

# Thomas Estley Community College

## Year 9 Autumn Term

### Knowledge Organiser



## What are Knowledge Organisers?

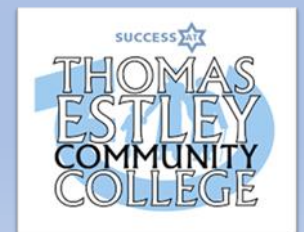
A knowledge organiser is an easy way that each subject can summarise the most important information. Each subject section will include key terms, short explanations, glossary words, diagrams etc making it clear to the student as to what is essential to learn. Each grid has an overall theme and these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

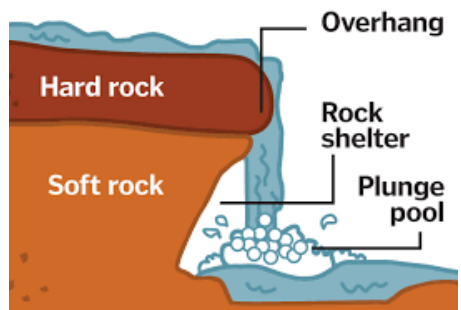
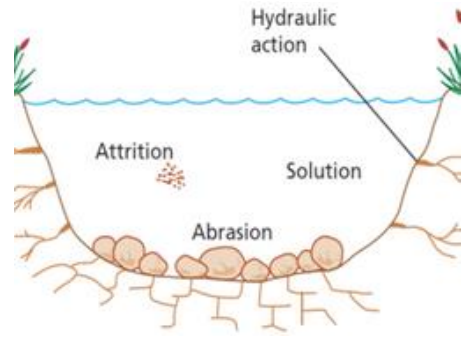
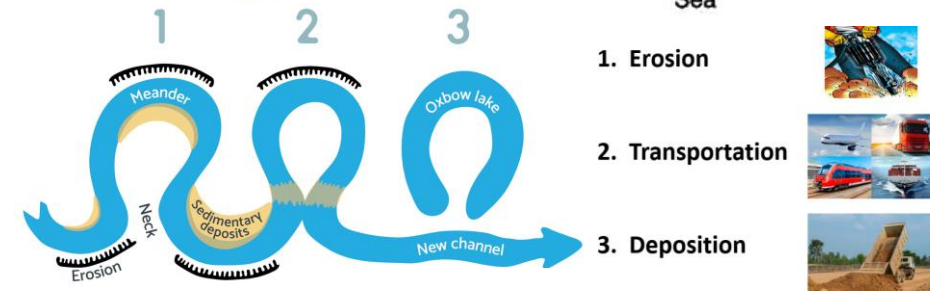
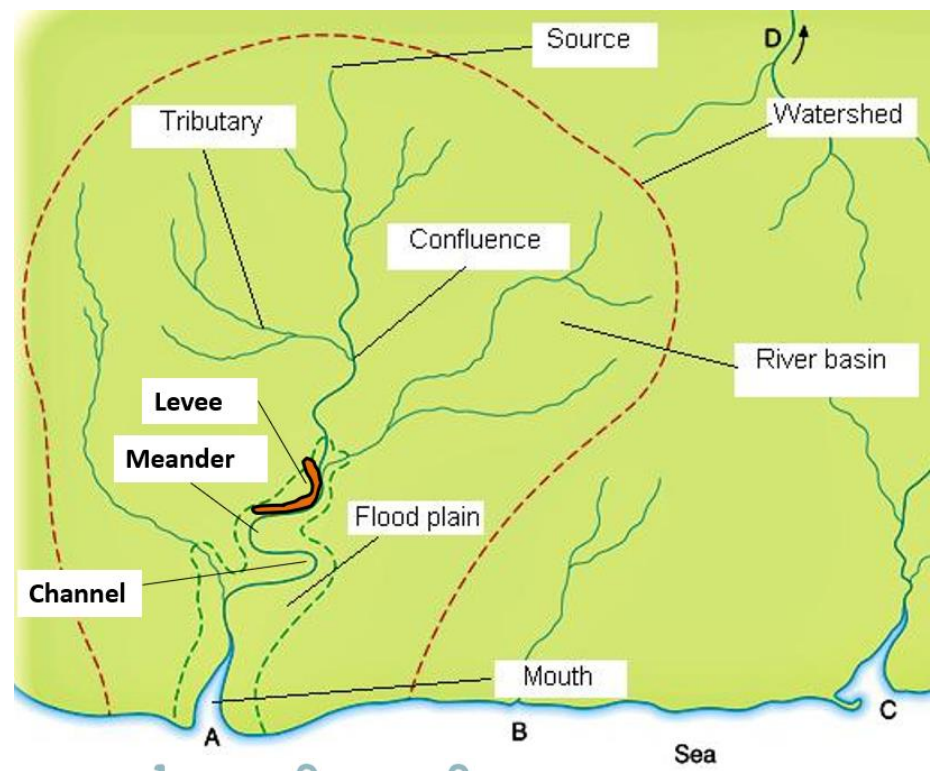


# Geography Knowledge Organiser

## Year 9: Rivers

Key Word	Definition
The Water Cycle	The movement of water around the atmosphere, sea and ground in a continuous cycle.
Drainage Basin	The area of land drained by a river and its tributaries.
Erosion	The process where sediment is picked up by the river.
Transportation	The process where rivers move sediment, generally downstream.
Deposition	The process where sediment is dropped by the river as it loses energy.
Source	The point at which a river starts.
Mouth	The point where a river meets the sea (or lake).
Waterfall	A geological formation where flowing water rapidly drops in elevation as it flows over a steep region or a cliff.
Ox-Bow Lake	A landform formed when a meander bend is cut off from the original river course.
Delta	A river mouth with lots sediment causing the main channel to split into smaller branching channels.

**Useful websites...**  
<https://www.bbc.co.uk/education/topics/zs92tfr>  
<https://www.bbc.co.uk/bitesize/guides/zgycwmn/revision/1>

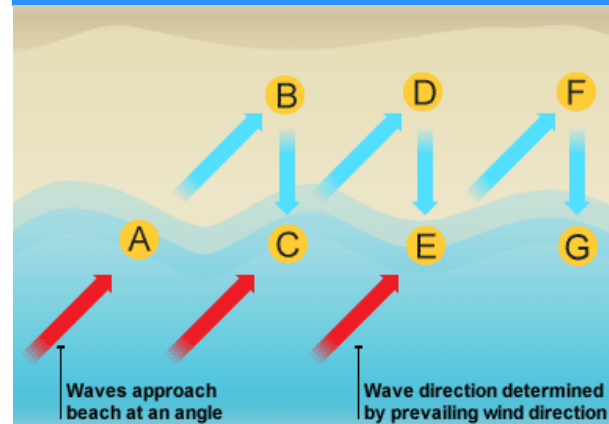
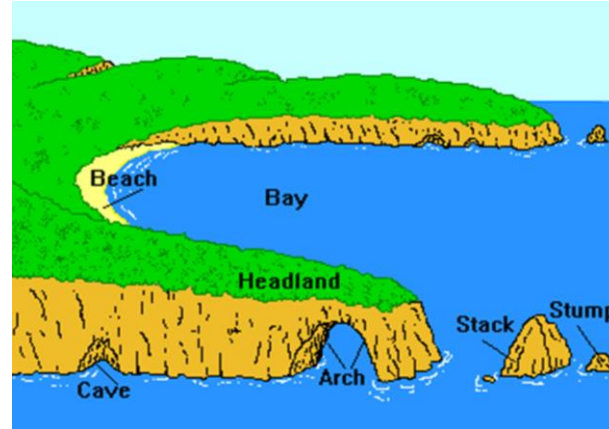




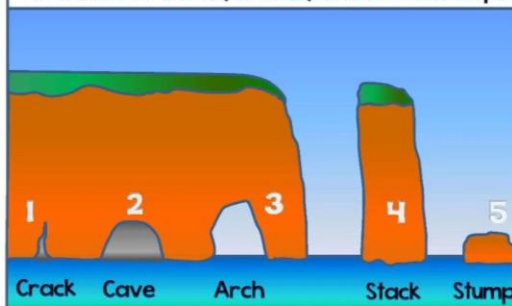
# Geography Knowledge Organiser

## Year 9: Coasts

Key Word	Definition
Coast	The narrow strip of land where the land meets the sea.
Swash	The waves that goes up the beach towards the land.
Backwash	The waves that goes back towards the sea.
Destructive Wave	Waves that have a more powerful backwash than swash – they erode the beach.
Constructive Wave	Waves that have a more powerful swash than backwash – they build up the beach.
Longshore Drift	The movement of sediment down the coastline due to wind and waves hitting the coast at an angle.
Spit	A 'finger' of land that has been made by the process of longshore drift.
Fetch	The distance of open water the wave has travelled over.
Bay	A smooth curve of coast between two headlands where sand accumulates.
Headland	Land, made of resistant rock, that sticks out into the sea.
Coastal Defences	'Barriers' to protect the coast from erosion or flooding – these can be 'hard' or 'soft'.



Formation of Caves, arches, stacks and stumps



- 1 Waves attack rock face using hydraulic action and abrasion. Crack is formed.
- 2 Over time, crack is enlarged to form cave.
- 3 Cave is widened and deepened and pushes through the headland to form a natural arch.
- 4 Undercutting and weathering lead arch to collapse leaving a stack.
- 5 Weathering and erosion wear stack down to a stump.

### Sea Defences:



### Useful websites...

- <https://www.bbc.co.uk/bitesize/guides/zmwxsbk/revision/1>
- <https://www.bbc.co.uk/bitesize/guides/zxj6fg8/revision/1>

# Geography Knowledge Organiser

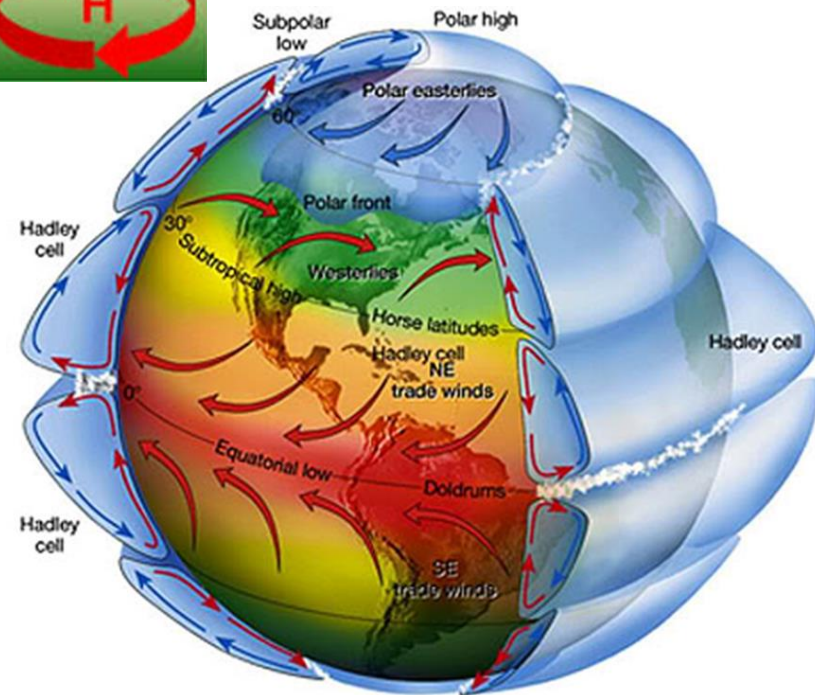
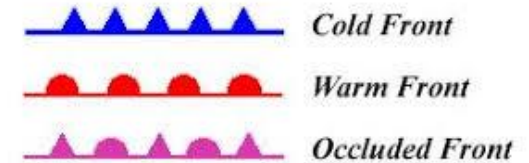
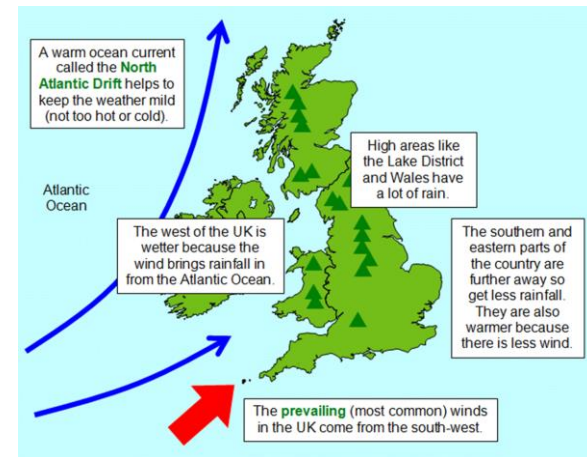
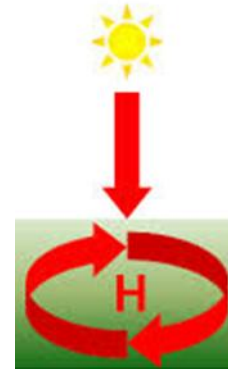
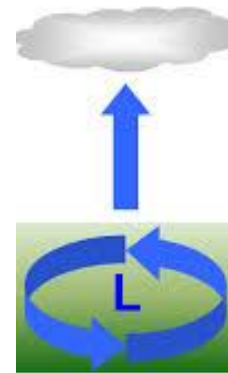
## Year 9: Weather

Key Word	Definition
Weather	The day-to-day condition of the atmosphere. It includes temperature, rainfall and wind.
Climate	The average weather conditions of a place.
Precipitation	Used to describe everything that is water-based that falls from the sky e.g. rain, snow, sleet, hail...
High Pressure	Sinking air from the upper atmosphere 'pushes' down on you and leads to settled conditions.
Low Pressure	Rising air goes up into the atmosphere, condenses into clouds and leads to rain.
Warm Front	Boundary behind which is warm air.
Cold Front	Boundary behind which is cold air.
Synoptic Chart	Like a 'map' of atmospheric conditions with all weather information in one place.
Climate Graph	A graph which shows the climate of a place including temperature and precipitation.
Anticyclone	A weather system with high pressure at its centre.
Depression	A weather system with low pressure at its centre.
Weathering	The breakdown of materials on Earth's crust into smaller pieces.

### Useful websites...

[www.metoffice.gov.uk](http://www.metoffice.gov.uk)

<https://www.bbc.co.uk/bitesize/topics/zx38q6f>



# 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:

## 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**.

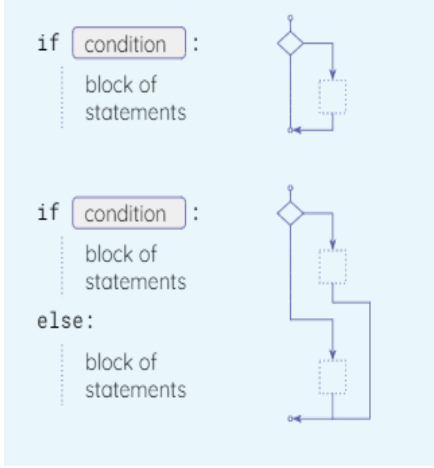
This is a program that translates and executes your Python program.

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

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

**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.



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. E.g. year=1944
Name=[item1, item2, item3]	Allows creation of a list e.g. shopping = ["oranges", "apples", "pears"]

**Some data types**

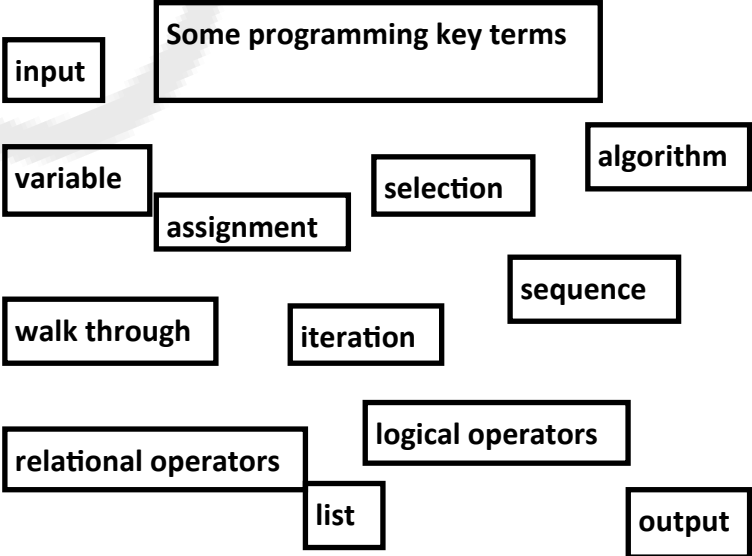
Whole numbers—**integer**

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)



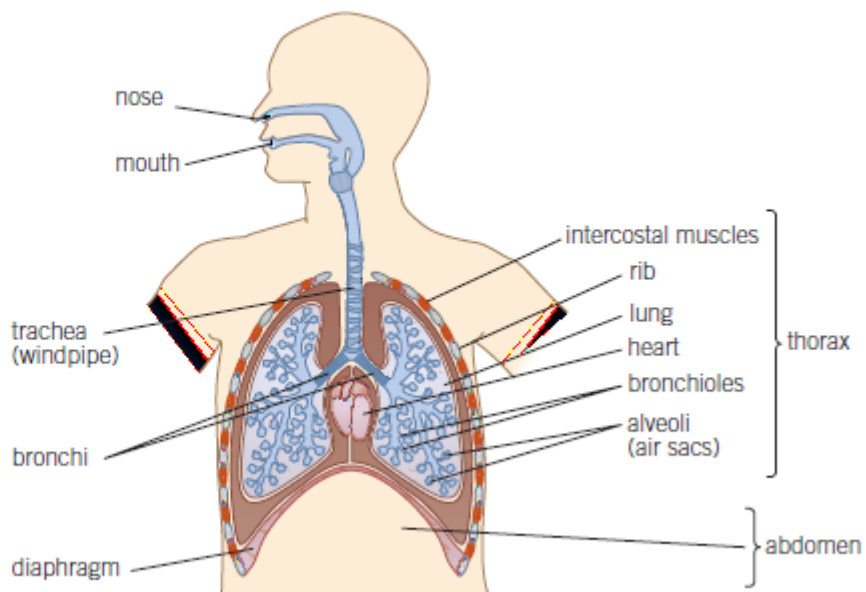
You can use multiple branches using **if, elif and else**

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

- Some 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

## 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

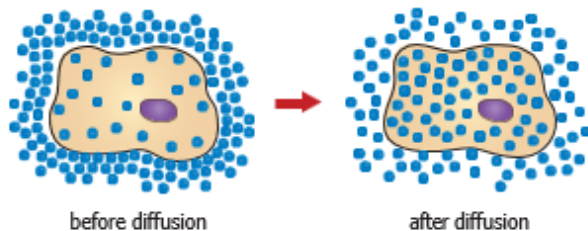


### What happens when you breathe in and out

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 decrease</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**

**Activate**  
Question • Progress • Success

Knowledge 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

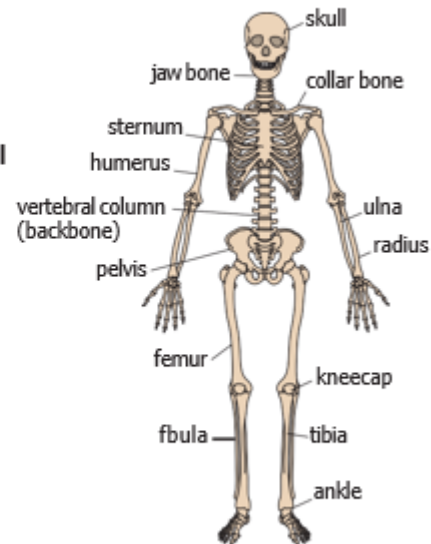
- **Fermentation** is a type of anaerobic respiration which occurs in yeast
- Instead of producing lactic acid, yeast produces ethanol, which is a type of alcohol  
$$\text{glucose} \rightarrow \text{ethanol} + \text{carbon dioxide}$$
- This process can be used to form alcohol to drink or to allow bread 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



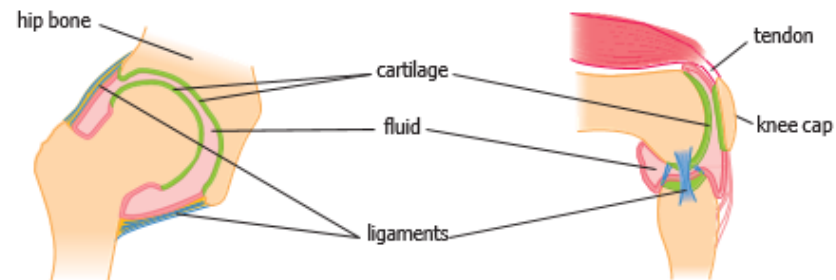
## Movement

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

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

Joints have three main types of tissue:

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



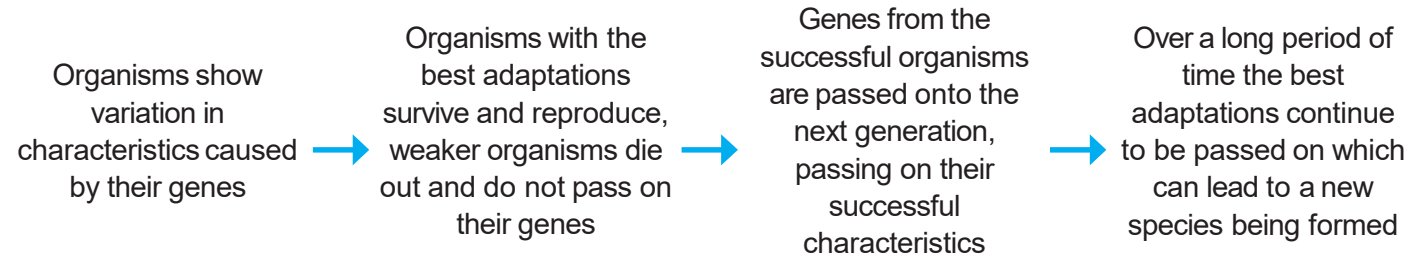
B5

Animals **Activate**  
Question • Progress • Succeed  
Knowledge organiser



### 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

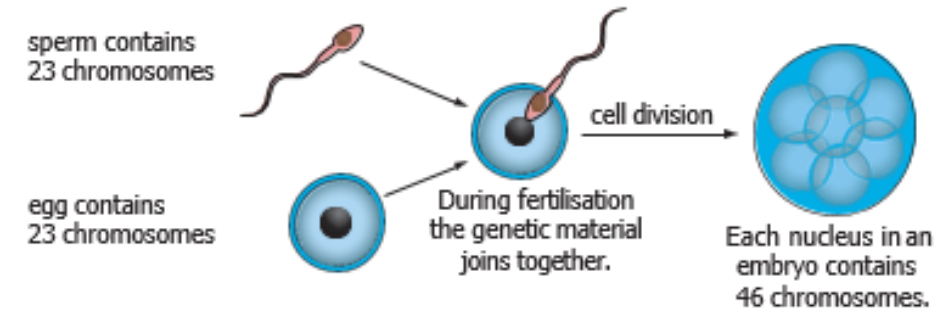
		Possible alleles from father	
		B (dominant allele for brown eyes)	b (recessive allele for blue eyes)
Possible alleles from mother	b (recessive allele for blue eyes)	<b>Bb</b> Offspring will have brown eyes as B is dominant	<b>bb</b> Offspring will have blue eyes as both alleles are recessive
	b (recessive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

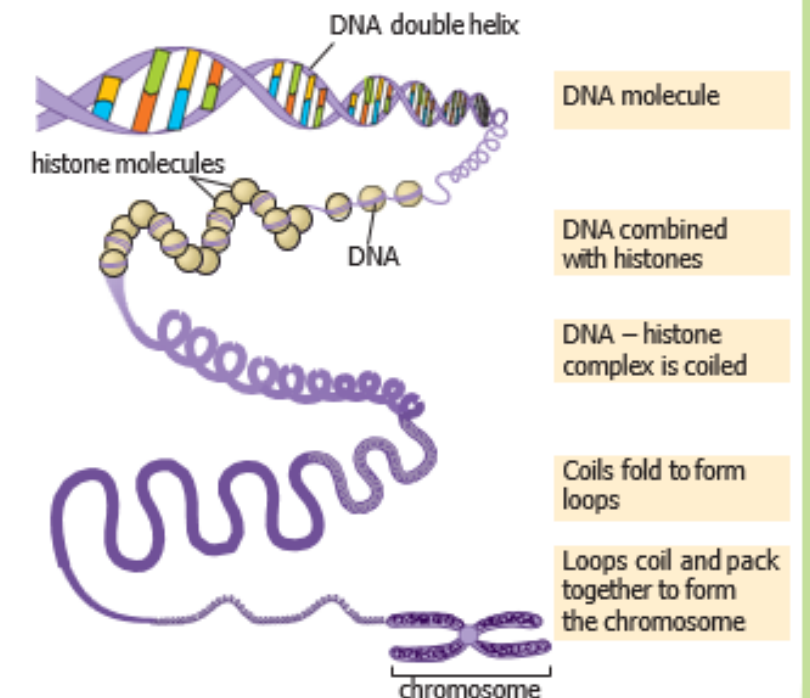


- DNA** is the material which contains all of this genetic information

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

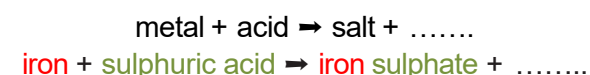
### Salts

**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.

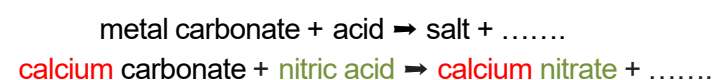
Different acids form different types of salts:

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

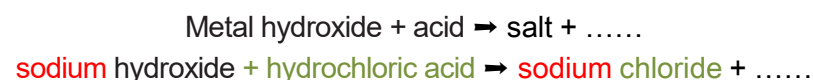
**Metal acid reaction:**



**Metal carbonate reaction:**

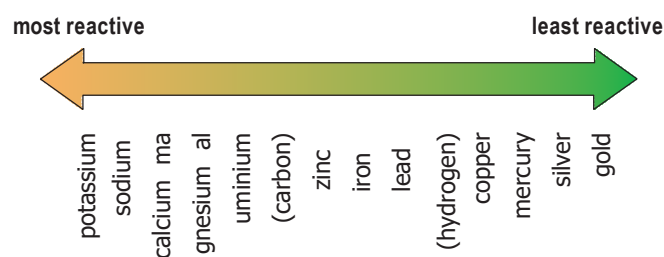


**Neutralisation reactions (one from year 7):**



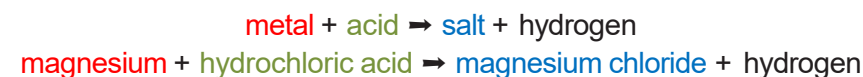
### The reactivity series

- 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

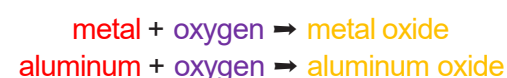
When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off.



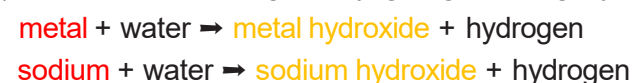
When a metal **carbonate** reacts with an acid, a salt, water and carbon dioxide is given off.



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



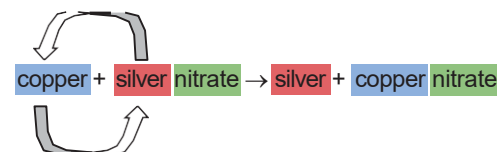
When a metal reacts with water it forms a metal **hydroxide** and hydrogen gas. The alkali (group 1) metals react most vigorously, giving off a brightly coloured flame.



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.

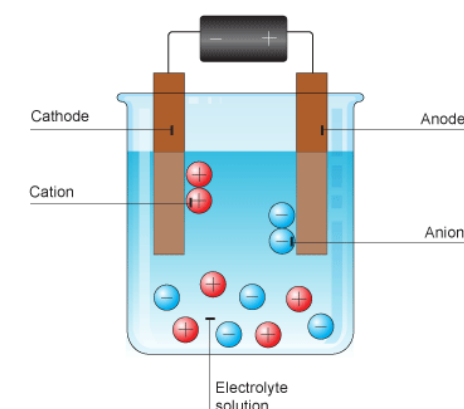
An example of this is the extraction of copper from its ore Malachite.

- copper oxide + carbon  $\rightarrow$  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).



#### 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

### 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

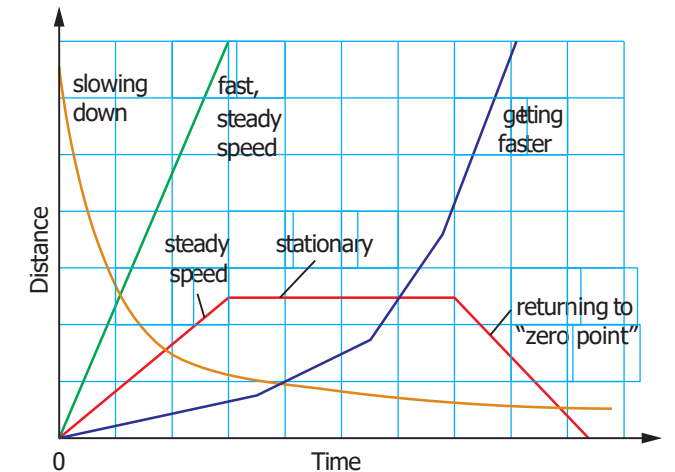
- **Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:

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

- **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



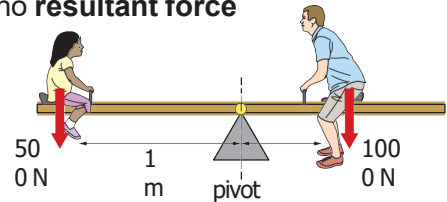
- To find the average speed, the total distance must be divided by the total time

### 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



# Blood Brothers by Willy Russell – KS3



## Features of form

1. A didactic play	A drama which intends to teach, especially with regard to morals.
2. Tragedy	An event causing great suffering, destruction and distress.
3. Parallels and contrasts	Parallels – similarities. Contrasts – differences.
4. Narrator	A person who gives the spoken account of something. Omniscient to remind the audience about the ending of the play.
5. Stage directions	An instruction in the text of the play indicating the movement, the position or tone of an actor, or the sound effects and lighting.
6. Song	A single work of music that is typically intended to be sung by the human voice. It is through the songs that the characters reveal their true thoughts and feelings.
7. Dialogue	A conversation between two or more people.
8. Montage	A series of short sequences are edited into a sequence to condense space.
9. Foreshadowing	A warning or indication of a future event.
10. Symbols and motifs	A thing that represents or stands for something else. A motif is a dominant or recurring image of idea.
11. Accent and dialect versus Standard English	Standard English is any form of the English Language that is accepted as a national norm. Accent is a distinctive way of pronouncing a language. Dialect is a particular form of language which is peculiar to a specific range or social group.

Set from 1960 – 1980  
In Liverpool, England



## Key Themes

Childhood Adolescence  
Superstition  
Violence  
Nature Vs Nurture  
Social Class

## Context

<b>Willy Russell</b>	<ol style="list-style-type: none"> <li>Born into a working class family.</li> <li>He grew up near Liverpool.</li> <li>Father had various jobs including mining and factory work.</li> <li>Annoyed at treatment of intelligent working class and associated stereotypes.</li> <li>Left school at 15 with just one O'level: a D in English Language. Went to evening classes and university to become a teacher.</li> </ol>
<b>Liverpool</b>	<ol style="list-style-type: none"> <li>A major port and the centre for trade providing lots of jobs at the docks.</li> <li>During the Industrial decline, Liverpool became very vulnerable as the docks were shut and unemployment rates soared.</li> <li>Some men turned to crime and gangs in order to support themselves and their families. There were also riots in 1980s.</li> </ol>
<b>Margaret Thatcher</b>	<ol style="list-style-type: none"> <li>Prime Minister in 1979.</li> <li>Reduced the power of the trade unions and closed down many factories etc leading to widespread unemployment.</li> </ol>
<b>Skelmersdale</b>	<ol style="list-style-type: none"> <li>In the 1960s the government began building New Towns. These were small, existing towns which were extended and redeveloped to provide more housing for nearby cities.</li> <li>Working class families were rehoused here in the 1960s.</li> </ol>
<b>Class</b>	<ol style="list-style-type: none"> <li>Working class vs Middle class divide</li> <li>More opportunities for middle classes reflected in education, job prospects and wealth.</li> </ol>
<b>Education</b>	<ol style="list-style-type: none"> <li>The Education Act of 1944 led to 'secondary modern schools' and 'grammar schools.'</li> <li>Top 20% went to a grammar school with an academic curriculum. Secondary modern taught more practical subjects.</li> <li>7% of students were educated in private, fee-paying schools. The average boarding school fees in the 1960s would have been approximately 25%.</li> </ol>



## Characters

1. Mrs Johnstone	Naïve, loving and maternal, caring, rash, strong, generous, good, selfless, uneducated, superstitious, lively, zesty, trapped, victim, helplessness,
2. Mrs Lyons	Lonely, cold, wealthy, dependent, inconsiderate, pampered, self-centred, manipulative, over-protective, anxious, unreasonable, mad
3. Mickey	Friendly, excitable, adventurous, sneaky, cast-off, wants to impress, shy, determined, bright, witty, hard-working, ambitious, trapped, victim
4. Edward	Friendly, generous, naïve, restricted, impulsive, lacks compassion, condescending, sneaky
5. Sammy	Aggressive, threatening, sarcastic, anti-social, criminal, hostile
6. Linda	Kind, compassionate, feisty, humorous, strong-willed, supportive, protective, poor, untrustworthy, desperate

# KNOWLEDGE ORGANISER



## PANTOMIME

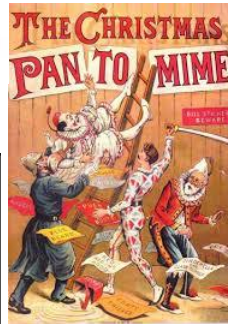


KS3  
Spring 1

### Origins of Pantomime

The origins of British Pantomime or Panto as it is affectionately known in the UK, probably date back to the middle ages, and blend the traditions of the Italian "Commedia dell'Arte, and the British Music hall to produce the art form that is Pantomime. "Commedia dell'Arte was a type of travelling street entertainment which came from Italy in the 16th century.

Commedia was a very physical type of theatre that used dance, music, tumbling, acrobatics and buffoonery. Commedia dell'Arte troupes had a repertoire of stories that they performed in fairgrounds and market places. Often the touring troupes were made up of family members who would inherit their characters, costumes, masks and stories from their parents or grandparents.



### Main Characters

Another element of "Traditional" pantomime is the "Principal boy" role [played by a female] although the role is that of a boy hero. The female playing the principal boy usually dresses in short, tight fitting skirts [the shorter and tighter the better] accompanied by knee-high leather boots and fishnet stockings.

### FAIRY TALE CHARACTERS

The Dame is played by a male member of the cast, dressed in drag; this character is usually portrayed as old, unattractive and fairly common, all qualities which she believes she is the exact opposite of! She befriends the two principals early in the story and is usually instrumental in all the good acts they perform in the course of the story; and quite often ends up "living happily ever after" either with the Principal Girl's kindly old widowed Father/Uncle/Guardian or with the ultimately-reformed Principal Baddie.

M  
A  
G  
I  
C



### Audience Participation

Audience participation is an important part of pantomime. This can involve audience members shouting out and joining in songs. They can even be invited on stage to take part



The fairy Queen and the Demon King appear in all pantomimes, although their exact guise and title may differ. From Old King Rat to modern Fairy Liquid, Peter Pan and Hook, names vary according to the location and topicality of shows, but certain stage directions nearly always hold strong. Good enters from stage right and Evil from stage left. This tradition of Evil entering from the sinister side goes back to the mystery plays and the few working star traps [through which the demon used to be projected in a puff of smoke] can always be found in the down stage left position. This tradition seems to echo medieval times, when the entrances to heaven and hell were placed on these sides. The story nearly always revolves around the tried and tested formula of good conquering evil. And requires the principal baddie to make all the innocent character's lives a misery, from the beginning. But by the end of the show, all the baddies and their henchmen will have either been destroyed, or be made to see they error of their ways and turn into reformed characters.

S  
L  
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K





# KNOWLEDGE ORGANISER



## The Elephant Man Developing a Stimulus

Year 9  
Autumn 2

### By the end of this unit you will be able to;

- explore how we can use real life as a starting point for drama.
- understand what is meant by 'placing the audience' and experimenting with it.
- know that exploring a characters movement and gestures helps the actor understand how they feel; thereby helping communicate ideas to an audience.
- explore how music and space help create atmosphere.

### Context of the stimulus

**Joseph Merrick**, in full **Joseph Carey Merrick**, also called **the Elephant Man**, (born August 5, 1862, in Leicester and died April 11, 1890 in London), disfigured man who, after a brief career as a professional "freak," became a patient of London Hospital from 1886 until his death. Merrick was apparently normal until about the age of five, when he began showing signs of a strange disorder that caused abnormal growths of much of his skin and bone. His legs and one of his arms were seriously deformed, and a defective hip caused such lameness that Merrick could walk only with the aid of a stick. The disorder from which Merrick suffered was long thought to be an extremely severe case of [neurofibromatosis](#) but his deformities were probably the result of an extremely rare disease known as Proteus syndrome

### Styles of theatre that you could use to develop the stimulus

**Physical Theatre** is a type of performance where **physical** movement is the primary method of story telling. Also, it may incorporate other techniques such as mime, gesture and modern dance to create performance pieces.

**Naturalism** is a movement in European **drama** and **theatre** that developed in the late 19th and early 20th centuries. It refers to theatre that attempts to create an illusion of reality through a range of dramatic and theatrical strategies.

**Epic theatre** is a theatrical movement arising in the early to mid-20th century from the theories and practice of a number of theatre practitioners who responded to the political climate of the time through the creation of a new political theatre.

### Performance Skills

Experimenting with body language will be an important part of understanding how a character feels.

- Posture
- Gesture
- Proxemics
- Stance
- Pace
- Tension
- Direction



### Performance Elements and the Audience

Placing the audience. This will determine the audiences experience of the piece. Sound and music will also be important here.

- Immersive Theatre
- Site specific Theatre
- Promenade Theatre
- Open Air Theatre
- Black Box Theatre
- Theatre in the Round
- Proscenium Stage
- Thrust Stage

"The purpose of theatre is to put the audience in a better position to understand the world around them."



Conveying meaning in your work means that your piece needs to have structure.

The process of structuring work is closely linked to choosing genre, style and form. As with the exploration phase, it is best to start improvising and moving rather than sat down in discussions. Test sequences of material and discover how one moment can impact on another when juxtaposed in performance. The basic principles that should apply to all choices are:

- a strong and engaging opening
  - detailed development of character, theme or idea
  - an ending that reinforces the ideas of the whole performance.
- This could be that you need to knit different scenes together. However, you should explore different structures and how they impact on the material's meaning.



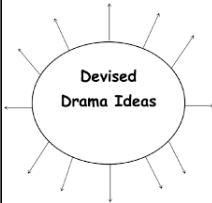




## Where do ideas come from?

Britain may lay claim to some of the world's greatest dramatists, but solitary scribbling isn't the only way to create theatre. "Devising" is a process in which the whole creative team develops a piece collaboratively. From actors to technicians, everyone is involved in the creative process. Since the pioneering *Oh What a Lovely War*, some of theatre's most exciting productions have been made this way.

You can get your ideas from many different sources. It can be a visual source such as a picture or object. It may be aural; a song or speech may inspire you to make performance. Written texts such as articles or poems may be the source of your inspiration.

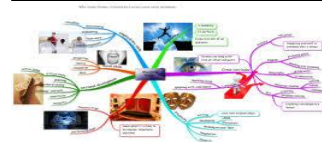


## Stimuli



A stimulus can offer many different avenues to explore. Don't dismiss anything initially and allow your creativity to lead.

You should try to include some social and historical context. Try to make your work so that it is relevant to contemporary society. You may want to mind map your ideas.



## Research and moving the process forward.

**Devising** is a group collaboration in response to a stimulus leading to the creation of an original performance. **Devising in drama** demands inventiveness, an understanding of the rules of structuring a piece of theatre and a readiness to collaborate with others.

**Do your research.** The more you know about your starting material, the freer your imagination will be within it. Research nourishes rehearsals, provides a huge wealth of material from which to devise, and gives authenticity to your final production. The latter is important; if an audience questions the world you create, it's almost impossible for them to relax into the fantasies you're weaving. So how do you research?

Internet	Observation / Participant Observation	Surveys
Interviews	Focus Groups	School Library

**Unite the whole company around a common purpose.** Set aside some time early on to explore everyone's personal objectives for making the piece. Then, as an ensemble, write a unified mission statement for the piece. This might range from explicitly political aims to simply wanting to create a joyous evening of fun – it might even change as the project moves forward. It will provide an essential framework against which you can judge every decision you make and ensures that everyone is travelling in the same direction.

## Practical exploration

Some of the possible areas of practical exploration and ideas for their application are described below. These should appeal to the full range of abilities, making this stage accessible and challenging. Note that this should not be taken as a definitive list and your own original ideas.

- Improvisation
- Tableaux
- Movement and physical sequences
- Developing a role and characterisation
- Hot seating



# KS3 Dance Skills KO – Autumn Term

## Performance Skills

### PHYSICAL:

- B**alance – Holding a steady position
- A**lignment – correct placement of body parts
- F**lexibility – range of movement in the muscles
- E**xtension – lengthening of the muscles
- M**obility – range of movements in the joints
- C**ontrol – ability to stop, start and change direction
- C**o-ordination – combining the body parts
- I**solation – independent movement of body parts
- P**osture – the way the body is held
- S**trength - muscle power

### EXPRESSIVE:

- F**ocus – use of the eyes
- F**acial Expressions – use of the face
- S**patial awareness – using the space
- P**rojection – energy used to connect with audience
- P**hrasing – distribution of the energy
- S**ensitivity to others – connecting with other dancers
- M**usicality – bringing out the music
- C**ommunication – portraying intentions and themes.

### SAFE PRACTICE:

- Safe execution, Appropriate dancewear- footwear, hairstyle, and no jewellery. Warm-up/cool down.
- Nutrition. Hydration

## Actions

### What the body is doing

- G**esture – non-weight bearing action
- U**se of different body parts – head, shoulders, hips
- E**levation – whole body in the air
- S**tillness – stationary/not moving
- T**ravel – journey from A-B
- F**loorwork – movement at a low level
- T**urn – whole body rotation
- T**ransfer – changing the weight-supporting body parts

**SPIN      TWIST      KICK**

**STAND      SLIDE      CHOP**

**SCOOCH      CARTWHEEL**

**COLLAPSE      SHAKE      GALLOP**

**PUNCH      LEAP      FLICK**

**RUN      PIROUETTE      STAMP**

**HIP ROLL      PIVOT      ROLL**

**RISE      BALANCE      STRETCH**

## Dynamics

### How the body is moving.

- F**ast/**S**low
- S**udden/**S**ustained
- F**lowing/**A**brupt
- D**irect/**I**ndirect
- A**ccelerate/**D**ecelerate
- S**trong/**L**ight

**SMOOTH      SHARP**

**EXPLODE      JERKY**

**ROBOTIC      MELTING**

**QUICKLY      BOUNCY**

**AGGRESSIVE      ERRATIC**

**GRACEFULLY      SILKY**

**SOFT      SPORADIC**

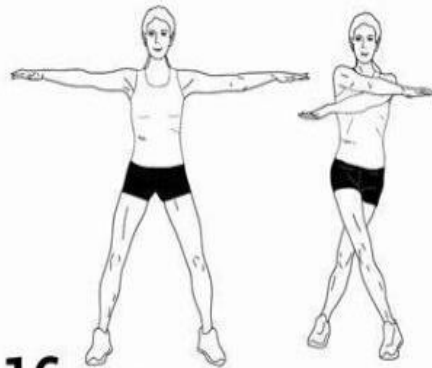
**FORCED      FLUID**

**LETHARGIC      HEAVY**



## Improve Core Strength

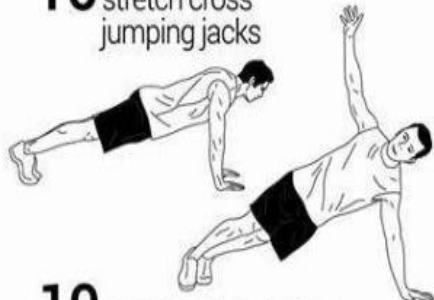
BEGINNER: 3 SETS INTERMEDIATE: 5 SETS ADVANCED: 8 SETS REST BETWEEN SETS: 45 SECONDS



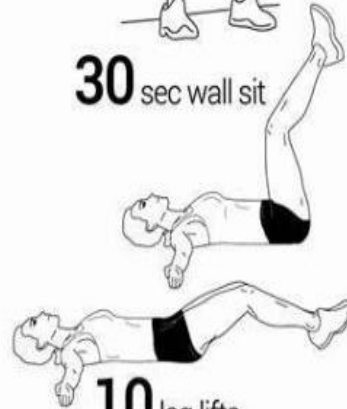
**16** stretch cross jumping jacks



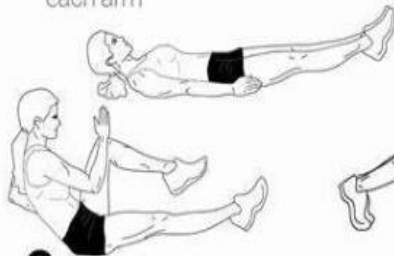
**30** sec wall sit



**10** planks with rotation each arm



**10** leg lifts feet not touching the floor



**8** sprinters each leg



**10** plank jump ins

## Improve Flexibility

**1**



Butterfly  
20 seconds



Pike Against Wall  
20 seconds

**2**



Frog  
25 seconds



Lunges  
25 seconds each side

**3**



Straddle  
30 seconds



Leg Holds  
30 seconds each leg

**4**



Butterfly  
35 seconds



Pike Against Wall  
35 seconds

**5**



Frog  
40 seconds



Lunges  
40 seconds each side

**6**



Straddle  
45 seconds



Leg Holds  
45 seconds each leg

**7**



Butterfly  
50 seconds



Pike  
50 seconds



Forced Arch  
30 seconds

**8**



Frog  
55 seconds



Lunges  
55 seconds ea.



Second  
35 seconds

**9**



Straddle  
60 seconds

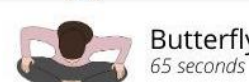


Leg Holds  
60 seconds ea.



Calves  
40 seconds

**10**



Butterfly  
65 seconds



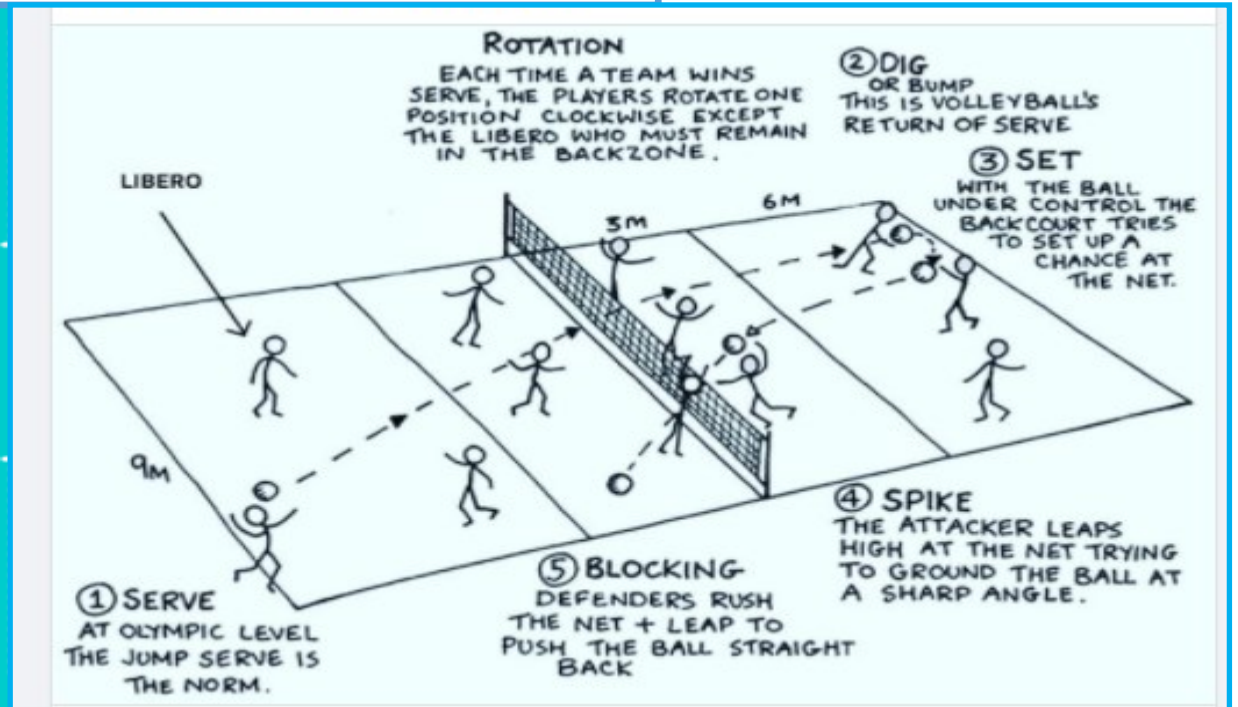
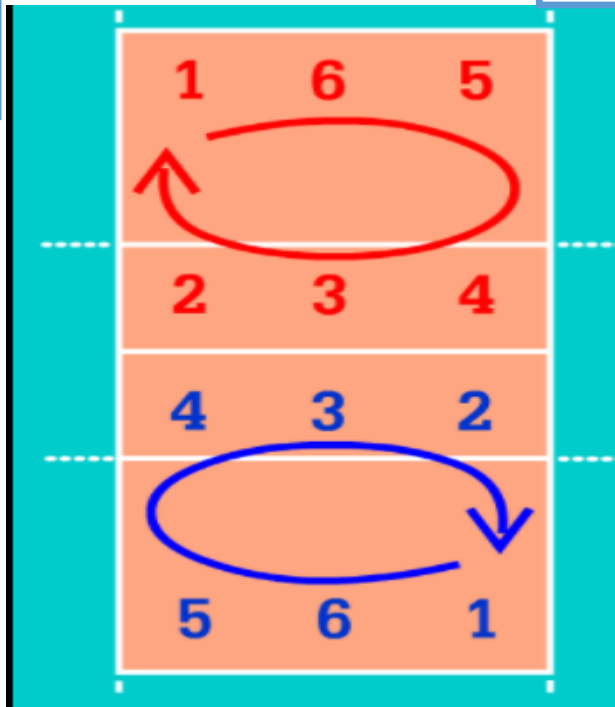
Pike  
65 seconds



Forced Arch  
45 seconds

Year 9 PE Knowledge Organiser

Know your Volleyball positions and Rotations

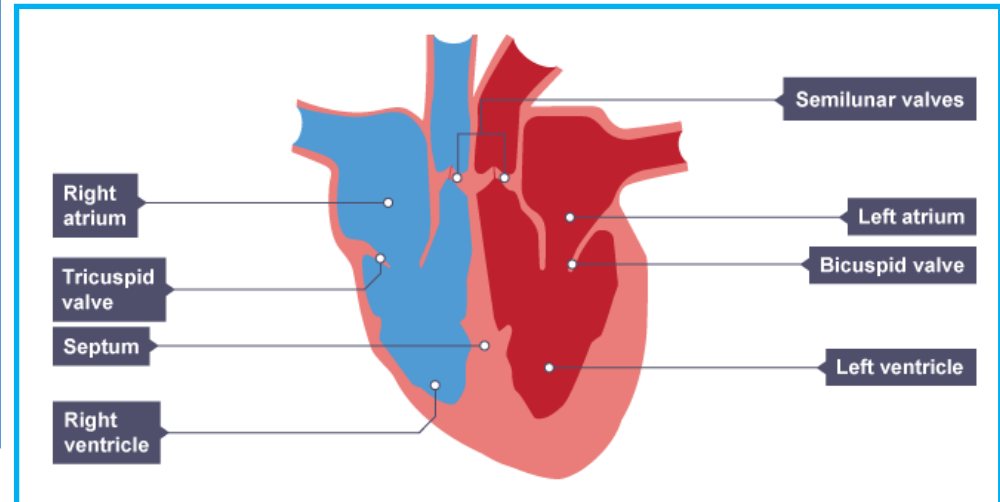


Fitness Tests

- 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



**Le sport et le fitness**

Pour être un bon sportif,  
 ...Il faut ...  
 avoir un bon programme d'entraînement.  
 bien manger.  
 bien dormir.  
 être motivé.  
 aimer la compétition.

**Sport and fitness**

*In order to be a good sportsperson,  
 ...You must ...  
 have a good training programme.  
 eat well.  
 sleep well.  
 be motivated.  
 like competition.*

**Tu aimes le sport?**

J'aime ...  
 Je n'aime pas ...  
 jouer dans une équipe  
 Ça booste le moral.  
 C'est fatigant.  
 C'est ennuyeux.

**Do you like sport?**

*I like ...  
 I don't like ...  
 to play in a team  
 That boosts morale.  
 It's tiring.  
 It's boring.*

**Les opinions**

Je pense que ...  
 Je suis d'accord avec ...  
 Je ne suis pas d'accord avec ...  
 À mon avis, ...

**Opinions**

*I think that ...  
 I agree with ...  
 I don't agree with ...  
 In my opinion, ...*

**Les mots essentiels**

à l'avenir  
 alors  
 c'est  
 ce sont  
 d'abord  
 deux fois par semaine  
 en général  
 en plus  
 ensuite  
 finalement  
 où  
 parce que  
 when  
 every day  
 very  
 That's that!/ Here you are!/ There you

**High-frequency words**

*in the future  
 so  
 it is  
 they are  
 first  
 twice a week  
 in general  
 as well as that  
 then  
 finally  
 where  
 because  
 when  
 every day  
 very  
 That's that!/ Here you are!/ There you go!*





## **La routine**

l'entraînement  
faire de l'activité physique  
jouer un match  
travailler avec son coach

## **Routine**

*training*  
*to do physical activity*  
*to play a match*  
*to work with your coach*

## **Manger sain**

les boissons gazeuses  
les céréales  
les chips  
l'eau  
les fruits  
les légumes  
les œufs  
le pain  
le poisson  
les produits laitiers

## **Healthy eating**

*fizzy drinks*  
*cereals*  
*crisps*  
*water*  
*fruit*  
*vegetables*  
*eggs*  
*bread*  
*fish*  
*dairy products*

les sucreries  
la viande  
Je mange sain.  
Je ne mange pas sain.  
Je mange des ...  
Je ne mange pas de ...  
Je ne mange jamais de ...

*sweet things*  
*meat*  
*I eat healthily.*  
*I don't eat healthily.*  
*I eat ...*  
*I don't eat ...*  
*I never eat ...*

## **Je vais changer ma vie**

Je vais faire du sport  
régulièrement.  
Je vais manger sain.  
Je vais prendre des cours  
d'arts martiaux.  
Je vais aller au collège à pied.  
Je vais faire trente minutes  
d'exercice par jour.  
Je vais aller au collège à vélo.

## **I am going to change my life**

*I am going to do sport regularly.*  
*I am going to eat healthily.*  
*I am going to take martial-arts  
classes.*  
*I am going to walk to school.*  
*I am going to do thirty minutes'  
exercise per day.*  
*I am going to go to school by bike.*

### Le sport et le fitness

Pour arriver en forme, il faut ...  
avoir un bon programme.  
bien manger.  
bien dormir.  
être motivé.  
faire du sport tous les jours.  
jouer dans une équipe.

### Tu aimes le sport?

Le sport ...  
diminue le stress.  
est bon pour le moral.  
est important dans la vie.  
ça me fatigue  
il faut apprendre à suivre les règles

### Les opinions

À mon avis, ...  
Moi, je trouve ça très ennuyeux de  
... (+ inf)  
Je crois fermement que ...

### Manger sain

les boissons gazeuses (fpl)  
les céréales (fpl)  
les chips (mpl)  
l'eau (f)  
les fruits (mpl)  
les gâteaux (mpl)  
les légumes (mpl)  
les légumes secs (mpl)  
la nourriture salée  
les œufs (mpl)  
le pain  
le poisson

### Sport and fitness

*In order to get fit, you must ...  
have a good schedule.  
eat well.  
sleep well.  
be motivated.  
do sport every day.  
play in a team.*

### Do you like sport?

Sport ...  
decreases stress.  
is good for morale.  
is important in life.  
it makes me tired  
you must learn to follow rules

### Opinions

*In my opinion, ...  
I find it very boring to ...  
  
I firmly believe that ...*

### Healthy eating

*fizzy drinks  
cereals  
crisps  
water  
fruit  
cakes  
vegetables  
pulses  
salty food  
eggs  
bread  
fish*



les pommes de terre (fpl)  
 les produits laitiers (mpl)  
 le repas  
 le sel  
 les sucreries (fpl)  
 la viande  
 manger équilibré

*potatoes*  
*dairy products*  
*meal*  
*salt*  
*sweets/confectionery*  
*meat*  
*to have a balanced diet*

## **Pour être en forme ...**

je ferai du sport  
 je ferai trente minutes d'exercice  
 par jour

j'irai au collège à vélo et pas en voiture

je jouerai au foot  
 je mangerai équilibré  
 je marcherai jusqu'au collège  
 je ne boirai jamais de boissons  
 gazeuses  
 je ne jouerai plus à des jeux vidéo

je ne mangerai plus de  
 frites/hamburgers  
 je ne prendrai pas le bus  
 je prendrai les escaliers  
 je prendrai des cours d'arts martiaux

## ***In order to keep fit ...***

*I will do sport*  
*I will do 30 minutes exercise per day*

*I will go to school by bike and not by car*

*I will play football*  
*I will eat a balanced diet*  
*I will walk to school*  
*I will never drink fizzy drinks*

*I won't play with my video games any more*  
*I will not eat chips/hamburgers any more*

*I will not take the bus*  
*I will take the stairs*  
*I will take martial arts classes*

## **Les mots essentiels    *High-frequency words***

alors                    *so/then*  
 au moins              *at least*  
 c'est-à-dire          *that is to say*  
 ce qui veut dire      *which means*  
 chaque                *each*  
 d'abord                *first*  
 de bonne heure      *early*  
 deux fois par semaine *twice a week*  
 donc                    *so*  
 ensuite                *then*

finalement          *finally*  
 où                      *where*  
 peut-être              *perhaps*  
 pour le futur        *for the future*  
 quand                 *when*  
 tous les jours      *every day*  
 Voilà!                 *That's that! / Here you are! / There*



# Year 9 Spanish Knowledge Organiser

## Orientate – Jobs and future plans.

### Los trabajos en el hotel

Soy...  
 camarero/a  
 cocinero/a  
 dependiente/a  
 esteticista  
 jardinero/a  
 limpiador(a)  
 peluquero/a  
 recepcionista

### Hotel jobs

I am...  
 a waiter  
 a cook  
 a shop assistant  
 a beautician  
 a gardener  
 a cleaner  
 a hairdresser  
 a receptionist



### ¿Cómo eres?

En mi opinión, soy...  
 Creo / Pienso que soy...  
 Soy muy / bastante...  
 ambicioso/a  
 creativo/a  
 independiente  
 inteligente  
 organizado/a  
 paciente  
 práctico/a  
 responsable  
 serio/a  
 sociable

### What are you like?

In my opinion, I am...  
 I think I am...  
 I am very / quite...  
 ambitious  
 creative  
 independent  
 intelligent  
 organised  
 patient  
 practical  
 responsible  
 serious  
 sociable



### ¿En qué consiste tu trabajo?

Tengo que...  
 contestar al teléfono y ayudar a los clientes  
 cortar el pelo a los clientes  
 cuidar las plantas  
 hacer manicuras  
 limpiar habitaciones  
 preparar comida  
 servir la comida en el restaurante  
 vender productos en la tienda

### What does your job involve?

I have to...  
 answer the phone and help customers  
 cut customers' hair  
 look after the plants  
 do manicures  
 clean rooms  
 prepare food  
 serve food in the restaurant  
 sell products in the shop

### Describe tu trabajo

¿En qué trabajas?  
 ¿Por qué decidiste ser...?  
 Me gusta mucho... y por eso decidí ser...  
 Estudié... y me encantó.  
 ¿Cómo es un día de trabajo típico?  
 Hablo con clientes.  
 Leo mi agenda.  
 Preparo mis cosas.  
 Trabajo con mi equipo.  
 Voy a la oficina.  
 ¿Qué cualidades tienes que tener?  
 Tienes que ser...  
 En mi trabajo, los idiomas son muy importantes.  
 Hablo español, alemán e inglés.  
 Voy a estudiar / trabajar en...

### Describe your job

What do you do for a living?  
 Why did you decide to be a...?  
 I really like... and so I decided to be a...  
 I studied... and I loved it.  
 What is a typical working day like?  
 I talk to customers.  
 I read my diary.  
 I prepare my things.  
 I work with my team.  
 I go to the office.  
 What qualities do you need to have?  
 You need to be...  
 In my job, languages are very important.  
 I speak Spanish, German and English.  
 I am going to study / work in...



### ¿En qué te gustaría trabajar?

Me gustaría ser...  
 Quiero ser...  
 abogado/a  
 cantante  
 diseñador(a)  
 enfermero/a  
 mecánico/a  
 periodista  
 policía  
 taxista  
 Me gustaría...  
 No me gustaría (nada)...  
 trabajar al aire libre  
 trabajar con animales  
 trabajar con niños  
 trabajar en equipo  
 trabajar en una oficina  
 trabajar solo/a  
 hacer un trabajo creativo  
 hacer un trabajo manual

### What job would you like to do?

I would like to be...  
 I want to be...  
 a lawyer  
 a singer  
 a designer  
 a nurse  
 a mechanic  
 a journalist  
 a police officer  
 a taxi driver  
 I would like...  
 I wouldn't like... (at all)  
 to work in the open air  
 to work with animals  
 to work with children  
 to work in a team  
 to work in an office  
 to work alone  
 to do a creative job  
 to do a manual job



### ¿Te gusta tu trabajo?

(No) Me gusta (nada)  
 mi trabajo porque es...  
 difícil  
 duro  
 estimulante  
 estresante  
 interesante  
 monótono  
 repetitivo  
 ¿Cómo es tu jefe?  
 Mi jefe/a (no) es muy educado/a.  
 ¿Cómo son los clientes?  
 Los clientes son exigentes / maleducados.  
 Mis compañeros son simpáticos.

### Do you like your job?

I (don't) like my job (at all) because it is...  
 difficult  
 hard  
 stimulating  
 stressful  
 interesting  
 monotonous  
 repetitive  
 What is your boss like?  
 My boss is (not) very polite.  
 What are the customers like?  
 The customers are demanding / rude.  
 My colleagues are nice.



### ¿Cómo va a ser tu futuro?

En el futuro...  
 Voy a...  
 ganar mucho dinero  
 hacer un trabajo interesante  
 ir a la universidad  
 ser famoso/a  
 ser voluntario/a  
 tener hijos  
 viajar (mucho)  
 vivir en el extranjero  
 Va a ser (muy) interesante.

### What is your future going to be like?

In the future...  
 I am going to...  
 earn lots of money  
 do an interesting job  
 go to university  
 be famous  
 be a volunteer  
 have children  
 travel (a lot)  
 live abroad  
 It is going to be (very) interesting.



To revise this topic



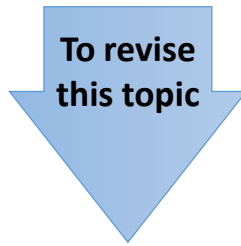
SCAN ME

<b>¿Qué tienes que hacer?</b>	<b>What do you have to do?</b>
Tengo que...	<i>I have to...</i>
ayudar a los clientes	<i>help customers</i>
cortar el pelo a los clientes	<i>cut customers' hair</i>
hablar por teléfono	<i>speak on the phone</i>
limpiar habitaciones	<i>clean rooms</i>
preparar comida	<i>prepare food</i>
servir en el restaurante	<i>serve in the restaurant</i>
vender productos en la tienda	<i>sell products in the shop</i>

<b>Opiniones</b>	<b>Opinions</b>
¿Te gusta tu trabajo?	<i>Do you like your job?</i>
(No) Me gusta (nada) mi trabajo porque es...	<i>I (don't) like my job (at all) because it is...</i>
creativo	<i>creative</i>
estresante	<i>stressful</i>
fácil	<i>easy</i>
interesante	<i>interesting</i>
monótono	<i>monotonous</i>
repetitivo	<i>repetitive</i>
Mi jefe/a es severo/a.	<i>My boss is strict.</i>
Los clientes (no) son simpáticos.	<i>The customers are (not) nice.</i>
Los clientes son horrorosos.	<i>The customers are awful</i>

<b>¿Qué tipo de persona eres?</b>	<b>What type of person are you?</b>
En mi opinión, soy...	<i>In my opinion, I am...</i>
Creo que soy...	<i>I believe I am...</i>
muy / bastante...	<i>very / quite...</i>
ambicioso/a	<i>ambitious</i>
hablador(a)	<i>talkative</i>
independiente	<i>independent</i>
inteligente	<i>intelligent</i>
organizado/a	<i>organised</i>
paciente	<i>patient</i>
práctico/a	<i>practical</i>
responsable	<i>responsible</i>
sociable	<i>sociable</i>
trabajador(a)	<i>hard-working</i>

<b>Palabras muy frecuentes</b>	<b>High-frequency words</b>
creo que...	<i>I think / believe that...</i>
mi/mis	<i>my</i>
tu/tus	<i>your</i>
bastante	<i>quite</i>
muy	<i>very</i>
un poco	<i>a bit</i>
¿qué?	<i>what?</i>
¿por qué?	<i>why?</i>
porque	<i>because</i>
por eso	<i>so / therefore</i>



<b>¿Qué tal ayer en el trabajo?</b>	<b>How did you get on at work yesterday?</b>
Por la mañana...	<i>In the morning...</i>
Por la tarde...	<i>In the afternoon...</i>
A la hora de comer...	<i>At lunchtime...</i>
bebí una botella de cola	<i>I drank a bottle of cola</i>
comí una hamburguesa	<i>I ate a hamburger</i>
dormí un poco	<i>I slept for a bit</i>
escuché música	<i>I listened to music</i>
escribí SMS a mis amigos	<i>I wrote text messages to my friends</i>
hablé por Skype™	<i>I talked on Skype™</i>
jugué a un videojuego	<i>I played a video game</i>
llegué tarde al trabajo	<i>I arrived late for work</i>
perdí mi trabajo	<i>I lost my job</i>

<b>¿Cómo es un día típico?</b>	<b>What is a typical day like?</b>
Escribo correos (electrónicos).	<i>I write emails.</i>
Hago reservas.	<i>I make reservations.</i>
Hago entrevistas.	<i>I do interviews.</i>
Organizo excursiones.	<i>I organise excursions.</i>
Preparo el programa.	<i>I prepare the programme.</i>
Salgo con los grupos.	<i>I go out with the groups.</i>
Trabajo con mi equipo.	<i>I work with my team.</i>
Viajo mucho.	<i>I travel a lot.</i>
Voy a la oficina.	<i>I go to the office.</i>
¿Qué idiomas hablas?	<i>What languages do you speak?</i>
Hablo español, inglés y alemán.	<i>I speak Spanish, English and German.</i>
Los idiomas son importantes.	<i>Languages are important.</i>
¿Te gusta tu trabajo?	<i>Do you like your job?</i>
Me encanta mi trabajo porque...	<i>I love my job because...</i>
es muy práctico	<i>it's very practical</i>
es muy variado	<i>it's very varied</i>
Ayer...	<i>Yesterday...</i>
conocí a...	<i>I met...</i>
fui a...	<i>I went to...</i>
hablé con...	<i>I spoke to...</i>
organicé una visita para...	<i>I organised a visit for...</i>
preparé un programa especial	<i>I prepared a special programme</i>
viajé en helicóptero	<i>I travelled by helicopter</i>

## Year 9 Autumn Term World Conflict 1914-1939

### Lesson Content

### The path to war

### The Schlieffen Plan

### Propaganda and joining up

### Life in the Trenches

### WW1 Technology

### Did the generals know what they were doing?

### The Home Front

### Who were the Suffragettes?

### Women and the War

### Was the war a "World War"?

### What was the Versailles Treaty?

### Why did Dictatorships grow after WW1?

### What were Hitler's aims?

### The path to WW2

### Key resources:

[www.tecchistoryks3.blogspot.com](http://www.tecchistoryks3.blogspot.com)

### Key dates

28 <sup>th</sup> June 1914	Assassination of Archduke Ferdinand, heir to the Austro-Hungarian throne
4 <sup>th</sup> August 1914	Britain enters the War against Germany
1 <sup>st</sup> July 1916	Battle of the Somme, worst day of the war for British casualties
November 1917	The Russian Revolution brings the Communists into power
11 <sup>th</sup> November 1918	End of World War 1, Armistice Day
1918	women could vote at 30 with property qualifications or as graduates of UK universities
28 <sup>th</sup> June 1919	Treaty of Versailles signed
October 1922	First fascist state set up in Italy under Mussolini
November 1923	Hitler attempts to take over Germany during the Munich Putsch – it fails!
October 1929	The Wall Street Crash – worldwide economic depression follows
January 1933	Hitler becomes Chancellor (Prime Minister) of Germany
March 1936	Hitler occupies the Rhineland
March 1938	Hitler reunites Germany with Austria
March 1939	Hitler takes over all of Czechoslovakia
3 <sup>rd</sup> September 1939	Britain declares war on Germany, after Hitler's invasion of Poland

### Key people

<b>Archduke Ferdinand</b>	Archduke Franz Ferdinand Carl Ludwig Joseph Maria of Austria was the heir presumptive to the throne of Austria-Hungary.
<b>Gavrilo Princip</b>	Bosnian Serb member of Young Bosnia who sought an end to Austro-Hungarian rule in Bosnia and Herzegovina
<b>Alfred von Schlieffen</b>	German field marshal and strategist who served as chief of the Imperial German General Staff from 1891 to 1906.
<b>Field Marshal Haig</b>	Senior officer of the British Army. During the First World War, he commanded the British Expeditionary Force (BEF) on the Western Front from late 1915 until the end of the war.
<b>Emmeline Pankhurst</b>	British political activist. She is best remembered for organizing the UK suffragette movement and helping women win the right to vote.
<b>Emily Davison</b>	English Suffragette who threw herself under the King's horse as a protest.
<b>David Lloyd George</b>	British statesman who served as Prime Minister of the United Kingdom from 1916 to 1922
<b>Georges Clemenceau</b>	French statesman who served as Prime Minister of France from 1906 to 1909 and again from 1917 until 1920
<b>Woodrow Wilson</b>	Thomas Woodrow Wilson was an American politician, lawyer, and academic who served as the 28th president of the United States from 1913 to 1921.
<b>Karl Marx</b>	Karl Heinrich Marx was a German philosopher, economist, historian, sociologist, political theorist, journalist and socialist revolutionary
<b>Benito Mussolini</b>	Italian prime minister (1922–43) and the first of 20th-century Europe's fascist dictators.
<b>Joseph Stalin</b>	Georgian revolutionary and Soviet politician who led the Soviet Union from the mid-1920s until 1953 as the general secretary of the Communist Party of the Soviet Union and premier of the Soviet Union.
<b>Adolf Hitler</b>	Adolf Hitler was a German politician and leader of the Nazi Party. He rose to power as the chancellor of Germany in 1933 and then as Führer in 1934.

### Key Words - Glossary

<b>Austro-Hungary</b>	Dual Monarchy established in 1867, consisting of what are now Austria, Hungary, the Czech Republic, Slovakia, Slovenia, Croatia, and Bosnia-Herzegovina, and parts of Poland, Romania, Ukraine, and Italy.	<b>armistice</b>	an agreement made by opposing sides in a war to stop fighting for a certain time; a truce.
<b>assassination</b>	murder by sudden or secret attack often for political reasons : the act or an instance of assassinating someone	<b>Economic depression</b>	In economics, a depression is a sustained, long-term downturn in economic activity in one or more economies.
<b>propaganda</b>	information, especially of a biased or misleading nature, used to promote a political cause or point of view.	<b>Fascism</b>	a form of government that is a type of one-party dictatorship. They work for a totalitarian one-party state. This aim is to prepare the nation for armed conflict, and to respond to economic difficulties. <b>Fascism</b> puts nation and often race above the individual.
<b>conscription</b>	compulsory enlistment for state service, typically into the armed forces.	<b>Marxism</b>	the political and economic theories of Karl Marx and Friedrich Engels, later developed by their followers to form the basis of communism.
<b>stalemate</b>	A position or situation in which no action can be taken or progress made; deadlock	<b>Communism</b>	a theory or system of social organization in which all property is owned by the community and each person contributes and receives according to their ability and needs
<b>"Lions led by donkeys"</b>	phrase popularly used to describe the British infantry of the First World War and to blame the generals who <b>led</b> them. The contention is that the brave soldiers ( <b>lions</b> ) were sent to their deaths by incompetent and indifferent leaders ( <b>donkeys</b> ).	<b>Nazism</b>	the political principles of the National Socialist German Workers' Party., extreme racist or authoritarian views or behaviour
<b>attrition</b>	the process of reducing something's strength or effectiveness through sustained attack or pressure	<b>appeasement</b>	Foreign policy of pacifying an aggrieved country through negotiation in order to prevent war. The prime example is Britain's policy toward Fascist Italy and Nazi Germany in the 1930s

**Key Assessment:** - 50 minute assessment based on skills from Paper 1+3 GCSE History, Questions 1-4 or 5



## Year 9 CRE – Drugs

### Key Words

Euphoria  
Legal  
Illegal  
Addiction  
Possession  
Dealing  
Class A, B, C  
Impact  
Drug  
Society

### Drugs used for medicinal purposes

There has long been debate around whether cannabis should be used to treat medical conditions.

The cannabis used to treat medical conditions is not the same as the cannabis that drug takers use. THC is a compound in cannabis, and this is the compound that gives user a sense of a 'high'. This is removed and any product that is sold in the UK must not have any more than 0.2% THC in it.

Therefore, any CBD products that are on the market, are very far from the cannabis that is sold through drug dealers.

### Key Facts

- Police can issue a warning or an on-the-spot fine of £90 if you are found with cannabis.
- If you are under 18, the police can tell your parent, guardian, or carer that you have been caught with drugs.

### Key Questions

Should life mean life?

Why do people commit crime?

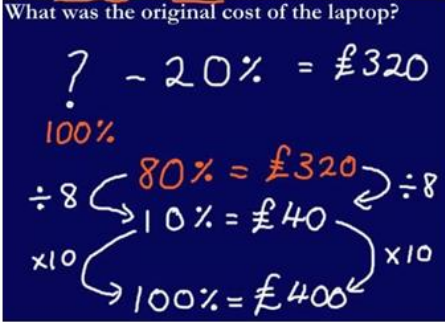
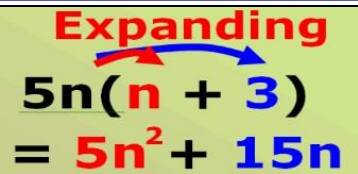
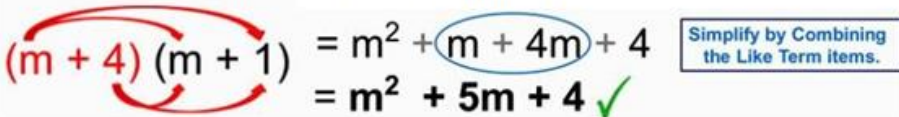
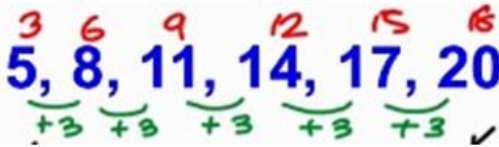
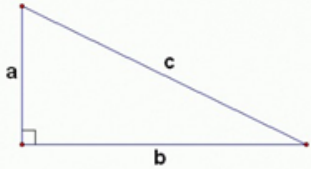
How should people who commit crime be punished?

Should people who commit crime be helped?

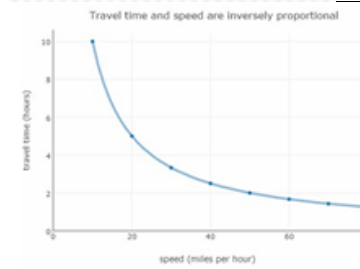
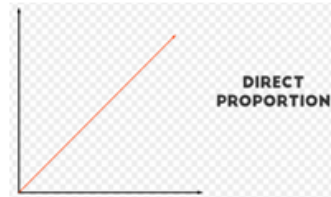
How does crime impact society?

Do we all have a part to play in tackling crime?

## 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. 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 $200 \times 1.4$ decrease £200 by 40% would be $200 \times 0.6$	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 (n <sup>th</sup> 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 <sup>th</sup> 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 style="text-align: right;">c = hypotenuse</p> $a^2 + b^2 = c^2$ $c^2 - b^2 = a^2$ $c^2 - a^2 = b^2$ <p style="text-align: center;">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

<b>Calculations with numbers in standard form</b>	Multiplying & dividing: do the 'normal' numbers like usual; then use index laws for the $\times 10^n$ Adding & subtracting: make them ordinary numbers first; do column addition or subtraction; change back to standard form	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; margin: 5px;"><math>a^{-c} = \frac{1}{a^c}</math></div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"><math>\left(\frac{1}{a}\right)^{-c} = a^c</math></div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"><math>\left(\frac{x}{y}\right)^{-c} = \frac{y^c}{x^c}</math></div> </div>	104 to 108
<b>Direct Proportion</b>	One quantity <b>increases</b> at the same rate as the other quantity <b>increases</b> .	339
<b>Inverse Proportion</b>	One quantity <b>increases</b> at the same rate as the other quantity <b>decreases</b> .	342

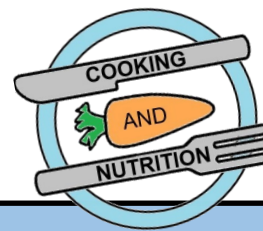


### Key Vocabulary

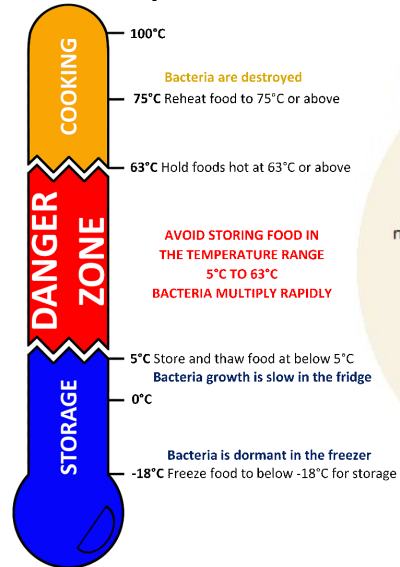
- Integer – A whole number.
- Power/Indices - The index of a number says how many times to use the number in a multiplication. It is written as a small number to the right and above the base number.
- Square number - the answer you get when you multiply a number by itself.
- Cube number - the answer 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.



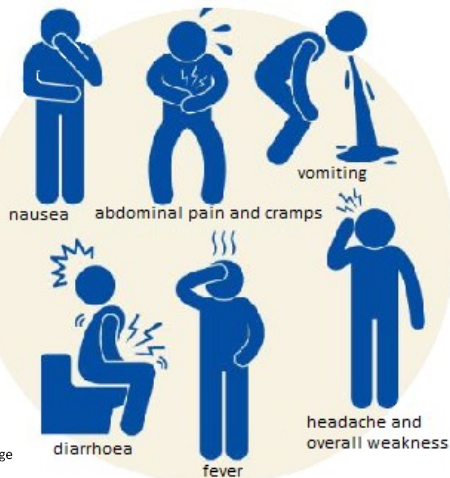
# Year 9 - Lifestyle & Choice



## 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.



[https://www.youtube.com/watch?v=OZOIEYQ0axo&list=PLcvEcrsF\\_9zlxoGGU59CjuZHciPI9uvGm&index=9&t=2s](https://www.youtube.com/watch?v=OZOIEYQ0axo&list=PLcvEcrsF_9zlxoGGU59CjuZHciPI9uvGm&index=9&t=2s)

[v=OZOIEYQ0axo&list=PLcvEcrsF\\_9zlxoGGU59CjuZHciPI9uvGm&index=9&t=2s](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 Art Weird and Wonderful

## The four main areas in this project:



Developing Ideas



Refining Materials



Recording Ideas



Presenting Responses

## You will develop skills in:

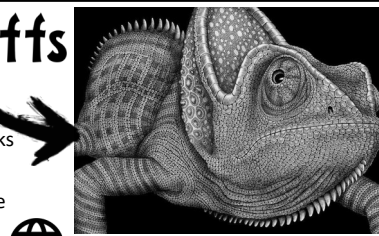
- Artist Research and Response
- Observational drawing skills

- Developing original ideas
- Visual Elements and Composition

### Artist Research

**Tim Jeffs**

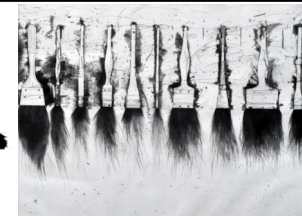
An artist who works mainly in pen and ink focusing on the theme of animals.



<https://timjeffsart.blogspot.com/>

**Jim Dine**

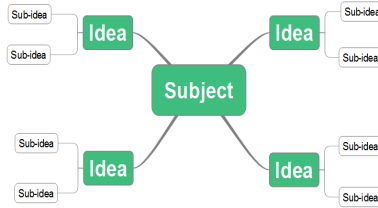
An artist who focuses on making objects look interesting.



<https://www.youtube.com/watch?v=g1UjAyJ0mI4>

## Mind Mapping

Artists and Designers often start with a mind map of ideas when they begin a project as this helps them to plan for where the creative journey will take them.



## Media and Materials

Pencil	Watercolour	Collage	Fineliner	Mixed Media
Pen	Oil Pastel	Monoprint	Wax Resist	Polyprint
Ink	Coloured Pencil	Charcoal	Scruffito	Digital

## Observational Drawing Tips:



- Draw from life where you can.
- Draw what you see, not what you think you see!
- Begin drawing the form lightly in pencil
- Use a soft sketchy line to get accurate shapes

## Primary Sources

Photos that you take yourself to inspire your art work.



## Secondary Sources

Photos that you use to inspire your artwork but they are taken by someone else.

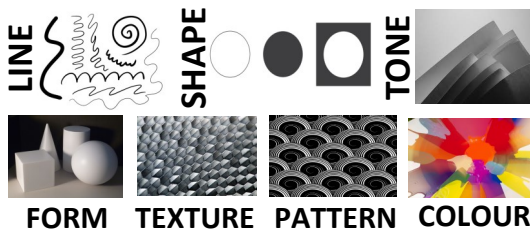
## Montage Page

A group of images based on a theme, carefully presented for idea development and to visualise your ideas of new and original designs.



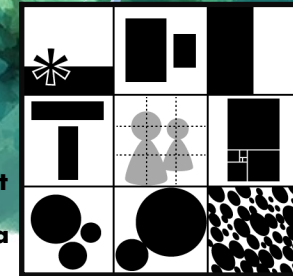
## Visual Elements

The components that make up a piece of art.



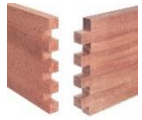
## Composition:

The arrangement of the visual elements in a piece of art.



- ### KEY WORDS
- Artist
  - Idea
  - Develop
  - Refine
  - Research
  - Plan
  - Create
  - Background
  - Foreground
  - Light
  - Dark
  - Detail
  - Proportion
  - Outline
  - Material
  - Original
  - Analysis
  - Evaluate
  - Express
  - Response
  - Inspire
  - Layout
  - Technique
  - Mood
  - Meaning
  - Style
  - Abstract
  - Realistic
  - Record
  - Arrange
  - Surreal

## Year 9 Resistant Materials Knowledge Organiser



Finger joint



Norman Foster is an architect who specialises in glass and metal buildings such as The Gherkin and Millennium Bridge in London.



Sir James Dyson reinvented the vacuum cleaner to no longer need a bag. He famously prototyped thousands of designs before refining his cyclone-suction, bag-free design.

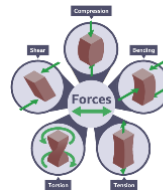


Dowel joint

### Forces and stresses

Forces act on materials all the time - even if a material appears stationary it still has a force acting on it. There are five terms used to describe what type of force can act on a material:

- **tension** - a pulling force
- **compression** - a pushing force
- **bending** - forces at an angle to the material
- **torsion** - a twisting force
- **shear** - forces acting across the material



Lap Joint



Butt joint

## Machinery and Tools in the workshop



**Tenon Saw:** used for sawing straight lines in wood.



**Chisel:** used to shape wood. Can cut out sections



**File:** Abrade a thin surface area of wood.



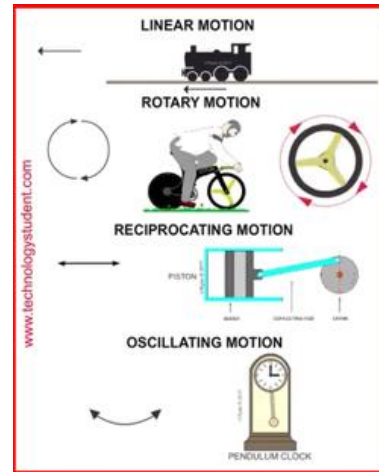
**Hand Drill:** used to drill holes into materials



**Rasp:** Abrade a thick surface area of wood.



**Coping Saw:** used to saw curved lines into 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.

Paper	Properties	Uses
Layout paper	Lightweight, thin, cheap, smooth surface	Graphic drawings, animations
Bleed proof (marker) paper	Contains more chalk, smooth, hard, doesn't absorb ink, doesn't bleed	Creating special effects for designers or artists
Tracing paper	Good transparency, expensive	For seeing an image underneath
Grid paper	Covered with continuous square grid	Used in many maths contexts
Cartridge paper	Heavier weight, good quality, opaque	Writing and sketching

### Boards

Board is selected by its thickness, measured in microns. One micron is 1/1,000th of 1 mm. Sometimes the thickness of board is given in **sheets**, referring to the number of pieces of paper that have been glued together to make a sheet of board.

Board	Properties	Uses
Corrugated cardboard	Strong, lightweight	Packaging protection in transportation of products and used to package some hot food such as a pizza due to its insulating properties.
Duplex board	Cheaper than white board, available with different finishes (metallic, holographic etc.)	Food packaging, eg biscuit boxes or containers
Solid white board	Top quality, range of thicknesses, excellent to print on	Hardback books
Foil-lined board	Expensive, good quality, aluminium foil lining, excellent barrier against moisture	Pre-packed food packages, cosmetic cartons
Inkjet board	Expensive, printable, photo quality	Posters, photography, art reproductions
Foam-core board (foam board)	Strong, lightweight, paper face, foam core	Model making, mounting photographs

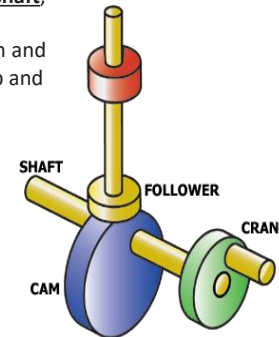
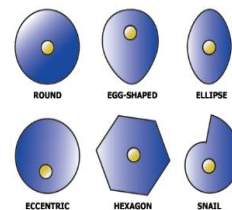
**ecological footprint** An analytical measurement of the amount of global resources used at each stage in a products lifecycle.

**environmental design** Designing products by ensuring minimal impact on the environment.

### Cams and followers

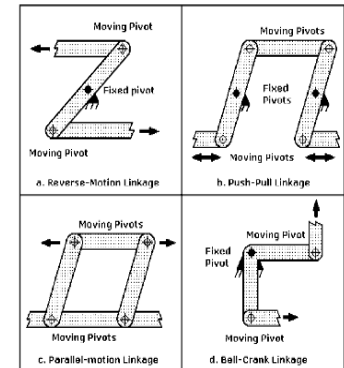
A **cam mechanism** has two main parts:

- a **cam** - attached to a **crankshaft**, which rotates
- a **follower** - touches the cam and follows the shape, moving up and down



### Linkages

**Levers** can be joined together to form **linkages**. Simple linkages change the direction of motion and the amount of force.





# Year 9 Textiles Design and Technology

**Iterative design** is a design method based on a process of making prototypes, testing them, improving them, testing again and repeating this cycle until the best solution has been found.

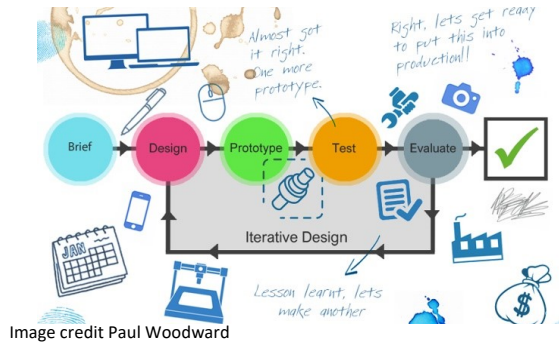


Image credit Paul Woodward

A **design brief** is the information a client gives to a designer explaining what they want their product to be like, eg 'Design a drinks bottle holder for use while riding a bicycle'. The designer could also produce a brief for the client, as the client might have identified a problem but not know how to solve it.

A **design specification** is a list of criteria a product needs to achieve. Using the brief to begin research, a specification can be written after the research has been carried out and when more information is known.

**Modelling** is a quick, cheap way to test ideas before making the final product.

## Key Terms:

**Technical Textiles** are made to be functional e.g. Nomex is fire-resistant, Kevlar is strong, 3M Scotchlite is reflective.

**Planned obsolescence** is when products are designed with a short lifespan in mind e.g. a disposable razor. Linked to environmental issues in design.

**Designing for Maintenance** is when products are designed to be repaired if they break. This is a good design principle.

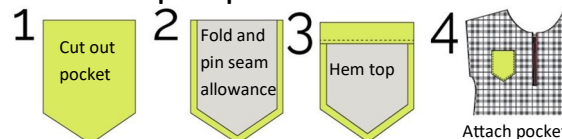
**Stock forms** are the standard ways of storing materials and components e.g. a reel of cotton, a roll of fabric.

**Sustainable Design** is when products can continually be made without harm to people of the environment.

Construction	Diagram/ Example	Characteristics
Open Seam		Quick and easy. Not strong and not bulky.
Closed Seam		Strong, can be bulky.
French Seam		Neat. Time consuming. Used on delicate fabrics.

Decorative Technique	Diagram/ Example	Characteristics
Quilting		Padded, protective. Warm.
Tie Dye		Different patterns, resist dye technique. Can achieve irregular or regular designs.
Reverse Applique		Time consuming. Can use various layers and textures.

## How to make a patch pocket:



## Mary Quant

- Famous in 1960's
- Invented the miniskirt and hot pants
- known for her use of pop art in fashion
- Changed the look of women worldwide
- Bright colours and monochrome

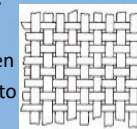
## Vivienne Westwood

- Famous in 1970's
- Known for moving punk music movement into fashion
- Controversial and artistic style
- Her collections have been diverse and include inspiration of pirates, royalty, aristocracy and India.
- Now designs Ethical fashion



## Weaving:

the yarns are woven together to make a fabric



## How Cotton fabric is Made

From source of origin to woven fabric

**Dyeing:** the yarns are dipped into baths of dye



**Twisting:** the yarns are twisted together to become stronger



**Picking:** Cotton buds of Gossypium genus (cotton plant) are picked



**Carding:** separates the fibres from dirt, insects and twigs.



**Combing:** Separates long fibres from short fibres. All fibres are placed in same direction



**Spinning:** fibres are spun into yarns

