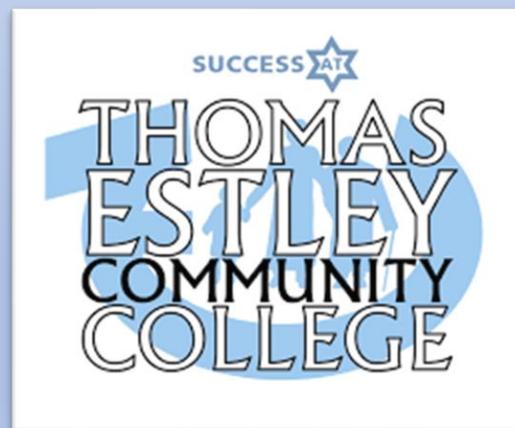


Thomas Estley Community College

Year 9 Summer Term

Knowledge Organiser



What are Knowledge Organisers?

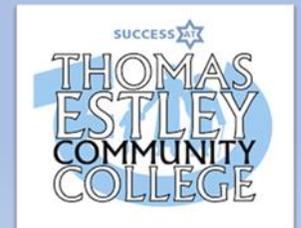
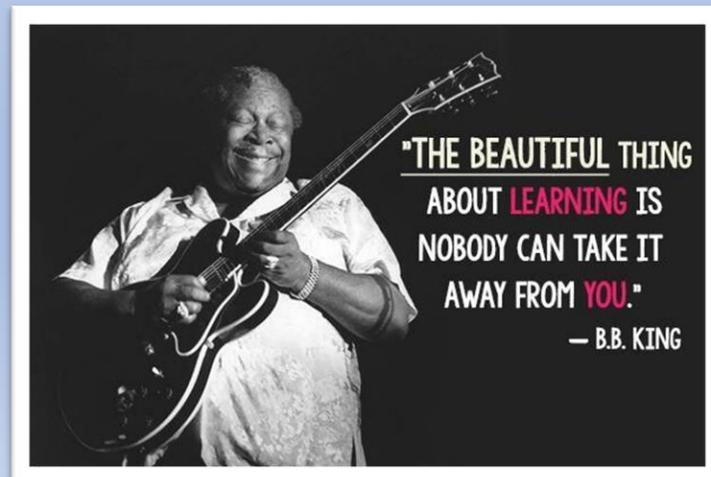
A knowledge organiser is an easy way that each subject can summarise the most important information. Each subject section will include key terms, short explanations, glossary words, diagrams etc making it clear to the student as to what is essential to learn. Each grid has an overall theme and these vary according to the subject being taught.

It will be the students responsibility to keep the knowledge organisers safe and refer to them over the whole academic year.

How will these be used at Thomas Estley?

At Key stage 3, you will be given a knowledge organiser each term. You need to keep these safe in your learning packs that you were provided with at the start of the academic year.

Your subject teachers will use these in a variety of ways, for both class work, remote learning opportunities and homework. They will be used to help with revision for class quizzes and retrieval practice activities. They will also be used for flip learning activities, where subject teachers will ask you to learn some information and then go in to it in more detail in class.



Revision Tips and Tricks!

Record It

Record yourself on your phone or tablet reading out the information. These can be listened to as many times as you want!



Teach it!

Teach someone your key facts and then get them to test you, or even test them!



Flash Cards

Write the key word or date on one side and the explanation on the other. Test your memory by asking someone to quiz you on either side.

Hide and Seek

Read through your knowledge organiser, put it down and try and write out as much as you can remember. Then keep adding to it until its full!



Back to front

Write down the answers and then write out what the questions the teacher may ask to get those answers.



Sketch it

Draw pictures to represent each of the facts or dates. It could be a simple drawing or something that reminds you of the answer.

Post its

Using a pack of post-it notes, write out as many of the keywords or dates as you can remember in only 1 minute!



Practice!

Some find they remember by simply writing the facts over and over again.

Read Aloud

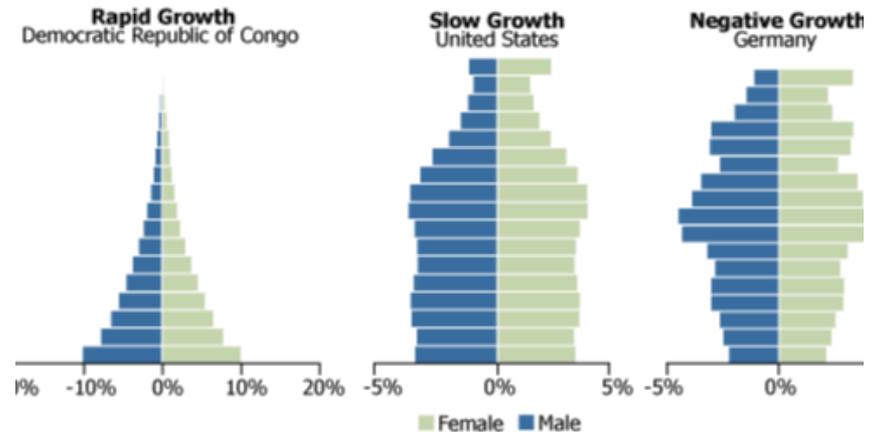
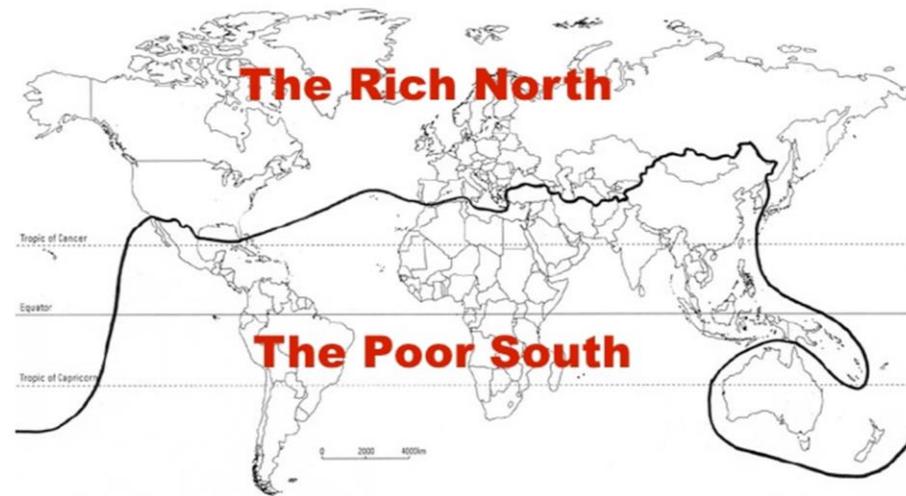
Simply speak the facts and dates out loud as you're reading the Knowledge Organiser. Even try to act out some of the facts – it really helps you remember!



Geography Knowledge Organiser

Year 9: Development

Key Word	Definition
Brandt Line	The dividing line on the world between the 'rich north' and 'poor south', first proposed in 1980.
Development Indicator	A way of comparing development between places.
Inequality	Differences between poverty and wealth, as well as in peoples' wellbeing and access to things like jobs, housing and education.
Trade	The buying and selling of good and services between countries.
Debt	money owed to a person or organization for funds borrowed.
Aid	Assistance provided to other countries in the form of money or food etc.
Population Pyramid	A graphical technique used to display population data about a country.
Economic Structure	Suggests what sectors (primary, secondary and tertiary) people work in.
HDI	Stands for Human Development Index. A number from 0 to 1 and is calculated by combining Life Expectancy, Education and Income.
Sustainable Development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.



Useful websites...

<https://www.bbc.co.uk/bitesize/topics/zg7nvcw>

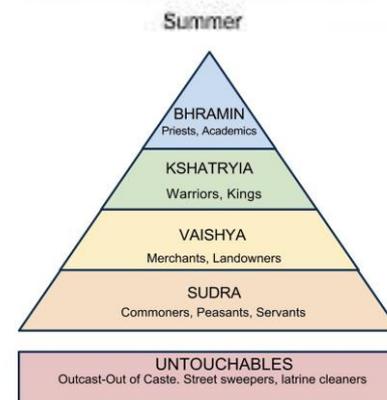
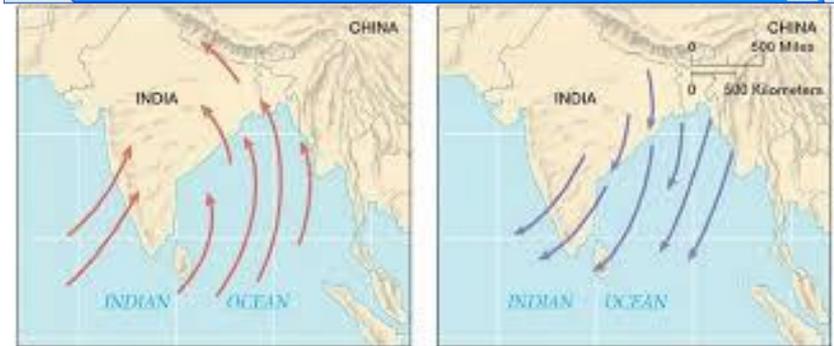
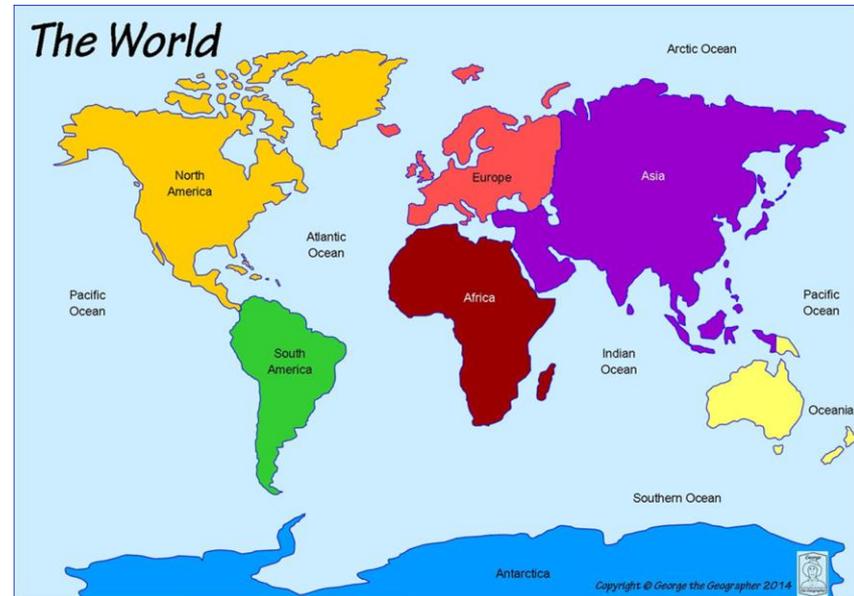
Geography Knowledge Organiser

Year 9: Asia

Key Word	Definition
Asia	One of the seven continents of the world, made up of forty-eight countries.
Himalayas	The name of the tallest mountain range in the world, located to the north of India.
Population Density	The average number of people that live in an are, given as a number per km ² .
Choropleth Map	A map that uses colour to show changes over space.
Monsoon	The name of the wet season in Asia occurring between June and October, when winds blow from the south west.
Caste	The name of a Hindu system where society is divided into categories.
Globalisation	The process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange across the globe.
Migration	The movement of people from one place to another.
Urbanisation	The process where more people live in urban areas (cities).
Shanty towns	An area of very poor housing, often self-built by residents out of basic materials.

Useful websites...

<https://www.bbc.co.uk/bitesize/topics/z3jhfg8>
<https://www.bbc.co.uk/bitesize/topics/zg7nvcw>



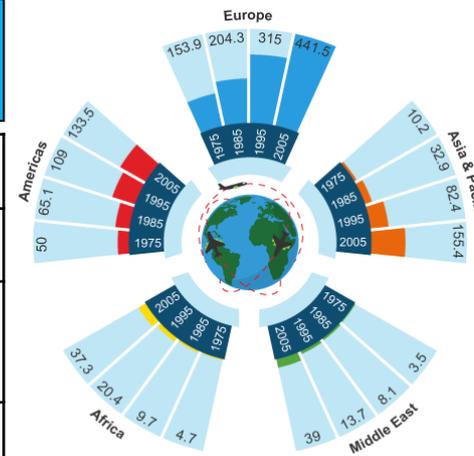
Geography Knowledge Organiser

Year 9: Tourism

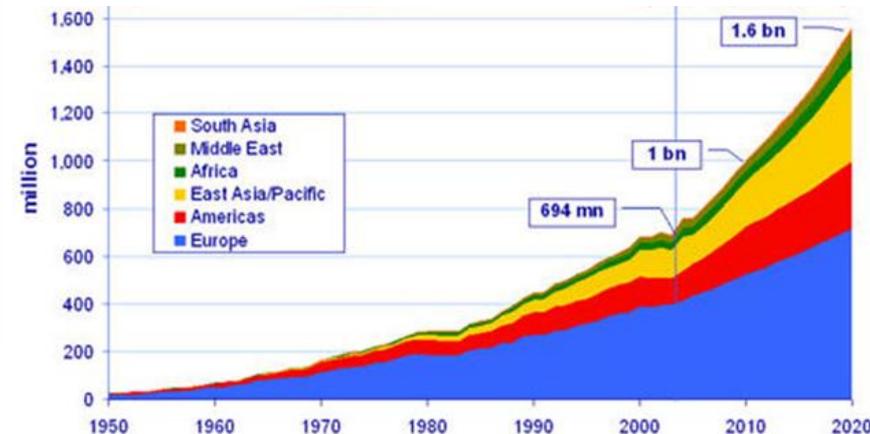
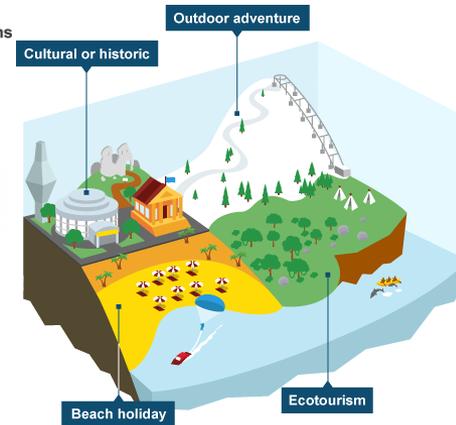
Key Word	Definition
Mass Tourism	Tourism on a large scale with many people visiting.
Sustainable Tourism	A type of holiday that doesn't cause harm to people or the environment.
Adventure Tourism	Tourism which aims to give an unusual experience.
Urban Tourism	When people take holidays in towns and cities.
Disposable Income	The income people have available to spend after bills, taxes etc.
Dynamic	Something that changes over time.
Galápagos	A group of islands off the west coast of south America made famous by Charles Darwin. This is now a popular eco-tourist destination.
Tertiary Sector	The type of jobs/shops that providing services e.g. retail, tourism, education, health and banking.
UNESCO	United Nations Educational Scientific and Cultural Organisation. Give funding and special protection for important sites globally.

Useful websites...

<https://www.bbc.co.uk/bitesize/topics/zcmfb9q>



Increase in world tourism 1975 - 2005 (millions)



Computing:

Data Representation

Key Words

1 bit (b)	The smallest unit of data—a 0 or 1.
1 nibble (N)	4 bits
1 Byte (B)	8 bits (note the difference between b and B)
1 Kilobyte (KB)	1000 bytes. Note KB is different from Kb
1 megabyte (MB)	1000 KB
1 gigabyte (GB)	1000 MB
1 terabyte (TB)	1000 GB
1 petabyte (PB)	1000 TB
Base 2 number system	A number system where there are only 2 digits to select from, that is 0 or 1; also known as the binary number system.
Data types	In computing there can be different data types, including integers, characters and boolean (yes/no)
Base 10 number system	The number system that humans use. It contains 10 unique digits, that is 0 to 9. Also known as the decimal or denary number systems.
Multiplier (also known as place value)	The value of the place, or position, of a digit in a number

Representing information with sequences of symbols is necessary for storing, exchanging and processing information. Information in computers must be represented in a form convenient for processing.



Humans have invented lots of different ways to code information using different sounds, symbols or even lights!

Computers represent all data, including numbers, letters, symbols, images, videos and sounds using binary numbers. All binary numbers are made up of the digits 0 and 1.

0s and 1s are called **binary digits**, or **bits**. All characters are represented using sequences of bits.

Computers only use the two symbols 0 and 1 because all computers are built out of electrical switched which can only be on (1) or off (0).

Binary digits are like letters; they are the symbols that computers 'write' with.

Multipliers or weights are the amount each digit in a sequence is worth e.g the number 314 contains three 100s, one 10s and four 1s. 100, 10 and 1 are the multipliers or weights. Binary numbers use different multipliers or weights.

Multipliers	128	64	32	16	8	4	2	1
Example binary number	0	0	0	1	0	1	1	1

To convert from binary to decimal (also known as denary) multiply each binary digit with its multiplier, then add up the products to work out the decimal number.

For example in the binary number above: $1 \times 16 = 16$ $1 \times 4 = 4$ $1 \times 2 = 2$ and $1 \times 1 = 1$ and $16 + 4 + 2 + 1 = 23$

To convert from decimal to binary go through the multipliers from left to right. If a multiplier needs to be included in the sum, set the corresponding binary digits to 1 and proceed with the number that remains

Decimal number	Binary number				
	16	8	4	2	1
13	1	1	0	1	

Computing: Developing for the Web

Hyper Text Markup Language (HTML) is a basic programming language for building web pages. It uses a set of predefined **tags** that the web browser then interprets and displays.

The World Wide Web is responsible for standardising HTML and releasing updated specifications that revise existing tags and introduce new tags. Web pages contain different types of information including images, text and multimedia.

Key Vocabulary

Web Browser: An application used to view webpages eg Google Chrome, Firefox, Microsoft Edge, Safari, Internet Explorer.

HTML: (Hyper Text Markup Language) Used to write and create web.

Hyperlink: A link in a document or webpage that connects to another location.

Internet: A global network connecting millions of computers together.

Website: A webpage or group of webpages hosted on a web server and viewed in a web browser,

Using HTML to create websites

HTML can be written in a simple text editor like Notepad. As long as it is saved with file extension.html eg: myfirstwebpage.html it can be opened and viewed as a webpage from a browser.

```
<html>
  <body>
    <h1> My First Web page </h1>
    <p> This is my very first web page
      that I have created using Notepad </p>
  </body>
</html>
```

Key Facts

- Web pages contain different types of information including images, text and multimedia.
- There is no central storage for websites.
- The World Wide Web (WWW) is a huge collection of websites that we can access using the internet.
- Each website contains web pages which are navigated via hyperlinks.

HTML Tags:

<html>	States that the document is a HTML document .
<body>	Information appears in the body of the page.
<h1>	The main heading for the web page.
<p>	The beginning of a new paragraph.
	Image for web page and file type of image example: Jpg, Png, gif

	Add a blank line
<a href>	A link to other web sites

Ranking algorithm

Used to rank the importance of web pages and considers:

- when the page was last updated
- webpages that link to a found page
- other webpages that a found page links to

Gathering information

- Search engines use programs known as **crawlers** or **spiders** to find content on the World Wide Web.
- These crawlers visit links from one web page to another, recording common keywords that they find.
- By travelling along these links, the crawlers can eventually find newly created content.

Indexing

When crawlers finish their journey, they are stored in a data structure called an index.

The index records the following about each web page:

- Frequently used keywords
- Type of content found, (images, text, etc.)
- Date of last update

CSS Cascading style sheets:

- HTML defines the structure and content of your web page.
- CSS defines the style and layout of web pages.
- CSS can be used to change the style of a whole website, one web page or a single occurrence of an element, e.g.

```
<h1 style="text-align:center">
```

OR

```
body {  
  color: green;  
}
```

Threats to networks

Trojan Horse: Programs designed to lock you out of your computer and not let you access the data unless you pay a ransom

Virus: A malicious program that hides inside other files that users might believe are harmless

Spyware: Installed without you knowing and used to track all your activity when you browse the World Wide Web

Ransomware: Executable code that when run damages the files and stops the computer from operating normally

Worm: Exploits the vulnerabilities of a system by finding holes in its security

Phishing: Steal people's personal information using fake emails from real organisations

What happens when I view a web page?



Controlling searches

The image shows three search engine results for the query 'Edinburgh OR castle'. The first result shows 'About 1,160,000,000 results'. The second result shows 'About 179,000,000 results'. The third result shows 'About 4,230,000 results'.

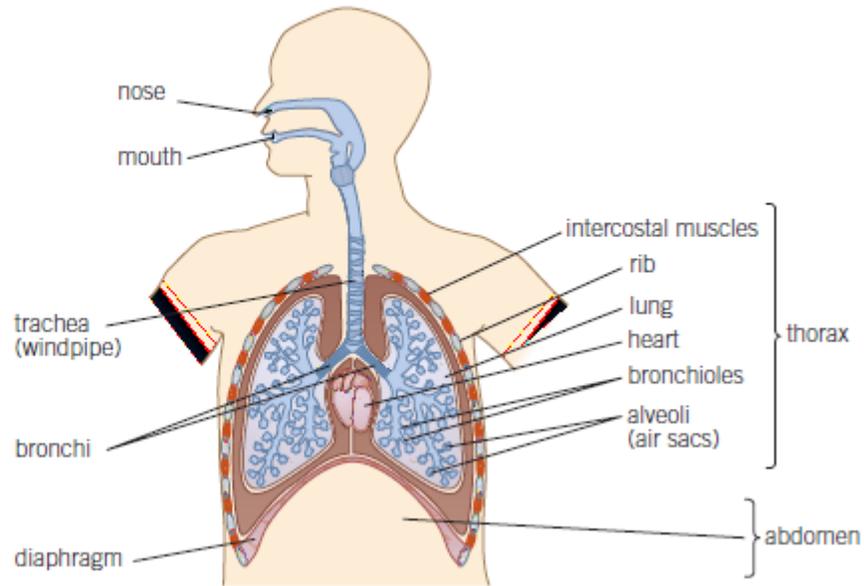
OR operator
Finds pages with either Edinburgh or castle on them.

NOT operator
Finds pages with Edinburgh, but removes those with word castle.

Phrase search
Pages found that only have "Edinburgh castle" on them, in that order.

Gas exchange and breathing

- **Gas exchange** is the process of taking in oxygen and giving out carbon dioxide
- This occurs in the **respiratory system**
- The proportions of gases in the air we **inhale** and **exhale** changes due to using oxygen in **respiration** and producing carbon dioxide

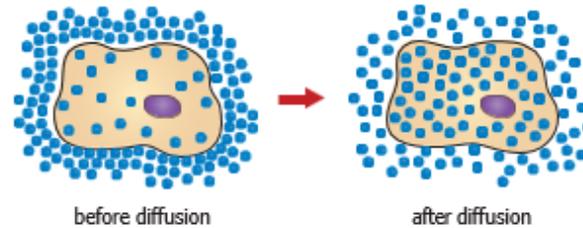


What happens when you breathe in and out

when you breathe in (inhale)	<ul style="list-style-type: none"> • muscles between the ribs contract • ribs are pulled up and out • diaphragm contracts and flattens • volume of the chest increases • pressure inside the chest decreases • air rushes into the lungs
when you breathe out (exhale)	<ul style="list-style-type: none"> • muscles between ribs relax • ribs are pulled in and down • diaphragm relaxes and moves up • volume in the chest decrease • pressure inside the chest increases • air is forced out of the lungs

Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During **diffusion** particles move from an area of **high concentration**, to an area of **low concentration**



- Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave

B5

Animals
Knowledge organiser

Activate
Question Organiser

Drugs

- **Drugs** are chemicals that affect the way that our body works
 - **Medicinal drugs** are used in medicine, they benefit health
 - If medicinal drugs are not taken in the correct way they can harm health
 - Examples include antibiotics and pain killers
-
- **Recreational drugs** are taken by people for enjoyment
 - Recreational drugs normally have no health benefits and can be harmful for health
 - Examples include alcohol and tobacco
-
- Drug **addiction** is when your body gets so used to a drug, it feels it cannot cope without it
 - If someone who has an addiction stops taking the drug, they will experience **withdrawal symptoms**



Key terms

Make sure you can write definitions for these key terms.

Aerobic respiration Anaerobic respiration Antagonistic muscle pairs Bone
Bone marrow Cartilage Diffusion Drug Exhale Fermentation Gas exchange
Haemoglobin Inhale Joints Lactic acid Ligaments Medicinal drug Muscle
Oxygen debt Plasma Recreational drug Red blood cells Respiration
Respiratory system Skeleton Tendons Tissue Withdrawal symptoms

Respiration

- Respiration is the process in which energy is released from the molecules of food which you eat
- Respiration happens in the mitochondria of the cell
- **Aerobic respiration** involves oxygen, it is more efficient as all of the food is broken down to release energy

$$\text{glucose} + \text{oxygen} \rightarrow \text{carbon dioxide} + \text{water}$$
- The glucose is transported to the cells in the blood **plasma**
- The oxygen is transported to the cells in **red blood cells**, by binding with **haemoglobin**
- Carbon dioxide is a waste product and is transported from the cells to the lungs to be exhaled

- **Anaerobic respiration** is a type of respiration which does not use oxygen, it is used when the body cannot supply the cells with enough oxygen for aerobic respiration
- Anaerobic respiration releases less energy than aerobic respiration

$$\text{glucose} \rightarrow \text{lactic acid} + \text{carbon dioxide}$$
- The **lactic acid** produced through anaerobic respiration can cause muscle cramps
- Lactic acid will build up if there is not enough oxygen present in the blood supply to break it down. This is known as an **oxygen debt**

Fermentation

- **Fermentation** is a type of anaerobic respiration which occurs in yeast
- Instead of producing lactic acid, yeast produces ethanol, which is a type of alcohol

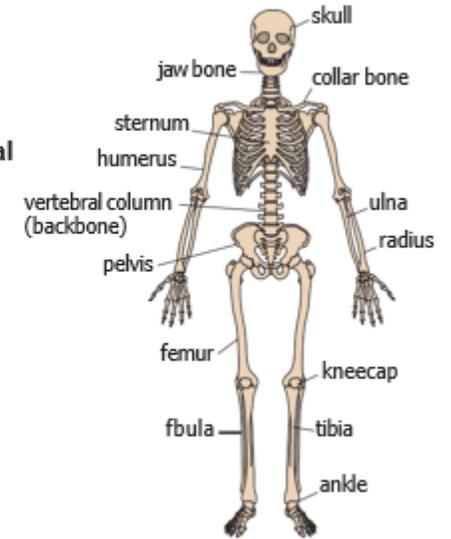
$$\text{glucose} \rightarrow \text{ethanol} + \text{carbon dioxide}$$
- This process can be used to form alcohol to drink or to allow bread and cakes to rise

Muscles

- **Muscles** are a type of tissue which allows movement
- They pull on tendons which in turn pull on bones to allow movement
- Muscles like the triceps and biceps are known as **antagonistic muscle pairs**, they work together –as one contracts, the other will relax

The skeleton

- The **skeleton** is made up of 206 **bones** which are a type of **tissue**
- Bones have a blood supply and are a living tissue
- The skeleton is part of the **muscular-skeletal system**
- The four main functions of the skeleton are:
 - To support the body –to keep you upright and hold **organs** in place
 - Protect organs – such as the skull protecting the brain
 - Movement – by working with muscles to allow you to move
 - Making blood cells –the **bone marrow** produces red and white blood cells



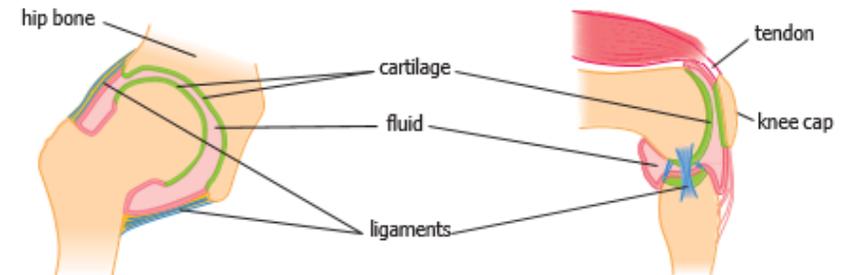
Movement

Joints occur between bones and allow movement, there are three main types of joints

Hinge	Ball and socket	Fixed
For back and forward movement, e.g. knees	For movement in all directions e.g. hips	Do not allow movement, e.g. skull

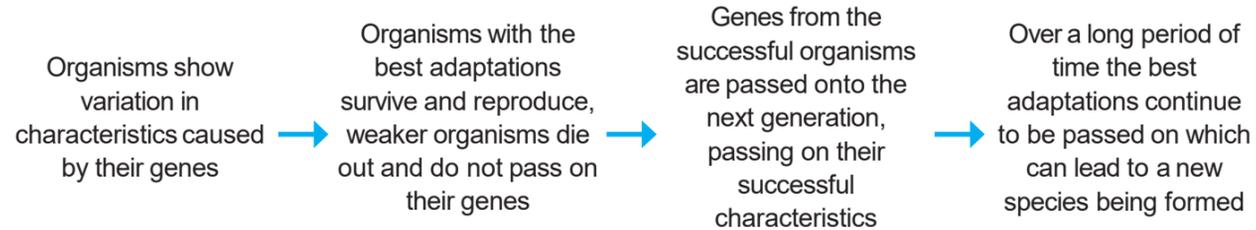
Joints have three main types of tissue:

Ligaments	Cartilage	Tendons
Connect bone to bone	Coats the end of bones as a protection	Connects bone to muscle



Natural selection

- Scientists believe that the organisms which we see on Earth today have gradually developed over millions of years, this is known as **evolution**
- Charles Darwin came up with the concept of **natural selection**, he said that only the best adapted animals will survive to pass on their **genes**, weaker animals will die out



- One example of natural selection can be seen in giraffes, only the giraffes with the longest necks would be able to eat from trees, the ones with shorter necks would not be able to eat and die out
- This would mean that only the gene for long necks would be passed on, leading to all giraffes having long necks

Extinction

- A species will become **extinct** when all of a species die out
- The **fossil record** shows us that animals have existed in the past which have now become extinct
- Extinction can be caused by:
 - Changes to the environment
 - Destruction of habitat
 - New diseases
 - Introduction of new predators
 - Increased **competition**
- When a species becomes extinct, the variety of species within an ecosystem is reduced, this is also known as a reduction in **biodiversity**
- The more diverse a **population** is, the more likely they are to survive environmental changes

Punnet squares

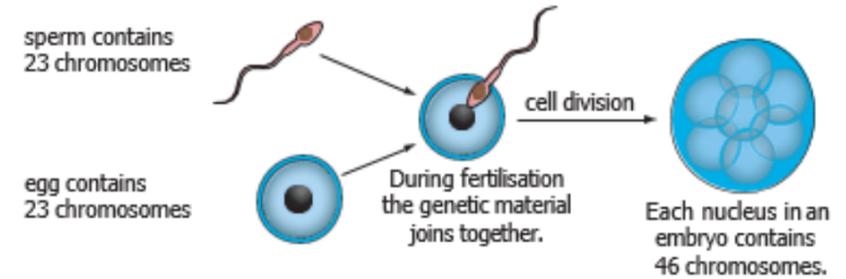
		Possible alleles from father	
		B (dominant allele for brown eyes)	b (recessive allele for blue eyes)
Possible alleles from mother	b (recessive allele for blue eyes)	Bb Offspring will have brown eyes as B is dominant	bb Offspring will have blue eyes as both alleles are recessive
	b (recessive allele for blue eyes)	Bb Offspring will have brown eyes as B is dominant	bb Offspring will have blue eyes as both alleles are recessive

Genetic modification

- Genetic modification** is the process which scientists can use in order to alter the genes of an organism
- Examples of this include altering cotton to produce higher yields, altering bacteria genes to produce medicines and altering crops to produce their own insecticides

Inheritance

- Characteristics** are passed along from parents to their offspring
- Half of the genetic information comes from each parent, this is passed on through the sex cells in the process of fertilisation

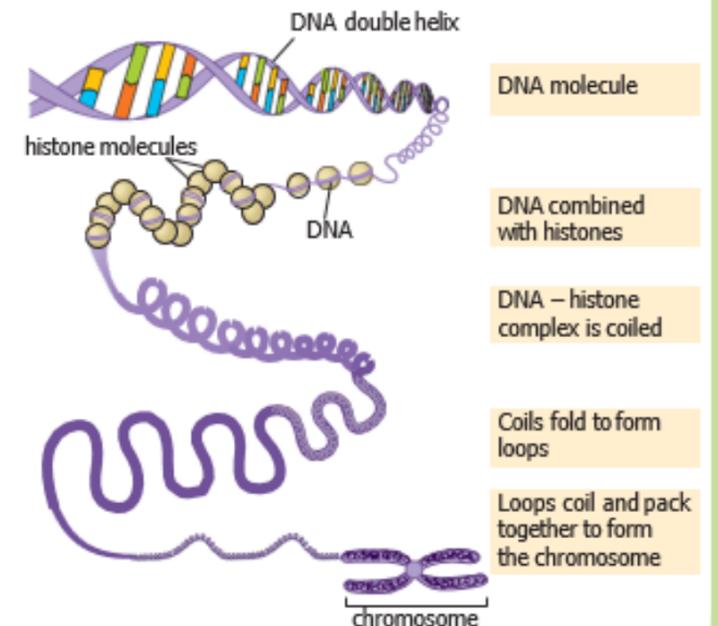


- DNA** is the material which contains all of this genetic information

DNA – in the shape of a double helix

Genes – a section of DNA which hold the information for a particular characteristic

Chromosomes – long strands of DNA which hold many genes, humans have 46 of these in the nucleus of cells



Genetics

- For every characteristic an organism will have two **alleles**, this is two different genes which can code for the same characteristic, one is inherited from each parent
- Dominant** alleles will cause the characteristic to be displayed even if they are with another allele, this is represented by a capital letter
- Recessive** alleles will not be displayed as characteristics unless there are two of the same allele, they are the characteristic least likely to be shown, this is represented by a small letter
- We can predict the inheritance of characteristics using a **Punnet square**

Key terms

Allele Biodiversity Characteristics Chromosome Competition DNA Dominant Evolution Extinct Fossil record Gene Genetic modification Mutation Natural selection Population Punnet square Recessive

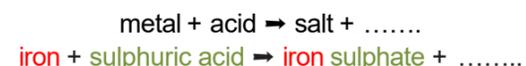
Salts

Salts are substances which are formed when an acid reacts with a metal or metal compound. The name of the salt produced depends on the metal and the acid involved in the reaction.

Different acids form different types of salts:

- Hydrochloric acids form chloride
- Sulphuric acids form sulphates
- Nitric acids form nitrates

Metal acid reaction:



Metal carbonate reaction:

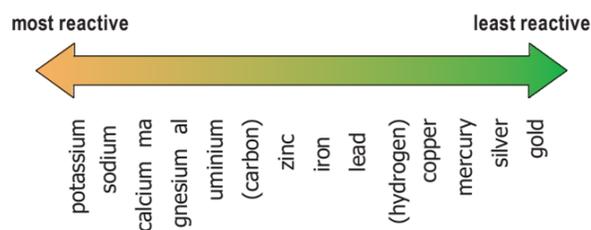


Neutralisation reactions (one from year 7):



The reactivity series

- The **reactivity series** describes how reactive different metals are compared to one another
- The higher the metal is in the reactivity series the more reactive it will be. This means that it will react much more vigorously.
- Carbon and hydrogen are in the reactivity series so that you can see their relative reactivity. Metals higher than carbon in the series must be extracted using **electrolysis**.



Metal reactions

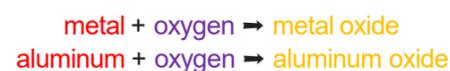
When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off.



When a metal **carbonate** reacts with an acid, a salt, water and carbon dioxide is given off.



When a metal reacts with oxygen a metal **oxide** is formed, this process is known as **Oxidation**.



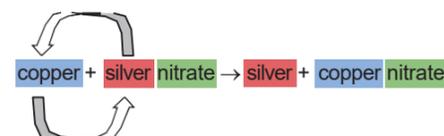
When a metal reacts with water it forms a metal **hydroxide** and hydrogen gas. The alkali (group 1) metals react most vigorously, giving off a brightly coloured flame.



A special oxidation reaction happens between iron and oxygen in the presence of water. This is called rusting.



When a more reactive metal reacts with a compound containing a less reactive metal, it can take its place, this is known as a **displacement** reaction



- If the metal on its own is higher in the **reactivity series** than the metal in the compound a reaction will take place
- If the metal on its own is lower in the reactivity series than the metal in the compound, a reaction will not take place

Metal extraction

Unreactive metals such as gold are found in the Earth's crust as elements. However most metals are found combined with other elements to form compounds.

Most metals are extracted from **ore** found in the Earth's crust. An ore is a rock that contains enough of a metal or a metal compound that makes extracting it worthwhile.

If a metal is less reactive than carbon then heating the metal in a fire with carbon will cause the carbon to **displace** the metal from its compound.

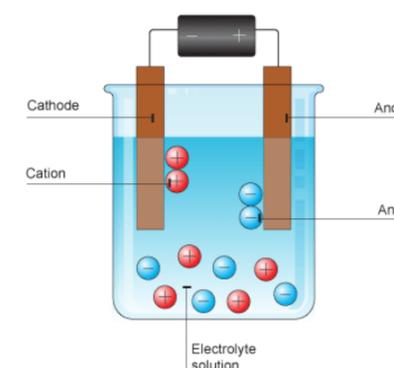
An example of this is the extraction of copper from its ore Malachite.

- copper oxide + carbon → copper + carbon dioxide

Electrolysis

When a metal is more reactive than carbon then extraction by heating with carbon does not work.

Electrolysis can be used instead to extract these metals from their compounds.



The metal compound is melted and electrical current is passed through. The metal ions are attracted to and form a layer on the cathode (the negative electrode).

Keyterms

Make sure you can write definitions for these key terms.

acid acidic neutralisation oxide chemical carbonate reactivity reactivity series salt displacement hydroxide hydrochloric acid

 sulphuric acid nitric acid ore electrolysis

KNOWLEDGE ORGANISER



Horror Manor



Year 9
Summer 1

Context

Ghost stories

Ghost story, a tale about ghosts. More generally, the phrase may refer to a tale based on imagination rather than fact. Ghost stories exist in all kinds of literature, from folktales to religious works to modern horror stories, and in most cultures.

Elements

Supernatural

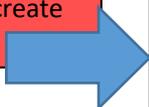
The word **supernatural** (from Latin: *supernātūrālis*) is used for things that some people believe are real, but that are not part of nature or inexplicable by the scientific laws of nature. Because we cannot prove whether these things are real, people often disagree about these things.

Setting

Choosing a location in a ghost story is the first and best way of creating a haunting atmosphere. Isolated, lonely places, buildings with unhappy histories, places where something terrible has happened regularly crop up in ghost stories for a reason. As well as using recognisable settings such as haunted house and fright night clichés, think how you can add an original twist to familiar ghost story tropes to give an original spin to your ghost story



How can an actor create tension?



The lack of movement can have just as much impact as movement. A **freeze frame** or **still image** with an emotional stillness can be very powerful. The power comes from the interruption of what is natural. We expect movement, so stillness is an implicit shock. It makes us look at what is happening, taking the time afforded by the stillness to interpret the action. This can also be used for **marking the moment** to explore a key moment in time. It also creates contrast and varies pace, keeping the work interesting.

Creating Your Production



A **soundscape** is a series of sounds created by students (not words, echoes, repetition, or speaking together) that create a setting or suggest a scene. Sounds could range from wind, to creaking boards, to laughter. Gestures are optional.

Ghostly sounds effect and ambiances

When it comes to ghostly sounds low mid and high frequencies are what we're after. Good source sounds are e.g. metal or wood squeaks, metal scrapes and moans. Also effective are whistling winds, squeaky doors and vocalizations of course (especially children's voices).

There are many 'standard tools' for blood soaking, bone cracking sound effects. These tools mostly are vegetables and other kinds of food. Take bone breaks, for example. You want to use something crunchy and snapping. For this I'd highly recommend Chinese cabbage or celery. Single leaves or sticks make great bone-snapping sounds when broken fast.

Techniques an actor can use to prepare for their role

Hot Seating

A widely used and very effective Drama strategy. Questions are asked to someone sitting in the 'hot-seat' who answers in character.

Dramatic Monologue

a speech or narrative by an imagined person, in which the speaker inadvertently reveals aspects of their character while describing a particular situation or series of events.

Energy

- **Energy** is needed to make things happen
- It is measured in **joules** or **kilojoules**
- The **law of conservation of energy** says that energy cannot be created or destroyed, only transferred
- This means that the total energy before a change is always equal to the total energy after a change

Energy can be in different energy **stores**, including:

- **Chemical** – to do with food, fuels and batteries
- **Thermal** – to do with hot objects
- **Kinetic** – to do with moving objects
- **Gravitational potential** – to do with the position in a gravitational field
- **Elastic potential** – to do with changing shape, squashing and stretching

Speed

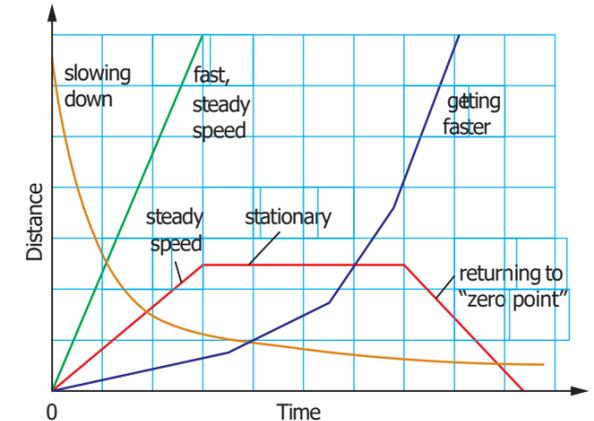
- **Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:

$$\text{speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}}$$

- **Relative motion** compares how quickly one object is moving compared to another
- If both objects are moving at the same speed, they are not changing position in comparison to one another, meaning that their relative speed is zero

Distance-time graphs

- **Distance-time graphs** tell the story of a journey, they show how much distance has been covered in a certain period of time



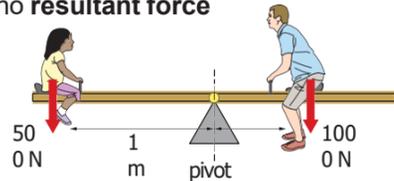
- To find the average speed, the total distance must be divided by the total time

Turning forces

- A **moment** is the turning effect of a force, it is measured in Newton meters
- We can calculate a moment with the equation:

$$\text{moment (Nm)} = \text{force (N)} \times \text{distance from the pivot (m)}$$

- The size of the moment will increase as the distance from the **pivot** or the size of the force increases
- When an object, such as a seesaw is balanced, the clockwise and the anticlockwise moments will be equal and opposite, which is known as **equilibrium**
- When forces are equal and opposite to each other, there is no **resultant force**



$$\begin{aligned} \text{clockwise moment} &= \text{force} \times \text{distance on the right} \\ &= 1000 \text{ N} \times 0.5 \text{ m} \\ &= 500 \text{ Nm} \\ \text{anticlockwise moment} &= \text{force} \times \text{distance on the left} \\ &= 500 \text{ N} \times 1 \text{ m} \\ &= 500 \text{ Nm} \end{aligned}$$

Power and energy

- **Power** is a measure of how much energy is transferred per second
- Power is measured in **watts (W)**
- Each appliance has its own power rating to tell us how quickly it uses energy
- We can calculate power with the equation:

$$\text{power (W)} = \frac{\text{energy (J)}}{\text{time (s)}}$$

Energy Dissipation

- We say that energy is **dissipated** when it is transferred to a nonuseful store, it cannot be used for what it was intended for
- Energy can be wasted through friction, heating up components or heating the surroundings
- **Efficiency** is a measure of how much of the energy has been used in a useful way, we can calculate this with the equation:
- Efficiency (%) = $\frac{\text{useful energy output}}{\text{energy input}} \times 100$

Gas pressure

- **Gas pressure** is caused by the particles of a gas colliding with the wall of the container which they are in
- The more often that the particles collide with the wall of the container, the higher the pressure of the gas will be
- Gas pressure can be increased by:
 - Heating the gas so the particles move more quickly and collide with the container with a higher energy
 - Compressing the gas so there are the same amount of particles within a smaller volume meaning that there are more collisions
 - Increasing the amount of particles within the same volume so there are more collisions
- **Atmospheric pressure** is the pressure which the air exerts on you all of the time, nearer the ground there are more particles weighing down on you so the pressure is greater
- The higher you go, the smaller the atmospheric pressure, this is because there will be less particles weighing down on you

Pressure in solids

- The pressure which is exerted on a solid is known as **stress**
- The greater the area over which the force is exerted over, the lower the pressure, this is why snowshoes have a large area to prevent you sinking into the snow
- **Pressure** can be calculated using the following equation:

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Pressure in liquids

- Liquids are **incompressible**
- The particles in a liquid are already touching, meaning that there is little space between them to compress
- Liquids will transfer the pressure applied to them, this is seen in hydraulic machines
- As the ocean gets deeper, the pressure will increase, this is because the pressure depends on the weight of the water above
- The greater the number of water molecules above, the higher the pressure will be

Key terms

Make sure you can write definitions for these key terms.

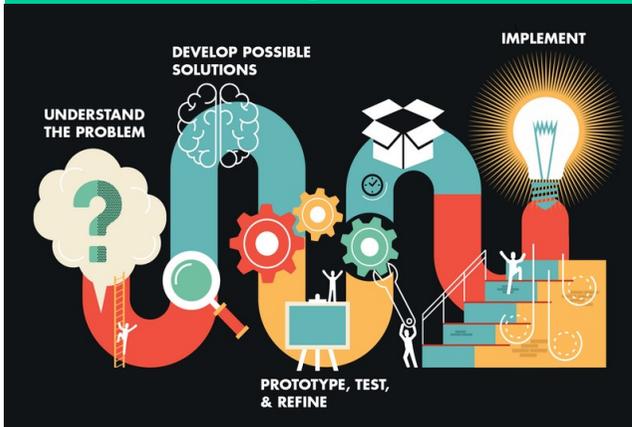
Acceleration, air resistance, atmospheric pressure, balanced, contact force, deceleration, distance-time graph, drag, equilibrium, field force, friction, gas pressure, gravity, gravitational force, interaction pair, kilograms, mass, moment, Newton, non-contact, pivot, pull, push, pressure, relative motion, resultant force, speed, unbalanced, weight

Sarah Turner



Sarah Turner is an eco artist and designer. She uses discarded items like plastic bottles, cans and circuit boards to make beautiful jewellery, sculptures, lighting and artwork.

The Design Process



Textiles Year 9

Design and Technology

Sustainability in Design.

Sustainable design is the idea of designing products, the built environment, and services so there is no negative impact on the planet or people. Examples of this include using recycled materials, using renewable materials and using fair trade principles.

The 6Rs

Rethink	Do we make too many products? Design in a way that considers people and the environment.	
Refuse	Don't use a materials or buy a product if you don't need it or if it's bad for people or the environment	
Reduce	Cut down the amount of material and energy you use as much as you can.	
Reuse	Use a product to make something else with all or parts of it.	
Recycle	Reprocess a material or product and make something else.	
Repair	When a product breaks down or	

Adidas



Adidas have teamed up with environmental company Parley to turn ocean plastic waste like fishing nets and plastic bottles into trainers. They are also rethinking how trainers are designed by producing innovative styles that use minimal materials.

The Impact Of Fast Fashion



Textile production produces harmful emissions and other pollution from chemicals and dyes.



Poor-quality clothing leads to more textile waste. Plastic based fibers release harmful gases in landfills.



Textile production uses scarce resources. The industry uses 100 billion cubic meters of water annually – about 4% of global freshwater withdrawal.



Microplastics enter the water system when synthetic materials are washed. Ocean species consume these plastics, and so do people eating seafood.

Alexander McQueen



McQueen has been credited with bringing drama, extravagance, fantasy and rebellion to fashion



McQueen became known for using skulls in his designs and his iconic skull scarf was copied into mainstream fashion



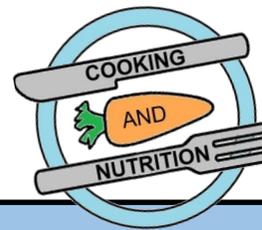
McQueen designed for both Givenchy and Gucci



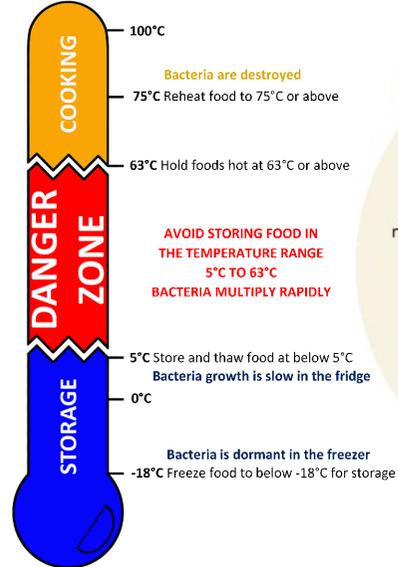
He was an avid scuba diver and used this passion as inspiration for his Plato's Atlantis Collection



Year 9 - Lifestyle & Choice



Food safety



Food poisoning symptoms



<https://www.youtube.com/watch?v=flxmB8NKMzE>
<https://www.nhs.uk/live-well/eat-well/10-ways-to-prevent-food-poisoning/>
<https://www.food.gov.uk/safety-hygiene/avoiding-cross-contamination>

Food labelling: lots of information is required by law. Storage instructions are particularly important for food safety.

USE BY VS **BEST BEFORE**

USE BY: YOU'VE GOT UNTIL THE END OF THIS DATE TO USE OR FREEZE THE FOOD BEFORE IT BECOMES TOO RISKY TO EAT. Keep refrigerated.

BEST BEFORE: YOU CAN EAT FOOD PAST THIS DATE BUT IT MIGHT NOT BE AT ITS BEST QUALITY. Store in a cool, dry place.

https://www.youtube.com/watch?v=OZOIEYQ0axo&list=PLcvEcrsF_9zlxoGGU59CjuZHciPI9uvGm&index=9&t=2s

Key vocabulary

safety / hygiene / cross-contamination
 pathogenic / food poisoning / symptoms
 nutrition / hydration / shelf life
 perishable / ambient / dormant
 ethical / moral / cultural / preferences
 allergies / intolerances / life stages

Nutritional needs and health: some

people have special dietary needs based on their age, lifestyle or allergies.



<https://www.youtube.com/watch?v=k5YSJq4iQtI>

Senses: influence our enjoyment of food.



<https://www.youtube.com/watch?v=zNchJla7G0E>

The Eatwell Guide shows the types and proportions of foods people need for a healthy and well-balanced diet.



<https://www.youtube.com/watch?v=7MIE4G8ntts>
<https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>
<https://www.youtube.com/watch?v=8aWqZd9RScQ>

Food choices: a variety of factors influence what we choose to eat.



<https://www.youtube.com/watch?v=D6eor1wkNFY>
<https://www.youtube.com/watch?v=bowUbkANVVY>

Dehydration: the main symptoms.



<https://www.youtube.com/watch?v=b7s2Aqj72Q8>

Y9 Set 1-2 : Les vacances

Vocabulaire

Les vacances

Je vais en vacances ...
 au bord de la mer
 à la campagne
 à la montagne
 J'y vais ...
 avec ma famille
 J'y reste ...
 une semaine/quinze jours/un mois
 Je pars en colo.
 Je pars en classe de neige.
 On fait du camping.

Les activités de vacances

Je fais ...
 du canoë-kayak
 du VTT
 du ski nautique
 du snowboard
 de la plongée sous-marine
 de la voile
 de la planche à voile
 de l'équitation
 de l'escalade
 des randonnées dans la forêt
 Je vais à la pêche.
 Je prends des cours de ski.
 J'ai fait un stage de (voile).
 Il n'y a pas grand-chose à faire.

Mes rêves

Je voudrais .../J'aimerais...
 descendre l'Amazone en canoë
 essayer des sports extrêmes
 faire un safari en Afrique
 passer des vacances sur une
 île déserte
 traverser le Sahara à dos

Holidays

I go on holiday ...
to the seaside
to the countryside
to the mountains
I go there ...
with my family
I stay there ...
one week/a fortnight/a month
I go to a holiday camp.
I go on a winter sports holiday.
We go camping.

Holiday activities

I do/go ...
canoeing
mountain-biking
water-skiing
snowboarding
scuba diving
sailing
wind-surfing
horse-riding
climbing
hiking in the forest
I go fishing.
I have skiing lessons.
I did a (sailing) course.
There's not much to do.

My dreams

I would like to...
 go down the Amazon in a canoe
 try some extreme sports
 go on safari in Africa
 spend the holidays on a desert
 island
 cross the Sahara by camel



Scan the QR code to
 access this vocab on
 Quizlet.





de chameau
visiter tous les parcs d'attractions
du monde
voir des gorilles en liberté

visit all the theme parks in the world
see gorillas in the wild

Les réactions

Oua-a-a-is! Cool!
Bonne idée!
Ce serait génial/super.
Quelle horreur!
Tu rigoles!
Ce serait trop ...
dangereux/tranquille pour moi.
Ce n'est pas mon truc.

Reactions

Yeah! Cool!
Good idea!
That would be great.
How horrible!
You must be joking!
That would be too ...
dangerous/quiet for me.
It's not my kind of thing.

Les verbes pronominaux

Je me baigne.
Je me coiffe.
Je me couche.
Je me douche.
Je me fais bronzer.
Je me fais piquer.
Je m'amuse.
Je m'ennuie.

Reflexive verbs

I swim.
I do my hair.
I go to bed.
I have a shower.
I sunbathe.
I get stung.
I have fun.
I get bored.

Les affaires de vacances

un adaptateur
un chargeur (pour mon mp3)
un chapeau de paille
un tuba
un sac à dos

une bombe anti-insectes
une lampe de poche
de la crème solaire
du gel coiffant
des lunettes de plongée (fpl)
des palmes (fpl)
des tongs (fpl)
plein de bouquins (mpl)

Holiday items

an adaptor
a charger (for my mp3)
a straw hat
a snorkel
a rucksack

an insect repellent spray
a torch
sun cream
hair gel
swimming goggles
flippers
flip-flops
loads of books

T'as passé de bonnes vacances?

Pas vraiment.
 C'était un désastre.
 Je suis resté(e) trop longtemps
 au soleil.
 J'ai pris un coup de soleil.
 Il a plu tout le temps.
 L'eau est entrée dans la tente.
 Je suis tombé(e) à l'eau.
 J'ai été malade.
 On a tous été malades.
 C'est dommage.
 C'est pas drôle, ça.

Did you have a nice holiday?

Not really.
It was a disaster.
I stayed in the sun too long.

I got sunburnt.
It rained all the time.
Water came into the tent.
I fell in the water.
I was ill.
We were all ill.
What a shame.
That's not funny.

À la base de loisirs

J'ai .../On a....
 fait du tir à l'arc
 fait de la planche à voile
 fait du trampoline
 fait de la baignade
 fait une balade en barque
 joué aux boules
 joué sur des structures gonflables
 loué un pédalo

At the leisure park

I .../We ...
did archery
went windsurfing
did trampolining
went swimming
went on a boat ride
played boules
played on a bouncy castle
hired a pedalo

Les mots essentiels

avec qui?
 combien de?
 que?/ qu'est-ce que?
 pourquoi?
 y
 quel(le)(s)
 toujours
 prochain(e)(s)

High-frequency words

with whom?
how much/how many?
what?
why?
there
which?/what
always
next

Y9 French Set 3-4 : Les vacances

Vocabulaire

Les vacances

Je passe mes vacances ...
 au bord de la mer
 à la campagne
 à la montagne
 en colo
 Je vais en vacances ...
 avec ma famille
 avec mes parents
 avec mes copains
 Je reste ...
 une semaine
 quinze jours
 dix jours

Les activités de vacances

Je fais ...
 du canoë-kayak
 du ski
 du snowboard
 du VTT
 de la voile
 de la planche à voile
 de l'équitation

Mes rêves

Un jour, je voudrais ...
 aller au pôle Nord
 descendre l'Amazone en
 canoë
 faire de la plongée sous-marine
 faire des sports extrêmes
 faire un safari en Afrique
 habiter sur une île déserte

Holidays

I spend my holidays ...
at the seaside
in the countryside
in the mountains
at a holiday camp
I go on holiday ...
with my family
with my parents
with my friends
I stay ...
one week
a fortnight
ten days

Holiday activities

I do/go ...
canoeing
skiing
snowboarding
mountain biking
sailing
windsurfing
horse riding

My dreams

One day, I would like to ...
go to the North Pole
go down the Amazon in
a canoe
go scuba diving
do some extreme sports
go on safari in Africa
live on a desert island



Scan the QR code to
 access this vocab on
 Quizlet.



Les réactions

Ouais! Cool!
 Bonne idée!
 Pourquoi pas?
 Quelle horreur!
 Tu rigoles!
 Ce n'est pas mon truc.

Reactions

Yeah! Cool!
 Good idea!
 Why not?
 How horrible!
 You must be joking!
 It's not my kind of thing.

Les affaires de vacances

un chargeur (pour mon
 mp3/ma PlayStation portable)
 un portable
 un tuba
 une bombe anti-insectes
 du gel coiffant
 de la crème solaire
 des lunettes de plongée
 des palmes
 des tongs

Holiday items

a charger (for my mp3/my portable
 PlayStation)
 a mobile phone
 a snorkel
 an insect-repellent spray
 hair gel
 sun cream
 swimming goggles
 flippers
 flip-flops

Les verbes pronominaux

Je me baigne.
 Je me coiffe.
 Je me douche.
 Je me fais bronzer.
 Je me fais piquer.
 Je m'ennuie.

Reflexive verbs

I swim.
 I do my hair.
 I have a shower.
 I sunbathe.
 I get stung.
 I get bored.

Des vacances désastreuses

J'ai oublié mon passeport.
 J'ai perdu mon portemonnaie.
 J'ai cassé mon appareil photo.
 J'ai pris un coup de soleil.
 J'ai mangé quelque chose
 de mauvais.
 On a raté l'avion.
 Aïe!

Disastrous holidays

I forgot my passport.
 I lost my purse.
 I broke my camera.
 I got sunburnt.
 I ate something bad.
 We missed the plane.
 Oh, no!/Ouch!



Mince!
Oh là là!
C'est pas possible!
Quel désastre!

Damn!
Oh, dear!
No way!
What a disaster!

À la base de loisirs

J'ai ...
Il/Elle a ...
fait du tir à l'arc
fait du trampoline
fait de l'escalade
Je suis ...
Il/Elle est ...
allé(e) à la pêche

At the leisure park

I ...
He/She ...
did archery
did trampolining
went climbing
I ...
He/She ...
went fishing

Les mots essentiels

où?
avec qui?
combien de?
que?/qu'est-ce que?
normalement
quel/quelle
alors/donc
quand
mon/ma/mes
ton/ta/tes
son/sa/ses
d'abord
ensuite
puis
après
finalement

High-frequency words

where?
who with?
how much?/how many?
what?
usually, normally
which/what (a)
so/therefore
when
my
your
his/her
first of all
then/next
then
afterwards
finally

¿Qué casa prefieres?

Esta casa es...
 Este piso es...
 amplio, amplia
 antiguo, antigua
 bonito, bonita
 cómodo, cómoda
 enorme
 feo, fea
 grande
 maravilloso, maravillosa
 moderno, moderna
 pequeño, pequeña
 La casa/El piso está
 cerca de la playa
 en el centro
 en la montaña
 más... que...
 menos... que...
 Prefiero...
 porque

Which house do you prefer?

*This house is...
 This flat is...
 spacious
 old
 nice
 comfortable
 enormous
 ugly
 big
 marvellous
 modern
 small
 The house/The flat is...
 near the beach
 in the centre
 in the mountains
 more... than...
 less... than...
 I prefer...
 because*

Beautiful



Expresiones de tiempo

ayer
 el fin de semana pasado
 el verano pasado
 el año pasado
 hace dos años
 hoy
 mañana
 este fin de semana
 el verano que viene
 el año que viene

Time expressions

*yesterday
 last weekend
 last summer
 last year
 two years ago
 today
 tomorrow
 this weekend
 next summer
 next year*



¿Qué se puede hacer en...?

Se puede(n)...
 hacer senderismo
 hacer actividades náuticas
 hacer artes marciales
 ir a la bolera
 ir al cine
 ir de compras
 ir de paseo en bicicleta
 ir a la playa
 ir al restaurante
 jugar al golf
 jugar al voleibol
 jugar al tenis
 ver la catedral
 visitar un castillo

What can you do in...?

*You can...
 go hiking
 do water sports
 do martial arts
 go bowling
 go to the cinema
 go shopping
 go on a bike ride
 go to the beach
 go to the restaurant
 play golf
 play volleyball
 play tennis
 see the cathedral
 visit a castle*



La casa

Tiene...
 una cocina
 un comedor
 un cuarto de baño
 un dormitorio
 un salón
 una chimenea
 un jacuzzi
 un jardín
 una piscina
 una terraza
 vistas al mar

The house

*It has...
 a kitchen
 a dining room
 a bathroom
 a bedroom
 a living room
 a fireplace
 a hot tub
 a garden
 a swimming pool
 a balcony, a terrace
 views of the sea*



Opiniones

Me gusta...
 Me encanta...
 Me gustaría mucho...
 Me encantaría...

Opinions

*I like...
 I love...
 I would really like...
 I would love...*



¿Dónde está...?

la catedral
 la estación de tren
 el minigolf
 el parque acuático
 el parque de atracciones
 la pista de karting
 el zoo
 Sigue todo recto.
 Dobla a la derecha.
 Dobla a la izquierda.
 Toma la primera a la derecha.
 Toma la segunda a la izquierda.
 Cruza la plaza
 Está a la derecha.
 Está a la izquierda.

Where is...?

*the cathedral
 the railway station
 the minigolf
 the water park
 the theme park
 the go-kart track
 the zoo
 Keep straight on.
 Turn right.
 Turn left.
 Take the first on the right.
 Take the second on the left.
 Cross the square.
 It's on the right.
 It's on the left.*



Palabras muy frecuentes

bastante
 donde
 esta, este
 está
 muy
 también

High-frequency words

*quite
 where
 this
 it is
 very
 also, too*

**To revise
 this topic**



SCAN ME

En la tienda de recuerdos In the souvenir shop

¿Qué vas a comprar?	What are you going to buy?	Es...	It's...
¿Qué quiere usted?	What would you like? (polite form)	barato/a	cheap
Quiero (comprar) algo para mi (madre).	I want (to buy) something for my (mother).	bonito/a	pretty
Creo que voy a comprar...	I think that I am going to buy...	caro/a	expensive
un abanico / un collar	a fan / a necklace	feo/a	ugly
un imán / un llavero	a magnet / a key ring	precioso/a	lovely
una camiseta / una figurita / una taza	a T-shirt / a figurine / a mug	útil	useful
(el) turrón	nougat	¿Cuánto es?	How much is it?
Me gusta la taza, pero prefiero el imán.	I like the mug, but I prefer the magnet.	Son... euros.	It is... euros.
		Es demasiado caro/a.	It's too expensive.
		No, gracias.	No, thank you.
		Perfecto, gracias.	Perfect, thank you.



Mi día favorito My favourite day

Mi día favorito fue el (martes).	My favourite day was (Tuesday).	hice / hicimos muchas cosas	I / we did lots of things
Por la mañana...	In the morning...	monté / montamos en la montaña rusa	I / we went on the roller coaster
Por la tarde...	In the afternoon / evening...	saqué / sacamos fotos	I / we took photos
bebí / bebimos horchata	I / we drank horchata	vi / vimos los delfines	I / we saw the dolphins
comí / comimos un bocadillo de calamares	I / we ate a fried squid sandwich	visité / visitamos el zoo / el parque de atracciones	I / we visited the zoo / theme park
compré / compramos una gorra	I / we bought a cap	Fue increíble / divertido / flipante.	It was incredible / fun / awesome.
fui / fuimos a la cafetería	I / we went to the café	¡Qué miedo / rico / guay!	How scary / tasty / cool!
fui / fuimos en metro	I / we went by metro / underground		



Mi último día en Madrid My last day in Madrid

Si...	If...	sacar fotos (del Palacio Real)	take photos (of the Palacio Real)
hace buen tiempo	it's good weather	tomar el sol (en el Retiro)	sunbathe (in the Retiro)
hace frío / sol / viento	it's cold / sunny / windy	ver un partido (en el estadio Santiago Bernabéu)	watch a match (at the Santiago Bernabéu Stadium)
llueve	it's raining / it rains	visitar (el Museo del Prado)	visit (the Prado Museum)
voy a...	I'm going to...		
ir de compras (al Rastro)	go shopping (in the Rastro)		
probar (un cocido madrileño)	try (cocido madrileño stew)		

Palabras muy frecuentes High-frequency words

primero	first	donde	where
luego	then	este/esta	this
después	afterwards	algo	something
más tarde	later	para	for
finalmente	finally	usted	you (polite form)
(o) tal vez	(or) perhaps	sobre todo	above all / especially

La caza del tesoro The treasure hunt

¿Adónde hay que ir?	Where do you/we have to go?	sacar fotos de...	take photos of...
Hay que...	You/We have to...	ver...	see...
ir al estadio Santiago Bernabéu	go to the Santiago Bernabéu Stadium	el campo de fútbol más famoso de Madrid	the most famous football pitch in Madrid
ir al parque del Retiro	go to Retiro Park	el cuadro más famoso de España	the most famous painting in Spain
visitar el Museo Reina Sofía	visit the Reina Sofía Museum	los churros más ricos del mundo	the tastiest churros in the world
coger el teleférico	take the cable car	el león más feroz del parque	the most ferocious lion in the park
comer...	eat...	los monumentos más interesantes de Madrid	the most interesting monuments in Madrid
comprar una postal de...	buy a postcard of...		
dibujar...	draw...		

To revise this topic



SCAN ME

Year 9 CRE – Ethical Questions

Key Words

Equality
Rights
Suffering
Evil
Belief
Punishment
Good
Treatment
Islamophobia
Atheist

God's biggest problem?

Ask most atheists why they do not believe in the God of the Bible, and their answer will ultimately come back to the character of God.

AIDS, genocide, child slavery, starvation, earthquakes, tsunamis, hurricanes, and terrorism—where did these evils come from, and how could a loving God allow people to endure so many horrible tragedies?

This is known as the problem of evil and suffering.

How does religion impact the UK?

- Bishops sit in the House of Lords in Parliament.
- Many laws have been based on religious teachings.
- Church plays a ceremonial role in society – weddings, funerals etc.

Key Questions

Should we respect everyone?

Why are people different?

What is in place to make sure people are treated equally?

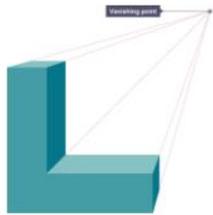
Why are people treated differently?

What does it mean to be a good person?

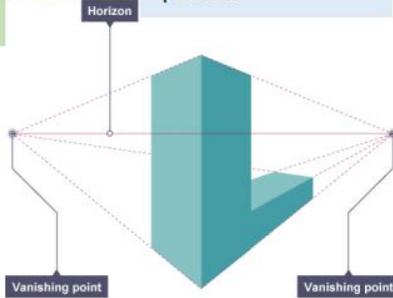
Do we all have a part to play in making sure everyone has equal rights?

Year 9 RM Knowledge Organiser – Architecture Project

Single-point perspective - This shows an object from the front in a realistic way as it gets smaller going into the distance. The front view goes back towards a **vanishing point**, which is a point on the horizon line that all lines meet at.



Two-point perspective - This shows an object from the side with two vanishing points.



Gerrit Rietveld 1888-1964 Connected with De Stijl



Rietveld was a Dutch furniture designer and architect. One of the principal members of the Dutch artistic movement called **De Stijl**, **Rietveld** is famous for his Red and Blue Chair and for the **Rietveld Schröder House**, which is now a **UNESCO World Heritage Site**.

Scaled models can be made from a variety of different materials using hard materials such as **wood**, **metal** and **plastic** or compliant materials such as **paper**, **board** and **foam**.

Block modelling

After sketch modelling, designers may progress onto block modelling as 'proof of concept' or to explore form or function in more detail. **Blockboard**, **Foamboard** and **Styrofoam** are all useful materials for making quick block models.



This logo belongs to the FSC, The Forest Stewardship Council. The FSC promotes the responsible management of forests through sustainable forestry.

The **six R's** are a range of approaches to minimizing the use of natural resources and reducing waste.

6 Rs:



Renewable energy sources are alternatives to fossil fuels and nuclear energy. They are considered infinite as sources of energy are produced naturally by the earth such as wind, seas, rivers and energy from the sun.

Card modelling

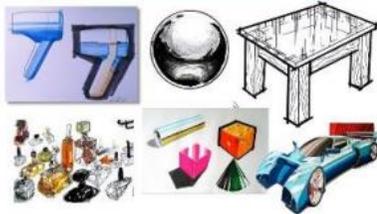
Unlike styrofoam and other solid modelling materials, card and paper can be used to make 'hollow' shell or box models.



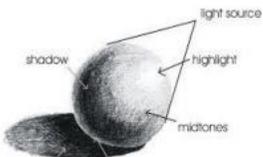
Another type of laminated board, **Foam Board** is a multi layer board made up of two outer layers of card with a foam centre. It is used for display boards and more commonly used for architectural models.

Rendering

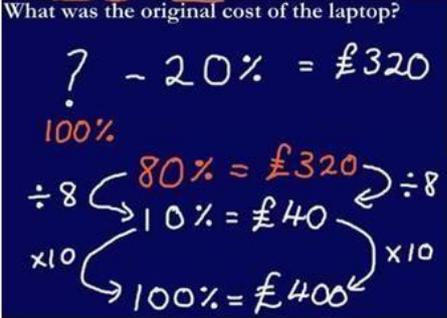
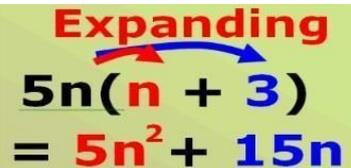
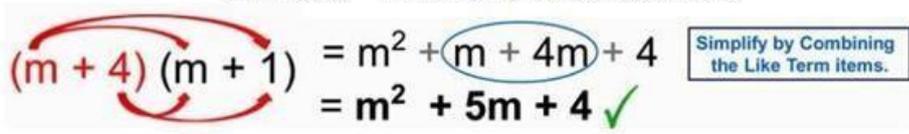
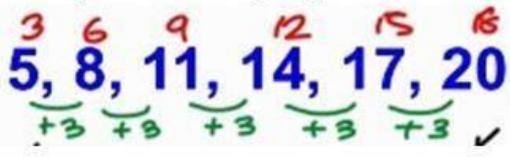
Creating the illusion of light, tone and texture using graphic materials. Creating the illusion that an object is made from a particular material.

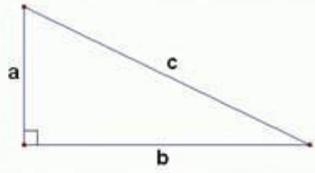
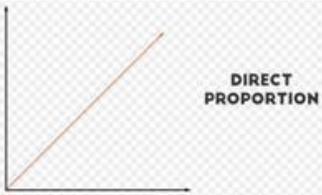
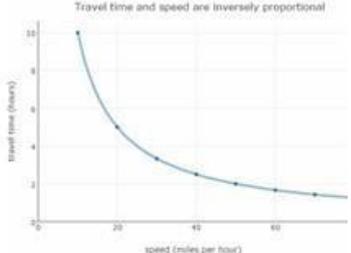


3 Tone shading



Year 9 Summer Maths Knowledge Organiser

Topic	Key fact	Hegarty maths clip number
Percentage of Amount	Turn the percentage into a decimal and multiply it by the amount. e.g. 45% of 60 is $0.45 \times 60 = 27$ The 0.45 is called the decimal multiplier.	83 to 87
Percentage Increase & Decrease	If it is a percentage increase, the decimal multiplier will be 1.something because you are getting more than 100%. If it is a percentage decrease, the decimal multiplier will be 0.something because you are getting less than 100% e.g increase £200 by 40% would be 200×1.4 decrease £200 by 40% would be 200×0.6	88 to 92
Reverse percentages	Sale price is £320 What was the original cost of the laptop? 	96
Expanding a single bracket		160 – 161
Expanding double brackets	Expanding – multiplying out the brackets. 	162 - 165
Linear sequences (nth term) & Special Sequences	Square: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, ... Cube: 1, 8, 27, 64, 125, ... Triangular: 1, 3, 6, 10, 15, 21, 28, 36, 45, ... n th term: General rule for a sequence. Find the difference between each term, then how do you get from that times table to the sequence: (e.g. $3n + 2$) 	196 – 198

Pythagoras' Theorem		<p>$c = \text{hypotenuse}$</p> $a^2 + b^2 = c^2$ $c^2 - b^2 = a^2$ $c^2 - a^2 = b^2$ <p>Remember to square root your answer to find the missing side.</p>	497 – 504
Indices		$a^m \times a^n = a^{m+n}$ $a^m / a^n = a^{m-n}$ $(a^m)^n = a^{m \times n}$ $a^0 = 1$ $a^1 = a$	102 to 106
Calculations with numbers in standard form		<p>Multiplying & dividing: do the 'normal' numbers like usual; then use index laws for the $\times 10^n$</p> <p>Adding & subtracting: make them ordinary numbers first; do column addition or subtraction; change back to standard form</p>	125 to 128
Negative and Fractional Indices		$m^{a/b} = b\sqrt[b]{m^a}$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">$a^{-c} = \frac{1}{a^c}$</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">$\left(\frac{1}{a}\right)^{-c} = a^c$</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">$\left(\frac{x}{y}\right)^{-c} = \frac{y^c}{x^c}$</div> </div>	104 to 108
Direct Proportion		<p>One quantity increases at the same rate as the other quantity increases.</p> 	339
Inverse Proportion		<p>One quantity increases at the same rate as the other quantity decreases.</p> 	342

Key Vocabulary

- Integer – A whole number.
- Power/Indices - The index of a number says how many times to use the number in a multiplication. It is written as a small number to the right and above the base number.
- Square number - the answer you get when you multiply a number by itself.
- Cube number - the answer you get when you multiply a number by itself 3 times.
- Root – The inverse operation of a power.
- Expand – to multiply the term before bracket by the terms in the bracket using the
- Factorise – To put into brackets by taking out the highest common factor.
- Hypotenuse – the longest side in a right-angled triangle.
- Direct proportion - one quantity increases at the same rate as the other quantity increases.
- Inverse proportion - one quantity increases at the same rate as the other quantity decreases.
- n^{th} term – the position to term rule for a sequence. Can be used to find any number in a sequence.

Success criteria

-  Answer the question
-  Writer's intentions
-  Quotation to support your idea
-  Subject terminology / method
-  Make links from method to your idea
-  Explain the effect on reader / audience
-  Develop analysis - zoom in
-  Alternative analysis
-  Comparison
-  Context links

 Answer the question  Writer's intentions	 Quotation to support your idea	 Subject terminology / method	 Make links from method to idea
<i>The writer...</i> <ul style="list-style-type: none"> • creates • evokes • suggests • presents • conveys • reveals • explores • introduces • highlights • persuades • states 	<ul style="list-style-type: none"> • choose carefully – it must support your idea • keep quotations short • embed where possible <p>e.g. At the beginning of the play, Shakespeare describes Macbeth as 'brave' and as 'disdaining fortune' to convey...</p> <ul style="list-style-type: none"> • avoid 'in the quote' - use 'the phrase' or 'the word' if you can't embed 	<ul style="list-style-type: none"> • noun • adjective • verb • dialogue • character • simile • metaphor • personification • alliteration • symbolism • imagery • semantic field 	<ul style="list-style-type: none"> • reflects • alludes to • echoes • symbolises • contrasts • connotes • develops • establishes • illustrates • highlights • questions • subverts
 Effect on reader / audience	 Explaining effect on reader / audience	 Develop analysis - zoom in  Alternative interpretation  Comparison	 Context links
<i>The reader / audience can...</i> <ul style="list-style-type: none"> • infer • understand • interpret <i>The reader / audience is...</i> <ul style="list-style-type: none"> • shocked • disturbed • provoked • reassured • manipulated • surprised • convinced 	<ul style="list-style-type: none"> • because • but • so that • as • also 	<ul style="list-style-type: none"> • additionally • similarly • in contrast • however • moreover • furthermore • although • whereas • despite this • equally • consequently 	<ul style="list-style-type: none"> • at the time • contextually • during this period • reflects contemporary ideas • typical of the time • unusual for the time • typical of the genre • subverts the genre • reflects the real world experience

Check:

- Capital letters (new sentence / proper nouns)
- Quotation marks
- Academic voice (no slang or weak vocabulary)
- Punctuation (full stops / no '?' or '!')
- Paragraphs

NARRATIVE WRITING - YEAR 9

CREATIVE WRITING DEVICES

Subversion Going against the natural order of things. In the context of literature, this means to create something which goes against the readers' expectation e.g. plot twist.

Didactic Intended to teach an audience and deliver entertainment. In the context of literature, a didactic story would usually provide the character with a moral dilemma.

Symbolism The use of symbols (names, people, locations, animals, weather) to represent something beyond the literal meaning. The symbol should not be taken literally but be used as a representative of something with a deeper meaning e.g. flying birds = freedom.

Foreshadowing Occurs when an author drops different hints to the reader about what is to come e.g. "Marley was dead: to begin with".

Show, not tell When language and structure are used to give clues to the reader about what is happening. This skill is a way of demonstrating creative techniques while avoiding making obvious statements.

HIGH LEVEL PUNCTUATION

Ellipsis ... Allows a reader to contemplate what you have written and create a sense of anticipation. For example: *You could probably imagine what I felt after that... complete embarrassment!*

Semi-Colon ; Used to link two clauses instead of a comma. The sentence after the semi-colon usually does not make sense without the previous sentence. For example: *Joan likes eggs; Jennifer does not.*

Colon : Consists of two equally sized dots placed one above the other on the same vertical line. A colon often comes before: an explanation, a list, a quotation, or a block quotation.

Parenthesis () Allows a writer to include additional information to a sentence. Whatever is inside the parenthesis must not be integral to the original sentence. For example: *He finally answered (after five minutes of thinking) that he did not understand the question.*

NARRATIVE WRITING HOOKS

Direct Speech Opening a story with somebody talking, perhaps saying something that helps the reader to imagine what might happen in the story.

Action Describing an action or something that has just happened, perhaps to the main character.

Scene Setting Describing the setting of the story; perhaps where they are or when. It also might use imagery to describe the weather.

Direct Address Opening a story where the narrator talks directly to the reader, often asking a question.

STORY MOUNTAIN

Exposition The start of the plot which introduces the characters, setting and outlines any relevant events that have taken place before the time of the story.

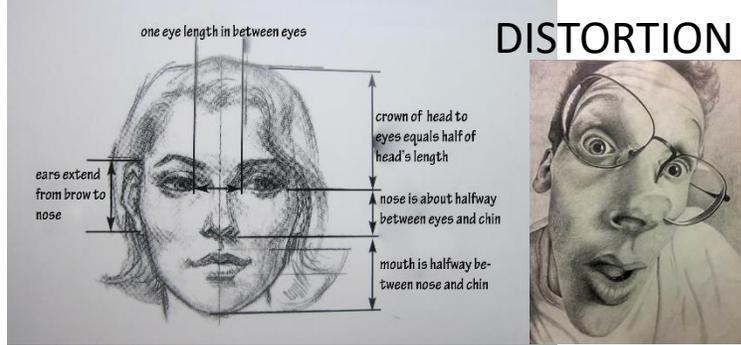
Rising Action A series of relevant events/moments in the story that lead to the climax of the story. It will usually create interest, suspense and tension for the reader.

Climax The most intense, important or exciting moment of a story.

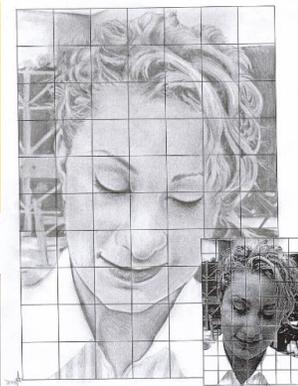
Falling Tension Events which happen immediately happen after the climax of the story. Usually address the consequences/after-effects of the climax.

Resolution Where the story is finalised, and the main problem is usually resolved. Loose ends are often tied up and it is typically when the story ends.

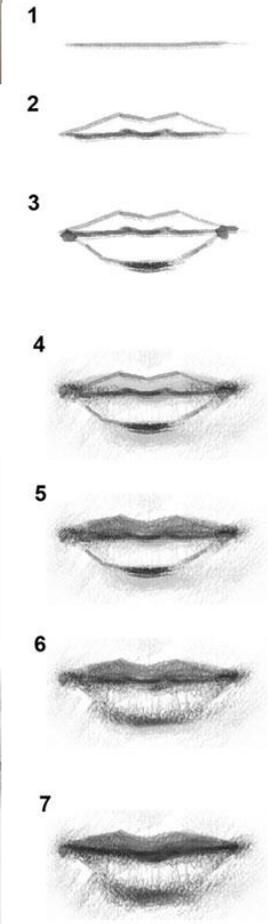
- AO1 Developing ideas- mindmap, montage, artist research
- AO2 Using Resources- testing out ideas/media
- AO3 Recording ideas-photos and drawings
- AO4 Making a personal response- final ideas



DISTORTION

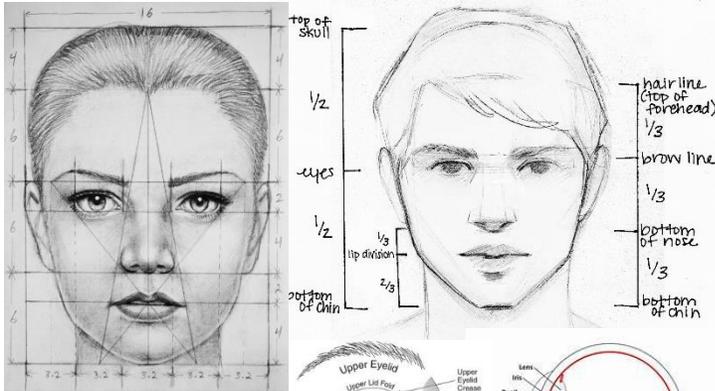


GRID METHOD

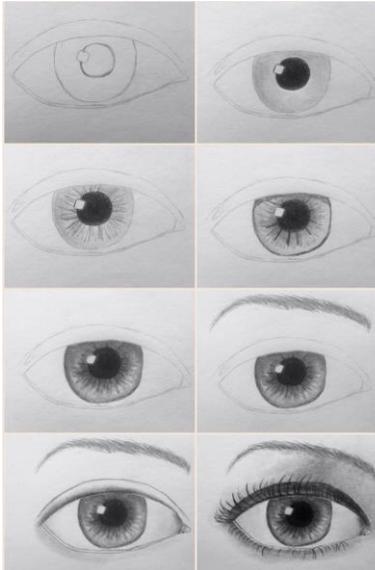
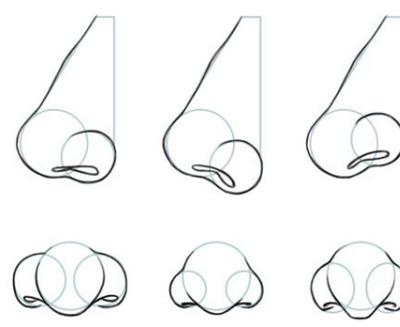
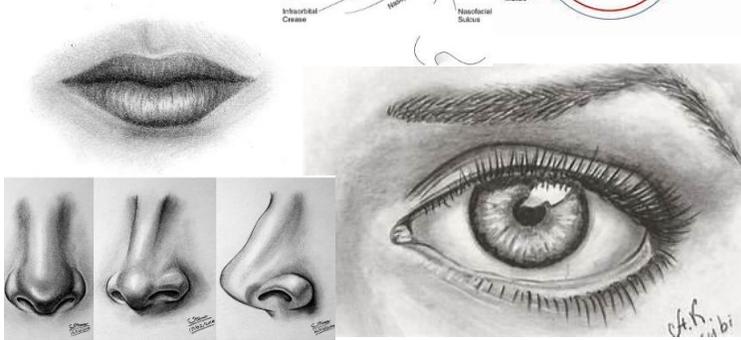


KEYWORDS:
 Portrait
 Contrast
 Shape
 Proportion
 Texture
 Tone
 Form
 Composition
 Observation
 Balance
 Tone
 Detail
 Collage
 Blending
 Shade
 Oil pastel
 Symmetry
 Profile
 Background
 Middle ground
 Foreground
 Composition

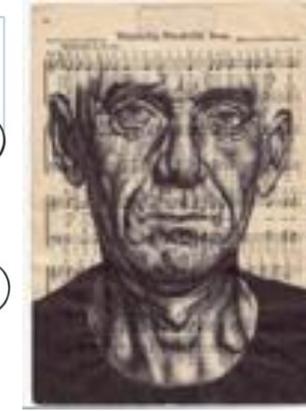
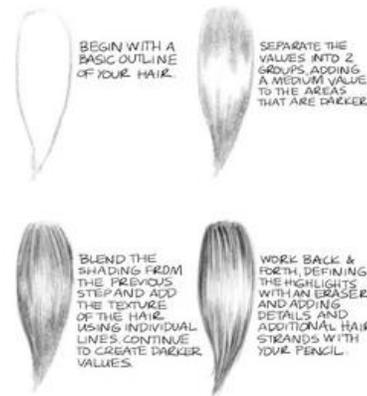
PROPORTION



FEATURES



DRAWING REALISTIC HAIR



MARK POWELL



FRANCOISE NIELLY



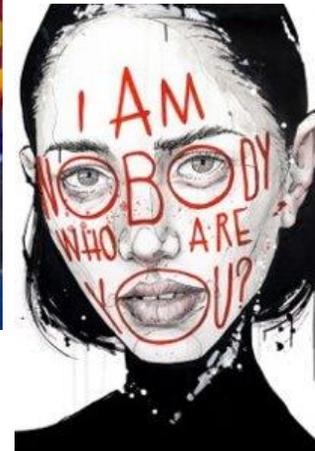
SANDRA CHEVRIER

PORTRAIT ARTISTS



LOBO

DOMINIC BEYELER



JEFF HUNTINGTON

WW1 POETRY- YEAR 9

FORMS OF WAR LITERATURE

Letters The main form of communication between soldiers and loved ones, they helped to: ease the pain of separation, boosted morale to keep Soldiers' connected to the lives they left behind. Although good for morale, many were censored by Army officials, meaning they may not give us a wholly honest account of Soldiers' experiences.

Poetry Not only a way to overcome boredom in the trenches, but it was a way to express extreme emotion and truth on the edge of experience.

Novels The primary action usually takes place on a battlefield, or in a civilian setting where they are preoccupied with the preparations, suffering because of or dealing with the War. Often written based on real experiences in order to document the horror experienced.

Newspapers Due to no television/internet communications, Newspapers were the best and most efficient way of spreading news to civilians about the War.

Posters During WW1, propaganda posters were used to encourage enlistment, boost morale and to encourage the war effort at home. They suggested war was glorious and heroic to encourage men to join.

KEY POETS

Wilfred Owen Owen enlisted in the War at the age of 22 and died a few days before the end of the War at aged 25. He was exposed to the sheer horror of the War and wanted to expose this horror to civilians.

Jessie Pope An English poet and journalist, she was best known for her patriotic stance on the War. As a woman, Pope was prohibited from fighting but encapsulated the civilian view at the beginning of the War.

Siegfried Sassoon An English poet but a self confessed conscientious objector. He wrote about the horrors of trench warfare and, using satire, mocked the 'incompetent' leaders of the War.

Philip Larkin Although not alive during WW1, he experienced WW2 as a young boy. His poetry often comments on the ordinary nature of society and how civilians interact.

SMILE

Structure The arrangement of a poem (including rhyme, form and rhythm).

Meaning What is meant by the poem/what is the poet trying to get across (including viewpoint and storyline).

Imagery A vibrant form of description which appeals to the readers imagination (including metaphors, similes, personification etc)

Language The choice of words chosen by the poet and their method of communication (including semantic fields, onomatopoeia etc)

Effect What emotions are brought about in the reader (including the mood, emotion and tone of the poem).

KEY POEMS

Dulce et Decorum Est Owen's anti-war poem exposes the horror's of War and criticises those who view the War as honourable.

The Call Pope's patriotic poem which shames those who have not yet enlisted and depicts the War as a glorious game.

The General Depicts and mocks a General in the War who, in Sassoon's opinion, is useless and careless in his plan of attack.

The Hero A controversial war poem where an Officer delivers a letter to a mother, concerning the death of her son. She is proud of his sacrifice although upon leaving, the Officer recollects the soldier's cowardice in battle.

MCMXIV (1914) A poem depicting pre-War Britain on the brink of war. It demonstrates how different life was before the war and comments on the changes it brought to society.