned that the ultimate punishment for insubordination is death.	'Charlie was stirring Hanley up unnecessarily, and was making things difficult for the rest of us.'	
A Minute Past Three	Tommo regrets drifting off and the lost time. He recalls the time his company was moved up to the front line. Their Captain – Wilke – is a kind man, but they see the horrors of war and the misery of the trenches for the first time. On sentry duty, Charlie saves Wilke's life.	'I'm not particularly worried. Charlie's going with me.'	
Twenty Five Past Three	Tommo recalls the move to Ypres, the vile state of the trenches, and the feeling of going 'over the top.' Charlie does not return for some time, and is assumed to be dead. When he does arrive, injured, it is thought he will be sent home to recuperate. The men find out that their new leader will be Sergeant Hanley.	'I was numb inside, as void of all feeling as the hands that clutched my rifle.'	
Nearly Four O' Clock	In the present, morning arrives with the fear of death, but for who is not yet clear. Tommo then recalls a gas attack, and a German soldier who let him live. Tommo receives a letter from home – Charlie and Molly have named their baby 'Tommo.' Charlie soon returns to the trenches.	'I know whose death it will be and how it will happen.'	
Five to Five	In the present, Tommo reveals that in 65 minutes time, a Private Peaceful will be shot for cowardice. Tommy recollects being rescued by Charlie on no man's land. The group are surrounded by the enemy. Hanley orders them to continue the attack, despite near-certain failure. Charlie knows Tommo is too weak and refuses. The others leave. Charlie realises he now won't make it home and gives Tommo the watch. Later, Charlie is arrested. Tommo reveals how he heard brother's death sentence only the day before the execution. He is given 20 minutes to speak with him. Charlie tells him of the injustice of the court martial. Tommo promises to look after Molly and the baby. As Tommo leaves, he hears that Hanley has died in a freak accident. At one minute past six, the past catches the present, and the execution takes place. Tommo vows to stay alive in order to keep his promises to Charlie.	'even if I wanted to, I can't go with you because I'd have to leave Tommo behind, and I can't do that.	
One Minute to Six		'I must survive. I have promises to keep.'	

ENGLISH

The Graveyard Book

Students will study **EITHER** Private Peaceful **OR** The Graveyard book

The Graveyard Book is a modern Gothic novel.
Definition of 'Gothic' writing: *"Tales of the macabre, fantastic, and supernatural, usually set amid haunted castles, graveyards, ruins, and wild picturesque landscapes."*

Typical gothic genre features:	Key Characters	Settings:
1. Death and darkness	Bod (Nobody) Owens is the novel's protagonist. Bod's family were murdered and he was raised in the graveyard by Mr and Mrs Owens.	The graveyard, which is now a nature reserve.
2. Supernatural (magic, ghosts, vampires, curses)	Mr and Mrs Owens live in the graveyard and never had children. Mrs Owens fought to raise Bod in the graveyard.	33 Dustan Road – home of Mr Frost.
3. Curses or prophecies	Silas is Bod's guardian. He's a very mysterious character and, unlike the other inhabitants of the graveyard, is not a ghost. Silas can leave the graveyard and does so to get Bod food and clothes.	The house where Bod's family were murdered. Bod's school
4. Madness and intense emotions/paranoia	Liza Hempstock is a witch who is buried in an unmarked grave away from the other inhabitants of the graveyard.	Ghulheim – home of the ghouls, which can only be accessed through the ghoulgate.
5. Mystery, terror and suspense	Miss Lupescu is Bod's teacher and a secondary guardian in Silas's absence. Miss Lupescu teaches Bod many valuable lessons.	Abanazer Bolger's shop.

Social and Historical Context of the genre

- The term 'gothic' comes from the Germanic tribe 'the Goths', who played a part in the fall of the Roman Empire. The Goths are sometimes called barbarians. They destroyed a lot of Roman architecture in around C3 and replaced it with buildings in the gothic style.
- **Medieval Europe (C3-14)** is sometimes referred to as the '**Dark Ages**' (although this can be contested for a number of reasons.) Some believe that people lived in fear due to superstition and ignorance and that not much learning took place in this time. Castles with gargoyles were built to ward off evil spirits, this architecture is known as 'gothic' e.g. Notre Dame.
- Figures from **The Age of Enlightenment (C18-19)** believed that scientific progress was the only way to advance society, and great discoveries were made in this time. They tried to rid Europe of superstition and ignorance through promoting reason and logic.
- A group of poets, artists and thinkers called the Romantics challenged this because they believed that not everything can be explained by science, and too much reason rids the world of beauty and mystery.
- The gothic genre first emerged from the **Romantic movement**. It used art and ideas from the Dark Ages, wild emotion and nature to contrast modern ideas about science and logic.
- Gothic writing transformed into the format of the extremely popular **Victorian ghost story**. •
- Today, we use the term 'gothic' widely to describe art, style, clothing, music and film (e.g. Tim Burton films). The style and genre is very much still alive.

ENGLISH

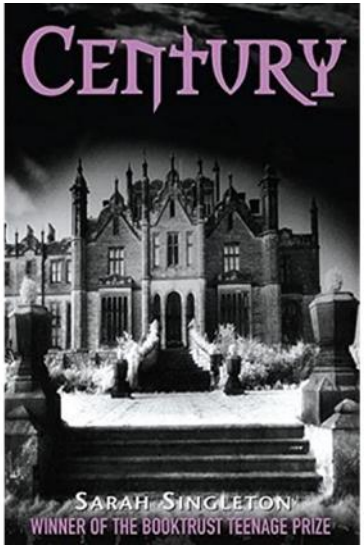
The Graveyard Book

Key vocabulary	
Afflicted	Hopeless
Anguish	Lamentable
Claustrophobia	Lifeless
Deception	Mausoleum
Decomposing	Meticulous
Democracy	Mournfully
Despair	Obscured
Dilapidated	Perilous
Disfigured	Repugnant
Enigma	Sinister
Epitaph	Torturous
Entrapment	Unleashed
Forbidding	Vengeful
Grotesque	Withered
	Wretched

Key techniques
Narrative voice Protagonist
Antagonist Tension
Pathetic fallacy Alliteration
Alliteration Foreshadowing
Imagery Alternating narrative
Imperatives Personification

Further reading:

- ***Dracula***, Bram Stoker
- ***Century,*** Sarah Singleton
- ***The Moth Diaries***, Rachel Klein
- ***Coraline,*** Neil Gaiman
- ***Between the Devil and the Deep Blue Sea***, April Genevieve Tucholke

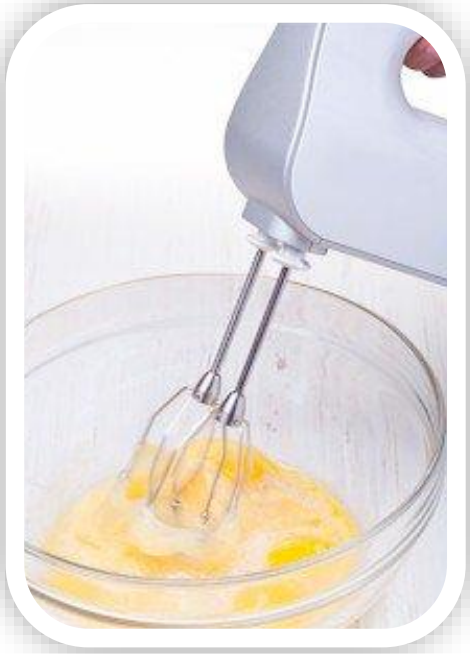


FOOD TECHNOLOGY

Recipes to learn:

All groups will make:

- Indian curry
- Pizza
- Victoria sponge
- Vegetable / meat chilli
- Risotto
- Flapjack
- Scrambled / fried / poached egg
- Cinnamon pastries



Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

Skills to learn

- Chopping safely using the **'bridge and claw'**
- How to 'rub in' butter and flour Kneading
- Mixing
- Whisking
- Frying

Scientific processes to learn

- Respiration – yeast and bacteria break down sugars and carbohydrates
- Rubbing in – fat coats starch to limit the amount of gluten released
- Dextrinisation – starch turns brown in dry heat
- Denaturation – proteins change their structure when heated, whisked or mixed with acid
- Coagulation – proteins set when heated
- Aerating – adding air to a mixture to help it rise
- Caramelisation – sugar turns brown when heated.
- Convection heat – where heat is transferred through a liquid or gas.
- Conduction heat – where heat is transferred through solid materials.

GEOGRAPHY YEAR 8: Plastics

Key term	Definition
Food web	A system of interdependent food chains. starting from producer organisms and ending at top predator species.
Landfill	The disposal of waste material by burying it
Recycling	Where your plastic is broken down and reformed to make new plastic products
Biodegradable	When a product or material is able to be decomposed by bacteria or other living organisms.
Ocean Current	A constant flow of ocean water in one direction, that circulates in one of the Earth's oceans.
Marine	Relating to the ocean or sea; saltwater.

What can be done to reduce the impacts?

- Buy clothes and other products for life, not one off use
- Spread the word about the impacts of plastic pollution, educate others
- Never flush plastic products down the loo
- Recycle and reuse products
- Use a bag for life
- Avoid using single use plastic e.g. bags. straws, cutlery

What is plastic and where does it come from?

Plastic is a man made material, that originates from crude oil being broken down.

Plastic usage has increased dramatically since it's invention in the 1950s. Today 138 million tonnes of plastic is produced annually. The packaging industry is the largest user of plastic.

Where does plastic go?

In the UK, waste plastic usually follows two routes:

1. Landfill, the disposal of waste material by burying it.
2. Recycling is where your plastic is broken down and reformed to make new plastic products. Some of this happens here in the UK but much of our recycling has previously been sent abroad to countries like China. However, recently, China has decided to stop accepting waste from the UK, which is posing a number of problems

Globally it is estimated that 91% of plastic generated is not recycled

What are the impacts of plastic waste?

Plastic products are more widely used in more developed countries. However, the impacts and mismanagement of plastic waste is generally greater in less developed countries.

- Mismanaged waste, including plastic waste can impact on people's life expectancy
- The burning of plastics releases toxic chemicals
- In developing countries the farming of cattle can be impacted as cattle consume waste plastics
- Plastic Garbage Patch in the Pacific Ocean
- Marine ecosystems damaged, fish tangled and suffocating in plastic waste.
- Marine animals ingesting plastic
- Impacts on the marine food web

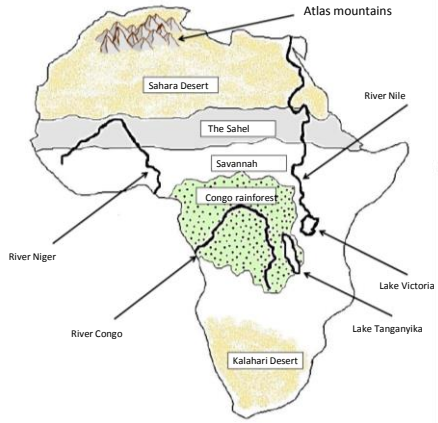
Extra reading: Why are Nike trainers washing up on beaches?

Extra reading: Cutting plastic waste

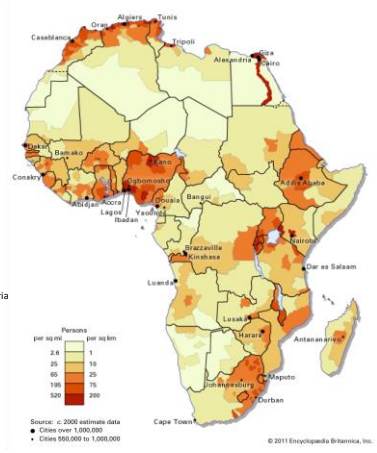
GEOGRAPHY YEAR 8: AFRICA

Key term	Definition
Population distribution	How people are spread out over an area
Ecosystem	A community of plants and animals that interact with one another and the environment in which they live
Biome	An ecosystem that covers a large area of the earth's surface
Colonialism	The historical process where one country ruled another
Globalisation	The process of the world becoming more connected
Governance	How a country is ruled and run
Standard of living	The wealth and material comfort available to people
Human Development Index (HDI)	A measure of how developed a country is, based upon levels of health, wealth and education
Resources	Goods and services that meet people's needs

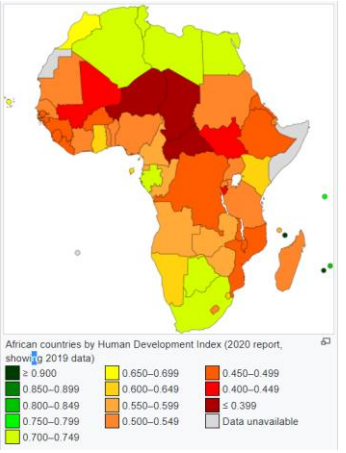
Key idea 1: Africa is hugely varied in terms of its…



…landscape



…population distribution



…levels of development

Key idea 2: The DRC is shaped by a range of processes including…

…its physical geography

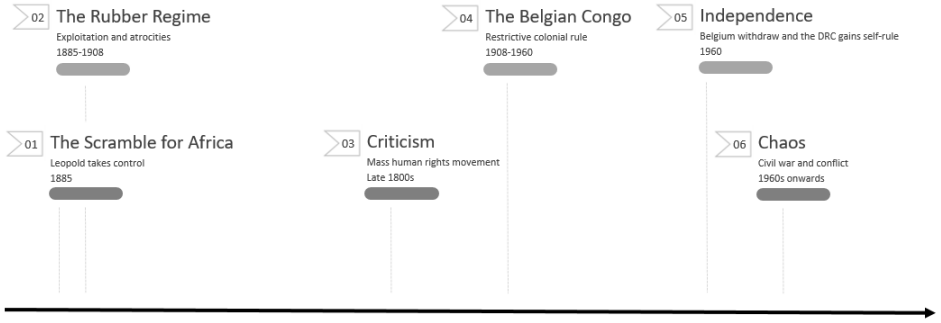
Climate	River	Ecosystem	Tectonic activity
Is tropical so it is hot and wet.	The River Congo is 2,733 miles long.	1000 species of tropical plants, 30% of which are unique to the Congo.	Volcanoes can be found on the eastern edge of the DRC.
Droughts can happen in the south, where there is a dry season.	900 miles of the River Congo is navigable by boat.	The Congo rainforest is the second largest in the world.	Mount Nyiragongo has the largest lava lake in the world.

…how it is governed

The DRC is an Authoritarian regime, which means…
No elections
People's freedoms are abused/ignored
Criticism is repressed
There is no independent legal system

Country	DRC
Type of regime	Authoritarian regime
Life expectancy	60
GDP/capita	$1070
Literacy rate	77%

…its history



…globalisation

Imports
Tourism

Exports
Coltan
Cobalt
Gold
Oil
Timber
Diamonds

These different processes all contribute to the DRC's low level of development and have played a part in stopping the DRC from being as rich as it could be

HISTORY

The British Empire – background

- The power of Britain was seen to be greatly increased by its empire – it meant Britain had access to more resources and could make lots of money from trading expensive things like silks and spices
- Lots of products from the empire became part of British culture, for instance tea and coffee
- British rulers tended to think of indigenous populations as 'uncivilised peoples' and did not treat them with very much respect

Key people

Elizabeth I: Queen of England 1558-1603, gave permission for the East India Company to be set up

East India Company: trading company given rights to trade in India. Started taking over lots of land in India during the 18th century.

General Dyer: a British general who ordered an attack on unarmed citizens in a town in India called Amritsar, which made the British very unpopular in India in 1919

Lord Mountbatten: the last Viceroy (leader) of the British Raj in India

Gandhi: started the Independence movement in India

Olaudah Equiano An ex-slave who came to live in Soham. He wrote about his experiences of the middle passage.

Thomas Clarkson A man from Wisbech who campaigned to abolish (end) the slave trade.

British Empire gained

Key dates:

1607: American colonies gained
1756: Britain fights France and starts to gain control of Canada
1770: Captain Cook discovered Australia
1775-1783: American War of Independence
1795: South Africa stolen from the Dutch
1842: Hong Kong gained as a trading post
1856: Lake Victoria discovered
1889: British South Africa Company set up

Key events:

- From as early as Elizabeth I's reign, the British had always been very interested in controlling newly discovered lands overseas. Having more land made a country more powerful, and could provide new resources and trade opportunities which might make a country very wealthy.
- The first real 'colony' to be founded was Virginia, in North America, named after Elizabeth (who was known as the 'virgin queen'). White settlers were keen to visit these new lands in the hope of making money and building a better life for themselves.
- Some colonies were won in wars against other European powers (like Canada and South Africa). Some were due to British discovery (like Australia). Britain also used these colonies in different ways.
- Australia was set up as a penal colony, so criminals were sent there to serve their sentence instead of being sent to prison. This meant a large amount of the inhabitants started out as British people. In colonies where the majority of inhabitants were British, the government were likely to allow them to become 'dominions' (which meant they could make their own laws etc). However other colonies, like India, were ruled totally by the government in Britain – and the indigenous population were usually treated poorly.

British Empire in India

Key dates:

1600: East India Company set up by Queen Elizabeth I
1857: Indian Mutiny
!858: Government takes away all control from EIC and runs India (renamed the British Raj)
1947: British quit India

Key events:

- The East India Company was set up to trade Indian products, such as silk and spices. They set up a number of trading stations (factories) with the permission of the Mughal Emperor in the early 1600s.
- However, other countries were trying to control parts of India too. This led to the British government granting the EIC more power to do things like make laws, and set up armies to fight the Dutch. This meant the EIC were being much more aggressive about taking over territory, which upset the Mughals.
- The EIC started fighting with the Mughal Emperor as well as other colonising countries to try and take over land. In 1708 the British government decided that they should be running India as well, not just the EIC. They worked together to rule India until 1857 and the Indian Mutiny.
- The Indian Mutiny was when Indian soldiers turned on their British generals and killed them, because they felt they were being treated unfairly e.g. they had lost their pensions and were being forced to use bullets greased in animal fat. After this, the government decided to take all control away from the EIC, and India was ruled as the British Raj.
- Lots of British people went to live in India, either because they were working for the government or because they were soldiers, keeping the population under control. Some people went as missionaries (people who try and covert others to their religion).

HISTORY

The Transatlantic slave trade

Key dates

1604: The first British people to settle in America arrived

Key events

- Cotton was grown in the Southern States of America, but there were not enough people to grow it. Traders in Britain traded goods for slaves that had been kidnapped in Africa. They sailed these slaves from Africa to the Southern states along the Middle Passage, where they were traded for cotton, which was taken back to Britain. The slaves were then used to grow the cotton. This was known as the Trade Triangle. The British made lots of money from it.
- In total, about 10 million slaves were taken across the Atlantic between 1700 and 1820. About half of the slaves who set out on the voyage across the Middle Passage died before arriving. Once they arrived the slaves were sold: a healthy young slave would cost £100,000 in today's money.
- Slaves in the USA lived on plantations growing cotton or tobacco. Some of these plantations were enormous with hundreds of slaves; other might be small with the master owning two or three slaves. The slaves had no rights and were their master's property. Often, they were supervised by an overseer.
- Some of the slaves might be their master's servants – they were house slaves. Most worked in the fields, growing the crops. Conditions in the Deep South – the states of Mississippi and Alabama - were particularly bad. Slaves could be cruelly punished by their master or their overseers.
- Slaves could marry and have families, but these families could be split up at any time, particularly when a master died. Many slaves escaped to the North of the USA, where slavery was illegal (no cotton or tobacco was grown there). Sometimes these slaves were recaptured by their masters. Slaves built up a rich cultural heritage, particularly in music. This became the basis for the blues, jazz, rock n roll, and later on rap and hip hop.

Key history terms

Interpretation: a particular historian's version of what happened in the past.

Cause*:* a reason why an historical event happened

Continuity: the opposite of changing, when something stays the same.

Key topic terms

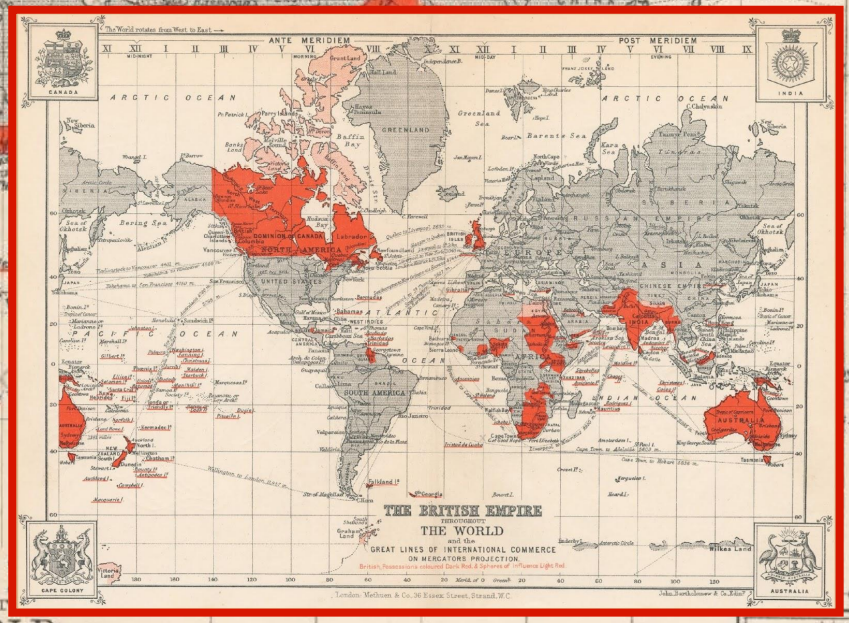
Colony: country that is ruled over by another country within an empire

The Middle Passage The voyage taken by captured slaves from Africa to America

Penal colony: colony set up as a destination for criminals instead of prison

Mutiny: when soldiers refuse to follow orders, and sometimes attack their leaders

Indigenous population: people native to a country/ originally from there



MATHS

Maths – Year 8

Factors

Numbers that an integer can be divided by.

e.g. factors of 12 are:

1, 2, 3, 4, 6, 12

Multiples

Numbers that are made by multiplying one integer by another.

e.g. multiples of 12 are:

12, 24, 36, 48, 60 etc

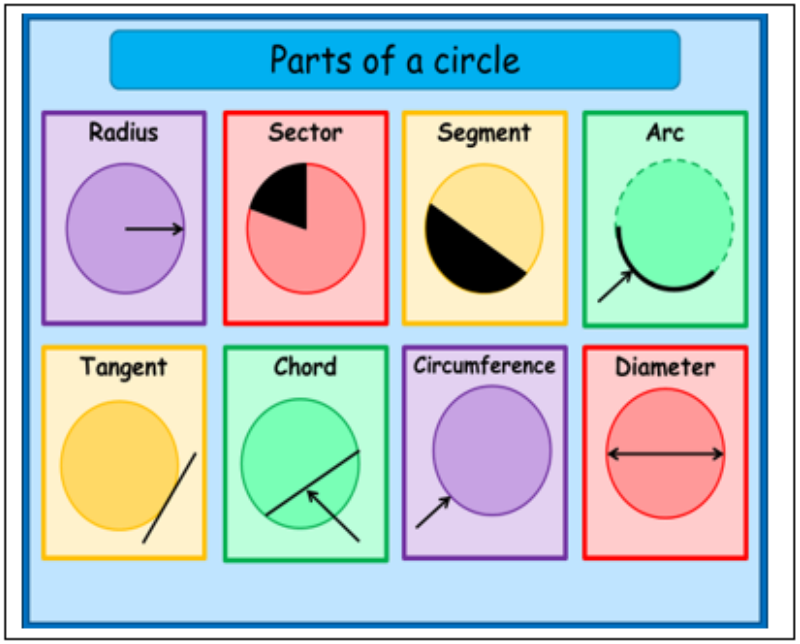
Prime Numbers

Numbers with only themselves and 1 as a factor:

2, 3, 5, 7, 11, 13, 17, 19, ...

Negative Numbers

3 + -5 = 3 – 5
-3 + -5 = -3 – 5
3 - -5 = 3 + 5
-3 - -5 = -3 + 5
3 x 5 = 15
3 x -5 = -15
-3 x 5 = -15
-3 x -5 = 15
15 ÷ 3 = 5
-15 ÷ 3 = -5
15 ÷ -3 = -5
-15 ÷ -3 = 5



Square Numbers

Numbers which are made by multiplying an integer by itself.

1 x 1 = 1
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64
9 x 9 = 81
10 x 10 = 100
11 x 11 = 121
12 x 12 = 144
13 x 13 = 169
14 x 14 = 169
15 x 15 = 225

Circles 2

Diameter = radius x 2 (2r)

Circumference = π x diameter (dπ)

Area = π x radius x radius (πr^2)

Percentages

Per cent means per 100

$1\% = \frac{1}{100} = 0.01$ $10\% = \frac{10}{100} = \frac{1}{10} = 0.1$

$20\% = \frac{20}{100} = \frac{1}{5} = 0.2$ $25\% = \frac{25}{100} = \frac{1}{4} = 0.25$

$50\% = \frac{50}{100} = \frac{1}{2} = 0.5$ $75\% = \frac{75}{100} = \frac{3}{4} = 0.75$

ALL ABOUT THE BASS

Exploring Bass Clef Reading and Notation and Bass Line Musical Patterns

A. Bass Clef & Bass Clef Notation

STAFF is the name given to the five lines where musical notes are written.

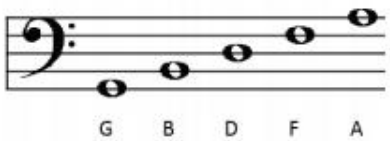
The position of notes on the stave or staff shows their **PITCH** (how high or low a note is).

The **BASS CLEF** is a symbol used to show low-pitched notes on the stave and is *usually* used for the left hand on a piano or keyboard to play the **BASS LINE** and also used by low pitched instruments (*see B.)*

The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

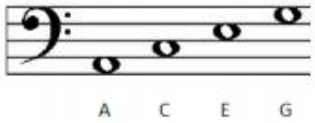
Notes on the **LINES** of the **BASS CLEF**: **G, B, D, F, A**

Green **B**uses **D**rive **F**ast **A**lways



Notes in the **SPACES** of the **BASS CLEF: A, C, E, G**

All **C**ows **E**at **G**rass



Bass Clef **STAFF NOTATION**:

B. Musical Instruments that use the Bass Clef

Left Hand of a **Piano/ Keyboard**

Left Hand & Pedals of an **Organ**

Bassoon

Cello

Double Bass

Trombone

Tuba

Timpani

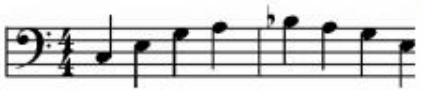
Bass Guitar

Bass (deepest male singing voice)

C. Bass Line Patterns

BASS RIFFS – Short, repeated, 'catchy' and memorable Bass Line Patterns used in Rock, Rap, Hip Hop, R'n'B, and Pop songs often performed on Bass Guitar. Bass Riffs 'fit' with the notes in the chord, but also use other '**EXTRA**' notes (**PASSING NOTES**) to make them more memorable.

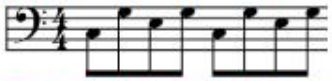
WALKING BASS – used in Jazz, Blues, Rhythm and Blues, and Rock'n'roll, and featuring **a note on every beat**. Using the **ROOT, THIRD** and **FIFTH** of the chord, and '**EXTRA**' notes (called **PASSING NOTES**) to create a smooth bass line often moving mainly by step **(CONJUNCT)**.



ALBERTI BASS – a type of **ACCOMPANIMENT PATTERN** in the **BASS LINE** using the **ROOT, THIRD** and **FIFTH** notes of a **CHORD** played in a **specific order**:

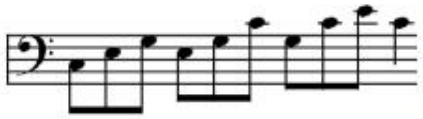
ROOT	FIFTH	THIRD	FIFTH
Lowest	*Highest*	*Middle*	*Highest*

The pattern repeats, but notes change as chord changes and a melody is added 'on top' of the Alberti Bass. Used by Classical composers such as Mozart, especially in solo piano music, as well as modern composers.

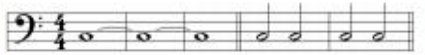


ARPEGGIO: Playing the notes of a chord separately and **in order** *root, third fifth, root, third, fifth etc*, can be ascending (going up) or descending (going down).

BROKEN CHORD – Playing the notes of a chord separately but **not necessarily in strict order** *(e.g., like an Alberti Bass)*, often creating a repeated musical pattern, can be ascending (going up) or descending (going down).



(BASS) PEDAL (POINT/NOTE) – either **SUSTAINED** notes of **LONG DURATION**, or **REPEATED LONG NOTES**, often in **BASS LINE PART**, using the **ROOT** (a **TONIC PEDAL**) or the **FIFTH** (a **DOMINANT PEDAL**). Changing chords, harmonies, and a melody line "fit over the top" of a **PEDAL** note.



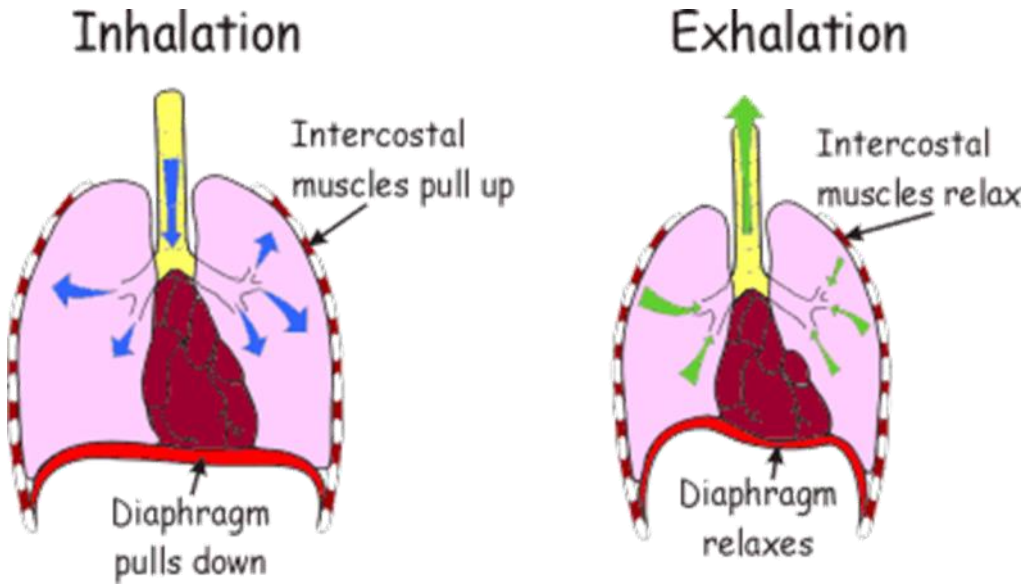
MUSIC

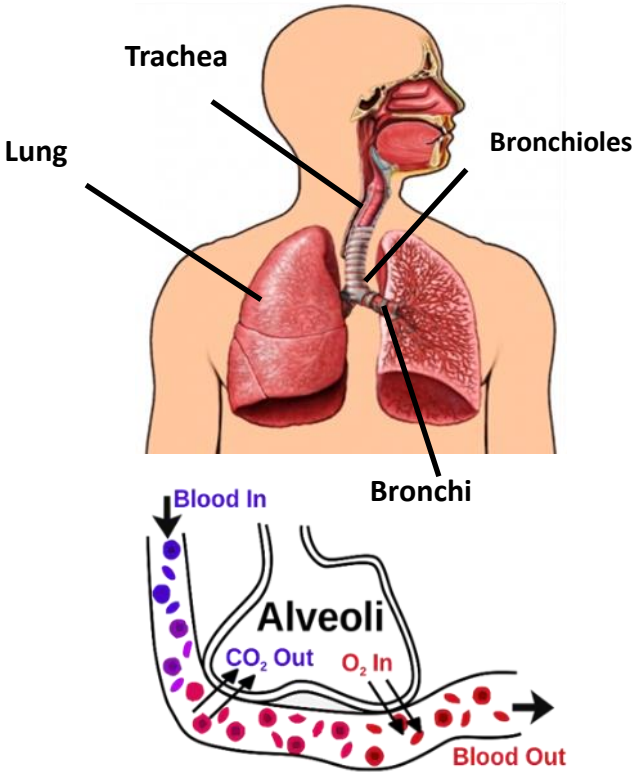
PE

Passage of air into the lungs

1. Air enters the body and is warmed as it travels through the mouth and nose.
2. It then enters the trachea.
3. The trachea divides into two bronchi. One bronchus enters each lung.
4. Each bronchus branches out into smaller tubes called bronchioles. Air travels through these bronchioles.

The role of the respiratory muscles in breathing





Inhalation (Breathing in)

The diaphragm contracts and moves downwards. The inter-costal muscles contract and move the ribs upwards and out-wards. This increases the size of the chest and decreases the air pressure inside it which sucks air into the lungs.

Exhalation (Breathing out)

The diaphragm relaxes and moves back to its domed shape. The inter-costal muscles relax so the ribs move inwards and downwards un-der their own weight. This decreas-es the size of the chest and increas-es the air pressure in the chest so air is forced out of the lungs.

Gaseous (or gas) exchange:

Gas exchange occurs at the alveoli in the lungs and takes place by diffusion. The alveoli are surrounded by capillaries so oxygen and carbon dioxide diffuse between the air in the alveoli and the blood in the capillaries.

Diffusion is the movement of gas from an area of high concentration to an area of low concentration.

PE

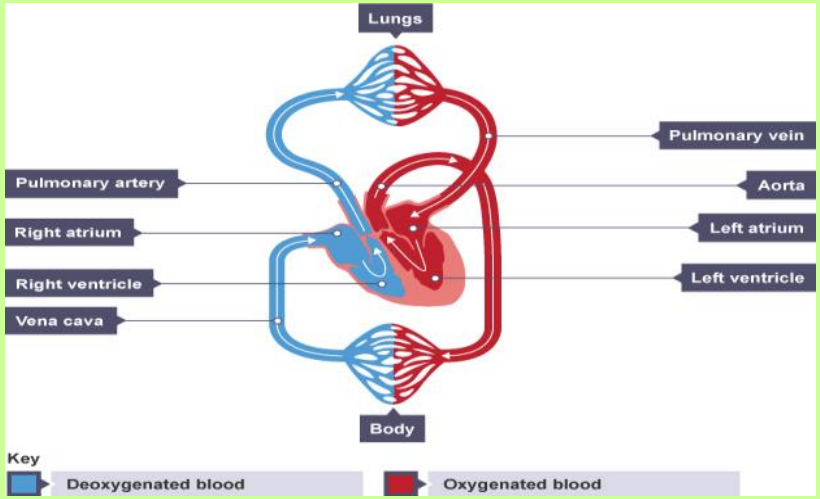
The pathway of blood through the heart

Blood is carried through three different types of blood vessels in the body:

1. Arteries
2. Capillaries
3. Veins

Left-hand side

Oxygenated blood is carried to the heart from the lungs in the pulmonary vein. It goes into the left atrium, through the bicuspid valve and into the left ventricle. The ventricle pumps the blood through the semilunar valve, into the aorta and round the body.



Right-hand side

Deoxygenated blood from the body is carried to the heart in the vena cava. It goes into the right atrium, through the tri-cuspid valve and into the right ventricle. The ventricle pumps the blood through the semilunar valve, into the pulmonary artery and to the lungs.

Structure of the cardiovascular system

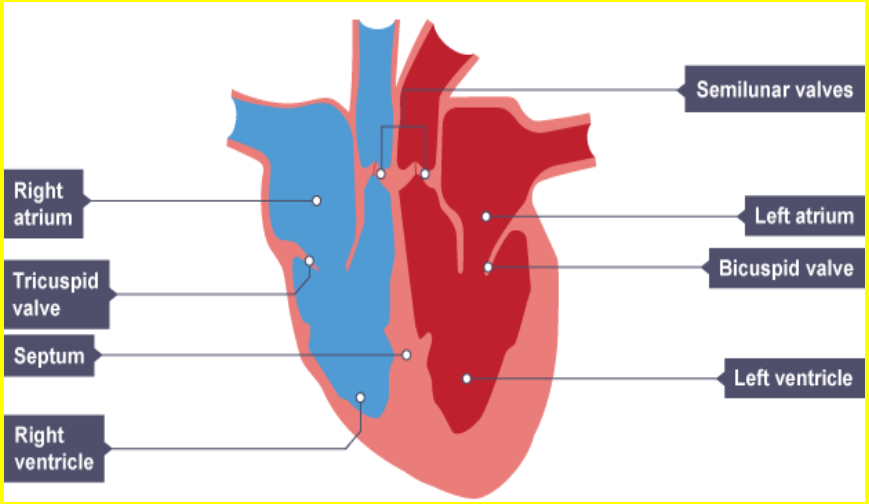
If you clench your hand into a fist, this is approximately the same size as your heart. It is located in the middle of the chest and slightly towards the left.

The heart is a large muscular pump and is divided into two halves - the right-hand side and the left-hand side.

The right-hand side of the heart is responsible for pumping **deoxygenated blood to the lungs.**

The left-hand side pumps **oxygenated blood around the body**.

Each side of the heart consists of an atrium and a ventricle which are two connected chambers.



Religion and Social Change

REP

Key Words

Equality	The state of being the same, especially in status, rights, or opportunities	**Exile**	The state of being banned from one's native country, typically for political reasons. It is a type of punishment
Prejudice	To hold a pre-judgement about someone. Usually before you know them.	**Ahimsa**	Means the act of non-violence, and it applies to all living beings including all animals according to many Indian religions
Discrimination	acting on a prejudice – racism, sexism… etc	**Segregation**	The action or state of setting someone or something apart from others.
Universal Declaration of Human Rights	A document which outlines human rights. All human beings are born free and equal in dignity and rights.	**Oppression**	A prolonged unjust and unfair treatment of a society by an authority.

Key Ideas

Ideas of Equality

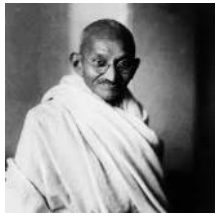
All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood. Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status – Universal Declaration of Human Rights

Religious Views on Equality:

'There is neither Jew nor Gentile, neither slave nor free, nor is there male and female, for you are all one in Christ Jesus.' (*Christian View)*

The Holy Qur'an states that all believers, without distinction, are equal and that only righteous deeds elevate one person above another. (*Islamic View)*

Gandhi



Born: 2nd October 1869 in Porbander
Job: Barrister – went to University in England.
Religion: Hinduism
Influences include: Christianity, Jainism and famous writers like Tolstoy. Died 30th January 1948 – assassination.
Key Teachings and Beliefs

"I object to violence because when it appears to do good, the good is only temporary; the evil it does is permanent."
'There are causes for which I am willing to die but not cause for which I am willing to kill'
"An eye for an eye will only make the whole world blind"
"We must become the change we want to see in the world"

REP

Key Ideas

Martin Luther King Jr

Martin Luther King didn't believe in using violence to change things. Instead, he gave powerful speeches and led peaceful protests.
Even so, he was arrested and sent to prison 29 times.
He never gave up the fight for equal rights, and made a real difference.

<u>'I have a dream' Speech</u>
His 'I have a dream' speech was delivered on 28 August 1963 at the Lincoln Memorial in Washington DC to a crowd of about 250,000 people. It was the culmination of the 'March on Washington for Jobs and Freedom' and is a key moment in the Civil Rights movement.

"Darkness cannot drive out darkness; only light can do that. Hate cannot drive out hate; only love can do that."

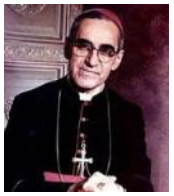
"We hold these truths to be self-evident, that all men are created equal."

Mother Theresa

Mother Teresa was born on 26 August 1910 in Skopje, North Macedonia - a country to the east of Albania and north of Greece - although she was called Gonxha Agnes at the time.
From 1937, she became known as Mother Teresa, but it was a train ride on 10 September 1946 which would change her life forever.
It is on this journey that Mother Teresa said she received her "inspiration" to carry out what she described as the work of God, devoting herself to helping people who lived in the slums of Kolkata. (Calcutta)

<u>Key Teaching</u>
It is not how much we do, but how much love we put in doing it. That makes all the difference.

Oscar Romero



Oscar Romero was the Archbishop of El Salvador.
Romero was increasingly outspoken about injustice by the corrupt military and government in the events leading up to his assassination.
Many described Oscar Romero as a 'voice for the voiceless'.
He taught that violence could be overcome by Christian love.
His sermons were broadcast every Sunday on the radio and were listened to and attended by thousands of people.

Bottisham Village College

KNOWLEDGE ORGANISER

YEAR 8 SCIENCE TERM 3

- CHEMISTRY OF THE ATMOSPHERE AND USING RESOURCES
- INHERITANCE, VARIATION AND EVOLUTION
- WAVES

Chemistry of the Atmosphere and Using Resources Year 8

A. Keywords

Atmosphere	The layer of gas above the surface of Earth.
Mixture	Two or more substances together that are not chemically bonded to each other.
Temperature	A measure of the amount of thermal energy.
Fossil Fuel	Coal, oil or gas. Chemicals humans obtain from rocks and burn to release energy.
Climate Change	A long-term change in weather patterns.
Distilling/ distillation	The process of separating a mixture of liquids by heating so it evaporates, then cooling it to condense it.
Respiration	A chemical reaction in the cells of living things that combines glucose with oxygen to release energy.
Combustion	A chemical reaction when a fuel is burned in oxygen to release energy.
Photosynthesis	A chemical reaction in the cells of plants, combining carbon dioxide and water to make glucose and oxygen.
Groundwater	Water that has filtered through rocks and soil and is found below earths surface.

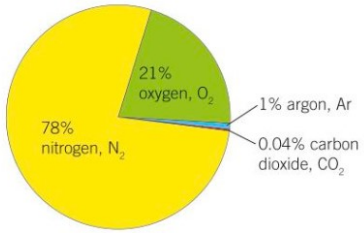
B. Climate Change

The effects of climate change may be:

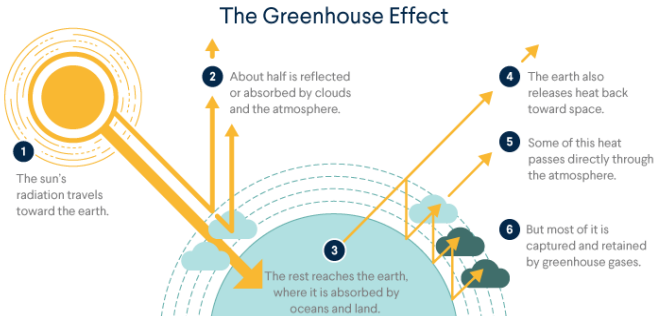
- Change in weather patterns.
- More extreme weather (floods, drought, storms).
- Melting glaciers and polar ice caps.
- Sea level rise.
- Extinction of plants and animals and food shortages.

C. Global Warming

Earth's atmosphere is a mixture of many gases, but mainly Nitrogen and Oxygen with smaller amounts of Argon and Carbon Dioxide.



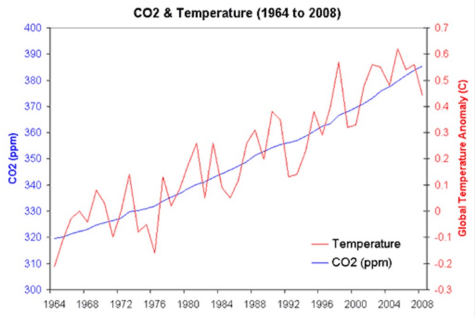
The **greenhouse effect** keeps earth warm.



D. Working Scientifically

Average global temperatures have been increasing since the 1960s.

Scientists have collected data that shows carbon dioxide levels in the atmosphere increasing at the same time.



E. Carbon Cycle

Carbon exists in the atmosphere as carbon dioxide, but can also be stored in a range of carbon sinks.

Respiration: Glucose + Oxygen → Carbon + Water Dioxide

Combustion: Methane + Oxygen → Carbon + Water Dioxide

Photosynthesis: Carbon + Water Dioxide → Glucose + Oxygen

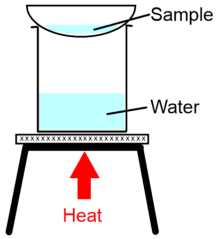
Respiration and combustion (of fossil fuels) add carbon dioxide to the atmosphere. Photosynthesis removes carbon, along with it dissolving in the oceans.

F. Potable Water

Potable water is safe to drink, but it may have low levels of salts or microbes in it. Pure water is only water (H_2O) molecules.

Potable water comes from filtering and sterilising river or groundwater.

Another method of producing potable water is to distil seawater. This involves evaporating the water and then condensing away from the salt.



G. Recycling

Recycling is when materials that have been used are collected and processed so they can be used again. Paper, plastic bottles and aluminium cans are examples of materials that can be recycled.

Advantages	Disadvantages
Resources will last longer.	Some people do not want to recycle and find it a nuisance.
Less energy is used to recycle than make something from new.	The lorries that collect recycling use fuel and create pollution.
Waste and pollution are reduced.	

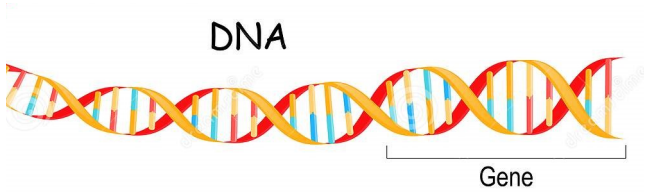
Inheritance, Variation and Evolution Year 8

A. Keywords

Gene	A section of DNA that determines an inherited characteristic.
Characteristic	A feature of the organism.
Allele	A different form of a gene.
Genetic mutation	A change to DNA that can cause disease.
Biodiversity	Is a measure of the variety of all the different species within an ecosystem.
Continuous (variable)	A variable that has values that can be any number.
Categoric (variable)	A variable that has values that are words.
Adaptation	A characteristic that helps an organism survive in its environment.
Species	A group of living things that have more in common with each other then with other groups. This allows them to mate to produce fertile offspring.
Evolution	Theory that the animal and plant species living today descended from species that existed in the past.
Population	A group of organisms of the same kind living in the same place.
Conservation	Protecting a natural environment, to ensure that habitats are not lost.
Captive breeding	Breeding animals in human-controlled environments.
Gene bank	A store of genetic samples, used for research and to try to prevent extinction.
Double Helix	Two strands wound round together in a spiral.
Chromosome	Thread-like structure containing tightly coiled DNA. It contains many genes.
DNA	A molecule found in the nucleus of cells that contains genetic information.

B. DNA

- Spiral shape called a **double helix**.
- DNA contains the genetic information that codes for proteins.



C. Variation

Variation is differences in our physical characteristics. There are two types of variation:

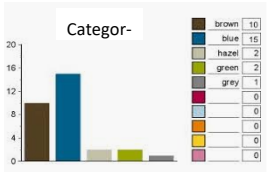
- Genetic variation: caused by the genes you inherit from your parents e.g. eye colour and attached earlobes.
- Environmental variation: physical characteristic caused by your surroundings e.g. scars and tattoos.

Lots of characteristics are influenced by inherited and environmental factors e.g. height and weight.

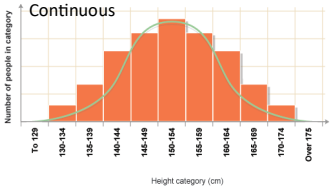
F. Working Scientifically

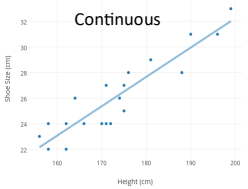
Variation can be measured by completing a survey of sample of the population. This is done by counting a tally of the different features, or dividing measurements up groups.

Once counted a graph of the data can be plotted. If the data is categoric then a bar chart should be plotted that separates each category.



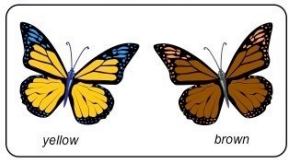
If the data is continuous then either a scatter graph should be plotted for each piece of data or a histogram of the different tallies which should produced a 'hill-shaped' curve.





D. Natural Selection

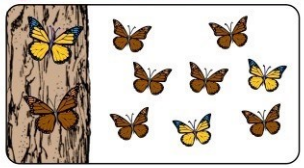
Process by which species change over time in response to environmental changes and competition for resources. The organisms with the characteristics that are most suited to the environment survive and reproduce, passing on their genes.



1. Variation. There is genetic variation within a population meaning some organisms have different characteristics.

2. Some of the organisms are better adapted for survival.

"Survival of the fittest."



3. The organisms that survive reproduce and pass on their genes so the offspring are better adapted to survive.

Natural selection occurring over **many years** causes evolution of a species and sometimes the formation of a new species.

E. Biodiversity and Food Security

Biodiversity is important because it helps to maintain populations. If there is more variation within a species then it is more likely some will survive an environmental change and prevent the species from becoming extinct.

Biodiversity can be maintained by:

- Conservation projects.
- Captive breeding.
- Gene banks.

Maintaining biodiversity is vital in ensuring food security as it means:

- Insects are protected so plants are pollinated.
- Fish are protected so overfishing does not occur.

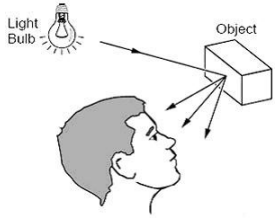
Waves Year 8

A. Keywords.

Concave	A lens that is thinner in the middle and that spreads out light rays.
Convex	A lens that is thicker in the middle and that bends light rays towards each other.
Absorbed	When light is absorbed by an object, the energy is shared amongst the atoms, often resulting in heating.
Transmitted	Light is able to travel through an object.
Specular reflection	Reflection from a smooth surface. Follows the law of reflection.
Diffuse reflection	Reflection from a rough surface. All rays follow the law of reflection individually.
Angle of incidence	Angle between the normal, and the incident ray (the ray of light from the light source).
Angle of reflection	Angle between the normal, and the reflected ray (the ray of light reflecting away from the surface)
Ionisation	The removal of an electron from an atom by high energy waves.
Normal line	An imaginary line at 90° to the surface of the object.

B. Working Scientifically

We are able to see objects because they reflect light that hits them. Different objects reflect different amounts of light. How accurately can you judge the amount of reflection with your eyes?



We could measure this more easily with a light meter, which measure how bright the light is. Then we can compare the results from different objects.

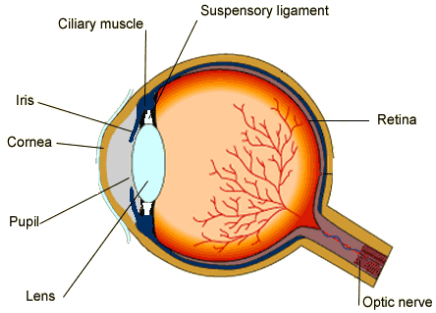
D. Refraction

Refraction is when a light ray changes direction as it moves from medium to another.

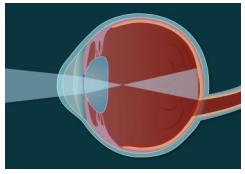
An example of this in everyday life is with lens. As the light travels from the air and through the solid lens it changes direction. This could be in a microscope, a camera or even our own human eye.

E. The Eye

The eye detects light emitted or reflected off objects which then triggers nerve impulses to the brain to create an image we can see.



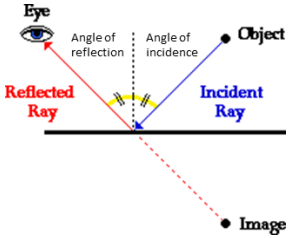
This diagram shows how light is refracted as it passes through the lens and hits the retina which triggers the nerve impulses to got to the brain.



C. Reflection

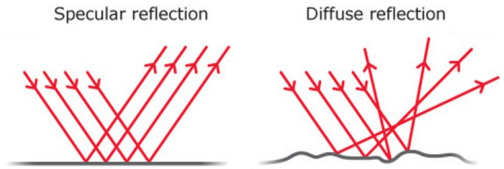
Reflection is the scientific term for light "bouncing off" and object. Light can also be **absorbed** by the object, or

When light reflects, it **always** follows the law of reflection; the angle of incidence is equal to the angle of reflection.

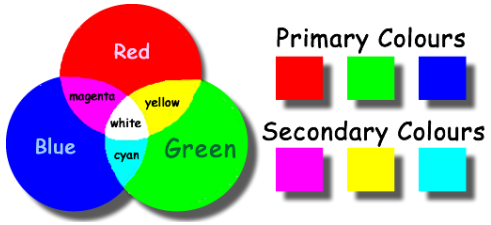


In a mirror, the image will appear to be the same distance from the mirror as the actual object is.

There are two types of reflection:

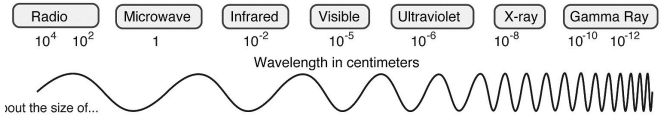


C. Colour



E. The Electromagnetic Spectrum

The electromagnetic spectrum shows the wavelengths of different wave types.



The shortest wavelengths, ultraviolet, x-rays and gamma rays are harmful to living cells because they are ionising.

All of the EM waves travel at the speed of light, 300,000,000 m/s