Knowledge Organiser
Year 8

Term 2

Name _____

Tutor Group _____

This document is part of your compulsory equipment and must be taken to every lesson (with the exception of practical PE).

Table of contents

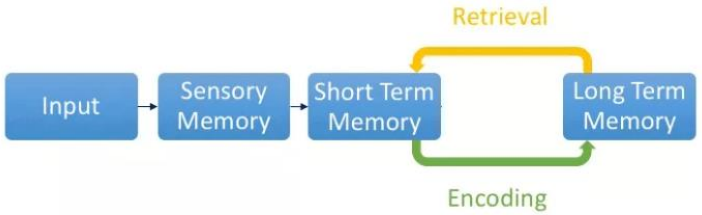
What is a Knowledge Organiser?

Your knowledge organiser summarises all the key facts and knowledge that you will need to have learned on a particular subject onto one side of A4. This information might include,

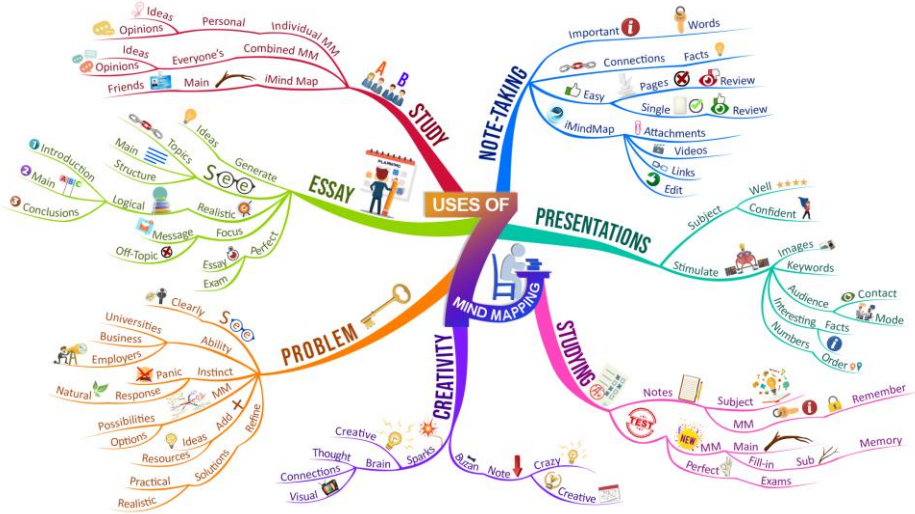
- key vocabulary
- key places and people
- useful diagrams
- key dates for a subject like history
- key themes
- important quotes
- stem sentences for a subject like Maths

How can you use your Knowledge Organiser most effectively?

1. Use it as a **checklist** to make sure you have notes and resources in your books or folders on each area. If you have a gap, talk to your teacher.



2. Use it to help get the information and knowledge into your **long-term memory**. Just reading over the pages does not help. You will need to put your knowledge organiser away and see how much you can remember. You could get a family member or carer to help test you on what you have remembered.



3. Knowledge organisers have already broken the knowledge down into chunks for you so they can be used to create **flashcards, revision posters or mind maps.**

4. Use your knowledge organiser **to get ahead on a topic**. Reading about what you are going to study and looking up any new or difficult words means that you are better prepared for your learning in the next lesson.

5. It is best to use your knowledge organiser for **short periods of time but regularly.** Choose a small part of a topic and practice writing it out with your organiser closed every day for 10 minutes.

THE KING SOLOMON STANDARD

Come to class fully prepared with correct equipment (Black / Blue Pen, pencil, glue stick, scissors, ruler, calculator, protractor and compass, exercise / text books). Form Tutors will check your equipment on a regular basis.

Presentation

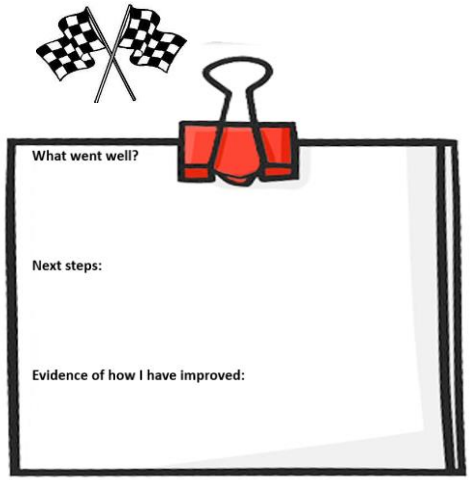
- Students write in black or blue inked pen only unless allowed by teachers to use another colour.
- Students ensure that all work has a Title and Hebrew and English dates, which are all underlined.
- Students take care of their exercise books and folders. There is no graffiti in, or on, books. All books must be covered and labelled clearly.
- Worksheets and Pit Stops slips must be stuck in or stapled.
- Pages must not be torn out of books.
- Work will be returned if it represents a significant lack of effort and students will be expected to resubmit the work.
- **PEEL** paragraphs must be labelled clearly and easy to spot.

Literacy marking symbols

Your teachers will be using the symbols below to mark your work.

S	Spelling mistake.
P	Punctuation mistake – either punctuation has been omitted, or has been used incorrectly.
??	Does not make sense/is not clear.
//	Start a new paragraph.
^	A word or sentence is missing.
C	Capital letter is needed.
DW	Choose a different word.

- *Correct all your class work and homework errors using a different coloured pen.*
- C3B4ME (See three before me; i.e. first try independently, check your class notes/resources or ask one of your peers before you ask your teacher ☺).



How to complete my Pit Stop slips

What went well….

Completed by your teacher or by you after receiving some guidance from your teacher.

Next steps….

Completed by your teacher or by you after receiving some guidance from your teacher.

Evidence of how I have improved:

Completed by student stating clearly where the work can be found. This is not a promise of what you will do but a clear indication of where to find the work of what you have done already in order to improve and following the advice from next steps.

THE PEEL PARAGRAPH

PEEL

***Point*: Your argument in one line.**

I think that ….. It is clear that…… In my opinion ….. The point is that….

***Evidence*: Reasons or evidence that back your argument up.**

This is because …… This is evidenced by ….. For instance ….. We can see that...

***Explanation*: Explain how your reasons or evidence prove your point.**

Therefore, this proves that….. because …… This shows that ….. This demonstrates…..

***Link*: Mini conclusion answering the question.**

In conclusion …… Overall …… To conclude ….. Finally…… To summarise…

How can I improve my writing?

Point

- I have included a point in my paragraph.
- The reader will be able to understand my entire argument just by reading the point.

Evidence

- My paragraph has at least two pieces of evidence.
- My evidence is in full sentences, carefully chosen and clearly helps prove my argument.
- My evidence is specific and detailed (includes quotes/facts/names/events/key words).

Explanation

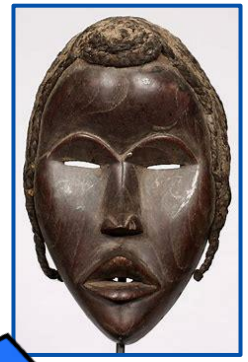
- I explain how my evidence proves that my argument is right.
- My explanation is at least two or three sentences long.
- I have added some balance to my argument and shown how there may be other reasons or arguments to the question.
- I have explained why my answer is the right one rather than any of the other reasons, ideas or arguments.

Link

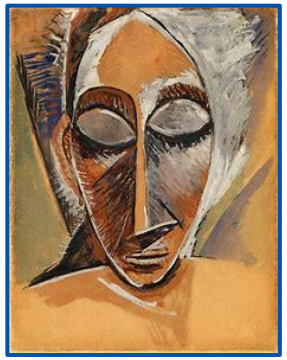
- I have included a link sentence in my paragraph.
- My link sums up my argument.
- My link uses the information I have used in my paragraph.

SPRING 1

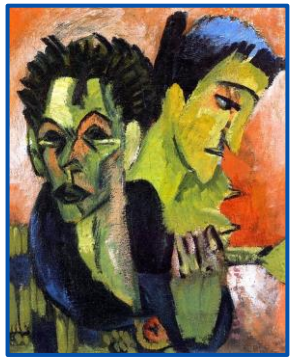
KEY MOVEMENTS - African Tribal Art, Cubism, Primitivism, Expressionism



Liberian Dan Masks



Picasso



Kirchner

Basquait

Key Words

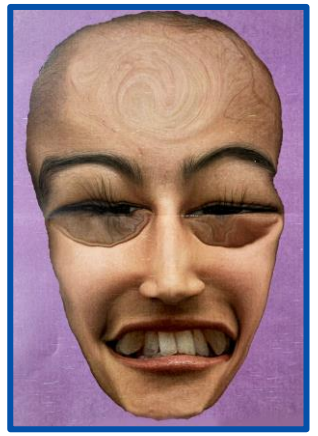
Transform, Convex, Concave, Protrude, Recess, Geometric.

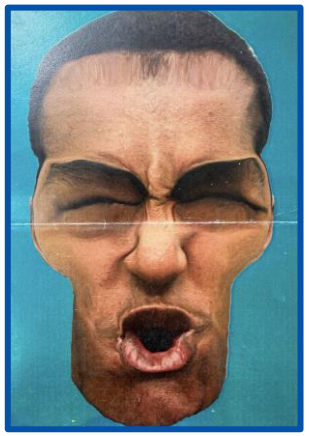
AFRICAN MASK PROJECT - DEVELOPMENT

Drawing from real African masks

Research

Photograph of expressive face and pencil drawing





Facial distortion using Photoshop in preparation for clay construction

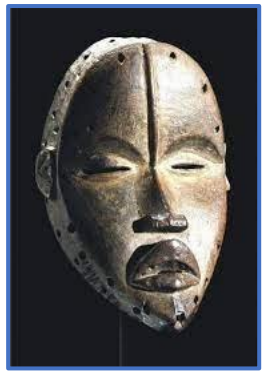
ART

SPRING 2

KEY MOVEMENTS - African Tribal Art


Bembe


Chokwe


Dan


Fang


Punu


Songye

CONSTRUCTING THE MASK - PROCESS


CONSTRUCTING


FIRING


MIXING


DECORATING


FINISHED MASK

Key Words

Template, Transfer, Mould, Convex, Concave, Engrave, Bevel, Emboss, Refine, Tertiary, Ceramics, Kiln, Firing, Biscuit ware.

Design Technology - Plastics

CORE learning

Plastics can be broken down into two categories:
thermoplastics and thermosets

- Plastics have excellent surface qualities. As they are self-finishing, plastics require little or no surface finish. .
- inclusive design – Designing products so that all people can use it regardless of physical ability.

- Thermoset plastic - Set by heat
- Cannot be reshaped once set
- Extremely strong and durable.

- **Thermoplastic -** Soften when heated
- Can be reshaped
- More commonly used in schools

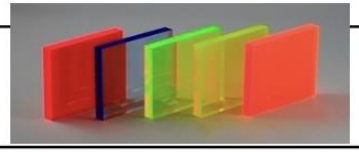
- **Ergonomic design enables us to interact with and use products safely.**

Key images

Fret Saw – Use to slowly cut a profile in your acrylic. WEAR GOGGLES when allowed to use.

- Example of an ergonomic pen to help students avoid wrist and finger pain when writing for hours in examinations.

- *Acrylic is sometimes called 'Perspex" and it comes in many different colours.*



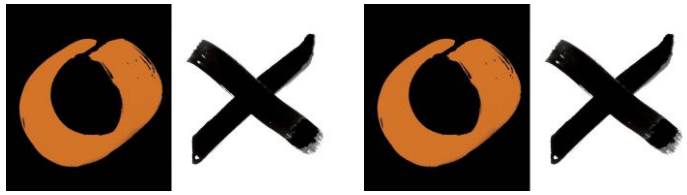
Product Analysis

- ***Aesthetics** – what something looks like – colour, shape, pattern, texture, physical quality, how does the product feel ?*
- Customer – **who will buy this product? Is it aimed at a particular target audience e.g. athletes? Can it be used by people of all abilities?**
- **Costs – how much will it costs to buy and how much does it costs to actually make? Can the product be made for a reasonable price? Is it socially inclusive by price and access/**
- **Environment – Does the product contribute negatively to climate change or global warming? Can it be made using sustainable resources, energy or systems?**
- **Safety - Products must be safe for the user and for those who make the product. This entails a quality control system that checks safety at various points.**
- **Function - What does the product have to do or allow the user to achieve to be successful? E.g. an umbrella must be waterproof.**

Key words

- ***Quality Control – a series of checks to make sure that a product is meeting the specific quality standards***
- **Anthropometric – measurements and dimensions of the human body used to make sure that products are designed to fit us.**
- ***Vacuum forming – a machine used to create plastic shapes using heat and a vacuum suction.***
- Profile – The 2d outline shape of a 3 dimensional product or person.
- ***Biomimicry – Using nature to inspire design ideas such as the shape of a petal to design umbrella section.***

English Term 2A and 2B- Noughts and Crosses



Key Themes:
- Racism
- Inequality
- Justice
- Friendship
- Love

Glossary	Terms
Dual narrative	A story that is told from two different perspectives.
Contrast	A type of opposition between two ideas or objects used to highlight differences.
Focus shift	Changes in what the writer focuses upon as texts develop – e.g. changing from focusing on one scene to another.
Foreboding	A feeling that something bad will happen; fearful apprehension.

Historical and social information

Segregation - Racial segregation is the systematic separation of people into racial or other ethnic groups in daily life. In the US, facilities and services such as housing, medical care, education, employment, and transportation were once segregated along racial lines. Segregation was outlawed by the Civil Rights Act of 1964, the Voting Rights Act of 1965, and the Fair Housing Act of 1968.

Apartheid - From 1948-1994, the South African government enforced apartheid. This meant that black and white people were forced to live separately, go to different schools and black people could not vote. White people got privileges and ruled the country. However, this all came to an end when black people finally got the right to vote and elected Nelson Mandela as president. He had spent 27 years in prison for fighting for black peoples' rights.

Little Rock 9 – A group of African American high-school students who challenged racial segregation in the public schools of Little Rock, Arkansas.

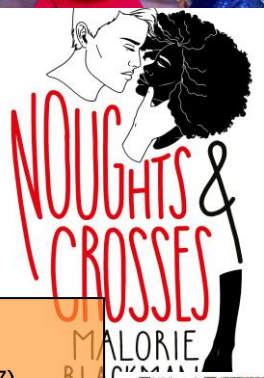
Rosa Parks – A member of a civil rights group which fought for black and white people to be treated the same. She was arrested and taken to jail for a few hours.

Martin Luther King Jr - Martin Luther King Jr. was an American Christian minister and activist who became a spokesman and leader in the American civil rights movement from 1955 until his assassination in 1968.

Malcolm X - Malcolm X was a Muslim minister and activist who became a spokesman and leader in the American civil rights movement until his 1965 assassination. He vigorously supported Black empowerment

Dystopia - An imagined society where there is great suffering and injustice.

Tragedy - A serious plot with a sad ending.

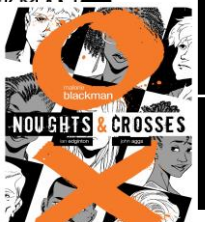


Links to previous units you have studied:

- Tragedy and play writing conventions in Richard III (Year 7)
- Understanding social class and backgrounds in Trash (Year 7)

Links to other units you are going to study:

- Themes of tragedy and fatality in Blood Brothers (Year 8)
- Themes of tragedy and fatality in Macbeth (Year 10)



Key characters

Callum

A nought who has a close relationship with his childhood friend Sephy. With the help of a scholarship, Callum can join Sephy's 'Cross' school, which leads to discrimination and bullying.

Sephy

A cross who has a close relationship with her childhood friend Callum. Sephy is naïve to the brutal world around her. However, she learns to sympathise with Callum's suffering.

Jude

Callum's older brother, who displays violent and aggressive tendencies.

Lynette

Lynette is Jude and Callum's older sister. Previously, she experienced trauma that affected her mentally.

Ryan Callum's father. He does all he can to protect his family.

Meggie

Callum's mother. She was fired as a housekeeper for the Hadley family three years before the novel begins

Kamal

Sephy's father. He is a government official who regards crosses as superior to noughts.

Jasmine

Sephy's mother. Her husband's neglect causes Jasmine to feel lonely, insignificant and powerless

Minerva

Sephy's older sister. They frequently disagree with one another.

In 1954, the landmark Brown v Board of Education case, the Supreme Court finally ruled that segregation could not ever be equal.

In 1955, Rosa Parks refused to give up her bus seat to a white person, inspiring the Montgomery Bus Boycott.

In 1957, nine black students, with military protection, attended a white school in Little Rock. Arkansas.

In 1963, a quarter of a million people marched in the 'March on Washington for Jobs and Freedom' to hear King's 'I Have a Dream' speech.

In 1964, Segregation was outlawed by the Civil Rights Act.

In 1965, Segregation was outlawed the Voting Rights Act. Malcolm X was assassinated.

In 1965, Segregation was outlawed the Fair Housing Act. MLK was assassinated.

In 1994, apartheid ended in South Africa.

Food & Nutrition

Key words

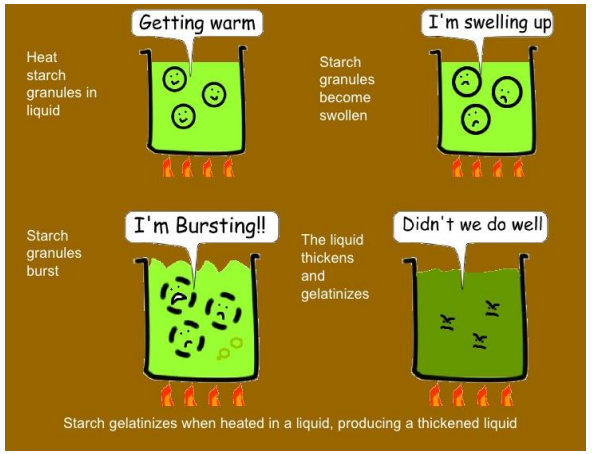
Hygiene Safety & spoilage	Bacteria	Microscopic living organisms that can be harmful to health
	Personal hygiene	Acts of cleanliness to minimise contamination – hand washing, apron, tie up hair
	Food Safety routines	Sanitising bench, clean as you go, washing & drying procedures, correct storage
	Cross contamination	Transfer of harmful bacteria to food from other foods, experiment or people
	Danger Zone	5-63°C; the temperatures between which bacteria can reproduce quickly
	Storage temperatures	Fridge: 0-5 °C. Freezer: -18. Chill to below 8°C within 90 minutes
	Hazard/risk	Biological, chemical or physical agent that could cause risk to health
	4Cs of food safety	Cooking, cleaning, chilling, cross contamination (keep separate)

Evaluation	Success criteria	Basic standards expected to be met when making a product
	Sensory words	Words used to describe a food's appearance, taste, texture and smell
	Quality control	A standard that needs to be checked and met at each stage of producing a product

Food Science – Functional characteristics of Ingredients

Ingredients provide a variety of functions in recipes, such as thickening, eg. flour in a roux sauce (Gelatinisation).

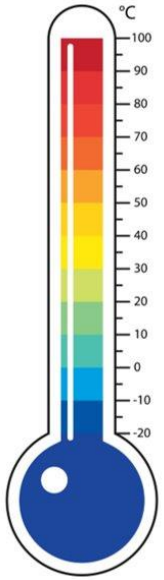
Examples of Gelatinisation
- **Custard**
- **Roux sauces**
- **Gravy**



Temperatures to remember

To reduce the risk of food poisoning, good temperature control is vital:

5-63°C – the danger zone where bacteria grow most readily.
37°C – body temperature, optimum temperature for bacterial growth.
8°C – maximum legal temperature for cold food, i.e. your fridge.
5°C (or below) – the ideal temperature your fridge should be.
75°C – if cooking food, the core temperature, middle or thickest part should reach at least this temperature.
75°C – if reheating food, it should reach at least this temperature. In Scotland food should reach at least 82°C. Remember to reheat food only once!



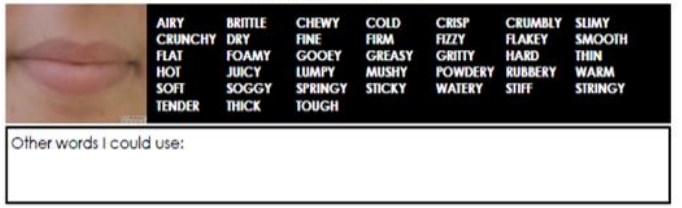
To ensure that a recipe works, it is important to weigh and measure ingredients accurately.

A recipe is made up of 3 parts:
- ingredients: a list of all the ingredients needed (metric);
- equipment: a list of all the equipment;
- method: how to make the dish.

Sensory Analysis Word Bank

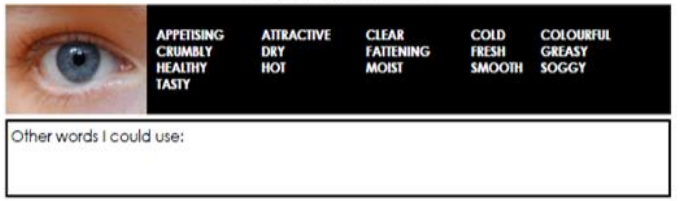
When conducting **sensory analysis** (or taste test) on a food product it is important to be able to describe the food in detail. To help do this use a **range of describing words to show the qualities of a food product**

Texture
(How food feels in your mouth)



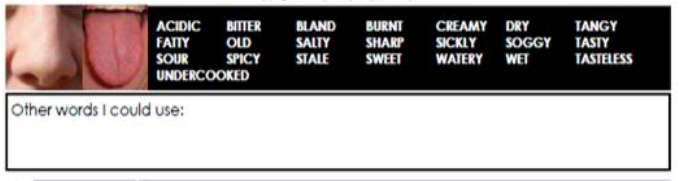
Other words I could use:

Appearance
(Looks—colour and aesthetics)



Other words I could use:

Taste, flavour and smell
(Organoleptic properties)



Other words I could use:

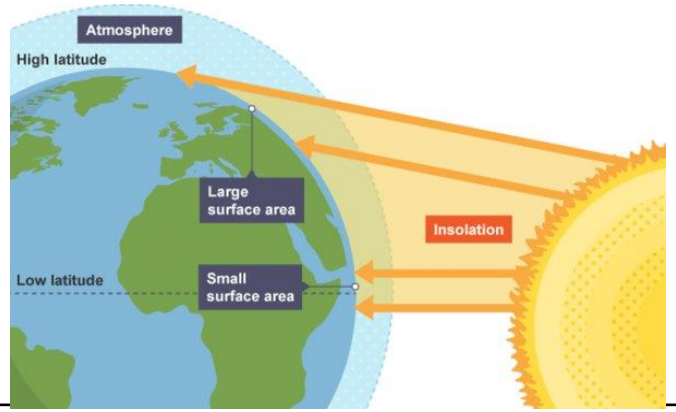
What is the difference between weather and climate?

Weather describes the day-to-day conditions of the atmosphere. Weather can change quickly - one day it can be dry and sunny and the next day it may rain.

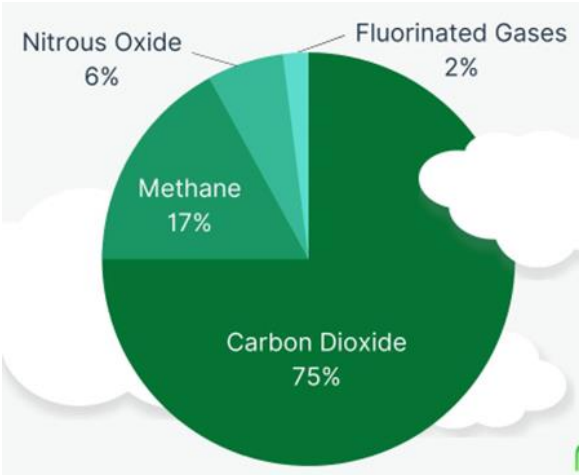
Climate describes average weather conditions over longer periods and over large areas.

Why does the Equator receive more energy than the sun?

Sunlight hits the Earth most directly at the Equator. The curve of the Earth means that sunlight is spread over a wider area the further you move from the Equator. Sunlight hits a smaller surface area at the Equator so heats up quickly compared to the poles.



What are greenhouse gases and how have they influenced global warming?



Some gases in the atmosphere, called greenhouse gases, trap escaping thermal energy. This causes some of the thermal energy to return to the surface and warm it up. This is called the **greenhouse effect**. It is much hotter standing in a greenhouse or sitting in a car with the windows up on a sunny day than a cloudy one for the same reason. As there are more greenhouse gases in the atmosphere, the Earth is getting hotter.

What are the main impacts of climate change?

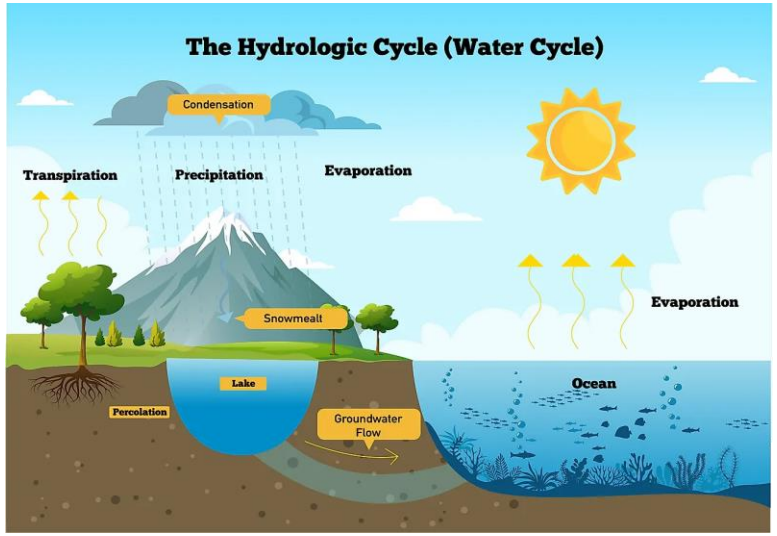
- The ice is melting faster than it can be replaced in the Arctic and Antarctic.
- The oceans warming up – their water is expanding and causing sea levels to rise.
- There are changes in where different species of plants and animals can live
- More extreme weather events e.g., drought and flooding.
- Habitats are being destroyed, leading to higher risks of extinction

Fossil fuels	Fossil fuels are made from decomposing plants and animals. These fuels are found in the Earth's crust and contain carbon and hydrogen, which can be burned for energy. Coal, oil, and natural gas are examples of fossil fuels.
Greenhouse gases	The main gases responsible for the greenhouse effect include carbon dioxide, methane, nitrous oxide, and water vapour
Bush fires	It is a fire in scrub or a forest, especially one that spreads rapidly.
Afforestation	the act or process of establishing a forest especially on land not previously forested
Alternative energy	Alternative Energy refers to energy sources other than fossil fuels. This includes all renewable sources and nuclear.

Enquiry 3: How does a river change as it travels towards the sea?

What is the water cycle?

The water cycle is also known as the **hydrological cycle**. It is called a cycle because water continuously moves around the system. Rivers are part of this cycle.



What are the different stages of a river?

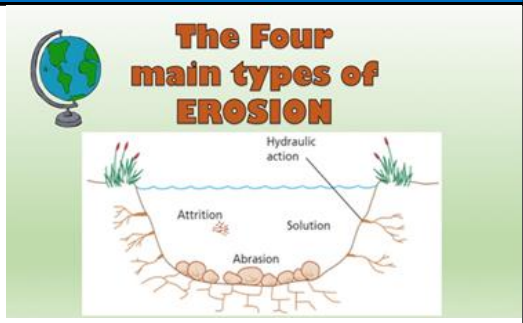
River stages and landforms:

Upper course: Shallow and narrow channel - Waterfall — Interlocking Spur — V-shaped Valley.
Middle course: Meandering River—Ox-bow Lake
Lower course: Wide & deep channel—Estuary — Delta

What processes occur along a river?

Erosion types:

Abrasion: the mechanical scraping of a rock surface by friction between rocks and moving particles during their transport by wind, glacier, waves, gravity, running water or erosion.
Attrition: The particles are knocked about as they are transported, and they gradually become more rounded and reduced in size.
Hydraulic Action: is the erosion that occurs when the motion of water against a rock surface produces mechanical weathering. Water is forced into cracks which forces the material apart.
Solution: Chemicals in the water cause materials in rocks or riverbed to dissolve and erode away.



Transportation types:

Traction: large boulders and rocks are rolled along the river bed.
Saltation: small pebbles and stones are bounced along the river bed.
Suspension: fine light material is carried along in the water.
Solution: minerals are dissolved in the water.

Key terms:

Erosion	Is when land is worn away by another material
Transportation	Is when Rivers pick up and carry material as they flow downstream.
Deposition	Is the process in which sediments, soil and rocks are added to a landform or landmass.
Drainage basin	Is the area of land drained by a major river and its tributaries.
Meander	Is a bend in a river channel.
Ox-bow lake	The remains of the bend in the river
Floodplain	Is a generally flat area of land next to a river or stream
Confluence	Occurs when two or more flowing bodies of water join together to form a single channel.

Why do rivers flood?

Physical causes	Human causes
Geology-Hard impermeable rocks will not allow water to be absorbed. Therefore there will be more surface run-off and a greater risk of flooding. **Climate**- if there has been a prolonged period of heavy rainfall, the ground will get saturated and the risk of flooding will increase. **Relief-** Surface run-off increases with steep slopes therefore river levels will rise leading to the river flooding.	**Urbanisation-** Water cannot pass through many of the materials houses are built from so it stays on the surface and floods. **Deforestation-**Permanent removal for trees. This leads to less infiltration and more surface run-off. **Global warming-** The increase in global temperatures caused by the burning of fossil fuels.

Boscastle is a small coastal settlement in the south-west of England. It flooded in August 2004, washing cars and buildings into the sea and putting peoples' lives in danger.

History: The British Empire

Overarching enquiry question: 'The Empire should be looked back on with pride and enhancing societies around the world.' How far do you agree?

The British empire has been built up over time, beginning in the 16th century. The British wanted to build an empire to expand its economic trade, gain more land and to become more powerful around the world.

The case study that we look at in this topic will focus on the British rule in India. This will include: Reasons why the British wanted to invade India for example, its resources. How the British rule affected the country over time, helping to build but also destroy lives. Why the British eventually left India after the Second World War, due to the amount pressure it was under to let go of its colonies. Most historians argue that the British Empire ended in 1997 when the British officially handed over Hong Kong to China.

Timeline of events	
1730	13 colonies established in America by the British.
1757	The Indian subcontinent is ruled by the British East India Company
1815	Britain takes the Cape Colony in South Africa from the Netherlands after the Napoleonic Wars.
1837	Queen Victoria becomes Queen of England
1839-42	Opium Wars between the British and China begins
1844	China gives the trading port of Hong Kong to Britain
1858	The British government takes complete control of India from the East India Company.
1876-78	Major famine in India, 6 million people die under British rule.
1898	George Curzon becomes Viceroy (governor) of India
20 August 1917	The Montagu Speech. British promise India more freedom for helping in WW1.
13 April 1919	Massacre at Amritsar – 379 unarmed Indians protesting killed by British troops
March-April 1930	Mahatma Gandhi leads the Salt March protesting against British taxation.
1939-1945	Second World War - by the end Britain runs out of money.
1931	Canada and Australia gain independence from Britain, but are part of the Commonwealth.
1947	India divided into two separate countries with Pakistan and gains independence from Britain.
1960	Kenya gains independence
1997	Hong Kong is no longer part of Britain and the Empire according to historians comes to an end.

Key words:	
Empire	A group of countries ruled by a single country
Imperialism	Increasing a country's power over other countries or colonies through military force, or by other means.
Colonialism	A country or area controlled by another country with people who have settled from the controlling country.
Colony	A country or area fully or controlled a little by settlers from a different country.
Commissioner	Someone who is chosen by the government and given authority.
Blockade	Stopping people from being able to trade.
Resources	Supply of money or materials from one country.
Native	Someone who is originally from their place of birth.
Invasion	When an army or country uses force to enter and take control of another country.
Convert	To change someone's beliefs.
Uninhabited	No one has ever lived in the area or land before.
Principles	A belief in a set of rules that should be followed.
Decolonisation	The process of colonies (of one country) becoming politically independent (of that country).
Irrigation	Supply of water to help grow crops
Progress	To move forward and make improvements over time
Enhancing	To make improvements to something

What sources should I know about/use?

National Archives documents on the partition of India (primary) - https://www.nationalarchives.gov.uk/education/resources/indian-independence/

BBC Bitesize British Empire Overview (secondary) - https://www.bbc.co.uk/bitesize/topics/z7kvf82/articles/zpjv3j6

HOBBIES – TACHBIVIM:

Likroh sefer – To read a book

Lirkod – To dance

Lesachek al hamachshev – To play on the computer

Lalechet lakolnoah – To go to the cinema

Lirot Televizyah – To watch the television

Lesachek kadooregel – To play football

Lalechet lekniyot – To go shopping

Lishmoah muzikah – To listen to music

Lischot – To swim

Ivrit

עִבְרִית

Key Words:

I like (male) | Ani ohev | אני אוהב
I like (female) | Ani ohevet | אני אוהבת
I don't like (male) | Ani lo ohev | אני לא אוהב
I don't like (female) | Ani lo ohevet | אני לא אוהבת
Because | Kee | כי
It is | Ze | זה

Reasons for liking / disliking hobbies:

Fun | Kef | כֵּיף
Healthy | Baree | בָּרִיא
Energetic | Energetee | אנרגטי
Enjoyable | Me'haneh | מהנה
Boring | Mesha'amem | משעמם
Interesting | Me'anyen | מענין
Easy | Kal | קַל
Difficult | Kasheh | קשה

Adjectives:

Big | Gadol | גדול
Small | Katan | קטן

The House:

House	Bayit	בית
Flat	Dira	דירה
Bedroom	Cheder Shena	חדר שינה
Living room	Salon	סלון
Dining room	Cheder Ochel	חדר אוכל
Kitchen	Mitbach	מטבח
Bathroom	Sherootim	שירותים
Study	Cheder Avoda	חדר עבודה
Garden	Gina	גינה

In my house there is…
Babayit sheli yesh בבית שלי יש

In my flat there is…
Badira sheli yesh בְּדירה שלי יש

Jewish Studies

The Holocaust /Shoah in Hebrew

This unit is serious and covers sensitive facts and themes. It teaches us the importance of speaking out against prejudice, racism and anti- semitism. We are one community made up of people from all faiths and backgrounds; we celebrate this.

Key Words:

Nazi Holocaust/Shoah the mass murder, by the Nazis, of 6 million Jews and 5 million other people; this happened in Germany and across Europe from 1933-1945

Nazis members of the National Socialist (German Workers') Party, led by Adolf Hitler, which controlled Germany from 1933 to 1945

Prejudice an unfair and unreasonable opinion or feeling, especially when formed wit hout enough thought or knowledge

Racism harmful or unfair things people think, say or do to others, based on their race e.g. antisemitism

Antisemitic a dislike, prejudice or discrimination towards Jews

Persecution unfair or cruel treatment of a group of people over a period of time, usually based on their beliefs

Segregation keeping one group of people separate or apart from one another, usually because of their race or beliefs

Ghetto an area of a city where the Jews were forced by the Nazis to live together in very bad conditions; one of most well-known was in Warsaw, Poland

Yellow star Jews were made to wear this in Germany and across Europe to show people who they were and to make them feel separate

Concentration camps places across Europe where Jews and others were kept prisoners by the Nazis; conditions were very bad and many died of disease

Extermination camps These places were used by the Nazis to kill Jewish people and others, on a large scale; Auschwitz is an extermination camp in Poland

Resistance fighting against something or refusing to accept something. During the Holocaust, Jews and others tried to resist the Nazis. Some formed groups and literally fought back. Others kept their faith when the Nazis tried to destroy it. Some others tried to keep life gong in the ghettos such as through studying or painting what they saw. We look at some incredible people who resisted in different ways:

- The Klausenberger Rebbe
- Janusz Korczak
- Anne Frank
- Oskar Schindler

Challenge:

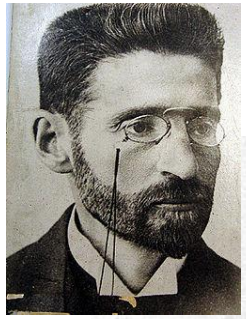
Look up one of these people and learn two facts about them.

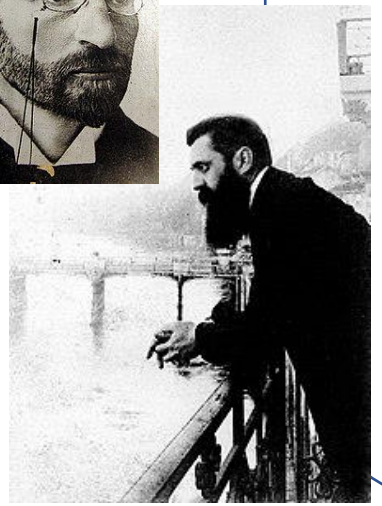
Super Challenge:

Why it is important to learn about and remember the Holocaust today?

Israel

The Land of Israel/Eretz Yisrael - the Holy Land promised to the Jewish people in the Torah. The country they lived in after they were freed from slavery in Egypt and received the Torah on Mount Sinai.
Covenant - a two way promise that can never be broken.
Abraham - the first father of the Jewish people. G-d made a covenant with him, promising the Jewish people the Land of Israel.
Exile - when the Jews were forced to leave the Land of Israel.
Diaspora - countries across the word, outside of Israel, where the Jewish people live (after they were exiled).
The Year 70 - when the Romans destroyed the second Holy Temple in Jerusalem, and the Jewish people were then exiled from the Land.
Medinat Yisrael - the modern State of Israel, established in 1948 by a vote in the United Nations.
United Nations - an international organisation set up in 1954, who aim to solve world problems in a peaceful way.





You will look at the lives of Theodor Herzl and Eliezer Ben Yehuda. This film tells you about Eliezer Ben Yehuda.
https://www.youtube.com/watch?v=jzPDmhihPBM

Challenge: Research some of the achievements of Modern Day Israel; examples include salination, cherry tomato.

Maths - Unit 5 Real-life graphs

Key Concepts

A **distance-time** graph, plots time against the distance away from a starting point.

Speed can be calculated from these graphs by finding the gradient of the graph.

Horizontal lines are sections where the object is stationary.

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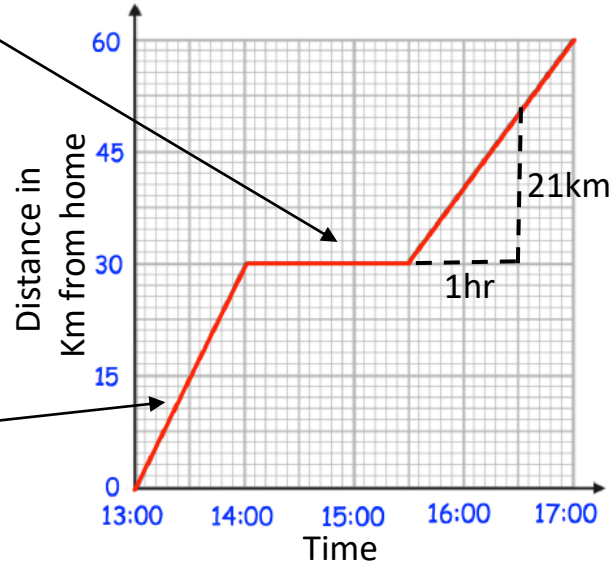
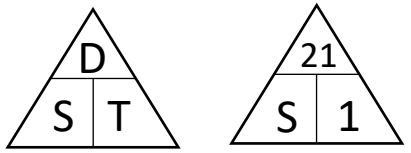
874 - 879

Examples

Horizontal sections are where the object is stationary

Diagonal lines show the object moving away from home or moving closer to home





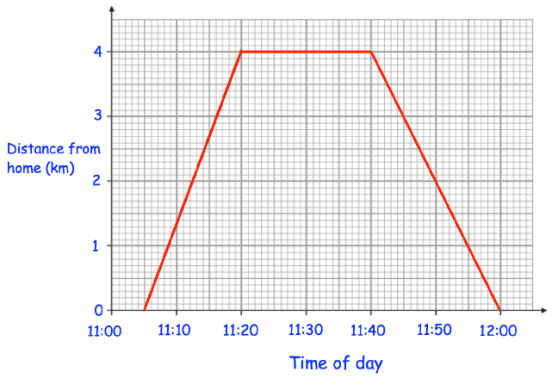
$$Speed = \frac{distance}{time}$$

$$Speed = \frac{21}{1}$$

$$Speed = 21km/h$$

Key Words

Distance
Time
Speed
Gradient
Stationary



A distance-time graph shows the journey of someone from home to the shop and back again.

1) How long were they at the shop for?
2) How far away from home is the shop?
3) How far did they travel in total?
4) What speed did they travel on the way to the shop in km/h?

ANSWERS: 1) 20 minutes 2) 4km 3) 8km 4) 16km/h

Maths - Unit 5 Real-life graphs

Key Concepts

Coordinates in 2D are written as follows:

x is the value that is to the left/right

(x, y)

y is the value that is to up/down

Straight line graphs always have the equation:

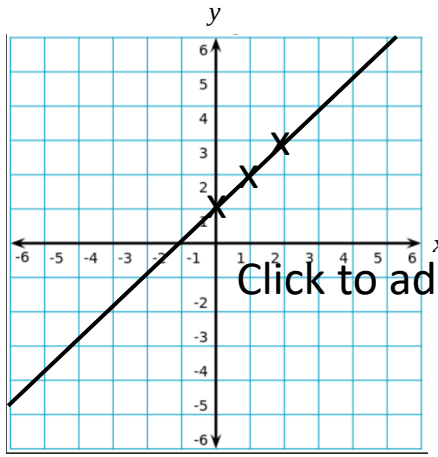
$$y = mx + c$$

m is the **gradient** i.e. the steepness of the graph.

c is the **y intercept** i.e. where the graph cuts the y axis.

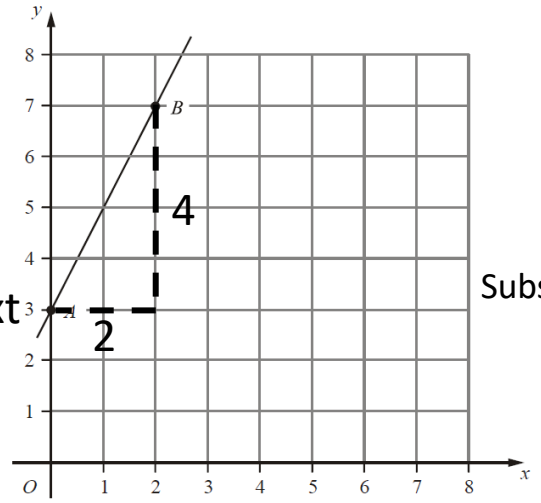
Plot the graph of $y = x + 1$

x	0	1	2
y	1	2	3



Click to add text

Examples



Calculate the equation of this line:

$$y = mx + c$$

$$m = \frac{4}{2}$$

$$= 2$$

$$y = 2x + c$$

Substitute in a coordinate: (2,7)

$$7 = (2 \times 2) + c$$

$$3 = c$$

$$y = 2x + 3$$

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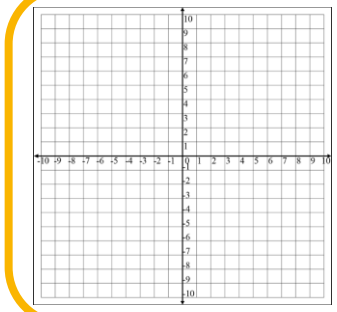
199,200,205,207-211,214

Key Words

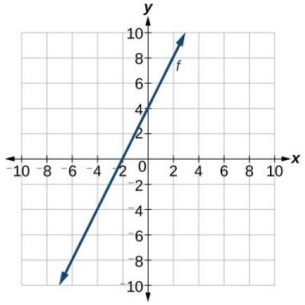
Coordinate

Gradient



1) Plot the line $y = 3x - 2$

2) Find the equation of the line for the attached graph.



ANSWERS: 2) $y = 2x + 4$

Maths - Unit 6 Decimals and ratio

Key Concepts

An amount can be divided into a given ratio.

Red : Green
1 : 3

For every 1 red there are 3 greens.

A ratio can be converted into fractions.

Red : Green
1 : 3

$\frac{1}{4}$ are red and $\frac{3}{4}$ are green.

A woman has £400. She is going to split her money between her two children in the ratio 2:3. How much does each child receive?

No. of boxes (2+3)

400 ÷ 5
= 80

2	:	3
80		80
80		80
£160		80
		£240

Child 1 receives £160 and Child 2 receives £240.

There are boys and girls at a party in the ratio 5:2.
There are 15 more boys than girls.
Calculate the number of people at the party.

No. of extra Boxes (5-2)

15 ÷ 3
= 5

5	:	2
5		5
5		5
5		
5		
5		

7 × 5
= 35 people

Examples

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329, 330, 332-337

Key Words
Ratio
Divide
Parts

1) Ann made some cakes. She made vanilla cakes and chocolate cakes in the ratio 2:9. What fraction of the cakes were chocolate?
2) Share £25 in the ratio 7:3
3) Katy and Becky share some money in the ratio 2:1. Katy receives £10 more than Becky. How much do they each receive?
4) Claire and John share some money in the ratio 3:2. Claire receives £18. How much does John receive?

ANSWERS 1) $\frac{9}{11}$ 2) £17.50, £7.50 3) £20, £10 4) £12

Maths - Unit 6 Decimals and ratio

Key Concepts

To calculate the **value** for a single item we can use the **unitary method**.

When working with best value in monetary terms we use:

$$Price\ per\ unit = \frac{price}{quantity}$$

In recipe terms we use:

$$Weight\ per\ unit = \frac{weight}{quantity}$$

If 20 apples weigh 600g. How much would 28 apples weigh?

600 ÷ 5 = 120g → weight of 4 apples

7 × 4 = 28 apples 7 × 120 = **840g**

Box A has 8 fish fingers costing £1.40.
Box B has 20 fish fingers costing £ 3.40.
Which box is the better value?

$$A = \frac{£1.40}{8} = £0.175 \qquad B = \frac{£3.40}{20} = £0.17$$

Therefore Box B is better value as each fish finger costs less.

Examples

The recipe shows the ingredients needed to make 10 Flapjacks.
How much of each will be needed to make 25 flapjacks?

Ingredients for 10 Flapjacks
80 g rolled oats
60 g butter
30 ml golden syrup
36 g light brown sugar

Method 1: Unitary

80 ÷ 10 = 8
8 × 25 = **200g**

30 ÷ 10 = 3
3 × 25 = **75g**

60 ÷ 10 = 6
6 × 25 = **150g**

36 ÷ 10 = 3.6
3.6 × 25 = **90g**

Method 2: 5 flapjacks

80 ÷ 2 = 40
40 × 5 = **200g**

30 ÷ 2 = 15
15 × 5 = **75g**

60 ÷ 2 = 30
30 × 5 = **150g**

36 ÷ 2 = 18
18 × 5 = **90g**

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335-337

Key Words

Unitary
Best Value
Proportion
Quantity

Ingredients to make 16 gingerbread men
180 g flour
40 g ginger
110 g butter
30 g sugar

1) How much will we need to make 24 gingerbread men?

2) Packet A has 10 toilet rolls costing £3.50.
Packet B has 12 toilet rolls costing £3.60.
Which is better value for money?

3) If 15 oranges weigh 300g. What will 25 oranges weigh?

ANSWERS 1) 270g flour, 60g ginger, 165g butter, 45g sugar 2) Packet B 30p per roll 3) 500g

Maths - Unit 7 Lines and angles

Key Concepts

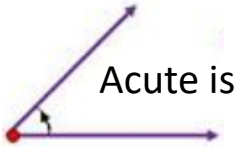
Regular polygons have equal lengths of sides and equal angles.

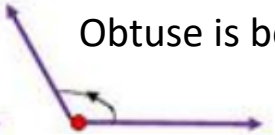
Angles in polygons
Sum of interior angles
$= (number\ of\ sides - 2) \times 180$

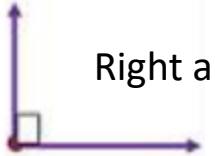
Exterior angles of **regular** polygons
$= \frac{360}{number\ of\ sides}$

Types of angle
There are four types which need to be identified – acute, obtuse, reflex and right angled.

Examples

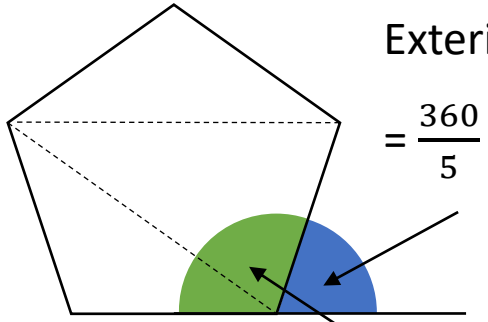

Acute is less than 90°


Obtuse is between 90° and 180°


Right angled is 90°


Reflex is between 180° and 360°

Regular Pentagon



Exterior angles
$= \frac{360}{5} = 72^o$

Sum of interior angles
$= (5 - 2) \times 180$
$= 540^o$

Interior angle = $\frac{540}{5} = 108^o$

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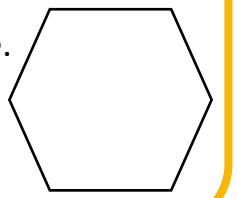
455, 456, 560-564

Key Words
Polygon
Interior angle
Exterior angle
Acute
Obtuse
Right angle
Reflex

Questions
1) Calculate the sum of the interior angles for this regular shape.
2) Calculate the exterior angle for this regular shape.
3) Calculate the size of one interior angle in this regular shape.



ANSWERS: 1) 720° 2) 60° 3) 120°

Maths - Unit 7 Lines and angles

Key Concepts

Angles in a **triangle equal 180°**.

Angles in a **quadrilateral equal 360°**.

Vertically opposite angles are equal in size.

Angles on a **straight line equal 180°**.

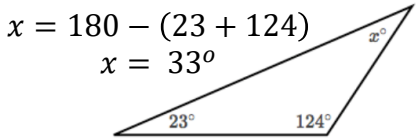
Base angles in an isosceles triangle are equal.

Alternate angles are equal in size.

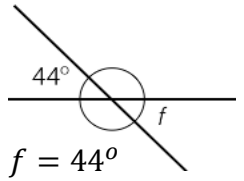
Corresponding angles are equal in size.

Allied/co-interior angles are equal 180°.

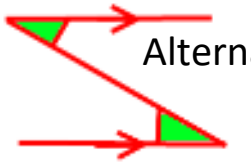
Examples



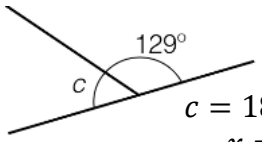
$x = 180 - (23 + 124)$
$x = 33^o$



$f = 44^o$

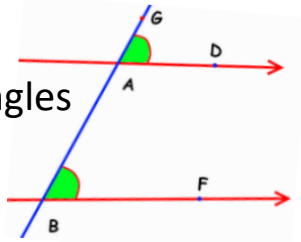


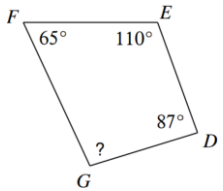
Alternate angles are equal



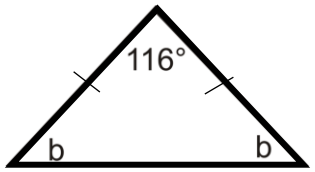
$c = 180 - 129$
$x = 51^o$

Corresponding angles are equal

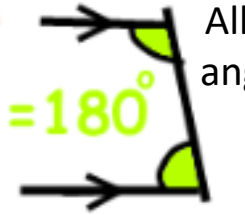




$? = 360 - (65 + 110 + 87)$
$? = 98^o$



$b = (180 - 116) \div 2$
$b = 32^o$



Allied/co-interior angles equal 180°

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477-480, 481-483

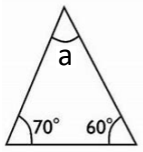
Key Words

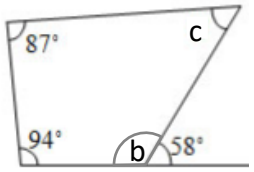
Angle
Vertically opposite
Straight line
Alternate
Corresponding
Allied
Co-interior

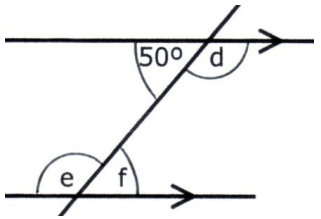
Questions

Calculate the missing angle:

a)







ANSWERS: 1) a=50° 2) b=122° c=57° 3) d=130° e=130° f=50°

Performing Arts: Drama

Unit: Commedia Dell' Arte

Commedia Dell' Arte

Commedia dell' Arte is an improvised style of popular comedy that originated in Italy in the 16th–18th centuries. Originally it was performed in town centres and moveable stages. Stock characters are used to create easily recognisable characters which are performed with the aid of a mask. Actors adapted their comic dialogue and action according to a few basic plots (commonly love intrigues) and to topical issues.

Different masks are used in Commedia dell' Arte. Here are some examples of masks made by your peers.

Each character is performed with a different part of the body leading how you walk. This diagram not only shows this but also the status of the characters.

Commedia dell' Arte

Commedia performances must:

- Have a Lazzi
- Use improvisation
- Use stock characters

Commedia stock characters must:

- Be exaggerated
- Talk in gibberish
- Exaggerate status
- Wear masks

Key Command Words:

Describe: Tell me what you see or do
Explain: Tell me why you did it or why they did it
Evaluate: Tell me how it could be improved or what was good about it.

Where does Commedia dell' Arte come from?

Performing Arts: Drama

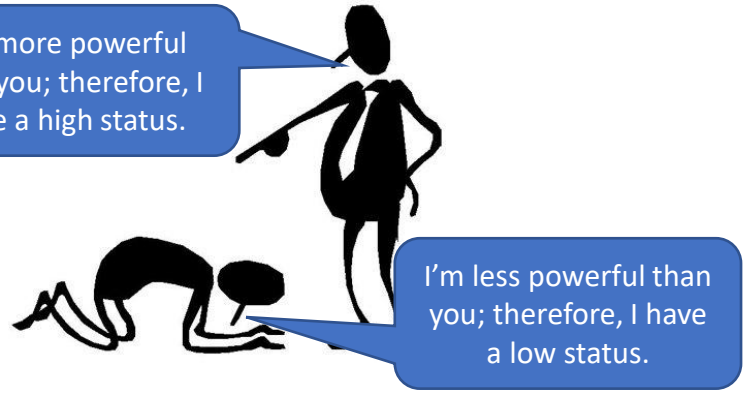
Unit: Commedia Dell' Arte

Lazzi Rules

•A Lazzi is a **short comic break** in the action.

•They usually involve the **low status characters** and involve lots of foolery.

•They are inspired by the action but do not further it in any way.



Useful Revision:

A historical overview of Commedia dell' Arte:
https://www.youtube.com/watch?v=mqlfTG40RUI

The world of Commedia dell' Arte:
https://www.youtube.com/watch?v=h_0TAXWt8hY&t=222s

How to create commedia dell' Arte characters:
https://www.youtube.com/watch?v=JJEwuurzDe4

Vocal Skills	Definition	Example
P - Pitch	How high or low you voice sounds.	High squeaky voice or low deep voice.
I – Intonation	How clearly you speak	Mumbling or saying every word clearly
P - Pace	The speed in which you speak	Fast or slow
E – Emphasis	The importance you put on certain words	Using volume or pause to highlight a word. I *(pause)* **AM** right!
D - Dynamics	The volume that you are speaking at.	Loudly or quietly
B – Breath Control	How many breaths you take in a sentence.	Do you take lots of breaths or none at all
A - Accent	The way you pronounce words	America, Australian, Jamaican, British
P - Pause	How many breaks you take	I am *(pause)* NOT going to see you again

Physical Skills	Definition	Example
P - Posture	The way you hold yourself	Hunched back, straight back
E – Eye Contact	Where you are looking	Staring, looking at the floor, quickly looking
T - Tension	How tight or relaxed your body is	Clenched fists, locked knees
F – Facial Expression	How you are modifying your face	Closed Eyes, Wide open mouth
L - Levels	The heights used within the performance.	Standing on toes, crawled up in a ball
A - Action	Movements that have specific meanings	Thumbs up, waving, peace sign
G - Gait	The way you are walking	Skipping, stomping, floating
S - Space	The area that you are using	Are you standing close or far away

Performing Arts: Music

Unit: Bhangra Music

Bhangra music

Bhangra music is the classical music of India. It has two major traditions: the North Indian classical music known as Hindustani and the South Indian expression known as Carnatic.

Dynamics

Generally, increase throughout a Raga performance starting of softly (piano) during the ALAP and JHOR with a gradual crescendo in the KHALA and very loud at the end (fortissimo).

Characteristics Rhythms and Meters, Traditional rhythm patterns & Repetition and Ostinato

- Based on TALAS (cyclic/repeating rhythm patterns) played by the TABLA.
- One single TALA used for a piece. Each TALA has a certain number of beats (regular and irregular TALAS are used).
- The most popular TALA is called TINTAL- 16 beats per cycle. Over 300 TALAS. HAND CLAPS and WAVES are used to mark certain beats.

Form & Structure

- FOUR sections (no breaks)
- ALAP — melody and drone, free un-metred, slow, soft.
- JHOR — melody and drone, increase in speed, more rhythmic
- JHALA — melody and drone, more speed and improvisation
- GAT - Tabla enters, tempo and dynamics increase.

Pitch & Melody and Harmony & Tonality

- Melodies based on RAGAS (scale/mode) — patterns of notes with strict rules about usage.
- RAGAS (scales) associated with a particular time of day or night or season and have different MOODS.
- Some RAGAS (scales) vary in ascent and descent e.g. Raga Vibhas (morning Raga); Raga Behag(evening Raga).
- RAGAS are written down used SARGAM notation.

Texture

There are three basic layers to the texture of Indian Classical Music:

MELODY (Voice, Sitar, Sarangi, Bansuri, Esraj or Sarod performing the melodic form of the Raga);

DRONE (Tanpura or Harmonium performing long sustained noted);

RHYTHM (Tabla performing the rhythmic Tala).

The opening three sections of a Raga performance all have a 2-PART TEXTURE (melody and drone), the final Gat section when the Tabla enters performing the Tala has a 3-PART TEXTURE.

Tempo

- ALAP — slow and free un-metred rhythm with no recognisable beat or pulse.
- JHOR— speeds up and becomes more rhythmic.
- JHALA — further increase in tempo and greater sense of metre.
- GAT — very fast tempo with complex rhythms.
- TEMPO RUBATO sometimes added by performers during performance.

Bhangra Music

*Bhangra started as a folk dance to celebrate the coming of the harvest.

*It is now performed throughout the year, throughout the world for many weddings, parties and special occasions.

*Dancers wear bright, colorful and baggy clothes, the men wear turbans, and the women wear beautiful jewelry.

*People dance and sing to the sound of the dohl drum. The drum is worn around the body and can be really big. Both ends of the drum are played with two sticks. One is called the daga and plays the bass beat and the tili plays the treble

*Bhangra music fuses pop music, film music and folk music.

Tanpura

Sitar

Sarod

Sarangi

Harmonium

Bansuri

Singer

Tabla

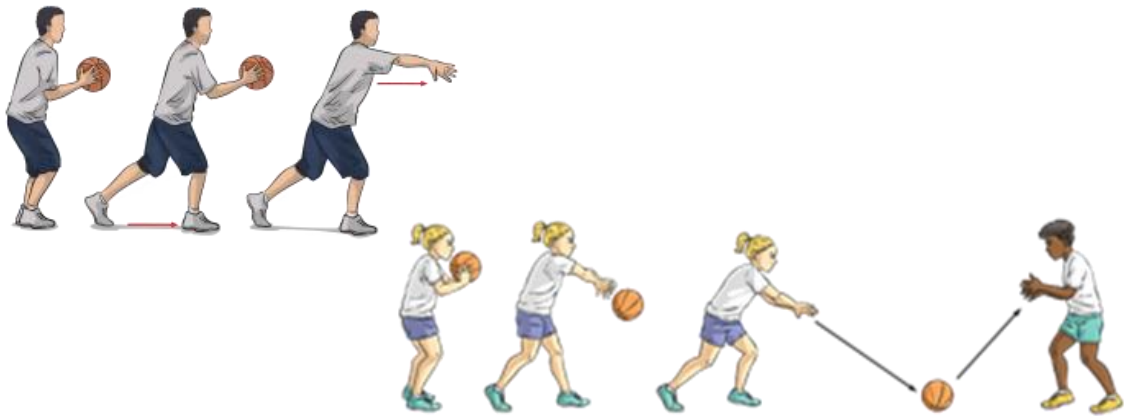
Term	Definition	Example
Raga	A scale.	A selection of notes.
Tala	A metric cycle with a specific number of beats.	How long the piece of music is run for.
Drone	In a performance of Indian classical music, the drone is usually the first and last sound to be heard.	The tanpura, a long necked, fretless lute whose open strings are plucked in a continuous loop throughout both performance and practice.
Improvising	Create and perform spontaneously or without preparation.	Improvisation is an important component of Indian classical music, in which the melodic framework (the raga) is explored.
Sitar	The sitar is a plucked stringed instrument, originating from the India, used in Hindustani classical music.	The Sitar is a common instrument in classical Indian music.
Tabla	A tabla is a pair of twin hand drums from the India.	The Tabla is played sitting on the floor.
Harmonium	Harmonium is a stringed instrument made of wood, metal, brass, and cloth. A kind of a portable wooden box, it was originated in West Bengal.	The Harmonium requires air blown through it in order to be played.

PE - Basketball

Key Vocabulary

Dribbling	Head up, spread fingers and fingertips, waist height.
Chest pass	W grip, step, chest to chest, follow through, short distance.
Bounce pass	W grip, step, chest to chest, follow through, bounce before player, short distance.
Pivoting, footwork and jump stop	Landing on alternative feet- first foot to land is the static pivoting foot. Landing on simultaneous feet- either foot can become static pivoting foot/can be used at the end of a dribble or when receiving a pass. On the move- release ball before third step.
Set shot	Knees bent, dominant foot slightly in front of other, strong hand at bottom, supporting hand on side, and elbow at 90 degrees.
Lay up	Strong hand at bottom, supporting hand on side, keep it high, right hand dribble, step right, jump left aim for top right hand corner of box, left hand dribble, step left, jump right, aim for top left corner of box.
Defending	Man to man- knees bent, back straight, head up, arms out, watch opponent's belly-button.
Attacking	Dribble into space, screen defenders, dribble out wide and quick inward passes, drive towards ball to receive pass losing defender, overload zone defence.

Key Images



Challenge Questions

Watch a video of a NBL game, identify key players and their positions and write what they did well.

Dig Deep & Discover

Find local clubs (P10)
https://www.redbridge.gov.uk/media/7611/sports-club-directory.pdf

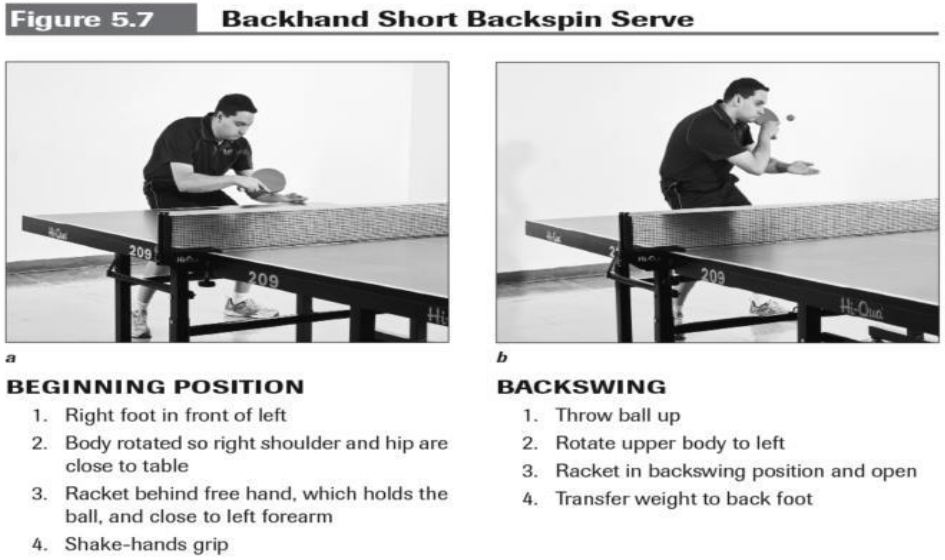
https://www.basketballengland.co.uk/

PE - Table Tennis

Key Vocabulary

Dribbling	**Head up, spread fingers and fingertips, waist height.**
Backhand push	The ball is played on the backhand side, with a flat bat face to push the ball over the net, and move the opponent consistently out of position
Forehand push	The ball is played on the forehand side, with a flat bat face to push the ball over the net, and move the opponent consistently out of position
Serve (Develop)	The first shot to begin a rally. The serve is alternated between the two players, after two serves the service goes to the opposite player regardless of the winning shot
Forehand topspin	A shot played on the forehand side, contact cuts on an angle to the ball to make it move differently, and move the opponent consistently out of position
Doubles/Singles play	Working alone or as a two to outwit the opponents.
Scoring and Umpiring	The performer who keeps track of the game situation.

Key Images



Challenge Questions

What ways can we vary the service to an opponent?

When playing the forehand push how should bat be positioned to help the balls land in court consistently?

What tactics can we use to outwit an opponent in Doubles /Singles?

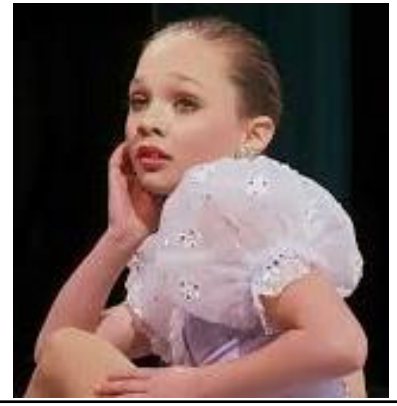
Dig Deep & Discover

Find local clubs (P26)
https://www.redbridge.gov.uk/media/7611/sports-club-directory.pdf

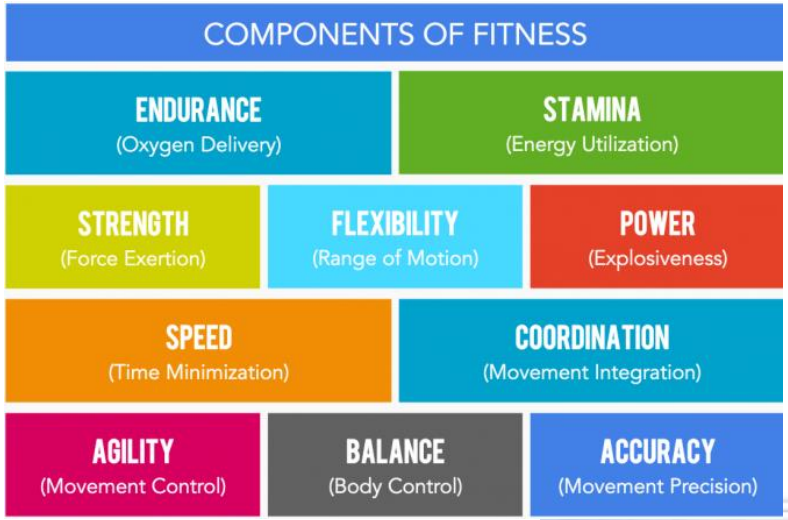
https://www.ittf.com

https://www.tabletennisengland.co.uk

PE - Dance

Key Vocabulary	Key Images
Unison – Two or more dancers performing the same movement at the same time. **Isolation** – An independent movement of part of the body. **Control** – The ability to start and stop improvement, change direction and hold a shape efficiently. **Coordination** – The efficient combination of body parts. **Projection** – The energy the dancer uses to connect with and draw in the audience. **Facial Expression** – Use of the face to show mood, feeling or character.	 
Challenge Questions	**Dig Deep & Discover**
What are the three most important traits a dancer should have and why? How do you successfully warm-up before a dance lesson? Research and summarise a what a flash mob dance is and why they are performed.	Find local clubs (P15) https://www.redbridge.gov.uk/media/7611/sports-club-directory.pdf https://www.britishdancecouncil.com/ https://www.onedanceuk.org/ https://www.adfp.org.uk/

PE - Fitness

Key Vocabulary	Key Images
Key Skills: Components of Fitness/ Tests for Components of Fitness:- **Muscular endurance**- The ability to use muscles repeatedly for a long period. 1 Minute Sit-Up Test & 1 Minute Press-Up Test **Cardiovascular/Aerobic Endurance** - Being able to exercise the whole body for a long period using oxygen and nutrients efficiently. Cooper 12-Minute Test; multi stage & Harvard Step Test **Muscular Strength**- The amount of force that muscle produces in one contraction. Grip Dynamometer **Flexibility-** The range of movement possible at a joint. Sit and Reach Test **Agility**- The ability to change direction at speed (quickly) without losing balance. Illinois Agility Run Test **Co-ordination**- The smooth flow of movement needed to perform a motor task efficiently and accurately using two or more body parts together. Alternate Hand Wall Toss Test **Power**- Speed X Strength Vertical Jump Test Reaction time- How quickly someone can react to a stimulus. Ruler Drop Test **Speed**- How quickly an object or human moves from 'A' to 'B'. 30m/40mSprint Test	 
Challenge Questions	**Dig Deep & Discover**
Link the Components of fitness to specific Sports/activities. Describe Training that could be undertaken to improve components of Fitness.	https://www.health.com/fitness https://www.rslonline.co.uk/

Science Term 2 - Energy

Energy adds up

The **law of conservation of energy** states that energy cannot be created or destroyed, only transferred.

total energy before = total energy after

Transferring energy

Light, sound, and electricity are ways of transferring energy between different stores.

Energy and temperature

- **Thermometers** measure temperature in degrees **Celsius (°C)**.
- Temperature measures the *average* energy.
- **Thermal energy** measures the total energy.

A warm bath has more thermal energy than a heated kettle, even though the kettle has a higher temperature.

Heating solids, liquids, and gases

- As we heat things the particles gain more **kinetic energy**, and vibrate more or faster.
- The energy needed to heat an object depends on the mass, material and temperature rise.

Equilibrium

Equilibrium is when objects have the same thermal energy.

Energy and power

Renewable resources

Renewable resources produce greenhouse gases when built, not when used, and will not run out.

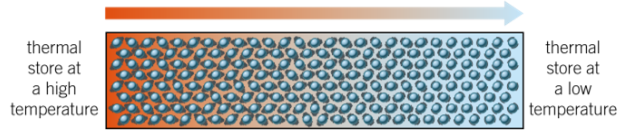
For example, wind, tidal, wave, hydroelectric, geothermal, biomass, and solar powers.

Particles

Thermal energy can be **transferred** by **conduction, convection** or **radiation.**

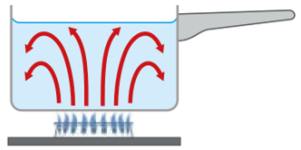
Conduction

- Particles collide into others when they vibrate.
- Occurs in solids.



Convection

- Occurs in liquids or gases.
- The part in contact with the heat source gets hotter. The particles move faster, causing them to become further apart, and a decrease in density.
- The hot part then rises, and cooler, denser parts fall and take its place at the bottom.
- They now heat, so the cycle continues. We call this a **convection current**.



Energy and power

Power is the rate of energy transfer – how much energy is transferred each second.

Energy bills

- Energy bills are measured in 1 **kilowatt** per hour (kWh).
  For example, a 2 kW device uses 4 kWh.
- A bill covers the cost of the fuel used at the power station, the power station, staff, and infrastructure.
- To convert kWh this to joules, convert the time to seconds.
  For example, 2000 J/s × 7200 s = 14 400 000 J

Reducing bills

- Use fewer appliances or more efficient ones.
- Insulated houses lose less thermal energy so don't need to use as much power.

Work energy and machines

Work done (J) = force (N) × distance (m)

Simple machines like **levers** and **gears** can make it easier to do work but you still get the energy out that you put in.

Radiation

- **Infrared radiation** transfers energy without particles – it is a wave.
- All objects emit radiation.
- The amount depends on their temperature and the surface (colour and rough/smooth).
- Radiation can be **absorbed** or **reflected**.

The current created is sent to our offices, factories, and homes down long cables.

These fossil fuels produce **greenhouse gases**, such as carbon dioxide.

Fossil fuels are burned to heat water, which produces steam.

The steam turns a turbine, which spins a generator.

Non-renewable resources

Non-renewable resources include the **fossil fuels** coal, oil, and gas. These were formed millions of years ago from fossilised remains.
These are non-renewable because you cannot reuse them, and they will eventually run out.
Coal, oil, or gas are used to run **thermal power stations**.

Food and fuels

- There is energy in the **chemical stores** associated with food and fuel.
- Energy is measured in **joules (J)**.
- You need different amounts of energy for different activities.

The energy in food varies.
For example:
- *apple – 200 kJ per 100 g*
- *chips – 1000 kJ per 100 g*

The energy used when we do things varies too.
For example:
- sitting – 6 kJ per minute
- running – 60 kJ per minute

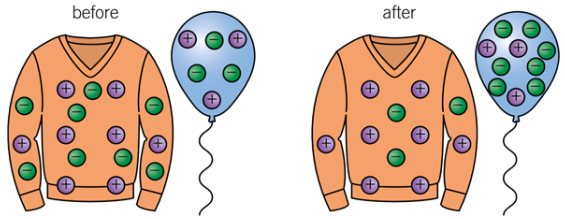
Key terms Make sure you can write definitions for these key terms.

absorb *chemical store* *conduction* *convection* *convection current* *equilibrium* *fossil fuel* *gear* *greenhouse gas* *infrared radiation* *insulator* *joule* *kilowatt* *kinetic energy* *law of conservation of energy* *lever* *non-renewable* *power station* *radiation* *renewable* *reflect* *thermal energy* *thermometer* *work*

Science Term 2 – Electricity and Magnetism

Charging up

Static electricity: by rubbing **insulators** together **electrons** are transferred, which gives the objects magnetic charges.



Like charges **repel**, and opposite charges **attract**.

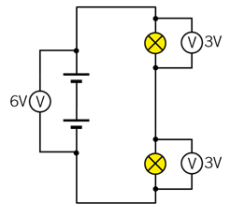
Charged objects have **electric fields** around them. These lines show how a positive charge will act.

Series and parallel circuits

In a series circuit all of the components are connected in one loop. If one component or wire breaks, **current** stops flowing everywhere.

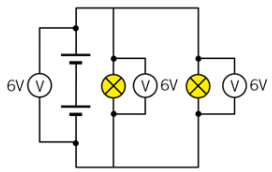
Series circuits

- contain only one loop
- the current is the same everywhere
- the **potential difference** across each component adds up to the potential difference across the battery



Parallel circuits

- contain multiple branches
- currents in all the branches add up to make the total current
- the potential difference across each component is the same as the potential difference across the battery



Resistance

The **resistance** is a measure of how easy it is to pass through a component.

conductors – low resistance

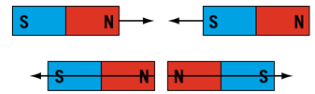
insulators – high resistance

Resistance is calculated by measuring the potential difference and the current.

The unit for resistance is the **ohm (Ω)**.

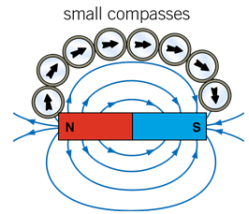
Magnets

- **Magnets** have north and south poles.
- Opposite poles attract, and the same poles repel:



Magnetic fields

- A magnet has a field around it.
- You can see the field around a bar magnet with a small compass or iron filings.
- If the lines are close together the field is stronger.



- The Earth has a magnetic field, which acts like a big bar magnet, with the south pole at the top of the planet.

Circuits and currents

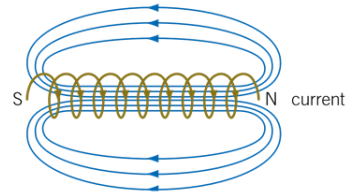
- Current is the amount of charge flowing per second.
- It is measured with an **ammeter** (connected in series).
- The unit for current is the **amp (A)**.

Electromagnets

- **Electromagnets** are only magnetic when they have a flow of current, so they can be turned off.
- They are made by running a current through a coil of wire.
- They usually have an iron core in the middle of the coil, which makes them stronger.

You can make an electromagnet stronger by:

- adding more turns of wire on the coil
- using more current.



Uses of electromagnets

- moving cars or other metal objects
- sorting iron and steel from aluminium
- making motors and speakers
- making levitating trains, which travel much faster as there is no friction

How motors work

Applying a current to a coil of wire makes it electromagnetic.

This causes a force between the coil of wire and the permanent magnet nearby, driving a motor.

Potential difference

- Potential difference is the amount of energy transferred by the charges in the circuit.
- It is measured with a **voltmeter** (connected in parallel). The unit is the **volt (V)**.

Key terms Make sure you can write definitions for these key terms.

ammeter attract conductor current electron electric field electromagnet insulator repel magnet magnetic field line motor north pole ohm parallel potential difference resistance series static electricity south pole volt voltmeter

Science Term 2 – Metals and Acids

Metals and acids

- If a metal reacts with an acid, it produces a **salt** and hydrogen gas.
- All acid compounds have hydrogen in them.
- When the hydrogen is replaced by a metal, the compound is called a salt.

For example, sulfuric acid has the formula H_2SO_4. Copper sulfate has the formula $CuSO_4$ – it is a salt because the copper has taken the place of the hydrogen in sulfuric acid.

The three main acids are hydrochloric acid, sulfuric acid, and nitric acid.
Metals can react with all of these acids to produce a salt and hydrogen gas.

copper + hydrochloric acid → copper chloride + hydrogen
iron + sulfuric acid → iron sulfate + hydrogen
magnesium + nitric acid → magnesium nitrate + hydrogen

Metals and water/steam

- Very reactive metals like sodium will react with cold water to produce a metal hydroxide and hydrogen gas.

sodium + water → sodium hydroxide + hydrogen

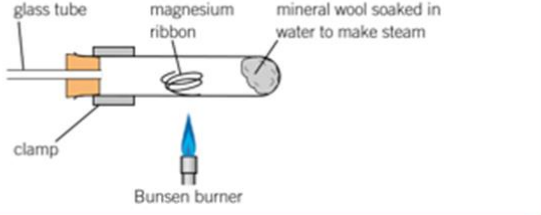
$2Na(s) + 2H_2O(l) \rightarrow 2NaOH(aq) + H_2(g)$

- Other metals like magnesium only react with steam, and produce a metal oxide and hydrogen.

magnesium + steam → magnesium oxide + hydrogen

$Mg(s) + H_2O(g) \rightarrow MgO(s) + H_2(g)$

Magnesium can be reacted with steam using the following experimental set-up.



Testing for hydrogen gas

The gas produced when reacting a metal and a salt can be collected in an upturned test tube, and a test performed to check that the gas is hydrogen.

Insert a lit splint into the upturned test tube – if the gas is hydrogen, there will be a 'pop' sound.

Metals and oxygen

- Many metals will react with oxygen from the air to produce a metal oxide.
- Often, they will need to be heated before they can react.

Metal	Reaction with oxygen
magnesium	burns vigorously
zinc	burns less vigorously
iron	burns
lead	do not burn; when heated, form layer of oxide on surface
copper	
gold	no reaction

Metal displacement reactions

- A **displacement reaction** occurs when a more reactive element takes the place of a less reactive element in a compound.
- In metals, this means that the more reactive metal will become a compound, and the less reactive one an element.

For example, iron is more reactive than copper so:

The reactivity series

Increasing reactivity

most reactive
potassium
sodium
lithium
calcium
magnesium
aluminium
zinc
iron
lead
copper
silver
gold
least reactive

State symbols

- Symbol equations have letters in brackets after each substance.
- These tell you the state of matter of each substance, and are called **state symbols**:

(s) = solid, (l) = liquid, (g) = gas, (aq) = dissolved in water

For example, $H_2O(s)$ is ice, $H_2O(l)$ is water, $H_2O(g)$ is steam, and $NaCl(aq)$ is sodium chloride (table salt) dissolved in water.

Key terms Make sure you can write definitions for these key terms.

acid displacement reaction metal reaction reactivity reactivity series salt state symbol

¿Qué haces con tu móvil?	*What do you do with your mobile?*
Chateo con mis amigos.	*I chat with my friends.*
Comparto mis vídeos favoritos.	*I share my favourite videos.*
Descargo melodías o aplicaciones.	*I download ringtones or apps.*
Hablo por Skype.	*I talk on Skype.*
Juego.	*I play.*
Leo mis SMS.	*I read my texts.*
Mando SMS.	*I send texts.*
Saco fotos.	*I take photos.*
Veo vídeos o películas.	*I watch videos or films.*

¿Qué hiciste ayer?	*What did you do yesterday?*
Bailé en mi cuarto.	*I danced in my room.*
Fui al cine.	*I went to the cinema.*
Hablé por Skype.	*I talked on Skype.*
Hice gimanasia.	*I did gymnastics.*
Hice kárate.	*I did karate.*
Jugué en línea con mis amigos.	*I played online with my friends.*
Jugué tres horas.	*I played for three hours.*
Monté en bici.	*I rode my bike.*
Vi una película.	*I watched a film.*
Salí con mis amigos.	*I went out with my friends.*
No hice los deberes.	*I didn't do my homework.*
ayer	*yesterday*
luego	*later, then*
por la mañana	*in the morning*
por la tarde	*in the afternoon*
un poco más tarde	*a bit later*

Los trabajos en el hotel	*Hotel jobs*
Soy...	*I am...*
camarero/a	*a waiter*
cocinero/a	*a cook*
dependiente/a	*a shop assistant*
esteticista	*a beautician*
jardinero/a	*a gardener*
limpiador(a)	*a cleaner*
peluquero/a	*a hairdresser*
recepcionista	*a receptionist*

Describe tu trabajo	*Describe your job*
¿En qué trabajas?	*What do you do for a living?*
¿Por qué decidiste ser...?	*Why did you decide to be a...?*
Me gusta mucho... y por eso decidí ser...	*I really like... and so I decided to be a...*
Estudié... y me encantó.	*I studied... and I loved it.*
¿Cómo es un día de trabajo típico?	*What is a typical working day like?*
Hablo con clientes.	*I talk to customers.*
Leo mi agenda.	*I read my diary.*
Preparo mis cosas.	*I prepare my things.*
Trabajo con mi equipo.	*I work with my team.*
Voy a la oficina.	*I go to the office.*
¿Qué cualidades tienes que tener?	*What qualities do you need to have?*
Tienes que ser...	*You need to be...*
En mi trabajo, los idiomas son muy importantes.	*In my job, languages are very important.*
Hablo español, alemán e inglés.	*I speak Spanish, German and English.*
¿Cuáles son tus ambiciones para el futuro?	*What are your future ambitions?*
Voy a estudiar / trabajar en...	*I am going to study / work in...*
¡Va a ser guay / fenomenal / flipante!	*It is going to be cool / fantastic / awesome!*

Me gustan las comedias	*I like comedies*
un programa de música	*a music programme*
un programa de deportes	*a sports programme*
un concurso	*a game show*
un documental	*a documentary*
un reality	*a reality show*
una comedia	*a comedy*
una serie policíaca	*a police series*
una telenovela	*a soap opera*
el telediario	*the news*
más... que...	*more... than...*
divertido	*funny*
Informativo/a	*informative*
interesante	*interesting*
aburrido/a	*boring*
emocionante	*exciting*

Palabras muy frecuentes	*High-frequency words*
así que	*so (that)*
más... que...	*more... than...*
mi, mis	*my*
tu/tus	*your*
su, sus	*his/her*
normalmente	*normally*
no	*no, not*
nunca	*never*
a veces	*at times*
a ver/ bueno / pues	*well*
o	*or*
porque	*because*
también	*also, too*
y	*and*
por eso	*so / therefore*
además	*what's more*
primero	*first*
luego	*then*

El telediario (the television news) is always singular in Spanish.
For example:
Me gusta **el** telediario porque **es** informativo

¿Cómo eres?	*What are you like?*
En mi opinión, soy...	*In my opinion, I am...*
Creo / Pienso que soy...	*I think I am...*
Soy muy / bastante...	*I am very / quite...*
ambicioso/a	*ambitious*
creativo/a	*creative*
independiente	*independent*
inteligente	*intelligent*
organizado/a	*organised*
paciente	*patient*
práctico/a	*practical*
responsable	*responsible*
serio/a	*serious*
sociable	*sociable*

SPANISH 

¿Qué tipo de música te gusta?	*What type of music do you like?*
el rap	*rap*
el R'n'B	*R'n'B*
el rock	*rock*
la música clásica	*classical music*
la música electronica	*electronic music*
la música pop	*pop music*
¿Qué tipo de música escuchas?	*What type of music do you listen to?*
Escucho rap.	*I listen to rap.*
Escucho la música de Adele.	*I listen to Adele's music.*
Escucho de todo.	*I listen to everything.*

Opiniones	*Opinions*
Me gusta...	*I like...*
Me gusta mucho...	*I like... very much*
Me encanta...	*I love...*
No me gusta...	*I don't like...*
No me gusta nada...	*I don't like... at all*
la letra	*the lyrics*
la melodía	*the tune*
el ritmo	*the rhythm*
porque es guay, triste, horrible	*because it is cool, sad, horrible*
¿Te gusta la música de One Direction?	*Do you like One Direction's music?*
Me gusta la música de Adele.	*I like Adele's music.*
mi canción favorita	*my favourite song*
mi cantante favorito, favorita	*my favourite singer*
mi grupo favorito	*my favourite group*
En mi opinión...	*In my opinion...*

Opiniones	*Opinions*
¿Te gusta tu trabajo?	*Do you like your job?*
(No) Me gusta (nada)	*I (don't) like my job (at all)*
mi trabajo porque es...	*because it is...*
difícil	*difficult*
duro	*hard*
estimulante	*stimulating*
estresante	*stressful*
interesante	*interesting*
monótono	*monotonous*
repetitivo	*repetitive*
¿Cómo es tu jefe?	*What is your boss like?*
Mi jefe/a (no) es muy educado/a.	*My boss is (not) very polite.*
¿Cómo son los clientes?	*What are the customers like?*
Los clientes son exigentes / maleducados.	*The customers are demanding / rude.*
Mis compañeros son simpáticos.	*My colleagues are nice.*

¿En qué consiste tu trabajo?	*What does your job involve?*
Tengo que...	*I have to...*
contestar al teléfono y ayudar a los clientes	*answer the phone and help customers*
cortar el pelo a los clientes	*cut customers' hair*
cuidar las plantas	*look after the plants*
hacer manicuras	*do manicures*
limpiar habitaciones	*clean rooms*
preparar comida	*prepare food*
servir la comida en el restaurante	*serve food in the restaurant*
vender productos en la tienda	*sell products in the shop*

¿En qué te gustaría trabajar?	*What job would you like to do?*
Me gustaría ser…	*I would like to be…*
Quiero ser…	*I want to be…*
abogado/a	*a lawyer*
cantante	*a singer*
diseñador(a)	*a designer*
enfermero/a	*a nurse*
mecánico/a	*a mechanic*
periodista	*a journalist*
policía	*a police officer*
taxista	*a taxi driver*
Me gustaría…	*I would like…*
No me gustaría (nada)…	*I wouldn't like… (at all)*
trabajar al aire libre	*to work in the open air*
trabajar con animales	*to work with animals*
trabajar con niños	*to work with children*
trabajar en equipo	*to work in a team*
trabajar en una oficina	*to work in an office*
trabajar solo/a	*to work alone*
hacer un trabajo creativo	*to do a creative job*
hacer un trabajo manual	*to do a manual job*

Adjectives

Remember, adjectives must agree in gender and in number with the nouns they describe.

singular		plural	
Masculine	**Feminine**	**Masculine**	Feminine
Creativo	**Creativa**	**Creativos**	Creativas
Responsible	**Responsable**	**Responsables**	Responsables
Práctico	**Práctica**	**Prácticos**	Prácticas
Sociable	**Sociable**	**Sociables**	Sociables
Hablador	**Habladora**	**Habladores**	habladoras

Comparatives

When you want to compare two things, you use the comparative.

Más+ adjective+ que… *more…than…*

The adjective must agree with the noun.

Los realitys son más divertidos que los concursus.
Reality shows are funnier than game shows.

Las series policíacas son más aburridas que las telenovelas.
Police series are more boring than soaps.

¿Con qué frecuencia?	*How often?*
todos los días	*every day*
dos o tres veces a la semana	*two or three times a week*
a veces	*sometimes*
de vez en cuando	*from time to time*
nunca	*never*

Use of the article

Make sure **you use the correct article** and remember to change singular to plural.

Es un concurso- Me gustan los concursos
Es una comedia- Me gustan las comedias

Note: The word **programa is masculine.**
(un programa de…/los programas de…).

Giving opinions

Giving opinions on tv programmes in general.

When you say what sort of programmes you like in general, you need to use the plural form of the programme with "me gustan".

Un concurso- Me gustan los concursos.
Una comedia- Me gustan las comedias.

Note that:
Programa is masculine even though it ends in an a.

Un documental- Los documentales.
Un reality- Los realitys/ Los realities.

SPANISH

¿Cómo va a ser tu futuro?	*What is your future going to be like?*
En el futuro…	*In the future…*
Voy a…	*I am going to…*
ganar mucho dinero	*earn lots of money*
hacer un trabajo interesante	*do an interesting job*
ir a la universidad	*go to university*
ser famoso/a	*be famous*
ser voluntario/a	*be a volunteer*
tener hijos	*have children*
viajar (mucho)	*travel (a lot)*
vivir en el extranjero	*live abroad*
Va a ser (muy) interesante.	*It is going to be (very) interesting.*

When you give opinions with **me gusta**, make sure you use el, la, los, or las before the noun. You may not use "the" in English, but you must use el, la, los or las in Spanish.
Me gusta el rap. *I like rap.*
Le encanta la música pop. *He/she loves pop music.*
However, you don't need el or la if you are saying what style of music you listen to.

Escucho rap. *I listen to rap.*

Use of present and near future

Use the present tense to say what is happening now.
Use the near future tense to say what is going to happen in the future.

Viajo mucho I travel a lot	***Voy a viajar mucho.*** *I am going to travel a lot.*
Ganas dinero. You earn money	***Vas a ganar dinero.*** *You are going to earn money*
Es interesante It is interesting	**Va a ser interesante.** *It is going to be interesting.*

Present tense

You use the present tense to talk about what usually happens.
There are three groups of regular verbs:

-ar		-er		-ir	
Hablar	*To talk*	**Leer**	*To read*	**Compartir**	*To share*
Hablo	*I talk*	**Leo**	*I read*	**Comparto**	*I share*
Hablas	*You talk*	**Lees**	*You read*	**Compartes**	*You share*
Habla	*He/she talks*	**Lee**	*He/she reads*	**Comparte**	*He/she reads*
Hablamos	*We talk*	**Leemos**	*We read*	**Compartimos**	*We share*
Hablaís	*You (pl) talk*	**Leéis**	*You (pl) read*	**Compartís**	*You (pl) share*
Hablan	*They talk*	**Leen**	*They read*	**Comparten**	*They share*

Some verbs are **stem-changing**. Jugar- to play - Juego- I play

Uses of present / preterite

You use:

- The present tense to talk about what usually happens.
- The preterite to talk about past events.

All types of verbs (regular –ar,-er and –ir verbs, stem-changing verbs and irregular verbs) change their endings to show whether they are in the present or the preterite.

Present	Preterite
Monto	*Monté*
Juego	*Jugué*
Veo	*Vi*
Salgo	*Salí*
Hago	*Hice*
Voy	*Fui*

El preterito

You use the preterite to talk about completed events in the past.
Do you remember the endings for each group of regular verbs?

-ar		-er		-ir	
Hablar	*Ta talk*	**Comer**	*To eat*	**Escribir**	*To write*
Hablé	*I talked*	**Comí**	*I ate*	**Escribí**	*I wrote*
Hablaste	*You talked*	**Comiste**	*You ate*	**Escribiste**	*You wrote*
Habló	*He/she talked*	**Comió**	*He/she ate*	**Escribió**	*He/she wrote*
Hablamos	*We talked*	**comimos**	*We ate*	**escribimos**	*We wrote*
Hablasteis	*You (pl) talked*	**comisteis**	*You (pl) ate*	**Escibisteis**	*You (pl) wrote*
Hablaron	*They talked*	**Comieron**	*They ate*	**Escribieron**	*They wrote*

Some verbs have a spelling change in the "I" form: jugué, llegué, navegué.

The verb hacer (to do/to make) is irregular. Learn its preterite form by heart.

Hice	*I did*
Hiciste	*You did*
Hizo	*He/she did*
Hicimos	*We did*
Hicisteis	*You(pl) did*
Hicieron	*They did*

Remember, **-ar**, **-er** and **–ir** verb groups follow different patterns in the present tense and the preterite.
Learn irregular verbs by heart.

	Infinitive	Present	preterite	Near future
Regular verbs	Trabajar Leer Decidir	**Trabajo** **Leo** **Decido**	**Trabajé** **Leí** **Decidí**	Voy a trabajar Voy a leer Voy a decidir
Irregular verbs	Salir Tener Ir Ser Hacer	**Salgo** **Tengo** **Voy** **Soy** **Hago**	**Salí** **Tuve** **Fui** **Fui** **Hice**	Voy a salir Voy a tener Voy a ir Voy a ser Voy a hacer

Tener + que + infinitive = *to have to*

Tener	***to have***
Tengo	*I have*
Tienes	*You have*
Tiene	*He/she has*
Tenemos	*We have*
Tenéis	*You (pl) have*
Tienen	*They have*

Tengo que limpiar habitaciones.
I have to clean rooms.

¿Tienes que contester al teléfono?
Do you have to answer the phone?

Remember that **tener** is an irregular verb. Revise the full verb in the present tense.

El verbo IR

The verb ir (to go) is irregular in the present (voy, vas, va…) and the preterite:

Fui *I went*	Fuimos *we went*
Fuiste *You went*	Fuisteis *you (pl) went*
Fue *he/she went*	Fueron *they went*

Remember that fue can also mean he/she/it was.
Some other verbs are also irregular in the preterite, e.g.
hacer: hago (*I do/make*) hice (*I did/made*)

SPANISH

¿Cómo se forma el *presente* perfecto? *How to form the present perfect*

Present tense of HABER + past participle of the verb you are conjugating

He		
Has		**hablado (hablar)**
Ha	**+**	**comido (comer)**
Hemos		**salido (salir)**
Habéis		
Han		

Ejemplos:
He hablado = *I have spoken*
He estudiado = *I have studied*
He salido = *I have gone out*

¿Cuándo se usa? *When do you use it?*

It's used to say something that you have done recently. Actions which have taken place close to the present. (Today / this morning / This week etc)
Ejemplos:
Hoy he desayunado café – *Today I have had coffee for breakfast*
Esta semana he ido al cine – *This week I have been to the cinema*
Este año he estado de vacaciones en París – *This year I have been on holiday to Paris.*
Nunca he estado en Japón - *I have never been to Japan.*

INCORRECT:
Ayer he desayunado café – incorrecto
El martes he ido al cine - incorrecto