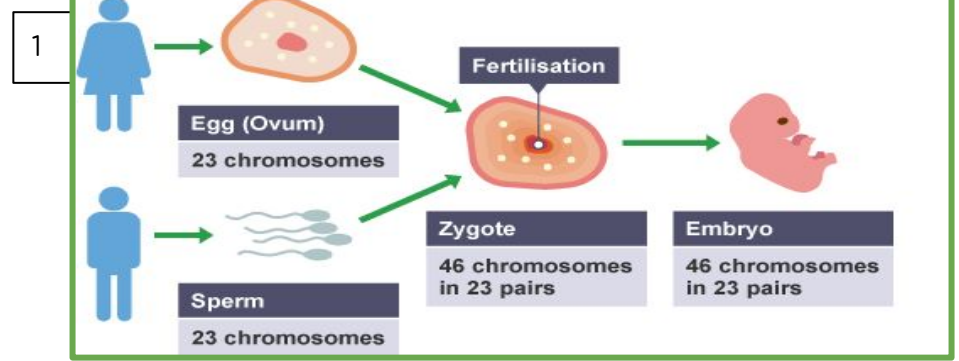


Biology

GCSE Inheritance and Evolution

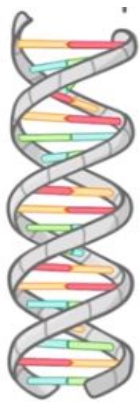
Learned Revised Confident

_____ % Achieved: _____



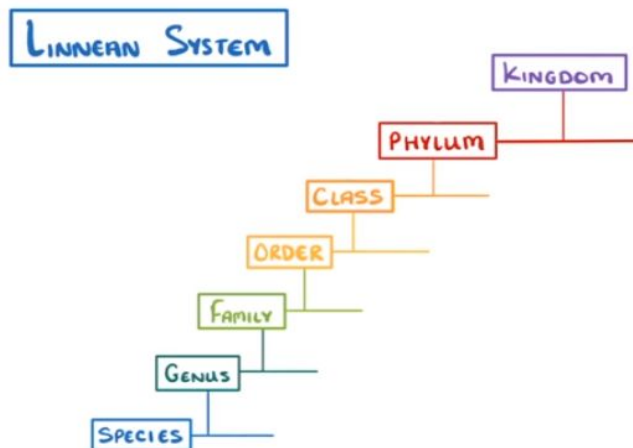
Nº	Keyword	Definition
2	Alleles	Different forms of the same gene.
3	DNA	Deoxyribonucleic acid. The material inside the nucleus of cells, carrying the genetic information of a living being.
4	Dominant allele	Represented with a capital letter. It is always expressed, even if only one copy is present.
5	Gamete	Sex cell (sperm in males and ova/eggs in females).
6	Genome	Entire set of genetic material in an organism.
7	Recessive allele	Represented with a lowercase letter. It is only expressed if two copies of it are present

8 Structure of DNA

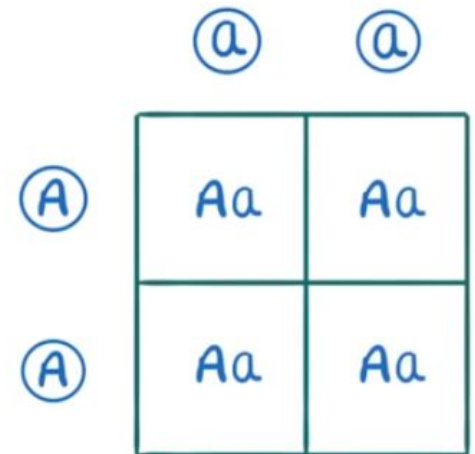


'DOUBLE HELIX'

9 Classification of living organisms



10 Punnett Square



Key facts

11	Natural selection	All species of living things have evolved from simple life forms over a period of time.
12	Genetically modified	Describes a cell or organism that has had its genetic code altered by adding a gene from another organism.
13	Genetic engineering	Process which involves the artificial transfer of genetic information from one donor cell or organism to another.
14	Evidence for evolution	Fossils, extinction, DNA analysis and antibiotic resistance.

GCSE Ecology

Learned	Revised	Confident
_____ % Achieved: _____		

Maintaining biodiversity

Breeding programmes

Protection and regeneration of rare species

Reintroduction of field margins and hedgerows.

Reduction of deforestation and carbon dioxide emissions

Recycling resources rather than dumping waste in landfill.

N°	Keyword	Definition
1	Abiotic factor	A non-living factor that can affect a community, e.g. light intensity and temperature
2	Adaptation	Special features that allow living organisms to survive and be successful in their habitat.
3	Biodiversity	The variety of all the different species of organisms on Earth, or within an ecosystem.
4	Biotic factor	A living factor that can affect a community, e.g. availability of food and new predators.
5	Community	Two or more populations of organisms occupying the same area.
6	Ecosystem	The interaction of a community of living organisms (biotic) and the non-living (abiotic) parts of their environment.
7	Interdependence	The dependence of each species on other species for food, shelter, pollination, seed dispersal etc. If one species is removed it can affect the whole community.
8	Quadrat	A square frame used to take a representative sample of plants or slow-moving animals in an area.
9	Transect	A line across a habitat or part of a habitat used to sample the number of organisms at regular intervals.

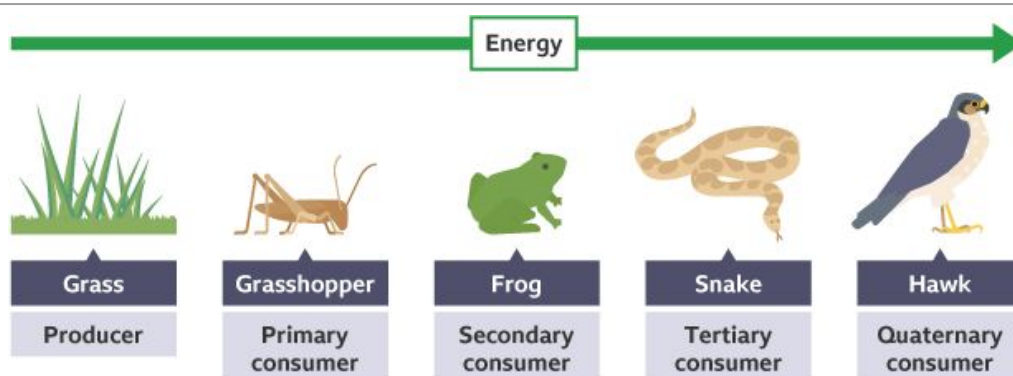
Facts

Carbon cycle - the main process involved are respiration, combustion and photosynthesis.

Water cycle - evaporation, condensation, precipitation, percolation, transpiration, respiration.

Global warming impacts living things by causing changes in the distribution of organisms, rising sea levels and habitat loss, changing weather patterns and changing migration patterns.

Land use for dumping waste, quarrying, farming and building - this reduces biodiversity.



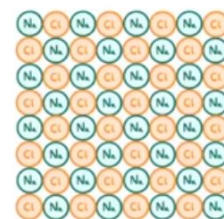
Chemistry

GCSE Chemical analysis



PURE SUBSTANCE

- CONTAINS ONLY ONE TYPE OF COMPOUND OR ELEMENT
- MELT AND BOIL AT SPECIFIC TEMPERATURES



PURE SODIUM CHLORIDE

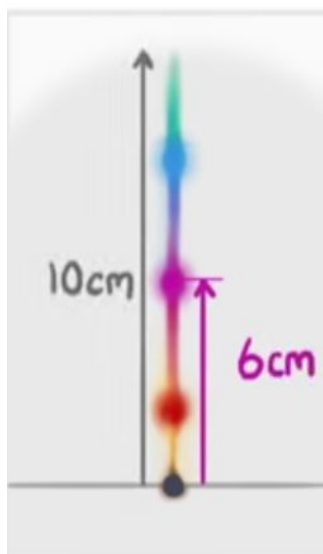
FORMULATIONS

MIXTURES THAT HAVE BEEN PREPARED USING A SPECIFIC FORMULA

Learned	Revised	Confident
_____ % Achieved: _____		

N°	Keyword	Definition
1	Pure	A substance that contains only one type of compound or element
2	Formulation	A mixture that has been prepared using a specific formula for a specific purpose
3	Chromatography	A physical technique used to separate substances with different solubilities from a liquid mixture
4	Mixture	Two or more different substances that are mixed but not chemically bonded
5	Mobile phase	The phase in chromatography that moves, this is usually the solvent
6	Stationary phase	The phase in the mobile phase that does not move, for example, the paper in paper chromatography
7	Solute	The part of a solution that dissolves in the solvent, for example, the salt in seawater
8	Solubility	A measure of how soluble a substance is in a certain liquid
9	Solvent	The liquid that the solute dissolves into to form a solution
10	Rf Value	This is a ratio of how far the solute has traveled compared to the solvent. We can use this to identify unknown substances

11 'R_f VALUE' = $\frac{\text{DISTANCE TRAVELLED BY THE SUBSTANCE}}{\text{DISTANCE TRAVELLED BY THE SOLVENT}} = \frac{6}{10} = 0.6$



Testing for common gases			
N°	Gas	Test	Result
12	Hydrogen	Insert a lit splint	Squeaky pop noise
13	Oxygen	Insert a glowing splint	Relights the splint
14	Chlorine	Insert damp litmus paper	Bleaches the litmus paper
15	Carbon dioxide	Bubble through lime water	Lime water turns cloudy

GCSE Chemistry of the atmosphere

BURNING LOADS OF FOSSIL FUELS



FARM ANIMALS PRODUCE METHANE DURING DIGESTION



CHOPPING DOWN LOADS OF TREES



LESS PHOTOSYNTHESIS (REMOVES CO₂)



RELEASES METHANE AS IT DECOMPOSES

Learned	Revised	Confident
_____ % Achieved: _____		

N°	Keyword	Definition
1	Atmosphere	layers of gases that surround the Earth. The main gases are nitrogen, oxygen and carbon dioxide.
2	Crude oil	Mixture of hydrocarbons, mainly alkanes, formed over millions of years from the remains of ancient dead marine organisms.
3	Evidence	Information or material that shows something is true.
4	Sedimentary	Rocks that are formed through the deposition of sediments, eg limestone and sandstone
5	Global warming	The increase of the overall average global temperature
6	Carbon footprint	The total amount of greenhouse gases a person, product or event is responsible for
7	Greenhouse gases	The gases responsible for global warming - carbon dioxide, methane, nitrous oxide and water.
8	Greenhouse effect	Retention of heat in the atmosphere caused by a build-up of greenhouse gas
9	Pollutant	A toxic chemical or object that causes damage to the land, air or water.

10

Atmospheric pollutants



NITROGEN OXIDES

N°	Fact
11	The evolution of the atmosphere is only a theory. This is because there is a lack of evidence NOT because no-one was there
12	The main effects of global warming are: flooding from sea level rise; extreme weather such as hurricanes; changes in rainfall such as storms and droughts and extinction due to all of this
13	The Earth needs certain level of greenhouse gases to be habitable. Without greenhouse gases the Earth would be too cold to live on
14	Carbon footprints are difficult to measure due to the large number of factors that need to be considered and the complexity of the greenhouse effect in the atmosphere.

Physics

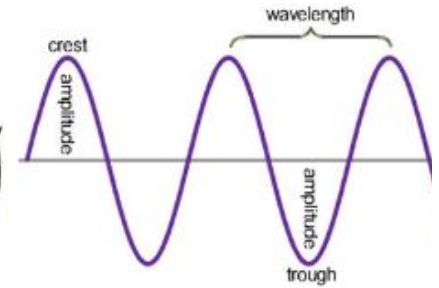
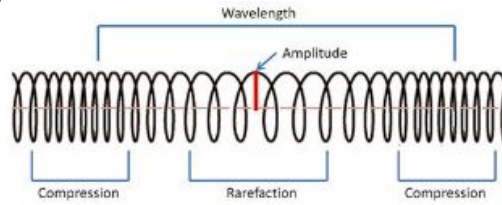
GCSE Waves

1

Longitudinal wave

2

Transverse wave

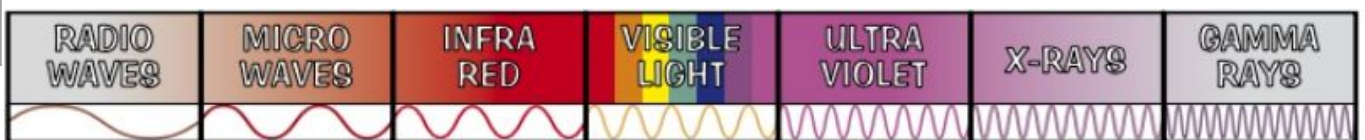


Learned Revised Confident

_____ % Achieved: _____

Nº	Keyword	Definition
3	Amplitude	Maximum displacement of a point on a wave from its undisturbed position (m)
4	frequency	Number of waves passing a fixed point per second (Hz)
5	Period	Time taken for one complete wave to pass a fixed point (s)
6	Wavelength	The distance from one point on a wave to the equivalent point on the next wave (m)
7	Longitudinal wave	Oscillations are <u>parallel</u> to the direction of energy transfer
8	Transverse wave	Oscillations are <u>perpendicular</u> to the direction of energy transfer
9	Normal	A line that is perpendicular (90°) to a surface.
10	Reflection	When a wave bounces back when it meets a boundary between two materials
11	Reflection	When a wave changes direction when it reaches a boundary between two materials at an angle to the normal

12



Long wavelength
Low frequency



Short wavelength
High frequency

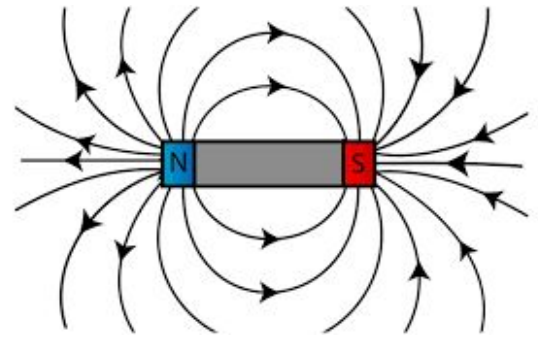
Nº	Facts
13	Waves transfer energy without transferring matter
14	The law of reflection is: angle of incidence = angle of reflection

Nº	Equations to learn
15	Period = $\frac{1}{\text{frequency}}$
16	Wave speed = frequency x wavelength

GCSE Magnets and electromagnets

1

Bar magnet magnetic field



Learned Revised Confident

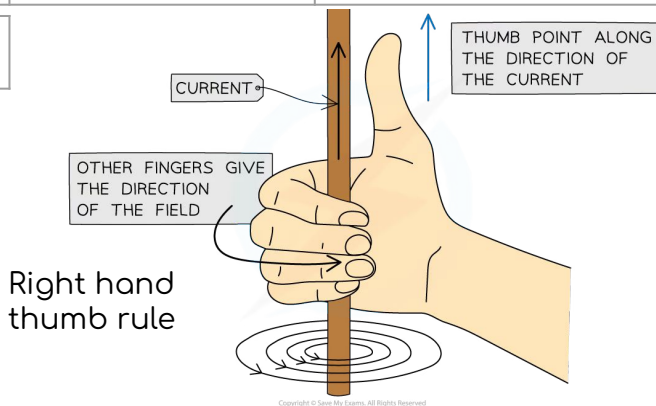
_____ % Achieved: _____

Nº	Keyword	Definition
2	Magnetic field	The region around a magnet where another magnet, or magnetic material will experience a force due to the magnet.
3	Permanent magnet	Produces its own magnetic field which is always there
4	Induced magnet	An object that becomes magnetic when it is placed in a magnetic field
5	Electromagnet	A solenoid with an iron core

HIGHER ONLY

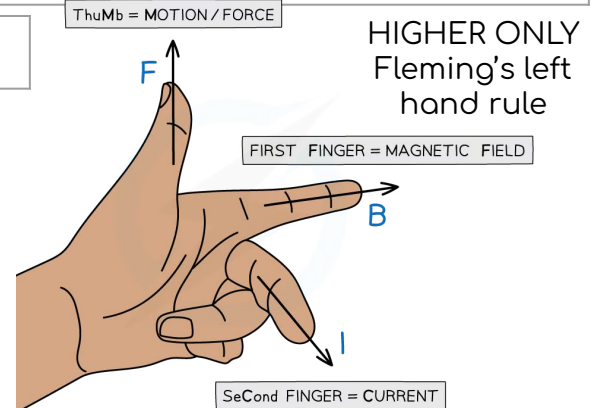
6	Motor effect	When a current carrying wire in a magnetic field experiences a force
7	Magnetic flux density	How many field (flux) lines there are in a region

8



Right hand thumb rule

9

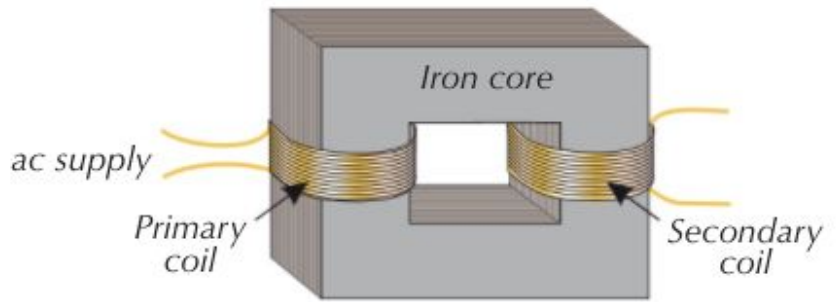


HIGHER ONLY
Fleming's left hand rule

Nº	Facts
10	All magnets have a north and south pole
11	Like poles (eg. north and north, or south and south) repel each other
12	Unlike (opposite) poles (eg. north and south) attract each other
13	The magnetic metals are iron, steel, cobalt and nickel
14	The closer together magnetic field lines are, the stronger the magnet
15	Magnetic field lines always point from north to south

GCSE Magnets and electromagnets

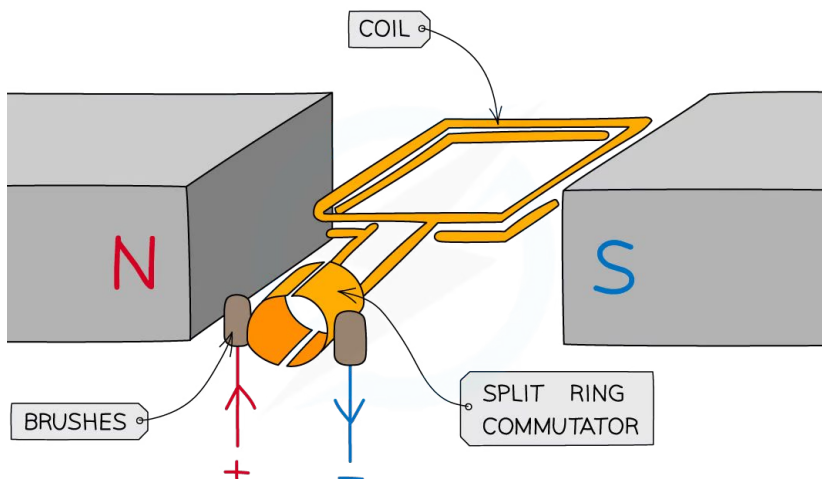
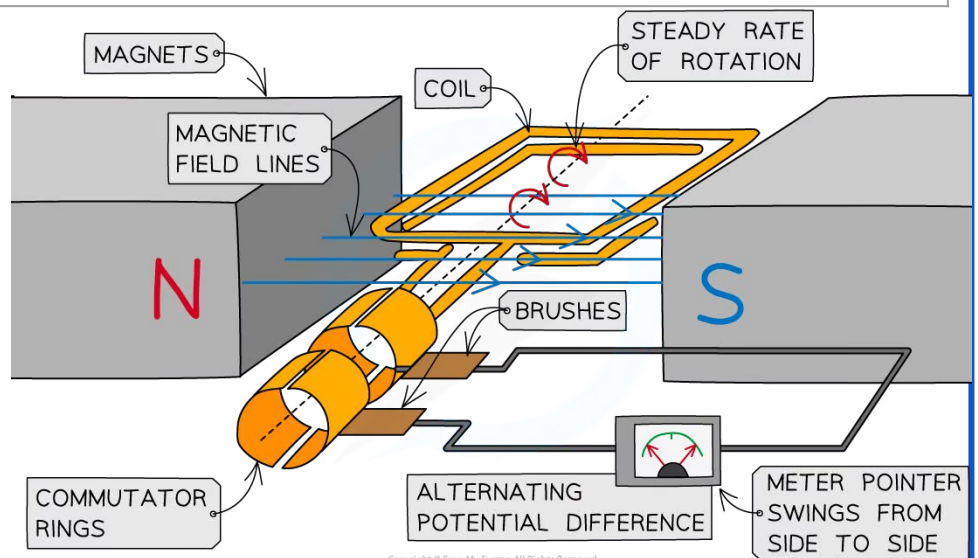
1 Transformer



Learned	Revised	Confident
_____ % Achieved: _____		

Nº	Keyword	Definition
2	Alternator	A type of generator that generates alternating current.
3	Dynamo	A type of generator that generates direct current.
4	Generator effect	The generator effect is the induction of a potential difference (and current if there is a complete circuit) across a conductor which is experiencing a change in an external magnetic field.
5	Transformer	A device that can change the potential difference of an ac supply.

6 Alternator



7 Dynamo