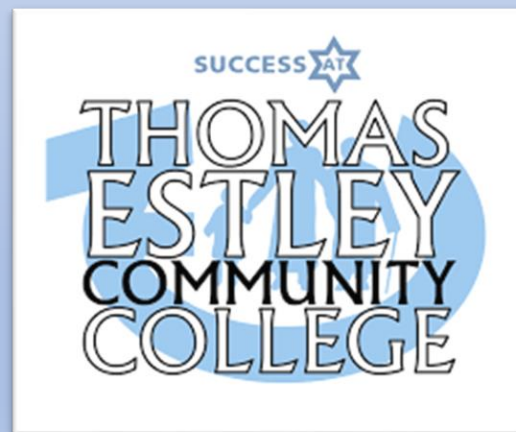


# Thomas Estley Community College

## Year 9 Autumn 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 it's full!



## Back to front

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



## 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!



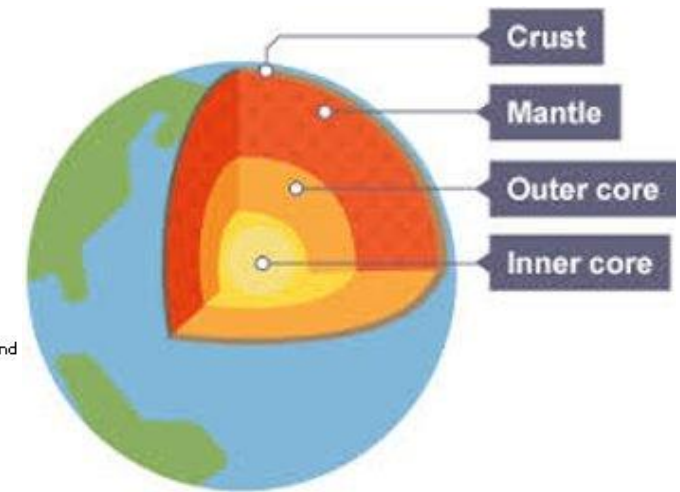
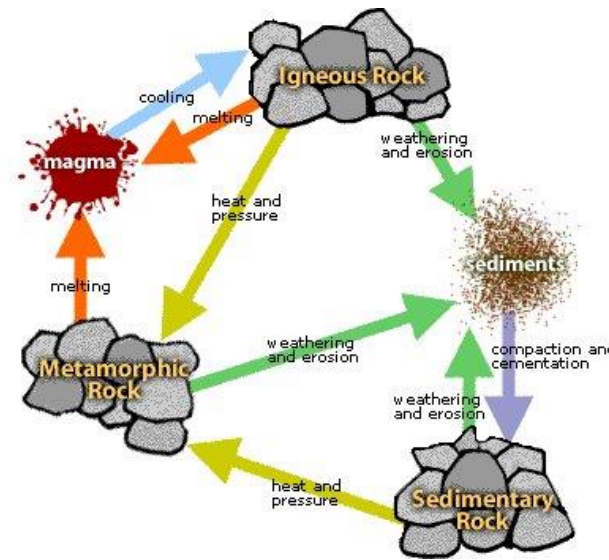
## Sketch it

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

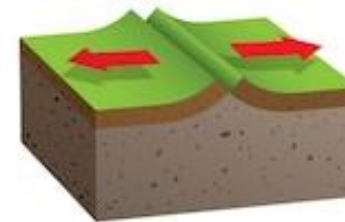


## Year 8 Knowledge Organiser – Tectonics

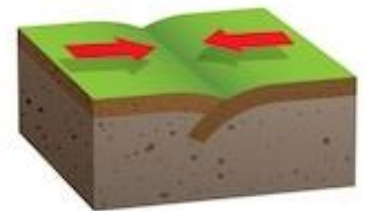
| Key Word        | Definition   |
|-----------------|--|
| Crust           | The solid outer layer of the Earth.  |
| Mantle          | The semi-molten layer of the Earth that the crust 'floats' on.   |
| Outer Core      | The liquid layer of the Earth below the mantle.  |
| Inner Core      | The solid layer of the Earth at its very centre.   |
| Tectonic Plates | The Earth's crust (and upper part of the mantle) are broken into large pieces called tectonic plates.        |
| Plate Boundary  | Where two tectonic plates meet. There are four types: constructive, destructive, collision and conservative. |
| The Rock Cycle  | The processes that turn one type of rock into another over time.   |
| Igneous         | Rock that has been melted.   |
| Sedimentary     | Rock that has been eroded and compressed.  |
| Metamorphic     | Rock that has been heated and pressured.   |
| Glacier         | A large mass of ice often shaped like a river that flows very slowly, under the force of gravity.            |



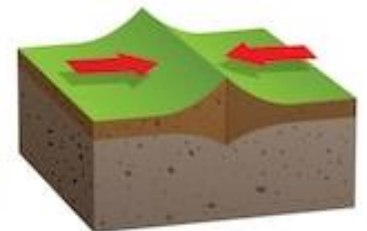
**Constructive**



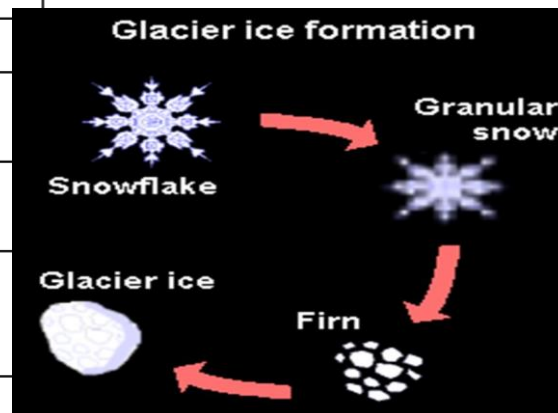
**Destructive**



**Conservative**



**Collision**



# Year 9 Knowledge Organiser – Globalisation

Globalisation is the idea that the world is becoming increasingly connected

## Effects of globalisation



|   |  |   |
|---|--|---|
| <p><b>Globalization creates access to Goods and Services</b><br/>Globalization makes more goods and services available to more people, often at lower prices. For example, we can now buy food, clothing and goods from other countries for cheaper prices.</p>   | <p><b>Globalization makes all cultures more similar</b><br/>Globalization leads to people becoming more similar in culture and beliefs. Traditional products cannot compete with cheaper ones made by TNCs and small businesses disappear as big TNCs take over. If everyone wears jeans, learns English and watches Hollywood movies we may lose precious cultural practices and languages and make the world less diverse.</p> | <p><b>Globalization Can Lift People Out of Poverty</b><br/>Globalization has caused increased job opportunities in developing countries (poorer countries) that would not have been available before.</p>                                     |
| <p><b>Information and Technology Spread More Easily With Globalization</b><br/>Art and culture aren't the only things that spread more easily in a globalized society. The same goes for information and technology. Societies can look to other countries for inspiration and good ideas and useful technology can spread more easily.</p> | <p><b>Globalization Increases Cultural Awareness</b><br/>Globalization means we are more aware of different cultures, attitudes and values of people in other countries. That exposure can inspire artists, strengthen ties between nations and reduce racism.</p>   | <p><b>Globalization increases poverty in some countries</b><br/>Big companies actively seek the countries with the weakest labour and environmental laws and the lowest wages so that they can profit more and pay the poor workers less.</p> |
| <p><b>Workers Can Lose Jobs to Countries With Lower Cost Labor</b><br/>Low-skill factory jobs in the richer countries (e.g. UK, USA) can disappear as a result of globalization (for example factories close in the US and reopen in China as it is much cheaper). This can result in unemployment and poverty in richer countries.</p>     | <p>TNCs and big companies are becoming very powerful<br/>Another criticism of globalization is that it has made big companies and TNCs too powerful. For example, big TNCs like Amazon now have so much power they can often find ways to avoid paying taxes or following labour rules in some countries.</p>  | <p><b>Key</b><br/><b>Positive:</b><br/><b>Negative:</b></p>   |



## Case studies



### Impacts of TNCs in Africa

|   |  |  |
|---|--|--|
| <p><b>Positive impacts of Shell in Nigeria</b></p>  | <p>Some people suggest Shell has been over working some of it's Nigerian workers.</p>  | <p>Oil spills caused by Shell have devastated rivers and beaches, killing millions of animals.</p>                                   |
| <p><b>Negative impacts of Shell in Nigeria</b></p>  | <p>Over 65,000 Nigerians are employed by Shell and earn a good income.</p>   | <p>Local farmers and fishermen have lost their jobs and incomes due to oil spills polluting seas and rivers.</p>                     |
| <p>Oil fires frequently happen due to accidents and violence caused by pirates. This creates lots of air pollution.</p> | <p>Due to local jobs like farming and fishing being lost, some locals have become armed pirates and survive by stealing oil which they sell.</p> | <p>Shell has helped Nigeria to develop and improve its infrastructure e.g. more Nigerians have access to energy and electricity.</p> |
| <p>Much of the profit that Shell makes is not spent in Nigeria and goes back to other countries.</p>                    | <p>Shell works with any other Nigerian companies, boosting income for some Nigerian businesses.</p>  | <p>Shell pays lots of taxes in Nigeria. These taxes can be used to improve Nigeria.</p>  |



### Locations of Costa Coffee around the world



## What should I already know?

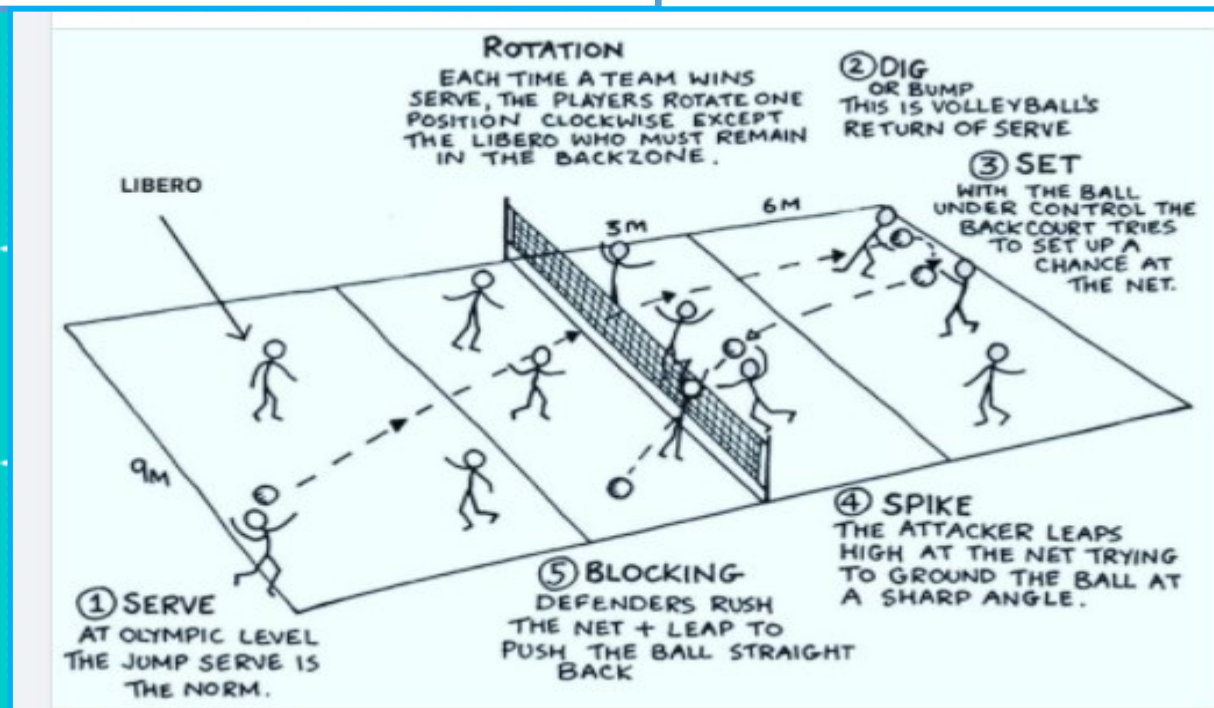
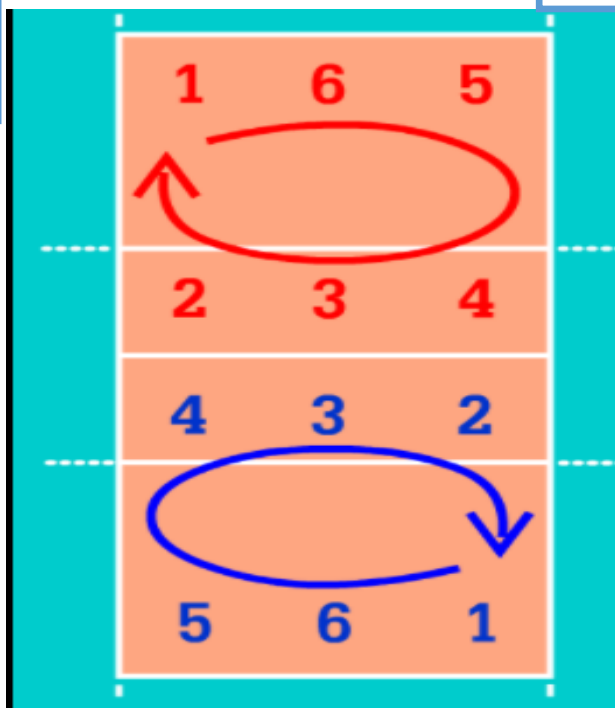
### Map Skill

## Key Definitions

| Keyword       | Definition  |
|---------------|---|
| Globalisation | The flow of people, goods, ideas and money worldwide. This is creating a complex web of inter-dependence, connecting people and places all around the world |
| TNC           | Trans National Corporations: large companies that operate in many countries around the world.   |
| NGO           | Non- Governmental organisations: these do not set out to make a profit, and are set up to address a social, health or political issue.                      |
| Trade         | The buying and selling of natural resources, manufactured goods and services.   |
| Localism      | Buying local products from local business that are unique to that area.   |
| Profit        | The amount of money that you gain when you are paid more for something compared to what it cost you to make it, get it or do it.                            |
| Revenue       | The total amount of money a company makes each year   |
| Costs         | All the money a company has to spend, for example paying staff, making products, keeping shops open etc.  |
| Economy       | The ways a country makes and spends its money.  |
| Imports       | The raw materials, goods and services that a country buys from other countries.   |
| Exports       | The raw materials, goods and services that a country sells to other countries.  |
| Labour        | Working people in a country   |

Year 9 PE  
Knowledge  
Organiser

Know your Volleyball positions and Rotations

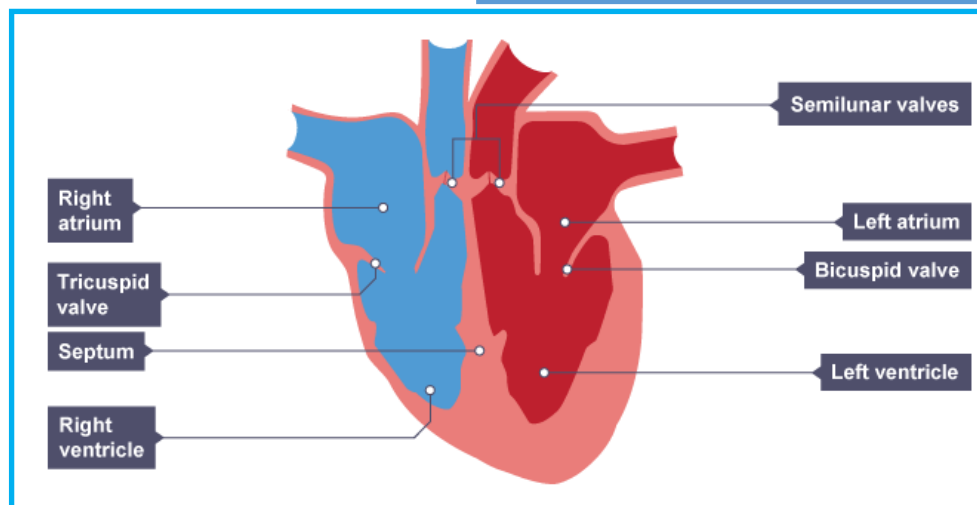


Fitness  
Tests

- Cooper Run →
- 30 m Sprint →
- Sit & Reach →
- Grip Test →
- Vertical Jump →
- Agility Run →

- Sit Ups →
- Wall Throw →
- Stork Stand →
- Ruler Drop →
- Standing Long Jump →

Know the parts of the Heart



## Year 9 Social Studies – Drugs

### Key Words

Support  
Evil  
Drugs  
Illegal  
Legal  
Prescription  
Crime  
Motivation  
Punishment  
Addiction

### Nature Vs Nurture?

#### **Are people born or made evil?**

- **Nature:** Supporters of this side argue that genes are the major influence on our intelligence and behaviour. In other words, we are born this way.
- **Nurture:** Supporters of this side argue that our intelligence and behaviour are learned through a complex process known as socialisation (learning how to behave in society from the people around us).

#### **How does this impact someone's chance of taking drugs?**

### Portugal – A Case Study

#### **Is legalising all drugs the way to stop them?**

- Portugal decriminalised all drug use, including marijuana, cocaine and heroin, in an experiment that inspired similar efforts elsewhere. The proportion of prisoners sentenced for drugs has fallen from 40% to 15% but now police are blaming a spike in the number of people who use drugs for a rise in crime.

### Key Questions To Ask Yourself

Why do people take drugs?

What are the consequences of taking drugs?

What support is there for people with addictions to drugs?

What is the impact of taking drugs on the individual?

What is the impact of illegal drugs on wider society?

What are the rights and wrongs of legalising all drugs?



### 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

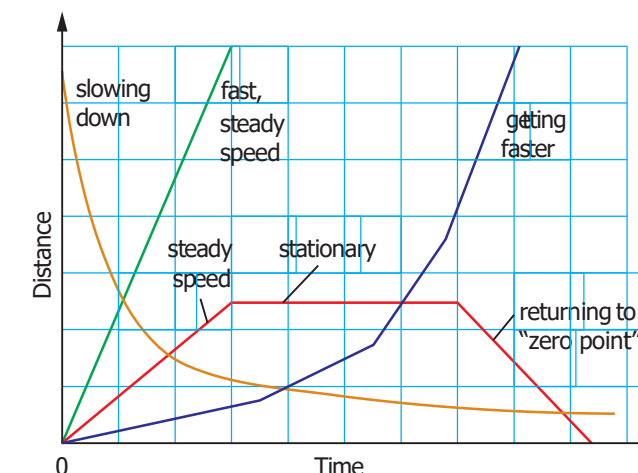
- Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:

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

- 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



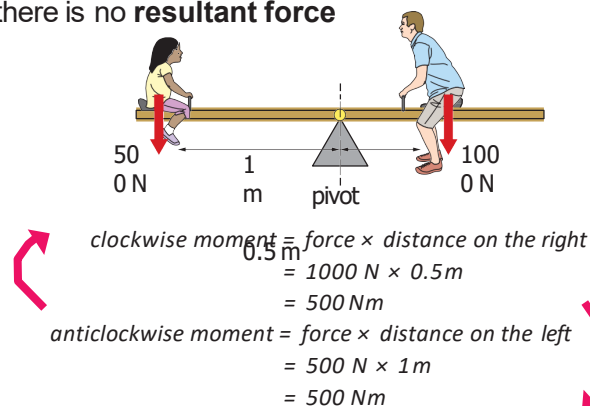
- To find the average speed, the total distance must be divided by the total time

### 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**



### 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



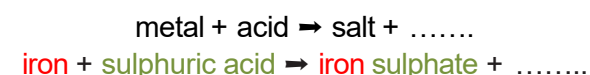
## Salts

**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.

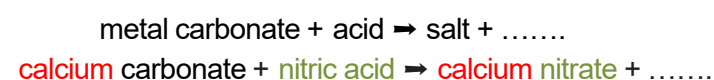
Different acids form different types of salts:

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

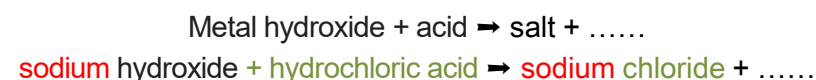
**Metal acid reaction:**



**Metal carbonate reaction:**

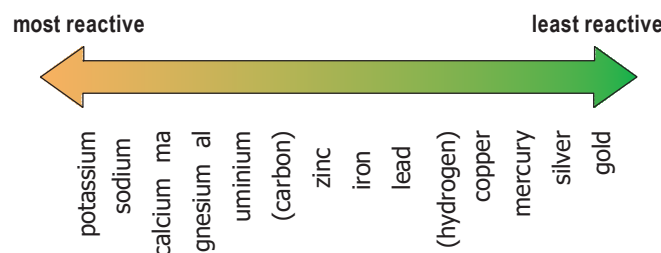


**Neutralisation reactions (one from year 7):**



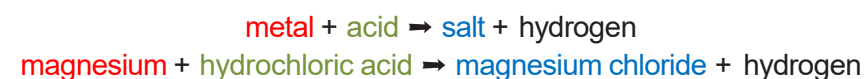
## The reactivity series

- 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

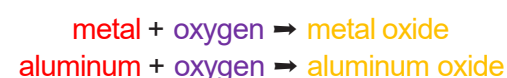
When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off.



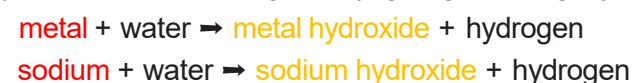
When a metal **carbonate** reacts with an acid, a salt, water and carbon dioxide is given off.



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.

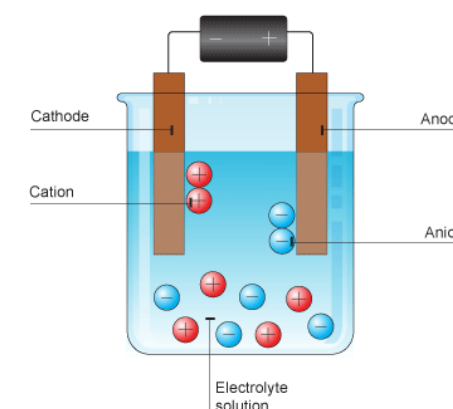
An example of this is the extraction of copper from its ore Malachite.

- copper oxide + carbon  $\Rightarrow$  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).



## Key terms

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

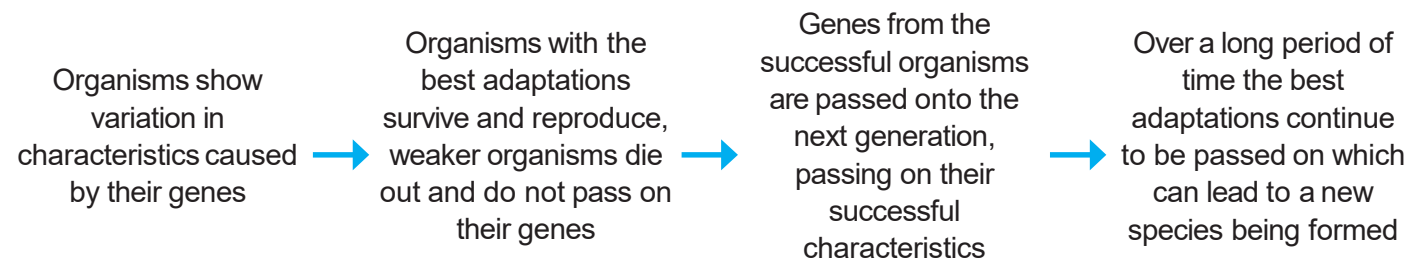
nitric acid

ore

electrolysis

### 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

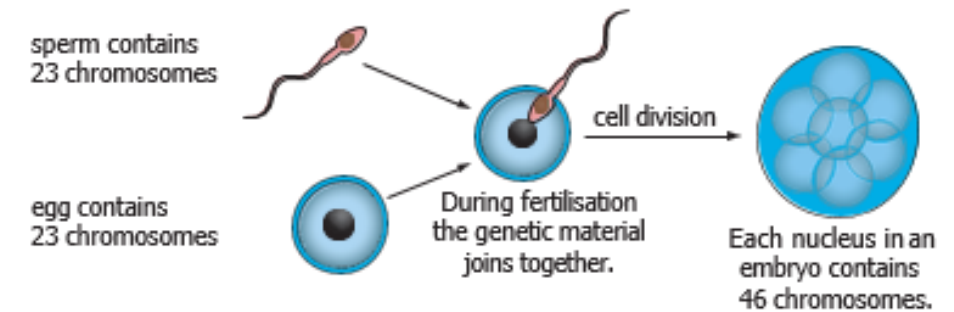
|                              |   | Possible alleles from father                                 |  |
|------------------------------|---|--|--|
|                              |   | B  | b  |
|                              |   | (dominant allele for brown eyes)                             | (recessive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

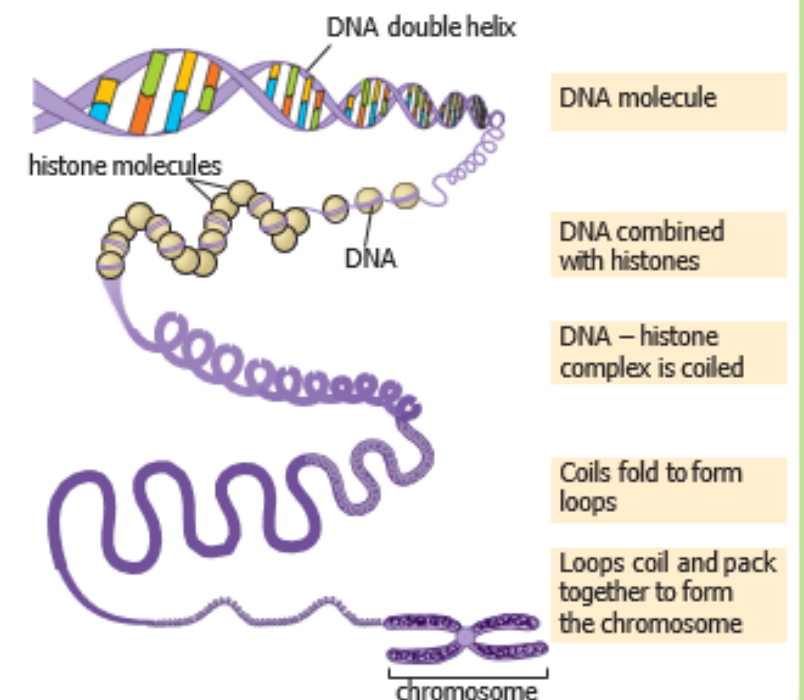


- DNA** is the material which contains all of this genetic information

**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

## 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  

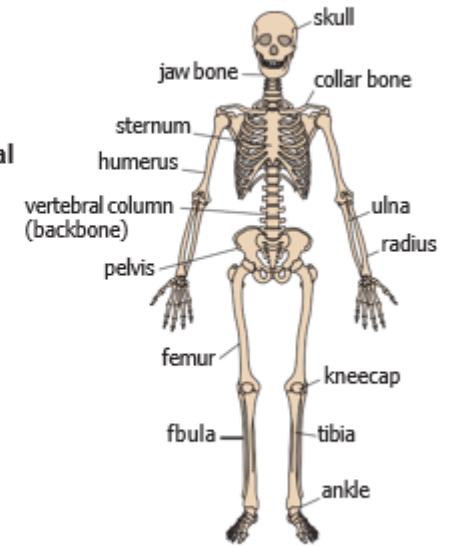
$$\text{glucose} \rightarrow \text{ethanol} + \text{carbon dioxide}$$
- This process can be used to form alcohol to drink or to allow bread and cakes to rise

## 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



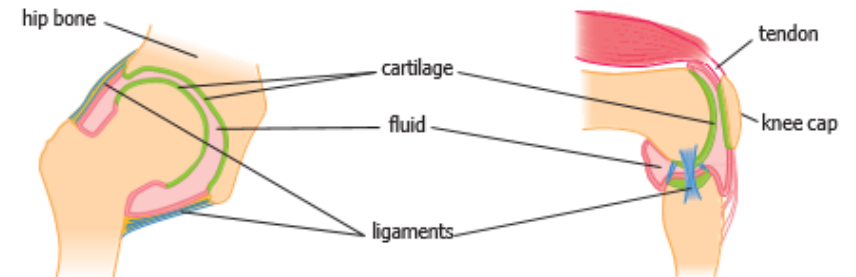
## Movement

**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:

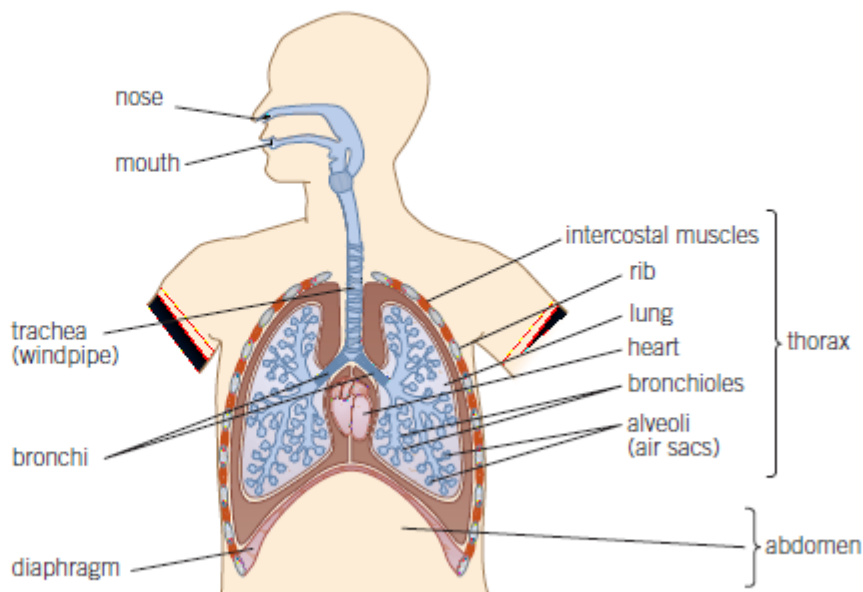
| Ligaments            | Cartilage                              | Tendons                 |
|----------------------|--|-------------------------|
| Connect bone to bone | Coats the end of bones as a protection | Connects bone to muscle |





## 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

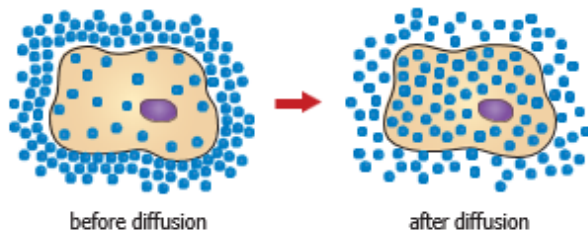


### What happens when you breathe in and out

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

### 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**

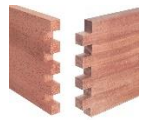


### Key terms

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

## Year 9 Resistant Materials Knowledge Organiser



Finger joint

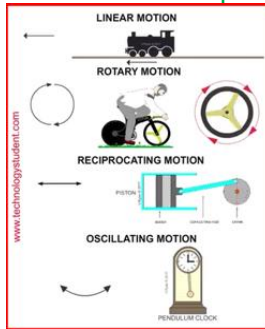
MDF is made from small timber fibres that are mixed with wax and **resin**. They are heated and **compressed** so that a flat, usable sheet is produced.



Dowel joint



Lap Joint



### Impact of plastic

Animals can become caught in pieces of plastic or mistakenly see it as food. If they cannot digest it then the animal may become ill and die.

Over time, plastic can be broken into smaller and smaller pieces. These tiny particles of plastic, known as microplastics, are eaten by fish and other sea creatures. The chemicals from the plastic are passed along the food chain and can ultimately end up in the food we eat.



## The 6Rs

Whenever environmental impact is to be reduced, 'the 6 Rs' can be addressed to ensure an in-depth analysis has been done. The 6 Rs can be considered by the designer, the and the to reduce that negative impact on the environment.



The term 'the 6 Rs' can be applied to the design of new products or when a product is finished with, used up or no longer wanted. Here are some questions to prompt 6 Rs thinking:

- Think of a package that was bought recently. Could any part of the packaging be reduced?
- Rather than disposing of a package once you have opened it, could it not be reused?
- **Recycle** - Many papers and boards are made from material that is fully or partly recyclable. Can the paper or board be disposed of correctly so that it can be recycled?
- Rethink how actions contribute to damaging the environment. Rather than buying a coffee that is served in a disposable, laminated card cup, why not buy a cup that can be refilled?
- Consumers have a huge amount of power when it comes to the choices they make when buying, including refusing to buy a product if they believe it is bad for the environment. Could a material that is sustainable be used instead?
- Many products are designed to be after a given period. When a product is broken, can it be repaired rather than discarded? If a repair can be carried out on the product, it could remain out of a landfill site for much longer.

| Name                      | Use   | Material               | Image |
|---------------------------|---|------------------------|-------|
| Tenon saw                 | A brass back saw used for precision cuts such as woodwork joints                                | wood                   |       |
| Coping Saw                | A saw that is used to cut on the back stroke to cut details and curves                          | Plastic and wood       |       |
| Hack saw/ Junior hack saw | A fine blade saw that has replaceable blades  | Metal / plastic / wood |       |
| File                      | An abrasive hand tool the removes and shapes materials  | Metal / plastic / wood |       |
| Rasp                      | Similar to a file but with bigger teeth. They are rough tool that requires more finishing work  | wood                   |       |
| Bevel chisel              | Has tapered angles that break away excess material away and give access tight corners           | wood                   |       |
| Surform                   | Has a surface similar to a food grater. They can quickly shape wood but produce a rough surface | wood                   |       |

**Product analysis** - Looking at products that already exist can help improve further designs by pinpointing issues to improve designs and **prototypes**.

### Modelling

**Modelling** ideas in card, paper, clay or other materials can create a cheap and quick way to do initial trials with a product. Using an easy to modify material provides a good way of seeing how a product looks and works, eg checking handles are in the right place or parts fit together well. Taking photographs or video throughout this can show development.

**Personal protective equipment (PPE)** must be worn where recommended:

Eye protection must be worn

Ear protection must be worn

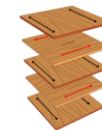
### Examples of using PPE:

- protective gloves and aprons for work with heat, eg *brazing* metals
- goggles where there may be splashing or splinters, eg chemical use or using machinery
- ear protection when using or working around noisy equipment
- dust mask when spraypainting or *routing* wood

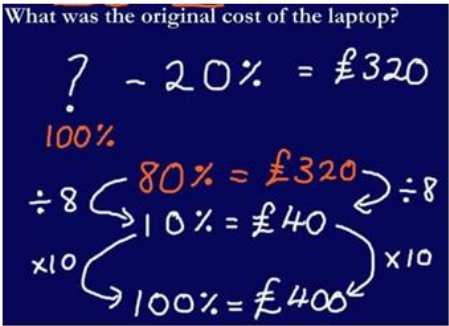
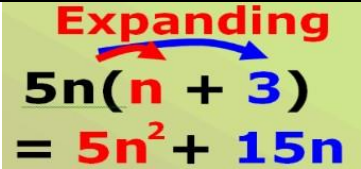
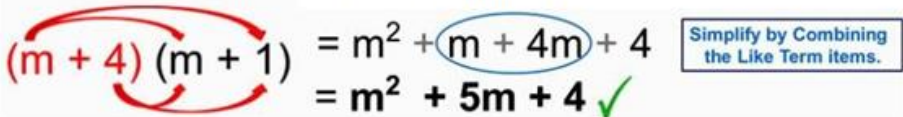
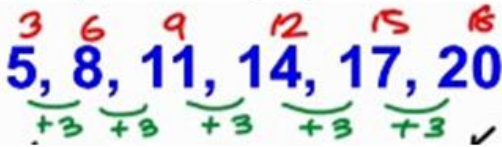
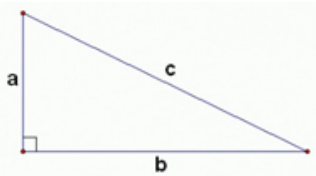


## Reinforced materials and methods include


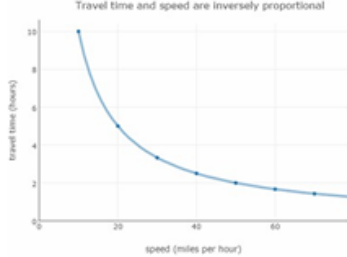
- Corrugated cardboard
- lamination of timber ( plywood)
- lamination of paper
- Reinforced concrete



# Year 9 Autumn 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.<br>e.g. 45% of 60 is $0.45 \times 60 = 27$<br>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%.<br>If it is a percentage decrease, the decimal multiplier will be 0.something because you are getting less than 100%<br>e.g increase £200 by 40% would be $200 \times 1.4$<br>decrease £200 by 40% would be $200 \times 0.6$   | 88 to 92                  |
| Reverse percentages   | Sale price is £320<br>What was the original cost of the laptop?<br>   | 96                        |
| Expanding a single bracket                                  |   | 160 – 161                 |
| Expanding double brackets                                   | Expanding – multiplying out the brackets.<br>   | 162 - 165                 |
| Linear sequences (n <sup>th</sup> term) & Special Sequences | Square: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, ...<br>Cube: 1, 8, 27, 64, 125, ...<br>Triangular: 1, 3, 6, 10, 15, 21, 28, 36, 45, ...<br>n <sup>th</sup> term: General rule for a sequence.<br>Find the difference between each term, then how do you get from that times table to the sequence: (e.g. $3n + 2$ )<br> | 196 – 198                 |
| Pythagoras' Theorem   | <br>$c = \text{hypotenuse}$<br>$a^2 + b^2 = c^2$<br>$c^2 - b^2 = a^2$<br>$c^2 - a^2 = b^2$<br>Remember to square root your answer to find the missing side.  | 497 – 504                 |
| Indices   | $a^m \times a^n = a^{m+n}$<br>$a^m \div a^n = a^{m-n}$<br>$(a^m)^n = a^{m \times n}$<br>$a^0 = 1$<br>$a^1 = a$  | 102 to 106                |



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

# Year 9 – The First World War

## Knowledge Organiser

### Background Info

- Tension had been building between the major countries of Europe at the start of the 20<sup>th</sup> century making war increasingly likely.
- When Archduke Franz Ferdinand was assassinated by a Serbian nationalist in June 1914 Austria-Hungary declared war on Serbia.
- A system of alliances quickly made this war escalate into a much bigger conflict as countries such as Russia, Germany, France and Britain rushed to support their allies.
- World War I lasted from 1914 to 1918. It was known at first as the Great War.
- Most of the battles took place in Europe and the Middle East. More than 8 million soldiers and sailors died, and more than 20 million were injured.

### Chronology

|                                |  |
|--------------------------------|--|
| 1882                           | The Triple Alliance is formed.                             |
| 1906                           | Britain launches its new battleship HMS Dreadnought.       |
| 1907                           | The Triple Entente is formed.                              |
| 28 <sup>th</sup> June 1914     | Archduke Franz Ferdinand is assassinated.                  |
| 4 <sup>th</sup> August 1914    | Britain declares war on Germany.                           |
| October 1914                   | 1 <sup>st</sup> Indian troops fought on the Western Front. |
| July 1 <sup>st</sup> 1916      | The Battle of the Somme begins.                            |
| April 1917                     | USA entered the war.                                       |
| 11 <sup>th</sup> November 1918 | The armistice is signed and the First World War ends.      |

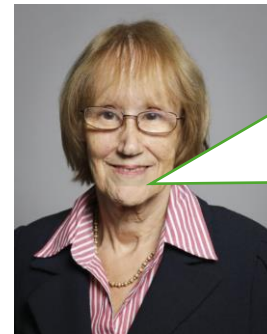
### Key Words

|                 |   |
|-----------------|---|
| Kaiser          | The Kaiser was the German monarch. In WWI this was Kaiser Wilhelm.                  |
| Empire          | A group of countries owned and controlled by one country.                           |
| Alliance        | An agreement between two or more countries to help one another in the event of war. |
| Arms Race       | Countries compete to build up their armaments.                                      |
| Schlieffen Plan | Germany's plan at the start of WWI.   |
| Conscription    | When people are forced to join the armed forces.                                    |
| Trenches        | A defensive system of ditches used by soldiers.                                     |
| Armistice       | An agreement made to end the First World War.                                       |

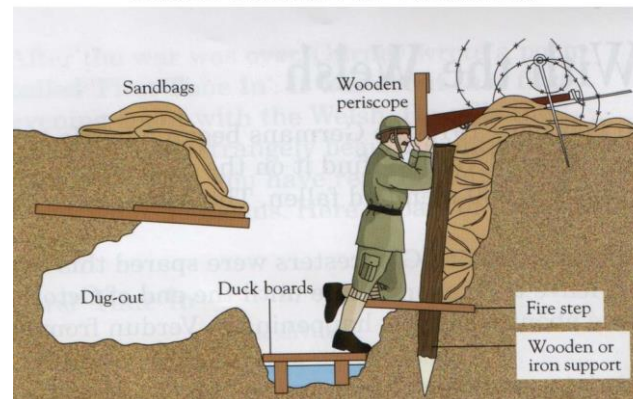
### Historical Interpretation

'By 1912, most European governments had come to believe that a general European war was inevitable and that the problems which plagued them at home and abroad could no longer be settled by negotiation and diplomacy... In these circumstances, war seemed to offer an attractive way out'.

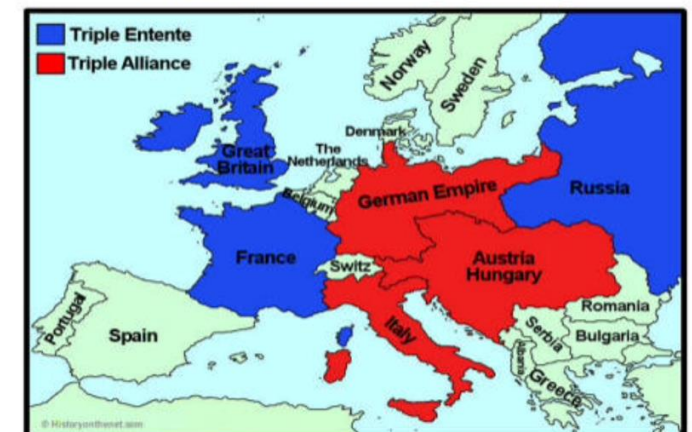
**Historian – Baroness Ruth Henia**



### Cross-section of Trenches



### World War One Alliances 1914



**Qu'est-ce que tu vas faire le week-end prochain? What are you going to do next weekend?**

|  |  |  |
|--|--|--|
| Le week-end prochain ( <b>next weekend</b> ) | Je vais ( <b>I'm going</b> )                     | aller au cinéma ( <b>go to the cinema</b> )<br>aller à une fête ( <b>go to a party</b> )<br>aller au centre commercial ( <b>go to the shopping centre</b> )  |
| Samedi prochain ( <b>next Saturday</b> )     | Tu vas ( <b>you are going</b> )                  |  |
| Dimanche prochain ( <b>next Sunday</b> )     | Il /elle / on va ( <b>he/she/ we are going</b> ) | faire du sport ( <b>do sport</b> )<br>faire les magasins ( <b>go shopping</b> )<br>faire du cheval ( <b>go horse-riding</b> )<br>faire mes devoirs ( <b>do my homework</b> )   |
| La semaine prochaine ( <b>next week</b> )    | Nous allons ( <b>we are going</b> )              |  |
|  | Vous allez ( <b>you are going</b> )              |  |
|  | Ils /elles vont ( <b>they are going</b> )        | regarder un film ( <b>watch a film</b> )<br><br>jouer au foot ( <b>play football</b> )<br>jouer sur mon ordinateur ( <b>play on my computer</b> )<br><br>voir un concert ( <b>see a concert</b> )<br>voir un match de foot ( <b>see a football match</b> )<br><br>manger une pizza ( <b>eat a pizza</b> )<br><br>boire du coca ( <b>drink coke</b> ) |

**Ce sera comment? How will it be?**

|  |  |
|--|--|
| Je pense que ( <b>I think that</b> )<br>A mon avis ( <b>In my opinion</b> )<br>Je crois que ( <b>I believe that</b> )<br>Selon moi ( <b>According to me</b> )<br>Je trouve que ( <b>I find that</b> )<br>Je dirais que ( <b>I would say that</b> ) | Ce sera amusant ( <b>it will be fun</b> )<br>Ce sera passionnant ( <b>it will be exciting</b> )<br>Ce sera cool ( <b>it will be cool</b> )<br>Ce sera genial ( <b>it will be great</b> )<br><br>Ce sera nul ( <b>it will be rubbish</b> )<br>Ce sera ennuyeux ( <b>it will be boring</b> ) |
|--|--|



**Qu'est-ce que tu as fait le week-end dernier? What did you do last weekend?**

|   |                                       |  |
|---|---------------------------------------|--|
| Le week-end dernier ( <b>last weekend</b> ) | Je suis ( <b>I</b> )                  | allé au cinema ( <b>went to the cinema</b> )<br>allé à une fête ( <b>went to a party</b> )<br>allé au centre commercial ( <b>went to the shopping centre</b> )                 |
| Samedi dernier ( <b>last Saturday</b> )     |                                       |  |
| Dimanche dernier ( <b>last Sunday</b> )     | Tu as ( <b>You</b> )                  | fait du sport ( <b>did sport</b> )<br>fait les magasins ( <b>went shopping</b> )<br>fait du cheval ( <b>went horse-riding</b> )<br>fait mes devoirs ( <b>did my homework</b> ) |
| La semaine dernière ( <b>last week</b> )    | Il / elle / on a ( <b>he/she/we</b> ) |  |
|   | Nous avons ( <b>we</b> )              | regardé un film ( <b>watched a film</b> )  |
|   | Vous avez ( <b>you</b> )              |  |
|   | Ils / elles ont ( <b>they</b> )       | joué au foot ( <b>played football</b> )<br>joué sur mon ordinateur ( <b>played on my computer</b> )  |
|   |                                       | vu un concert ( <b>saw a concert</b> )<br>vu un match de foot ( <b>saw a football match</b> )  |
|   |                                       | mangé une pizza ( <b>ate a pizza</b> )<br>bu du coca ( <b>drank coke</b> )   |

**C'était comment? How was it?**

|  |  |
|--|--|
| Je pense que ( <b>I think that</b> )<br>A mon avis ( <b>In my opinion</b> )<br>Je crois que ( <b>I believe that</b> )<br>Selon moi ( <b>According to me</b> )<br>Je trouve que ( <b>I find that</b> )<br>Je dirais que ( <b>I would say that</b> ) | C'était amusant ( <b>it was fun</b> )<br>C'était passionnant ( <b>it was exciting</b> )<br>C'était cool ( <b>it was cool</b> )<br>C'était génial ( <b>it was great</b> )<br><br>C'était nul ( <b>it was rubbish</b> )<br>C'était ennuyeux ( <b>it was boring</b> ) |
|--|--|

## Qu'est-ce qu'on peut faire dans ta ville?

Dans ma ville **(In my town)**

On peut **(one can)**

On ne peut pas **(one cannot)**

aller à un match de foot **(go to a football match)**

aller au cinéma **(go to the cinema)**

aller au centre commercial **(go to the shopping centre)**

faire du cheval **(do some horse riding)**

faire du ski **(do some skiing)**

faire de l'équitation **(go horse-riding)**

faire des promenades **(do some walks)**

faire les magasins **(do some shopping)**

faire un pique-nique **(do a picnic)**

se baigner dans la mer **(swim in the sea)**

se détendre sur la plage **(relax on the beach)**

visiter le château **(visit the castle)**

visiter les musées **(visit the museums)**

regarder un match de foot **(watch a football match)**

Qu'est-ce que tu as fait récemment en ville?

|  |                                   |   |
|--|-----------------------------------|---|
| Le week-end dernier ( <b>last weekend</b> )    | J'ai joué ( <b>I played</b> )     | au foot<br>au tennis  |
| Il y a trois jours ( <b>three days ago</b> )   | J'ai fait ( <b>I did/went</b> )   | de la natation ( <b>swimming</b> )<br>du shopping<br>du footing ( <b>jogging</b> )                                      |
| Hier ( <b>yesterday</b> )                      | J'ai regardé ( <b>I watched</b> ) | un film<br>des séries sur Netflix<br>la télé ( <b>TV</b> )  |
| Récemment ( <b>recently</b> )                  | J'ai vu ( <b>I saw</b> )          | un film<br>un concert<br>un match de foot   |
| Avant hier ( <b>the day before yesterday</b> ) | J'ai mangé ( <b>I ate</b> )       | une pizza<br>du popcorn   |
| La semaine derniere ( <b>last week</b> )       | Je suis allé ( <b>I went</b> )    | au cinéma<br>au centre commercial ( <b>to the shopping centre</b> )<br>au centre sportif ( <b>to the sport centre</b> ) |

Où habites-tu? Where do you live?

|  |   |   |   |   |
|--|---|---|---|---|
| J'habite <b>(I live)</b><br><br>Nous habitons <b>(We live)</b> | en France <b>(in France)</b><br>en Italie <b>(in Italy)</b><br>en Espagne <b>(in Spain)</b><br>en Grèce <b>(in Greece)</b><br>en Allemagne <b>(in Germany)</b><br>en Irlande <b>(in Ireland)</b><br>en Suisse <b>(in Switzerland)</b><br><br>au Canada <b>(in Canada)</b><br>au Pays de Galles <b>(in Wales)</b><br><br>aux Etats-Unis <b>(in America)</b><br>à Paris <b>(in Paris)</b><br>à Londres <b>(in London)</b> | dans un village <b>(in a village)</b><br>dans une ville <b>(in a town)</b><br>au centre-ville <b>(in the town centre)</b><br>au bord de la mer <b>(at the seaside)</b><br>à la campagne <b>(in the countryside)</b><br>à la montagne <b>(in the mountains)</b><br>en ville <b>(in town)</b> | c'est dans le nord <b>(it's in the north)</b><br>c'est dans le sud <b>(it's in the south)</b><br>c'est dans l'est <b>(it's in the east)</b><br>c'est dans l'ouest <b>(it's in the west)</b><br>c'est dans le centre <b>(it's in the centre)</b> | de l'Angleterre <b>(of England)</b><br>de l'Écosse <b>(of Scotland)</b><br>de l'Irlande <b>(of Ireland)</b><br>de la France <b>(of France)</b><br>du pays de Galles <b>(of Wales)</b> |
|--|---|---|---|---|

Qu'est-ce qu'il y a dans ta ville?  
What is there in your town?

|  |   |
|--|---|
| Dans ma ville il y a <b>(In my town there is)</b><br><br>Dans mon village il y a <b>(In my village there is)</b><br><br>Pres de chez moi <b>(Near my house)</b><br><br>Dans mon quartier <b>(In my neighbourhood)</b><br><br>Il n'y a pas de/d' <b>(There isn't)</b> | un centre de loisirs <b>(a leisure centre)</b><br>un château <b>(a castle)</b><br>un musée <b>(a museum)</b><br>un stade <b>(a stadium)</b><br>un supermarché <b>(a supermarket)</b><br>une poste <b>(a post office)</b><br>une bibliothèque <b>(a library)</b><br>une église <b>(a church)</b><br>une gare (SNCF) <b>(a train station)</b><br>une mosquée <b>(a mosque)</b><br>des cafés <b>(some cafes)</b><br>un centre commercial <b>(a shopping centre)</b><br>un cinéma <b>(a cinema)</b><br>un club de jeunes <b>(a youth club)</b><br>un grand parc <b>(a big park)</b><br>une piscine <b>(a swimming pool)</b><br>une patinoire <b>(an ice-rink)</b> |
|--|---|



Tu aimes ta ville? Do you like your town?

|  |   |  |
|--|---|--|
| J'aime <b>(I like)</b><br><br>J'adore <b>(I love)</b><br><br>Je n'aime pas <b>(I don't like)</b><br><br>Je déteste <b>(I hate)</b> | ma ville <b>(my town/city)</b><br>mon village <b>(my village)</b> | car <b>(because)</b><br>c'est <b>(it is)</b><br><br>grand(e) <b>(big)</b><br>petit(e) <b>(small)</b><br>joli(e) <b>(pretty)</b><br>dangereux <b>(dangerous)</b><br>sûr <b>(safe)</b><br>propre <b>(clean)</b><br>sale <b>(dirty)</b><br><br>il y a <b>(there is/are)</b><br>beaucoup de choses à faire <b>(lots of things to do)</b> |
|--|---|--|

|  |
|--|
| entre <b>(between)</b><br><br>devant <b>(in front of)</b><br><br>derrière <b>(behind)</b><br><br>à côté <b>(next to)</b><br><br>à gauche <b>(to the left of)</b><br><br>à droite <b>(to the right of)</b><br><br>en face <b>(opposite)</b> |
|--|

<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>

[https://www.youtube.com/watch?v=OZOIEYQ0axo&list=PLCvEcrsF\\_9zIxoGGU59CjuZHciPI9uvGm&index=9&t=2s](https://www.youtube.com/watch?v=OZOIEYQ0axo&list=PLCvEcrsF_9zIxoGGU59CjuZHciPI9uvGm&index=9&t=2s)

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

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

A diagram illustrating the symptoms of dehydration. On the left, there are six red circular icons arranged in a 3x2 grid. Each icon contains a white symbol representing a symptom: a head with a circular arrow for dizziness, a mouth for dry mouth, a drop of urine for dark urine, a head with a pulse line for headache, a glass of water for thirst, and a battery with a red bar for low level for fatigue. To the right of each icon is the corresponding symptom name in a bold, black, sans-serif font. To the right of the entire grid is a stylized silhouette of a human figure, colored light blue for the upper body and light green for the lower body.

**DIZZINESS**

**DRY MOUTH**

**DARK URINE**

**HEADACHE**









**THIRST**

**FATIGUE**

<https://www.youtube.com/watch?v=b7s2Aqi72Q8>

# Year 9 - Cooking skills

## Equipment

|  |   |   |  |
|--|---|---|--|
|  |  |  |  |
| Fish slice   | Food thermometer  | Food processor  | Potato masher  |
|  |  |  |  |
| Wok  | Tongs   | Electric whisk  | Pastry brush   |

## Skills and Processes

### Blind baking



**Used in:** tomato and basil tarts

### Dividing and shaping



**Used in:** burgers, fish cakes, croquettes, Swedish meatballs

### Whisking



**Used in:** tomato and basil tarts, Swiss roll

### Folding and wrapping



**Used in:** samosas, spring rolls

## Key word

## Meaning

### Denaturation

When protein foods are heated causing them to change size, colour and texture eg. burgers, meatballs, chicken.

### Stir-frying

A cooking technique in which ingredients are fried in a small amount of very hot oil while being stirred in a wok

### Aeration

The process of incorporating air into a mixture to help provide structure and volume eg. whisking eggs for Swiss roll.

### Reduction

Simmering a liquid over heat until it thickens due to evaporation.

## Independent skills I need to learn in Year 9

**Select the correct colour coded chopping boards** to prevent cross contamination.

**Use a wide range of preparation and cooking techniques** eg. finely dicing, blind baking, whisking, sautéing, shaping, mashing, enrobing, stir-frying etc.

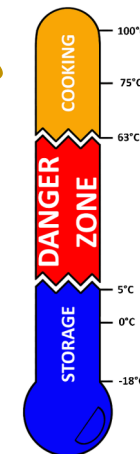
**Organise** my workspace, remove food waste promptly, clean as I go.

**Manage temperature control** know when to turn heat up and down accordingly.

**Check for readiness** using a food thermometer to check the internal temperature.

## Food safety

Know the **critical temperature** for cooking foods, the effect on **bacteria** and how to **check the core temperature** of meat.





# JACOBEOAN RHETORIC

## GLOSSARY:

Rhetoric – the art of spoken or written persuasion

Quintessentially – the most typical example of something

Decipher – convert into understandable language

Mastery – comprehensive knowledge or skill in a certain area

Pedagogical – relating to teaching

Litigation – The process of taking legal action

Prosaic – having the style of prose, as opposed to the beauty and crafting of poetry

**Deliberative rhetoric** is speech or writing that attempts to persuade an audience to take (or not take) some action.

**Judicial rhetoric** is speech or writing that considers the justice or injustice of a certain charge or accusation.

**Epideictic rhetoric** is speech or writing that praises (encomium) or blames (invective).

*“Classical Rhetoric, the art of persuasion, formed the sum and substance of Shakespeare's education and was the basis of his understanding of the power of language and how it worked to move, delight and teach. Rhetoric, which seeks to explain the way that language works to influence others, provides a powerful, transformative tool for approaching text in performance.” Arden/Benet Brandreth.*

## Rhetorical Devices:

I – Imperative verbs

N – Nouns (pronouns/addressing the reader)

A - Alliteration

F - Facts

O - Opinion

R – Rhetorical questions

E – Emotive language

S - Statistics

T - Triplets



Aristotle's Rhetorical Triangle



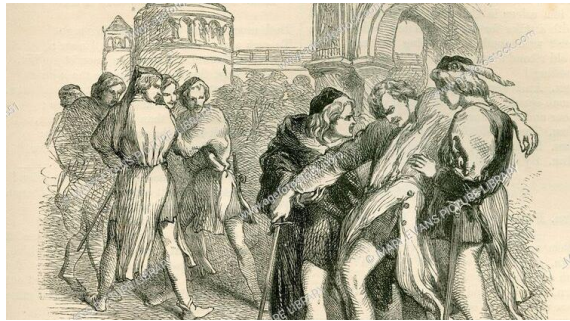


# Shakespeare's *Romeo and Juliet*



## Romeo and Juliet – Shakespeare's most infamous tragedy.

An age-old vendetta between two powerful families erupts into bloodshed. A group of masked Montagues risk further conflict by gatecrashing a Capulet party. A young lovesick Romeo Montague falls instantly in love with Juliet Capulet, who is due to marry her father's choice, the County Paris. With the help of Juliet's nurse, the women arrange for the couple to marry the next day, but Romeo's attempt to halt a street fight leads to the death of Juliet's own cousin, Tybalt, for which Romeo is banished. In a desperate attempt to be reunited with Romeo, Juliet follows the Friar's plot and fakes her own death. The message fails to reach Romeo, and believing Juliet dead, he takes his life in her tomb. Juliet wakes to find Romeo's corpse beside her and kills herself. The grieving family agree to end their feud. (source: [www.shakespeare.org.uk](http://www.shakespeare.org.uk))



## Keywords and terminology:

Iambic pentameter – 10 syllables in a line of writing/poetry.

Simile – comparing two things using “like” or “as”.

Vendetta - a blood feud in which the family of a murdered person seeks vengeance on the murderer or the murderer's family.

Dichotomy – a division or contrast between two opposed things.

Epithet - an adjective or phrase expressing a quality or attribute regarded as characteristic of the person or thing mentioned (“star-crossed lovers”).

Foreshadowing – ideas or events which hint at later events in the story.

Dramatic Irony – When a character is not aware of events in the story, but the audience are aware.

Microcosm – a small group of society used to represent a much larger issue.

Soliloquy – a monologue spoken by a character on stage, verbalising their inner thoughts for the sake of the audience.

Stichomythia - dialogue in which two characters speak alternate lines of verse.



# URBAN

Brooklyn  
Harlem  
New York

Cutting mat



**TAG:**

A tag is the most **basic writing** of an artist's name or nickname.

**Key Words:**

Mixed Media

Stencil

TAG

Materials

Sources

Craft knife

Taki 183

Banksy

Shepard Fairey

Dashone

Keith Haring

Grid method

Graphite transfer

Research

Analysis

Composition

Proportion

Printing

Style

Technique

Digital

Manipulation

## Year 9 Art & Design

**SHEPARD FAIREY**

Activist, Political,  
propaganda, posters,  
blue and red, graphic  
design, mixed media



Make sure it is always  
under your laminate  
when cutting

Metal safety rule

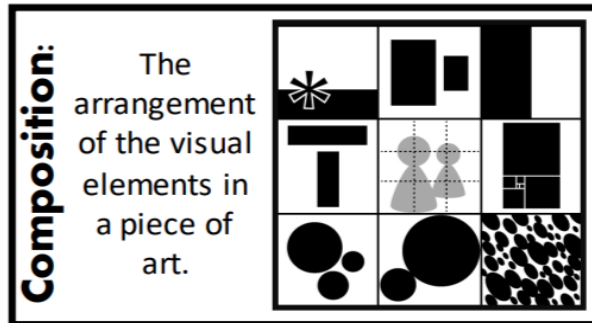


Keep hands away from  
the side when cutting.

Craft knife



Keep hands away  
from blade. Do not  
have open on furthest  
setting. Close when  
not in use.



**Artist Research:**

Title

Images

Information

Artist

copy/response

**BANKSY**

Stencil, controversial,  
anonymous, Flower  
Thrower, Girl with Balloon,  
spray paint, street art



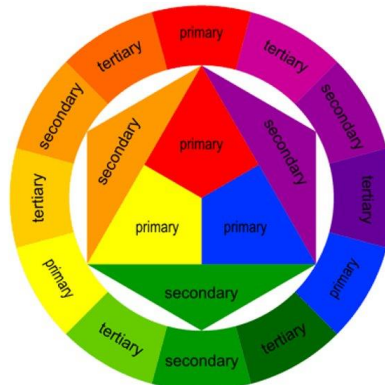
**DASHONE**

Mixed media,  
monochromatic, bright  
colours, neon, celebrities,  
hip hop



Artist research  
Artist analysis  
Artist copy  
Artist response

Primary  
Secondary  
Harmonious  
Contrasting  
Monochromatic



### Stencilling Process:

1. Print and laminate your image
2. Place your laminated image on a cutting mat
3. Carefully cut away the black sections of your stencil
4. Masking tape your stencil onto paper making sure it is flat
5. Use a sponge and poster paint and dab it carefully over your stencil to create your print

# Computing:

## Introduction to Python

Python is a **text based programming language** that can be used to create programs, games, applications and much more!

A **program** is a set of precise instructions, expressed in a **programming language**.  
**Translating** the programming language is necessary for a machine to be able to **execute** the instructions.

To execute a Python program, you need a **Python interpreter**.

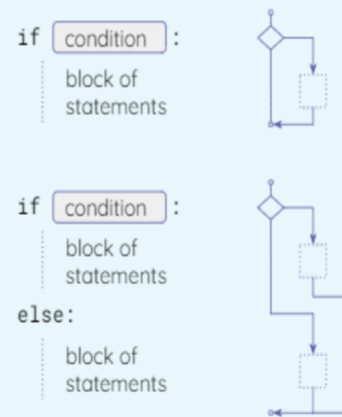
This is a program that translates and executes your Python program.

A **selection** statement allows a computer to **evaluate** whether an **expression** is 'true' or 'false' and then perform an action depending on the outcome.

### Syntax Errors

All programming languages have rules for **syntax**, i.e. how statements can be assembled.  
Programs written in a programming language must follow its syntax.  
Programs with **syntax errors** cannot be translated and executed.

You will need an **if** or an **if, else**:  
when there is **more than one possible path** for your program to follow.



### Useful snippets of code

|                            |   |
|----------------------------|---|
| print ("Year 9")           | Will display the string "Year 9"  |
| input ()                   | Reads a line of text from the keyboard and returns                          |
| variable name = expression | Allows an expression to be assigned to a variable.<br>E.g. year=1944        |
| Name=[item1, item2, item3] | Allows creation of a list e.g.<br>shopping = ["oranges", "apples", "pears"] |

### Some data types

Whole numbers—**integer**

Yes/no or True/False—**boolean**

Letters, combination of letters, numbers—**string**

### Arithmetic operators

+ addition  
- difference  
\* multiplication  
/ division  
// integer division  
% remainder of integer division  
\*\* exponentiation (to the power of)

### Some common syntax errors in selection

- use if and else—no capitals
- A colon : is always required after the if condition and after else.
- Use **indentation** to indicate which statements 'belong' to the if block and the else block.
- The == operator checks for equality.
- A single = is only used in assignments

You can use multiple branches using if, elif and else

Python helps by telling the programmer where the error is. So if you see red error text—read it first.

### Some programming key terms

input

variable

assignment

selection

algorithm

sequence

walk through

iteration

relational operators

logical operators

list

output

# YEAR 9 CYBERSECURITY

**Cybersecurity** looking at common attacks and methods to protect ourselves and our networks against these attacks.

**Data:** raw facts and figures

**Information:** data that has been processed and has context

It is the law



## Key words

|                            |  |
|----------------------------|--|
| <b>adware</b>              | advertises for products a user may be interested in, based on internet history |
| <b>authentication</b>      | verifying the identity of a user or process                                    |
| <b>auto update</b>         | updating software to remove vulnerabilities automatically                      |
| <b>biometrics</b>          | 'password' created from the user fingerprint, iris, retina, facial, voice      |
| <b>blagging</b>            | inventing a scenario to obtaining personal information                         |
| <b>CAPTCHA</b>             | Completely Automated Public Turing Test To Tell Computers and Humans Apart     |
| <b>DoS/DDoS</b>            | Denial of Service attack/Distributed Denial of Service                         |
| <b>encryption</b>          | mathematically converts data into a form that is unreadable without a key      |
| <b>firewall</b>            | checks incoming and outgoing network traffic for threats                       |
| <b>hacking</b>             | gaining <b>unauthorised</b> access to or control of a computer system'         |
| <b>malware</b>             | a variety of forms of hostile or intrusive software                            |
| <b>penetration testing</b> | testing a network/program for vulnerabilities                                  |
| <b>pharming</b>            | redirecting web traffic to fake websites designed to gain personal information |
| <b>phishing</b>            | messages designed to steal personal details/money/identity                     |
| <b>ransomware</b>          | virus which locks a computer and encrypts files until a "ransom" is paid       |
| <b>script kiddies</b>      | hackers with no technical hacking knowledge using downloaded software          |
| <b>shouldering</b>         | directly observing someone enter personal details e.g. PIN number, password.   |
| <b>social engineering</b>  | manipulating people so they give up personal/confidential information          |
| <b>spyware</b>             | gathers information about a person or organisation without their knowledge     |
| <b>trojans</b>             | masquerades as having a legitimate purpose but actually has malicious intent   |
| <b>viruses</b>             | self-replicating software attached to another program/file                     |
| <b>worms</b>               | Replicate and spread through the network                                       |

## Data Protection Act 2018:

All organisations and people using and storing personal data must abide by the DPA principles . It states how data should be stored/accessed and what rights a data subject has for the protection of their data.

**Computer Misuse Act 1990:** It is an offence to

- 1.have unauthorised access to computer material
- 2.have unauthorised access with intent to commit or facilitate the commission of further offences
- 3.commit unauthorised acts with intent to impair, or with recklessness as to impairing, the operation of a computer.

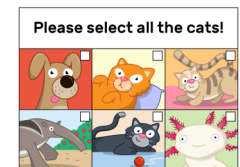
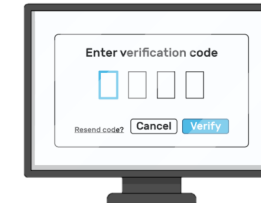
## Network and System security measures include:



Anti-malware  
firewall  
encryption

passwords  
biometrics

Auto updates  
Penetration testing  
User permissions  
User authentication



**Hacking** in the context of cyber security is gaining **unauthorised** access to or control of a computer system .

## Unethical versus ethical hacking

Penetration testers (pen testers) are people who are paid to legally hack into computer systems with the sole purpose of helping a company identify weaknesses in their system.

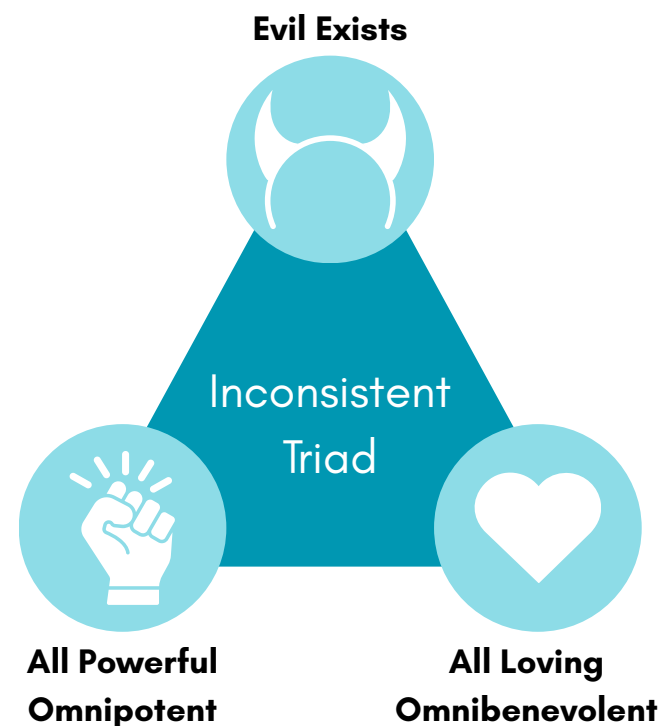
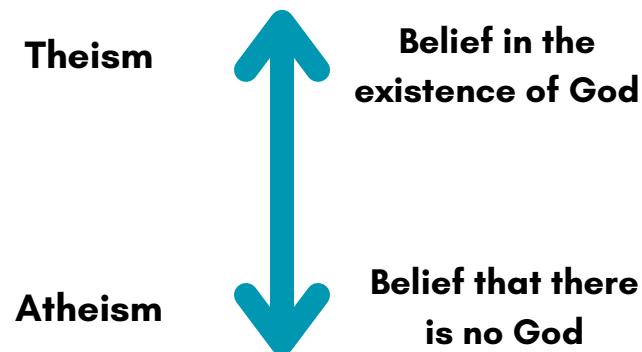




# Year 9 Religious Education - Autumn Term

## The Problem of Evil and Suffering

| Key Term             | Definition   |
|----------------------|--|
| Evil                 | Profound immorality or wickedness causing harm or suffering.             |
| Suffering            | The experience of pain, distress, or hardship.                           |
| Moral Evil           | Evil resulting from human choices and actions (e.g., murder).            |
| Natural Evil         | Suffering caused by natural events (e.g., earthquakes).                  |
| Theodicy             | A defence of God's goodness despite the existence of evil.               |
| Free Will            | The ability to choose freely between different courses of action.        |
| Moral Responsibility | Being accountable for one's own actions and their consequences.          |
| Compassion           | Deep empathy and care for others who are suffering.                      |
| Charity              | Voluntary giving to help those in need.                                  |
| Philosophy           | The study of fundamental questions about life, knowledge, and existence. |



### Augustines Theodicy

The idea that evil is the result of human misuse of free will; God created a perfect world.

### Irenaean Theodicy

The idea that suffering helps humans grow morally and spiritually.

A philosophical problem that says God cannot be omnipotent, omnibenevolent, and allow evil to exist all at once.