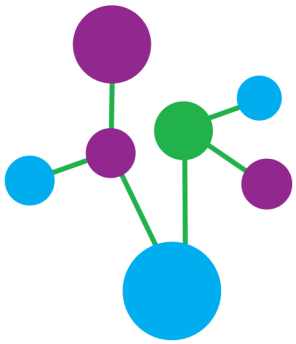
NAME: _____

TERM 1&2

YEAR 8



PLYMPTON ACADEMY

HANDBOOK

TERM 1&2

Keystone Vocabulary	Definition
Psychology	The study of the mind.
Motif	A dominant or recurring idea or item throughout literature.
Supernatural	Beyond scientific laws or understanding. Usually connected to creatures such as ghosts.
Macabre	Concerned with or causing a fear of death.
Gothic	A style of architecture and writing.
Occult	Mystical, supernatural or magical powers/practises.
Genre	A way of grouping literature by presentation of typical conventions.
Symbolism	Symbols or images used to represent ideas or qualities.

Eras & Movements	Explanation
Georgian Era	1714-1837 The union of England and Scotland created Great Britain and it continued to become a powerful empire.
Gothic period	Flourishing art, sculptures and architecture that emerged originally in the Middle Ages. Influenced dark literature.
Victorian Era	1837-1901 Under the rule of Queen Victoria, Britain became the world's first global industrial power.
American Gothic period	A subgenre of gothic fiction. Includes themes of guilt, monsters, the uncanny and ghosts.
Era	A long and distinct period of history.
Period	A length or portion of time.
Internal conflict	The psychological struggle within the mind of a literary or dramatic character, the resolution of which creates the plot's suspense.
External Conflict	The struggle between a character and an outside force such as nature or another character.

Year 8 - A Bloody Mess: Gothic Stories

ENGLISH

Terminology	Definitions
Protagonist	The main character within a narrative.
Simile	Comparing two unlike things using 'like' or 'as'.
Metaphor	A literal comparison of two things.
Personification	Humanising an inanimate object.
Imagery	The use of words to create images (pictures), especially to create an impression or mood.
Pathetic Fallacy	When the weather or setting reflects the mood/tone of the characters.
Connotation	A feeling or idea that is suggested by a word in addition to its basic meaning, or something suggested by an object or situation.
Conventions	Typical features of a genre.
Neo-Victorian	Modern writing which replicates the style of Victorian writing.
Allegory	A story, poem or picture that carries a hidden meaning. Usually representing a moral message.
Tone	The mood that is created using visual descriptions and vocabulary choice.
Picturesque	Visually attractive.

ENGLISH

Punctuation	Definition
Exclamation mark!	Used at the end of a sentence to show excitement, fear or volume.
Question mark?	Used at the end of a sentence to indicate that it is a question.
Full stop.	Used at the end of a sentence to mark it has finished.
Comma ,	Used to separate items in a list and to separate a subordinate clause.
Semicolon ;	Replaces a full stop when both sentences either side are related in topic.
Colon:	Introduces a list or expansion of an explanation.
Brackets (or parentheses)	Adds (extra) information in a sentence.
Ellipsis...	Indicates a cliffhanger or tailing off a train of thought...
Dash -	Indicates a range or a pause.

Punctuation	Example
Exclamation mark!	That was absolutely fantastic to see!
Question mark?	Why did you do that?
Full stop.	There was nowhere left to go.
Comma ,	I bought: fish, eggs, muffins and lettuce. Although I'd never been abroad, I was very excited.
Semicolon ;	I love to eat ice cream; I also love spicy food too.
Colon:	At the shop I purchased: bread and ham. We knew who would win the game: the Eagles.
Brackets (or parentheses)	His favourite team (who he'd followed since he was young) was Manchester United.
Ellipsis...	At that point she fell...
Dash -	I needed to breathe - there wasn't much time left to escape.

Year 8 Autumn Half Term 2 - Monsters Through Time

Keystone Vocabulary	Definition
Protagonist	The leading character in a film, play or novel etc.
Antagonist	A person who opposes the protagonist or is actively hostile.
Characteristics	The features that make up a character and/or their personality.
Tension	The apprehensive and anxious feeling creating when building up to an event in a piece of text.
Atmosphere	The general mood created within a scene/extract.
Inhuman	Lacking human qualities of compassion and mercy. Someone who is cruel and barbaric.
Inference	A conclusion reached on the basis of evidence or reasoning.
Show not tell	Showing a reader actions, emotions and senses rather than just telling them.

Terminology	Definition
Extended simile	An extended comparison of two things using 'like' or 'as' to create a vivid image in the reader's mind. E.g. the stars were sprinkled across the sky like salt and pepper spilled across a table.
Extended metaphor	A literal comparison of two unlike things that is referred to more than once.
Personification	Humanising an inanimate object. E.g. the wind sighed.
Paragraphing for effect	Separating (by choice) ideas throughout a text, usually using fragmented sentences and onomatopoeia for tension.
Pathetic Fallacy	When the weather and setting reflects the mood of the characters and atmosphere.
Sensory language	Using the five senses to build on description and 'show not tell'.
Imagery	The image/picture created in a person's mind through rich description.

Punctuation	Definition
Exclamation mark!	Used at the end of a sentence to show excitement, fear or volume.
Question mark?	Used at the end of a sentence to indicate that it is a question.
Full stop.	Used at the end of a sentence to mark it has finished.
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Dash -	Indicates a range or a pause.

Punctuation Marks

! Exclamation	● Full Stop
, Comma	? Question Mark
; Semi Colon	: Colon
/ Slash	“” Quotation Marks
() Round Bracket	– Dash

Bonus: ellipsis

...

Punctuation	Example
Exclamation mark!	That was absolutely fantastic to see!
Question mark?	Why did you do that?
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Punctuation Marks

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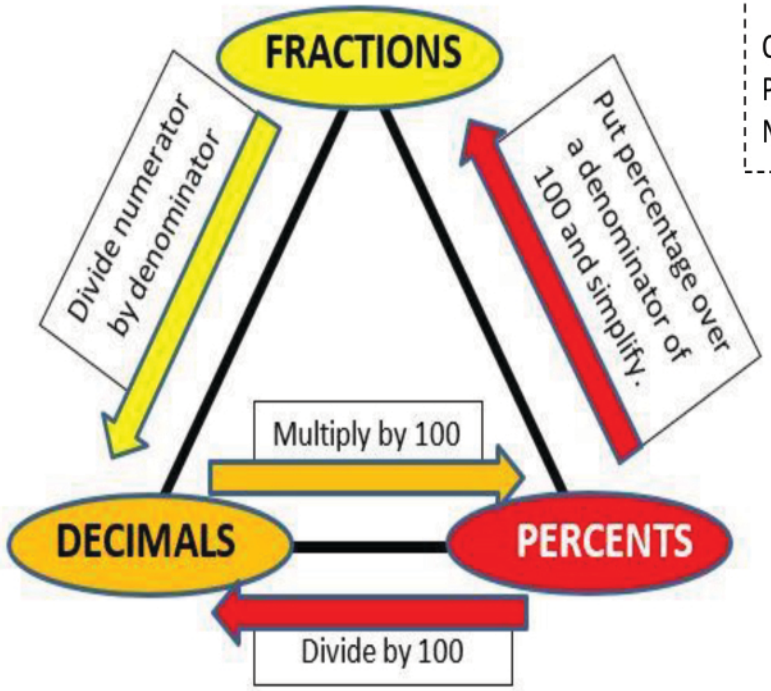
Bonus: ellipsis

…

Maths Knowledge Organiser - Number

Stage 7



Percentages

OV x PM = NV

OV= Original value
PM= Percentage multiplier
NV= New Value

Stage 8

Numbers in standard form are written in this format:

$$a \times 10^n$$

Where **a** is a number **1 ≤ a < 10** and **n** is an **integer**.

$$\text{Speed (s)} = \frac{\text{distance (d)}}{\text{time (t)}}$$

$$a^x \times a^y = a^{x+y}$$

$$a^x \div a^y = a^{x-y}$$

$$\left(a^x\right)^y = a^{xy}$$

$$a^0 = 1$$

Stage 9

$$\text{Pressure (p)} = \frac{\text{force (F)}}{\text{area (A)}}$$

$$\text{Density (d)} = \frac{\text{mass (m)}}{\text{volume (V)}}$$

Higher

Compound interest-

OV x PM^n = NV

OV= Original value
PM= Percentage multiplier
n= number of percentage changes
NV= New Value

$$a^{-x} = \frac{1}{a^x}$$

$$a^{\frac{x}{y}} = \sqrt[y]{a^x} = \left(\sqrt[y]{a}\right)^x$$

Maths Knowledge Organiser – Geometry and Measure

Shape	Perimeter	Area
Triangle	$P = a + b + c$	$A = \frac{1}{2}(b \times h)$
Square	$P = 4b$	$A = b^2$
Rectangle	$P = 2(b + h)$	$A = (b \times h)$
Parallelogram	$P = 2(b + h)$	$A = (b \times h)$ b = the length
Rhombus	$P = 2(b + w)$	$A = (b \times h)$ b = the length
Trapezium	$P = a + b + c + d$	$A = \frac{1}{2}(a + b)h$

Stage 7

Volume of a cuboid
= length × width × height
= lwh

Surface Area of a Cuboid = $2(lw + wh + lh)$

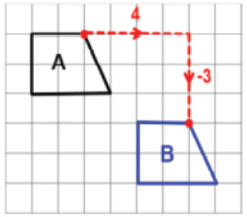
When a shape is **translated**, it is **moved to a different position**, without being turned or flipped.

Vectors such as $\begin{bmatrix} 4 \\ -3 \end{bmatrix}$ are used to describe translations.

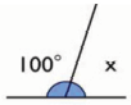
The **top** number is the **horizontal** movement:
← *left if negative* or *right if positive* →

The **bottom** number is the **vertical** movement:
↓ *down if negative* or *up if positive* ↑

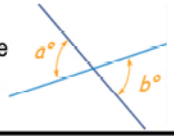
Translate shape A by the vector $\begin{bmatrix} 4 \\ -3 \end{bmatrix}$



Angles on a straight line add up to 180°

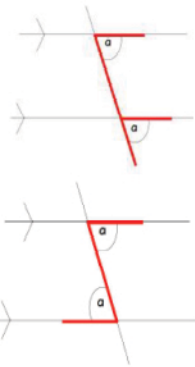


Vertically opposite angles are equal



Angles around a point add up to 360°

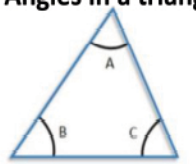
Stage 8



Corresponding Angles
F shape
Angles are equal

Alternate Angles
Z shape
Angles are equal

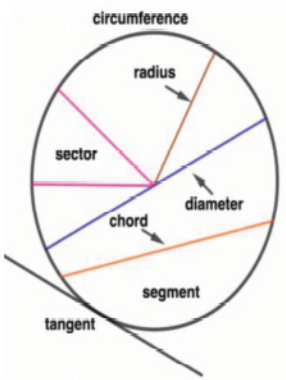
Angles in a triangle



$A + B + C = 180°$

Regular Polygons

	Interior	Exterior
Sum of all Angles	$(n-2)180°$	$360°$
Each Angle (Regular Polygon)	$\frac{(n-2)180°}{n}$	$\frac{360°}{n}$



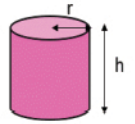
Circumference

$C = \pi D$

Area

$A = \pi r^2$

Volume of a Cylinder

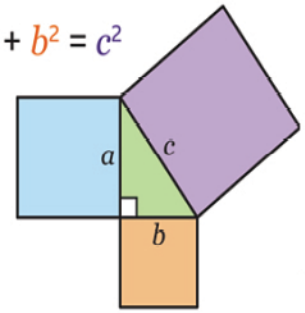


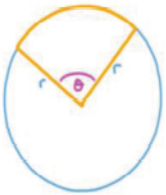
Volume = $\pi r^2 h$

Stage 9

Pythagoras Theorem

$a^2 + b^2 = c^2$





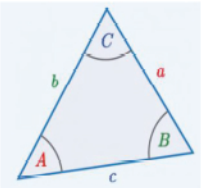
Arc length = $\frac{\theta}{360} \times \pi d$

Area of sector = $\frac{\theta}{360} \times \pi r^2$

Surface Area Cylinder
= $2\pi r^2 + \pi dh$

Describing transformations
Translation- vector
Enlargement – scale factor
- centre of enlargement
Rotations – Angle
- direction
-centre of rotation
Reflection – line of reflection

Higher



Area of a triangle: $\frac{1}{2}ab\sin(C)$

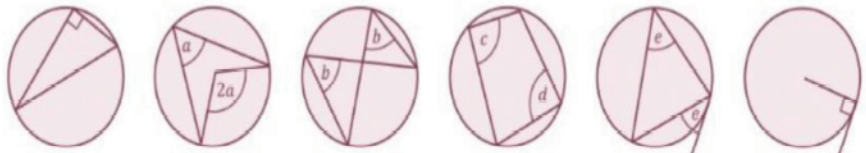
Sine Rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule: $a^2 = b^2 + c^2 - 2bc\cos A$

or

$\cos(A) = \frac{b^2 + c^2 - a^2}{2bc}$

Circle theorems G10



Volume of sphere $= \frac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$

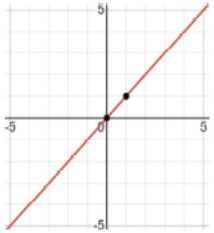
Curved surface area of cone = πrl where l is the slant height

Volume of cone $= \frac{1}{3}\pi r^2 h$

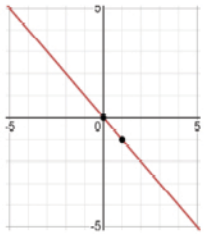
MATHS

Maths Knowledge Organiser - Algebra

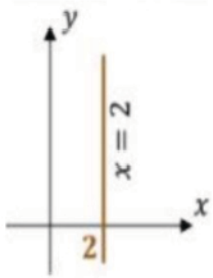
Stage 7

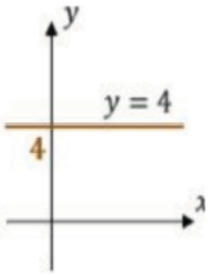


y = x



y = -x





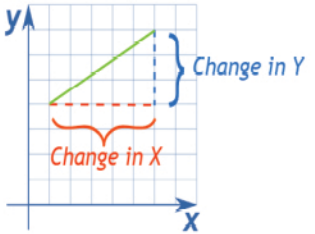
Stage 8

The general equation of any straight line is:

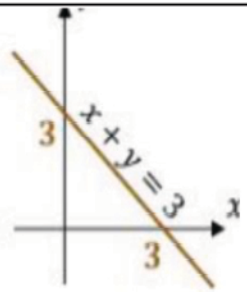
$$y = mx + c$$

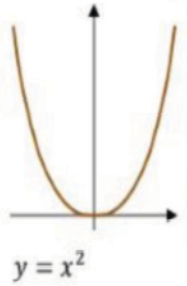
c is the **y-intercept** (where the line crosses the y-axis)

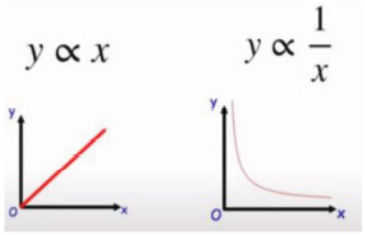
m is the **gradient** (steepness) of the line

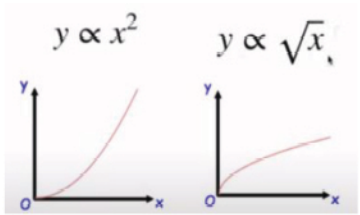


Gradient = $\frac{\text{Change in Y}}{\text{Change in X}}$

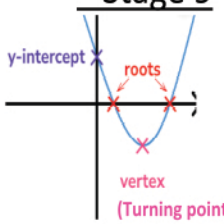




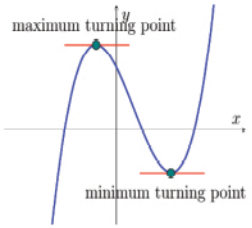


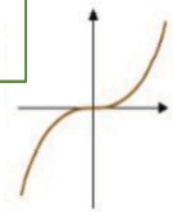


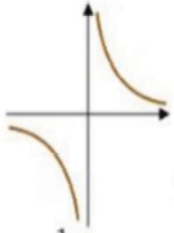
Stage 9



Straight line graphs-
Parallel lines have the same gradient
$m_1 = m_2$







Direct proportionality:
(y is proportional to x, x^2)

$$y \propto x \rightarrow y = kx$$

$$y \propto x^2 \rightarrow y = kx^2$$

Inverse proportionality:
(y is inversely proportional to x, x^2)

$$y \propto \frac{1}{x} \rightarrow y = \frac{k}{x}$$

$$y \propto \frac{1}{x^2} \rightarrow y = \frac{k}{x^2}$$

Quadratic Equation

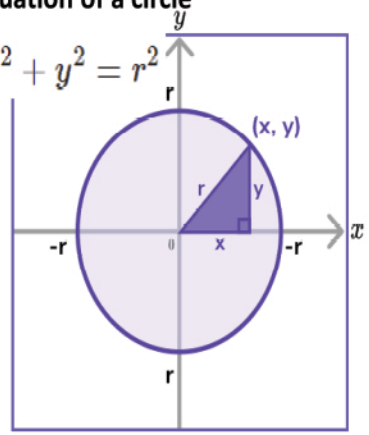
$$ax^2 + bx + c = 0$$

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

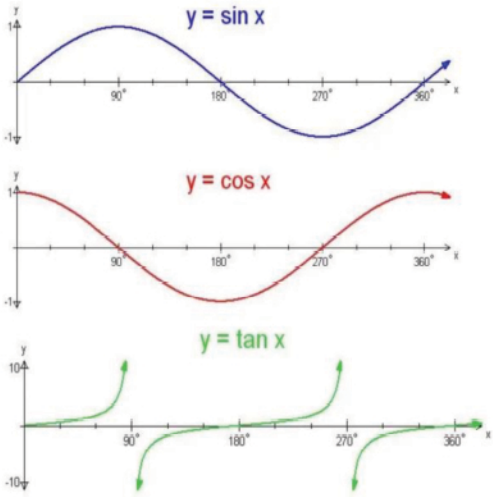
Equation of a circle

$$x^2 + y^2 = r^2$$



Higher

Straight line graphs-
Perpendicular lines have gradients that multiply to get –1 $m_1 \times m_2 = -1$



MATHS

Maths Knowledge Organiser - Statistics

Stage 7

Pie Charts

$$Sector\ Angle = 360 \times \left(\frac{Category\ Frequency}{Total\ Frequency}\right)$$

The **mean, median and mode** in maths are averages

Mean

Find the total of the values and divide the total by the number of values

$$\text{mean} = \frac{\text{total}}{\text{number of values}}$$

Median

Arrange the values in numerical order and find the middle value

Mode

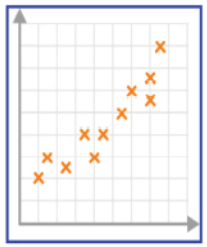
Find the most frequently occurring item in the data set

Range – Not an average – measures consistency

Biggest value - Smallest value

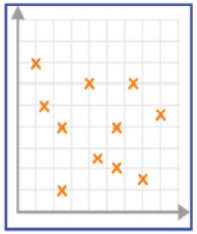
Stage 8

Positive correlation



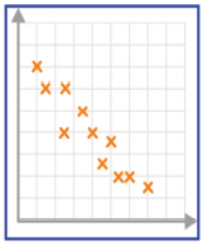
- As one variable increases so does the other
- Upward trend in the data

No correlation

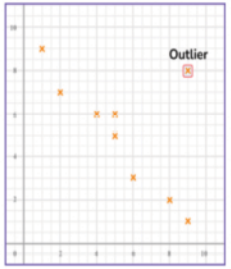


- No trend between the variable
- Plots are random and no linear pattern.

Negative correlation



- As one variable increases, the other decreases
- Downward trend in the data



Outlier

- A point that is 'far away' from the main group of data.
- They **lie out**side the other values

Stage 9

Independent events are events which are not affected by the occurrence of other events.

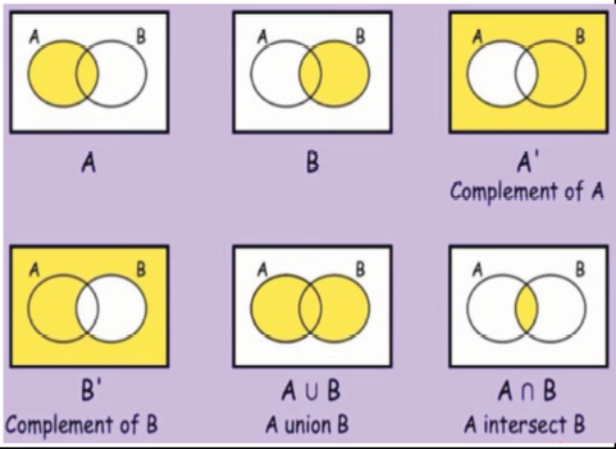
Dependent events are events which **are** affected by the occurrence of other events.

Higher

Interquartile Range
= Upper Quartile – Lower Quartile

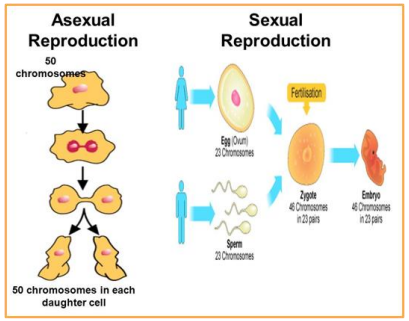
$$Frequency\ Density = \frac{Frequency}{Class\ Width}$$

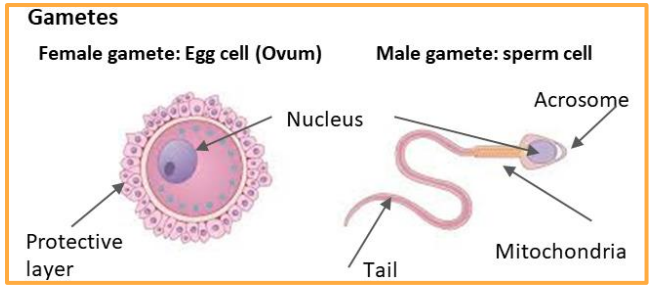
Symbol	Description
$\{\}$	Curly Brackets, contain all items in a set
,	Comma - separates all items in a set
'	Complement - the items not in a set
ξ	The Universal Set - contains all items in every set and subset required
ϕ	The Empty Set - contains no items



HUMAN REPRODUCTION

Key terms	Definition
Reproduction	The biological process by which new individual organisms – "offspring" – are produced
Asexual reproduction	Occurs in some animals and plants, it involves only one parent.
Sexual reproduction	Involves the fusion of gametes from two parents.
Gamete	The male gamete (sex cell) in animals is a sperm, the female an egg (ovum)

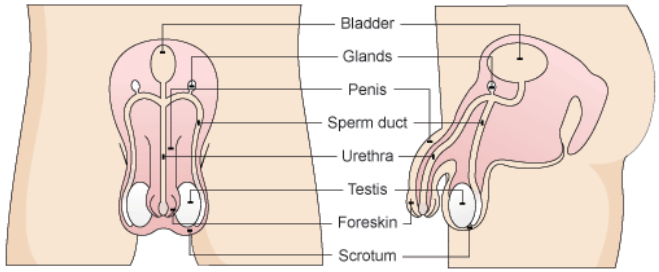




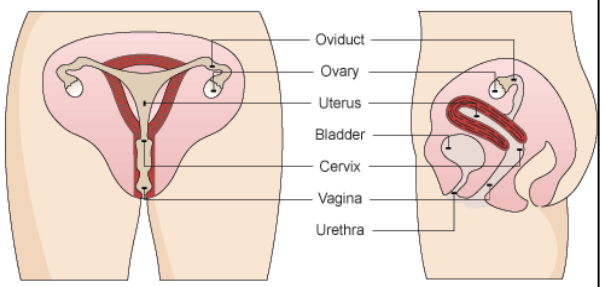
<u>Asexual reproduction</u>: The parent makes a complete copy of its genetic material. There is no variation.

<u>Sexual reproduction</u>: When a sperm and egg fuse together, the new cell contains the half the genetic information from each parent. There is variation in the new individual.

Key terms	Definition
Reproductive system	All the male and female organs involved in reproduction.
Ovary	Organ which contains eggs.
Oviduct (fallopian tube)	Carries an egg from the ovary to the uterus and is where fertilisation occurs.
Uterus (womb)	Where a baby develops in a pregnant woman.
Vagina	Where the penis enters the female's body and sperm is received.
Cervix	A muscular ring that helps keep a foetus in place in the uterus during pregnancy. During birth it dilates (expands) to 10cm in diameter.
Testicle	Organ where sperm are produced.
Penis	Organ which carries sperm out of the male's body.
Scrotal sac	Protects the testicles and holds them outside the body where the temperature is best for their function.
Sperm duct	Tube that carries sperm from the testis to the prostate gland.
Urethra	Tube leading from the prostate gland along the penis.
Semen	Liquid that mixes with sperm and provides them with nutrients for their journey.

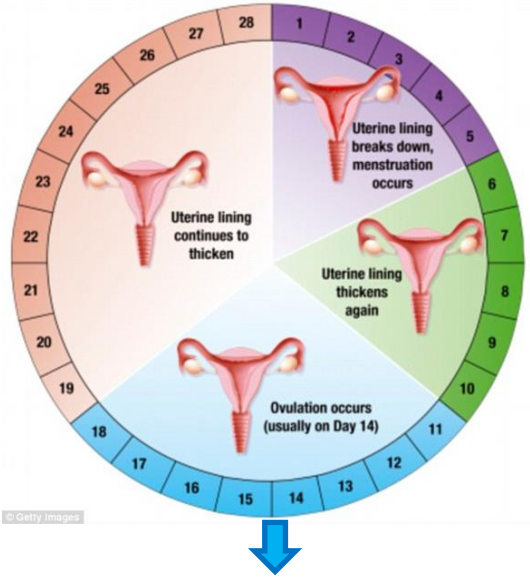


The male reproductive system: Male gametes (sperm) are made in the testes. Sperm travel from the testes, through the sperm duct, where glands add semen, and then out of the body via the urethra.



The female reproductive system: Female gametes (egg / ovum) are made in the ovary. They are there from birth. The egg travels from the ovary, through the oviduct / fallopian tube to the uterus. If it has been fertilised, it will implant into the uterus lining. If it has not been fertilised, it will leave the body during menstruation.

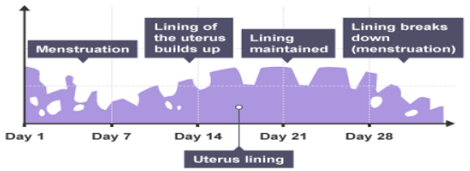
Key terms	Definition
Menstruation	Loss of the lining of the uterus during the menstrual cycle.
Ovulation	Release of an egg cell during the menstrual cycle, which may be met by a sperm.
Fertilisation	Joining of a nucleus from a male and female gamete.
Implantation	When a growing embryo embeds in the thick uterus lining.
Gestation	The time taken for the development from a foetus to a new individual. In humans this is 40 weeks.
Placenta	Organ that provides the foetus with oxygen and nutrients and removes waste substances.
Amnion	Bag surrounding the foetus that helps stop infections and holds the fluid in.
Amniotic fluid	Liquid that surrounds and protects the foetus.
Umbilical cord	Connects the foetus to the placenta.
Embryo	The developing baby from fertilisation to 12 weeks of gestation.
Foetus	The developing baby from 12 weeks of gestation until it is ready to be born.



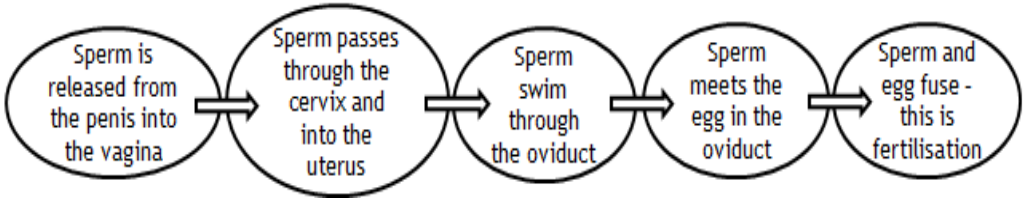
The menstrual cycle

The menstrual cycle prepares the female body for pregnancy by causing eggs (ova) to mature and be released. It lasts for 28 days.

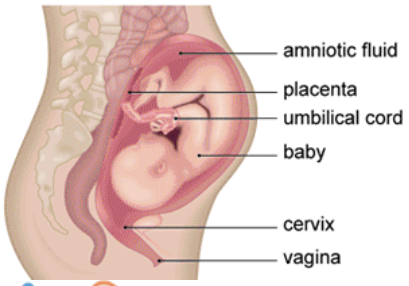
- Days 1-5: 'period' happens (menstruation), where uterus lining breaks down.
- Days 6-13: Uterus lining builds up (thickens) to prepare for pregnancy. The egg (ovum) matures in the ovary
- Day 14: Egg (ovum) released from the ovary and travels down the oviduct
- Days 15-28: Uterus lining stays thick, in case the egg is fertilised

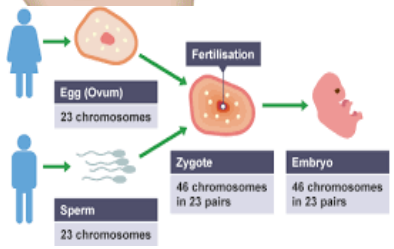


This window is the best time for **fertilisation:**



Just after ovulation, the female has the highest possibility of getting pregnant. This sequence shows how the sperm fertilises the egg.





Gestation

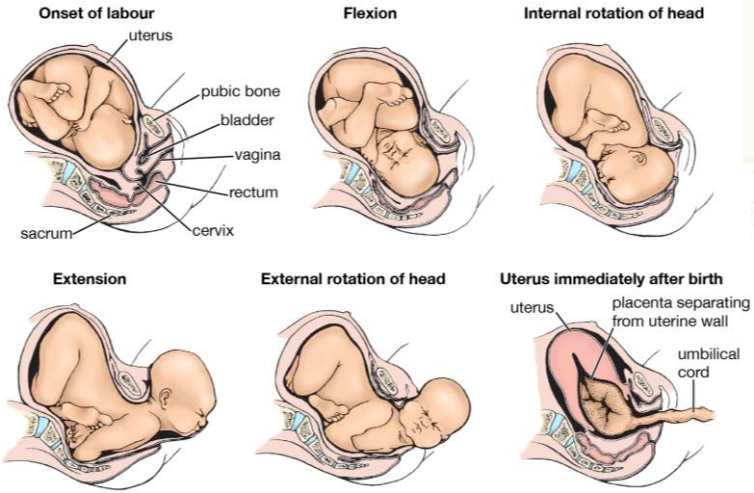
After fertilisation the **zygote** begins to divide into a ball of cells called an **embryo.** The embryo grows as cells continue to divide and travels to the uterus. Ciliated cells in the oviduct help it to move to the uterus.
The embryo **implants** into the uterus wall. The woman is now **pregnant.**
The embryo gets oxygen and nutrients from the mother's blood.
From **12 weeks**, we call the growing embryo a **foetus.** It now looks like a tiny human baby and has many specialised cells.
A **placenta** grows. This is a special organ that acts as a barrier between the foetus' and mother's blood. The placenta makes sure that their blood does NOT mix.

Oxygen, nutrients and other substances (including drugs and alcohol) pass from the mother's blood to the foetus.
Carbon dioxide and other waste products from the foetus travel down the umbilical cord to the placenta where they diffuse into the mother's blood.

Birth

After about 40 weeks of pregnancy, the foetus is ready to be born.

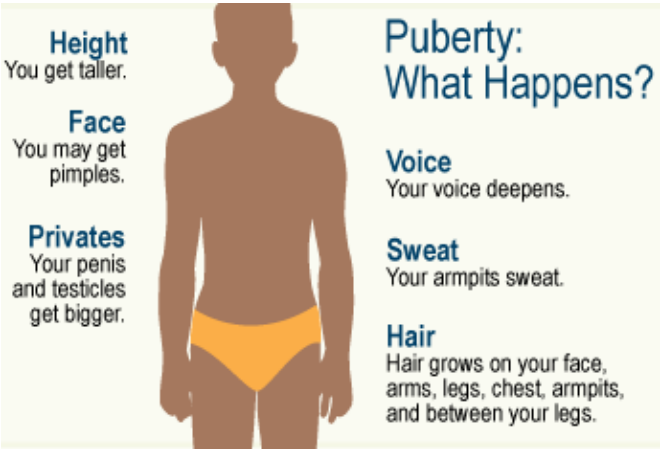
- The muscles in the wall of the uterus contract (**contraction)**
- The cervix **dilates** (gets bigger) to **10cm.** This is big enough for the foetus's head to pass through.
- These contractions get stronger and faster (this is **labour**)
- After some time of labour, the **amniotic sac** breaks, which releases the fluid (this is the **waters breaking)**
- Contractions push the baby headfirst through the **cervix** and then through the **birth canal** - vagina.
- The foetus is now called a **baby.**

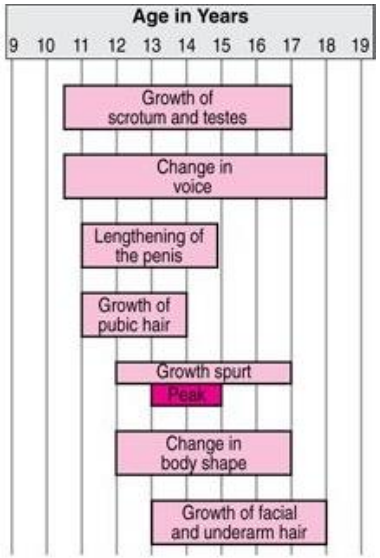


Key terms	Definition
Puberty	The change that occurs between the ages of ten and sixteen to prepare the body for sexual reproduction

Hormones - chemical messengers that are secreted directly into the blood. The blood carries the hormones to organs and tissues of the body to carry out their functions.

There are many types of hormones that act on different aspects of bodily functions and processes. Some of these include development and growth.



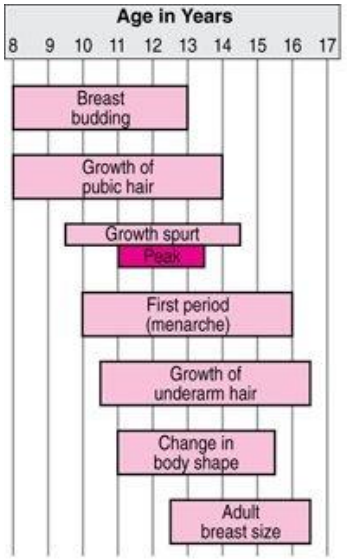


These changes are perfectly normal and all part of growing up.

They can happen at any time, over a number of years.

They can seem scary, but talking about the way your body and emotions are changing is a good way to cope.

If you have any questions, ask your teacher.



GENES - VARIATION

Key terms	Definition
Variation	Differences in characteristics between individuals of the same species and between species
Intraspecific	Variation within a species
Interspecific	Variation between species
Characteristics	Features of an organism
Species	Group of organisms that have more in common with each other than with other groups; they can interbreed and produce fertile offspring

Key terms	Definition
Adaptation	Special feature that helps an organism survive its environment
Structural adaptations	A feature of an organism's body that helps it survive/reproduce
Behaviour adaptations	A response made by an organism that will help it survive/reproduce
Functional adaptations	A body process that helps an organism survive/reproduce
Seasonal adaptations	Changes to the colour or behaviour of an organism to help survive changes of season

Within a species, there is usually a great deal of variation among individuals.

Grizzly Bear

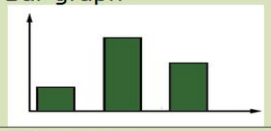
vs.

Polar Bear

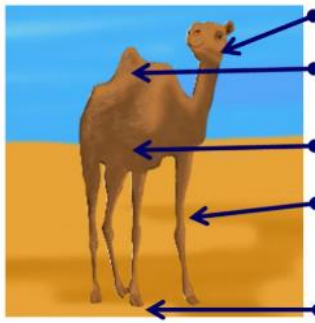
Killer Whale

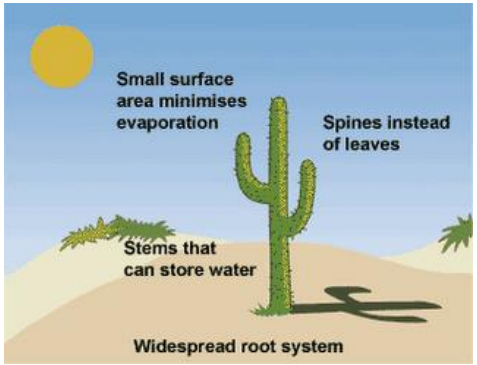
vs.

Blue Whale

	Continuous variation	Discontinuous variation
Properties	- No distinct categories - No limit on the value - Tends to be quantitative	- Distinct categories. - No in-between categories - Tends to be qualitative
Examples	• height • weight • heart rate • finger length • leaf length	• tongue rolling • finger prints • eye colour • blood groups
Representation	Line graph 	Bar graph 
Controlled by	A lot of Gene and environment → range of phenotypes between 2 extremes, e.g. height in humans.	A few genes → limited number of phenotypes with no intermediates e.g. A, B, AB and O blood groups in humans

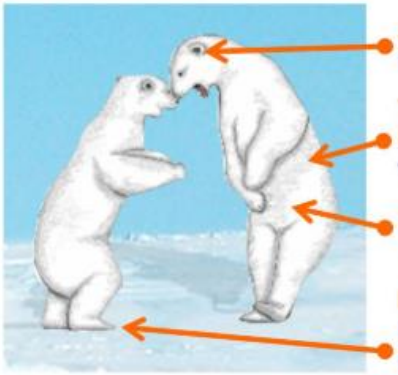
Adaptations in Dry Climates





Adaptations in Cold Climates

Short
Grow under snow



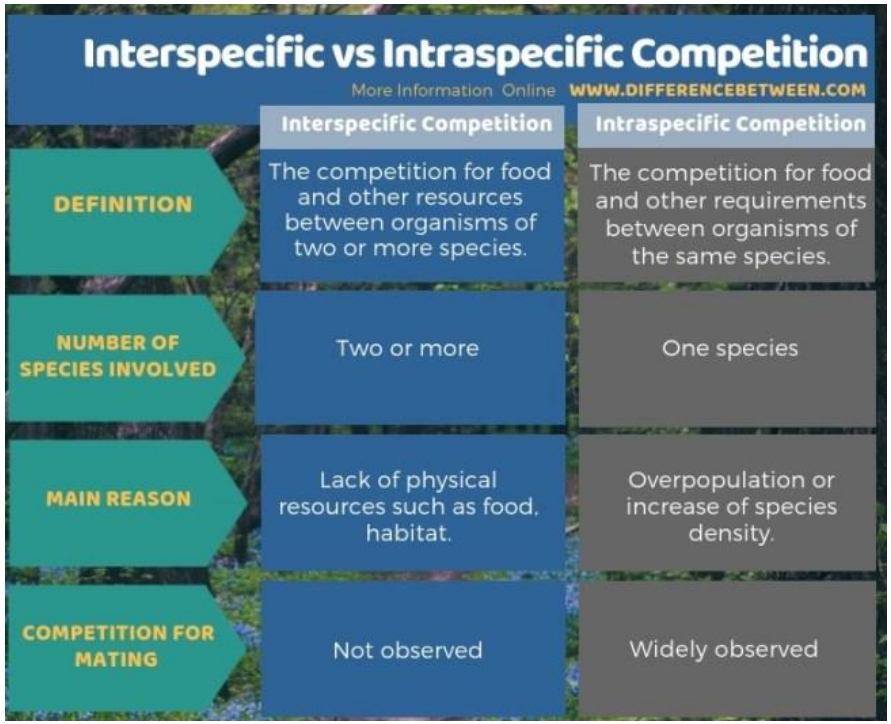
Small ears help to reduce heat loss.

Thick fur and a thick layer of body fat insulate from the cold.

White fur acts as camouflage.

Large feet to spread the body's weight. The wide paws act as good paddles and snow shoes.

Key terms	Definition
Natural selection	Process by which species change over time in response to environmental changes and competition for resources.
Evolution	Theory that the animal and plant species living today descended from species that existed in the past.
Population	Group of organisms of the same kind living in the same place.
Competition	When two or more living things struggle against each other to get the same resource.
Biodiversity	The variety of living things. It is measured as the differences between individuals of the same species, or the number of different species in an ecosystem.
Fossils	Prints or remains of organisms that have been preserved in rock through a process of mineralisation
Extinct	When no more individuals of a species remain.



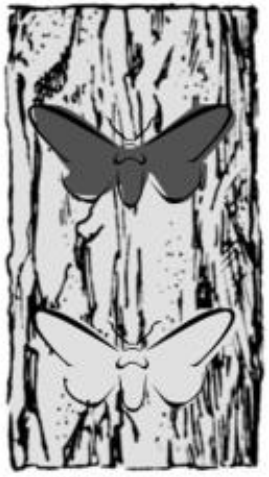
Key Facts:

- All living things have characteristics that help them to survive. There is competition between individuals for food, space and other resources. This leads to a struggle for survival. Natural selection is a theory that explains how species evolve and why extinction occurs.
- Biodiversity is vital to maintaining populations. Within an ecosystem, having many different species ensures resources are available for other populations, like humans.

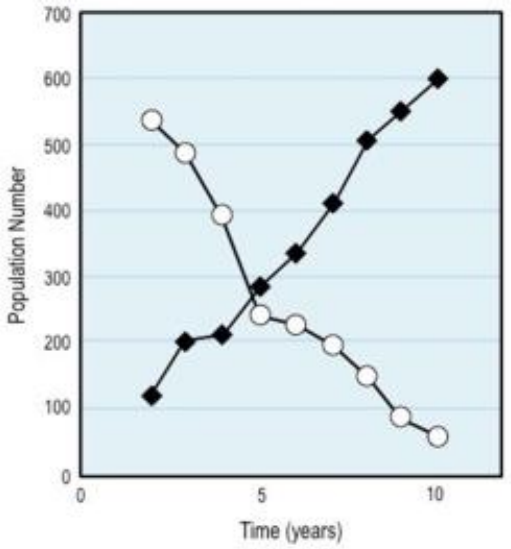
How do populations change over time?

Peppered moths come in two forms, white and black.

- Before the industrial revolution, trees were not blackened by soot. The black moths stood out on the white bark.
- After the industrial revolution, trees were blackened by soot. The white moths stood out on the black bark. They were easily spotted and eaten by predators.
- There were less white moths to pass on their genes and their numbers decreased.



Pre-Industrial Revolution



Post-Industrial Revolution

THE PERIODIC TABLE

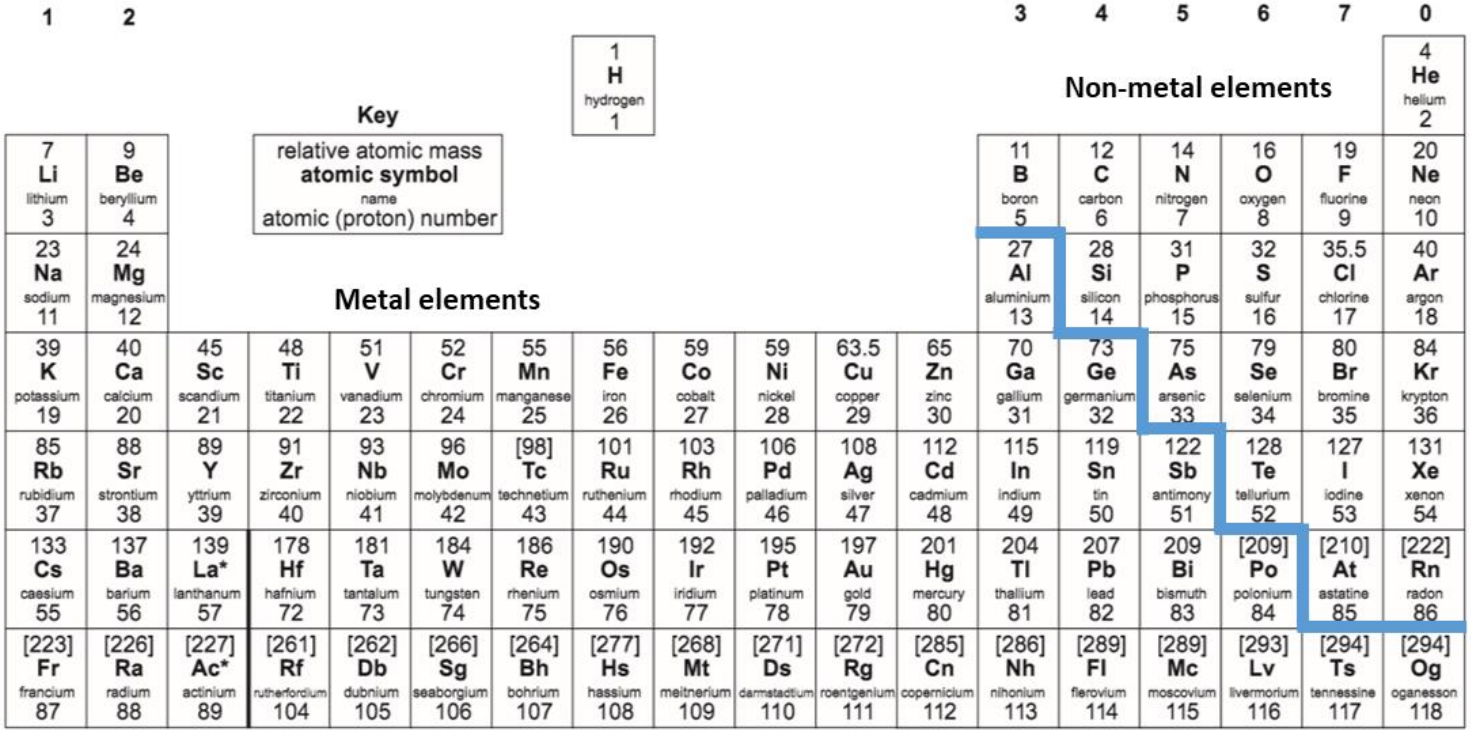
Key terms	Definition
Periodic table	Shows all the known elements in order of atomic number.
Element	Made up of only one type of atom, found on the periodic table.
Compound	Two or more different atoms chemically joined together.
Particle	Circle that represents an element or compound in particle diagrams.

Organisation of the Periodic Table

Metal elements are found on the left-hand side and in the middle of the periodic table.

The properties of metals are:

- **High melting point**
- **Conductors** of electricity and heat
- **Malleable**
- **Ductile**



Non-metal elements occur in the top right-hand corner of the periodic table.

Non-metals have different properties to metals, with exceptions.

- **Low melting point**
- **Insulator** of electricity and heat (except Carbon - it can conduct electricity)
- **Brittle**

The Periodic Table - Key Facts:

- Most elements are solid at room temperature, two elements are liquids and the rest are gases.
- Elements are arranged in order of increasing atomic number and according to their properties.
- As you go down a group and across a period the elements show patterns in physical properties e.g.:
  - Atoms increase in size (atomic radius) down a group
  - Atomic mass increases
  - Elements change state as you move from left to right across a period.

Group 1 – The Alkali metals

- A group of highly reactive metals with low melting points and low density. Form alkaline solutions.

Group 7 – The Halogens

- A group of highly reactive non-metals.

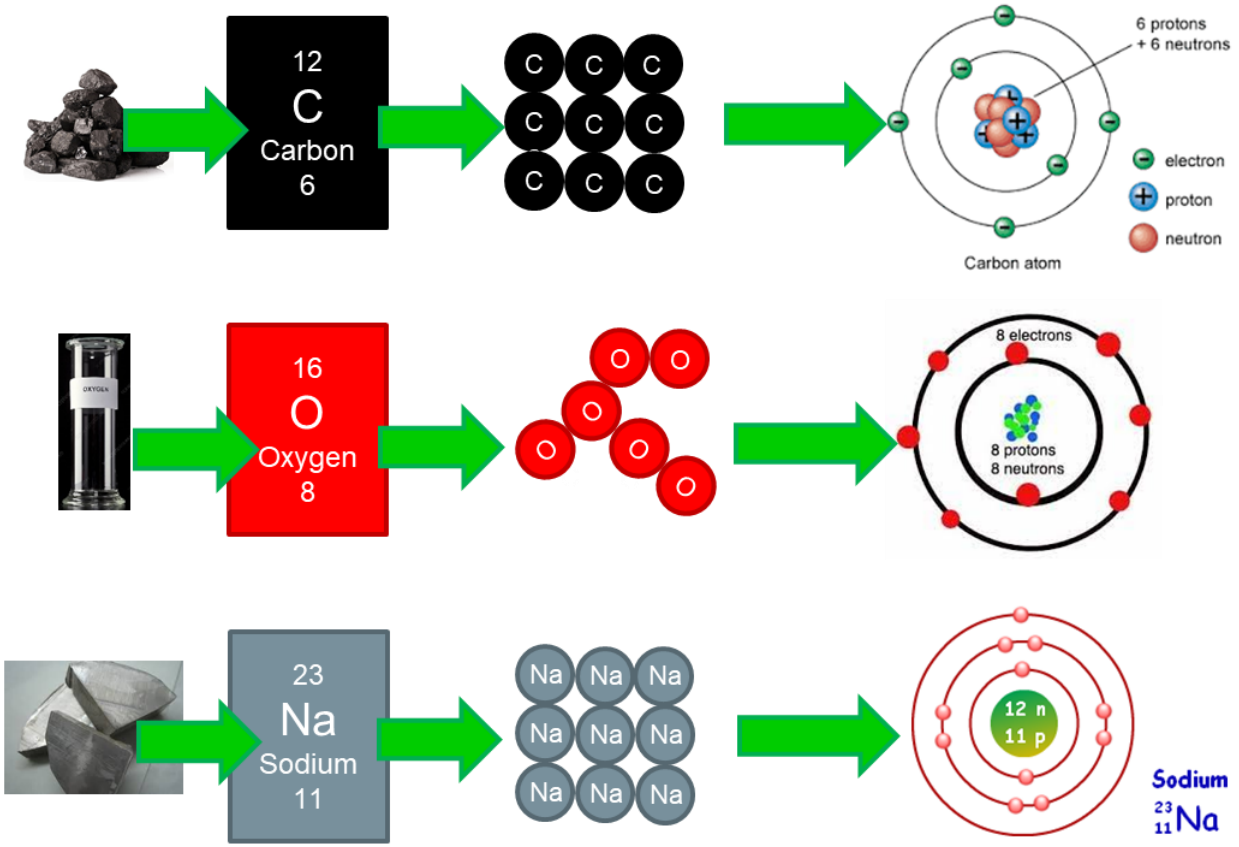
Group 0 – The Noble Gases

- A group of non reactive gases.

Elements in the same group have similar properties

Key terms	Definition
Particle	Circle that represents an element or compound in particle diagrams.
Element	Made up of only one type of atom, found on the periodic table.
Atom	Atoms are the smallest particles of an element that still have the properties of the element
Energy level / shell	An area on the outside of the atom where electrons are found. Atoms can have many energy levels.
Nucleus	The central area of an atom where protons and neutrons are located, this part of the atom contains the mass (this mass is due to the neutrons and protons within nucleus)
Electron	A particle, found in the energy level, it has a negative charge and a negligible mass (1/2000th of the mass of a proton).
Proton	A particle found in the nucleus of the atom. It has a positive charge and a relative mass of 1.
Neutron	A particle found in the nucleus. It has a relative mass of 1 and no charge.
Atomic number	Shown for each element on the periodic table, this number states the number of protons in the nucleus (proton number)
Atomic mass	The sum of the protons and neutrons in the nucleus, (number of protons and neutrons added together).
Indivisible	Term used to describe that an object cannot be broken down into smaller parts.
Positive charge	A type of charge indicated by the symbol +. A positively charged object is attracted to an object with a negative charge, however it is repelled by an object with a positive charge.
Negative charge	A type of charge indicated by the symbol -. A negatively charged object is attracted to an object with a positive charge, however it is repelled by an object with a negative charge.

Substances are made up of atoms. In an element the atoms are all the same.



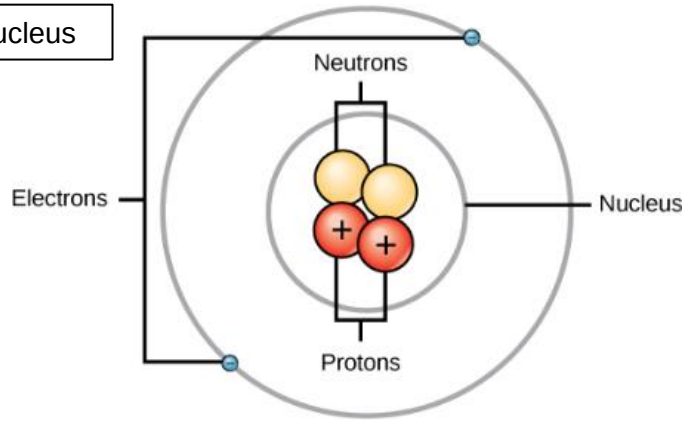
The number of protons and neutrons in the nucleus

mass number → 4

atomic number → 2

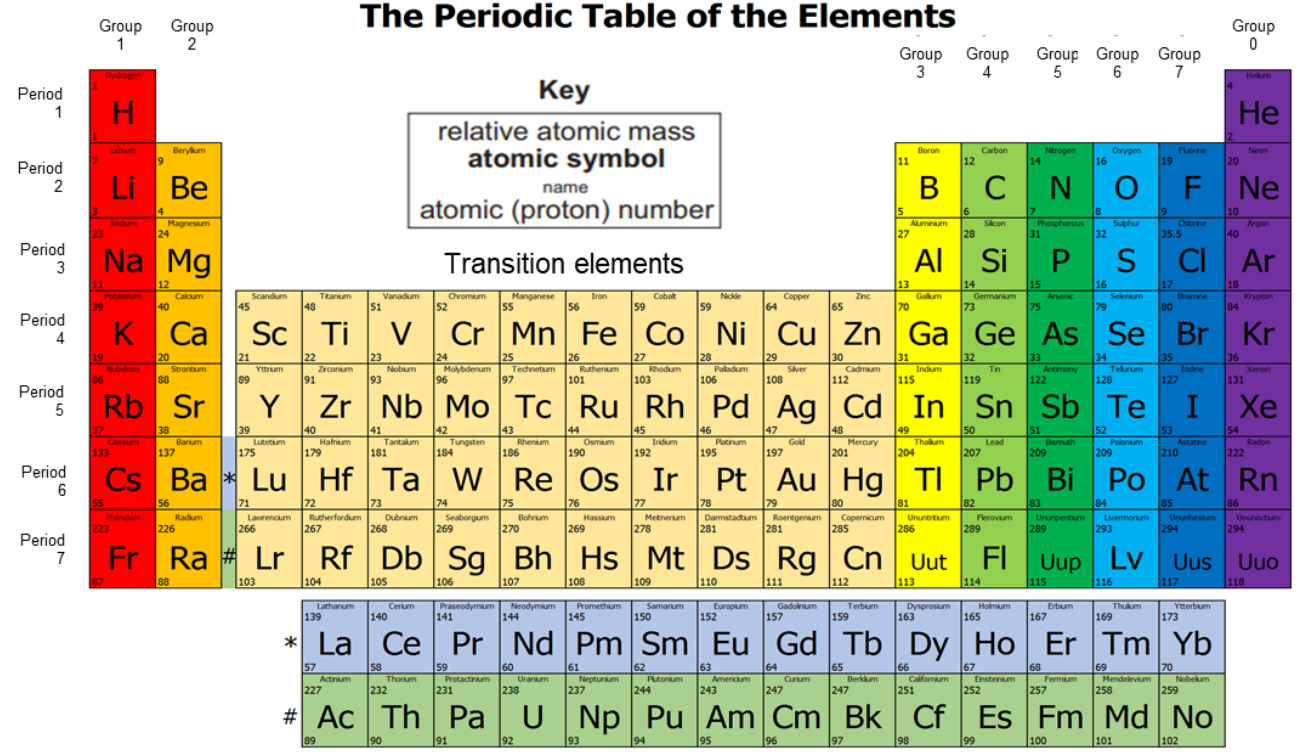
He

The number of protons or electrons



CHEMISTRY

The Periodic Table of the Elements



Elements in the same group have similar properties and reactions:

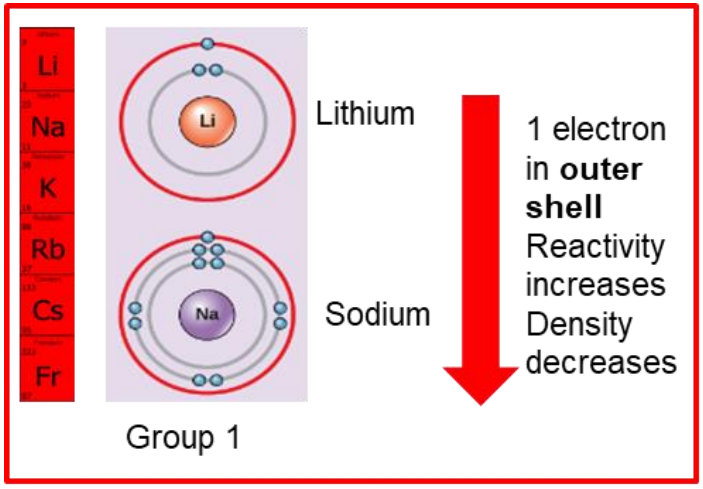
Group 1 – The Alkali metals
React with water to form metal hydroxide and hydrogen gas. E.g.

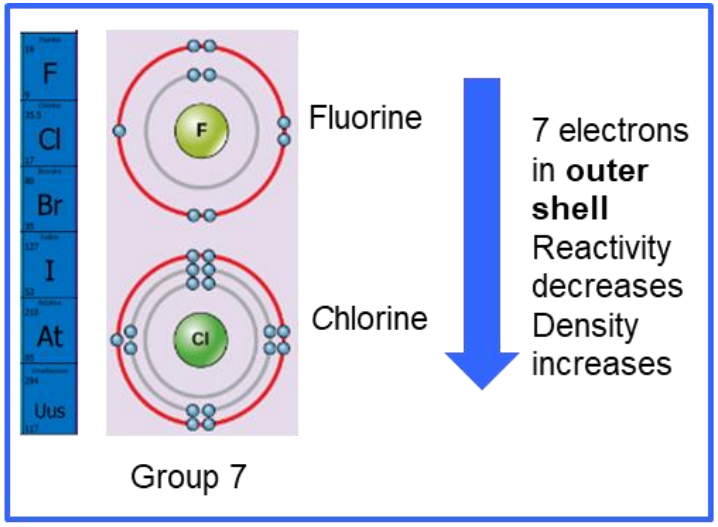
Lithium + water → Lithium hydroxide + hydrogen

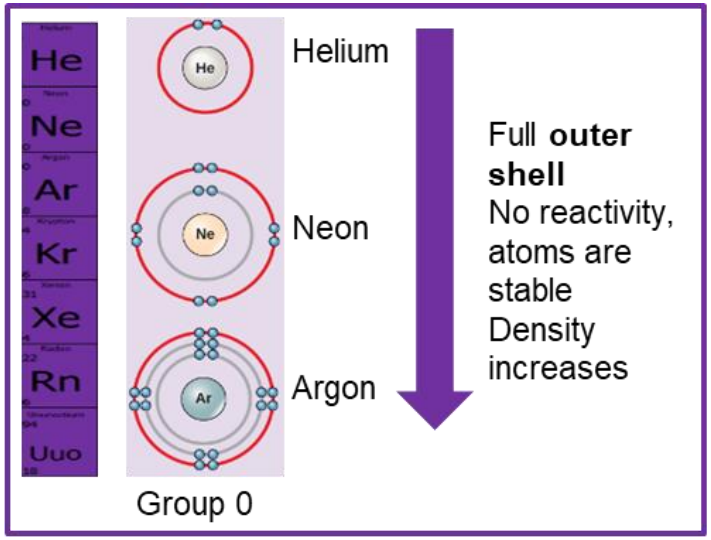
Group 7 – The Halogens
React with alkali metals to form metal halides. E.g.

Sodium + chlorine → Sodium chloride

Group 0 – The Noble Gases
These gases do not react because they have a stable electronic arrangement, they have ***full outer shells of electrons.***

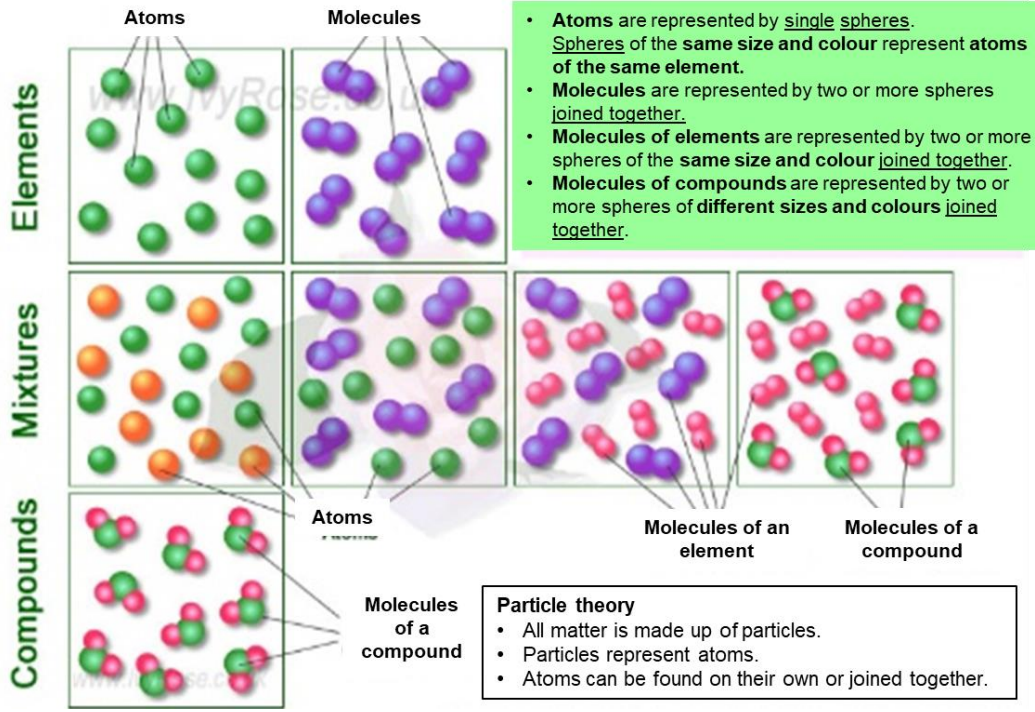






ELEMENTS AND VOMPOUNDS

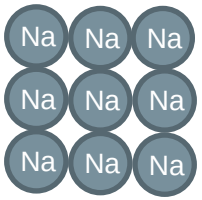
Key terms	Definition
Element	Made up of only one type of atom, found on the periodic table.
Compound	Two or more different atoms chemically joined together.
Particle	Circle that represents an element or compound in particle diagrams.

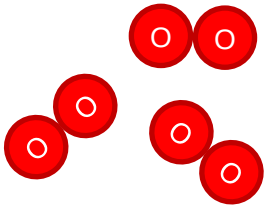


- **Atoms** are represented by single spheres. Spheres of the **same size and colour** represent **atoms of the same element.**
- **Molecules** are represented by two or more spheres joined together.
- **Molecules of elements** are represented by two or more spheres of the **same size and colour** joined together.
- **Molecules of compounds** are represented by two or more spheres of **different sizes and colours** joined together.

Particle theory
- All matter is made up of particles.
- Particles represent atoms.
- Atoms can be found on their own or joined together.

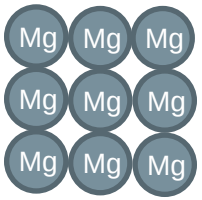
23 Na Sodium 11

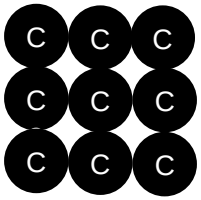




16 O Oxygen 8

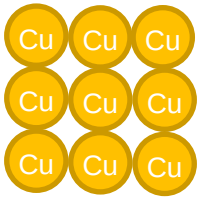
24 Mg Magnesium 12

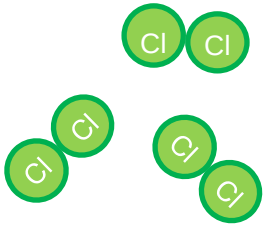




12 C Carbon 6

63.5 Cu Copper 29



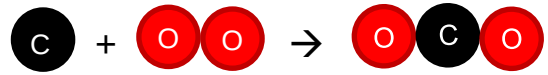


35.5 Cl Chlorine 17

Elements
- Elements are found on the periodic table.
- In an element the atoms are all the **same.**
- The arrangement of atoms show if the substance is solid, liquid or gas

Compounds
- Particle diagrams help us to see how the atoms of elements combine in compounds.
- Elements combine in fixed proportions to make compounds.
- In a compound the atoms are **different.** This shows the elements the compound is made from.
- Compounds are not found on the periodic table.

Carbon reacts with oxygen to make Carbon dioxide

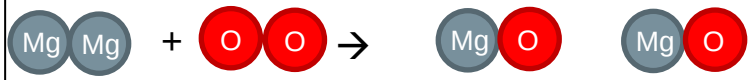


Carbon + Oxygen → Carbon dioxide

Magnesium reacts with chlorine to make magnesium chloride

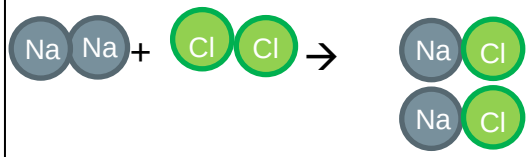
Magnesium + Chlorine → Magnesium chloride

Magnesium reacts with oxygen to make Magnesium oxide



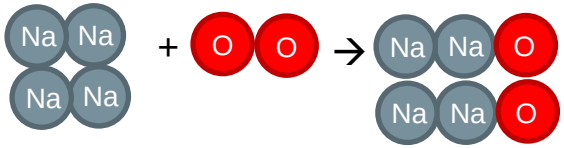
Magnesium + Oxygen → Magnesium oxide

Sodium reacts with chlorine to make sodium chloride



Sodium + Chlorine → Sodium chloride

Sodium reacts with oxygen to make sodium oxide



Sodium + Oxygen → Sodium oxide

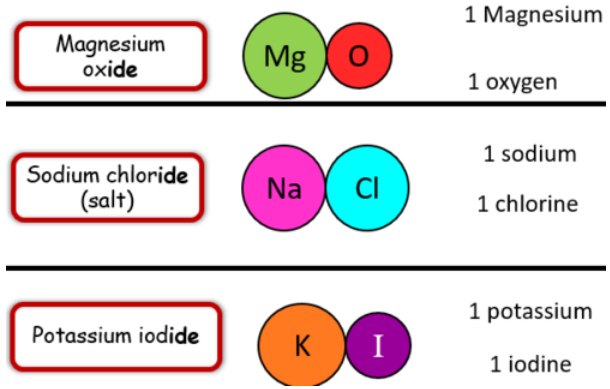
Copper reacts with chlorine to make copper chloride

Copper + Chlorine → Copper chloride

Naming Compounds

When a metal and non-metal combine chemically the ending of the non-metal changes to ***IDE.***

e.g. Magnesium and oxygen react to make magnesium ox***ide***.



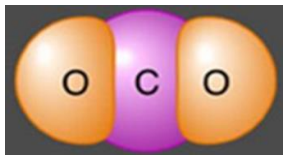
When a metal, a non-metal **AND** oxygen, combine chemically the ending of the non-metal changes to ***ATE.***

e.g. Magnesium, carbon and oxygen react to make magnesium cabonat***ate***.

Metal	Non-metal	Oxygen	Name of compound
nickel	sulphur	oxygen	nickel sulph**ate**
magnesium	nitrogen	oxygen	magnesium nitr**ate**

Writing Formulae

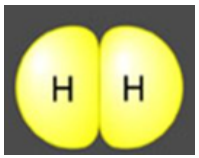
This molecule is made from…



1 carbon atom and 2 oxygen atoms.

It has the formula **CO_2**

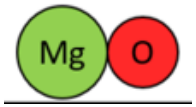
This molecule is made from…



2 hydrogen atoms.

It has the formula **H_2**

This molecule is made from…

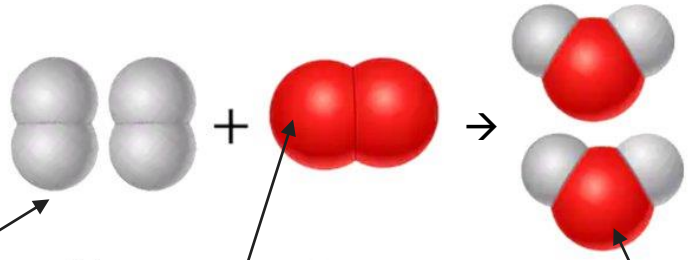


1 magnesium atom and 1 oxygen atom.

It has the formula **MgO**

Counting the number and type of atoms in a molecule, help you to write the formula.

Reaction of Hydrogen and Oxygen to Water



Hydrogen is a colourless, odourless, highly reactive gas

Oxygen is a colourless, odourless, highly reactive gas

Water is a colourless, odourless, stable liquid

Reacting elements to make compounds, changes the properties of the reacting substances. The changes are ***irreversible***.

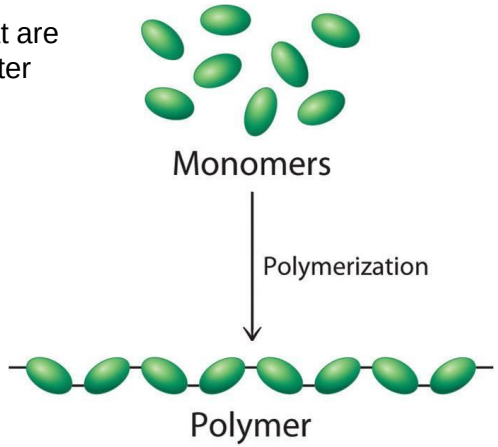
CHEMISTRY

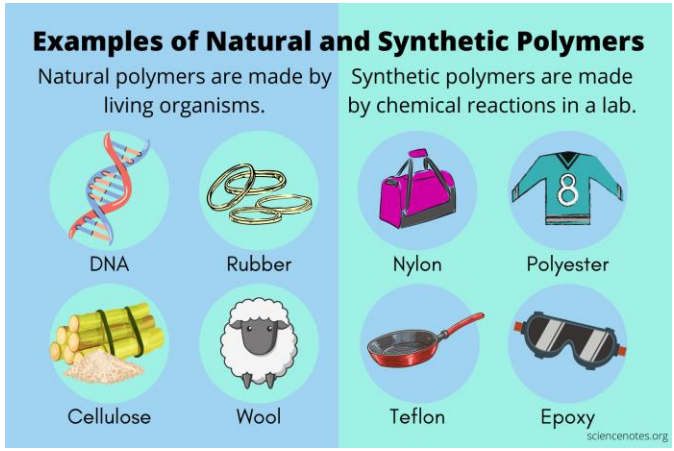
Polymers are long molecules that are made up of ***many*** repeating shorter molecules called ***monomers.***

Polymer Means: '***many*** parts'
Monomer Means: '***one*** part'

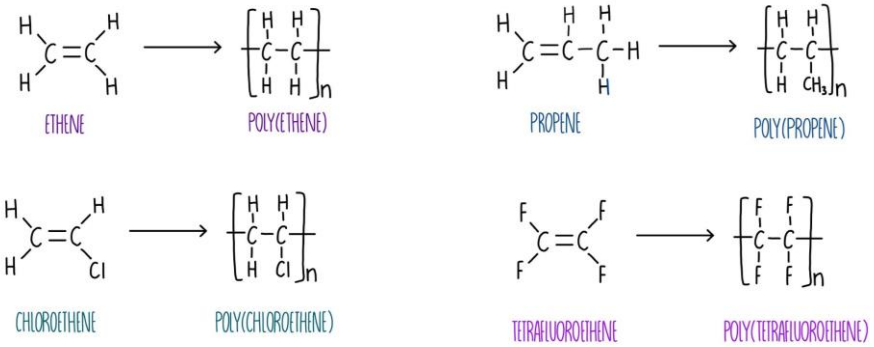
There are many examples of polymers.

Some are ***natural*** and some are man-made or ***synthetic***.





Naming Polymers



Ceramics and Composites

Ceramics are inorganic, non-metallic solids, prepared by heating and then cooling substances such as clay and glass.

General properties of ceramics:

- Hard and resistant to wear
- Relatively light
- Brittle – break if a force is applied
- Thermal insulators
- Electrical insulators
- Non-magnetic
- Chemically stable
- Non-toxic
- Non-ductile

A ***composite*** material is made from two or more different materials, each of these having very different properties.

Generally the properties of composites is determined by the job they have been designed to do. The different materials work together and create a better structure that can be:

- Stronger
- More flexible
- Lightweight
- Non-corrosive
- An insulator
- A conductor

Both ceramics and composites are starting to take the place of traditional metals used in some engineering applications.

- Advanced ceramics include high temperature parts for aeroplane engines, turbo-jet engine blades and missile nose cones.
- Composites such as carbon fibre are used in making car, aircraft and spacecraft bodies and in the manufacture of bikes.

ENERGY AND ENERGY COSTS

Key terms	Definition
System	An object or group of objects working together.
Transfer	Move from one energy store to another energy store
Work	When energy is transferred from one store to another
Power	The rate of transferring energy
Dissipated	Become spread out wastefully
Renewable	A resource that will not run out
Non-renewable	A resource that will run out (finite) or can't be replaced in our lifetime

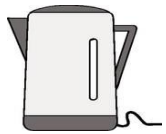
Power = the rate of transferring energy.

An object with a high power rating transfers a lot of energy every second.

E.g. an electric kettle with a power rating of 2400 W (2.4 kW) transfers 2400 J every second!

Equation	Meanings of terms in equation
$power = \frac{energy}{time}$ $P = \frac{E}{t}$	*P = power (W)* *E = energy (J)* *t = time (s)*

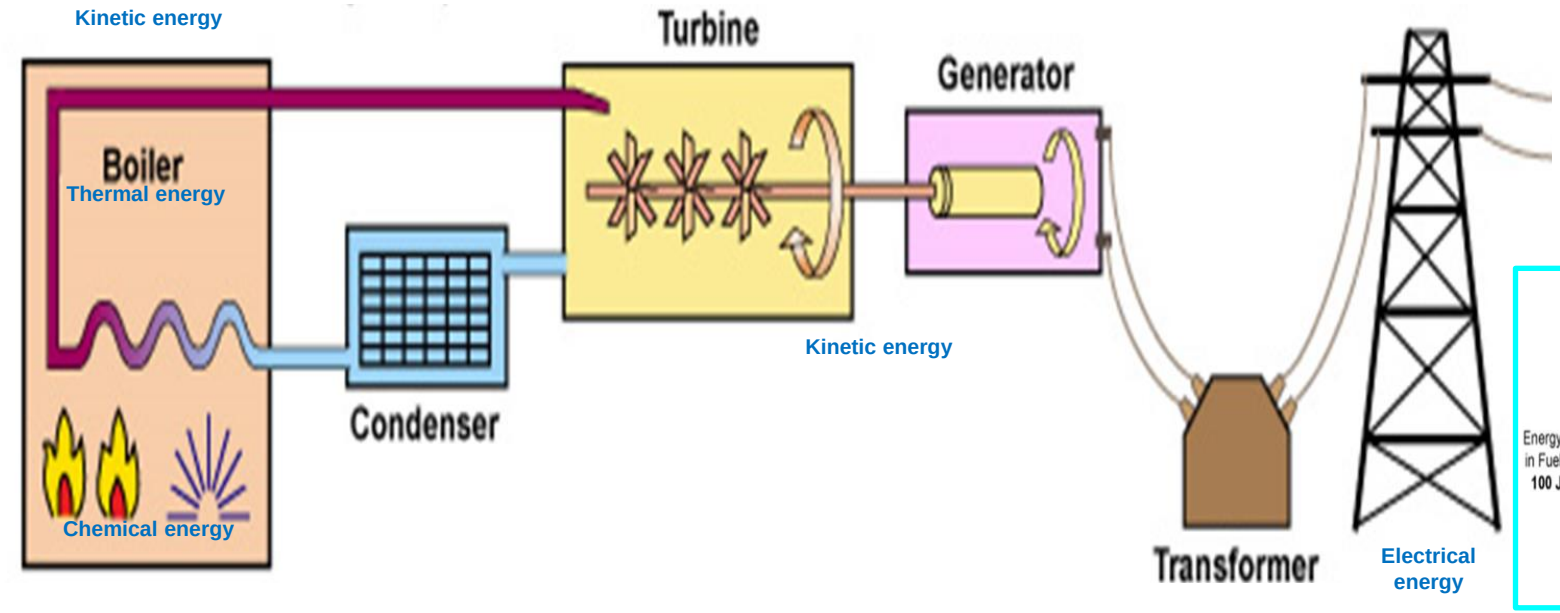
Appliance	Power in W
Clock	10
Lamp	50
Drill	800
Iron	1,250
Kettle	2,400
Hot water heater	3,000
Electric oven	12,000



Generating electricity

Fossil and **nuclear fuels** transfer stored **energy** through a **series of energy transfers** as shown in the system diagram below.

Chemical energy – Stored in fuel (fossil fuel or nuclear) → Thermal energy – Combustion in boiler or nuclear reaction → Kinetic energy – Movement of steam molecules as they are heated → Kinetic energy – Movement of turbine and generator → Electrical energy – Transferred to the National grid



Sankey Diagram – shows how energy is dissipated through the series of transfers.

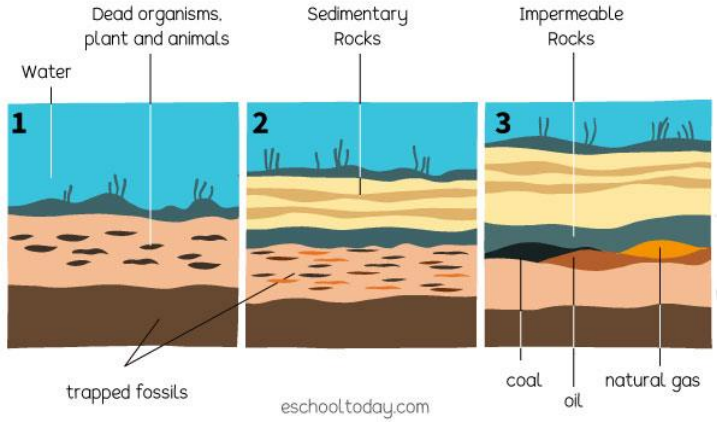
Energy is "lost" at every transfer through the system.

Non-renewable – will run out

Fossil Fuels

nuclear fuel

Fossil fuel formation



Microscopic plants and animals die and fall to the sea floor. → They decompose WITHOUT oxygen under layer, over millions of years → Heat, pressure and time change the chemicals into oil, coal and natural gas.

FOSSIL FUELS → COMBUSTION

Carbon
Hydrogen
Nitrogen
Sulfur
Oxygen

Primary Pollutants
CO - Carbon Monoxide
CO_2 - Carbon Dioxide
SO_2 - Sulfur
NO_x - Nitrogen Dioxide
N_2O - Nitric Oxide
VOCs - Volatile Organic Compounds or HCs - Hydrocarbons

Particulate Matter
PM_{10} - Course Particles - less than 10 microns
$PM_{2.5}$ - Fine Particles - less than 2 microns
NH_3 - Ammonia

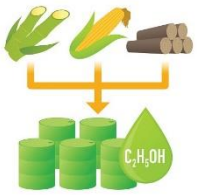
Advantages
- **Energy** – generate a lot of cheap electrical energy

Disadvantages
- **Environmental**
  - CO_2 – global warming
  - SO_2 and Nitrogen oxides – acid rain
  - Particulates – global dimming
- **Health**
  - CO – poisonous gas
  - Nitrogen oxides – asthma
- **Reliability** – sources will become scarce as they run out, conflict can disrupt supplies.

Renewable energy sources also generate **electrical energy** through a **series of energy transfers** The starting source is different depending on the type of renewable energy.

Renewable	Biofuel	Solar	Wind	Hydroelectric	Wave	Tide	Geothermal
Starting energy	Chemical	Thermal	Kinetic	Kinetic	Kinetic	Kinetic	Thermal

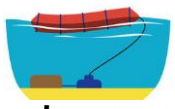
biofuel



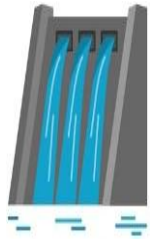
Solar

wind

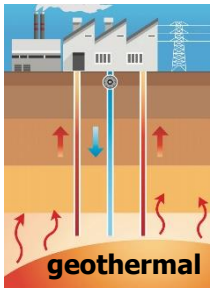
tides



water waves

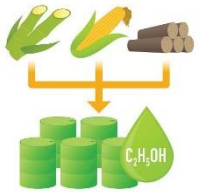


hydroelectricity



Renewable – will not run out

biofuel



Advantages
- **Environmental** - Can reduce the amount of greenhouse gases emitted.
- **Economic** - biofuels create new job infrastructure and will help support local economies. **Environmental** - Biodiesel is biodegradable (it will break down easily).

Disadvantages
- **Environmental** – Deforestation is where land is cleared for biofuel plant growth. Deforestation in South America and South Eastern Asia causes loss of habitat for animals and for indigenous people living there.
- **Environmental** - If rainforests and other high biomass lands are cleared on a mass scale for biofuel production then the amount of greenhouse gases emitted would be up to 420 times more. This is because rainforests absorb lots of CO_2 for photosynthesis.
- **Economic** - Biofuel may raise the price of certain foods, which are also used for biofuel such as corn.

Solar

Advantages
- **Environmental** – There are not greenhouse gas emissions.
- **Reliability** – In sunny countries the solar panels can be considered to be extremely reliable energy sources. However, in less sunny climates (such as the UK!) they are not quite as reliable.
- **Cost** –They are very cheap to run

Disadvantages
- **Reliability** – They only work during the day!
- **Energy** – Do not generate much electrical energy and therefore generally only used on small scale projects such as individual homes or businesses

wind

Advantages
- **Environmental** – There are not greenhouse gas emissions.
- **Cost** – They have an high initial set up cost, but are very cheap to run once built

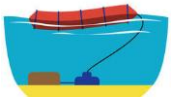
Disadvantages
- **Reliability** – Even when located in windy areas, they are very much weather dependent. It is not always windy!
- **Environmental** – Wind turbines can have an impact on the local plants and animals. They are also thought to be an eyesore by some.
- **Noise** - A problem with this design is that the rushing air can be very noisy, unless a silencer is fitted to the turbine.
- **Energy** – Individual wind turbines do not produce very much power. Around 1500 turbines are needed to replace one coal-fired power station.

hydroelectricity

Advantages
- **Environmental** – There are not greenhouse gas emissions.
- **Reliability** – In the UK, generally no problem as we have lots of rain!
- **Energy**– It can provide instant electricity. As soon as the water begins to flow, turning the turbine and the generator, electricity is generated.

Disadvantages
- **Environmental** – There is a big impact on the local environment as the local valley is flooded. Resulting in loss of habitat.
- **Cost** – The initial costs are very high (However, cheap to run once established).

Renewable – will not run out



water waves

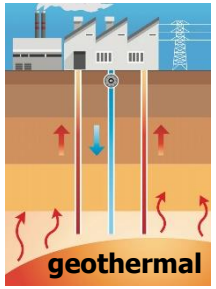
Advantages
- **Environmental** - There are not greenhouse gas emissions.
- **Cost** - They are very cheap to run once they have been installed

Disadvantages
- **Reliability** - They are fairly unreliable since the waves stop when the wind drops
- **Energy** - Individual wave power stations do not generate much energy and so many power stations are needed to generate large amounts of electricity
- **Eyesore** - They spoil the view, making coastal regions look less attractive.

tides

Advantages
- **Environmental** – There are not greenhouse gas emissions.
- **Reliability** – Tides happen twice a day without fail, and always near the predicted height. The only drawback is that the heights of the tides are variable
- **Costs** – The initial costs are moderately high, but there no fuel costs and low running costs
- **Energy** – Can generate lots of energy

Disadvantages
- **Environmental** - It may cause disruption of the animal and plant life in the area where the plants are built



Advantages
- **Environmental** – There are not greenhouse gas emissions.
- **Reliability** – In areas where there is volcanic activity, geothermal power can be considered to be an extremely reliable source of energy.
- **Cost** – This a brilliant cheap energy source (but with high instillation cost)

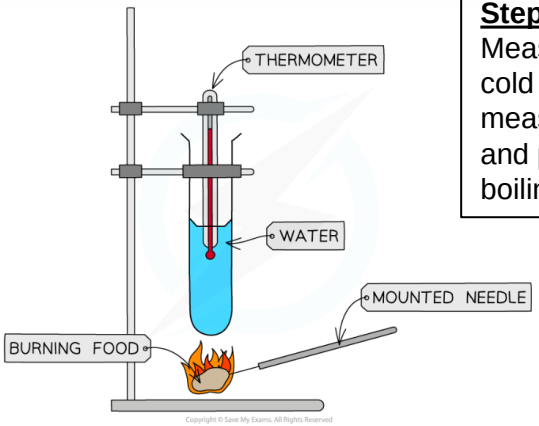
Disadvantages
- Cost – High installation cost (building the power plant but cheap once established)

Energy in food

Food stores chemical energy.

Some foods store more chemical energy than others.

This can be investigated using the equipment opposite.



Step 1: Measure 10cm^3 cold water using a measuring cylinder and pour it into a boiling tube.

Step 2: Measure the **start temperature** of the water using a thermometer.

Step 3: Weigh the **initial** mass of the food sample

Step 4: Set fire to the sample of food using the Bunsen burner and hold the sample 2cm from the boiling tube until it has completely burned

Step 5: Record the **final** temperature of the water

Step 6: (Once cooled) weigh the mass of any remaining food and record

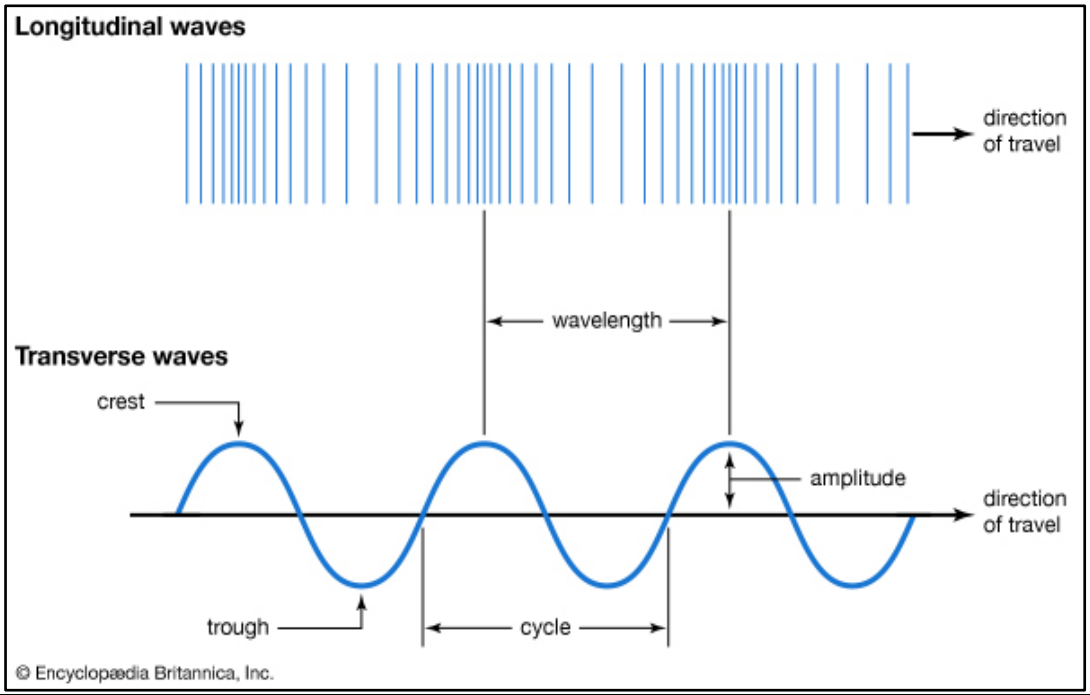
Step 7: Repeat the process with different food samples

WAVES AND WAVE PROPERTIES

Key terms	Definition
Mechanical waves	Vibrations that travel through a medium (solid, liquid or gas)
Electromagnetic waves	Electric and magnetic disturbances that transfer energy from one place to another without needing a medium (no particles needed to pass on vibrations)
Transverse waves	Where the direction of vibration is perpendicular to that of the wave.
Longitudinal waves	Where the direction of vibration is parallel to that of the wave.
Wave diagram	A diagram that shows the properties of wave
Amplitude	The maximum amount of vibration, measured from the middle position of the wave, in metres
Wavelength	Distance between two corresponding points on a wave, in metres.
Frequency	The number of waves produced in one second, in hertz.
Oscilloscope	Device able to view patterns of sound waves that have been turned into electrical signals.
Volume	How loud or quiet a sound is, in decibels (dB).
Pitch	How low or high a sound is. A low (high) pitch sound has a low (high) frequency.

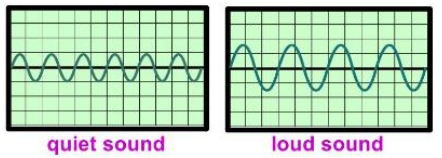
Key Facts:
The speed of sound in air is 330 m/s, a million times slower than light.
Sound consists of vibrations which travel as a longitudinal wave through substances.
Sound does not travel through a vacuum.
The denser the medium, the faster sound travels.

Key Skills:
- Use the formula for speed to calculate the speed of sound from experimental data.
- Calculate and compare speed of sound in different materials.
- Represent and accurately label diagrams of sound waves
- Describe the transfer of vibrations through the ear.

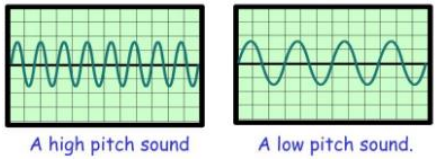


Oscilloscope traces show sound waves as electrical signals.

Amplitude is linked to the loudness of the sound. High amplitude transfers more energy. The sound is louder.



Frequency is linked to the pitch of the sound. High frequency transfers more energy, the sound has a higher pitch.

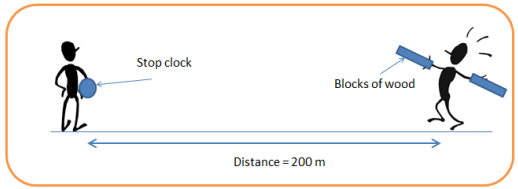


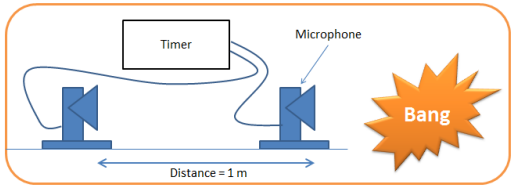
Measuring the speed of sound:
You can use the speed equation to calculate the speed of sound from experimental data.

Speed (m/s) = distance (m) ÷ time (s)

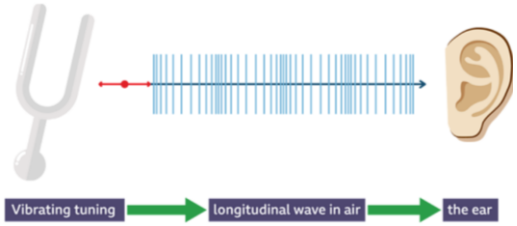
The method using a digital timer is an improvement on the manual method:
- Removes human timing errors caused by reaction times
- Has a higher level of accuracy and precision

The method would be repeated to calculate a mean time for the sound waves to travel the distance.





Speed of sound in different materials
Sound waves travel faster in solids because the particles are close together.



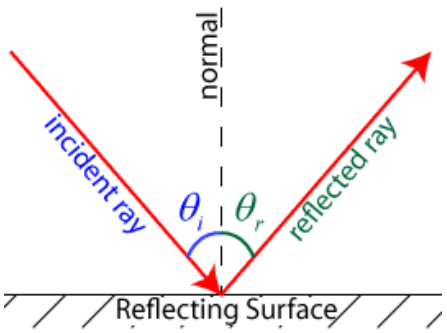
Material	Density (g/cm³)	Speed (m/s)
Copper	8.90	6420
Steel	7.86	5940
Beryllium	1.93	12890
Aluminium	2.58	6420
Water	1.00	1496
Ethanol	0.79	1207
Air	0.00139	331.45
Helium	0.000178	965
Fat	0.95	1450
Muscle	1.07	1580
Skull bone	1.91	4080

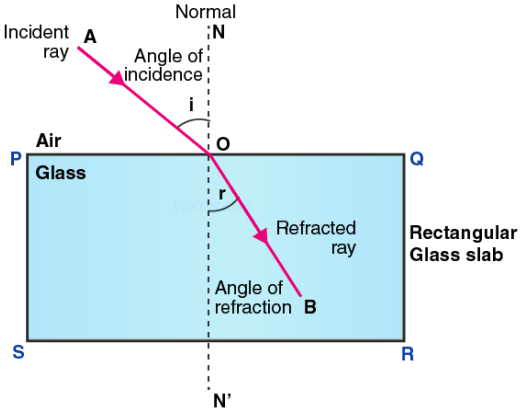
Key terms	Definition
Transparent	A material that allows all light to pass through it.
Translucent	A material that allows some light to pass through it.
Opaque	A material that allows no light to pass through it.
Incident ray	The incoming ray.
Reflected ray	The outgoing ray.
Normal line	From which angles are measured, at right angles to the surface.
Angle of reflection	Between the normal and reflected ray.
Angle of incidence	Between the normal and incident ray.
Refraction	Change in the direction of light going from one material into another.

Key Facts:

- When a light ray meets a different medium, some of it is absorbed and some reflected.
- For **reflected** light in a mirror, the angle of incidence equals the angle of reflection.
- The ray model can describe the formation of an image in a mirror.

- When waves cross the boundary between one medium and another, they change direction. This is **refraction**.
- When light enters a denser medium it bends towards the normal; when it enters a less dense medium it bends away from the normal.
- Refraction through lenses and prisms can be described using a ray diagram as a model.

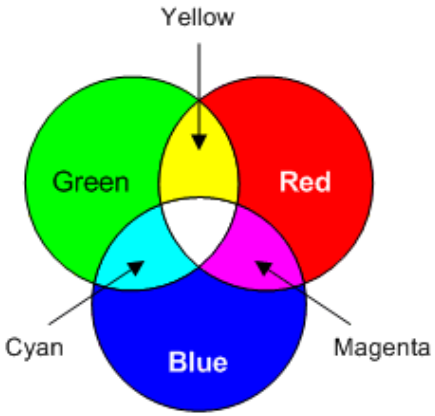




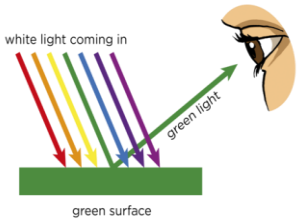
Key terms	Definition
Spectrum	Red; orange; yellow; green; blue; indigo; violet
Primary	Red; green; blue
Secondary	Magenta (red + blue); cyan (green + blue); yellow (red = green)
Transmission	Where waves travel through a medium rather than be absorbed or reflected.
Green filter	Transmits green light, absorbs red and blue
Blue filter	Transmits blue light, absorbs red and green
Red filter	Transmits red light, absorbs blue and green light

- **Spectrum**: red; orange; yellow; green; blue; indigo; violet
- **Primary colours**: red; green; blue
- **Secondary colours**: magenta; cyan; yellow
- Coloured objects reflect their colour and absorb all other colours of the spectrum e.g. red object reflects red frequency, absorbs all others; cyan object reflects blue and green frequencies, absorbs all others
- Filters affect the colour seen due to the transmission of only parts of the spectrum.

Primary and secondary colours

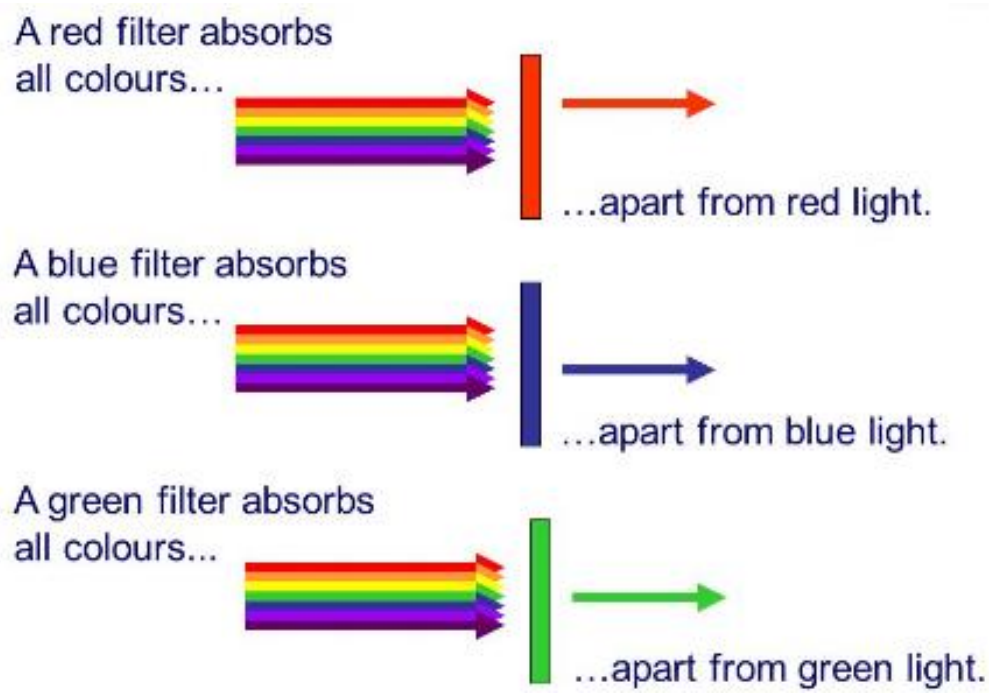


Seeing coloured objects

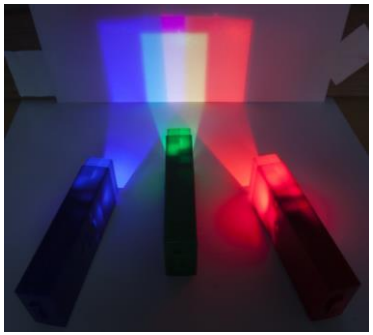


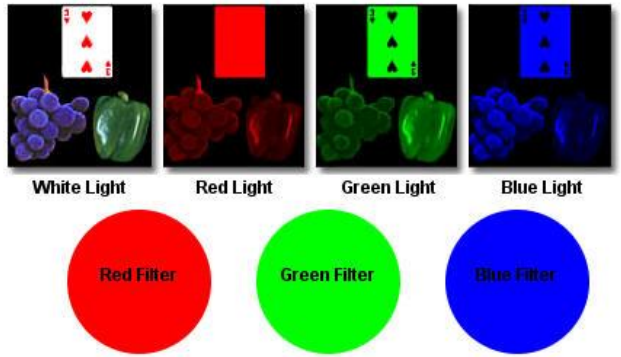
The green object ***ABSORBS*** all the colours of the spectrum except green which is ***REFLECTED***.

Coloured filters



Filters affect the colour seen due to the transmission of only parts of the spectrum.





Finding inspiration: Artists sometimes use the world around them to draw inspiration from. By looking at your locality you can discover new things and celebrate the place that you live in.






Collaborating: Artists often work together with others to create their artworks. This may be in the planning and designing stages or the making and creating. Teamwork and sharing of ideas can help to develop stronger outcomes.

Artist reference - Angie Lewin, Stephen Wiltshire, Kurt Jackson

Key Vocabulary

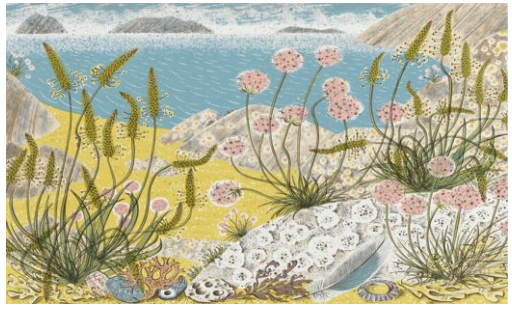
Wet Felting
Collage
Layers
Composition
Design
Landscape
Seascape
Cityscape
Technique
Savant
Autism
Dartmoor
Plymouth Sound
Barbican



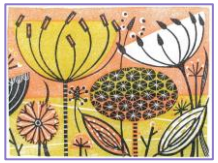



Kstg 3 Assessment areas

Generating Ideas
Making
Evaluating
Knowledge



ART & DESIGN - Moor to Shore

Duration:	12 weeks
Overview: 	During this project you will explore your locality and take **inspiration** for your art work. You will focus on recording the **landscape**, **cityscape** and **seascapes** of the South West. You will begin by exploring the work of **printmaker** Angie Lewin and create work in her style inspired by Dartmoor. You will then look at the **panorama** drawings of Stephen Wiltshire and create your own responses inspired by Plymouth City Centre. You will take inspiration from the paintings of Kurt Jackson and create your own work in response. By **researching** the work of other artists, you will learn new **skills** and **techniques** to support your progression. Finally you will create a **composition** that combines elements of the project. You will work with collage, pens, charcoal and paint.
Key skills:	Collage, Drawing, Mark-Making, Painting
Careers:	Fine artist, Printmaker, Illustrator, Photographer, Painter

BY THE END OF THIS PROJECT....

Generating Ideas	I can generate ideas at the start of a project
	I can research the work of an artist and present my findings creatively
	I can design a composition incorporating several elements
Making	I can create my own original artwork in response to the work of an artist
	I can create artwork inspired by my locality
	I can make an original work of art drawing inspiration from other artists
Evaluating	I can analyse the work of an artist and present my writing creatively
	I can make my own creative choices when developing my ideas
	I can review and reflect on my work as it progresses
Knowledge	I know about the artwork of Angie Lewin, Stephen Wiltshire and Kurt Jackson
	I understand how to present an artist research page
	I understand how to mix colours and apply paint to create a seascape

USEFUL WEBSITES...

https://www.kurtjackson.com/
https://www.angielewin.co.uk/
https://www.stephenwiltshire.co.uk/
https://www.bbc.co.uk/bitesize/topics/z9kmhyc

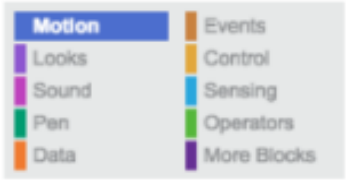
TERM 1

What is Scratch?

Scratch is a visual programming language that allows you to create programs by dragging blocks of scripts.

Block menu

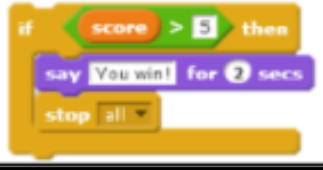
The block menu helps users pick which scripts they need to control various aspects
of a program.



Variables

A variable is used to store data for use in your program.
Variables can be used to store lots of different types of data such as names, numbers and scores.

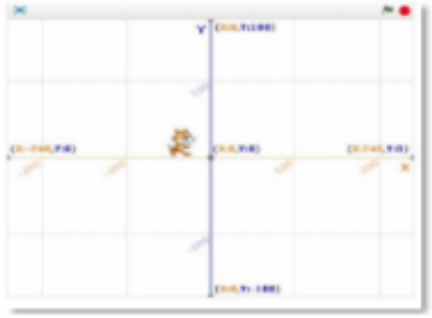
The data stored in a variable can be changed or "varied" depending on certain conditions within a program.



Keywords		
Program	Sprite	Variable
Costume	Stage	Loop
Operator	Iteration	Selection

Stage

The stage is the background of the project.
Scratch uses co-ordinates to position different elements around the screen.



Different backgrounds can be imported or you can create your own.

Operators

Operators are used for changing or comparing data.
They can add, subtract, multiply and divide data

They can also check if values are less than, greater than, or equal to other values.

IF Statements

IF statements can be used to select different scripts of a program depending on a condition . They are also known as selection.

Sprites

A sprite is a character or object in your game or animation. In order to give the impression that a character is moving you can change the sprites' costume.

COMPUTING

Physical Skills

Alignment Correct placement of body parts in relation to each other.

Balance A steady or held position achieved by an even distribution of weight.

Control The ability to start and stop movement, change direction and hold a shape efficiently.

Coordination The efficient combination of body parts.

Extension Lengthening one or more muscles or limbs.

Flexibility The range of movement in the joints (involving muscles, tendons and ligaments).

Posture The way the body is held.

Stamina Ability to maintain physical and mental energy over periods of time.

Strength Muscular power.

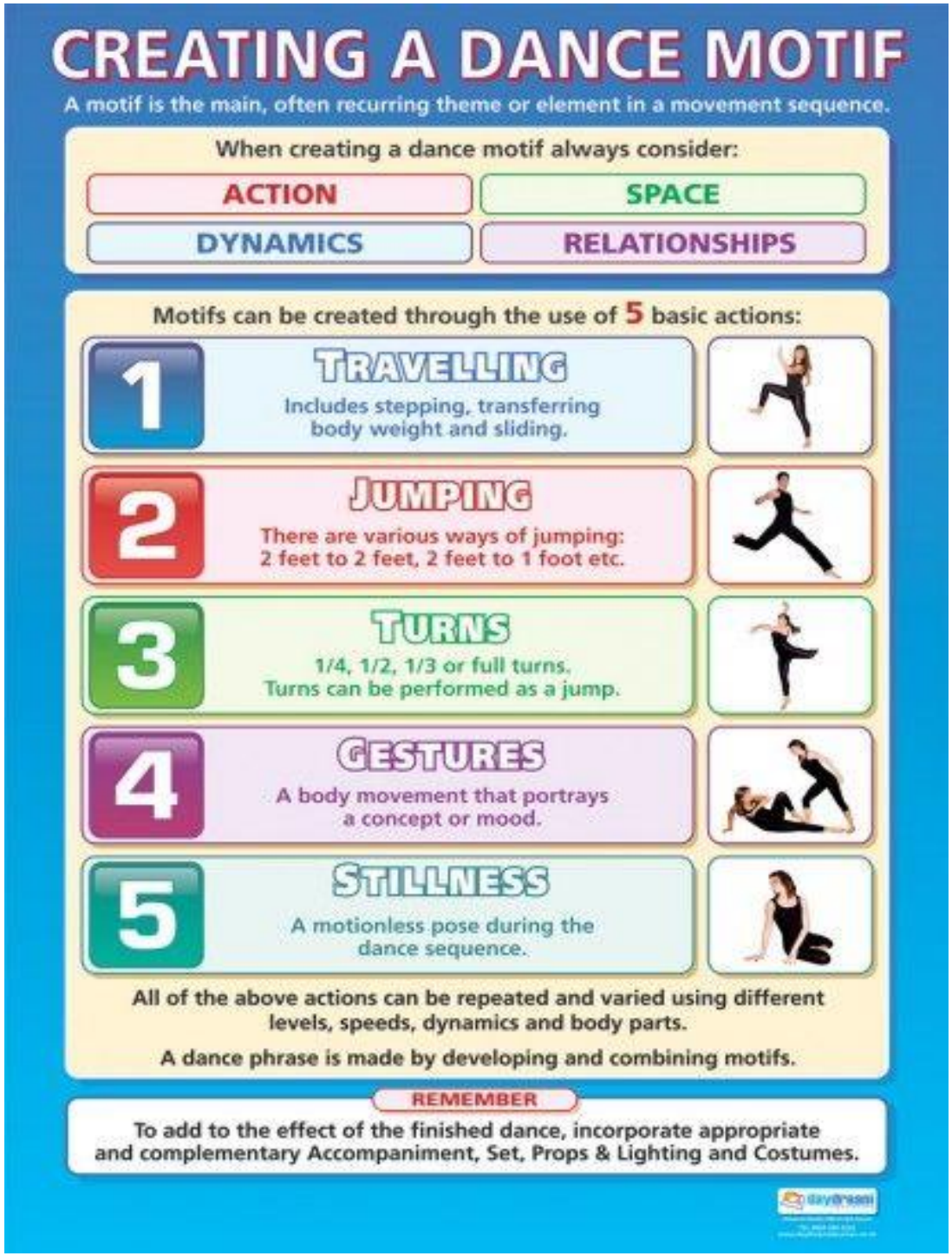
Performance Skills

Facial Expression Use of the face to show mood, feeling or character.

Musicality The ability to make the unique qualities of the accompaniment evident in performance.

Projection The energy the dancer uses to connect with and draw in the audience.

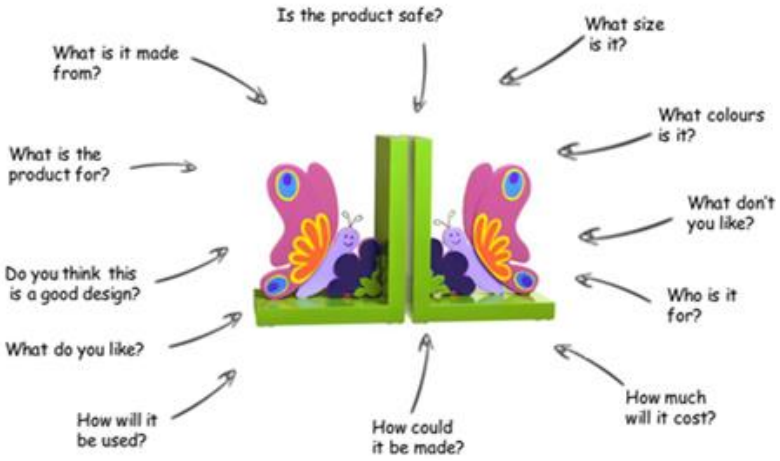
Energy the force applied to dance to accentuate the weight, attack, strength, and flow of a dancer's movement



Choreography key words

- **Stimulus**: The starting point for a dance piece.
- **Motif**: A short phrase of movement that reflects a stimulus.
- **Choreographic intention**: What the choreographer would like the audience to learn about the dance.
- **Choreographic approach**: How the choreographer created movement material eg improvisation, collaboration, choreographic tasks.
- **Unison**: Dancers moving at the same time doing the same movements
- **Repetition**: Repeating movement
- **Improvisation**: Spontaneous unplanned and not choreographed movement
- **Accumulation:** New movements are added to existing movements in a successive manner, for example, A, AB, ABC, ABCD
- **Canon:** Movements introduced by one dancer are repeated exactly by subsequent dancers in turn.
- **Choreographic devices** Tools of the choreographer used for the creation of dances such as canon, motif, contrast, accumulation, repetition, reversal, retrograde, inversion, fragmentation, and embellishment.
- **Contrast** A choreographic device where dance elements are altered to create oppositions, thus making contrasts such as high/low, big/little
- **Embellishment** A choreographic device where detail is added to the original movement sequence.
- **Fragmentation** A choreographic device where only a part of the movement sequence/motif is manipulated. A movement is broken down into smaller units.
- **Inversion** A choreographic device used in creating choreography that produces variations on a movement phrase. Inverting the movement phrase would mean executing it as if 'looking in a mirror'. A forward step becomes a backward step
- **Levels** The altitude of a movement in relation to its distance from the floor. The height of the dance floor. • Low: close to the floor with the intention downwards. • Medium: the level of everyday walking. • High: any movement done with elevation, not necessarily a jump. It implies a lifting of the chest and an upward focus.
- **Retrograde** Another of the choreographic devices used in creating dance compositions that produce variations on a movement phrase. The movement phrase is performed backwards, as if rewinding a video.

1. Design Brief - A set of instructions that your practical project must meet.
2. Visual design style - A visual design is the use of imagery, color, shapes, typography, and form to portray an idea or experience.
3. Target market - A particular group of customers at which a product or service is aimed.
4. Annotation - An explanation or comment added to a text or diagram.
5. Cad - Computer Aided Design, a program used to draw a design on a computer.
6. Vectorise - The manipulation of digital pixel based image into a vector/line image for preparation for laser cutting.
7. Evaluation - Evaluation - An assessment of what has worked well or not so well.
8. Connective - A word used to link two parts of a statement to create a complex sentence.



What to write in your annotation/labels.

Memphis style design

The Memphis group were Italian designers and architects who created a series of products in the 1980's. They challenged the idea that products had to follow conventional shapes, colours, textures and patterns. The Memphis group was founded in 1981, one of the leading members of the group was Ettore Sottsass.
The Memphis Group offered bright, colourful, shocking pieces. The colours they used contrasted the dark blacks and browns of European furniture.The group may no longer exist but it has certainly influenced graphic design, restaurant design, fabrics and furnishings.

1. In order to prepare a drawing for use in the laser cutter the following steps need to be taken.Copy an image from the Internet.
2. Paste your image into 2D Design.Click vectorise on the left toolbar, and then click on the image.
3. Choose monochrome, click Ok twice.Click Fill, opt for no fill.Your drawing is then a line based drawing that the laser cutter will be able to read.
4. You will also need to distinguish between lines you want to cut or draw by changing the colour of the line.

Theatre Makers Stagecraft

Part 1) To understand **what** Theatre is about…

Page to Stage: Staging is the process of selecting, designing, adapting to, or modifying the performance space for a **play** or film. Putting the page to stage focuses on the directing, designing and producing of a play. Putting page to stage would look at how to set the space for a scene. It would then focus on the props and costume needed. It would then be important to cast the characters and work on the characterisation. The text would then be analysed and final all of this combined would be rehearsed to produce a performance.

Group roles: In drama you will work in groups. It is important that you remember to listen, to give ideas and to lead at times. Each group will need individuals to give feedback for improvements, try new ideas and remained focused.
Leader- To try all ideas and listen.
Time keeper- To keep everyone focused and on track.
Improvement officer- To watch and give feedback to improve.
Lead actor- To act out the roles and try ideas.
Technical director- To think about space, lighting etc.

Performance skills:

- Projecting your voices
- Focus in performance
- Don't perform with your back to the audience
- Be confident
- Rehease, rehearse, rehearse
- Don't laugh
- Exaggerate your physicality
- Engage with your audience

Feedback: In drama you will give lots of feedback to other groups (peer) and to yourself (self). You need to always think what works well and why, what could be improved and how and what skills have they used.

Collaboration: It is important when working with others to listen, give ideas and be respectful and kind to all. Everyone is trying their best!

Part 2) To understand **how** Theatre is made…

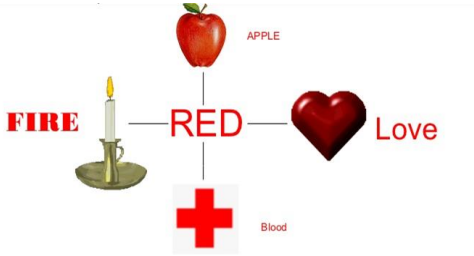
Semiotics: Everything on stage has meaning. Semiotics is the reading of signs and symbols on stage. The symbols and objects are used to represent ideas and meaning to an audience. For example, colour has meaning on stage such as red could mean anger or love. Colours can symbolise emotion, feelings, mood and atmosphere. Objects can represent time periods by using props on set. If an object or colour is on stage then it must have a meaning.

Interpretation: In drama we interpret the meaning of a thing, person, place and then show that meaning to the audience.

Performer: The role of the performer is to create a character and presence of stage to embody the interpretation.

Director: The role of the director is to ensure that meaning is created for the audience, the space and actors are correct and the performance is complete.

Audience: It is very important to always think about our audience. What do we want them to take away from the piece?



Mood and atmosphere: Both **atmosphere** and **mood** refer to feelings, but there's a small difference. The **atmosphere** is an external feeling coming from the physical environment. The **mood** is the internal feeling of the audience. The external feeling induces the excitement in the reader.
Atmosphere is created by objects, characters, props, background, setting and foreshadowing. Atmosphere shows the feeling and emotion of the scene. It is important to consider what atmosphere you want to create in performance. **Mood** is the feeling or tone of a performance.The mood shows how you want the audience to feel.

Theater Makers Stagecraft

'Great Theatre is about challenging how we think and encouraging us to fantasize about a world we aspire to' - William Dafoe.

Part 3) To understand **how** Theatre is made…

Blocking: In theatre blocking is to set a scene. This means to decide on the staging of the scene and where the characters are going to move to and from. It is important to consider the props and set when blocking to know how the characters are going to move around and use the space. Blocking is at the beginning of the process.

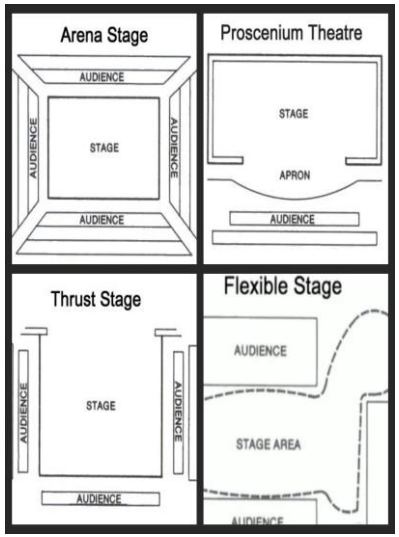
Rehearsal: To create great theatre it is important that you work on how to rehearse effectively. When rehearsing it is important to start by sharing ideas, then trying all ideas and then watching back to choose what works well and what does not. It is important to remain focused at all times and to set targets for your rehearsal.

Technical theatre:Technical theatre encompasses all that goes into making a staged production. The areas of **technical theatre** are scenery, lighting, properties, costuming and sound. All of these areas work together in a production to establish the place, time period, and mood of the production. Technical theatre is important to consider when staging and blocking a scene or production. It is important to think about the technical aspects of theatre (lighting, sound, costume, stage etc) to create the desired atmosphere to the scene and the meaning that is being created for the audience.

Costume: When considering the costume for a character think about their personality and important to the play. How are you going to create meaning with the costume? How will you show the audience what personality that character has with the costume?
Lighting: When choosing the lighting for your piece think about the colours and what they suggest to the audience, think about where you want the audience attention to be.
Staging: When blocking, rehearsing and performing always think about how you are going to set up the space. Where will the actors be placed? Where will the props and set be placed? What stage would work best for the production?

Key words…

Keywords:
Collaboration- To work with others towards a common goal.
Facial expressions- To use the face to show character, emotion or feeling.
Levels- To use height in performance.
Devising- To create your own performance.
Proxemics- To use space to show relationships in performance.
Body language- To use the body to show meaning to the audience.
Projection- To project the voice in order that the audience can hear.
Storytelling- the activity of telling or writing stories.
Semiotics- the study of signs and symbols and their interpretation.
Stagecraft- skills and experience in staging plays.
Gesture- a movement of part of the body to express an idea or meaning.
Proxemics- the space between performers, audience and staging.
Characterisation- the creation of a character.
Interpretation- the action of explaining the meaning of something.
Atmosphere- the tone or mood of a place or situation.
Mood- a state of mind or feeling.
Intention- a thing intended; an aim or plan.



COASTS

Key Terms

Erosion	The wearing away of rocks due to wind or water
Weathering	The breakup of rocks due to temperature, weather or biological components
Concordant coastline	A straight line coastline caused by the same type of rock running parallel to the coast
Discordant coastline	A coastline with lots of headlands / bays due to alternating rock types
Headland	An area of land that sticks out into the sea as it hasn't been eroded
Relief	The shape of the land

Types of Erosion

Hydraulic Action - Water enters cracks in the cliff, air compresses causing the cracks to expand

Attrition - Rocks bash into each other to become smaller / smoother

Abrasion - Rocks hurled at the base of a cliff to break pieces apart

Solution - A chemical reaction that dissolves rocks

Types of Weathering

Freeze Thaw - Rain enters cracks in rocks and freezes into ice overnight. The ice expands the crack

Onion Skin - Heat expands the rock in the day and it contracts at night when it cools down

Biological - Trees are able to grow

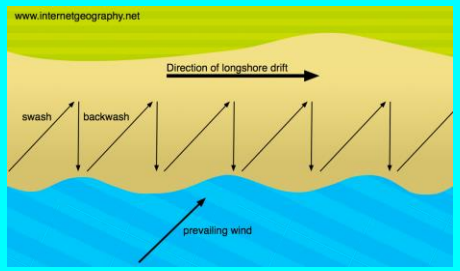
Formation of a coastal stack

1)Hydraulic action widens cracks in the cliff face over time.
2)Abrasion forms a wave cut notch between HT and LT.
3)Further abrasion widens the wave cut notch to from a cave.
4)Caves from both sides of the headland break through to form an arch.
5)Weather above/erosion below –arch collapses leaving stack.
6)Further weathering and erosion eaves a stump.

Formation of beach / dunes

A beach is formed by low energy waves / wind **depositing** sand usually within a bay.
Dunes are formed from sand being blown onto land creating a mound of sand. This is then reinforced by plantlife.

Long shore Drift



Coastal Defences

Hard Engineering
Methods designed to work against nature and stop erosion e.g. Sea walls / Groynes

Soft Engineering
Methods designed to work with natural processes to prevent erosion e.g. beach nourishment

Impacts of tourism on coastal locations

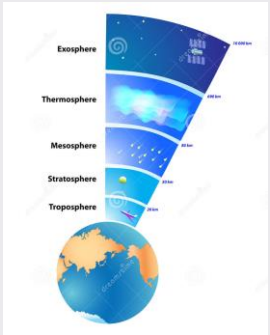
Positive
People bring money into the area
More jobs will be created
Area will be protected against the sea

Negative
More people means more pollution
Can change the culture of the area
It can harm natural habitats

Dawlish / Dawlish Warren example

- The sea wall at Dawlish has been upgraded to be larger in size allowing for better coastal protection and for tourists to have a safer walk along it
- The Dunes at Dawlish Warren have fencing and signs around them to stop people climbing over them. There are designated footpaths throughout the Dunes
- Dawlish Warren is a nature reserve

Atmosphere



- The atmosphere is split into 5 layers. Most clouds are found within the Troposphere.
- The start of outer space is in the Thermosphere
- Satellites are found in the Exosphere.
- Clouds can be found in the stratosphere but this is very rare.

Cloud Types

There are many different cloud types. The 4 major cloud types are:

Cumulus Clouds	Fair weather fluffy clouds which have a flat base.	
Cumulonimbus Clouds	A large vertical cloud which rises high into the sky. Known as a storm cloud	
Cirrus clouds	High level short, hair like clouds at high altitudes	
Stratus Clouds	Low level 'dull' cloud which usually brings rain.	

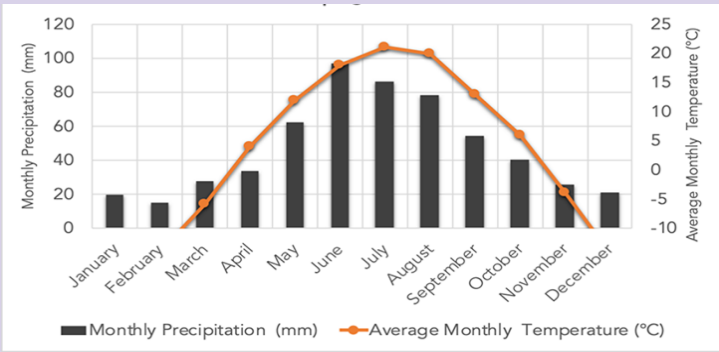
Air Pressure

Air pressure is the weight of air. Cool high air is pulled down by gravity. These area don't have clouds and therefore the sun is more intense leading to warm days. Lack of clouds leads to cold nights.

Low air pressure is where warm air rises taking any moisture with it. Clouds form leading to rain and stronger winds.

Air pressure is represented by Isolines on a weather forecast. The closer the lines, the lower the air pressure (and the stronger the winds)

Climate Graphs



Climate graphs show the average temperature and precipitation of a place over time. The line graph represents **temperature** and the ba chart represents **precipitation.**

Tornadoes

Why do they form?

- Warm and and cold air collide together along with an area of dry air.
- The air start to spin around each other horizontally
- Uprafts rotate this spinning air vertically which gets faster and faster
- No one knows why a tornado falls to the ground

Enhanced Fujita Scale

Category	Winds (mph)	Damage
EF-5	>200	Incredible
EF-4	166-200	Devastating
EF-3	136-165	Severe
EF-2	111-135	Considerable
EF-1	86-110	Moderate
EF-0	65-85	Light

How can we protect ourselves?

Going underground is the safest course of action. Protection is based on ensuring people have access to information

- TV / Radio updates
- Social media updates
- Tornado warning apps
- Warning Sirens and personal warning systems.

Key Vocabulary

Weather	The atmospheric conditions of a particular place at a particular time
Climate	The average weather conditions of a place over a long period of time
Atmosphere	The layer of gasses which surround the Earth
Prevailing Wind	The usual wind direction in a location
Anemometer	A device used to measure the wind speed
Wind Vane	A device used to measure the wind direction
Air Mass	A large area of air which has similar temperature and moisture
Precipitation	Condensed liquid which falls from the sky as rain, snow, sleet or hail
Tornado	A large spinning funnel cloud which touches the ground and has fast wind speeds
Air Pressure	The weight of air. High pressure is where air falls whereas low pressure is where air rises

Weather

GEOGRAPHY

Year 8 History: How did the Age of Exploration change the world?

Box A: Key words and definitions

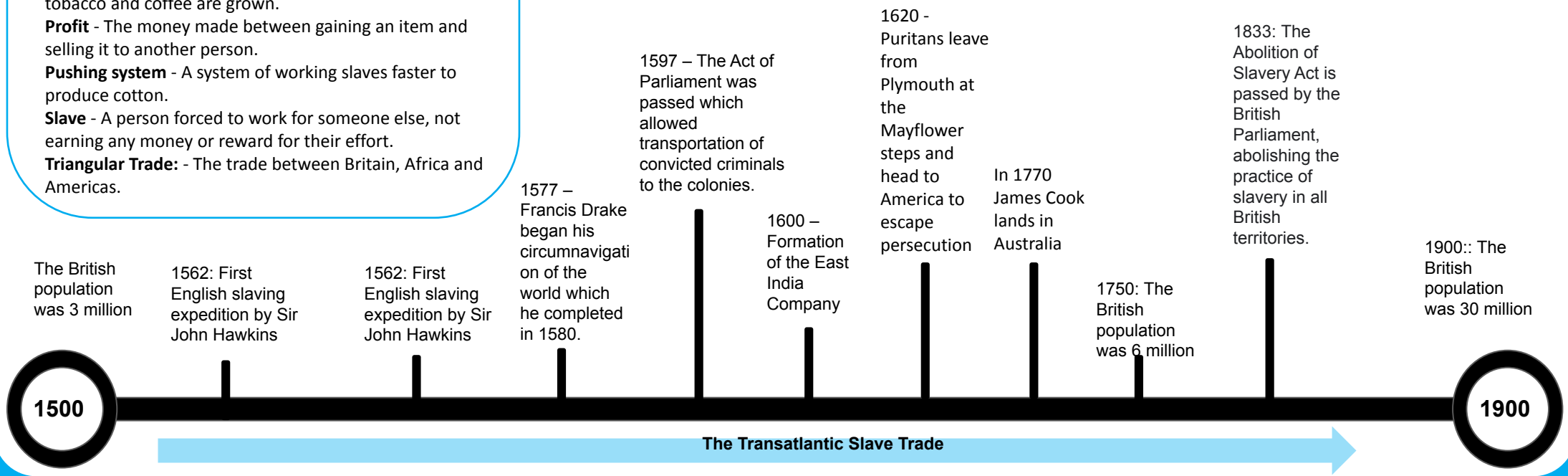
Privateers- someone who was given a commission by the government/monarch to capture enemy ships/treasure.
Colony- a country under the control of another country.
Astrolobes- a circular instrument used by sailors to help with navigation.
Galleons- faster, lighter ships.
Circumnavigation- travelling across the world by ship.
Abolition - Bring slavery to an end.
Abolitionist - Person who supported ending slavery.
Auction - A public sale where goods or services go to the highest bidder.
Colony - A country controlled by another country with settlers living there.
Empire - Large group of countries ruled by one single king / queen or country.
Imperialism - Process of increasing a country's power through building an empire. Often uses force.
Merchants - People who bought and sold items across the world.
Plantation - A large farm where crops like cotton, sugar, tobacco and coffee are grown.
Profit - The money made between gaining an item and selling it to another person.
Pushing system - A system of working slaves faster to produce cotton.
Slave - A person forced to work for someone else, not earning any money or reward for their effort.
Triangular Trade: - The trade between Britain, Africa and Americas.

Box B: What was life like in the Early Modern Period?

1. Few people died from starvation.
2. The population was increasing, in 1550 it was 3 million. By 1750 it was 6 million.
3. The main work was in the wool industry, spinning wool.
4. People started to use coal and Thomas Newcomen invented the steam engine in 1712 which led to mining.
5. There was more trading with foreign lands for good like sugar and tobacco.
6. Towns were growing and 20% of people lived in them.
7. Monasteries were no offering health care because of the reformation.
8. 1683 – Leeuwenhoek sees 'animalcules' (germs) in microscope.
9. Printing press spread new ideas and it was quicker to get books.

Box C: How and why did the Early Modern Period become the Age of Exploration?

1. In the Medieval period, travel was rare. However, people did travel if they had to, whether it was for work, for war or for pilgrimage. As sea travel was often dangerous, when people did travel, they tended to do so overland.
2. By the later middle ages, new discoveries had opened up the possibility of long sea travel.
This was because of: New invention, More detailed and accurate maps, New, faster and lighter ships, New inventions of weapons.
3. As a result, monarchs and traders encouraged sea voyages because they wanted a more reliable source of luxury goods and also to find treasure! Spain had already developed colonies in Central and South America (known as the 'New World') and the gold they found there had made Spain very rich.



Box D: Navigation and Ship Design

1. Navigation tools became much more precise with a much simpler way of using the sun to calculate the sailing distance of a ship leading to much safer and faster voyages. Astrolobes- a circular instrument used by sailors to help with navigation.
2. These inventions allowed for longer and more accurate voyages using the stars. These journeys were recorded and printed using the printing press for others to follow.
3. New shipyards were built which meant more ships!
4. Larger more stable ships meant longer journeys were possible. It also meant that the larger ships could carry more cargo.
5. Bows and sterns were lower on these ships making them more stable in rough seas.
6. There were faster more manoeuvrable ships due to different sail types. More masts and sails allowed for longer, faster and more accurate voyages.
7. he ships had better fire power due to canon technology. This allowed for good defences against piracy and the Spanish.

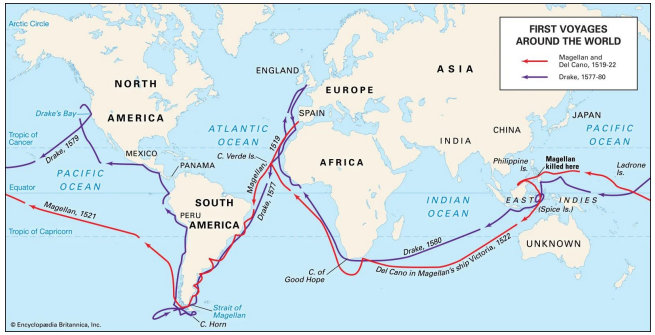
Box E: Queen Elizabeth I

1. Queen Elizabeth I ruled England from 1558-1603. She was particularly keen to encourage exploration.
2. There were many reasons for this:

- ❏ As England was an island, Elizabeth was keen to build ships and create a powerful navy, which would be a good defence against her enemies.
- ❏ Elizabeth was jealous of Spain's wealth from the New World. Elizabeth was keen for overseas territory, so as to build an Empire.
- ❏ Trade- In the 1550s, the cloth trade, England's main trade for centuries had collapsed. Merchants needed new markets for their goods and new goods to sell. They wanted a sea route to India and China, so they didn't have to rely on overland merchants.

Box F: Sir Francis Drake

1. Francis Drake was an adventurer, a pirate and a slave trader.
2. In 1572, he led a voyage to Panama, in the New World and captured £40,000 worth of Spanish silver. In 1577, he was raiding Spanish colonies and attacking Spanish ships with Queen Elizabeth's support.
3. In 1577, whilst Drake was undertaking the first English circumnavigating the globe, he captured a Spanish ship the Cacafuego. It was carrying £140,000 worth of treasure. He also took possession of California in America for Elizabeth I.
4. He sailed as the Queen's admiral, was knighted for his services and in 1588 sailed against the Spanish Armada.
5. His actions boosted England's reputation in Europe and English morale. He also boosted confidence that Spanish attacks could be defeated. Drake's voyages gathered a lot of information about the Americas, which was useful for the attempted colonisation that Elizabeth was planning.



A Map of routes taken by explorers in the Age of Exploration

Box G: Explorers

1. Many young adventurers sought to go on voyages in the hope of making their fortune and to have an adventure. Adventurers like Sir John Hawkins and Sir Francis Drake.
2. John Hawkins was an adventurer, a pirate and a slave trader. His father, William made the first overseas voyage to the Guinea coast in Africa.
3. From 1553, a group of London traders, such as John Hawkins began a series of voyages to develop overseas trade. These voyages returned to England with gold, ivory, pepper and most significantly, five African men. These Africans were brought to England to learn English and returned to Africa as interpreters for visiting English traders.
4. Hawkins from 1561, set out on a voyage to capture African people. It is believed he took 500 Africans and transported them from Africa to America and the Caribbean and sold them as slaves for goods such as ginger, pearls and sugar.

Box H: Walter Raleigh

1. Walter Raleigh was a famous adventurer and explorer. The queen invested in his privateering expeditions against the Spanish. He wanted to establish colonies for Elizabeth in North America and trade goods with the natives who lived there.
2. In the 1580s the colonisation of America was seen as an outlet for some of England's surplus population. Virginia was seen as an ideal place for a colony because it was believed to have a never ending supply of wine, oil, sugar and flax, which might reduce England's dependence on Europe.
2. In 1584, he gained a royal charter to establish a colony on Roanoke island off the coast of North Carolina.
4. Raleigh organised two expeditions to take settlers from England to the colony. The colonists did not prosper although the Virginia voyages did bring tobacco and potatoes back to England!

Year 8 History: How did the Age of Exploration change the world?

Box K: What was the British Empire?

1. The first English colonies were formed in North America in 1585.
Britain had control over Ireland from the late 1600s.
East India Company began to build up a group of trading posts in India after 1612.
2. English colonies in West Indies founded in 1620s.
3. In 1664, the English took over a Dutch colony in America, which included the state of New Amsterdam. The English renamed this New York.
4. Robert Clive helped Britain control India from 1757.
5. British won Canada from France in 1763.
6. By 1783, Britain controlled Gibraltar and Minorca.
From 1787, some crimes in Britain meant that people were transported (sent to) Australia to complete hard labour.
7. From 1881 to 1919, Britain gained colonies in Africa.
8. Britain colonised South Africa from 1902.

A Map of the British Empire

Box J: What did colonisation mean to the indigenous people of Australia?

1. In 1770 James Cook lands in Australia
2. The Aboriginal people try to protect the land. They are shot at.
3. Scientists explored the area and were excited by the plan and animal life.
4. Cook claims New South Wales.
5. The British start to send convicts to America via transportation (the punishment).
6. The Convicts built up Australia.
7. The wood and food of the Aboriginal people is disrupted
8. The ancient animal tracks are disrupted which stops the Aboriginal people being able to hunt.
9. Many die from smallpox

Box I: What did colonisation mean to the indigenous people of America?

1. Martin Frobisher went to America in 1576 and took gold and silver
2. 1578 Drake went to America and stole from Spanish treasure ships
3. 1587 - Walter Raleigh sets up his colony in Roanoke. This is abandoned for Jamestown
4. 1620 - Puritans leave from Plymouth at the Mayflower steps and head to America to escape persecution
5. The Puritans in America face starvation
6. The Natives help the Puritans to survive
7. The Native face hardships, such as war with the Puritans in King Philip's war. The Puritans also brought diseases like smallpox and Plague which impacted the tribes.

Box L: What did colonisation mean to the indigenous people of India?

1. Robert Clive and the East India Company were in India
2. They took control of Bengal and robbed its treasury
3. They increased the tax the Indian people paid to 50% of their earnings
4. Shah Alam II signed over his rights to the British
5. The British took £90 million from Mysore
6. The British set up schools, roads, trains, and a postal service.
7.The British tried to convert Indian people to Christianity
8. The Sepoy rebellion was the result of years of mistreatment and then a lack of respect for Indian culture.

Box: What was the transatlantic slave trade?

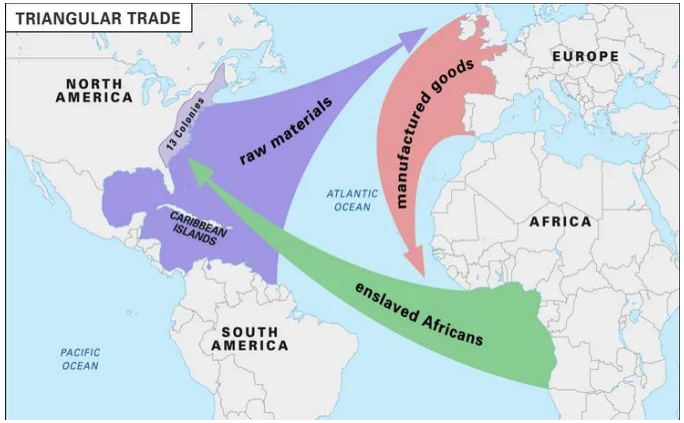
1. In 1700, a slave cost about £3-worth of traded goods, e.g. cloth, guns, pots and pans, gunpowder and brandy.
2. A British slave ship would set off from the ports of Liverpool, Glasgow or Bristol, carrying the trade goods mentioned in point 1 above and sail to West Africa.
3. These trade goods were 'manufactured' goods that had been made in Britain. They were highly valued in Africa.
4. .The slave ship would offload the trade goods and replace them with the captured African slaves.
5. The slave ship would then sail across the Atlantic to the West Indies with the slaves (cargo) packed tightly in the decks.
6. This part of the voyage was called the 'Middle Passage' as it was the middle part of the journey, crossing the Atlantic ocean.
7. When the slave ships arrived in the West Indies they would offload their slave 'cargo'. Some ships, but not all, would then fill up their decks with sugar, cotton, tobacco and rum, before sailing back home. These raw materials would then be sold to the British.

Box: What was the impact of the transatlantic slave trade?

1. The slave trade had devastating effects in Africa. Some African leaders would capture slaves from rival tribes and this led to lawlessness and conflict in Western Africa
2. In Western Africa development was slow as they had a much smaller population which led to poverty
3. The slave trade produced deep social divides between the rich white and poor black communities in America when black workers were forced to work on plantations. This still causes problems today many years after slavery ended

Box: How did different people contribute to the abolition of the British transatlantic slave trade?

1. From a financial viewpoint, the Transatlantic Slave Trade made a lot of money for both Britain and America, however, Britain did not want to help America make money after that country won independence from them.
3. Many people in Britain also thought slavery was morally wrong. In 1787, the Committee for the Abolition of the Slave Trade was set up. William Wilberforce represented the committee in Parliament.
4. The campaigners boycotted sugar, wrote letters and presented petitions.
5. Thomas Clarkson and former slaves, such as Olaudah Equiano went on a speaking tour, showing people chains and irons and a model of a slave ship.
6. Other campaigners published leaflets describing conditions on the Middle Passage and how the captains' behaved.
7. The Abolition of the Slave Trade Act (1807) made it illegal to trade slaves throughout the British colonies.



A Map of Triangular Trade during the Transatlantic Slave Trade

Box: Why was Colston's statue pulled down in Bristol in 2020?

1. Bristol's fame and wealth were built on the slave trade.
2. Edward Colston was a sea merchant and trader who lived in Bristol.
3. During the Transatlantic Slave Trade it is thought that Colston's ships transported around 80,000 African enslaved people to the Americas
4. Colston supported and donated large sums of money to schools, houses for the poor, almshouses, hospitals and Anglican churches in Bristol, London and elsewhere. His name features widely on Bristol buildings and landmarks
5. On 7 June 2020, a statue of Colston was toppled and pushed into Bristol Harbour by demonstrators during the George Floyd protests.
6. The statue was retrieved from the harbour four days later by Bristol City Council, and taken to a secure location. It is now displayed in Bristol's MSHED museum.

Box: Wider Reading

https://www.bbc.co.uk/bitesize/topics/z2qj6sg/articles/zfkfn9q

https://www.liverpoolmuseums.org.uk/history-of-slavery/transatlantic-slave-trade

https://www.bbc.co.uk/news/uk-england-bristol-42404825

HISTORY

Year 8
Knowledge Organiser

Food Tech.

Topic: Skills and Nutrition

LOVE FOOD hate waste

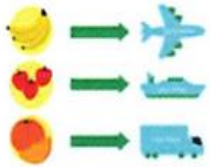
Cupcakes	
Self Raising Flour	Makes the cakes rise
Caster Sugar	Sweetens the cakes
Margarine	Moistens the cakes
Egg	Binds the mixture together
Vanilla Essence	Adds flavour

	Bread
Strong Flour	To provide Structure
Yeast	Makes the bread rise
Water	Provides moisture

What is are Food Miles?

The distance food has travelled. Less food miles are better for the environment.

How to reduce them:
Eat seasonal, local food where possible



Seasonal Food

Food grows at different times of year in the UK. The time that food is ripe for eating is known as its season. Food grows in different countries at different times, so if food is not in season in England, it can be transported from another country.

Why is eating seasonal food a good idea?

Seasonal food is-

- fresher
- tastes better
- has more flavour
- has less environmental impact due to a reduction in carbon footprint
- often support the local community

What is the difference between best before, use by and sell by date?

- Best Before date: It means the product will taste best up until that date. It is still edible and okay to eat a little past the listed date, though you may notice a slight change in texture, flavour, or colour.
- Use by date: The date that food should be used by. After this it may be unsafe.
- Sell by date: a date marked on a perishable product indicating the recommended time by which it should be sold.

Food labelling

Binding

Binding means holding ingredients together.

Eggs act as a binding agent and holds together burgers / fishcakes. Eggs can also enrich pastry / roux as well as to bind. Water binds dry ingredients like flour and fat for pastry.

Breadcrumbs are a binder in sausages.

Potato and flour bind fishcakes

Coating

Coating means adding an outer layer. Breadcrumbs on fish cakes and goujons.

Batters are used to protect fish. Chocolate is used as a coating (enrobe) – KitKat.

Glazing

Egg wash gives a golden shiny finish. Egg white gives a crisp, golden texture – sweet foods.

Egg yolk gives a golden brown colour – potato dishes.

Milk gives a matt golden brown colour – scones.

Sugar and water for sweet coverings. Jam gives a shiny fish on fruit flans. Arrowroot is a clear shiny gel – fruit flans.

Nutrient	Source	Function
Protein	Meat, Fish, Eggs, Dairy, Nuts, Soya, Quorn	Growth & repair of body energy
Carbohydrate	Starch: Bread, Pasta, Rice, Potato Sugar: Fruit, Sweets, Chocolate, Honey	Slow release energy Fast release energy
Fat	Saturated: Butter, Cheese, Crisps Unsaturated: Mackerel, Olive Oil,	Energy, Heat, Insulation, Fat Soluble Vitamins
Fibre Not absorbed	Wholegrain foods, nuts, fruit and vegetables	Maintain a healthy digestive system

Nutrient		Source	Function
	Water Soluble: Vitamin C	Citrus Fruit, Broccoli, Strawberries, Peppers, Kiwi	Prevents Scurvy-makes collagen. Helps absorb iron
Vitamins	Water Soluble: B group	Eggs, Cereal foods, Red Meat	Release energy from foods
	Fat Soluble: Vitamin A	Liver, Cheese, Carrots, Dark Green Vegetables, Margarine	Essential for normal structure & function of skin & mucous membranes
	Fat Soluble: Vitamin D	Sunlight (Oily fish, Eggs, Margarine)	Needed for the absorption of calcium & phosphorus *(Rickets has re-appeared in the UK)*
	Fat Soluble: Vitamin E	Vegetable oils, nuts and seeds	Antioxidant - required to protect cells against oxidative damage from free radicals
	Fat Soluble: Vitamin K	Green leafy vegetables, dairy products and Meat. Synthesised by gut bacteria	Synthesis of several of proteins required for normal blood clotting and bone structure
Minerals	Iron	Red Meat, Dark green vegetables	Formation of Haemoglobin
	Calcium	Dairy foods, lemons, almonds	Healthy bones & teeth. Nervous system & blood clotting

Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving (150g) contains

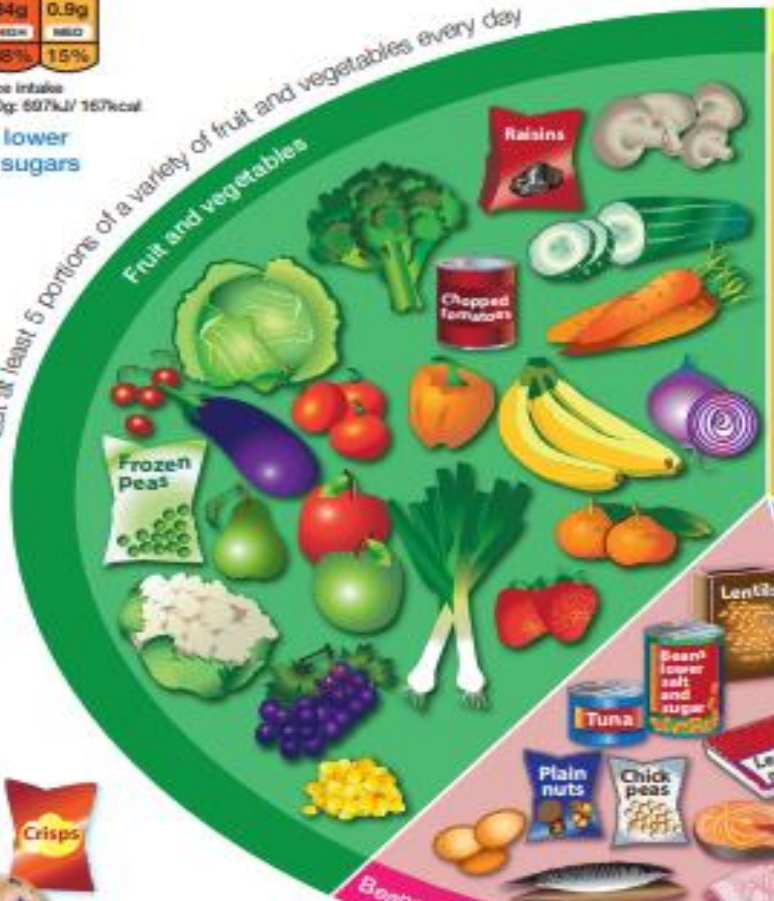
Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake
Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Fruit and vegetables

Eat at least 5 portions of a variety of fruit and vegetables every day



Potatoes, bread, rice, pasta and other starchy carbohydrates

Choose wholegrain or higher fibre versions with less added fat, salt and sugar

Beans, pulses, fish, eggs, meat and other proteins

Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Dairy and alternatives

Choose lower fat and lower sugar options

Oil & spreads

Choose unsaturated oils and use in small amounts

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

6-8 a day

Limit fruit juice and/or smoothies to a total of 150ml a day.

Eat less often and in small amounts

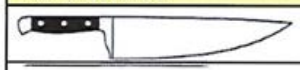
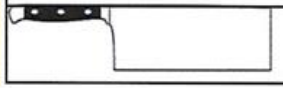
Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

Year 8 Knowledge Organiser

Food Technology

Topic: Skills and Nutrition

Name of Knife	Function and Use
	A Chef's Knife can be used for slicing, chopping vegetables, slicing meat, or disjointing large cuts of beef or ham.
	A Carving Knife Is a large knife used to slice thin cuts of meat, including poultry, roasts, hams, and other large cooked meat. It is much thinner than a chef's knife (particularly at the spine), enabling it to carve thinner, more precise slices.
	A Paring Knife is a small knife with a plain edge blade for peeling & other small tasks. This 'all purpose' knife, is smaller than a chef's knife, usually between 6 & 10 cm long.
	A Palette Knife is a blunt knife with a flexible steel blade and no sharpened cutting edge. A palette knife easily slides underneath pastries or other items to lift from trays.
	Boning Knife is used to remove bones from cuts of meat. It has a thin, flexible blade, to get in to small spaces. A stiff boning knife is good for beef and pork, but a flexible boning knife is preferred for poultry and fish.
	A Filleting Knife is a very flexible boning knife that is used to fillet and prepare fish. The blade that is about 15 cm to 28 cm long, allowing them to move easily along the backbone and under the skin of fish.
	A Cleaver is a large, most-often rectangular knife that is used for splitting or "cleaving" meat and bone. The knife is designed to cut with a swift stroke without cracking, splintering or bending the blade

Nutrient	Source	Function
Protein	Meat, Fish, Eggs, Dairy, Nuts, Soya, Quorn	Growth & repair of body energy
Carbohydrate	Starch: Bread, Pasta, Rice, Potato Sugar: Fruit, Sweets, Chocolate, Honey	Slow release energy Fast release energy
Fat	Saturated: Butter, Cheese, Crisps Unsaturated: Mackerel, Olive Oil,	Energy, Heat, Insulation, Fat Soluble Vitamins
Fibre Not absorbed	Wholegrain foods, nuts, fruit and vegetables	Maintain a healthy digestive system

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Minerals	Iron	Red Meat, Dark green vegetables	Formation of Haemoglobin
	Calcium	Dairy foods, lemons, almonds	Healthy bones & teeth. Nervous system & blood clotting

Food Hygiene 4 C's				
				
	Cleaning	Cross Contamination	Cooking	Chilling

Baton/Jardinere 5mmx 5mm x 20mm	Julienne 3mmx 3mm x 40mm	Macedoine 8mmx 8mm Cubes	Macedoine 8mmx 8mm Cubes
Sliced	Oblique	Paysanne 15mmx 3mm	Mirepoix Rough Cut

	Fair Trade food production aims to provide fair prices and better working conditions for farmers and farm workers.
	Farm Assured means that the farms and food companies meet high standards of food safety and hygiene, animal welfare and environmental protection.
	Food Miles means the distance that food travels from where it is grown to where it is bought. This is an environmental concern because of the CO2 emissions from transport.
	Free Range is a method of farming where animals are allowed to roam freely.
	Genetically Modified Food is grown with genetic manipulation technology. Some people consider this a risk to the environment and choose GM-free products.
	Organic Foods have been grown without the use of chemical fertilisers or pesticides.
	Seasonal Foods means foods that are in season. Choosing these reduces food miles
	**Sustainability** is food production that aims to preserve the world's natural resources for future generations.

HOSPITALITY & CATERING

WHAT IS RHYTHM?

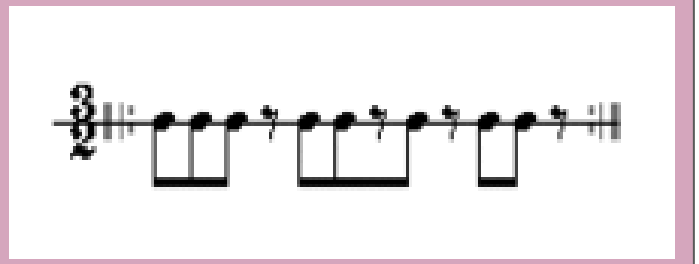
A combination of long and short notes. Rhythms can be played on drums on on pitched instruments to make a melody or tune.

WHAT IS PERCUSSION?

Percussion is when the instruments are struck wither with your hand or with a beater. There are lots of Percussion groups.

Steve Reich - Clapping Song

A rhythm Composition that was created for two people to clap on stage. The rhythms are exactly the same but 1 performer leaves a long space in between every so many times he claps so the patterns end up out of sync with each other...



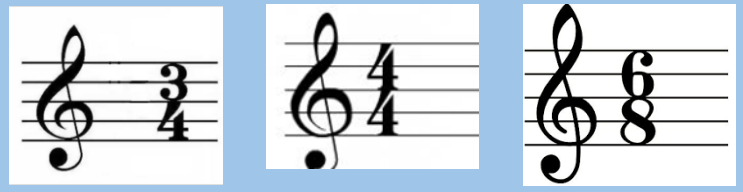
https://www.youtube.com/watch?v=IzkOFJMI5i8

Key Words:

Time Signature: Tells us how many beats to count in our head.
Beat/Pulse: a count in our head.
Layering: Putting rhythms on top of each other.
Rhythm Grid: Making a grid that you put beats in to perform.
Rhythm Notation: writing music using a variety of short and long notes.
Semibreve: a 4 beat note value.
Minim: a 2 beat note value
Crotchet: a 1 beat note value
Quaver: a ½ a beat note value
In time: Performing together with the same beat in your head.
Polyrhythms: Name for lots of rhythms on top of each other.

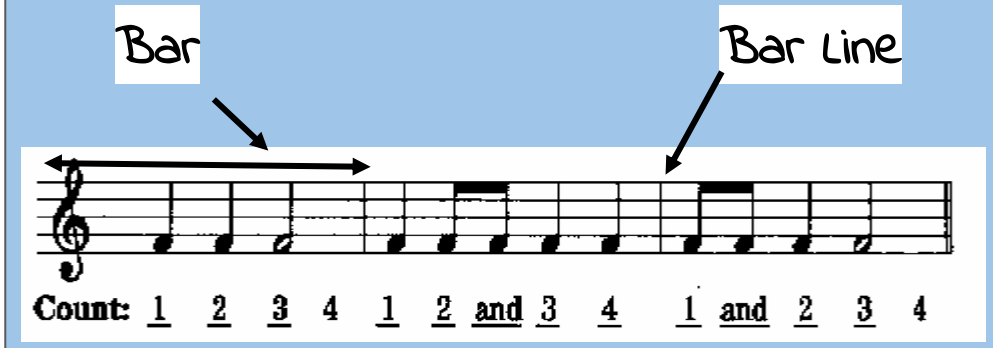
Back to Basics - Rhythm

Time Signature - Tells you what beat to count in your head:

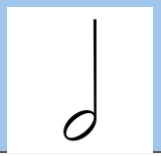


In time - all parts are working together and play with the beat.

Reading a rhythm grid - a grid with patterns that we can play:



Try clapping the rhythm above...

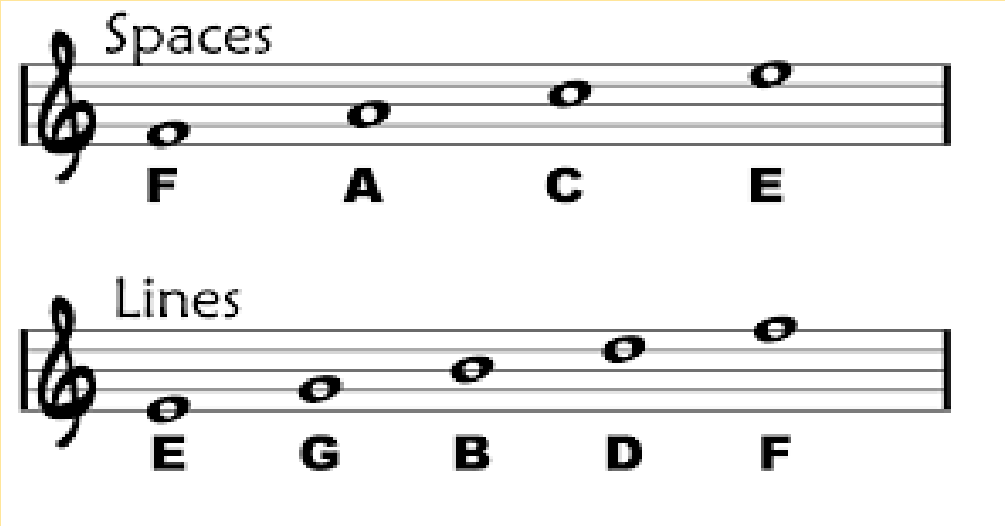
Semibreve (4 beats)	Minim (2 beats)	Crotchet	Quaver (1 beat)
			

Tea		1 Beat
Coffee		½ beat each
Coca cola		¼ beat each
Lemonade		¼ + ¼ + ¼
Pineapple		¼ + ¼ + ¼

Research each of these groups / performances.. what instruments can you hear? Are they all traditional instruments? If not, what are they? What is the style of the performance?

Reading Music NOTATION is really important and let you play many pieces of music.

PITCH



Every Good Boy Deserves Football
FACE in the Space

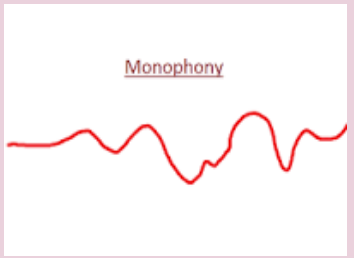
The TREBLE CLEF is a high pitched Clef and tells you what instruments play the music. The following instruments use this clef; Violin, Piano (right hand), Trumpet, Flute and Saxophone.

The BASS CLEF is a low pitched clef and tells you what instruments play the music. The following instruments use this clef; Cello, Trombone, Piano (left hand), bass guitar and Double bass.

Texture of Music

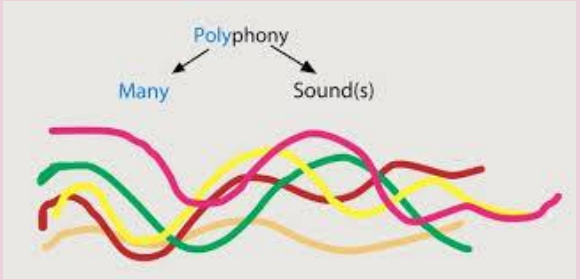
Music can either be THICK or THIN in texture this means either lots of instruments playing different things at the same time.

Monophonic.



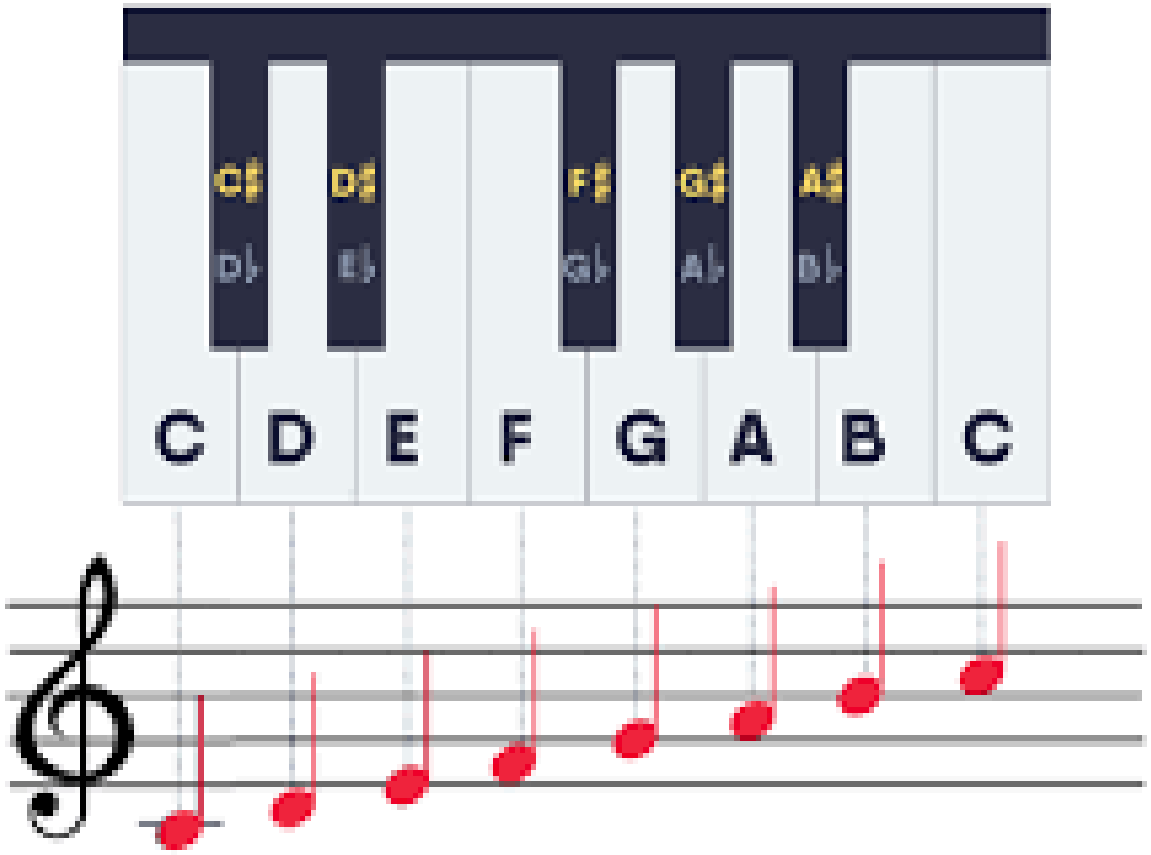
A single line of melody with lots of people singing the same thing.

Polyphonic Music began to develop during the high medieval era period and was much more complicated.



Lots more voices singing different parts that all link and work together.

MUSICAL NOTES



Performing:

We will be playing our music on the Keyboard, using music notation as above. The musical alphabet only goes A B C D E F G, so 7 notes to learn.

Key Terminology:

Music Notation - How music is written. This was very different in the medieval ages.

Score - The music is all written one page and includes all the parts.

Stave - The 5 lines tha music is written on.

Treble clef - This is at the beginning of the stave and tells you what type of instrument you need to play.

Ostinato - a repeating pattern of a short music idea or rhythm.

Drone - two notes played together at the same time.

Melody - a tune played by an instrument.

1. Key Words:

Teleological -relating to the doctrine of design and purpose in the material world

Cosmological - relating to the origin and development of the universe.

Numinous - the feeling of the presence of God or something bigger than yourself.

Miracle- an event that is not explicable by natural or scientific laws and is therefore attributed to God.

Conversion - the fact of changing one's religion or beliefs

Prayer - communication with God.

Pilgrimage - A spiritual journey to a sacred place.

Original Sin - the tendency to evil supposedly innate in all human beings

Proof - evidence or argument establishing a fact or the truth of a statement.

Evolution - the process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth.

Big Bang Theory - the rapid expansion of matter from a state of extremely high density and temperature which according to current cosmological theories marked the origin of the universe.

2. Arguments for the existence of God:

Cosmological Argument

-Thomas Aquinas -Argues that everything can be traced back to one cause which is the start of everything. -There has to be a first cause; something which starts everything. -This first cause must always have existed. -According to Aquinas, this is God.

https://www.bbc.co.uk/bitesize/guides/zpxpr82/revision/5

Teleological Argument

-William Paley -The world was not an accident because it works so well e.g. water cycle. -The world is also a beautiful place. -It cannot have been caused by accident. -It must have been designed by someone. -This is 'God' (although not necessarily the Jewish / Christian idea) -Although suffering and evil argues against this.

https://www.bbc.co.uk/bitesize/guides/zpxpr82/revision/6

Religious Experience- case studies.

Nicky Cruz -Thrown out of his house and moved to New York. -Became leader of the Mau Mau gang and was a drug dealer. -Threatened street preacher David Wilkerson. -Went to disrupt David's meeting but felt a warmth through his body and a feeling of love. -Became a Christian and opened foster homes.

Bernadette Soubirous -Saw Mary (Jesus' mother) in a series of 18 visions. -After one she washed her face in a muddy puddle, which Mary called a 'stream' -The next day a river had appeared. An elderly blind man washed his face in it and he could see. -Also after Mary's requests, a grotto and church was built. -Thousands visit the site today.

4. Reasons why people do / do not believe in God

Do believe in God:- Religious Upbringing; Friends / Family; Religious experience; Holy Books; comfort during sad times; belief in life after death; the majority of the world's population does.

Do not believe in God:- Science (e.g. the Big Bang and evolution; Suffering and Evil; Friends / Family; Pluralism (the amount of different religions in the world)

3. Evil and Suffering

Types of Suffering and Evil

Global- an event which affects a large group of people, normally across several countries e.g. war

Moral Evil - a bad act caused by a person e.g murder Natural Evil - a bad act caused by nature e.g. flood Personal Suffering - an event which affects an individual or small group of people e.g. illness

https://www.bbc.com/bitesize/guides/zhmhgk7/revision/1

Problem of Suffering and Evil

If God is omnibenevolent then why does He allow suffering & evil? Does He not love the people he created? If God is omnipotent then why does He not stop suffering and evil? Is He not powerful enough to stop it?

Christianity

- God allows suffering as a test eg Job.
- God allows suffering to allow us to grow and develop – soul making.
- God allows suffering because we can therefore experience the pain Jesus went through.
- God allows suffering because it allows us to have free will.
- God allows suffering because it is our choice to commit bad acts.
- Evil exists because of Adam and Eve.

RELIGIOUS STUDIES - Does God exist?

5. Religious experience

Numinous - a numinous experience is an experience of connection with something outside yourself - nature, the universe or God.
Miracles - Religious believers might say that witnessing a miracle (something impossible apparently performed by God) would be a good reason to believe.
Conversion Experiences are when someone (often someone opposed to religion) suddenly chooses to become religious, moved by a powerful force.
Prayer (and other activities) are experiences that people choose to have - putting themselves into states of mind that might make connection with God more likely.

8. Original Sin and Free-will

Many Christians believe that evil is the result of **Adam and Eve**'s disobedience to God. In the **Garden of Eden**, Adam and Eve ate the forbidden fruit. God punished Adam and Eve for their actions, and the punishment was to endure suffering in life. This is known as **'the fall'**.

Some Christians believe that all people inherited the tendency to sin from Adam and Eve. This belief is called **original sin**. According to this belief, all humans are born with a tendency towards evil and the ability to cause suffering.

Christians believe that God gave humans free will. This is the ability for humans to make their own decisions. It means that although God made a world and it was good, it is up to humans whether they choose to do good or bad deeds.

6. Suffering and Evil Case Study: Hotel Rwanda

Genocide broke out in Rwanda in 1994 with between 500 000 and 1 million Rwandans being killed in 100 days.

Some people argue that events like this demonstrate that God does not exist, because thousands of innocent people including children were killed.

Others argue that these events happen because people have Free Will meaning they are able to choose how to behave. Some people choose to do bad things (moral evil) whilst others choose to do good (Paul Rusesabagina who saved the lives of 100s of people)

7. Sanctity of Life:

Most people believe that all human life is special because:

- There is a special value in human life (we are all unique)
- We only have this life and it ends when we die.
- Life is not sacred but worthy of respect.
- The central purpose of life is happiness:ours & others

Christianity and the Sanctity of life

† All life is sacred because it comes from God.
† God is interested and involved in each human's life. *'You knit me together in my mother's womb.'* **Psalms 139: 13**
† God created each individual person and made them unique in their own right.
† God created humankind in His own image.
† Life is a gift from God and cannot be thrown away.
† All humans are important.'
There is neither Jew nor Gentile, neither slave nor free, nor is there male and female, for you are all one in Christ Jesus' **Galatians 3:28**

9- Creation Science vs Religion

The Big Bang hypothesis states that all the current and past matter in the Universe came into existence at the same time, roughly 13.8 billion years ago. At this time, all matter was compacted into a very small ball with infinite density and intense heat called a Singularity. Suddenly, the Singularity began expanding, and the universe as we know it began.

Evolution is the change in the characteristics of a species over several generations and relies on the process of natural selection. The theory of evolution is based on the idea that all species are related and gradually change over time.

Genesis creation story:
Day 1: God created light and day
Day 2: God created the sea and the sky
Day 3: God created land and plants (trees; vegetation etc)
Day 4: God created the sun, moon and stars
Day 5: God created birds and fish
Day 6: God created living creatures including man.

Literal Interpretation- the world was made as described in the Bible, with each stage happening on a different day. Christians who accept this view tend to reject the scientific explanation of the Big Bang and the theory of evolution.
Liberal Interpretation- whilst the story is symbolically true, it did not necessarily happen over 6 twenty four hour periods. Many liberal Christians see the term 'day' as representing a longer period, so the six days of creation could actually be millions of years. Liberal Christians can therefore accept that God started the Big Bang and Evolution.

RELIGIOUS STUDIES - Does God exist?

OPINION	NOUN	CONNECTIVE	VERB	QUANTIFIER	ADJECTIVE
En mi colegio estudio… *(At school I study…)* **Mi asignatura favorita es** *(my favourite subject is)* **Me encanta** *(I love)* **Me interesa** *(I'm interested in)* **Me gusta** *(I like)* **No me gusta** *(I don't like)* **No soporto** (I can't stand) **Odio** *(I hate)*	**el dibujo** *(art)* **el diseño** *(design)* **el español** *(Spanish)* **el francés** *(French)* **el inglés** *(English)* **el teatro** *(drama)* **la cocina** *(catering)* **la geografía** *(geography)* **la historia** *(history)* **la informática** *(computing)* **la música** *(music)*	**porque** *(because)* **ya que** *(since)* **pero** *(but)* **aunque** *(although)* **sin embargo** *(however)*	**es** *(it is)* **puede ser** *(it can be)*	**muy** *(very)* **tan** *(so)* **bastante** *(quite)* **un poco** *(a bit)* **demasiado** *(too)*	**aburrido/a** *(boring)* **divertido/a** *(fun)* **interesante** *(interesting)* **útil** *(useful)* **fácil** *(easy)* **difícil** *(difficult)* **un reto** *(a challenge)*
Mis asignaturas favoritas son *(my favourite subjects are)* **Me encantan** *(I love)* **Me interesan** *(I'm interested in)* **Me gustan** *(I like)* **No me gustan** *(I don't like)* **Odio** *(I hate)*	**las ciencias** *(science)* **las matemáticas** *(maths)*		**son** *(they are)* **pueden ser** *(they can be)*		**aburridas** *(boring)* **divertidas** *(fun)* **interesantes** *(interesting)* **útiles** *(useful)* **fáciles** *(easy)* **difíciles** *(difficult)*

TIME PHRASE	OPINION	NOUN	CONNECTIVE	REASON
Al momento *(At the moment)*	**me encanta mi profesor(a) de…** *(I love my ... teacher)* **me gusta mi profesor(a) de…** *(I like my ... teacher)* **prefiero a mi profesor(a) de...** *(I prefer my ... teacher)* **a mi amigo/a le gusta su profe de …** *(My friend likes his/her … teacher)*	**dibujo** *(art)* **diseño** *(design)* **español** *(Spanish)* **francés** *(French)* **inglés** *(English)* **teatro** *(drama)* **cocina** *(catering)* **geografía** *(geography)* **historia** *(history)* **informática** *(computing)* **música** *(music)* **ciencias** *(science)* **matemáticas** *(maths)*	**porque** *(because)*	**es divertido/a.** *(s/he is fun)* **es gracioso/a.** *(s/he is funny)* **es simpático/a.** *(s/he is kind)* **nos ayuda mucho.** *(s/he helps us a lot)* **explica las cosas muy bien.** *(s/he explains things very well)* **aprendo mucho en la clase.** *(I learn a lot in the class)* **le apasiona su asignatura.** *(s/he is passionate about his/her subject)*
Actualmente *(Currently)*	**odio a mi profesor(a) de…** *(I hate my ... teacher)* **no me gusta nada mi profesor(a) de…** *(I don't like my ... teacher at all)* **no soporto a mi profesor(a) de...** *(I can't stand my ... teacher)* **mi amigo/a odia su profe de …** *(My friend hates his/her … teacher)*		**ya que** *(since)*	**es aburrido/a.** *(s/he is boring)* **es perezoso/a.** *(s/he is lazy)* **es antipático/a.** *(s/he is mean)* **nunca nos ayuda.** *(s/he never helps us)* **explica las cosas muy mal.** *(s/he explains things very badly)* **no aprendo nada en la clase.** *(I learn nothing in the class)*

¿Qué hay en tu insti? *(What is there in your school?)*

VERB	NOUN	CONNECTIVE	VERB	QUANTIFIER	REASON
En mi insti hay *(In my school there is/are)*	**un gimnasio** *(a gym)* **un comedor** *(a canteen)* **un teatro** *(a theatre)* **una biblioteca** *(a library)* **una cocina** *(a kitchen)* **una sala de informática** *(a computer suite)*	**que** *(that)*	**es** *(is)*	**muy** *(very)*	**grande** *(big)* **pequeño/a** *(small)* **antiguo/a** *(old)* **moderno/a** *(modern)* **ruidoso/a** *(noisy)* **tranquilo/a** *(quiet)* **limpio/a** *(clean)* **sucio/a** *(dirty)*
Mi insti tiene *(My school has)*			**son** *(are)*	**tan** *(so)*	
En mi escuela primaria había *(In my primary school there was / were*	**los servicios** *(toilets)* **muchas instalaciones** *(lots of facilities)* **muchas aulas** *(lots of classrooms)*	**pero** *(but)*	**era** *(was)*	**bastante** *(quite)*	**grandes** *(big)* **pequeños/as** *(small)* **antiguos/as** *(old)* **modernos/as** *(modern)* **ruidosos/as** *(noisy)* **tranquilos/as** *(quiet)* **limpios/as** *(clean)* **sucios/as** *(dirty)*
Mi escuela primaria tenía *(My primary school had)*			**eran** *(were)*	**un poco** *(a bit)* **demasiado** *(too)*	

¿Cómo es tu día escolar? *(What is your school day like?)*

VERB	TIME	CONNECTIVE	VERB	NOUN	TIME	SEQUENCER	NOUN
Llego al insti *(I arrive to school)*	**a las ocho en punto** *(at eight o'clock)*	**y** *(and)*	**tengo** *(I have)*	**el recreo** *(break)*	**a las once en punto.** *(at eleven o'clock)*	**Después de clase hay** *(After lessons there is/are)*	**ayuda con deberes.** *(help with homework)*
Las clases empiezan *(Lessons start)*	**a las ocho y diez** *(at ten past eight)*	**luego** *(then)*	**tenemos** *(we have)*	**la comida** *(lunch)*	**a las once y cuarto.** *(at quarter past eleven)*		**apoyo con exámenes.** *(support with exams)*
	a las ocho y cuarto *(at quarter past eight)*				**a las doce menos veinte.** *(at twenty to twelve)*		**ensayos.** *(rehearsals)*
	a las ocho y veinte *(at twenty past eight)*		**terminan las clases** *(lessons end)*		**a las doce y media.** *(at half past twelve)*		**partidos de deporte.** *(sports matches)*
	a las ocho y media *(at half past eight)*				**a la una menos cuarto.** *(at quarter to one)*		
	a las nueve menos veinte *(at twenty to nine)*				**a la una.** *(at one)*		
					a las tres en punto. *(at three o'clock)*		

¿Cómo es tu uniforme? *(What is your uniforme like?)*

VERB		NOUN	ADJECTIVE	CONN' VE	NOUN	OPINION	REASON
Llevo *(I wear)*		**un jersey** *(a jumper)* **un vestido** *(a dress)* **una camisa** *(a shirt)* **una chaqueta** *(a blazer)* **una corbata** *(a tie)* **una falda** *(a skirt)*	**negro/a** *(black)* **blanco/a** *(white)* **rojo/a** *(red)* **amarillo/a** *(yellow)* **morado/a** *(purple)* **verde** *(green)* **azul** *(blue)* **gris** *(grey*	**con** *(with)*	**un jersey.** **un vestido.** **una camisa.** **una chaqueta.** **una corbata.** **una falda.**	**Me chifla mi uniforme** *(I'm crazy about my uniform)* **Me gusta mi uniforme** *(I like my uniform)* **Odio mi uniforme** *(I hate my uniform)* **No soporto mi uniforme** *(I can't stand my uniform)*	**porque es muy elegante.** *(because it's very smart)* **porque es cómodo.** *(because it's comfortable)* **porque es feísimo.** *(because it's really ugly)* **porque es demasiado incómodo.** *(because it's too uncomfy)*
Tengo que *(I have to)* **Tenemos que llevar** *(We have to)*	**llevar** *(wear)*	**pantalones** *(trousers)* **zapatos** *(shoes)*	**negros** **blancos** **rojos** **amarillos** **morados** **verdes** **azules** **grises**	**y** *(and)*	**pantalones.** **zapatos.**	**Personalmente, pienso que** *(Personally, I think that)* **Personalmente, diría que** *(Personally, I'd say that)*	**es muy elegante.** *(it's very smart)* **es cómodo.** *(it's comfortable)* **es feísimo.** *(it's really ugly)* **es demasiado incómodo.** *(it's too uncomfy)*

PHYSICAL EDUCATION - THE BENEFITS OF PE

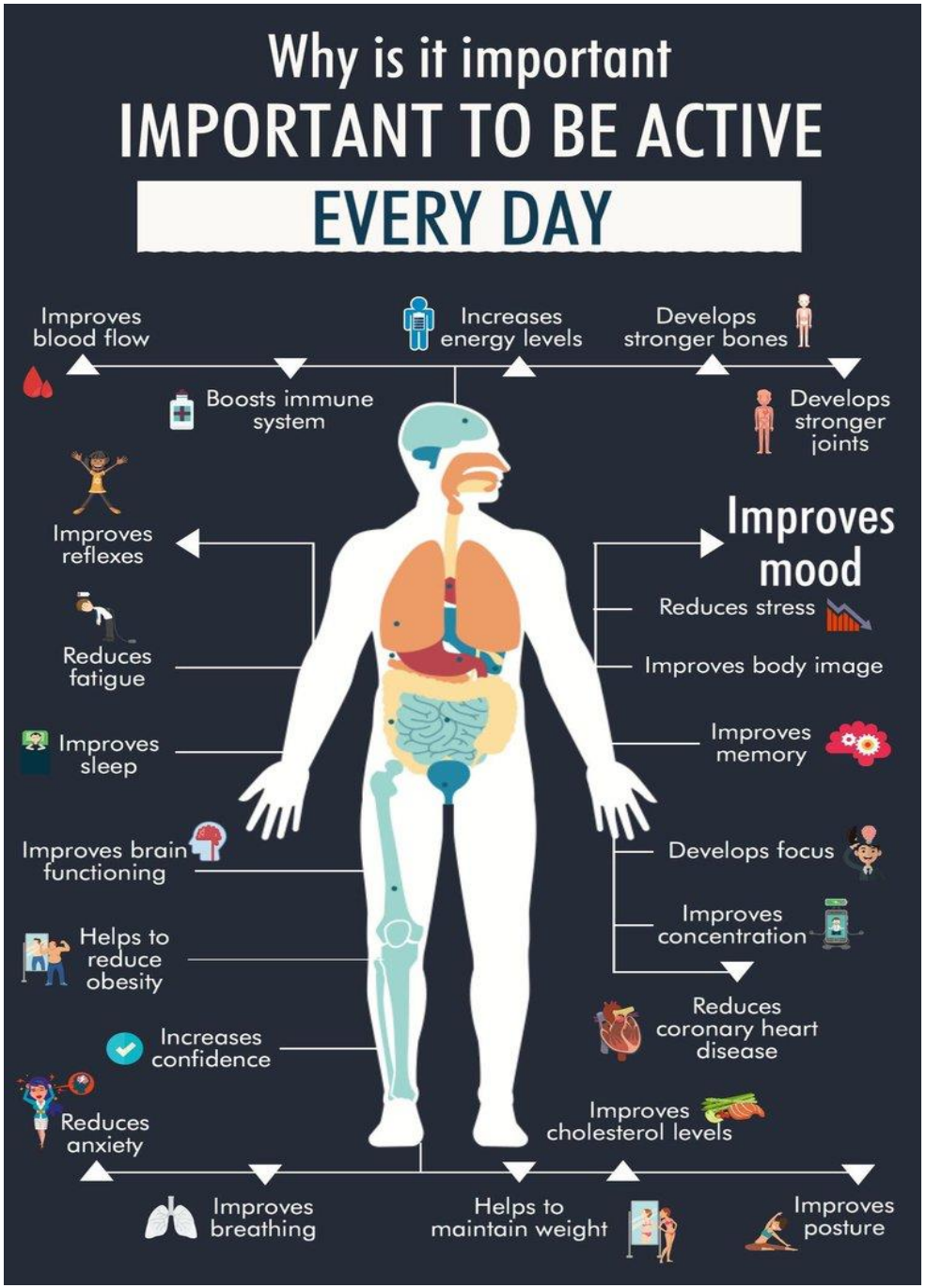
Knowing & Understanding the benefits of PE

In PE at Plympton Academy, you are assessed in three key areas: Skills, Knowledge and Character.

Skills	Knowledge	Character
- Physical skills/ techniques - E.g. - Run. throw, jump, catch, kick,	- Understanding how to perform the skills. - Decision making skills - Understanding the rules of the sports - Awareness/ understanding of tactics/ strategies	- Ability to co-operate and communicate with others. - Showing understanding, empathy, respect, sportsmanship and integrity when competing. - Demonstrating determination/ resilience

We also look at setting ourselves personal targets and goals in PE, here are some of the reasons why:

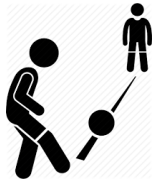
- Targets give us something to work towards and aim for.
- Targets allow us to reflect on our skills and evaluate our performance.
- Targets can help to motivate us to improve.
- Targets can be used to help us to measure our progress.



PHYSICAL EDUCATION - WARM UPS/ COOL DOWNS/ IMMEDIATE EFFECTS OF EXERCISE

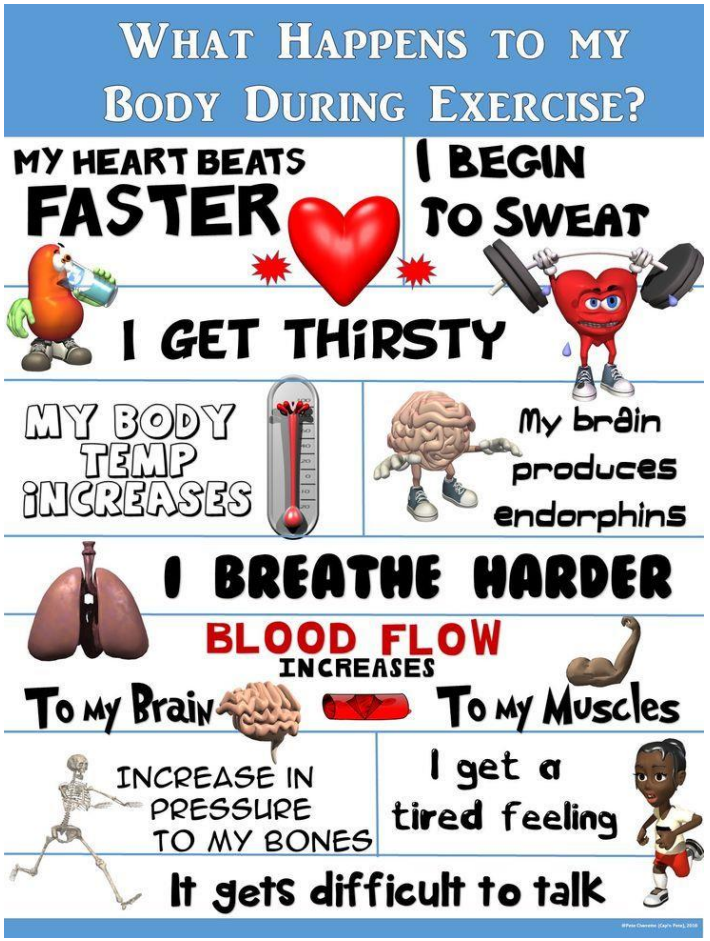
A **warm up** should be completed before taking part in exercise/ sport and is important as it physically and mentally prepares a person for exercise. A **cool down** should be completed at the end of the session and helps to return the body to its normal resting state.

The 3 phases of a warm up

1) Pulse raiser	2) Dynamic stretching	3) Skill based activity
This is the first part of a warm up. It involves running/ jogging around an area and can be in the form of a game (e.g. stuck in the mud). A pulse raiser increases the heart rate and blood flow to the working muscles; increases the breathing rate and body temperature. 	This is the second part of the warm up. This involves performing stretches whilst moving. It increases the range of movement at the joints; keeps the heart rate and body temperature elevated; and can help to reduce the risks of injuries. 	This is the third part of the warm up. This involves using some sport specific equipment and performing similar movements which are required in a game. A skill based activity physically and mentally prepares the participants for the demands of the main activity. 

<u>Cool down</u>

A cool down is important as it lowers the body temperature; heart rate; breathing rate and returns the body to its normal resting state. A cool down involves performing static stretches which can help to remove lactic acid; reduce muscle soreness the following day and reduce the risk of injury. Static stretches should be held for 8 - 12 seconds.



PLYMPTON ACADEMY

TERM ONE & TWO

HANDBOOK

YEAR 8