Year 8

Knowledge Organiser

January- April 2024

AMBITION, CONFIDENCE, CREATIVITY,
RESPECT, DETERMINATION

Proud to be part of the GREENSHAW LEARNING TRUST

FIVE ACRES HIGH SCHOOL

Why do we have knowledge organisers?
Knowledge organisers are a collation of the basic essential knowledge for success in each subject area that will underpin your learning for the term.

They are designed to provide the information you will need to be committing to your long term memory through recall exercises in Low Stakes Quizzing.

How do we use knowledge organisers?
You should be using these KOs to create your homework quizzes so that you are practising retrieving information.

1. You can do this by testing yourself on the definition of key terms (both recalling the key term and then swapping to recall the definition), practice labelling diagrams, retrieves reasons and justifications for the main learning points.
2. They can also be used for 'memory dumps' where you try to recall as much of the information about a topic as possible and then use the KP to fill in the gaps.
3. They can also be used in class to assist with retrieval of the core knowledge needed for each subject.

You should have these with you at all times in school and out on your desk in all lessons.

If you lose your KO or it becomes too dishevelled, please purchase a new one from the Head of Year or the School Office.

Contents

English Term 2 Year 8 Knowledge Organiser The Fragile Mind

Being Human key vocabulary

Abstract Nouns: Name ideas qualities and states rather than concrete objects.
Human:The characteristics of people
Flaw: A fault, mistake or weakness
Humane: To show kindness, care and sympathy towards others, especially those who are suffering
Hamartia: A flaw in character that brings about a person's failure or downfall
The Seven Deadly Sins: Lust, Gluttony, Greed, Sloth, Wrath, Envy, Pride

Key Context of Elizabethan and Jacobean Society

Jacobean Society: The era in which King James I was king – 1603-1625.
Patriarchal Society: A male dominant society in which women were seen as subordinate to men.
Marriage: Women from wealthy families were allowed to marry from the age of 12. These were arranged for the good of the family and financial gain.
Hysteria: Originally, this was a medical term for a mental illness in women.
The Great Chain of Being: Jacobeans believed that God set out an order for everything in the universe. It was a social order that put the King or Queen in charge because God put them there.
Witchcraft; mainly at the hands of women, was blamed for causing illness, death and disaster, thought to punish their enemies by giving them nightmares, making crops fail and their animals sicken. Viewed as a threat to the stability of society.

Othello Plot:

Iago is furious about being overlooked for promotion and plots to take revenge against his General; Othello, the Moor of Venice. Iago manipulates Othello into believing his wife Desdemona is unfaithful, stirring Othello's jealousy. Othello allows jealousy to consume him, murders Desdemona, and then kills himself.

Key terminology

- **Affix**: A letter or group of letters added to the beginning or end of a root word to make a new word.
- **Prefix**: A letter or group of letters added to the beginning of a word
- **Suffix**: A letter or group of letters added to the end of a word
- **Protagonist**: The leading character in a story
- **Antagonist**: A character who opposes the protagonist or hero
- **Anaphora**: A form of repetition in which the first part of a clause of phrase is repeated at the start of multiple others.
- **Epiphora**: A form of repetition in which a word or phrase is repeated at the end of multiple clauses of sentences.
- **Aposiopesis**: A sentence or thought is unfinished by a character
- **Internal Conflict**: The struggle that occurs within a character's mind – for example, between doing good or evil

Stage Craft

Literary Apostrophe
A rhetorical device used by playwrights and authors whenever their characters address a character that isn't present in the scene
Stage directions
Instructions which tell the actors where to stand/how to behave and inform the set and design and direction.
Aside
Something said in a play that is intended to be heard by the audience but not by the other characters
Soliloquy
When a speaker speaks to themselves - a technique to show the innermost feelings of the character
Monologue
A speech given by just one character in a story or play
Allusion
A reference to a well-known person, place, thing, event or literature.
Prometheus
A Titan from Greek mythology who stole fire from the Gods and was punished by being chained to a rock and had his liver pecked out by eagles every day.

Hamlet

The plot: The ghost of the King of Denmark tells his son Hamlet to avenge his murder by killing the new king, Hamlet's uncle. Hamlet feigns madness, contemplates life and death, and seeks revenge. His uncle, fearing for his life, also devises plots to kill Hamlet.

Key vocabulary:

Betrayal The act of deceiving someone or letting them down
Power Control or authority
Parenthesis The addition of extra information in the middle of a main clause. This is surrounded by commas, brackets or dashes.
Grief Extreme mental suffering caused by death or a loss
Sanity The ability to be able to think or behave normally and reasonably
Distress Anxiety, sorrow or pain
Disempower To take away someone's power

King Lear

The plot: King Lear divides his kingdom among the two daughters who flatter him and banishes the third one who loves him. His eldest daughters both then reject him at their homes, so Lear goes mad and wanders through a storm. His favourite daughter is killed for treason and he is heartbroken at her death.

Key vocabulary:

Hubris excessive pride or self-confidence
Semi-colons are used to join two main clauses that are linked in meaning
Diacope when a writer repeats a word or phrase with one or more words in between
Rejection the act of pushing someone or something away
Turmoil a state of confusion, disturbance or anxiety
Epizeuxis rhetorical device in which the words or phrases are repeated in quick succession, one after another, for emphasis.

Frankenstein:

The Plot: Frankenstein tells the story of gifted scientist Victor Frankenstein who succeeds in giving life to a being of his own creation. However, this is not the perfect specimen he imagines that it will be, but rather a hideous creature who is rejected by Victor and mankind in general.
Metaphor Comparing two things by saying one thing is another
Foreshadowing Hints given by a writer towards a future event.
Epigraph A short quotation, phrase or saying given at the beginning of a book or chapter

Poetry key terms:

- **Free Verse** A form of poetry that doesn't make use of a rhyme or a rhythm
- **End-stopped lines** A line in poetry that ends with punctuation such as a dash, comma, colon, semi-colon or full-stop
- **Half-rhyme** type of rhyme formed by words that have a similar but not identical sound.
- **Dramatic Monologue** A poem written in the form of a speech given by an individual character
- **Prepositional phrases** a group of words that show the position of something. Often, the phrase begins with a preposition
- **Rhyming couplets** A pair of lines in a verse that rhyme.
- **Exclamative** A sentence that ends with an exclamation mark to so show a strong emotion like anger or surprise.
- **Enjambment** When lines from one verse run into another without ending with punctuation
- **Caesura** A stop or pause in a line of poetry, often indicated by punctuation
- **Rhetorical Question** A question that's posed that doesn't require or expect an answer
- **Assonance** The repetition of vowel sounds
- **Consonance** The repetition of consonant sounds
- **Internal Rhyme** Rhyme that occurs within a single line of verse or across multiple lines
- **Iambic pentameter** A rhythm that uses 10 syllables and mimics the rhythm of a heartbeat
- **Pronoun** Words that are used instead of nouns that refer to people.
- **Stanza** The literary term for a verse

Significant figures

Topics

- Rounding integers using significant figures (M994)
- Rounding decimals using significant figures (M131)
- Estimating calculations (M878)

Keywords

Round - making a number simpler but keeping its value close to what it was

Significant figures - the digits that are meaningful (e.g. the digits 3 and 4 in 3400 and 0.00034)

Estimate - working out an answer using rounded numbers to make the calculation easier

Coordinates and midpoints

Topics

- Calculating midpoints (M622)
- Mixed problems: Coordinates and midpoints (M311)

Building Blocks

- Reading and plotting coordinates (M618)

Keywords

Midpoint - the middle point between two points

Vertical - up and down |↕

Horizontal - left and right ↔

Line Segment - a part of a line

Coordinate - a point on the coordinate system written as (x , y)

Vertices - corners of a shape

Area and units

Topics

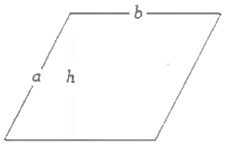
- Finding the area of parallelograms (M291)
- Finding the area of trapeziums (M705)
- Converting units of area (M728)

Building Blocks

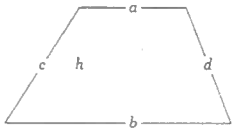
- Finding the area of rectangles (M390)
- Finding the area of compound shapes (M269)
- Finding the area of triangles (M610)
- Finding the area of compound shapes containing triangles (M996)
- Converting units of length (M772)

Keywords

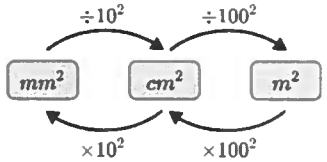
Parallelogram - ½ x b x h



Trapezium - ½ x (a + b) x h



Parallel - lines in the same dire
meet



Area and circumference

Topics

- Identifying parts of circles (M595)
- Finding the circumference of circles (M169)
- Finding the area of circles (M231)

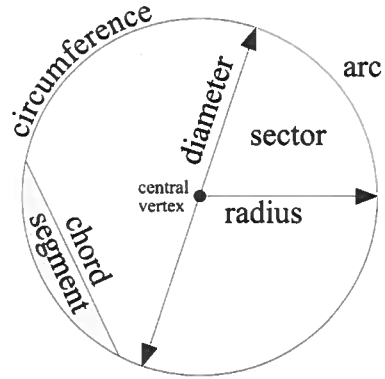
Building Blocks

- Calculating with roots and powers (M135)
- Substituting into algebraic formulae (M208)
- Rounding decimals (M431)

Keywords

Circumference = **π x diameter**

Area = **π x radius²**



Standard form and ordinary numbers

Topics

- Using standard form with positive indices (M719)
- Using standard form with negative indices (M678)

Building Blocks

- Multiplying and dividing by 10, 100 and 1000 (M113)

Keywords

Standard form - a scientific way of writing a number in the following form: $a \times 10^n$
Where a is between 1 and 10

Ordinary number - the normal way of writing a number (e.g. 324)

Ascending - smallest to largest

Descending - largest to smallest

Venn diagrams

Topics

- Venn diagrams (M829)
- Probabilities from Venn diagrams (M419)

Building Blocks

- Writing probabilities as fractions (M941)
- Writing probabilities as fractions, decimals and percentages (M938)
- Probabilities of mutually exclusive events (M755)

Keywords

Region - a section of the venn diagram

Probability - the chance of something happening number of ways event can happen÷ total

Frequency - number of times something happens

Factors, multiples and primes

Topics

- Finding the HCF and LCM using prime factor decomposition (M365)

Building Blocks

- Venn diagrams (M829)
- Finding the lowest common multiple (M227)
- Finding factors and using divisibility tests (M823)
- Finding the highest common factor (M698)
- Finding prime numbers (M322)
- Prime factor decomposition (M108)

Keywords

HCF - Highest Common Factor

LCM - Lowest Common Multiple

Prime number- number that is only divisible by 1 and itself (2, 3, 5, 7, 11, 13 …)

Product of Prime Factors (prime decomposition) - write a number as its prime factors multiplied together (e.g. $12 = 2^2 \times 3$)

Index Form - collecting together numbers that are multiplied together (e.g. $4 \times 4 \times 4 = 4^3$)

Nets and Surface Area

Topics

- Properties of 3D shapes (M767)
- Nets of 3D shapes (M518)
- Finding the surface area from a net (M884)
- Finding the surface area of cubes and cuboids (M534)
- Finding the surface area of prisms (M661)

Building Blocks

- Shape properties (M276)
- Nets of 3D shapes (M518)
- Finding the area of compound shapes (M269)
- Finding the area of compound shapes containing triangles (M996)
- Converting units of length (M772)

Keywords

Face - the individual flat surfaces of a 3D shape

Vertices - the corners of a shape

Edge - a line joining the corners of a shape

Prism - A 3D shape with two identical ends and flat sides

Surface Area - the total area of the surface of a 3D shape

Volume

Topics

- Finding the volume of cubes and cuboids (M765)
- Finding the volume of prisms (M722)
- Converting units of volume (M465)

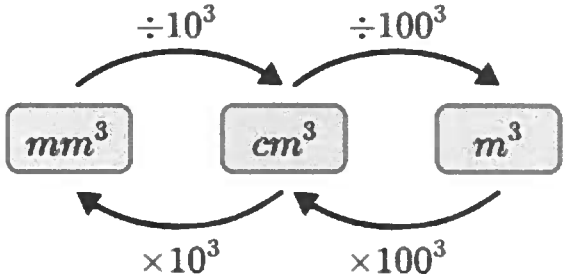
Building Blocks

- Finding the area of compound shapes (M269)
- Finding the area of compound shapes containing triangles (M996)
- Converting units of length (M772)

Keywords

Volume of a cuboid = length x width x height

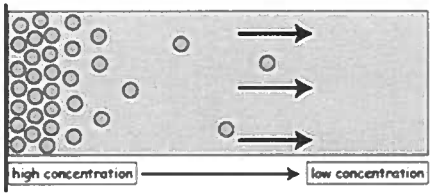
Cross-sectional area -

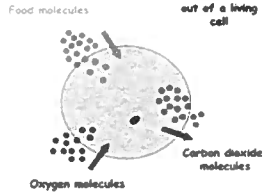


Year 8 Biology Knowledge Organiser
Organisation – Transport

Box 1 - Diffusion

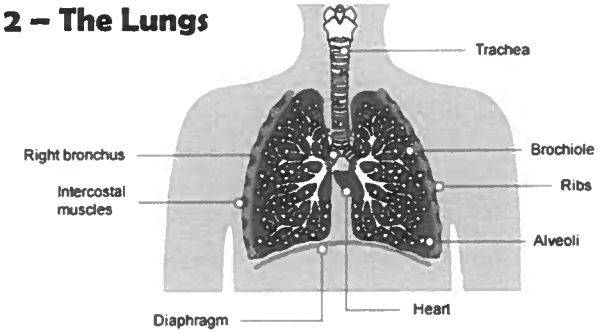
Diffusion is the **spreading out of the particles** of any substance in solution or a gas from an area of **higher concentration to a lower concentration.**



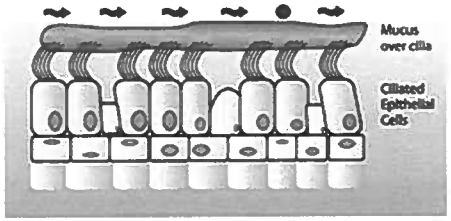


Substances can move into or out of cells across the cell membrane by diffusion.
Oxygen and **glucose** usually move into cells by diffusion.
Carbon dioxide and **waste (urea)** usually move out of cells by diffusion.
The bigger the surface area the faster the rate of diffusion.

Box 2 – The Lungs



When we breathe in, air enters the lungs; it travels through the trachea, bronchi, bronchioles then into the alveoli.
The trachea is held open by rings of cartilage to stop it collapsing when the neck is moved and bent.
The trachea and the bronchi are lined with ciliated epithelial cells and mucus. When we breathe, dust and microorganisms in the air stick to the mucus. The cilia "beat" to move the dirty mucus up and out of the lungs and it is then swallowed.



Box 3 - Breathing

Breathing is caused by the intercostal muscles between the ribs and the diaphragm.
Breathing in is also called **inhaling** and occurs when:

- Intercostal muscles contract and move the ribs up and out.
- Diaphragm contracts and flattens.

This increases the volume inside the thorax and decreases the pressure in the thorax which draws air into the lungs.
Breathing out is also called **exhaling** and occurs when:

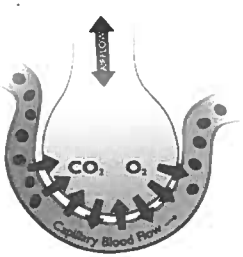
- Intercostal muscles relax and move the ribs down and in.
- Diaphragm relaxes and bulges upwards.

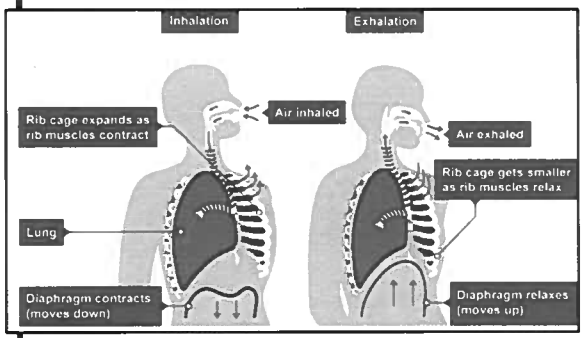
This decreases the volume inside the thorax and increases the pressure in the thorax which pushes the air out of the lungs.

Key Terms	Definitions
Cilia	Microscopic hair like structures that cover the cells in the trachea and bronchi.
Alveoli	Microscopic air sacs in the lungs where gas exchange by diffusion occurs.
Gas exchange	The swapping of oxygen and carbon dioxide between the alveoli and the blood.
Thorax	Upper part of body including the rib cage, lungs and heart.

Box 4 - Gas exchange

The lungs contain millions of microscopic alveoli. These are tiny air sacs that are just one cell thick and are surrounded by tiny blood vessels called capillaries.
The movement of oxygen and carbon dioxide is called gas exchange.
- The millions of tiny alveoli give a large surface area for diffusion.
- The walls of the alveoli are very thin so the substances don't have far to diffuse.





Box 5 - Asthma

Asthma is a disorder where the muscles in the walls of the airways become swollen and inflamed and the muscles in the airways contract and the tubes become narrow.
This makes it hard to breathe out.
The triggers for asthma include dust, pollen, exercise and smoke.
Inhalers make the muscles relax so the airways widen.

Box 6 - Smoking

Cigarette smoke contains:

- Tar (which can cause lung cancer)
- Carbon monoxide (which reduces the amount of oxygen the blood can carry and causes breathlessness)
- Nicotine (which is addictive).

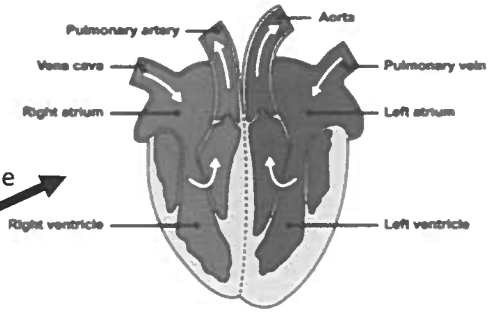
Smoking damages the cilia, which leads to a smokers cough.

Year 8 Biology Knowledge Organiser
Organisation – Transport

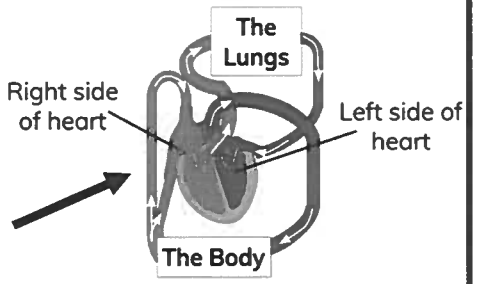
Box 7 - The Circulatory System- The Heart

The circulatory system includes the heart, blood vessels and blood.
The function of the circulatory system is to transport substances around the body.
The heart muscle contracts to pump blood around the body.
Heart muscle is a unique type of muscle because it doesn't tire.
The heart has four chambers called the

- left atrium
- right atrium
- left ventricle
- right ventricle

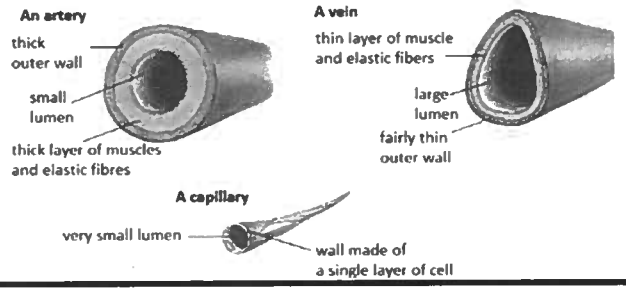


The right side of the heart pumps deoxygenated blood to the lungs.
The left side of the heart pumps oxygenated blood to the head and body
The heart is a **double pump**, with double circulation (one side of the heart pumps blood to the lungs and the other pumps blood to the head and body)



Box 8 - The Circulatory System- Blood vessels

Arteries are blood vessels that carry blood away from the heart under high pressure.
Capillaries are tiny blood vessels with walls that are one cell thick. Substances such as glucose, oxygen can move out of capillaries into cells. Carbon dioxide can move into capillaries from cells.
Veins are blood vessels that carry blood to the heart under low pressure.

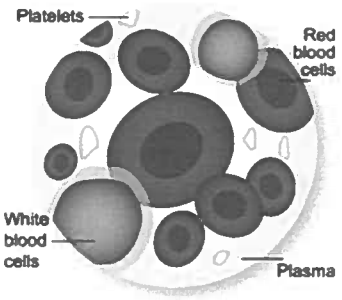


Key Terms	Definitions
Circulatory system	Heart, blood vessels and blood that are involved in transporting substances around the body.
Oxygenated blood	Blood containing oxygen.
Deoxygenated blood	Blood that doesn't contain oxygen.
Transpiration	The loss of water from the surface of plants that occurs by evaporation.

Box 9 - The Circulatory System- Blood

Blood is made up from red blood cells, white blood cells, platelets floating in a pale yellow liquid called plasma.

- **Red blood cells** carry oxygen around the body.
- **White blood cells** are part of the immune system and are
- involved in fighting disease .
- **Platelets** are needed for blood clotting.
- **Plasma** transports dissolved glucose and carbon dioxide.

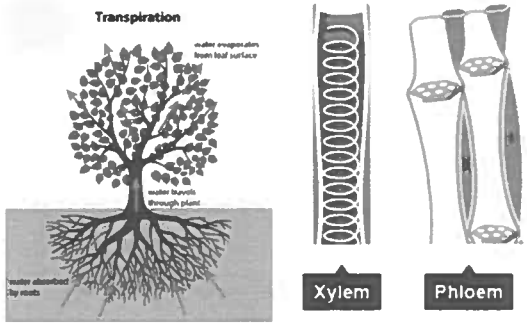


Box 10 - Transport in plants – Xylem, Phloem and Transpiration

Xylem cells transport water and minerals from the roots to the leaves.
Phloem cells transport sugars around the plant from the leaves to the roots and flowers.

Transpiration is the loss of water from a plant by evaporation.

The rate of transpiration is affected by the temperature.



Box 11 - Transport in plants – Minerals

Plants need minerals from the soil for healthy growth. Nitrates and magnesium are examples of minerals.
Nitrates are needed to make proteins. A plant that is deficient in nitrates has stunted growth and yellow leaves.
Magnesium is needed for making chlorophyll. A plant deficient in magnesium has yellow leaves
Fertilisers contain minerals and can be added to the soil to improve the growth of crops and plants.

Year 8 - Chemistry Knowledge Organiser
Materials and their properties

Box 1 -The Structure of the Atom

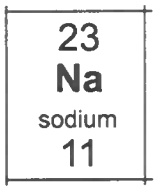
- All matter is made from atoms. Atoms are very small.
- The central part of the atom is known as the nucleus. The nucleus is tiny in comparison to the size of the atom.
- An atom is made up of three subatomic particles: **protons, neutrons** and **electrons**.
- Protons and neutrons are found in the **nucleus**
- Electrons are found orbiting the nucleus in energy levels (also known as *shells*).
- The mass and charges of the subatomic particles is shown below:

	Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	0	-1

- Atoms have **no overall charge** because they have the same number of positive protons as negative electrons.

Box 3 -Electron Configuration/Electronic Structure

Each shell has a maximum number of electrons it can take.
Shell 1: maximum 2 electrons; Shell 2: maximum 8 electrons; Shell 3: maximum 8 electrons



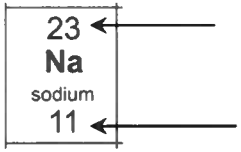
11 electrons

The electronic configuration of Sodium (Na) can also be written like this: 2,8,1. This shows there is 2 electrons in the 1st shell, 8 electrons in the second shell and 1 electron in the 3rd shell.

1. The period number is an element's row in the periodic table. It indicates the number of electron shells an element has.
2. The group number is the column an element is in in the periodic table. It indicates how many electrons an element has in its outer shell. All shells inside the outer shell are full.

Key Terms	Definitions
nucleus	The centre of an atom; it is made of protons and neutrons.
nanometre	A unit of measurement: $1x10^{-9}m$
proton	A subatomic particle found in the nucleus, it has an electric charge of +1 and a relative mass of 1.
electron	A subatomic particle found in the shells of an atom, it has an electric charge of -1 and a negligible mass
subatomic	Describes particles smaller than an atom (protons, neutrons, electrons)
neutron	A subatomic particle found in the nucleus of an atom, it has a charge of 0 and a mass of 1
Physical property	A characteristic or feature of a substance that can be measured (e.g. melting point, boiling point, density, colour, conduction of heat/electricity)

Box 2 - Atomic Number and Mass Number



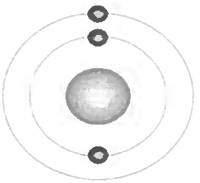
Mass number: This is the total protons + neutrons

Atomic number: This is the number of protons, which is equal to the number of electrons

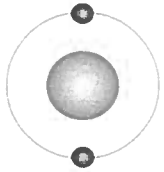
Therefore sodium has 11 protons, 11 electrons and 23 – 11 = 12 neutrons

Box 4 Electron Configuration/Electronic Structure

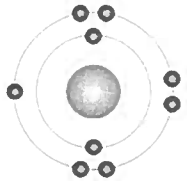
Hydrogen
1



Lithium
2,1



Helium
2

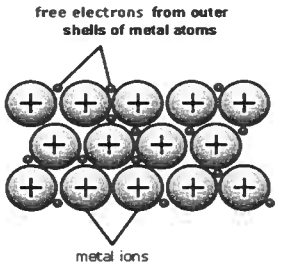


Fluorine
2, 7

Year 8 - Chemistry Knowledge Organiser
Materials and their Properties

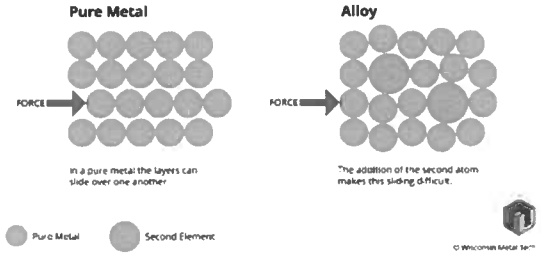
Box 5 – Metals Properties and Metallic Bonding

Metals form giant structures. The outer electrons are called delocalised electrons.
These electrons are free to move and mean that metals are good conductors of electricity and heat.
Metallic bonds hold the metal structure together.
The bonds are forces of attraction between the negative electrons and the positive metal ions.



Box 6 - Alloys

Alloys are mixtures of different **metals or metals and carbon.** Examples of alloys include brass (copper and zinc) and steel (iron and carbon).
Pure metals are soft because the layers of metal atoms/ions can slide over each other.
Metals are alloyed because the different atoms are different sizes, so the layers get disrupted and hence the layers cannot slide.



Stainless steel is a mixture of iron and chromium. It's physical properties include that it is hard and does not rust, making it useful for making cutlery.
Alloys of aluminium are used to make the bodies of aircraft. The body is hard and low density.

Box 7 - Composites

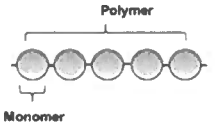
Composites are materials made from 2 different materials where one is embedded into the other.
A composite has properties of both materials and are stronger and more durable than the individual materials.
Bone is a natural composite. Concrete, Fibreglass and carbon fibre are man-made composites

Key Terms	Definitions
metallic bonding	A type of bonding which occurs only in metals
alloy	A mixture of 2 or elements, one of which is a metal (the other element may be metal or non metal)
delocalised electron	An electron that is free, not part of an atom
Physical Property	A feature/characteristic of a material or substance – e.g. conducts electricity, hard, strong.
malleable	The ability of a material to be hammered/pressed into shape.
Ceramic	Non-metallic solid that is hard, durable and brittle.
Composite	Substance made from 2 different materials where the properties of both materials are gained.
Polymer	Long chain molecules made up from repeating units called monomers.

Box 8 - Ceramics

Ceramics are non-metallic crystalline solids, for example porcelain, brick. They are made by the action of heating and cooling.
Physical properties - They are hard, durable, brittle, have high melting points and are non-toxic and unreactive.
Ceramics are used for plates, bowls etc because they are durable, non-toxic and unreactive.
Ceramics are used in dentistry because they are hard, durable, non-toxic and unreactive.

Box 9 - Polymers



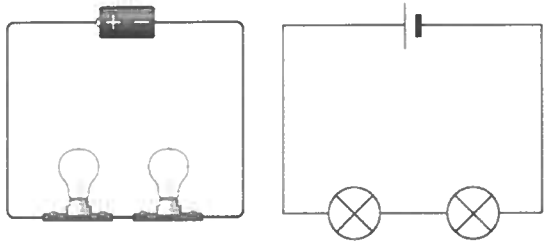
Polymers are long chain molecules made up from repeating units called monomers.
Natural polymers include DNA and starch.
Synthetic (man-made) polymers include polythene and polystyrene. These are called plastics and are often made from crude oil.
Polymers can be designed with useful physical properties.
Many synthetic polymers are non-biodegradable (they don't rot away) . This means they end in land fill or polluting oceans.

Year 8 Physics Knowledge Organiser: Electricity

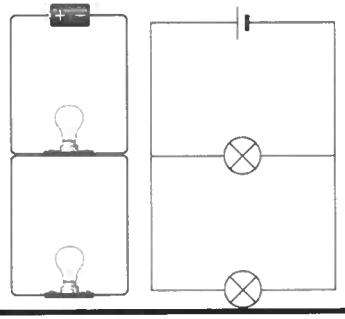
Box 1 – Series and parallel circuits

- Electrical circuits are made of metal wires with components (see Box 3) that perform a function.
- The metal in the wire is a conductor, so the electric current can pass through the wire – it is conducted.

Series circuits are closed circuits where the current can only flow along one route.



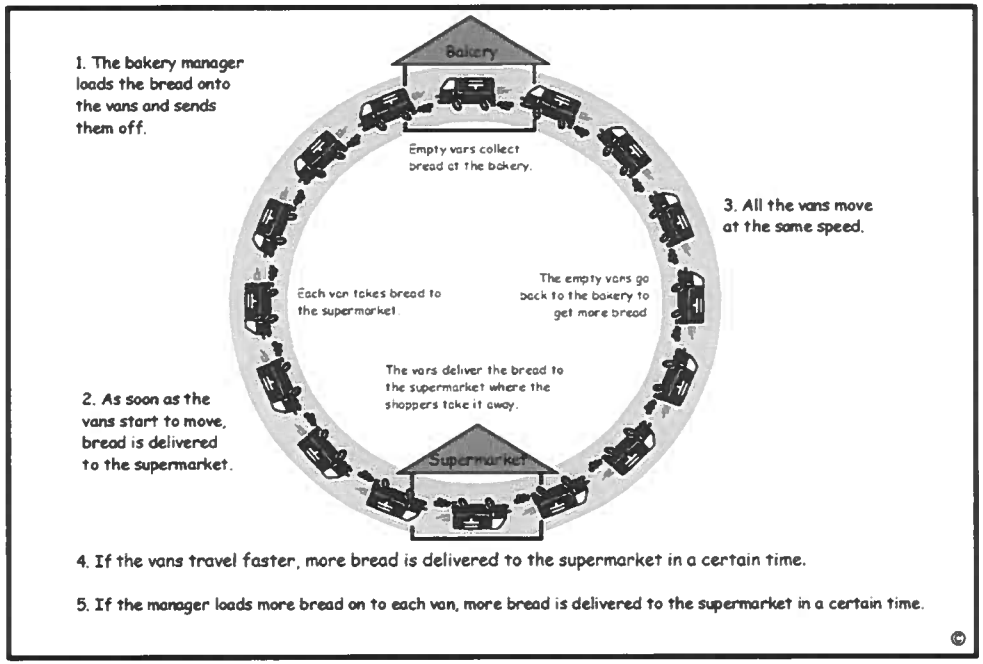
Parallel circuits are closed circuits with more than one route (also called branches) that the current can take.

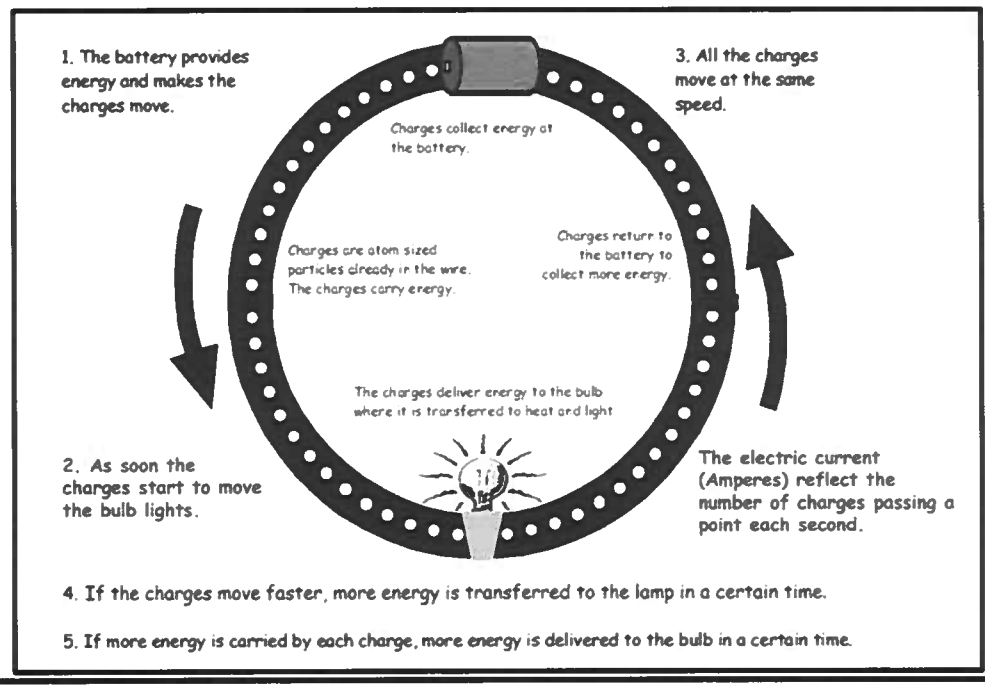


Key term	Definition	Analogy
Charge	The particles that carry energy in an electrical circuit, often electrons	Van
Energy	Electrical energy carried by charges	Loaves of bread
Current	Rate of flow of charge	Speed of vans
Potential difference	The energy per unit of charge	Number of loaves of bread in each van
Resistance	Opposes the current (the more resistance, the lower the current)	Reduces the speed of the vans

Box 2 – Describing Circuits Bread van analogy

Analogy – A story used as an explanation





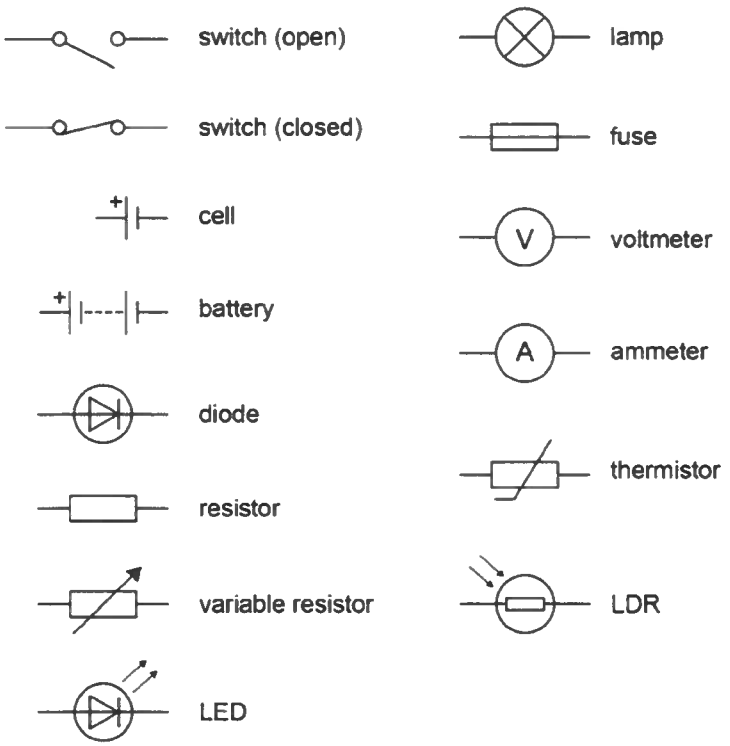
Year 8 Physics Knowledge Organiser: Electricity

Key term	Definition
Electrical conductor	A material with a low resistance that allows charge to flow.
Electrical insulator	A material with a high resistance that does not allow charge to flow.
Series circuit	Circuit with a single loop.
Parallel circuit	Circuit with two or more loops.

Equation	Meanings of terms in equation
$V = I\,R$	*Potential difference = Current x Resistance* *(Volts, V) (Amps, A) (Ohms, Ω)*

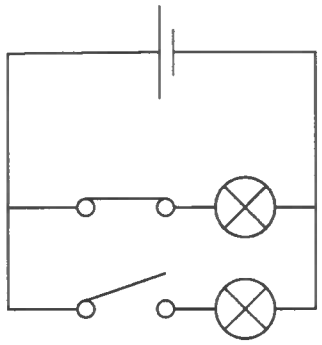
Box 3 – Circuit symbols

The parts that go into circuits are called components. They are shown in diagrams with symbols, as shown:



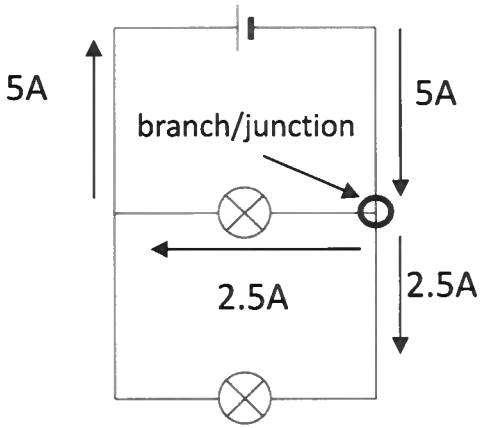
Box 4 – Using parallel circuits

- Lighting circuits in houses use parallel circuits to make sure all the bulbs in the house are bright and stay the same brightness regardless of how many bulbs are switched on at any one time.
- A parallel circuit also means that if one bulb breaks, the others remain lit.
- Car headlights are also wired in parallel for the same reasons.



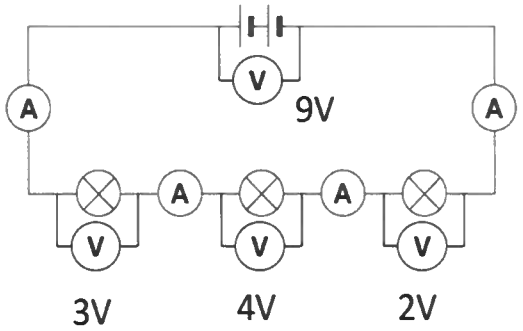
Box 5 – Kirchoff's current law

Current flowing into a junction in a parallel circuit must be equal to current flowing out of it.



Box 6 – Kirchoff's potential difference law

The sum of the potential differences in a series circuit is equal to the cell potential difference.



Potential difference of cell = 9V

3 + 4 + 2 = 9

Year 8 Chemistry Knowledge Organiser
Energy Changes and Rate of Reaction

Box 1 – Energy Changes: Exothermic and endothermic reactions

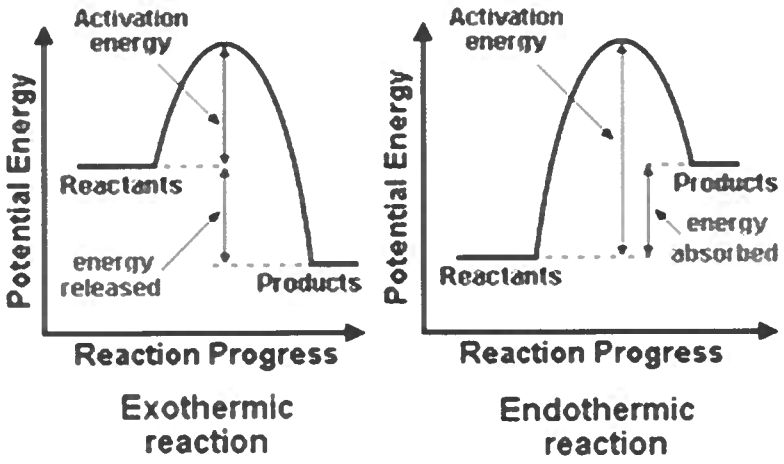
Exothermic reactions

- These are reactions that **release/give out energy** to the surroundings. This is usually in the form of heat.
- They cause the **temperature to increase**.
- The **reactants have more energy** in their energy stores **than the products**. (see reaction profile)

Endothermic reaction:

- These are reactions that **take in energy** from the surroundings.
- They cause the **temperature to decrease**.
- The **reactants have less energy** in their energy stores **than the products**. (see reaction profile)

The diagrams below are called reaction profiles.



Box 2 – Rate of reaction

The rate of a reaction is a measure of how quickly a reaction is occurring. Rate = Amount of substance ÷ time

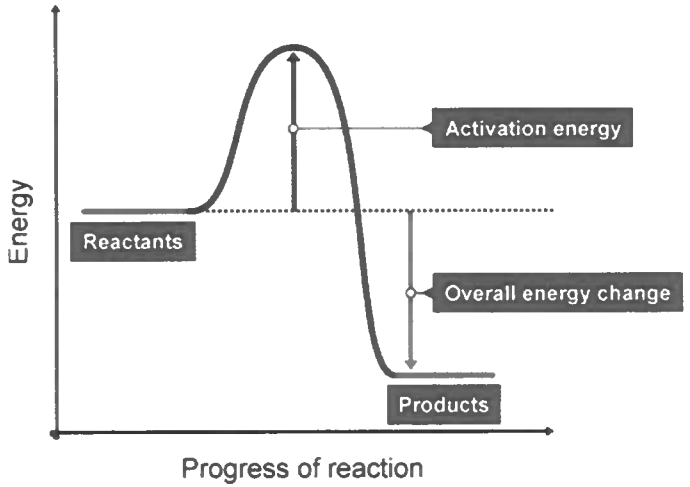
The rate of a reaction can be measured by how quickly a reactant is used up or by how quickly a product is made.

Key Terms	Definitions
Exothermic	Reaction that releases energy to the surroundings
Endothermic	Reaction that takes in energy from the surroundings
Energy profile diagram	Graph that shows energy changes in reactions
Rate of reaction	How fast a chemical reaction occurs
Collision theory	The idea that successful collisions are needed between reactant particles if a chemical reaction is to occur.
Activation energy	The minimum amount of energy needed in a collision for a reaction to occur
Catalyst	A chemical that speeds up a reaction without being used up during the reaction
Concentration	The amount of a chemical dissolved in a certain volume of water.

Box 3 – Collision theory

A **chemical reaction** can only occur if the reactant **particles collide successfully**. To collide successfully they must **collide with activation energy.**

Activation energy the minimum amount of energy needed in a collision for a reaction to occur



Year 8 Chemistry Knowledge Organiser
Energy Changes and Rate of Reaction

Box 4 – Factors that affect the rate of a reaction

All factors that increase the rate of reaction will increase the frequency of successful collisions between the reactants.

The **rate of a chemical reaction is affected by**:

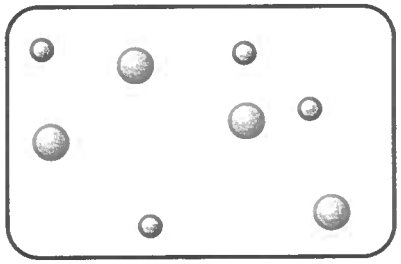
- **Temperature** – The higher the temperature the faster the rate of reaction, because the particles gain energy, move faster and therefore collide more frequently and with more energy.
- **Concentration** – The higher the concentration of a reactant that is in solution, the faster the rate of reaction. When there are more particles in a set volume, there is a higher frequency of collisions.
- **The pressure of a gas** – The higher the pressure of a gas, the faster the rate of reaction.
- **The surface area of a solid** – Powdered solids react more quickly than lumps of a solid. This is because the powdered solid has a larger surface area over which collisions can occur, therefore there is a higher frequency of collisions.
- **Adding a catalyst** – See Box 5

Box 5 – Explaining concentration

The amount of a substance dissolved in a certain volume of water.

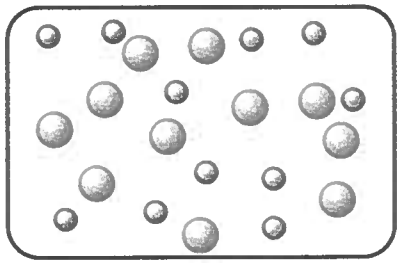
The higher the concentration, the more particles of the substance there are in a certain volume of water.

Low concentration
Few particles in a set volume



Increase concentration

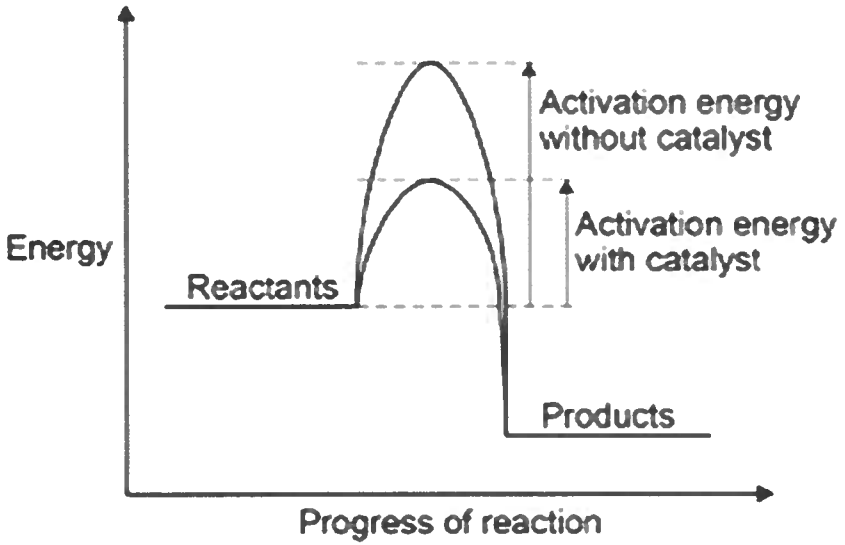
High concentration
Many particles in a set volume



Box 6 – Catalysts

A catalyst is a chemical that speeds up a reaction without being used up during the reaction.

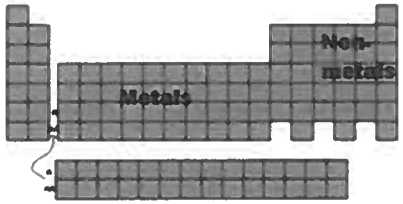
It does this by providing an alternative reaction pathway with a lower activation energy.



Year 8 Chemistry Knowledge Organiser – Reactivity

Box 1 - Metals and Non-Metals

- Metals are found on the left hand side of the periodic table
- When metals react, they lose electrons to form positive ions.



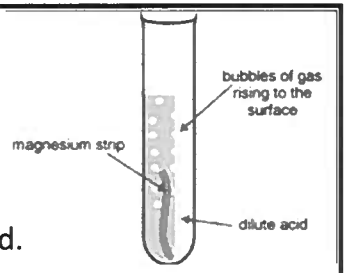
- Properties of metals are: high density, high melting point and good conductors of heat and electricity.
- Only three metals are magnetic (iron, cobalt and nickel).
- Metals react with oxygen to make metal oxides e.g.

Magnesium + Oxygen → Magnesium Oxide

Box 2 - Metals and Acids

- Acids react with most metals , producing a salt and hydrogen gas . This is the general word equation for the reaction is:

metal + acid → salt + hydrogen



- The salt produced depends upon the metal and the acid.

zinc + sulfuric acid → zinc sulfate + hydrogen

- To test for hydrogen gas we use the 'squeaky pop' test. This means that hydrogen burns and makes a squeaky pop sound when a lit splint is added.

Box 3 - Corrosion and Rusting

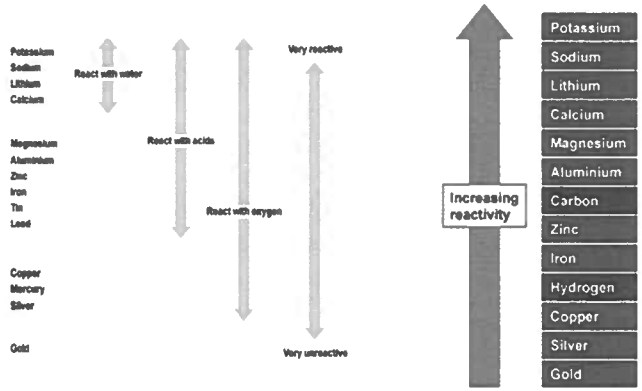
- **Corrosion** is where a metal reacts with substances in its environment.
- When iron corrodes we say that it **rusts**. Water and oxygen are required for rusting.
- The equation for rusting is:

Iron + Oxygen + Water → Hydrated iron oxide

- Corrosion can be prevented by coating the metal with paint or oil. Sacrificial protection can also be used. This is where the metal is coated with a more reactive metal (e.g. coating iron with zinc).

Box 4 - The Reactivity Series

- Elements are ordered by their reactivity in a series called **the reactivity series.**
- Observations of the way that these elements react with water, acids and steam enable us to put them into this series.



Box 5 - Displacement reactions

- In a displacement reaction a more reactive metal replaces a less reactive metal in a compound.
- Displacement reactions are **exothermic.**
- The larger the difference in reactivity the greater the temperature rise.
- The example below shows the following reaction

Copper sulfate + Magnesium → Magnesium sulfate + Copper

Box 6 - Extraction of Metals

- Most metals need to be extracted from their ore so that we can use them.
- A metal ore is a metal compound found in rock, that contains enough metal that it is **economical** to extract it.
- Metals which are less reactive than carbon are extracted from their ore using **reduction**. This is an example of a displacement reaction

Example: Iron Oxide + Carbon → Iron + Carbon Dioxide

- Metals more reactive than carbon are extracted from their ore using **electrolysis**.
- Electrolysis is expensive as it requires a lot of energy.

Y8 History Knowledge Organiser: The Industrial Revolution

1.1 The Industrial Revolution

Britain underwent a dramatic transformation between 1750 and 1850

PRE-1750 An *Agricultural* Society

- Before 1750, Britain was a largely **agricultural** society
- Most people lived in the **countryside** and grew their own food
- The threat of **famine** kept the population low

POST-1750 An *Industrial* Society

- The process of **industrialisation** transformed Britain
- Most people now worked in **factories** and bought food with their **wages**
- The **population** expanded as towns and cities grew

Why was there an industrial revolution in Britain in the 18th Century?

Natural resources such as **coal** provided new forms of energy

New technology and machinery increased production

Slavery and **empire** provided wealth to stimulate **industry**

1.2 The Traditional View

The traditional pessimistic interpretation of the industrial life is based on sources written from a middle class point of view for a particular purpose and audience

Arnold Toynbee

- The 19th Century historian Arnold Toynbee argued that the **Industrial Revolution** was a **'darker period'** in history that was **'disastrous and terrible'** for ordinary people
- He based his conclusions on sources written by **middle-class** individuals such as:

Francis Trollope's novel

- Trollope's **novel** *Factory Boy* describes the miserable lives of child workers
- The **purpose** of her novel was to support the growing movement for improved working conditions

Michael Sadler's interviews

- **Michael Sadler** interviewed child workers and created a report to support a new law to improve **factory** work
- Sadler sometimes used **leading questions** to get the evidence he needed

1.3 Emma Griffin

The historian Emma Griffin has used the autobiographies of ordinary people to construct a different interpretation

Griffin's sources

- Emma Griffin looked at 350 **autobiographies** and **memoirs** of working people
- These sources provided evidence for a different **interpretation** of life in **industrial** Britain

Griffin's interpretation of life in industrial Britain

- Griffin argues that the **Industrial Revolution** presented new and exciting opportunities for **working class** men, even if they lived through hardships
- The **autobiographies** clearly show that family **incomes** increased
- However, **working class** women and children did not share in these advantages

Problems with Griffin's sources

- Very few women wrote **autobiographies**, making it hard to find evidence about their lives
- **Autobiographers** did not want to spend time discussing the difficult times in their life, preferring to focus on positive experiences

VOCABULARY

Agricultural	Related to farms and farming
Autobiography	A book written about the authors own life
Factories	Large buildings where goods are manufactured by workers and machines
Famine	A period in which there is not enough food
Glasgow	A large industrial city in Scotland
Income	The amount of money you earn
Industrial	An adjective that describes a place or a time when most people worked in factories
Industrialisation	The process of becoming industrial
Justify	To prove something was right
Leading questions	Questions that lead the respondent to give particular answers
Memoir	A type of autobiography
Novel	A fiction book
Poverty	The state of being very poor
Progress	Development towards a more advanced time / state
Purpose	The reason why something is made
Sanitation	Hygiene / Cleanliness
Slums	Poor quality housing
Wages	Money earnt from working
Working class	People who work for wages, usually the poorest people in society

Y8 History Knowledge Organiser: The Development of Democracy

1.1 Political power in Britain before 1750

Parliament became increasingly powerful during the Early Modern period, although the franchise was very limited

Magna Carta	*Personal Rule*	*Charles I executed*	*Restoration*	*Bill of Rights*
1215	**1629 - 1640**	**1649**	**1660**	**1689**

Medieval Parliaments

- In 1215, English barons forced **King John** to sign **Magna Carta**
- Later in the 13th Century, the barons set up **Parliament** to give **consent** for new **taxes** and present **petitions** to the monarch
- By the 14th Century, **Parliament** also included the **Commons**: **knights** and **burgesses**
- **Burgesses** were elected, but only by other wealthy and powerful men

The English Civil War

- During the **'personal rule' Charles I** ruled as an **absolute monarch**, claiming he held power by **divine right**
- This led to the **English Civil War** and **Charles' execution** in 1649
- The new government under **Lord Protector Oliver Cromwell** crushed groups like the **Levellers** who wished to broaden the **franchise**
- **Cromwell** ignored **Parliament** and ruled as **'king in all but name'**
- The monarchy was **restored** under **Charles II**

Bill of Rights

- In 1688 **Parliament** invited the Dutch ruler William of Orange to seize the English throne to protect **Protestantism**
- In 1689 **Parliament** introduced a Bill of Rights which stated that:
  - The **monarch** had to obey the law at all times
  - **Parliament's consent** was required for new taxes
- The **franchise** remained limited to **wealthy** men

1.2 The Age of Revolution

Revolutions in America, France, and Haiti increased the pressure for democratic reform

American Revolution	*French Revolution*	*Haitian Revolution*	*Haitian Constitution*
1775	**1789**	**1791**	**1801**

American Revolution

- In 1775, colonists in the **American colonies** rose up against British rule
- The **Declaration of Independence** introduced new ideas of **equality** (*"all men were created equal"*) and **democracy** (*"the consent of the governed"*)

French Revolution

- A **revolution** in France in 1789 led to the execution of the king and a new form of **democratic** government
- The **Declaration of the Rights of Man** laid out ideals of **equality** and **democracy**

Haitian Revolution

- A **slave revolution** in Haiti in 1791 defeated **French** imperial rule
- The 1801 **Haitian Constitution abolished slavery** and expanded the ideas of **equality** and **democracy** to include people of all **races**

1.3 Peterloo

The protests for democratic reform in the early 19th Century - and the brutal response from the authorities - reveals the corrupt and repressive nature of British government

The Peterloo Massacre

- On 16th August 1819, over 60,000 people gathered in St Peter's Field in **Manchester** to protest for **democratic reform** and listen to **radical** speakers such as **Henry Hunt**
- Fearing an **uprising**, the authorities demanded that the crowd leave and the speakers be arrested
- When the crowd linked arms to protect the speakers, the mounted **Manchester Yeomanry** charged
- 18 **protestors** were killed and over 700 injured

Why did so many people join the protest?

- In 1819 only 5% of the adult **population** could vote, excluding all women and huge **industrial** towns such as Manchester
- **'Rotten boroughs'** and **public elections** led to **corruption**
- **Trade unions** were illegal
- These realities clashed with the ideas of the age of **revolution**

Why did the authorities respond brutally?

- The authorities feared a **revolution** similar to the one in France and believed it could only be stopped by **brutal repression**
- The **Manchester Yeomanry** were made up of wealthy local **businessmen** who saw **democratic reform** as a threat to their power

Y8 History Knowledge Organiser: The Development of Democracy

2.1 Chartism and 19th Century Reform

Under pressure from groups such as the Chartists, Parliament passed a series of acts that reformed British democracy

1832

The Great Reform Act

- Abolished the **rotten boroughs** and gave MPs to growing industrial towns like Manchester
- Expanded the **franchise** to include all men with land worth over £10 a year, about 6% of the population

The Chartists

- The **Chartist movement** grew out of anger at the failure of the **Great Reform Act** to give the vote to the working class
- They presented **petitions** to **Parliament** with millions of signatures, demanding their **Six Points:**

1. **Votes for all men**
2. **Elections every year**
3. **Equal representation for all regions**
4. **Secret ballots**
5. **All men can be MPs**
6. **Pay for MPs**

- The Chartists lost power after 1848, yet their influence can be seen in later 19th Century reforms

Parliamentary Reform

1867

The 1867 Reform Act

- Gave more **MPs** to **industrial** areas in the North
- Increased the **electorate** to 15% of the **population** by giving the vote to men who paid £10 or more in rent

1872

The 1872 Ballot Act

- Introduce the **secret ballot**, allowing voters to cast their votes in secret

1884

The 1884 Reform Acts

- Set up a **commission** to ensure **MPs** were elected by an equal number of votes
- Increased the **electorate** to 30% of the population

2.2 Women's Suffrage

Although the franchise had expanded by the end of the 19th Century, women were still excluded from political life

Rights of Women?

- In 1792, **Mary Wollstonecraft** published **A Vindication of the Rights of Women**
- She argued that women were human beings who deserved the same rights as men
- However, 19th Century Britain was a highly **patriarchal** society:
  - Women were legally the property of their husbands and could be physically abused
  - Women were not allowed to own property
  - Even by 1900, women could not vote

Opponents of women's suffrage employed a variety of false arguments

1. ***Separate spheres***: women belonged in the private, **domestic** sphere, not the public male sphere of politics
2. ***Loss of femininity***: entering the world of politics might make women less feminine
3. ***Biology***: women were **hysterical** and wouldn't be able to cope with the pressure of political decisions

Some women still played a significant role in public life

- Women could vote in **local elections** after 1869 and played a role in **local government**
- There were women's **suffrage** societies across the country who held meetings and submitted **petitions** to **Parliament** demanding votes for women
- Women were also active in the **trade union** movement, for example winning improved working conditions during the **1888 Match Girls' Strike**

VOCABULARY

Absolute Monarch	A monarch with complete power
Act	A new law
Authorities	The local / national government
Ballot	A vote
Burgess	The representative of a town / city
Commission	A government agency
Democracy	Government based on the will of all the people
Divine Right	King's authority based on God, not the people
Domestic	Related to the home, including cooking / children
Electorate	The number of people who are allowed to vote
Election	An organised vote for political leaders
Equality	Being treated/seen as the same as other people
Femininity	Stereotypically like a woman
Franchise	The right to vote in elections
Haiti	A French Caribbean colony
Hysterical	Highly emotional / out of control
Local elections	Votes for local councils
MPs	Members of Parliament, elected
Parliament	The elected part of the UK government
Patriarchal	Ruled by men
Petition	A written appeal or request given to Parliament
Public elections	An election where voters have to vote publicly
Reform	A slower and gradual change
Repression	The crushing of protest by force
Revolution	A sudden often violent change
Rotten Borough	A tiny place that still elected MPs
Secret Ballot	An election where voters vote in secret
Suffrage	The right to vote in elections
Trade union	Organisations of workers to protect their rights
Yeomanry	A military unit made up of local businessmen

Y8 History Knowledge Organiser: India and 1857

1.1 The Mughal Empire

From the 16th Century India was ruled by the powerful and wealthy Mughal Empire

- The **Mughal Empire** was founded by **Emperor Babur** in **1526**
- The Empire contained over **150 million** people and controlled **25%** of global wealth

Mughal Emperors used their wealth...

- ...to build a **capital city** at **Delhi**
- ...to built great monuments such as the **Taj Mahal**

In the early 18th Century, the Empire declined as other Indian states began to challenge **Mughal** control.

The Mughal Empire was home to many religions. The largest were:

- **Hinduism**
- **Islam**
- **Sikhism**

Although they were **Muslims**, the Mughal emperors were **tolerant** of other religions.

1.2 The East India Company

By 1857, large parts of India were ruled by a British trading company: the East India Company

Trading Posts

The **East India Company** was set up by British **merchants** in 1600 to trade for **jewels**, **tea**, and **cotton**.

The **East India Company** set up **trading posts** on the coast of **India**.

Sepoys

The **Company** recruited **sepoys** - Indians **mercenaries** - to protect their **trading posts**

The **sepoys** were led by British officers. **Robert Clive** led the **Company's Bengal Army**

Company Rule

In 1757 **Clive** defeated the **Nawab of Bengal** in the **Battle of Plassey**.

This began the period of **Company Rule**: the **East India Company** was not just trading but actually *ruling* large parts of India.

Clive became the **Governor of Bengal**. He added to his income by collecting **taxes** and taking **loot**.

1.3 Causes of rebellion in 1857

The rebellion of 1857 was caused by a combination of long term grievances and a short term trigger

Annexation

- In the 19th Century, the **East India Company** continued to expand its territory
- The Company **annexed** Indian **provinces** such as the **Punjab** (1848) and **Awadh** (1856)

Company Rule

- Many Indians felt that the Company was asking them to pay too much **tax**
- During the **1770 Bengal Famine**, 10 million Indians died. This proved to many Indians that the **East India Company** was more interested in **profit** than ruling India well.
- **Hindus** and **Muslims** were worried that British **missionaries** were trying to stop traditional religious practices, such as **Sati**

Enfield Rifles

- In 1857 the **East India Company's** armies issued the **sepoys** with new **Enfield Rifles**
- To load the new rifles, sepoys had to bite a **cartridge** greased with pig and cow fat
- **Hindu sepoys** considered cows to be holy animals and refused to use the new rifles; **Muslim sepoys** also refused as the **Qu'ran** forbid them from eating pork
- When **East India Company** commanders threatened to punish any **sepoys** who would not use the new rifles, the **sepoys mutinied**

Y8 History Knowledge Organiser: India and 1857

2.1 Events of the rebellion

Although the rebellion began as a sepoy mutiny, it quickly spread to other parts of the Indian population, though some Indians remained loyal

Mutiny at Meerut

- In April 1857, **sepoys** in **Meerut** were arrested for refusing to fire the **Enfield rifle**
- Other sepoys in **Meerut mutinied** and marched towards **Delhi**, the old Mughal capital
- The rebels were joined by Indian **civilians**
- Within a few months, the rebels controlled northern India and chose a **descendent** of the **Mughal emperors** as their leader

India Divided

- During 1857, the **Company** lost control of most of northern and central India
- However, some areas - such as **Madras** - did not experience **mutinies** or **rebellions**
- **Sikhs** from the province of **Punjab** remained **loyal** to the **Company** because they did not trust the mutinous sepoys who were mainly Hindus and Muslims

The Rani of Jhansi

- The **Rani** of **Jhansi**, a **province** in northern India, initially supported the **Company** and fought off attacks by **mutinous sepoys** who wanted to seize her **province**
- However, when British forces tried to seize **Jhansi** for themselves in 1858, she fought for the **independence** of her province before being killed in battle

End of the Rebellion

- By 1858, fresh soldiers arriving from **Britain** and **Punjabi Sikhs** had crushed the rebels
- The British **executed** anyone who they suspected of supporting the rebellion
- After the rebellion, the British government ended **Company Rule** and ran **India** itself

2.2 Interpreting 1857

In the years after 1857, people in Britain and India gave different names to the events of 1857

	THE SEPOY MUTINY	INDIAN WAR OF INDEPENDENCE
What did this name suggest?	British historians in the 19th Century called the rebellion **the sepoy mutiny** to suggest that only a small number of sepoys had rebelled	The Indian **nationalist** leader **Veer Savarkar** called the rebellion an **Indian War of Independence** to suggest that the rebels wanted freedom from British rule
Why did historians use this name?	• After 1858, India was ruled directly from London during the **British Raj** • Queen Victoria was named **Empress** and 1,000 British **civil servants** ruled over 200 million Indians • British historians suggested that the **rebellion** was just a minor disagreement with a small number of sepoys to **justify** continued British rule in India	• In the early 20th Century, a **nationalist** movement began to protest for Indian **independence** • From 1915, **Gandhi** led **peaceful protests** against the **British Raj** • **Nationalists** such as **Savarkar** suggested that 1857 was a war of independence because they wanted to **inspire** Indians to rebel against Britain again

VOCABULARY

Annex	To add (a territory to an empire)
Annexation	The process of adding a territory to an empire
British Raj	The period of direct British rule of India from 1858 to 1947
Cartridge	A gunpowder container
Civilian	A person not in the army
Company Rule	The period of the East India Company ruling parts of India from 1757 to 1857
Famine	A period of hunger and starvation caused by a lack of food
Independence	Being free from an empire
Inspire	Make someone want to do something
Justify	Make something seem right or reasonable
Mercenaries	Soldiers who fight for money
Missionaries	European Christians who tried to convert people to Christianity
Mutiny	A rebellion by soldiers or sailors against their commanders
Mutinous	An adjective describing soldiers or sailors who had rebelled against their commanders
Nationalist	Someone who supports the independence of a colony from an empire
Peaceful protest	A protest that uses non-violent methods
Punjab	A province in northwest India
Province	An area of India
Rani	A Hindu queen
Sati	Traditional Hindu practice of burning a widow with her dead husband
Sepoy	An India soldier who was paid to fight for the East India Company
Tolerant	Being happy to allow religious beliefs different to your own
Trading Post	A coastal settlement to allow ships to land to import and export goods

Year 8 – is the geography of Russia a curse or a benefit?

KPI1: Key Words

1. **Abiotic:** Non-living
2. **Adaptation:** the process of change by which an animal becomes better suited to its environment.
3. **Abundance**: a lot of
4. **Arctic circle**: One of the two polar circles, and the most northerly of the five major circles of latitude as shown on maps of Earth
5. **Biomes**: a large naturally occurring community of flora (plants) and fauna (animals) occupying (living in) a major habitat
6. **Biotic:** Living
7. **Choropleth map**: a map that presents data using shading or colours
8. **Climate Graph**: A graph that presents data on the temperature and rainfall for a particular area throughout the year.
9. **Coniferous woodland**: Trees that produce cones, and have leaves that do not fall off in the winter.
10. **Continental climate**: A climate that has hot summers, cold winters, and little rainfall, typical of the interior (inside) of a continent.
11. **Deciduous woodland**: Trees that lose their leaves during winter.
12. **Densely populated**: a lot of people per km2
13. **Ecosystem:** An environment containing a community of interdependent plants and animals (plants and animals that rely on each other).
14. **Environmental pressure groups**: groups of people who share a common interest and try to influence the decisions made by businesses, organisations or governments
15. **Exclusive economic zone**: an area of coastal water and seabed within a certain distance of a country's coastline, to which the country claims exclusive rights for fishing, drilling, and other economic activities.
16. **Exports:** Goods sent to other countries.
17. **Indigenous**: Originating in a place
18. **Migration**: Movement of people
19. **Peninsular**: a piece of land almost surrounded by water or projecting (sticking out) into a body of water.
20. **Permafrost**: a thick subsurface layer of soil (a layer of soil just below the surface) that remains below freezing point throughout the year
21. **Plain**: a landmass (area) that is flat or gently rolling and covers many km
22. **Population density**: the number of individuals divided by the size of the area.
23. **Precipitation**: rainfall
24. Raw Materials: the basic material from which a product is made.
25. **Resource**: a stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively.
26. **Self-sufficient**: needing no outside help
27. **Sparsely populated**: Very few people live in an area

KPI2: What is an ecosystem?

An **ecosystem** is 'an environment containing a community of interdependent plants and animals'.

It is made up of 2 parts: Living (**biotic**) factors and Non-living (**abiotic**) factors

An **ecosystem** is made up of different parts including...

- A food chain shows which what eats what or the transfer of energy between different organisms.
- A producer is a plant that gets its energy from the sun.
- A primary consumer is an organism that eats the producer.
- A secondary consumer is an organism that eats the primary consumer.
- A decomposer is an organism that eats dead or decaying matter and returns nutrients back to the soil.
- A food web is shows all the connections in an ecosystem.

KPI3: Where is Russia located?

In the continents of Asia and Europe. Surrounded by 14 countries including Mongolia, Kazakhstan, Ukraine, Belarus, Finland. It is surrounded by the Arctic Ocean and the Pacific Ocean.

KPI4: What is the climate of Russia?

Most of Russia experiences a **continental climate** – characterised by two main seasons: long dark cold winters with brief, often warm summers. **Precipitation** is low throughout the years.

Climate Graphs

Climate can be displayed *(shown)* on a graph. A climate graph contains two pieces of information, the **precipitation** and the temperature of an area. The temperature is shown as a line, and the rain is displayed as bars. The figures are usually calculated as an average over a number of years.

KPI5: What biomes exist in Russia?

Most of Russia is dominated by the taiga and tundra **biome**.

*Taiga **Biome**:*

- Characterised by **coniferous** forests – consists mainly of pines, spruces and larches.
- Largest biome in Russia.
- Contains more than 55% of the world's conifers.

Adaptations in the taiga biome

- Evergreen, no need to renew leaves during the short growing season
- Thick resinous *(contains resin)* bark acts as protection against the cold winds
- Cones protect seeds in winter loss
- Long shallow roots for anchorage *(a means of securing)* against strong winds
- Trees have long thin needles which reduce moisture loss

Tundra biome:

- Coldest of all the **biomes**.
- The Siberian tundra is located in the north-eastern part of Russia between 60° to 80° North latitude and 70° to 80° East longitude.
- Winters are long and summers are short.
- Soils form very slowly in these cold conditions – much is frozen as **permafrost**

***Adaptations** in the tundra biome:*

- Plants of the Siberian tundra grow low to the ground to be protected from the wind and the cold.
- Plants group together to keep warm.
- Plant roots spread out on the surface to take in water.
- They don't grow deep roots because the soil is always freezing and thawing *(melting)* which would break up the roots

Year 8 – is the geography of Russia a curse or a benefit?

KPI6: How have animals adapted to cold environments?

Adaptation: the process of change by which an animal becomes better suited to its environment.

Polar Bear has adapted by:

- A white appearance - as camouflage from prey on the snow and ice
- Thick layers of fat and fur - for insulation *(warmth)* against the cold
- Large feet - to distribute *(spread)* their load and increase grip on the ice
- A greasy coat that sheds water after swimming - to help reduce heat loss
- A small surface area to volume ratio - to minimise heat loss

Arctic Hares have adapted by:

- Arctic hares have a very keen sense of smell that allows them to find food hidden beneath the snow and detect predators before they strike.
- It's ability to dig holes beneath the snow to escape the cold wind
- During winter, the coats are snow white and provide excellent camouflage, but towards spring, the color changes to blue-gray to match vegetation and local rocks.
- The paws of the Arctic hare are padded with the fur to help the animal spread weight while walking on snow and provide insulation from icy surfaces.
- The broad paw also provides a better grip on slippery surfaces, especially when running from predators

KPI7: Where do people live in Russia?

Russia is the largest country in the world by area *(size)*, but it is ranked 9th largest worldwide for population.

*How to calculate **population density**:*

Population density is calculated like this:

$$\frac{\text{Total population}}{\text{Area}}$$

The total population of Russia is 144,000,000 people. The area is 17,098,246km²

$$\frac{144{,}000{,}000}{17{,}098{,}246} = 8.4 \text{ people per km}^2$$

So in each km² in Russia there are 8.4 people.

Places that are crowded are called **densely populated** areas. Places that only have a few people living there are **sparsely populated** areas.

*Reasons for **population density**:*

A place is **densely populated** if:

- Rich soils for farming
- Good communication options such as ports
- Temperate weather conditions

A place is **sparsely populated** if

- There are difficult landscapes such as mountains or deserts
- Harsh climates
- Risk of floods or earthquakes

77% of Russia's population live in the European part of the country, west of the Ural Mountains.

KPI8: How have humans adapted to cold environments?

Humans have **adapted** to the following conditions by:

Extreme temperatures:

- People dress warmly and this can make outdoor work very slow and difficult.
- Steep roofs – to stop snow from gathering on the roof and risk collapsing in on the house.
- Triple glazing – to ensure heat is not lost through the windows
- Fuel supply – it is important to keep the houses warm in the extremely low temperatures and make sure you have a supply of fuel in case your house is cut off
- Stilts – to stop your house from flooding when the now melts in the summer
- Small windows – these would reduce heat loss
- Overground pipes to prevent them from thawing the permafrost and allow easy maintenance.

KPI5: Does the geography help or hinder the Russian economy?

The geography of Russia helps the economy because:

- Russia has an **abundance** of natural **resources**.
- It provides 20% of the world's natural gas and is the world's leading producer of oil.
- Russia is **self-sufficient** in all major industrial raw materials and contains the 8th largest crude oil reserves
- Russia **exports** steel and aluminium
- 20% of the world's forests lie in Russia, supply the world's timber.

The geography of Russia hinders the economy because:

- It is a vast *(big)* country so transport across the country is a problem (much of the natural resources are in Siberia and the north)
- Many of the roads are in poor condition because of the constant maintenance needed due to damage from the extreme cold (-35°C)
- Russia depends on railways including the world longest railway line, but this railways line does not extend to the north where many of the **resources** are.

KPI7: Why did Russia plant their flag on the seabed of the North Pole?

In 2007, Russian explorers carried out scientific research on the ocean floor near the North Pole. Two submarines planted a metre-high titanium Russia flag to claim this land as their own.

What is the Arctic like?

The Arctic is a region surrounding the North Pole that consists of the Arctic Ocean, surrounded by land.

Who owns the Arctic?

International law states that Arctic countries are allowed an **exclusive economic zone (EEZ)** of 200 miles bordering their coastline. Countries can apply to the United Nations to extend this zone and 'own' the land but they must have geological data to support the claim that this area of land is part of their continental shelf. If successful, then that country can control all the resources on or under the region of the continental shelf.

What is the environmental impact?

Environmental groups such as Greenpeace are concerned about the potential economic damage these economic developments will have on the environment. For example, Arctic oil drilling is high risk. Russia produces 12% of the world's oil but is responsible for 50% of the world's oil spills.

What is the impact for local people?

The **indigenous** population of the Arctic (the Nenets) live in the Yamal **Peninsular**. The Nenets have always moved seasonally with the reindeer but now their **migration** routes are affected by oil and gas pipelines.

Year 8 – Topic 4 - Year 8 Geography – Where do people live?

KPI1: Key words:

- **Population distribution:** The pattern of where people live
- **Population density:** The number of people to live in an area per km2
- **CBD:** Central business district where shops, offices and historic buildings are located at the centre of the city.
- **Migration:** movement of people from one place to another
- **Natural increase:** the difference between the number of births and the number of deaths recorded over a period
- **Deindustrialisation:** the reduction of industrial activity or capacity in a region or economy.
- **Urban Sprawl:** the rapid expansion of the geographic extent of cities and towns
- **Counter urbanisation:** when large numbers of people move from urban areas into surrounding countryside or rural areas
- **Favela:** a Brazilian shack or shanty town; a slum.
- **Push Factor:** force people to move from a place e.g., famine
- **Pull Factor:** encourage people to move to a place e.g., jobs
- **Rural Urban Fringe:** the area at the very edge of the city beside the countryside
- **Mega City:** an urban area with a total; population of over 10 million
- **Sustainable:** the practice of using natural resources responsibly, so they can support both present and future generations
- **Urban Greening:** means to increase the amount and proportion of green spaces within a city.
- **Regeneration:** Is the attempt to reverse that decline by both improving the physical structure, and, more importantly and elusively, the economy of those areas.
- **Brownfield sites** previously developed land, which is or was occupied by a permanent structure.
- **Greenfield site** - a site located in a rural area which has not previously been built on.
- **Green belt** - land is heavily protected land circling an urban area, aiming to protect the surrounding countryside from development
- **Suburbanisation** - The movement of people from inner cities to the suburbs

KPI1 – What influences population distribution?

Rural: A rural area is an open swath *(area)* of land that has few homes or other buildings, and not very many people. A rural area's population density is very low.
Urban: An urban area is **the region surrounding a city** with many homes. An urban area's population density is very high.

Working out **population density**:

$$\frac{\textit{The number of individuals}}{\textit{size of the area}}$$

When an area has a low population density, we say it is **sparsely populated** . When an area has a high population density, we say it is **densely populated**

Factors that influence population density?

- **Availability of freshwater.**
- **Communications** *(roads, railways, airports).*
- **Proximity** *(closeness)* **to the coastline.**
- **Cities and their opportunities.**
- **The relief** *(shape)* **of the land.**

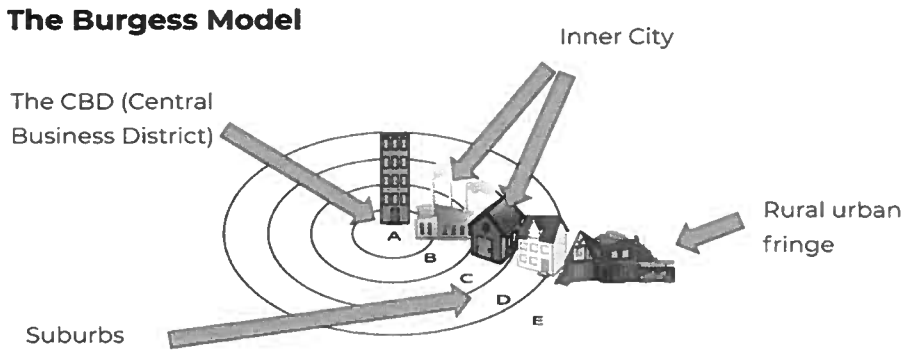
KPI 2 Do cities in the UK have a common structure?

Geographers create models to show how land is 'typically' used.

The Burgess Model shows that in cities the most expensive land is in the centre and then as land use changes to the outskirts of the city is becomes less dense.

Location of cities in the past has been impacted by; natural resources, dry point sites, defensive sites, bridging points

UK cities have a variety of land uses geographers can use RICEPOTS to investigate land use. (Residential, Industrial, Commercial, Entertainment, Public Buildings, Open Space, Transport, Services).



KPI 3 What are the opportunities associated with living in urban areas?

Example: Gloucester **-** Located in the west of England lies on the River Severn. Near the Cotswold Hills and the Forest of Dean.

Why did Gloucester develop?

- Gloucester has access to a major transport network – including motorways, trains and a quay.
- Gloucester has access to the River Severn which allows it to trade with cities in the Midlands and access the ocean.
- Gloucester is close to other important cities such as Bristol and Cheltenham.

Positives of living in Gloucester	Negatives of Living in Gloucester
• Road network - The M5 sits to the east of the city and provides good links to Birmingham and the Midlands north and Bristol, Devon and Cornwall to the south. • Access to the River Severn - Developed due to the dock, it has the most inland port in the UK with a strong industrial past.	• Overcrowding - Gloucestershire is a small piece of land with a relatively higher population. • Getting a good job in the region of Gloucestershire can be a little difficult. The information that there are very few good companies and factories in the region has reduced the possibility of getting a good job.

Year 8 – Topic 4 - Year 8 Geography – Where do people live?

KPI 4 - What is deindustrialisation and how has it had an impact on cities in the UK?

There are 4 employment sectors primary, secondary, tertiary and quaternary. The secondary sector involves manufacturing and was traditionally located in the inner city.

Key definitions:

- **Primary:** involves the production or extraction of raw materials and includes forestry, farming, fishing and mining.
- **Secondary:** is the manufacturing of goods.
- **Tertiary:** involves providing services to people, for example a cleaner or a doctor.
- **Quaternary:** the newest sector and focuses on knowledge-based industries or high-tech industries such as ICT (information and communication technologies) and research and development.

Deindustrialisation is the reduction of manufacturing within an economy. It can lead to parts of cities becoming run down as factories and warehouses close leading to dereliction, known as brownfield sites. Gloucester Docks is an example of an area that was a **brownfield site** following de-industrialisation.

Many brownfield sites have undergone **regeneration** Gloucester Quays is an example of this, buildings have been restored, new businesses have developed including new shops and restaurants. The benefits of this regeneration project include:

- A combination of new build and the repair/refurbishment of many historic warehouses, typically for apartments with active commercial uses on the ground floor, have given new life to the docks.
- Peel Outlets will invest £100 million in the Gloucester Quays over the next three years.
- Full or canal barges, tall ships and pleasure craft, the docks have been excellently developed. Plenty of shops, cafes and restaurants.
- The Gloucester Quays scheme also covers around 25 hectares of brownfield land, where Gloucestershire College, Sainsbury's, Travelodge, a cinema and several restaurants are now located.

KPI 5 What is urban sprawl and what are the impacts of it?

Urban sprawl is **the uncontrolled growth of towns and cities, encroaching on rural surroundings**. Land is cheaper in rural areas therefore the city expands allowing more space for population growth. However, once the land is built on, it is unlikely to be turned back to the countryside. Valuable farmland may be lost. Natural habitats may be destroyed.

Houses can be built on two areas – greenfield and brownfield sites.

KPI 6 Why is counter-urbanization taking place in the UK?

Reasons for increasing urban population can be sorted into two categories:

1. **Push Factor** is something which is negative about the place you are in that would force you to move away
2. **Pull Factor** is something positive about a place that may make you want to move there

Examples of push and pull factors include:

- Location
- Crime rates
- House prices
- Traffic
- Pollution levels

Counter Urbanisation is taking place in HICs because:

1. Developed communication network (IT, telephones)
2. Established transport links
3. A range of amenities (coffee shops, gyms, retail)

Counter-urbanisation can lead to impacts such as:

- Improvements are made to key services such as water and gas pipes
- Loss of character
- Potential increase in investment for local businesses
- Rising house prices force locals out of the area

KPI 7 How can we make cities more sustainable?

Gloucester is aiming to become a more **sustainable** city by:

- Increasing the amount of trees
- Creating new habitats
- Encouraging use of cycle paths and public transport

KPI 8 – How are cities different in NEE countries?

Mega cities are those that have populations over 10 million people. Most megacities are located in Asia. Urban growth in these cities is due to **natural increase** more births than deaths and **migration** where people are leaving rural areas to move to urban areas.

Rio de Janeiro is a large city of 13.5 million people situated on the south east coast of Brazil in South America.

KPI 8 – What are the challenges in favelas?

- Many homes use illegal connections to get electricity
- High unemployment rates of 20%
- Average income is £75 a week
- There is a lack of healthcare and public spaces
- Its difficult to dispose of waste and it builds up on the streets
- The army have been called in to crack down on crime.

KPI 9 – How are favelas being improved?

- A pacifying police unit is set up to reduce crime
- Cable cars help people get jobs in the city
- Loans to allow people to improve their homes
- Training to help people learn new skills
- Services to help people affected by drug addiction, alcohol, addiction and domestic violence
- Adult education centres to improve adult literacy
- Widening and paving streets to allow for easier access
- Residents can apply to legally own properties

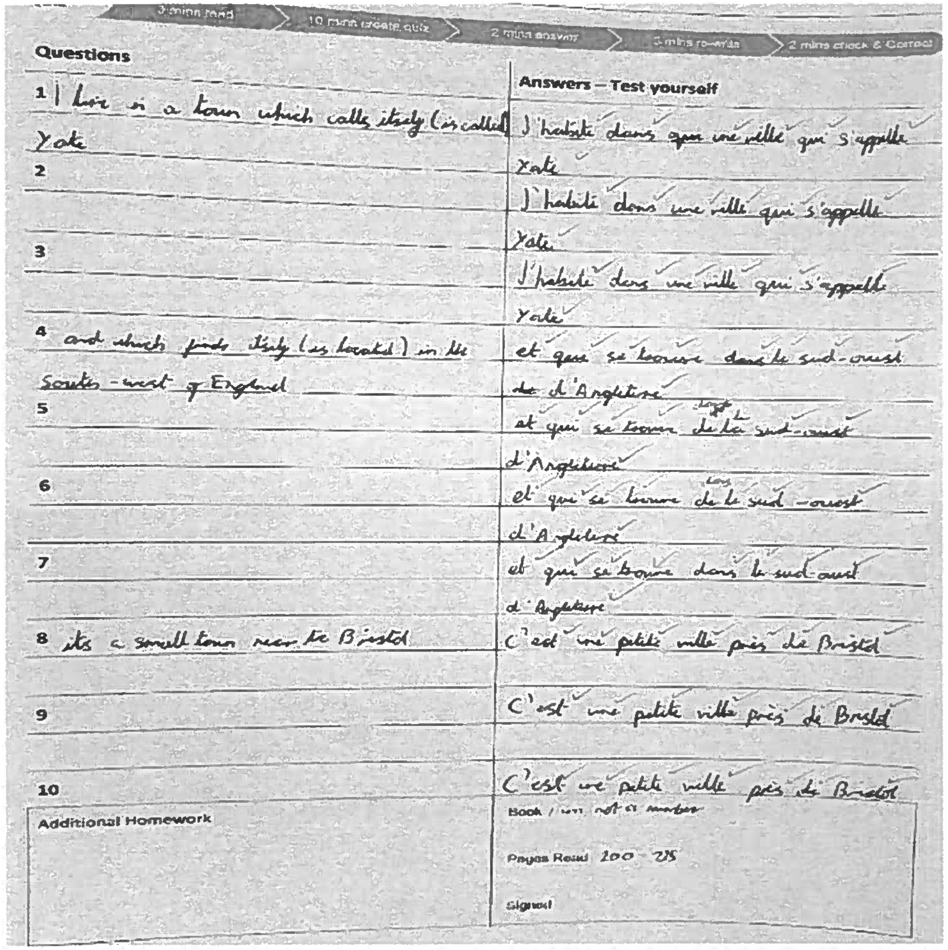
Year 8 Term 2 – Voyages et vacances

1	Usually I go on holiday	D'habitude je vais en vacances
2	in Nice in France with my family.	à Nice en France avec ma famille.
3	I travel by car because	Je voyage en voiture parce que
4	it's not far and I have fear (I'm scared) of flying (to fly).	ce n'est pas loin et j'ai peur de voler.
5	I stay in a hotel	Je reste dans un hôtel
6	which finds itself (is located) near to the beach.	qui se trouve près de la plage.
7	Every day I go to the seaside	Tous les jours je vais au bord de la mer
8	and I do windsurfing.	et je fais de la planche à voile
9	But last year I went	Mais l'année dernière je suis allé(e)
10	to Italy with my school.	en Italie avec mon collège.
11	I travelled by coach, because it is cheaper!	J'ai voyagé en car parce que c'est moins cher!
12	I stayed in a campsite	Je suis resté(e) dans un camping
13	it was very uncomfortable but nice!	c'était très inconfortable mais sympa!
14	I did canoeing/kayaking in a lake	J'ai fait du canoë-kayak dans un lac
15	and I did rock climbing in the mountains.	et j'ai fait de l'escalade à la montagne.
16	In the future I would like to go to the USA	À l'avenir je voudrais aller aux États-Unis
17	(in order) to visit New-York, and (in order) to appreciate the culture	pour visiter New-York, et pour apprécier la culture
18	Furthermore, I have always dreamed of going to Australia	En plus, j'ai toujours rêvé d'aller en Australie
19	and if I were rich I would travel around the world.	et si j'étais riche je voyagerais autour du monde.
20	In December, if it snows, I'm going to go to Switzerland	En décembre, s'il neige, je vais aller en Suisse

MFL key classroom language:

Key Word	Definition	Example
Infinitive	In English it is always accompanied by the word **"TO"**. In French, it always ends in **ER/IR/RE** E.g: **to** play, **to** do, **to** go, **to** go out. jouer / faire / sortir	An opinion is always followed by an infinitive: <u>J'aime</u> jouer/ faire/ acheter <u>I like</u> **to play/to do/to buy**
Cognate	A word that is similar in spelling and meaning in two languages	This word is a cognate, what do you think it means? e.g. télé-réalité = TV reality
Connectives	A word that links two sentences or ideas together, e.g. et / cependant	What connective can we use to link these two sentences ? • j'aime l'histoire **(mais)** je déteste l'anglais • I like history **but** I hate English
Intensifiers	A word that strengthens the meaning of other expressions and shows emphasis, e.g. très/assez	Every time you write an adjective, make sure you use an intensifier before it. • je pense que le sport est très important • I think that sport is very important

Example of a French/Spanish LSQ:



Year 8 Spanish Module 2 – Viajes y vacaciones

1	Usually I go on holiday	Generalmente voy de vacaciones
2	to France with my family.	a Francia con mi familia.
3	We travel by car because	Viajamos en coche porque
4	it's more comfortable than by plane.	Es más cómodo que en avión.
5	We stay in a hotel	Nos alojamos en un hotel
6	which is located near to the beach.	que está situado cerca de la playa.
7	Every day I go to the coast.	Todos los días voy a la costa.
8	But last year I went	Pero el año pasado fui
9	to Italy with my school.	a Italia con mi colegio.
10	We travelled by coach	Viajamos en autocar
11	and the journey was too long.	y el viaje fue demasiado largo
12	We stayed in a campsite	Nos alojamos en un camping
13	far from the centre.	lejos del centro.
14	Every day I did swimming.	Todos los días hice natación.

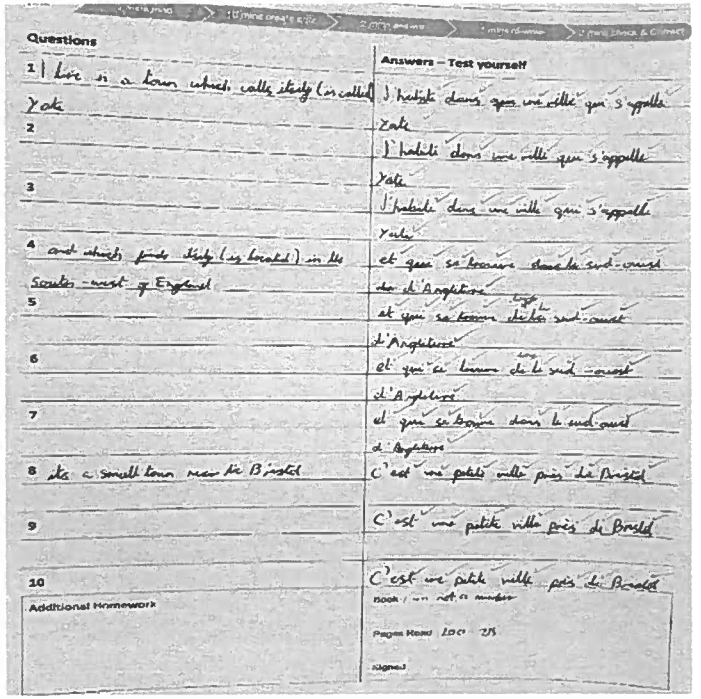
Year 8 Spanish Module 2 – Viajes y vacaciones

15	In the future I would like to go to the USA	En el futuro me gustaría ir a Los Estados Unidos
16	(in order) to visit the monuments.	para visitar los monumentos.
17	I have always dreamed of going to Australia	Siempre he soñado con ir a Australia
18	and if I were rich I would travel to Mexico.	y si fuera rico viajaría a México.
19	In December, if it snows,	En diciembre, si nieva,
20	I'm going to go to Switzerland.	voy a ir a Suiza.

MFL key classroom language:

Key Word	Student-friendly definition	Example
Infinitive	In English it is always accompanied by the word **"TO"**. In Spanish, it always finishes in **"R" (-ar/-er/-ir)** E.g: **to** play, **to** do, **to** go, **to** visit. jugar/ hacer / ir / visitar	An opinion is always followed by an infinitive: Me gusta jugar/ hacer/ comprar I like **to play/to do/to buy** After suelo/solía, you always need an infinitive: suelo ver /jugar/descansar I tend **to watch/to play/to rest**
Cognate	A word that is similar in spelling and meaning in two languages,	This word is a cognate, what do you think it means? e.g. ciclismo = cycling
Connectives	A word that links two sentences or ideas together, e.g. y/por otro lado	What connective can we use to link these two sentences ? • Me gusta la historia **(pero)** odio el ingles • I like history **but** I hate English
Intensifiers	A word that strengthens the meaning of other expressions and shows emphasis, e.g. muy/bastante	Every time you write an adjective, make sure you use an intensifier before it. • Creo que las ciencias son **muy** interesantes • I think science is **very** interesting

Example of a French/Spanish LSQ:



RE Year 8 Term 3-4 Special journeys

Tourist	a person who is visiting a place for pleasure of interest
Pilgrim	a person who journeys to a sacred place for religious reasons
Pilgrimage	a journey to a place regarded as holy for a believer
Rites of passage	a ceremony or event marking an important stage in someone's life
Lourdes	pilgrimage site of Lourdes is near the Pyrenees mountains in France
Miracle	extraordinary event that breaks the laws of nature
Varanasi	it is located on the left bank of the Ganges (Ganga) River and is one of the seven sacred cities of Hinduism

KPI1 - To explain the difference between a tourist and a pilgrim

When theists (religious believers) go on pilgrimage they travel somewhere that is special to their faith. It might be to places written about in the sacred writings. It may be a place where a miracle once happened or a saint is buried. Often the journey itself matters as much as being at the special place, because it gives the 'pilgrim' – the person on the journey – time to pray and think.

People have always gone on pilgrimage for many reasons – perhaps to say sorry to God for something they had done wrong (penance), or because they were ill looking for an answer to a problem or difficulty.

KPI 2 : To describe a variety of religious pilgrimages

Bethlehem is situated approximately five and a half miles west of Jerusalem. It is the place where Christians believe **Jesus** was born. The most important site in Bethlehem is the Church of the Nativity in Manger Square, which was built in the fourth century. Christian pilgrims travel to Bethlehem, particularly at Christmas time to attend services in the Church of the **Nativity**. Some pilgrims kiss the star representing the birthplace of Christ to show their devotion.

Varanasi is an ancient city on the banks of the River Ganges in Uttar Pradesh, Northern India. It is one of the most sacred sites in India because it is believed to have been the home of **Lord Shiva**. Millions of pilgrims visit Varanasi in order to **purify** (cleanse) themselves by bathing in the River Ganges at sunrise.

Jerusalem remains an important place of pilgrimage for Jewish people. Until the destruction of the Second Temple in 70 CE and the Roman occupation of the city after the Bar Kokhba revolt, it used to be a duty for Jewish people to visit Jerusalem three times every year, to coincide with three major **Jewish festivals - Pesach, Shavuot and Sukkot.**

KPI 3- To analyse whether miracles take place during Lourdes

Lourdes is considered a special place to visit because prayers and services are believed to bring real **blessings** to the pilgrim.

Pilgrims may visit to be cleansed of their sins and to be **cured** of their illnesses. It is believed that spring water from the grotto can heal people if they are sick. Millions of visitors come to Lourdes each year in the hope of being cured.

The International Medical Committee of Lourdes began in 1947 and passes judgement on whether or not any of the healings that take place in Lourdes are **miracles**. By 2015, 69 cases had been recognised as miracles by the Roman Catholic Church.

The opportunity to focus closely on their faith helps pilgrims feel secure in the knowledge that God will look after them, forgive them for their sins and even cure them of their illnesses.

Miracles still happen today

Agree	Disagree
People have been written off by doctors who say that they only have a certain length of time to live. Yet some of these people have made a full recovery.	For a lot of so-called miracles of Jesus there is a logical or scientific explanation. For example, the boy with the evil spirit maybe had epilepsy and Jairus' daughter was probably in a diabetic coma.
There have been 69 cases in Lourdes where science and medicine cannot explain why the person has made a full recovery.	People rely on doctors and medical treatments because they know they can cure them. It's a waste of money going to a site of a miracle because they just don't happen.
These people have been healed because of their faith in the miraculous water of Lourdes.	People today do not place any importance on religion anymore so they don't have faith or pray, therefore miracles can't happen.
Jesus performed miracles to people in the past who had faith and prayed. This shows that miracles do exist.	

RE Year 8 Term 3-4 Special journeys

Hajj	Fifth pillar of Islam, performed at least once in the life time
Mecca	Muslim holy city in Mecca/Makkah
Ka'bah	The house of Allah
Ihram	State of purity before Hajj- the sacred state in which Muslims carry out the required rituals (actions) to complete Hajj
Tawaf	Is one of the principal rites of the pilgrimage and refers to circumambulating or walking in circles around the Kaaba in an anti-clockwise motion
Mount of Mercy	Mount Arafat is a granite hill east of Mecca in the plain of Arafat
Jamarat	Three stone walls, formerly pillars, which are pelted as a compulsory ritual of Hajj
Eid- Ul- Adah	Feast of sacrifice
Ummah	Islamic community

KPI 4: To explain why Hajj is a significant event for Muslims

Duty – the Hajj is the fifth of the Five Pillars of Islam and is an obligation (action) for all Muslims, at least once in their lives. Once they have completed the Hajj, a Muslim man may call himself a **Hajji** and a woman can call herself a **Hajjah.** Following in the footsteps of the Prophet Muhammad .

Five Pillars of Islam - Hajj is the fifth of the Five Pillars of Islam. As such it reflects a Muslim's devotion, loyalty and belief and therefore helps him or her to grow spiritually.
Key belief – the pilgrimage to Makkah reminds Muslims of their key belief in the equality of all humankind before Allah, because each person takes part on exactly the same basis. **Muslim will dress in white – Ihram when beginning Hajj.**

Spirituality - the Hajj prompts Muslims to reflect and think on their own lives. Modern lifestyles are hectic, but the Hajj gives Muslims the opportunity to switch off from work and trivial issues. It also allows Muslims to reconnect with what is really important and focus on spiritual matters.

KPI5 - To describe the rituals performed during Hajj.

- The pilgrimage to Makkah is called Hajj and is the fifth Pillar of Islam. Muslims try to go to Makkah during Dhu al-Hijjah, the twelfth month of the Islamic calendar.
- **Ihram** relates to the state of purity and equality before God (Allah) which Muslims enter before going on Hajj. To symbolise this state, male pilgrims wear two lengths of white cloth whilst on Hajj.
- On the first day of the Hajj, pilgrims walk around the **Ka'bah** seven times in an anti-clockwise direction
- Pilgrims next run between the hills of Safa and Marwah seven times. This is to represent the search of Hagar, Ibrahim's wife, for water for her son Ismail.
- Pilgrims travel from Makkah to **Mina** to spend the first night of the Hajj. The next morning they travel on to the plain of **Arafat**, where they stand on or near the **Mount of Mercy from** noon until dusk, praising Allah.
- Pilgrims spend the second night at Muzdalifah, where they collect small stones to use on the third day when they return to Mina. They throw these stones at three pillars called **Jamarat**, which represent the Devil.
- At the end of the pilgrimage, Muslims celebrate the festival of **Eid ul-Adha.**

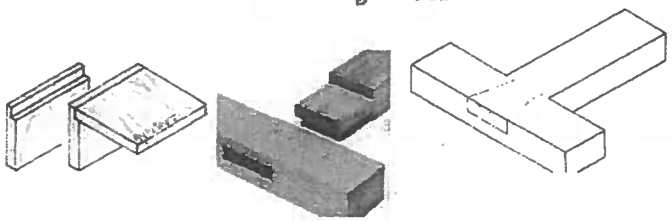
Design & Technology
Year 8

1: Joining Methods

Wood joints can be either permanent of temporary depending on the type and if glue is used.

Permanent:	Temporary:
When we do not want to take the pieces apart again	When we will, or might need to take pieces apart again
Glues, welding, rivets	Screws, bolts, nails

1.1Wood joints



Lap Joint | Mortise + Tennon Joint | Dovetail Joint

2. Scales of Production

<u>One off</u>: when you make a unique item
<u>Batch</u>: when you make a few/set amount
<u>Mass</u>: when you make thousands
<u>Continuous</u>: open ended production

3. Adhesives

<u>P.V.A.</u> – Poly Vinyl Acetate – best for joining 2 pieces of wood together
<u>Epoxy</u> – a *thermosetting* resin that can be used to bond most types of material
<u>Contact Adhesive</u> – a glue type that creates a tacky bond on both surfaces to be joined. It can be used with most materials.

4: Materials

4.1 Woods:	
Hardwoods:	Softwoods:
Beech Oak Ash	**Scots Pine** Cedar Spruce

4.2 Engineered Boards
Engineered boards are manmade materials usually made by mixing wood chips and glues to make wooden sheets.
Examples: Medium Density Fibreboard (MDF) Chipboard, Plywood and **Hardboard**

4.3 Plastics	
Plastics are made of polymers, and are mostly refined from oil. There are 2 main categories:	
Thermoplastics	Thermosetting plastics
Acrylic **Polypropylene (PP)** **High Impact Polystyrene (HIPS)**	Urea Formaldehyde Melamine Formaldehyde Epoxy Resin

4.4 Metals	
Metals are hard and usually shiny, containing one or more elements dug and refined from the ground	
Ferrous metals are any metal that contains iron and will rust	Non-Ferrous metals do not contain iron and will not rust
Alloys are metals made from a mix of 2 metals – brass is made of copper and zinc.	

***Composite** materials* are a mix of 2 different types of material to get the best qualities from each – eg: GRP (Glass Reinforced Plastic)

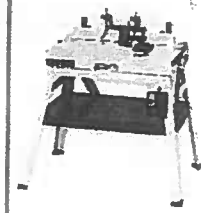
5: TOOLS


Try square


Bench Hook


Vice


PVA Glue


Router Table


Mallet


Chisel


Laser Cutter


Tenon Saw

6: Surface Finishes

Finishing is usually one of the last stages of making a project. It will usually involve sanding and applying a surface coating to **protect** your material and **improve its visual appearance.**

<u>Some examples:</u>
Paint, Stain, Varnish, Oil, **Danish Oil**, Wax, Polish & Dip Coating.

7: KEY WORD FOCUS

You should be able to explain the meaning of each of these words by the end of this rotation.

CAD	Computer Aided Design
CAM	Computer Aided Manufacture
CNC	Computer Numerical Control

Year 8 - Food Technology

Prevention of Bacteria Growth and Cross Contamination

4 C's	Chill – foods to be kept in the fridge: dairy, protein, high risk foods / Cook – cook foods properly / Cross Contamination / Clean
Food Temperature Control:	Temperature control is especially important when you buy, store, prepare and cook food. Food correctly stored will minimise the risk of food spoilage and food poisoning. Food poisoning can be caused by high-risk foods when they are stored in warm conditions for too long. Controlling the temperature of food will help keep your food safe until it is ready to be eaten. Bacteria growth danger zone 5-63 degrees C. Most bacteria dead at 75 degrees C. All dead at 100 degrees C. Fridge temperature 0-5 degrees C
Sources of Cross Contamination:	Human: Hair, nose, cuts, wounds, ears, throat, clothing, jewellery, dirty hands (bacteria) after touching raw meat/going to the bathroom. Other: Pets, Dirt, Birds, Vermin (mice/rats), Insects, bacteria from raw meat and seafood.
Bacteria needs:	Heat, Moisture, Time and Food to grow/survive.
Chopping Boards	Chopping boards: Red = raw meat, Blue = raw fish, Brown/Green = fruit and vegetables, Yellow = Cooked meat/fish, White = Dairy

Eatwell Guide Key Messages

Eatwell Guide / Use the Eatwell Guide to help you get a balance of healthier and more sustainable food.	**Carbohydrates**: Starchy foods such as, rice, pasta, potatoes, bread, porridge, couscous – Choose wholegrain or higher fibre versions with less added fat, salt, and sugar. **Fruits and Vegetables**: Fresh, frozen, dried, canned – Eat at least 5 portions of a variety of fruit and vegetables every day. Fruits and vegetables contain vitamins and minerals **Protein**: Chicken/poultry, fish – fresh and canned (tuna), meat, eggs, chickpeas, lentils, beans. Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat. The body uses protein to build and repair muscles. Protein contains amino acids. **Dairy and Alternatives**: Milk, yoghurt, cream, cheese, alternative milks: almond, rice, coconut, hazelnut, soya. Choose lower fat and lower sugar options. These foods contain calcium which is needed in the body for strong bone growth. **Fats**: Choose unsaturated oils not saturated oils and use in small amounts – sunflower, olive, rapeseed. Saturated oils come from animal meat and animal products such as butter. Too much of this type of oil can clog the body's arteries and lead to weight gain, high blood pressure and heart disease. Fats are higher in calories than protein and carbohydrates. Sugary foods/crisps/ketchup – eat less free sugars often and in small amounts. **6-8 cups of water:** lower fat milk, sugar-free drinks including tea and coffee all count.

Macronutrients and Micronutrients

Macronutrients are: Carbohydrates, Protein and Fats	Food is eaten and digested in the body to allow the absorption of energy and nutrients. **Macronutrients are**: proteins, carbohydrates and fats and are measured in grams. Carbohydrates are the primary source of energy. 1gram = 4 calories Protein is the secondary source of energy. They are also needed for the growth of the skeleton, strong bones, teeth and hair. 1gram = 4 calories. Fats are the third source of energy. They are also needed in small quantities to keep the body warm and protect the organs. 1 gram = 9 calories. There are two types of fats: saturated and unsaturated. Saturated fats mainly come from animal products, for example, bacon fat, chicken skin and crispy crackling. Unsaturated fats mainly come from plant foods, for example, sunflower oil, olive oil, nuts and seeds.

Year 8 - Food Technology

Micronutrients are: Vitamins and Minerals	**Micronutrients are:** vitamins and minerals. **Vitamins:** Vitamins ADEK are water soluble. Vitamins B and C are fat soluble. **Vitamin A**: helps us with our night vision, healthy skin and eyes, helps us with resistance to infection. Found in carrots, cheese, eggs, milk products. **Vitamin B1** (Thiamin) is needed for a healthy nervous system and to release energy from carbohydrates. Found in wholegrains, nuts, pork, fortified cereal, fruit and vegetables. **Vitamin B2** (Riboflavin) is needed to release energy from protein, carbohydrate and fat. It also helps transport iron around the body. Found in milk, eggs, rice, fortified cereals, green vegetables. **Vitamin B3** (Niacin) needed for the release of energy from foods, normal function of the skin and the nervous system. Found in meat, eggs, dairy, yeast, wheat and maize flour. **Vitamin C**: needed to make collagen for healthy structure of skin and cartilage. Also helps the body absorb iron and helps wounds heal. Found in citrus fruits and berries, green vegetables, peppers, tomatoes, new potatoes. **Vitamin D** is needed for the body to absorb calcium to keep our bones healthy. We take most of our vitamin D from the sun but can also be from mushrooms, oily fish, meat and eggs. **Minerals Calcium:** Required for bone structure, blood clotting, normal muscle function, healthy teeth. Found in dairy products, fortified nut milks, eggs. **Iron:** Iron is essential for the formation of haemoglobin in red blood cells. Red blood cells carry oxygen and transport it around the body. Iron is also required for normal metabolism and removing waste substances from the body.

Glossary of Key Terms:	**Food spoilage** – when food deteriorates to the point that its quality is reduced or it can no longer be safe to eat. **High Risk Foods** – Ready to eat moist foods - pasta, rice, seafood, poultry, protein, dairy, sauces/gravy. **Cross Contamination** – the process by which bacteria or other microorganisms are unintentionally transferred from one substance or object to another, with harmful effects. **Hob** – top of the oven used to boil, simmer and fry. **Grilling** – to cook with heat that does not directly touch the food. **Rubbing In** – to combine fat with flour to make a breadcrumb-like consistency. **Creaming** – to combine sugar and soft fat (butter). **Coating** - to cover (for example, breadcrumbs around fish for fish fingers). **Boiling** – to bring water to 100 degrees C. **Simmering** – to heat liquids to just below the boiling point. **Dietary fibre** - a type of carbohydrate which is not digested to provide energy. **Free sugars** - include all sugars added to foods plus sugars naturally present in honey, syrups, and unsweetened fruit juice. **Starch** is found in a variety of foods. It is made up of many sugar molecules. **Amino Acids** - Protein is made up of building blocks called amino acids. Different foods contain different amounts and different combinations of amino acids. **Haemoglobin** - a red protein responsible for transporting oxygen in the blood. **Metabolism** - chemical reactions within the body that help maintain the living state of cells.

Art - Year 8 - Places and Objects

Formal Elements

Line
A mark that connects two or more points. These can be straight, curved, short or long.

Tone
The lightness or darkness or something. For darker tones use a higher grade B pencil.

Colour
Colour is what you see when light reflects of something.

Texture
How something looks or feels e.g. fluffy, rough, smooth etc.

Pattern
A symbol, shape or colour that repeats. Man-made patterns are designed by humans, natural patterns are formed by nature.

Shape/Form
Shape is 2D e.g. rectangles. Form is 3D e.g. cubes, spheres etc.

Colour Theory

Primary Colours
Colours that can't be mixed/ made from other colours e.g. red, yellow and blue.

Secondary Colours
Colours that can be made by mixing two primary colours.
Red + Blue = Purple
Yellow + Blue = Green
Yellow + Red = Orange

Tertiary Colours
Colours that can be made by mixing a primary and secondary colour together e.g. Blue + Green = Turquoise.

Complementary Colours
Colours that are opposite each other on the colour wheel.
Blue & Orange
Red & Green
Purple & Yellow

Analogue/ Harmonious Colours
Colours that are next to each other on the colour wheel e.g. Red, red-orange and orange.

Tints/ Shades
Tint - Adding white to a colour to make it lighter.
Shades - Adding black to a colour to make it darker.

Tips, Tools & Techniques

Blender Stick
A paper stump that allows you to blend tones.

Blending
The smooth transition between tones.

Graded Pencils
On the side of your pencil you will find letters e.g. H, B or HB. H = Hard led and B = Black which means it has a softer led to give you darker tones, therefore a HB is a good standard drawing pencil.

Shading Techniques
Hatching, Cross-Hatching, Stippling and Scumbling.

Continuous Line
Drawing an entire piece of work without taking your pen/pencil off the page until it is completely finished. This often makes the artwork look more gestural/ abstract.

Poly-Tile Printing
Carving/cutting into the surface. Carved/cut areas remain untouched by ink, only recessed area transfers colour.

Keywords & Concepts

Observational Drawing
Drawing something from real life in front of you.

Primary & Secondary Sources
Primary = real objects or your own photos that you have taken yourself
Secondary = an image from the internet or books

Proportion
Correct size and placement of things in a composition. Using the grid-method is one way of helping you draw using accurate proportions.

Grid-Method
Using a grid to ensure you draw in proportion.

Still Life
A piece that depicts objects or something that is generally static (does not move).

Perspective
representing three-dimensional objects on a two-dimensional surface e.g. One-Point Perspective, Two-Point Perspective etc.

Mixed Media
Artwork in which more than one material has been used.

More Tips, Tools & Techniques

Types of Perspective
The difference between one- and two-point perspectives is the number of vanishing points on the horizon line. A vanishing point is a spot on the horizon where all receding parallel lines appear to meet or disappear

A bird's-eye view is an elevated view of an object from above, with
a perspective as though the observer were a bird, often used in the making of blueprints, floor plans, and maps. It can be an aerial photograph, but also a drawing.

Grid-Method
A method of drawing to recreate, enlarge or reduce an image ensuring accurate proportions.

Mono-Printing
A form of printmaking that has lines or images that can only be made once.

More Keywords & Concepts

Architecture
Architecture is both the process and product of planning, designing and construction. For this project we will be focusing on buildings from our local area, as well as looking at some historic or contemporary buildings around the world.

Composition
This is where you place objects on a page. You can explore different layouts such as close up, far away, busy, quiet, off centred, clustered.

DRAMA year 8 - Romeo and Juliet

PLOT

Act 1 - In Italy two noble families, the Montagues and Capulets, have much bad blood between them. Romeo, son of old Montague, is in love with Rosaline, who disdains his love. As a result, Romeo is depressed. To cure him of his love, his friend Benvolio induces him to attend a masked ball at the Capulets, where he could encounter other beauties and forget Rosaline. At the ball, Romeo is attracted by a girl who he learns is Juliet, daughter of the Capulets. They seal their love with a kiss.

Act 2 - Romeo lingers in Capulet's garden, standing in the orchard beneath Juliet's balcony. He sees Juliet leaning over the railing, hears her calling out his name, and wishes that he were not a Montague. He reveals his presence, and they resolve, after an ardent love scene, to be married secretly.

Act 3 - Tybalt encounters Romeo returning from Friar Lawrence's cell. Romeo, softened by his newfound love and his marriage to Juliet, refuses to be drawn into a quarrel with Tybalt, now his kinsman by marriage. Mercutio grapples with Tybalt and is killed. Aroused to fury by the death of his friend, Romeo fights with Tybalt and kills him and takes shelter in the Friar's cell.

Act 4 - In despair, Juliet seeks Friar Lawrence's advice. He gives her a sleeping potion, which for a time will cause her to appear dead. Thus, on the day of her supposed marriage to Paris, she will be carried to the family vault. By the time she awakens, Romeo will be summoned to the vault and take her away to Mantua.

Act 5 - The Friar's letter fails to reach Romeo. When he hears of Juliet's death Romeo procures a deadly poison from an apothecary and secretly returns to Verona to say his last farewell to his deceased wife and die by her side. At Juliet's side, Romeo drinks the poison and dies. When Juliet awakens from her deep sleep, she realises Romeo's error and kills herself with his dagger.The Capulets and Montague decide to reconcile as a result of the deaths of their children.

CHARACTERS

Romeo Montague - Intense, intelligent, quick witted, and loved by his friends.

Juliet Capulet - Naïve and sheltered at the beginning, develops into a woman with strength. Grounded.

Mercutio - Romeo's close friend. Wild, playful and sarcastic

Tybalt - Juliet's cousin. A hothead consumed by issues of family honour. Hates the Montagues.

Benvolio - Romeo's cousin, less quick witted than Romeo and Mercutio, tries to keep the peace.

Friar Laurence - A Franciscan monk and a friend to both Romeo and Juliet.

Nurse - Juliet's best friend and confidante, and in many ways is more her mother than Lady Capulet is.

Prince Escalus - Leader of Verona, concerned with keeping order between the warring families.

Paris - Nobleman given permission to woo Juliet initially, then to marry her after Tybalt's death. Killed by Romeo.

Lord Capulet - Patriarch of the Capulets, counterpart to Lord Montague. Arranges marriage for Juliet, quick to anger when disobeyed.

Lord Montague - Romeo's father, despises the Capulet family and would never approve of the union between the star crossed lovers.

Balthazar - Romeo's friend who delivers the news that Juliet has died.

THEMES AND CONTEXT

Love - The love Romeo and Juliet share *is* beautiful and passionate. It is pure, exhilarating, and transformative, and they are willing to give everything to it. But it is also chaotic and destructive, bringing death to friends, family, and to themselves. Alternative attitudes to love are offered through Mercutio's cynicism and innuendo, and the Nurse's often bawdy, physical references. Familial love can be explored, especially with Juliet's relationship to her parents.

Fate- No matter what the lovers do, what plans they make, or how much they love each other, their struggles against fate only help fulfill it. But defeating or escaping fate is not the point. No one escapes fate. It is Romeo and Juliet's determination to struggle against fate in order to be together, whether in life or death, that shows the fiery passion of their love, and which makes that love eternal.

Individuals v society- Because of their forbidden love, Romeo and Juliet are forced into conflict with the social world around them: family, friends, political authority, and even religion.

Violence / Conflict – The play opens in a violent street fashion. The blood feud between the two families features in the prologue. The romance between Romeo and Juliet brings many deaths until the eventual death of the two protagonists.

Language and word play- Romeo and Juliet constantly play with language. They pun, rhyme, and speak in double- entendres. All these word games may seem like mere fun, and they are fun. The characters that pun and play with language have fun doing it. But word play in *Romeo and Juliet* has a deeper purpose: rebellion. Romeo and Juliet play with language to escape the world.

SYMBOLISM AND KEY TERMS

Light and Dark/Night and Day - *Romeo and Juliet* is filled with imagery of light and dark. But while light is traditionally connected with "good" and dark with "evil," in *Romeo and Juliet* the relationship is more complex. Romeo and Juliet constantly see each other as forms of light. In the balcony scene, Romeo describes Juliet as the sun, while Juliet describes Romeo as stars. But the relationship between light and dark is complicated by the lover's need for the privacy of darkness in order to be together.

Prologue - an opening of a play that establishes context and gives background details.
Foreshadowing - a warning or indication of a future event.
Dramatic irony - originating from Greek tragedies, a technique whereby the audience is aware of a piece of information that is still unknown to the characters.
Monologue - a long speech by one actor
Soliloquy - the act of speaking one's thoughts aloud when by oneself regardless of who is listening, usually for the benefit of the audience (a Shakespearean version of thought tracking)
Direct address - when a character breaks the metaphorical fourth wall and speaks directly to the audience
Iambic Pentameter - a line of verse/poetry with 10 syllables whereby one short (unstressed) syllable is followed by a longer (stressed) syllable

All of the techniques listed above were prominent in almost all of Shakespeare's plays. They may seem completely normal in modern performances but at the time, Shakespeare was praised for the innovative ways of presenting a play in a way that engaged audiences of all classes. His plays were just as accessible to the poor as they were to the rich, which is another reason why his work has aged well and is still studied all across the world.

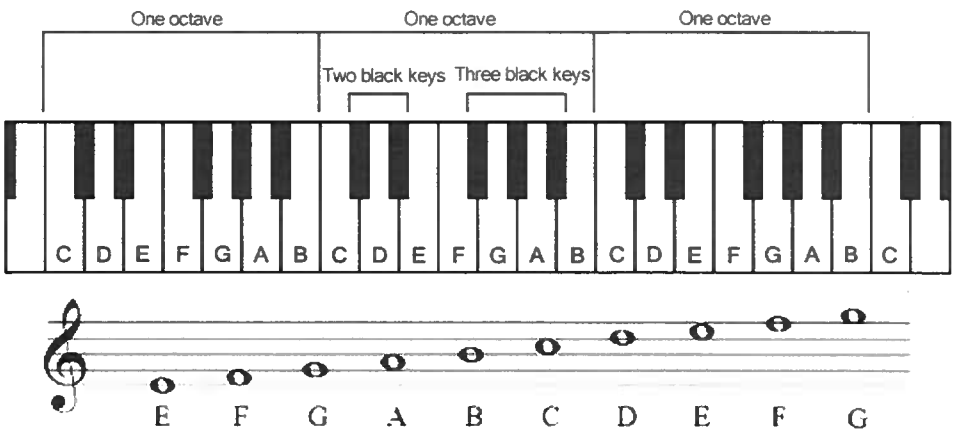
MUSIC - The Elements of Music

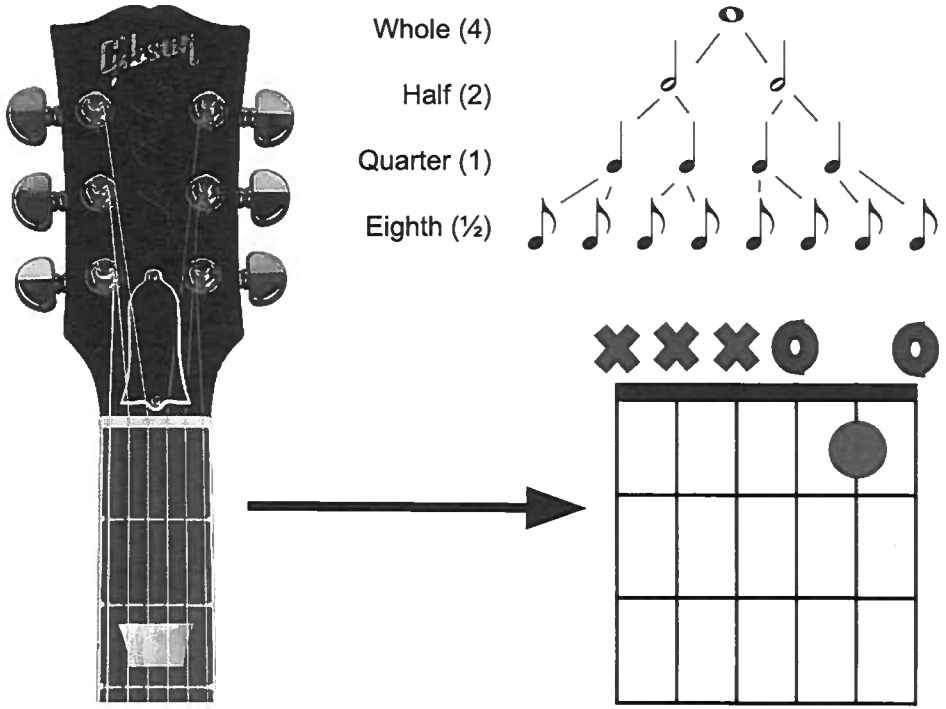
Key Terminology

Conductor - A person who directs the performance.
Note - A singular sound.
Chord - A group of three or more notes played at the same time.
Harmony - Different notes played or sung together.
Melody - A small arrangement of notes that make a tune.
Scale - A series of eight notes starting somewhere between A-G.
Arpeggio - When you play the 1st, 3rd, 5th, and 8th note of a scale one after each other.
Rhythm - The pattern of how notes are played.
Beat - The pulse or heartbeat of the music.
Tempo - The speed of the music.
Dynamics - The volume of the music.
Octaves - The jump between the same note going higher or lower on the piano (e.g. lower C to higher C).
Pitch - How high or low the notes are played.
Guitar - 6-stringed instrument. Can be electric or acoustic.
Bass Guitar - Low sounding 4-stringed instrument. Usually electric.
Piano/Keyboard - Percussion instrument made up of white keys and black keys.
Drum Kit - Percussion instrument made up of drums and cymbals.

Feedback Starters

Positives: ***What I thought went well was...***
Points for improvement: ***It would be even better if...***





Year 8 Unit 3 -Python Introduction

Lesson 1

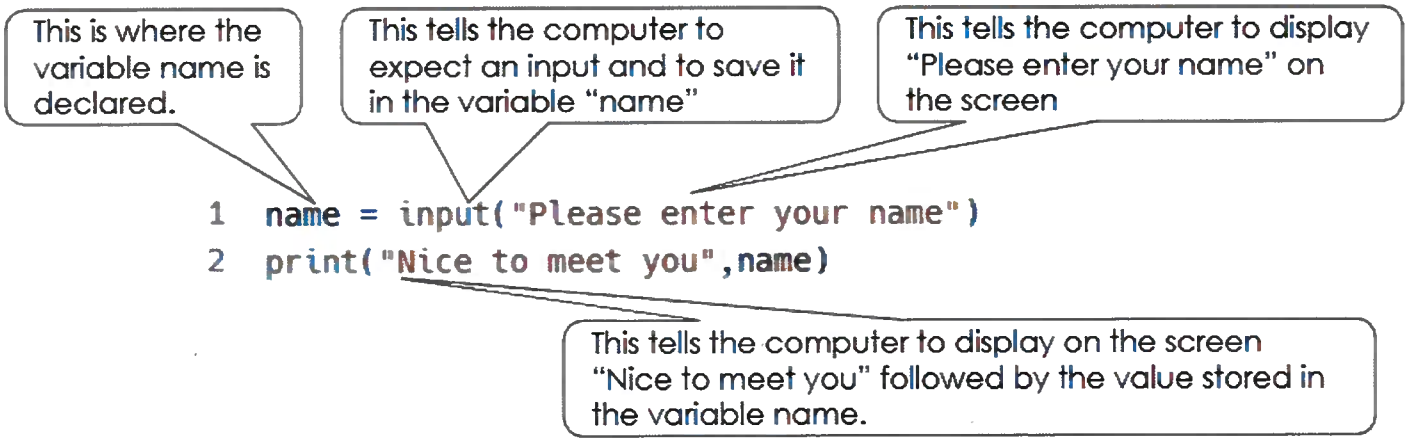
Describe what algorithms/sets of computer instructions and programs are and how they differ.

An algorithm/set of computer instructions is a set of instructions created in order to solve a problem. An algorithm/set of computer instructions is written in what is known as pseudocode. Pseudocode is written similar to how a program is written but without all the syntax (commas, brackets, colons etc)/ (the set of rules for forming language). A programmer will then take the pseudocode and turn it into a computer program. Algorithm/Sets of computer instructions s are similar/are just like to a program but they are not written using a programming language.

What needs to happen to a completed computer program before it can be executed/ran/run by the computer?

Programming languages have been developed to help humans write computer programs. A computer cannot directly understand the programs that are written. They must first be converted into binary form (1's and 0's) using a translator. Only then can a computer execute/run those programs.

Give an example of a simple Python program that displays a message,assigns a value to a variable/(number or thing that changes), and receive keyboard input



Keywords

Algorithm/Set of computer instructions
An algorithm/Set of computer instructions is a list of instructions, used to solve problems or perform tasks/(do/complete).

Program
A program is a set of operations for a computer to perform/(do/complete).

Programming language
A programming language is a language that can be used to control a computer.

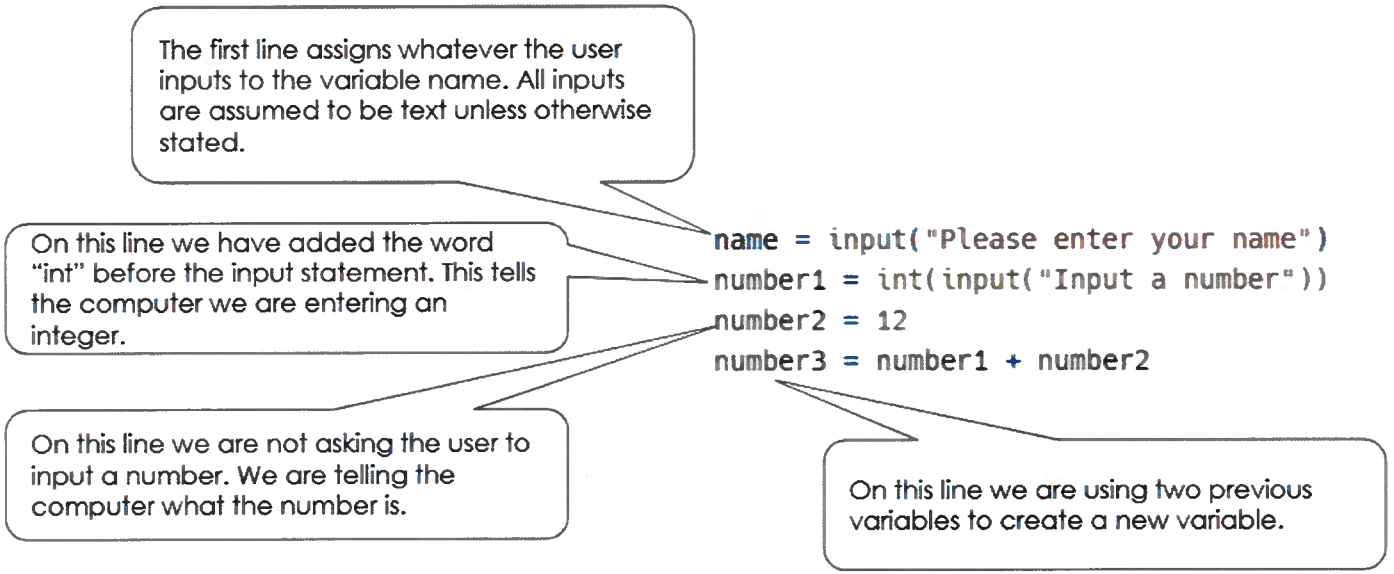
Program translation
A translator is a program that converts source code (python) into code that the computer can use.

Program execution
To execute/run a program is to run the program in the computer,

Interpreter
A computer program that directly executes instructions written in a programming language

Lesson 2

Describe the semantics/(meanings of words) of assignment statements



Use simple arithmetic expressions in assignment statements to calculate values

```
length = 4.5
width = 3.76
area = length * width
perimeter = length * 2 + width * 2
```

Receive input from the keyboard and convert it to a numerical value

See example for variable/ (number or thing that changes) **number2** above.

Programming environment/(surrounding conditions)

A program that contains language specific/clearly stated/particular editors and source level debugging/(finding and correcting mistakes in) facilities. (Replit.org)

Input

Data that is entered into or received by a computer

Output

The information that it displays on a screen or prints on paper as a result of a particular program.

Variables/(numbers that change/things that change)

A variable/(numbers that change/things that change) is a value that is stored by a computer.

Assignment

A statement in computer programming that is used to set a value to a variable.

Operators

An operator is a specific mathematical or logical action or process.

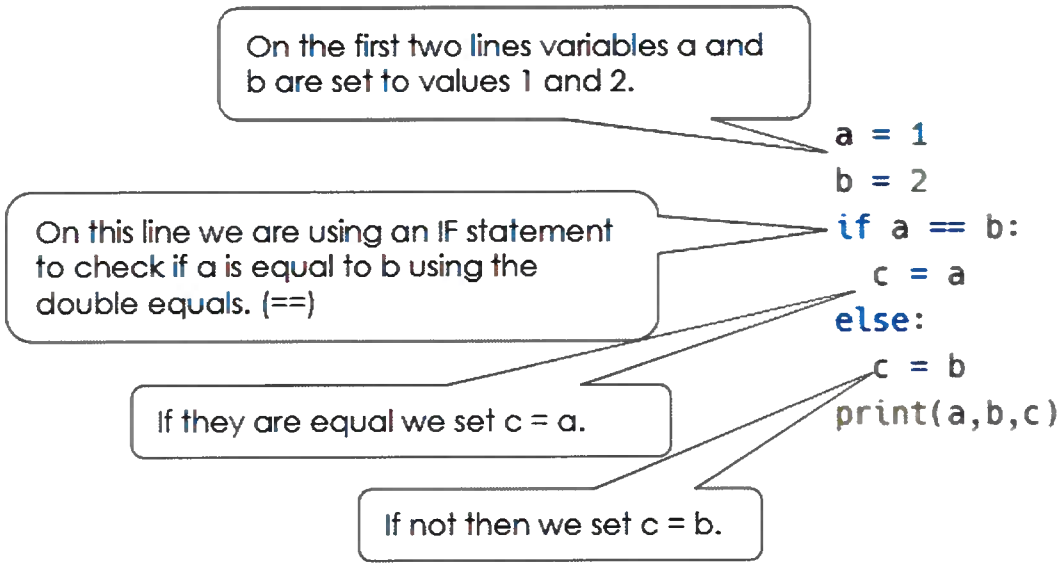
Expressions

A combination of values and functions that are combined to create a new value

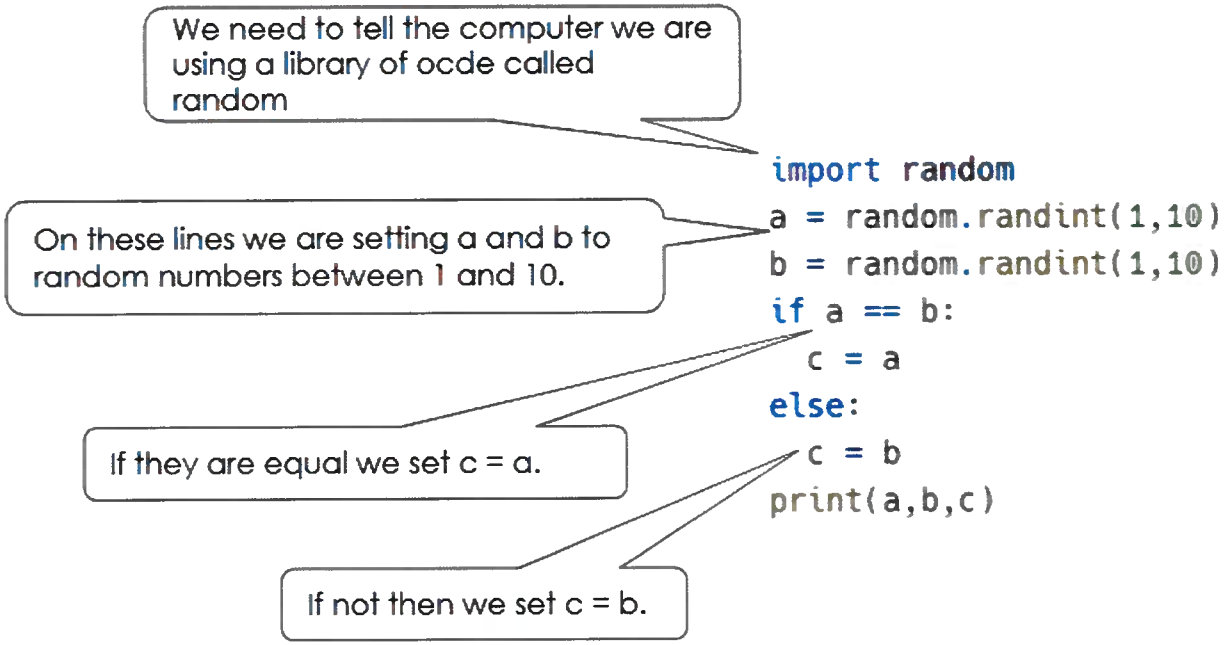
Lesson 3

Lesson 3

Describe how to use binary selection to control the flow of program execution.



Describe how to use random integers e.g.,



Integer and string type

Integer is a numeric/number-based value, while string is a character value represented in quotes.

Execution

To execute/ run a program is to run the program in the computer

Selection

Where a section of code is run only if a condition is met

Relational operators

Relational operators compare numeric/number-based, character string, or logical data. The result of the comparison, either true (1) or false (0). Examples include =, > < and <>.

Logical (or Boolean) expressions

An operation involving the use of logical functions, such as AND or OR.

Conditions

Conditions are statements which evaluate/(figure out the worth, amount, or quality of) if something is true or false.

Multi-branch selection

Where the flow of a program can go in many different directions depending on a particular value.

		Iteration/Cycle A sequence of instructions or code being repeated until a specific end result is achieved/(accomplished or gained with effort). **Flags** A flag is a variable(number or thing that changes) that acts as a signal within a program.

Lesson 4

Explain how multi-branch selection (if, elif, else statements) can be used to control the flow of program execution.

We need to tell the computer we are using a library of ocde called random

On these lines we are setting a to a random numbers between 1 and 10.

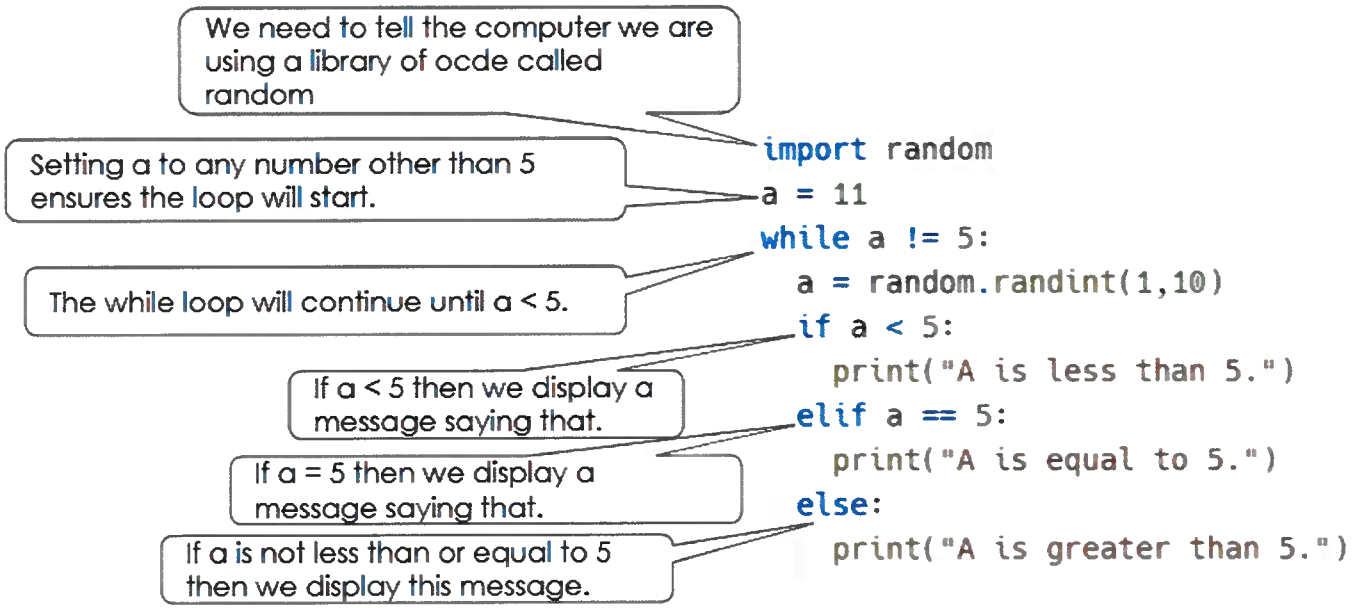
If a < 5 then we display a message saying that.

If a = 5 then we display a message saying that.

If a is not less than or equal to 5 then we display this message.

```
import random
a = random.randint(1,10)
if a < 5:
  print("A is less than 5.")
elif a == 5:
  print("A is equal to 5.")
else:
  print("A is greater than 5.")
```

Explain how iteration/cycle (while statements) controls the flow of program execution



Lesson 5

Use iteration/cycle (while loops) to control the flow of program execution

Use variables/ (numbers that change/things that change) as counters in iterative/repeating/repetitive programs

We need to tell the computer we are using a library of ocde called random

Count will be used to control the loop

The while loop will continue as long a count < 10

If a < 5 then we display a message saying that.

If a = 5 then we display a message saying that.

If a is not less than or equal to 5 then we display this message.

count is increased by 1

```
import random
count = 0
while count < 10:
  a = random.randint(1,10)
  if a < 5:
    print("A is less than 5.")
  elif a == 5:
    print("A is equal to 5.")
  else:
    print("A is greater than 5.")
  count = count + 1
```

Lesson 6

Combine iteration/cycle and selection to control the flow of program execution

Use Boolean variables/(numbers that change/things that change) as flags

We need to tell the computer we are using a library of ocde called random

loop controls the while loop and is set to **True**

The while loop will continue as long a loop = True

If a < 5 then we display a message saying that.

If a = 5 then we display a message saying that. We then set loop to False to stop the loop.

If a is not less than or equal to 5 then we display this message.

```
import random
loop = True
while loop == True:
    a = random.randint(1,10)
    if a < 5:
        print("A is less than 5.")
    elif a == 5:
        print("A is equal to 5.")
        loop = False
    else:
        print("A is greater than 5.")
```

PCSHE – Year 8 Term 2 – Identity and Relationships

KPI1: Key Terms

- **Consent**: Consent is a person's permission or agreement by choice to anything that informs them. Consent must be freely given, it is reversible, it must be informed, enthusiastic and very specific.
- **Underage**: Under the age of 16.
- **Age of consent**: The age where someone can legally agree to taking part in sexual activity. In the UK the age of consent is 16.
- **Legislation**: the law
- **Prosecuted**: to bring legal action against a crime or punishment of a crime for the breaking of a law.
- **Contraception**: Birth control, also known as contraception, is the use of methods or devices used to prevent unintended pregnancy.
- **Gender Identity**: Gender Identity is an individual person's sense of their gender; it is how they experience, feel, view and label it. It is unique to each person and is separate from the sex they were registered with at birth, although someone's gender identity may align with this.
- **Sexual Orientation**: Sexual Orientation relates to romantic attraction. Examples of sexual orientation can include:
- **LGBTQA+**: The letters stand for: lesbian, gay, bisexual, transgender, queer/questioning, asexual, and many other terms that people may use to define their sexual attraction or gender identity.
- **Cisgender**: Someone whose gender identity is the same as their birth sex.
- **Transgender**: Someone whose gender identity is the different to their birth sex.

KPI2 – What is consent?

Consent is a person's permission or agreement by choice to anything that informs them. For example, their body, personal space, time, money and belongings.

We all have the right to be asked for consent in situations that involve us, and the responsibility to ask others for consent in situations that involve them. Consent is important because it gives people **choice** and **control** over decisions that affect them.

Consent is:

- Freely given. It's not okay to pressure, trick, or threaten someone into saying yes.
- Reversible. It's okay to say yes and then change your mind — at any time!
- Informed. You can only consent to something if you have all the facts.
- Enthusiastic. You should do stuff you WANT to do, not things people expect you to do. If someone doesn't seem enthusiastic stop and check in.
- Specific. Saying yes to one thing (like going to the bedroom to make out) doesn't mean you're saying yes to other things (like having sex).

Consent cannot be given when:

- When a person is drunk or high, to the point that they are unable to speak or look after themselves.
- Asleep or Passed Out – if they are not conscious they are unable to agree to any sexual activity. If someone passes out whilst engaging in sexual activity – STOP!
- They are Underage – Legally a person under the age of 16 cannot give consent to any sexual activity.
- Mental disability or learning difficulties which mean they are unable to fully understand what they are consenting to.

KPI3 – Consent and the Law

In the UK, the age of consent is 16. This means that a person under the age of 16 cannot legally consent to sexual activity because they are seen as not having the capacity to do so. The law applies to everyone, regardless of gender or sexual orientation in England, Wales, Scotland and Northern Ireland.

The law is designed to protect young people from abuse, harm of being taken advantage of. If someone is under the age of 16 and decides to have sex anyway, it is still vital that they and their partner(s) are able to consent to sex in every other capacity.

According to the law, there are no circumstances in which someone under the age of 13 can consent to any sexual activity or act.

KPI4: Sexting

Sexting: Sexting is the sending or posting of nude or semi-nude images, videos or live streams online by young people under the age of 18. This could be via social media, gaming platforms, chat apps or forums. It could also involve sharing between devices via services like Apple's AirDrop which works offline.

What is the law about sexting?

In the UK the age of consent for sexual intercourse is 16. However, it is an offence to make, distribute, possess or show any indecent images of anyone aged under 18, even if the content was created with the consent of that young person. The law is contained in **Section 1 Protection of Children Act 1978**. 'Indecent' is not defined in law. When cases are prosecuted, the question of whether any photograph of a child is indecent is for a jury, magistrate or district judge to decide.
Indecent imagery does not always mean nudity.

Will I get in trouble?

You can get in trouble if you threaten to share a nude, even if you don't actually do it. Only the police can decide if they're going to charge you with an offence after sexting. But it's important to remember that the law is there to protect you, not get you into trouble.

PCSHE – Year 8 Term 2 – Identity and Relationships

KPI3 – Types of Contraception

Birth control, also known as contraception, is the use of methods or devices used to prevent unintended pregnancy.

Birth control	How to use	Prescription Needed	Protects against STIs
Oral Contraceptive	Take one pill every day as directed	Yes	No
Injection	Get injections every three months	Yes, injection given in health care providers office	No
Female condom	Insert every time before sex	No	Yes
Male condom	Partner must wear every time during sex	No	Yes

KPI5: Sexual Orientation and Gender Identity

Gender Identity:

Gender Identity is an individual person's sense of their gender; it is how they experience, feel, view and label it. It is unique to each person and is separate from the sex they were registered with at birth, although someone's gender identity may align with this.

Important definitions:

- **Biological Sex:** The physical anatomy and gendered hormones one is born with.
- **Cisgender:** A description for a person whose gender identity, gender expression and biological sex all align.
- **Gender Dysphoria:** where a person experiences distress due to a mismatch of their biological sex and their gender identity.
- **Intersex:** A person with a set of sexual anatomy that doesn't fit within the labels of female or male (e.g. XXY phenotype, uterus, and penis)
- **Transgender:** A person whose gender identity is the binary opposite of their biological sex, who may undergo medical treatments to change their biological sex.
- **Gender Identity:** A way to describe how you feel about your gender. You might identify your gender as a boy or a girl or something different. This is different from your sex, which is related to your physical body and biology.

People do not necessarily identify as only 'male' or 'female'. There are a number of different labels that people may use to describe their gender.

Sexual Orientation:

Sexual Orientation relates to romantic attraction. Examples of sexual orientation can include:

- **Asexual:** A person who generally does not experience sexual attraction to any group of people.
- **Bisexual:** A person who experiences sexual, physical and/or spiritual attraction to people of their own gender as well as another gender.
- **Heterosexual:** A person who is attracted to someone with the other gender.
- **Homosexual:** A person who is attracted to someone with the same gender.
- **Pansexual:** A person who experiences sexual, romantic, physical, and/or spiritual attraction for members of all gender identities/expressions.

KPI6 – Legal Changes that have affected LGBTQ+ people in the UK:

- 2000: Government lifts the ban on lesbians and gay men serving in the Armed Forces.
- 2001: Age of consent for gay/bi men is lowered to 16.
- 2002: Equal rights are granted to same-sex couples applying for adoption.
- 2003: Repeal of Section 28 - Section 28 was a law that made it illegal to talk positively about homosexuality in schools.
- 2003: A new law comes into force protecting LGBT people from discrimination at work. Until 2003 employers could discriminate against LGBT people by not hiring them or not promoting them, just because of their sexual orientation or gender identity.
- 2004: Civil Partnership Act is passed.
- 2004: Gender Recognition Act is passed - This Act allowed trans people to change their legal gender. This means that they can get a new birth certificate that reflects who they really are, which helps for future legal processes like marriage.
- 2007: It becomes illegal to discriminate against people because of their sexual orientation or gender identity when providing them with goods or services.
- 2008: The Criminal Justice and Immigration Act makes 'incitement to homophobic hatred' a crime.
- 2009: A new law gives better legal recognition to same-sex parents.
- 2013: The Marriage (Same-Sex Couples) Act is passed.

Where to get more help and support:

- Parents and trusted family members
- Teachers and School Staff including School Nurse and Safeguarding Team
- Your Doctor or Community Nurse
- NHS Online
- Young Stonewall: https://www.youngstonewall.org.uk/
- The Proud Trust – Local Support groups: https://www.theproudtrust.org
- Friends and Family of Lesbians and Gays: https://www.fflag.org.uk/
- www.healthforteens.co.uk
- www.brook.co.uk
- **NSPCC: Helpline: 0808 800 5000 (24 hours, every day) nspcc.org.uk**
- **Childline: Helpline: 0800 1111(24 hours, every day) https://www.childline.org.uk**

PCSHE – Year 8 Term 4 – Mental Health

KPI 1 - Key terms:

- Body image: The perception that a person has of their physical self and the thoughts and feelings that result from that perception.
- Social Media: Websites and applications that enable users to create and share content or to participate in social networking.
- Mental wellbeing: Mental wellbeing describes your mental state - how you are feeling and how well you can cope with day-to-day life. Our mental wellbeing is dynamic. It can change from moment to moment, day to day, month to month or year to year.
- Emotional literacy: The ability to understand and express feelings. It involves having self-awareness and recognition of one's own feelings and knowing how to manage them.
- Digital resilience: Involves having the ability to understand when you are at risk online, knowing what to do if anything goes wrong, learning from your experiences of being online, and being able to recover from any difficulties or upsets.

KPI 2- Things that can affect our mental wellbeing:

Everyone is different and what affects someone's mental wellbeing won't necessarily affect others in the same way. Everyone will have times when they have low mental wellbeing, where they feel stressed, upset or find it difficult to cope.
Common life events that can affect your mental wellbeing include:

- loss or bereavement
- loneliness
- relationship problems
- issues at work
- worry about money

However, there are times when there is no discernable reason for the way a person feels which can be extremely frustrating.

There are some factors that may make people more vulnerable to experiencing a period of poor mental wellbeing. These may have happened in the past or might still be happening now:

- Childhood abuse, trauma, violence or neglect
- Social isolation or discrimination
- Homelessness or poor housing
- A long-term physical health condition
- Social disadvantage, poverty or debt
- Unemployment
- Caring for a family member or friend
- Significant trauma as an adult, such as military combat, being involved in a serious accident or violent crime

KPI 3 – Digital Resilience

How does going online effect young people?
Like all aspects of our lives, going online conjures up a huge range of emotions and responses that can impact our mood and well-being. Someone could be pleased to see photos of their friend having a great time on holiday but at the same time they may feel envious because they are not there or have never been to such a place.

Why is digital resilience important?
Digital resilience gives everyone the ability to recognise when going online is having a negative impact and the strategies to bounce back and recover. If a someone realises that the balance has shifted and going online is not making them feel supported, empowered and happy we want them to have a variety of people and techniques that they can turn to.

Digital Resilience Tips

- Build a support network – reach out to someone and support others too. A problems shared is a problem halved.
- Find useful sites/organisations who can help give yourself a break.
- Give yourself a break – you are not perfect and will make mistakes. Be kind and fair to yourself. Take some time offline if you want to.
- Sort out disagreements quickly.
- Lifestyle changes – make time for things and people that make you happy.
- Look out for new challenges – life can be hectic. Find ways to help you relax
- Physical health – get some exercise, be active.
- Put your devices away at night to get a good night's sleep.
- Eat regularly and healthily.
- Protect your online reputation - Use the services provided to manage your digital footprints and 'think before you post.' Content posted online can last forever and could be shared publicly by anyone.
- Know where to find help - Understand how to report to service providers and use blocking and deleting tools. If something happens that upsets you online, it's never too late to tell someone.
- Don't give in to pressure - Keep calm and keep in control; once you've pressed send you can't take it back.

For further support...

Home/school support:
A friend; A teacher; Your tutor; Parents/carers; Mr Ogden Mrs Jones; Mrs Loveridge; Mr Hayward

Self-help apps

- Calm Harm – Managing Self-Harm
- MindShift – to manage anxiety and urges to self-harm
- Cove – express your mood with music
- Stress and Anxiety Companion – helps you to manage stress and anxiety
- Chill Panda – relaxation and breathing exercises.

Reputable organisations:

- - Child Bereavement UK – call 0800 028 8840 Monday to Friday, 9am to 5pm, or email support@childbereavement.org
- Cruse Bereavement Care – call 0808 808 1677 Monday and Friday, 9.30am to 5pm, and Tuesday, Wednesday and Thursday 9.30am to 8pm, or email info@cruse.org.uk
- Grief Encounter – call 0808 802 0111 Monday to Friday, 9am to 9pm, or email contact@griefencounter.org.uk
- Hope Again – call 0808 808 1677 Monday to Friday, 9.30am to 5pm, or email hopeagain@cruse.org.uk
- Winston's Wish – call 0808 802 0021 Monday to Friday, 9am to 5pm, or email info@winstonswish.org
- Young Minds – www.youngminds.org.uk
- Young Minds Crisis Messenger: Text YM to 85258
- Childline – www.childline.org.uk Phone: 0800 1111
- Samaritans – www.Samaritans.org Phone: 116 123
- Young Minds Matters – Text 07480635723
- Kooth – Kooth.com
- TIC+ - online text chat – 07977334433
- Self-harm Helpline Rethink Gloucestershire – webchat: www.gloucestershireselfharm.org Text: 07537410022 Phone: 0808 801060