Year 8

Knowledge Organiser

April - July 2026

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

Year 8: To Kill A Mockingbird

The Basics

Noun	A naming word (person, place, thing, idea)	**Simile**	Comparison using *like/as*
Verb	A doing/being word	**Metaphor**	Direct comparison
Adjective	Describes a noun	**Personification**	Human qualities to non-human
Adverb	Describes a verb	**Pathetic fallacy**	Weather reflects mood
Pronoun	Replaces a noun	**Main clause**	Makes sense on its own
Preposition	Shows position	**Subordinate clause**	Needs a main clause

Essential Vocabulary

Identity	Who a person is; what shapes them	**Innocence**	Lack of experience with evil
Prejudice	Judging without knowing the facts	**Morality**	Knowing right from wrong
Discrimination	Unfair treatment of a group	**Justice**	Fair treatment under the law
Racism	Belief that race determines worth	**Hypocrisy**	Saying one thing, doing another
Courage	Doing what is right despite fear	**Hostility**	Unfriendly, angry, or aggressive behaviour or attitudes toward someone.
Equality	The state of being equal	**Courage**	Facing danger with bravery and determination

New Vocabulary

Segregation	Keeping groups apart	**Antagonism**	Open hostility
Empathy	Understanding others' feelings	**Compassion**	Care for others' suffering
Integrity	Doing right even when unseen	**Dignity**	Calm self-respect
Conscience	Inner sense of right and wrong	**Injustice**	Lack of fairness

Aspirational Vocabulary

Systemic racism	Racism built into society's systems	**Ethical responsibility**	Duty to do what is morally right
Moral courage	Standing for right despite consequences	**Symbolism**	Objects representing ideas
Social hierarchy	Ranking of people by status	**Narrative perspective**	Who tells the story and how
Marginalisation	Pushing groups to the edge of society	**Allegory**	A story, character, or event that represents a bigger moral or political idea about society.

Context

Racism and the Jim Crow Laws

- Jim Crow laws began in the **19th century** in the Southern United States
- They enforced **racial segregation** and kept Black and white communities separate
  These laws encouraged and protected **racist attitudes and discrimination**
- The **Civil Rights Act (1964)** and **Voting Rights Act (1965)** ended Jim Crow laws
- Change happened because of Civil Rights activists such as **Martin Luther King Jr.**

The Wall Street Crash and The Great Depression

- The **Wall Street Crash** happened in **1929**
- It caused widespread **unemployment and poverty**
- This led to the **Great Depression** of the 1930s
- The novel is set during this period of economic hardship
- Many families struggled with **food, money, and housing**, especially the poorest in society

The Plot

Despite Atticus presenting clear evidence of Tom Robinson's innocence during the trial, the jury delivers a guilty verdict, shattering the children's faith in justice.

CLIMAX

Racial tensions mount as Atticus defends Tom Robinson; meanwhile, Boo Radley shows his hidden kindness during a house fire, and Scout helps disperse a lynch mob.

RISING ACTION

FALLING ACTION

Following the trial, Tom is tragically killed while trying to escape, and a vengeful Bob Ewell begins threatening Atticus and his family.

In 1930s Maycomb, Scout begins school while she and Jem find mysterious gifts in a tree and become obsessed with the rumours surrounding their neighbour, Boo Radley.

EXPOSITION

RESOLUTION

Key Characters		
Character	**Role**	**What they represent**
Scout Finch	Narrator	Innocence, moral growth, perspective
Jem Finch	Scout's brother	Loss of innocence, justice
Atticus Finch	Father, lawyer	Morality, justice, courage
Calpurnia	Housekeeper	Bridge between communities
Dill	Friend	Childhood imagination, empathy
Miss Maudie	Neighbour	Kindness, quiet resistance
Boo Radley	Recluse	Misjudgement, hidden goodness
Tom Robinson	Accused man	Innocence destroyed by racism
The Ewells	Antagonists	Ignorance, prejudice, hypocrisy

Boo Radley saves the children from Bob Ewell's attack; as Scout walks Boo home, she finally understands the world from his perspective.

A: Plotting graphs and finding equations

Topics

- Plotting horizontal and vertical lines(M797)
- Plotting straight line graphs(M932)
- Finding equations of straight line graphs(M544)

Building Blocks

- Reading and plotting coordinates(M618)
- Substituting into algebraic formulae(M208)

Keywords

Axis (pl. axes) - an axis is the horizontal or vertical line on a graph from which coordinates are measured.
y-intercept - the value of the y-coordinate when a graph crosses the y-axis (the value for y when x=0).
Gradient -steepness of a line. Found by dividing the change in y by the change in x.

G: Transforming shapes

Topics

- Translation(M139)
- Reflection(M290)

Building Blocks

- Reading and plotting coordinates(M618)

Keywords

Translation - a translation is a transformation in which every point of a shape moves the same distance and direction.
Reflection - a reflection is the image seen in a mirror, or produced by reflecting an object in an axis of symmetry/ mirror line.

G: Finding unknown angles

Topics

- Angles in quadrilaterals(M679)
- Combining angle facts(M319)
- Angles on parallel lines(M606)
- Using quadrilateral properties to find angles(M393)
- Angles in polygons(M653)

Building Blocks

- Angles on a line and about a point(M818)
- Vertically opposite angles(M163)
- Angles in triangles(M351)

Keywords

Quadrilateral - 4 sided shape.
Alternate angles - angles that occur on opposite sides of the transversal line and have the same size.
Corresponding angles - angles that occur on the same side of the transversal line and are equal in size.
Co-interior angles - angles that occur on the same side of the transversal always add up to 180 degrees.
Polygon - a polygon is a flat shape with many sides. If all sides in a polygon are equal it is said to be a regular polygon.
Exterior angles - angle between the extended side of a polygon and the neighboring side.

P & S: Drawing and interpreting statistical diagrams

Topics

- Drawing pie charts(M574)
- Interpreting pie charts(M165)
- Drawing line graphs(M140)
- Interpreting line graphs(M183)
- Drawing stem-and-leaf diagrams(M648)
- Interpreting stem-and-leaf diagrams(M210)
- Finding averages from diagrams(U854)

Building Blocks

- Drawing angles(M331)
- Angles on a line and about a point(M818)
- Fractions of amounts without a calculator(M695)
- Averages and range(M328, M934, M841, M940)

Keywords

Pie Chart - circular chart in which each category is shown in a sector of a circle.
Line graph - a graph that shows information between two categories, usually including time.
Median - the 'middle' of an ordered list of numbers.
Mode - the piece of data that appears the most.
Range -the difference between highest and lowest value.
Mean - adding up all the data points and dividing by the number of data points there are.

A: Linear inequalities

Topics

- Reading and drawing linear inequalities on number lines(M384)
- Solving single inequalities(M118)

Building Blocks

- Using number lines(M763)
- Solving equations with one step(M707)
- Mixed problems: solving equations with two or more steps(M509)

Keywords

Inequality - statement showing two quantities that are less than, more than, or equal to one another.
Including - containing.
Excluding - not containing.

A: Double brackets

Topics

- Expanding double brackets(M960)

Building Blocks

- Expanding single brackets and simplifying expressions(M792)

Keywords

Expand - remove bracket by multiplying.
Like term - terms whose variables and their powers are the same.
Simplify - writing an expression in the most basic way possible.

N: Fractions review

Topics

- Calculating with fractions(M645)
- Calculating with mixed numbers(M619)

Building Blocks

- Adding and subtracting fractions(M931)
- Adding and subtracting mixed numbers(M931)
- Multiplying fractions(M157)
- Multiplying with mixed numbers(M197)
- Dividing fractions(M110)
- Dividing with mixed numbers(M265)

Keywords

Numerator - top number in fraction.
Denominator - bottom number in fraction.
Mixed number - a number larger than 1 written as a whole number and a fraction (e.g. 1 ⅗).
Improper fraction - a number larger than 1 written as a single fraction (e.g. 7/5).

A: Algebraic fractions

Topics

- Simplifying algebraic fractions by factorising(M754)
- Adding and subtracting algebraic fractions(M336)

Building Blocks

- Calculating with fractions(M645)
- Simplifying algebraic fractions by cancelling common factors(M568)
- Factorising into one bracket(M100)

Keywords

Factorise - identify the highest common factor from an algebraic expression, place outside brackets and make it equivalent to the original expression.

N: Fractions and recurring decimals

Topics

- Using recurring decimal notation(M701)
- Converting fractions to recurring decimals(M922)

Building Blocks

- Using a written method to divide by integers to get a decimal answer(M262)
- Converting between fractions, decimals and percentages(M264)

Keywords

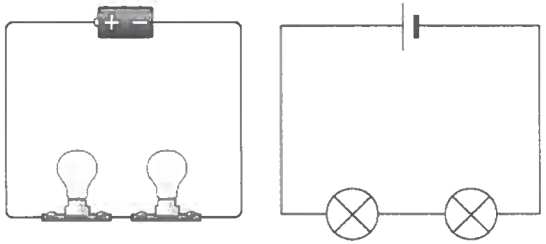
Recurring decimals - a decimal number with a digit (or a group of digits) that repeats forever. This is shown by either "..." or dots on top of the digits.

Year 8 Physics Knowledge Organiser: Electricity

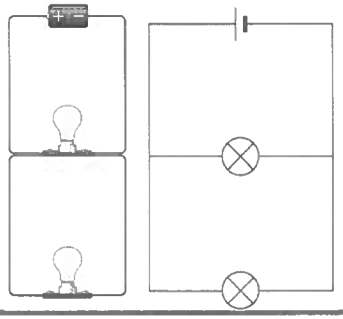
Box 1 – Series and parallel circuits

- Electrical circuits are made of metal wires with components (see Box 2) 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.



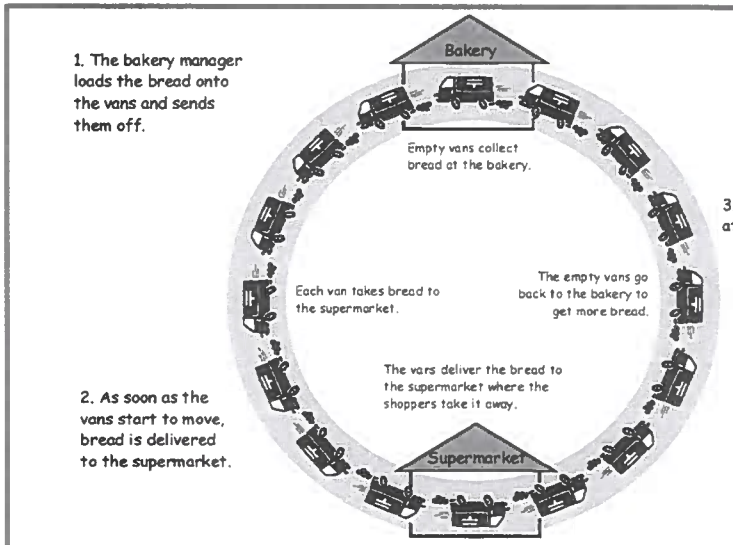
Parallel circuits are closed circuits with more than one route (also called branches) that the current can take.



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



4. If the vans travel faster, more bread is delivered to the supermarket in a certain time.

5. If the manager loads more bread on to each van, more bread is delivered to the supermarket in a certain time.

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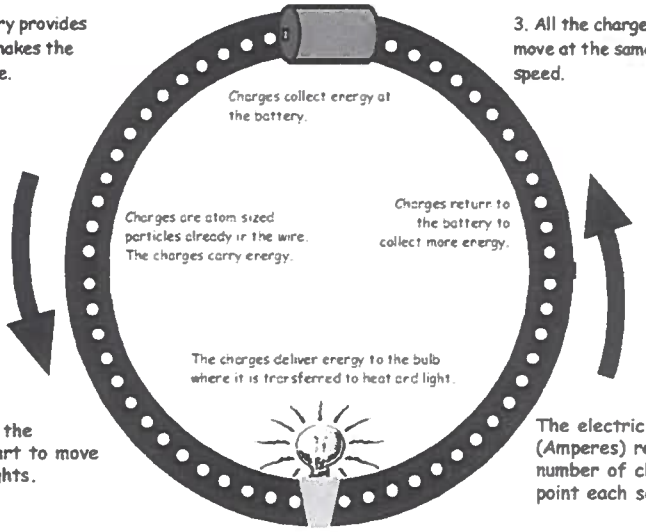


4. If the charges move faster, more energy is transferred to the lamp in a certain time.

5. If more energy is carried by each charge, more energy is delivered to the bulb in a certain time.

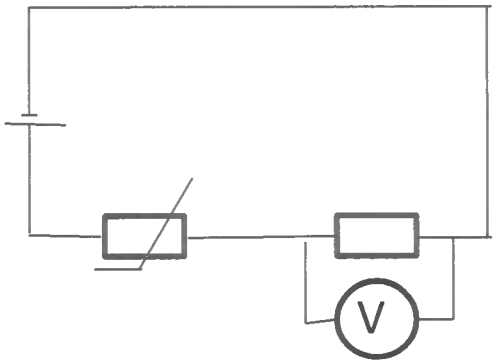
6

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.
Light dependant resistor (LDR)	Decreasing resistance as light level increases
Thermistor	Decreasing resistance as temperature increases

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

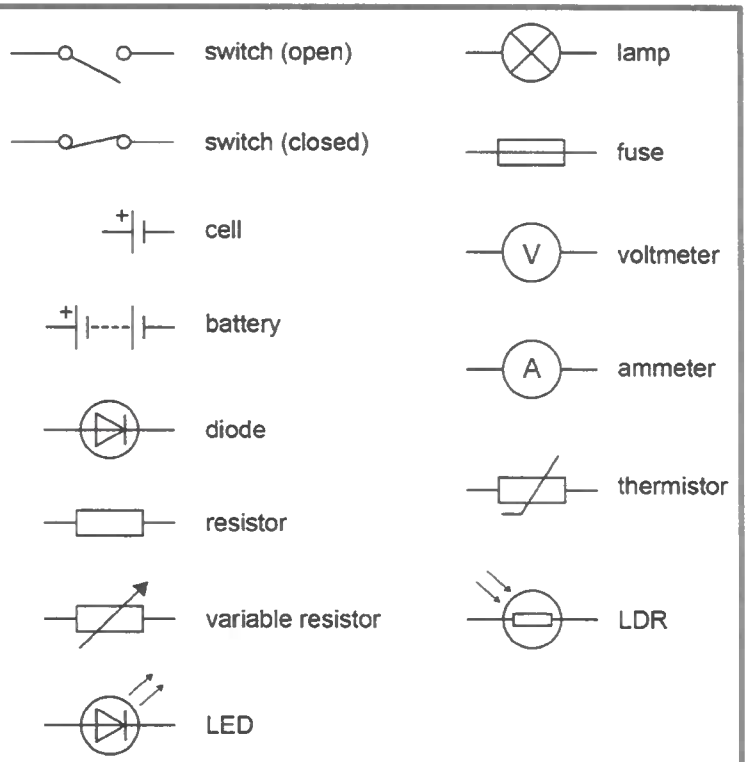
Box 4 – Sensing circuit



- **Sensing circuits** are used to control heating control systems and dusk to dawn lights.
- Sensing circuits contain either a **thermistor** (heating systems) or an **LDR** (dusk to dawn lights) in series with a fixed resistor.
- When the temperature or light level changes the circuit detects the change and changes the potential difference in the circuit.
- Lighting circuits in houses use parallel circuits to make sure all the bulbs in the house are bright.

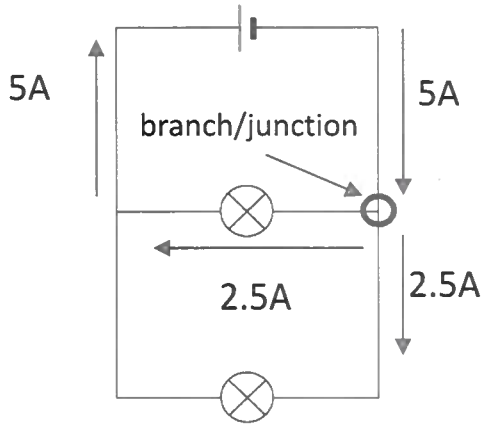
Box 3 – Circuit symbols

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



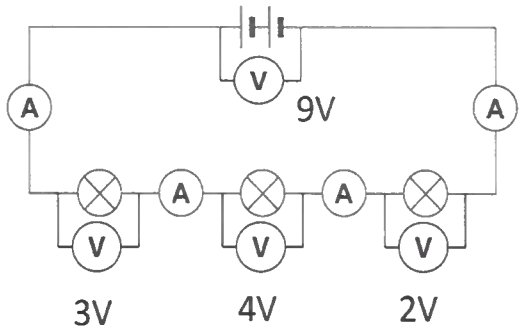
Box 5 – Kirchoff's current law

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

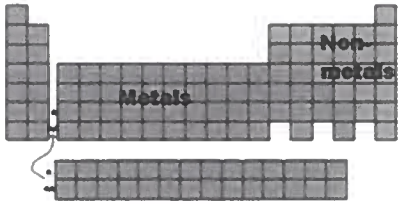
3 + 4 + 2 = 9

7

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.



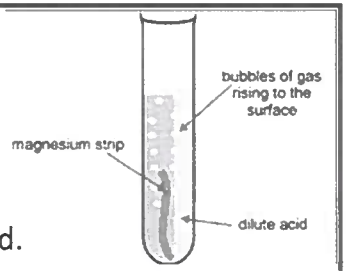
- Properties of metals are: high density, high melting point and good conductors of heat and electricity.
- Only three metals are magnetic (iron, cobalt and nickel).
- Metals react with oxygen to make metal oxides e.g.

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

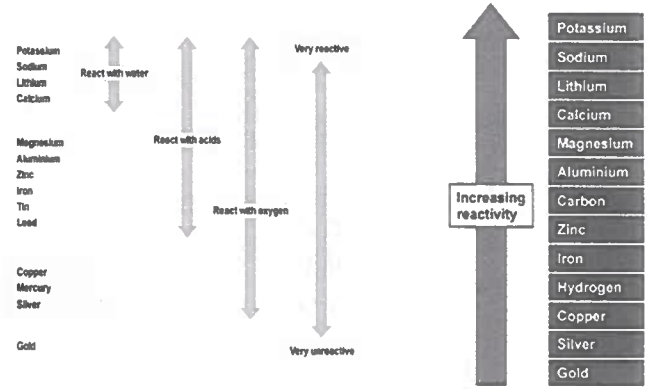
- **Corrosion** is where a metal reacts with substances in its environment.
- When iron corrodes we say that it **rusts**. Water and oxygen are required for rusting.
- The equation for rusting is:

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.

Year 8 Chemistry Knowledge Organiser
Energy Changes and Rate of Reaction

Box 1 – Energy Changes: Exothermic and endothermic reactions

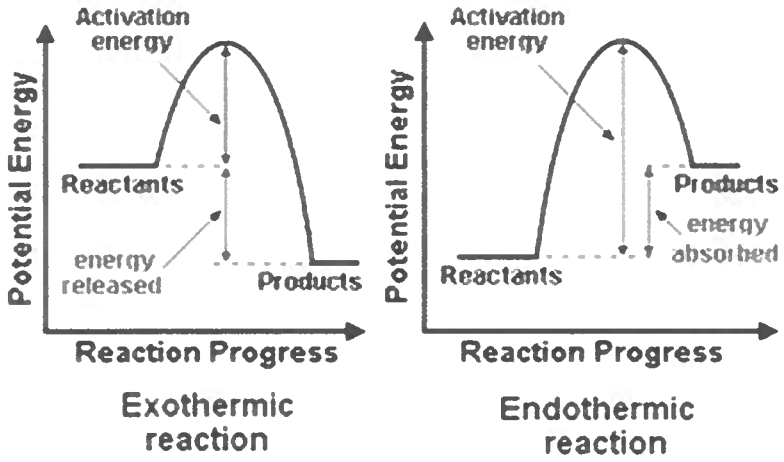
Exothermic reactions

- 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

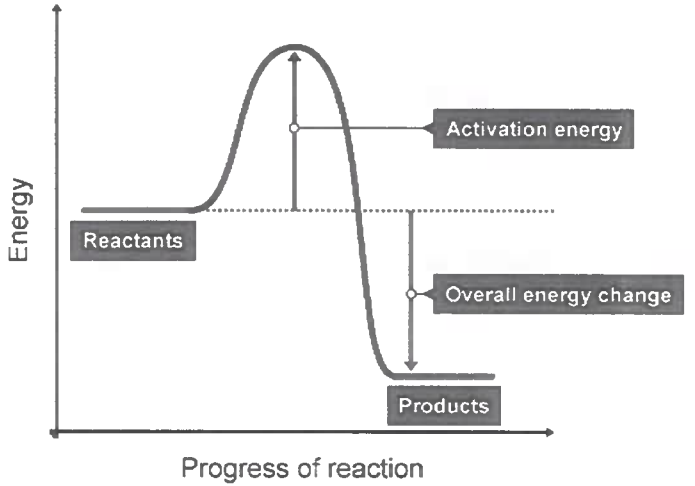
The rate of a reaction can be measured by how quickly a reactant is used up or by how quickly a product is made.

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



9

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**:

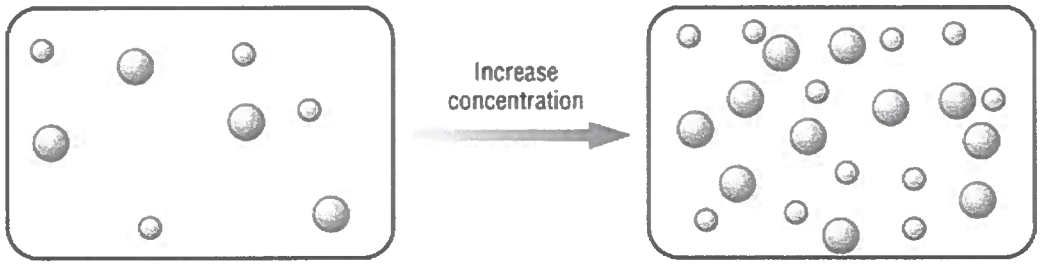
- **Temperature** – The higher the temperature the faster the rate of reaction, because the particles gain energy, move faster and therefore collide more frequently and with more energy.
- **Concentration** – The higher the concentration of a reactant that is in solution, the faster the rate of reaction. 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

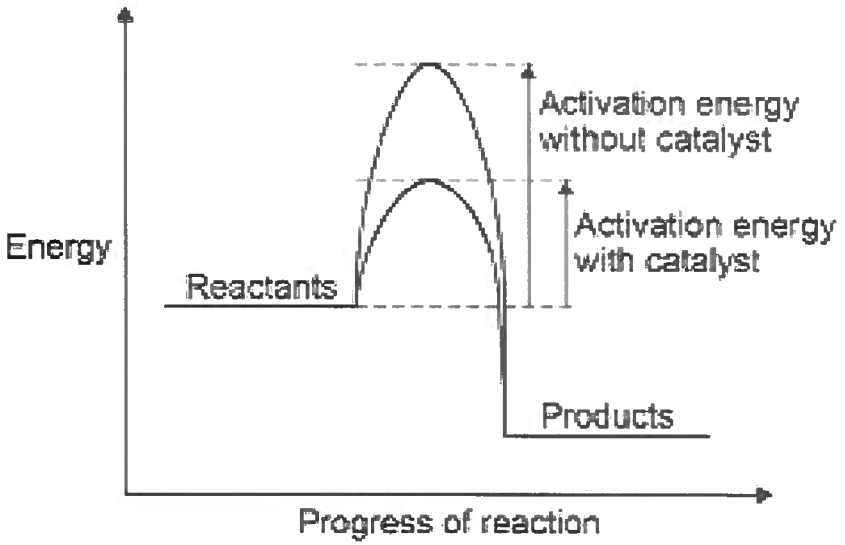


High concentration
Many particles in a set volume

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 Biology Knowledge Organiser – Biodiversity

Box 1: Ecology, Communities and Ecosystems

Ecology is the study of how organisms interact with each other and with their physical environment. The distribution and number of organisms on Earth is shaped by **biotic factors** (the effect of living things) and abiotic factors (the effect of non-living things). The term **biosphere** means anywhere and everywhere life is found on Earth, including in the atmosphere, on the ground, underground and in water.

Biomes are large zones such as rainforests, deserts and coral reefs. The word ecosystem can be used to describe the ecology of a large area e.g., a rainforest or can be used to describe the ecology of a very small area – such as underneath a rotting log in the forest.

Communities are groups of **interdependent** populations of organisms that interact with each other within an **ecosystem**, for example in a field there may be a community of mice, beetles, hawks, rabbits, dandelions, bees and frogs all interacting with each other.

A **stable community** is one where all the species' populations and the abiotic factors are in balance; as a result, population sizes don't change much in stable communities. A stable community will include a wide range and variety of organisms (it will have a high **biodiversity**). When a large stable community is lost, it cannot be easily replaced.

Key Terms	Definitions
Biosphere	Wherever life is found on Earth (and in the atmosphere).
Biome	A large zone of life with particular characteristics – e.g. tropical rainforest, arctic tundra.
Ecosystem	The interactions between a **community** of organisms, which all depend on each other, and the non-living environment.
Habitat	A specific set of conditions, usually a specific location, where an organism (or organisms) is adapted to live.
Community	A group of **interdependent** populations of organisms all interacting with each other.
Population	A group of organisms of the same species living in a particular habitat – for instance, the buffalo on the savannah, or the greenfly on a rose bush.
Interdependence	All organisms in a community rely on one another – for food, shelter, pollination, seed dispersal, nutrient recycling etc.
Biotic factors	How living things affect other living things in a community.
Abiotic factors	How non-living things affect the living things in a community (e.g. light intensity, temperature, soil pH).
Biodiversity	The range and variety of all the different species living in an area.

Box 2: Biotic and abiotic factors affecting organisms

Communities of organisms are affected by **biotic** and **abiotic** factors in their **habitat.**

Abiotic factors that are non-living features of the environment that affect the growth of living things, including light intensity; temperature; soil pH; carbon dioxide level for plants.

Biotic factors are ways that living things affect other living things, including food availability; predators; pathogens; competition between species. Competition can lead to **extinction** of a species.

Competition is a struggle between living things for resources they need to survive. It occurs when resources are scarce.

Box 3: Biodiversity

Biodiversity is the range and the variety of all the different of organisms living in an area.

An area with a high biodiversity increases the stability of ecosystems, because it reduces the dependence of one species on another, for instance for food. If a species has only one food source (e.g. pandas and bamboo shoots), it may be easily threatened by environmental changes. A rainforest has a high level of biodiversity with many plants and animals interacting. A palm tree plantation has a low level of biodiversity – with only one plant type and a limited number of organisms living there.

Many **human activities** threaten biodiversity and reduce it. **Deforestation** had damaged biodiversity by removing vast areas of natural woodland along with virtually every population of every species that used to live there. Our waste, polluting land, air and sea, has negatively affected biodiversity in many areas. Global warming is already having measurable effects on global biodiversity.

Year 8 Biology Knowledge Organiser – Biodiversity

Box 4: Deforestation

Deforestation is the **permanent loss** of natural forest ecosystems through human activity.

Deforestation on a large scale happens to provide land, with the largest areas cleared for raising cattle, to plant palm oil trees and rice fields and to grow crops that can be made into **biofuels**. Our food and fuel needs conflict with the need to preserve forests and rainforests so biodiversity is maintained.

Deforestation **reduces biodiversity** – it has caused or is threatening the **extinction** of many species. Rainforests are so rich in rare and unusual species that scientists estimate that many species are lost before they've even been discovered.

As they grow, trees and other plants absorb **CO_2** from the atmosphere through **photosynthesis and** lock it away within themselves. Deforestation releases this 'locked in' CO_2 back into the atmosphere because the vegetation is often burned or left to decay. Deforestation is therefore a major contributor to the total global **greenhouse gas** emissions, causing **climate change** through **global warming**.

Box 5: Humans need to maintain high Biodiversity

Humans rely on a large range of plants and animals to survive. Plants provide the **oxygen** we need to breathe, crops produce the **food**, some plants provide **medicines**.

Animals such as cows, sheep and pigs provide **food**; animals such as bees **pollinate** plants. The population of bees is falling due to diseases and the use of **insecticides**. Insecticides are chemicals that kill insects, bees as well as pests. If the bee population reduces it could have a significant impact on the production of food because the crop plants would not be pollinated.

Box 6: Human activities that help maintain a high biodiversity

- Breeding programmes for endangered species help prevent species becoming extinct.
- Protection and regeneration of rare habitats such as rainforests, coral reefs and peat bogs provides a habitat for often rare organisms.
- Reintroduction of hedgerows – previously removed by farmers to increase the size of fields to grow crops, which reduced in the populations of birds, mammals, insects and plants.
- Reduction of deforestation and carbon dioxide emissions – prevent habitat loss for rare and endangered organisms. Reduce the rate of global warming and the impact of climate change.
- Recycling resources – reduces the need for landfill sites that destroy natural habitats. Recycling materials takes less energy than creating new materials, so less CO_2 is emitted.

Box 8: The problem with plastics

Plastics cause pollution on land and in water, and are an increasing problem, because they are non-biodegradable (they cannot be broken down by microorganisms).

Micro-plastics (e.g. microbeads in cosmetics) can get into the oceans via sewage systems. Some countries have banned the use of microbeads.

Plastics can harm animals (both on land and in the sea) if they eat them (either intentionally or not) or they can become tangled in them.

Plastic pollution is being tackled by reducing single use plastic and improving recycling and disposal.

Box 7: The Greenhouse effect and Global warming

The greenhouse effect is a natural process that allows the Earth to be warm enough to support life. Human activities have dramatically increased the levels of greenhouse gases in the atmosphere.

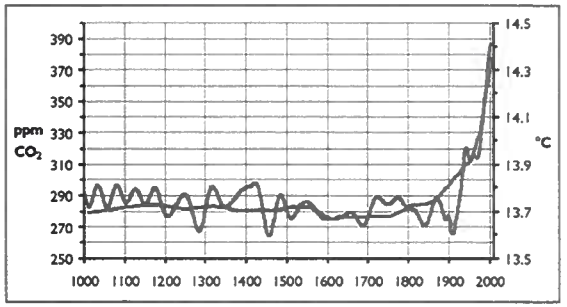
The main greenhouse gases are **carbon dioxide** and **methane**.

→ These gases absorb infrared (heat) radiation, causing gradual increases the atmosphere's and the Earth's temperature.

Human activities such as **burning fossil fuels**, **deforestation** are increasing the amount of carbon dioxide in the atmosphere and enhancing the greenhouse effect, causing an increase in the global average temperature.

The idea that global warming is caused by humans used to be controversial. Now global scientific consensus is that humans are causing climate change because of **peer-reviewed research**.

The consequences of global warming are; **melting of the polar ice caps** causing a rise in sea level and flooding; **changing weather patterns** and more severe storms and droughts; **changing migration patterns** for animals; **changes in the distribution** of plants and animals.



The data shows a direct link between the concentration of CO_2 in our atmosphere and the global average temperature. There is a sudden, dramatic increase in both at the beginning of the 19th century (exactly the same time as the industrial revolution began, when humans started burning massive amounts of coal).

Year 8 Biology Knowledge Organiser – Biodiversity

Box 9 -Measurements of ecosystems

Biologists measure both the **distribution** and **abundance (number)** of organisms in ecosystems to help us understand them. It would be impractical to attempt to count e.g., all the seaweed on a beach, so biologists use **sampling** techniques.

If you want to measure the abundance in an area and estimate a population size, or to compare two locations for abundance of e.g. seaweed, ***random sampling*** would probably be used. For this, quadrats are used to count individual organisms.
The quadrat is placed many times at randomly selected positions within the area to be sampled.
The equation opposite can then be used to calculate the total estimated population size.
The random placement is important for ensuring there is no bias, and the samples are representative of the whole area. Randomisation can be achieved by using a system of coordinates along with a random number generator see image 1.

To assess how the distribution (spread) of an organism changes as a specific **abiotic** factor changes, you measure along a **transect**. For instance, with the seaweed example, you could set up your transect line down the beach towards the water (just using a long tape measure) and measure the coverage of seaweed at 2 metre **intervals**. Alongside this, also measure a value for the abiotic factor (eg. light intensity) at each position. Data may be summarised using means, modes or medians, and graphs can be produced to represent differences between locations, or the change in distribution along a transect.

Key Terms	Definitions
Distribution	Describes how organisms are spread/where they are found in an ecosystem.
Abundance	How many individuals of a particular species there are (population size) in a location.
Quadrat	A square frame used for sampling plants in an ecosystem. Can be used for counting plants for measuring the coverage of the ground by a particular species.
Transect	Sampling method where a quadrat is laid down at regular intervals along a line. This is used to measure the change in distribution of organisms when a particular factor changes, such as light intensity.
Interval	The spaces between measurements – e.g. on a transect, the interval might be 1m or 2m.

Equation

$$\text{Estimated population size} = \frac{\text{Total area}}{\text{Area Sampled}} \times \text{Total number of plants counted}$$

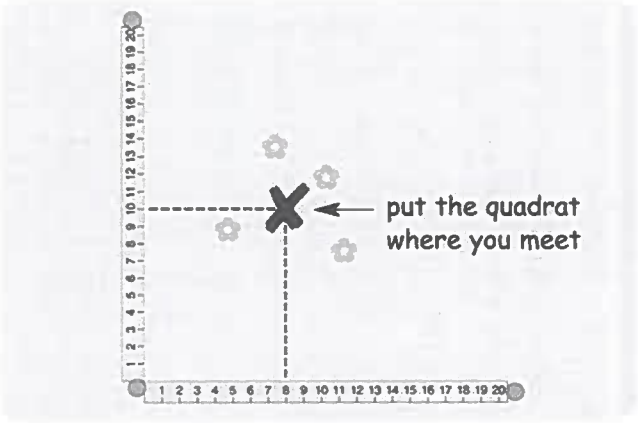


Image 1 - Use a random number generator to select coordinate positions for your quadrat placements

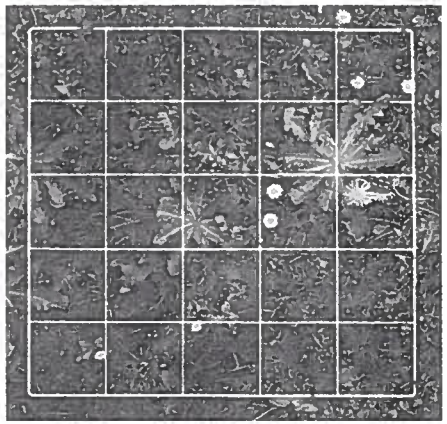


Image 2 - A quadrat: this one is a 0.5m x 0.5m square: the area is 0.25m^2. Quadrats are divided up into a grid (here of 25 smaller squares) within the frame, useful for estimating % coverage: each small grid square represents 4% of the area.

Image 3 - A Line transect: place a tape measure and use a quadrat to sample the organisms at regular intervals along its length.
This shows how the distribution changes alongside an abiotic factor, as you move across an area from one region to another.

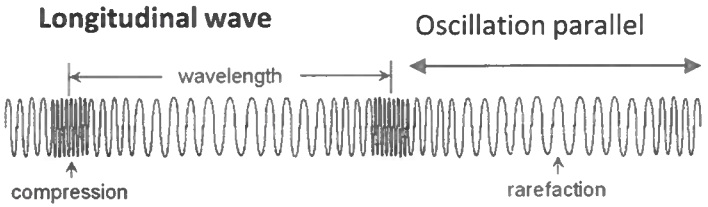
Year 8 Physics Knowledge Organiser – Waves

Box 1 – Types of waves

Waves are oscillations (e.g. vibrations) that transfer energy without transferring matter.

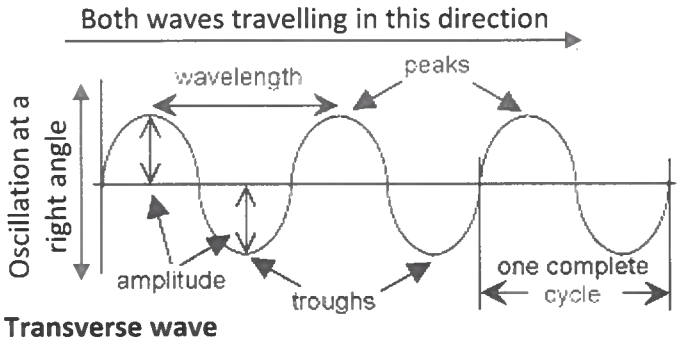
Longitudinal Waves

The oscillations of the wave are **parallel** to the direction of energy transfer of the wave (see diagram).
e.g. sound



Transverse Waves

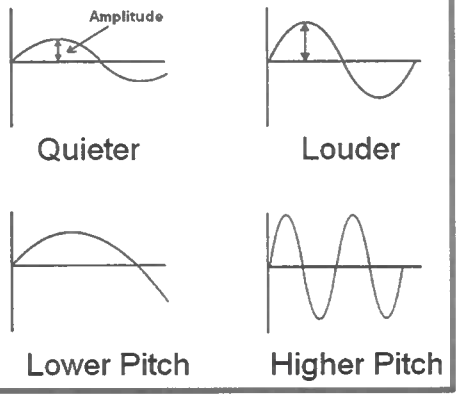
The oscillations of the wave are **at right angles** to the direction of the energy transfer of the wave. e.g. light, water waves



Transverse wave

Box 2 - Sound Waves

- Sounds travel as longitudinal waves.
- Sound waves can travel through any **medium** that contains particles – solid, liquid or gas. Sound waves cannot travel in a vacuum.
- **Louder sounds** have larger **amplitudes.**
- Sounds with a **higher pitch** have a **shorter wavelength** and **higher frequency.**
- **A reflected sound** is called an echo.



Box 3 - Auditory Range

- Humans can hear sounds with frequencies between **20Hz** and about **20,000Hz**. This is called the auditory range.
- Sound waves that have a frequency **above 20,000 Hz** is known as **ultrasound.** Humans cannot hear ultrasound.

Key Terms	Definitions
oscillation	A rhythmic, back and forth or up and down movement (e.g., vibration).
wave	A whole series of oscillations that allows transfer of energy without transferring matter.
medium	The substance a wave is passing though
longitudinal wave	A wave made from oscillations parallel to the direction of the wave.
compression	A part of a wave where matter is made denser by the oscillations of the wave.
rarefaction	A part of a wave where matter is made less dense by the oscillations of the wave.
pitch	The highness/lowness of a sound.
Volume	Loudness of a sound
frequency	The number of waves passing a point per second.
transverse wave	A wave made from oscillations at right angles to the direction of the wave.
amplitude	Height of a wave – maximum displacement of the oscillation from the resting position.
wavelength	The length of one complete wave – from one point on one wave to the equivalent point on the next wave.
Ultrasound	A sound with a frequency above 20,000 Hz

Box 4 - Uses of Ultrasound Waves

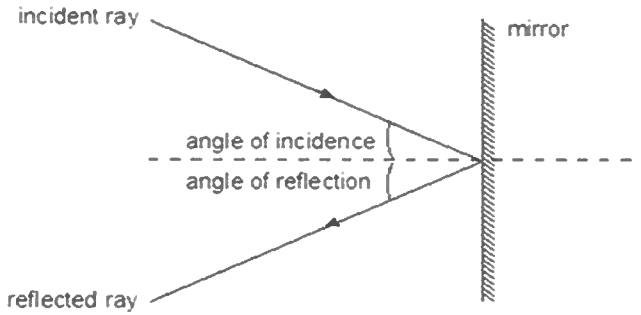
Ultrasound can be used for:

- Scanning during pregnancy to check the health of the foetus
- Checking objects for cracks for example concrete
- Cleaning objects for example jewellery

Year 8 Physics Knowledge Organiser – Waves

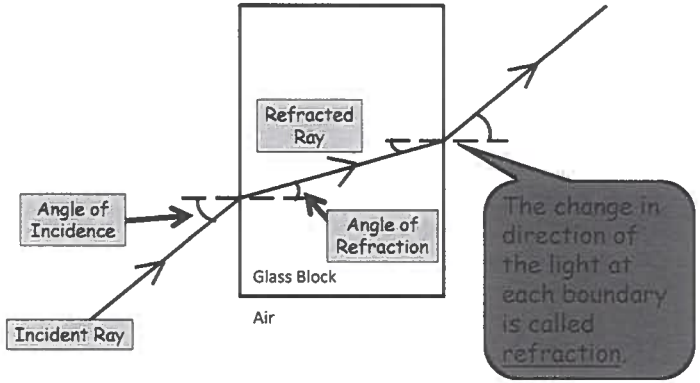
Box 5 - Reflection of Light

When light is reflected from a mirror, the angle of incidence is equal to the angle of reflection. This is the **law of reflection**.



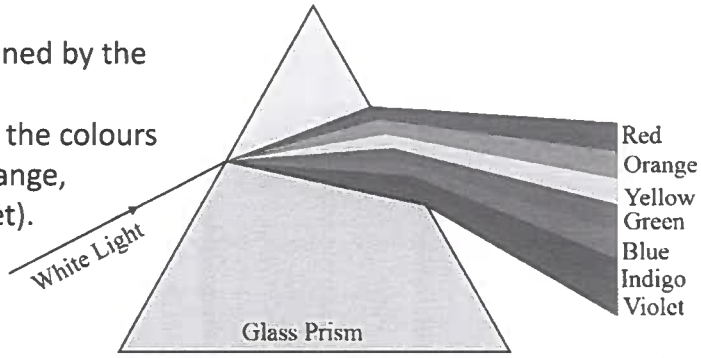
Box 6 - Refraction

As light waves pass across a boundary into a medium of different density it will cause the light waves to change speed and direction. This process is known as **refraction.**



Box 7 – Colours of light

- The **colour** of light is determined by the **wavelength** of the light waves.
- White light is a mixture of all the colours in the visible spectrum (Red, orange, yellow, green, blue, indigo, violet).
- White light can be split into the visible spectrum using a **prism**.

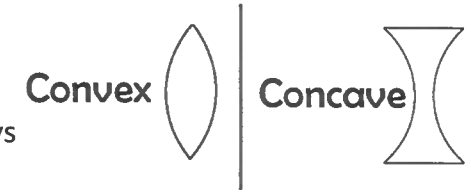


- White objects reflect all the colours of the visible spectrum.
- Black objects absorb (take in) all the colours of the visible spectrum.
- A red object will reflect red light and absorb all of the other colours.

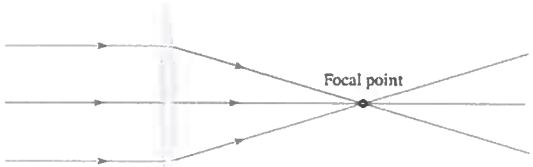
Key Terms	Definitions
Convex Lens	A lens which refracts the light rays to a focal point behind the lens
Focal Point	The point where the refracted light rays meet after passing through a lens
Cornea	The transparent layer at the front of the eye.
Retina	The part of the eye that the light is focussed onto. It has special cells which detect light.
Refraction	Change in direction of a wave as it passes from one medium into another.
Prism	Triangular block used to split white light using refraction.

Box 8 – Lens and the eye

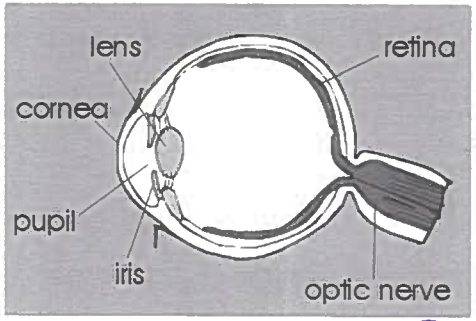
- **Convex lenses** cause light rays to converge (come together).
- **Concave lenses** cause light rays to diverge (spread apart).



- Light is refracted as it enters and leaves a lens.
- In convex lenses, the point where the light rays converge (meet) is called the **focal point.**



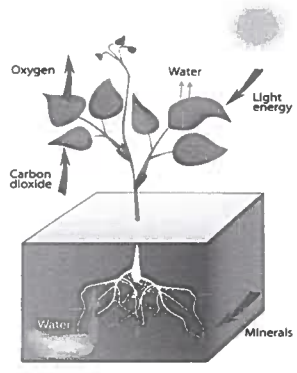
- The **human eye** contains a **convex lens** to refract light.
- The cornea also refracts the light that passes through it.
- For the image to be in focus the focal point should be on the Retina.
- The retina is the part of the eye which detects light. It contains light sensitive cells.



Year 8 Biology Knowledge Organiser – Photosynthesis

Box 1 – Photosynthesis

Photosynthesis is a chemical reaction that occurs in the chloroplasts in plants cells. It is a reaction that uses light to produce biomass and transfer energy from the Sun to a chemical store in the plant.



The **word equation** which represents photosynthesis is:

carbon dioxide + water $\xrightarrow{\text{light}}$ glucose + oxygen

The balanced **symbol equation** which represents photosynthesis is:

$6CO_2 + 6H_2O \xrightarrow{\text{light}} C_6H_{12}O_6 + 6O_2$

Glucose is converted into starch and stored in the leaf. Iodine solution will turn from orange to blue/black in the presence of starch; this test is used to show that photosynthesis has occurred in a plant. It will give a negative result (stay orange) if the plant has been kept in the dark.

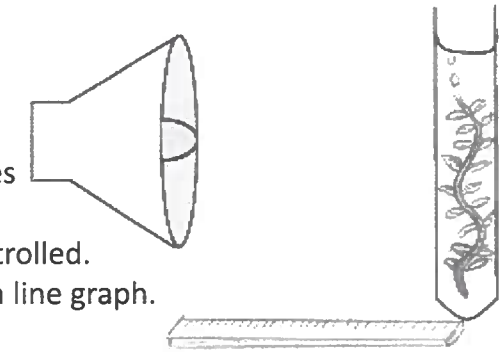
Box 2 – Investigating Rate of Photosynthesis

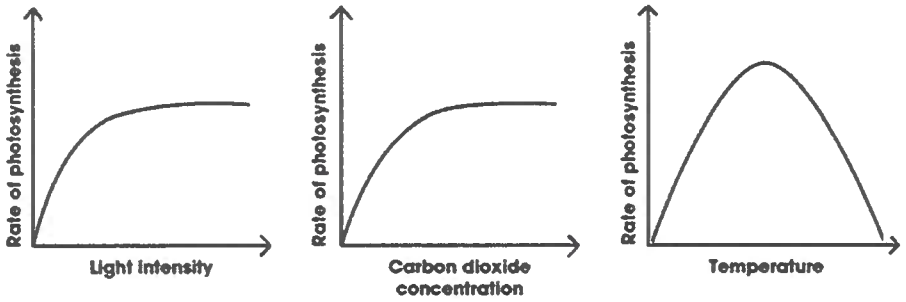
The rate of photosynthesis can be affected by temperature, carbon dioxide level and light intensity.

The rate can be measured by counting bubbles of oxygen given off by pond weed.

In this investigation, variables need to be controlled.

The rate of photosynthesis can be shown on a line graph.

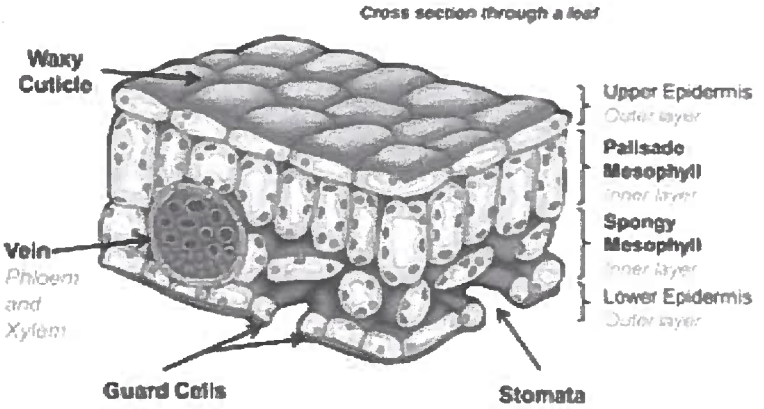




Key Terms	Definitions
Chlorophyll	Green chemical in chloroplasts that absorbs light, essential for photosynthesis
Glucose	A type of sugar produced in photosynthesis and a chemical store of energy
Limiting Factor	A factor (thing) (light intensity, temperature, carbon dioxide) that prevents photosynthesis from going faster.

Box 3 – Plant tissues

Specialised cells/tissues in plants include palisade cells (for photosynthesis), guard cells (to open and close stomata for movement of water and gases) and veins containing xylem which transports water and minerals, and phloem which transports dissolved sugars.



Box 4 – How plants use the glucose they produce

1. For respiration – to transfer energy to all cells so they can function.
2. To make cellulose – the material which strengthens plant cell walls.
3. To make starch – the insoluble storage product that is stored inside cells, especially in roots (like potatoes) or bulbs (like daffodils).
4. To make proteins – glucose is converted to amino acids and combined with nitrate minerals that the plant absorbs through the root hair cells to make proteins.
5. To make fats and oils – these are chemicals that are stores of energy and are found in seeds and nuts which provide an energy source for a young plant before it has leaves so it can photosynthesise.

Y8 History Knowledge Organiser: Interpretations of Medieval Africa

TIMELINE	
c.1075	Kingdom of Mapungubwe begins to develop
1200s	Golden Rhino created
1700	European settlers arrive in Southern Africa
1884	Pear's Soap advert produced
1893	Cecil Rhodes takes control of Rhodesia
1932	Golden Rhino discovered
1948	Apartheid begins in South Africa
1956	Ghana wins independence from British Empire
1980	Rhodesia (Zimbabwe) wins independence
1994	Apartheid ends

KPI 1 Mapungubwe

The Kingdom of **Mapungubwe** was a Medieval kingdom of the **Bantu people located in southern** Africa.

It was most powerful between 1075 and 1220.

The centre of the kingdom was on **Mapungubwe Hill**, where the leaders of the kingdom lived and were buried.

KPI 2 Archaeological Evidence from Mapungubwe

1. The Golden Rhino of Mapungubwe was created in the 13th Century. It is about **20 cm** long and it made of thin gold sheet held together by gold pins. It was discovered in the grave of a leader of the kingdom.
The **Golden Rhino** shows that the **Bantu** people:
- Were skilled **craftsmen**
- Were wealthy

Had time to spend creating decorative items

2. Glass beads from places as far away as India, China, and Egypt have been discovered. This shows that the **Bantu** people:
- Had trading links with other peoples
- Had valuable items to trade for the beads

3. Board games have been discovered. Animal herders dug hollows in the rock that could be filled with pebbles. This shows that the **Bantu** people:
- Had free time to spend on entertainment

Herded animals

4. Rock art is visible in caves all around **Mapungubwe**. These paintings show that the **Bantu** people:
- Saw animals as very important
- Had different roles for men and women

5. Other gold items, such as a necklace and sceptre, were also discovered in the graves on top of **Mapungubwe Hill**. This shows that the **Bantu** people:
- Were very wealthy
- Were skilled craftsmen

KPI 4 Apartheid in South Africa

In 1910, South Africa gained **independence**, although the country was still controlled by white **settlers** who made up just 15% of the population.

In 1948, the white government introduced the policy of **Apartheid**, which was based on the idea that Europeans were naturally **superior** to black Africans.

Apartheid Laws
removed black rights. Black people couldn't vote or marry white people.

Segregation
Black Africans lived in separate **homelands** and could not attend white schools.

Opposition
Nelson Mandela, an **anti-apartheid** leader, was in put prison for 27 years for resisting

KPI 3 European views of Africa in the 19th Century

Europeans had begun to settle in parts of Africa from 1700. However, during the late nineteenth-century, the whole continent was divided up between the European **empires** who wanted to get their hands on **natural resources** like gold and diamonds.

Cecil Rhodes was a British **imperialist**. He wrote that *"we are the first race in the world...and the more of the world we **inhabit**, the better it shall be for the world."*

In 1893 Rhodes took over an area of southern Africa called **Matabeleland** because he heard there was gold there. His soldiers killed thousands of **Matabele** warriors with machine guns.

He named the **territory** he had conquered after himself: **Rhodesia**.

Europeans **justified** taking over Africa by explaining that Africans were **uncivilised** and **backwards**. Europeans argued that European rule was good for Africans because they could be civilised by the European **master race**.

This view is clear in this Pears' Soap advert from 1884.

The advert shows African soldiers in Sudan dressed in a **backwards** and **uncivilised** way.

They are praying to the Europeans' soap, suggesting that they need the Europeans to make them **civilised**.

Ideas like this helped justify **imperialism**.

Y8 History Knowledge Organiser: Interpretations of Medieval Africa

KPI 6 Change in the 20th Century

Decolonisation

In 1956, **Ghana** became the first African **colony** to claim **independence** from the British Empire.
One by one, the **colonies** became **independent**. Rhodesia won independence in 1980. This process was known as **decolonisation**.

The End of Apartheid

Following protests and pressure from other European countries, **Nelson Mandela** was released from prison in 1993 and voting rights were granted to black Africans. In 1994, Mandela was elected President of South Africa and **apartheid** ended.

Changing Ideas about Race
After World War II, European ideas about race began to change.

American **anthropologists** such as **Margaret Mead** showed that there are very few relevant differences between people from different races.

KPI 7 Interpretations of Medieval Africa

1893 – Cecil Rhodes takes over Rhodesia

1910 – South African independence

1932 – Golden Rhino discovered

1948 – Apartheid begins in South Africa

1956 – Ghana wins independence

1994 – Mandela elected President

Interpretation 2 - a History textbook produced by the South African government in 1955

"Southern Africa began to be settled by White Europeans at the same time as Black Africans. Around 1700, as Europeans were travelling north, tribes of Black Africans began to migrate South. The two groups struggled to dominate this empty land."

Interpretation 3 - an extract from a speech given by Sian Tiley-Nel, a South African museum manager, in 2016.

"the Golden Rhino...gives us evidence of a powerful and sophisticated kingdom that existed in Africa hundreds of years before white settlement"

VOCABULARY

Anthropologist	Someone who studies people
Apartheid	South African government policy to separate white and black
Archaeology	The study of historical objects
Backwards	Not modern, not having technology, not intelligent
Bantu people	A southern African black ethnic group
Cecil Rhodes	A British imperialist
Craftsmen	People who make things
Curfew	A time when everyone has to be in their home in the evening
Decolonisation	When countries become independent from an empire
Empire	When a powerful country takes over other areas of land
Funding	Money
Ghana	A former British colony in West Africa
Granite	Hard, heavy stone
Homelands	Areas where black Africans were forced to live under apartheid
Imperialism	The belief that expanding European empires is a good thing
Imperialist	Someone who expands European empires
Independence	When a colony becomes free from an Empire
Independent	Free from an empire
Inhabit	Live in
Interracial	Between white and black people
Interpretation	One persons' view of history
Justify	To explain something and make it seem fair
Kingdom	A people ruled by a King
Mapungubwe	A medieval African kingdom
Master race	The view that one race (white) was superior to all others
Matabeleland	An area of southern Africa
Nelson Mandela	Anti-apartheid leader in South Africa
Rhodesia	British colony, named after Cecil Rhodes
Rock art	Paintings drawn on rock
Segregation	Separation
Settlers	White Europeans who made their homes in other areas
Superior	Better than
Territory	Land
Uncivilised	Not modern, backwards

Y8 History Knowledge Organiser: The Jim Crow South

1.1 Slavery and the American Civil War

Slavery was abolished in the United States following the American Civil War

American Slavery

By 1860 around 4 million slaves worked on tobacco and cotton **plantations** in **the South**.

The American Civil War

In 1860, **Abraham Lincoln** was elected president. He opposed slavery.

In response, the southern states broke away from the US. Between 1861 and 1865, the North fought a **civil war** against the **South** to decide whether slavery would continue spreading.

In 1863, **President Lincoln** signed the **Emancipation Proclamation** which made all slaves free. The northern states won the **Civil War** in 1865 and slavery ended.

Reconstruction

After the **Civil War**, **the South** was ruled by **the North** during the period of **Reconstruction**. **African Americans** won the right to vote.

African Americans were granted the right to vote and over 1500 black politicians won elections.

However, in 1877, white southerners regained control of governments in the **South**.

1.2 Pete Daniel and the Jim Crow South

In the years after Reconstruction, a system of racial oppression emerged that meant African Americans remained second-class citizens. This system was called Jim Crow.

Pete Daniel

In 1979 the historian Pete Daniel used a metaphor to describe the **Jim Crow** system of laws that came after slavery:

> *"The system of racial oppression that emerged after slavery can be likened to an unfinished **patchwork quilt**; year by year the design would change - a law added here, a law there, while **lynchings**, beatings, **vagrancy** laws, and **illiteracy** eventually pieced it out. Yet the quilt **transcended** the patches; its ultimate pattern was greater than its parts. There was a strength in its design that may well have been **aesthetically pleasing** to the people who sewed it, but to those it covered, it was **stifling**."*

In other words:

- African Americans faced lots of little problems
- Each problem made the other problems worse
- The problems were linked together

1.3 Segregation

Segregation meant the separation of black and white people

Jim Crow laws which forced African Americans to use separate...

- Train carriages
- Schools
- Restaurants
- Swimming Pools
- Toilets and water fountains

Black schools were underfunded
Alabama spent $37 on each white child and just $7 on each black child

By 1890, more than 60% of black Americans were illiterate

In 1896 the **Plessy vs. Ferguson Supreme Court** decision ruled that **segregation** was legal, as long as **facilities** were equal.

In reality, however, **segregated facilities** were almost always **inferior** to white facilities.

1.4 White Supremacy

Jim Crow was underpinned by the ideology of white supremacy

Scientific Racism

- White supremacy is an **ideology** that states that white people are *naturally* superior to black people.
- At **Harvard University**, students learnt that African Americans were closer to chimpanzees than white people. We would now call this **pseudoscience**.

Laws

- **White supremacy** was a widespread idea amongst American politicians. As a result they supported **Jim Crow**. For example:

The Supreme Court: In 1896, the **Supreme Court** ruled in the **Plessy vs. Ferguson** case that segregation was legal.

The President: President Woodrow Wilson (1912-1920) introduced **segregation** in the White House in 1913

Stereotypes in Popular Culture

- The most popular film of the early 20th Century - **Birth of a Nation** (1915) - warned about aggressive black men attacking white women and portrayed white men as saviours
- The film inspired **racial violence**
- The **Ku Klux Klan**, a white terrorist organisation, had over 2 million members by the 1920s

Y8 History Knowledge Organiser: The Jim Crow South

2.1 Sharecropping

When slavery ended, many former slaves continued to work as sharecroppers on the plantations of former slave owners.

What was sharecropping?

Sharecroppers were not paid for the work they did but received a share of the profit when the crops were sold at harvest time.

Sharecroppers were forced to loan money from the plantation owner during the year. The share of the profit they received was not enough to repay the **debt**.

Sharecroppers often misunderstood the complex contracts they signed with plantation owners. This led to them receiving a lesser share of the **profit**.

The Thibodaux Sugar Massacre

- In **Thibodaux, Louisiana** in 1887, 10,000 sugar workers went on strike after their bosses refused to pay them every two weeks
- The white **planation** owners responded with **violence** and 35 sugar workers were killed

2.2 Divided Resistance

African Americans resisted Jim Crow but disenfranchisement and division made it very difficult to overturn

Disenfranchisement: white southerners employed a variety of different methods to prevent African Americans from voting including:

Intimidation: African Americans who tried to vote were threatened with lynching

Literacy Tests: voters had to take a literacy test, which many black Americans failed because they were illiterate

Poll Tax: voters had to pay a tax to vote. In Texas, everyone had to pay $1.50 each year to be able to vote.

Division: African Americans disagreed about the best way to fight Jim Crow, which made resistance less effective

The **National Association of Coloured Women (NACW)** urged African Americans to proving themselves equal to whites by 'living cleanly' and rejecting drinking and gambling

Jack Johnson challenged white supremacy by defeating white boxers and becoming heavyweight champion. However, his lifestyle - drinking, speeding, and going out with white women - also undermined **NACW's** efforts.

2.3 Ida B. Wells

The story of Ida B. Wells reveals a lot about life in the Jim Crow South

- Ida B. Wells was a journalist and teacher
- She was sacked from her job as a teacher for complaining that, although white teachers were paid $80 per week, she was paid just $30 a week.
- In her newspaper, *The Free Speech*, Wells wrote hundreds of articles that showed the world the problem of lynching.
- In 1889 alone, 29 black men were lynched in Georgia, including Wells' friend Thomas Moss who was killed because white shopkeepers were jealous of the success of his grocery store
- She also travelled abroad, visiting England in 1892 and 1894 and giving a speech in Bristol. When she returned home, her offices had been attacked.
- Wells campaigned for a law to make **lynching** illegal. The law was rejected over 200 times by Congress

VOCABULARY

Aesthetically pleasing	Prettily
Congress	American parliament
Disenfranchisement	Not being able to vote
Emancipation	Freedom from being a slave
Facilities	Schools, transport, shops, etc
Harvard	The most respected US university
Ideology	A group of ideas
Illiterate	Not able to read or write
Inferior	Worse
Intimidation	Scaring someone with violence
Jim Crow	Racial system in the South
Literacy tests	Spelling tests before you vote
Louisiana	A southern state
Lynching	Violent murder, often hanging
Poll tax	A tax voters have to pay
Pseudoscience	Incorrect scientific ideas
Reconstruction	When North controlled South
Second-class citizens	People who are not treated equally in their country
Segregation	Separating the races
Sharecropping	Working for a share of the crop
The South	Part of the US with slavery
Stereotypes	False ideas about somebody
Supreme Court	The most powerful law court in America
Transcended	Was more than
Vagrancy	Homelessness
Went on strike	Stopped working to protest
White supremacy	Ideology stating that whites were naturally superior

Year 8 Civil Rights in the USA

1. Problems facing African Americans

Although slavery had ended in 1865, African Americans were still treated as **second-class citizens** in the **South**. All southern states had introduced **Jim Crow laws** in the 1890s that made life difficult for black Americans.

Segregation

Segregation meant the separation of the races. In the southern states, **Jim Crow laws** said that blacks and whites had to eat in separate restaurants, travel at the back of buses and trains, and attend separate schools.

Disenfranchisement

Disenfranchisement means not being able to vote. White southerners used a variety of means to stop African Americans voting, including threatening violence, setting **literacy tests**, and requiring payment of a **poll tax**.

Stereotypes

Negative **stereotypes** of black Americans as dirty, violent, or uneducated were spread through songs, advertisements, and books. This made it difficult for African Americans to get jobs.

Violence

White southerners, led by organisations like the **Ku Klux Klan**, used violence to stop African Americans resisting **Jim Crow**. In Mississippi, 581 African Americans were **lynched** during the Jim Crow period. Racist southern politicians took no action to stop lynching.

2. African Americans and World War II

By 1945, there were 750,000 black soldiers in the US Army. The war provided opportunities for African Americans to prove themselves and make progress in the struggle for equality.

Progress

1. The US Supreme Commander Eisenhower supported **integrating** the army and the armed services were **desegregated** by 1948
2. The war provided jobs. 4 million African Americans moved from the **South** to the **North** to work in factories.
3. A **Committee on Civil Rights** recommended laws to stop **lynching** and housing **segregation** in 1946

Problems

1. The army was **segregated**. Black nurses were not allowed to treat white soldiers.
2. Black migration to northern cities created racial tension. In 1943, 25 black and 9 white people were killed in a **race riot** in Detroit.
3. **President Truman** decided not to act on the recommendations of the **Committee on Civil Rights**

3. Education

Education

Black children had to attend separate all-black schools which were **underfunded** and had poor facilities. Poor education made it hard for African Americans to find work.

Psychologists also proved that **segregation** affected the **self-esteem** of black children.

1954: Brown vs. Topeka Board of Education

Oliver Brown, a black man, **sued** the **Board of Education** in **Topeka, Kansas** because his daughter - **Laura Brown** - had to walk 2 miles to an all-black school, rather than go to the white school around the corner. **Brown** was supported by the **NAACP**.

The case went to the **Supreme Court**, led by **Chief Justice Warren**. In 1954, the **Supreme Court** ruled that segregation in education was **unconstitutional**.

However, many schools continued to refuse to implement this and by 1956, in six southern states, not a single black child attended any school where there were white children. Southern politicians such as **George Wallace** promised **massive resistance** against **integration**.

SIGNIFICANCE: 1. First time that the **Supreme Court** supported Civil Rights; 2. Provided a platform for future Civil Rights protest

1957: Little Rock Nine

The **NAACP** used the courts to challenge **massive resistance**.

In 1957, nine black pupils tried to attend a white school in **Little Rock**, Arkansas. The **Governor**, Orval Faubus, sent **National Guard** soldiers to prevent the nine students from entering the school.

President **Eisenhower** ordered 1,000 troops from the **101st Airborne Division** to escort the children into the school and protect them from the white mobs.

SIGNIFICANCE: 1. **Federal Government** willing to support Civil Rights

4. The Montgomery Bus Boycott 1955-6

The Bus Boycott

In 1955, **Rosa Parks** was arrested for refusing to give up her seat at the front of the bus in **Montgomery, Alabama**.

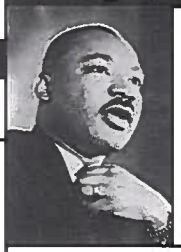
The **NAACP**, the Women's Political Council and **Martin Luther King**, a young minister, organised a **boycott** of the buses. For over a year, black citizens of **Montgomery** refused to use the buses. The black community organised a taxi service and encouraged walking where possible. King and 90 other leaders were arrested.

Eventually, the bus companies gave in. They could not survive without the black community using buses.

Impact

1. In 1956, the **Supreme Court** ruled that bus **segregation** was illegal
2. King emerged as an inspirational leader who could motivate African Americans to protest peacefully
3. Showed that **peaceful protest** worked and inspired other protests, such as the **Sit Ins**.
4. Violence continued. King's house was firebombed. Snipers shot at **integrated** buses.

5. Civil Rights Leaders



Martin Luther King

King was a Christian minister from the **South**. He believed in **peaceful protest**: if black Americans refused to use violence, the white southerners would look bad and the government would support change. He believed black and white Americans could work together. **Assassinated** in 1968.

SIGNIFICANCE: 1. A great **orator**, his speeches persuaded both black and white Americans to support the Civil Rights movement, such as his 'I have a dream' speech at the **March on Washington**; 2. Led peaceful protests such as **Montgomery Bus Boycott** and **Selma March**; 3. Worked closely with white leaders such as **JFK**

Malcolm X

Malcolm X was a leader of the **Nation of Islam**. He wanted black Americans to stand up for themselves, **'by any means necessary'**, including violence. He had grown up in **northern** cities and focused on the problems of poverty and police violence in places like New York. **Assassinated** in 1965.

SIGNIFICANCE: 1. An inspiration for groups such as the **Black Panthers** who used violent methods to achieve equality; 2. Increased black **self-esteem** by celebrating black heritage through the **Black Power** movement; 3. Encouraging violence led some white supporters of civil rights to stop supporting the movement

6. Civil Rights Legislation

1964 Civil Rights Act

Banned **segregation** in public places

Gave black students equal rights to attend schools and universities

1965 Voting Rights Act

Ended measures to stop black people voting

Government officials monitored elections and stepped in if they thought **discrimination** was taking place

101st Airborne	US army unit who defeated Hitler
Assassinated	Shot dead
Black Panthers	Black group using violent methods
Black Power	Movement for black pride
Boycott	Stop using a service
Desegregated	Not segregated
Discrimination	Racism
Disenfranchisement	Not allowing people to vote
Eisenhower	President 1952-1960
Governor	Leader of a state government
Integrated	Not segregated
JFK	President 1960-1963
Jim Crow laws	Racist laws in the South
Lynching	Racist murders
March on Washington	Civil rights protest uniting black and white
Massive Resistance	Southern resistance to integration
NAACP	Black rights organisation
Nation of Islam	Organisation of black Muslims
Orator	Person who gives great speeches
Peaceful Protest	Protesting without violence
Race Riot	Violence between white and black people
Second-class citizens	People without rights, treated differently
Self-esteem	How you feel about yourself
Selma March	March for voting rights, led by King
Segregation	Separating white and black people
Truman	President 1944-1952
Sit Ins	Peaceful protest against segregation
Unconstitutional	Illegal

PCSHE – Year 8 Topic 4 – Equality and Discrimination

Section 1: Key Terms

- **Autism**: A condition that affects how a person interacts with the world and other people.
- **Biphobia**: Dislike or prejudice against bisexual people.
- **Bullying**: Repeated behaviour intended to hurt someone physically or emotionally.
- **Cyber Bullying**: Bullying that takes place online, through social media, or via messaging apps.
- **Disablism**: Unfair treatment or discriminatory language directed at people with disabilities.
- **Discrimination**: Treating a person or group unfairly because of a protected characteristic.
- **Equality**: Ensuring everyone has the same opportunities and rights and is treated fairly.
- **Hate Crime**: A criminal act motivated by prejudice against a specific group of people.
- **Homophobia**: Fear, resentment, or prejudice against gay or lesbian people.
- **Inequality**: A situation where some people have more rights or better opportunities than others.
- **Prejudice**: An opinion or "pre-judgment" about someone made before you actually know them.
- **Protected Characteristics**: The 9 groups of people protected from discrimination by the Equality Act 2010.
- **Racism**: Prejudice or discrimination directed against someone because of their race or ethnicity.
- **Stereotype**: A fixed and oversimplified image or idea of a particular type of person.
- **Transphobia**: Fear, resentment, or prejudice against transgender people.

Section 2: The Equality Act

The **Equality Act 2010** aims to prevent discrimination. This law was meant to help make equality law easier to understand and simpler to use. It is illegal to discriminate against anyone based on nine protected characteristics:

- Age
- Disability
- Gender reassignment
- Marriage and civil partnership
- Pregnancy and maternity
- Race: can refer to colour, nationality, ethnic or national origins
- Religion or belief: can refer to religious or philosophical beliefs, including a lack of belief
- Sex: refers to a person's gender
- Sexual orientation

Importance of the Equality Act:

- The Act makes it law that every organisation must not discriminate against their employees or the people that use their services because of their characteristics.
- It is used to help convince people to report crimes and know that the police must take them seriously.

How to end discrimination?

- Education: Educating students about the problems raises awareness
- Rallies: Public displays of support to show how many people are trying to fight discrimination
- Law: Anti-discrimination laws have been passed to help those at risk
- Charities: They do excellent work all over the world to help those effected.
- Religion: They teach us that everyone is equal, made in God's image. They need to work together to continue spreading the message
- Defend: If you see someone discriminating against someone else, speak up, explain how their actions are wrong.

Section 3: LGBTQ+ Awareness and Pride

- **Sexual Orientation and Identity**: Everyone has the right to express their identity without fear. Using "casual homophobia" (like using the word 'gay' as an insult) is harmful and creates an environment of prejudice.
- **Challenging Prejudice**: We should challenge hurtful remarks even if the person being talked about isn't there to hear it. This helps stop stereotypes from spreading.
- **Pride**: Celebrated in June, Pride commemorates the **Stonewall Riots** of 1969. It is a time to celebrate LGBTQ+ communities and demand equal rights and justice.

Section 4: Disability and Autism

- **Understanding Disability**: A disability is a physical or mental condition that has a long-term impact on a person's daily life.
- **Autism**: This is a lifelong condition that affects how a person communicates and relates to others. It is a "spectrum," meaning it affects every person differently.
- **Disablism**: This is a specific form of discrimination. It includes using unhelpful labels or treating someone as "lesser" because they have a disability or learning difficulty.

Section 5: Racism and Hate Crime

Racism is a form of discrimination where someone is treated unfairly because of their **race, colour, nationality, or ethnic origin**. Under the **Equality Act 2010**, "Race" is a protected characteristic, meaning it is illegal to discriminate against someone because of it.

- **Overt Racism**: This is open and obvious hostility, such as using racist names, sending threats, or physical violence.
- **Covert Racism**: This is more subtle and can be harder to spot. It includes "microaggressions"—small comments that make someone feel like they don't fit in or are less important because of their race.
- **The Impact**: Racism can make people feel lonely, angry, or ashamed of their identity. It can lead to long-term mental health struggles like anxiety and depression.

- **Hate Crime**: A crime becomes a "Hate Crime" if it is motivated by hostility toward a person's disability, race, religion, sexual orientation, or transgender identity.

Support

- Report hate incidents to the police via "True Vision" or seek support from charities like Childline or Tell MAMA.
- Safeguarding/pastoral: Mr Ogden, Mrs Jones, Mrs Loveridge, Miss Phelps, Mrs Toulson

PCSHE – Year 8 Topic 5 – Safety

Section 1: Key Terms

- **Acclimatise**: To get used to a new environment, such as slowly getting used to the temperature of cold water.
- **Analyse**: To look at something in detail to understand it better (e.g., looking at a road scene for risks).
- **Cold Water Shock**: The body's natural, painful reaction to being suddenly dropped into cold water.
- **Consequences**: The results or effects of an action, especially when they are bad.
- **Distraction**: Something that takes your attention away from what you should be focusing on, like a phone while crossing the road.
- **Impact**: The powerful effect that an event has on someone or something.
- **Inland Water**: Bodies of water that are not the sea, such as lakes, rivers, canals, and reservoirs.
- **Insurance**: A legal requirement for drivers that helps pay for costs if there is an accident.
- **Lifebuoy**: A ring-shaped floating device used to help someone stay afloat in water.
- **Pedestrian**: A person walking rather than travelling in a vehicle.
- **Peer Influence**: When people your own age encourage you to change your behaviour or do something you might not usually do.
- **Responsible**: Having a duty to deal with something or taking care of yourself and others.
- **Risk Assessment**: The process of identifying what could go wrong and how likely it is to happen.
- **Strategy**: A plan of action designed to achieve a goal, like safely leaving a risky situation.

Section 2: Water Safety

Assessing Risk: Open water (like lakes, rivers, or quarries) can look safe but contains hidden dangers. Even strong swimmers can get into trouble.

Hidden Dangers:

- **Cold Water Shock**: Very cold water can cause your body to panic, making it hard to breathe or swim.
- **Hidden Currents**: Moving water can be much stronger than it looks on the surface.
- **Objects Underwater**: Reeds, rubbish, or rocks can trap you.

Peer Influence: Sometimes friends might pressure you to "jump in" or "bridge jump." Being a "responsible friend" means recognizing the danger and suggesting a safer activity instead.

Emergency Actions: If you see someone in trouble, **do not jump in to save them**. Call 999 and look for a rescue aid (like a lifebuoy) to throw to them.

Section 3: Road Safety

Responsibilities: Everyone on the road has a role to play.

- **Pedestrians**: Staying alert, using crossings, and avoiding distractions like phones or headphones.
- **Passengers**: Helping the driver stay focused by not being too loud or distracting.
- **Drivers**: Following the speed limit, avoiding alcohol/drugs, and ensuring the car is safe (e.g., having insurance).

Risk Factors: Accidents are often caused by "The Fatal Four":

1. Speeding.
2. Distractions (like mobile phones).
3. Not wearing a seatbelt.
4. Drink or drug driving.

Impact of Risks: Road accidents don't just affect the people involved; they have a "ripple effect" on families, friends, and the emergency services.

Section 4: Managing Peer Pressure

Strategies for Safety: If you are in a risky situation (like a car with a fast driver or near dangerous water), you can use these "exit strategies":

- **The "Text Home"**: Pretend you've had a message saying you need to be home immediately.
- **The "Blame the Parents"**: Say your parents are tracking your location and will be angry if you stay.
- **The "Broken Record"**: Keep calmly repeating "No, I'm not comfortable with this" until they stop asking.

Support for Road and Water Safety

If you have seen something dangerous or want to learn more about staying safe outdoors:

- **999**: Only call this in a real emergency, such as seeing someone drowning or a serious car accident.
- **111**: Call this for non-emergency medical advice if someone is hurt but it isn't life-threatening.
- **Think! Road Safety**: A website with specific advice for teenagers on how to manage distractions and stay safe near roads.
- **RNLI & Royal Life Saving Society (RLSS)**: These organisations offer great guides on how to spot "Cold Water Shock" and how to help a friend without putting yourself in danger.

Year 8 Topic 4 – 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 environmen .
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 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 which would break up

Year 8 Topic 4 – 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 against the cold
- Large feet - to distribute 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, 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 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 5 – What is the challenge of resource management?

Key words

- HIC- High Income Country
- LIC- Low Income Country
- NEE- Newly Emerging Economies
- Malnutrition- not having the right balance of nutrients
- Undernourished- having insufficient food to survive
- Water deficit- water demand is greater than supply
- Water surplus- water demand is lower than supply
- Water transfers can help to maintain supplies e.g. dams, aqueducts.
- Resource -resource is a stock or supply of something that has a value or purpose. Adequate supplies of these resources are essential for a countries development.
- Surplus - When there is a surplus of these resources humans benefit from them socially and economically so quality of life improves.
- Deficit - When there is less availability (scarcity) of resources is reduced the quality of life is also reduced.
- Economic wellbeing- linked to jobs and money
- Social wellbeing- linked to family, friends, community, happiness etc..

KPI1- Why are resources important?

Access to food, water and energy affects the economic and social well-being of people and countries.

	Food	Water	Energy
Why is it needed?	A balanced diet keeps us healthy, active and productive.	• Essential for drinking • Vital for crops • Used to produce energy	Countries need energy or industry and transport as well as homes. HIC depend on a large stable supply of energy.
What problems are caused by a scarcity of this resource?	• Without access to safe, nutritious food people become malnourished which affects development; Malnourishment increases the likelihood of getting diseases e.g. 1/3 of under 5's die • People who aren't getting enough to eat may not perform well at school meaning they lack skills to help a country's economic development.	Without proper sanitation water resources get polluted. Water borne diseases (e.g. cholera) kill millions each year.	It would be impossible to develop as a country without this resource as industry would not function
How does the distribution and use of this resource vary?	Over one billion people on the globe do not eat enough calories	Many LICS have a shortage of water mainly because of the extreme climates and lack of technology	HICs consume more energy than LICS. As LICS develop their use of energy will increase rapidly

KPI2 – Why are there global inequalities of resources?

1. Access – some countries have more natural resources than others, and if the resource is evenly shared all can benefit. This is not always the case however.
2. Quantity – how much of a natural resource does a country or population have? If it is in short supply do they have the means to overcome that. For example, water is in short supply in the Dubai but it is building desalinisation plants to help it cope.
3. Level of wealth – how much money does a place have? The wealthier a place the more options the country has to combat any shortages in key resources.
4. Level of technology and infrastructure – here we need to consider if the country has the technology to deliver energy, water and food to its people. The UK has a tiny percentage of its population producing food (about 1%) yet can produce nearly 60% of the nations needs. Some countries do not have water purification plants or enough power station capacity.
5. Standard of living of population, the higher this is the more the population expects to get in terms of clean water, energy use and food consumption.
6. **Diet** – this can influence how many calories and taken in and what foods are eaten. A meat rich diet would be harder for a country to provide for.

KPI3 – What problems are caused by a lack of a resource?

- Use of fossil fuels and depleted reserves puts pressure on countries to find alternative sources and for humans to adapt their lives.
- A lack of food can cause a famine- this is a serious lack of food across a large area. It can lead to starvation and death.
- Social unrest - when there is a lack of resources this can lead to riots and may cause civil wars.
- When water supplies are low this has an impact of farming in areas which rely on irrigation
- Water that is polluted can be more dangerous than when water is scarce as it may lead to people contracting water borne diseases e.g. cholera.

KPI4 – What happened to Easter Island?

Easter Island is 63 square miles and lies 2000 miles off the coast of Chile. The island was settled by an ocean travelling tribe by around 1200AD.

What caused the depopulation of Easter Island?

- Moai (statues) were built and moved using the trunks of trees.
- Deforestation (cutting down trees) led to a lack of wood to build ships and caused the soil to become infertile so very few crops could be grown.
- A civil war killed off many individuals
- rats were accidently introduced to the island by the Europeans and explorers carried disease (such as smallpox) which the native people had no immunity to. This reduced the population to only 111 people by 1877.

KPI 5 – What crisis is Las Vegas facing?
Location – Las Vegas is located in the state of Nevada, USA

Causes:
1. **Unsustainable water demand**: The Colorado River supplies 7 states with water! The demand for water now outstrips the supply of water by a factor of 2. This is called a water stress.
2. **Increasing population**: Population in Colorado Basin States will increase from 40 million in 2015 to 76.5 million by 2060. This has the potential to significantly increase water demand and consumption.
3. **Disappearing Groundwater**: Lack of groundwater in aquifers (stores of water underground) is causing the land to subside (sink) in some areas. In agricultural areas, where farmers rely on pumping out groundwater, groundwater levels are dropping rapidly.
4. **Worst drought:** 14 years of drought from the Rocky Mountains to Arizona has been the worst in 1250 years. Reservoirs have shrunk to less than half of their capacities.
5. **Less river flow:** Dust storms are becoming increasingly fierce. Dust is being deposited on the snowy peaks of the Sierra Nevada. This is making them darker and causing more snow melt. This could reduce river flows in the summer as all the snow has melted.

Impacts:
1. Lake Mead has been drained of 18 trillion litres of water and is now only half full
2. Nevada and California are just two of the states that depend on the 2,300-km Colorado River, which rises in the Rocky Mountains and once emptied into the Gulf of California in Mexico. It now runs dry before it reaches the sea.
3. The Colorado is a dying river with seven US states taking water from it: California, Nevada, Arizona, Utah, Wyoming, Colorado and New Mexico.

Solutions –
- ***Xeriscaping-*** In Las Vegas a lot of the water is used to water golf courses, parks and gardens. A concerted effort is now being made to remove grass from home gardens.
- **Desalination Plants:** Desalination converts salty water into drinkable water by removing salt and other solids from seawater. Depending on their location, building a plant can cost from $300 million to $2.9 billion. Once operational, plants require huge amounts of energy. Additionally, the wastewater is very salty and can be difficult to dispose of in a sustainable way which does not harm marine ecosystems.
- **Water conservation:** Water conservation means to save water. Within households this can be done in a variety of ways including: having a shower instead of a bath; collecting rainwater to use on the garden rather than tap water; recycling bath water to flush toilets with; installing more efficient versions of appliances such as washing machines.
- **Raising the price of water:** Raising the price of water is one strategy being considered to encourage individuals to conserve the water that they are using.
- **Limiting population growth:** Some countries have historically introduced policies to encourage individuals to have more children (France) or to discourage individuals from having children (China). The direction of policies is directly linked to the needs of the country.
- **Strict planning controls:** Strict planning controls might be a solution to solve water stress. If governments or councils placed greater controls over what could be built in a certain region this might influence how much water is being used.

KPI6- What crisis is Ghana facing?
Location - Ghana is a LIC located in western Africa. The country has lots of fertile land, but in spite of this it suffers from food insecurity.

Impacts:
- About 5% of Ghana's population (1.5 million people) suffer from food insecurity, and another 2 million people are vulnerable to food insecurity.
- Ghana has a food deficit - in 2007 it was 59 kilocalories per person per day, but by 2012 it was down to 22 kilocalories per person per day.
- The number of people who are undernourished went down from 2.8 million in 2007, to 1.2 million by 2012.

Solutions:
- Aeroponics: the process of growing plants in an air or mist environment without the use of soil. The basic principle of aeroponics growing is to grow plants suspended in a closed or semi-closed environment by spraying the plant's dangling roots and lower stem with a spray that is a nutrient-rich water solution.
- Hydroponics: The method of growing plants without soil, using mineral nutrient solutions in water. Only the roots are exposed to the solution.
- Biotechnology: the DNA of the plants are modified using genetic engineering methods. The aim is to introduce a new trait to the plant which does not occur naturally in the species. Examples in food crops include resistance to certain pests, diseases, or environmental conditions.
- Green revolution: Introducing modern management techniques, fertilisers and pesticides to famers in LICs.

KPI7- Blood diamonds
Blood diamonds come from war-torn countries, usually in Africa. They have been used to pay for weapons to continue the fighting. It's illegal to buy or sell conflict diamonds.

How big is the problem?
It's impossible to say exactly how many conflict diamonds are out there. But, for example, we do know that recently, stones worth over £11m have been smuggled out of Cote D'Ivoire every year.

What's being done to stop the trade?
In 2000, the diamond industry set up something called the Kimberley Process. This is a scheme which aims to track every diamond from the place it was mined to the place it is sold, meaning illegal diamonds can't slip through. But human rights groups say it's not being enforced well enough, meaning blood diamonds could be in our shops.

What does the diamond industry say?
It says conflict diamonds are a very small part of the world trade. They also say legal mining is very important for the countries which do it, so avoiding diamonds would do more harm than good. They have also started paying money to charities in Africa to try to fight problems like poverty and disease there. Human rights groups say this is just masking the bigger problems.

Knowledge Organiser - Year 8, Summer 1 - Do we have control over animals?

Key words	Definition
Animal Rights	Animals have a right to live free of being abused and suffering.
Stewardship	The belief that God made the world and so we have a duty to take of all his creations.
Dominion	The belief that God made humans the most important beings on earth and we can do whatever we want.
Gene	A collection of DNA that determines your traits e.g. eye colour.
DNA	A hidden blueprint that tells your cells how to look, grow and work. It is unique to everyone
Cloning	The process of making an exact copy of a living thing
Animal Experimentation	Testing medicines, chemicals, beauty products and hair products on animals to check they are safe before giving them to humans.
Vegetarian	Someone who does not eat meat or anything that contains parts of an animal e.g. gelatine
Vegan	Someone who does not eat meat or use anything produced by an animal e.g. milk, honey, leather
Ethics	The study of right and wrong

KPI1: How do we treat animals today?

We use animals in many ways in the world today and throughout history. Animals are pets, a source of food and drinks, a form of transportation and even a source of entertainment.
However, animals are living beings and experience pain. Some of the above uses of animals can cause them pain and many people in the modern world view some of the uses of animals as wrong.
Science, TV, Social Media and religion can be motivators in whether we view animals as something we should protect (stewardship) or something we can control (dominion).

KPI2: Animal experimentation

One way that we use animals in the modern world is by experimenting on them.
Often when companies are developing things like medicines they cannot give them to a person straight away as they may cause harm or even death. To avoid killing people and check that they work, medical researchers will test them first on animals. This has allowed us to develop medical treatments such as vaccines and has saved millions of lives.
However, beauty companies will also test products on animals to check they are safe for humans. Many question if we really need a nice smelling perfume if a poor animal has had to suffer skin burns just for us to get it.

KPI3: Cloning

Cloning is when you make an exact genetic copy of a living thing. This is something scientists have been trying to do for years as it could help solve world hunger if we can simply produce more healthy plants and animals by copying them.
The most famous example is Dolly the Sheep who was genetically cloned and was the first successful example of animal cloning.
However, cloning has many negative side effects, such as the clones often having a shorter life.

KPI4: Should we all be vegetarian?

Eating meat is seen as very normal in many countries and cultures. However, there has been a rise in the vegetarian and vegan movements. Killing animals for meat obviously does cause them pain and is frowned upon by many people and religious groups as it harms a living thing.
However, others argue that the protein and vitamins we gain from meat allow us to have a balanced diet. Furthermore, Christians argue that God gave us the ability to kill and eat meat and we should therefore act as God wanted us to.

Knowledge Organiser - Year 8, Summer 2 - Why is Judaism so controversial?

Key words	Definition
Anti-Semitism	Hatred, prejudice and discrimination against Jewish people
Torah	Jewish Holy Text
Abraham	The first man to have believed in one God.
Israel	Country in Western Asia which contains the city of Jerusalem.
Hanukkah	Eight day Jewish festival of lights
Passover	Eight day festival celebrating the end of Jewish slavery under the Israelites in Egypt.
Persecution	Being discriminated against or treated badly because of your faith
Holocaust	The murder of 11 million people from 1933-1945. 6 million of these people were Jewish.
Sacred	Something that is considered to be religiously special and important
Covenant	A sacred binding promise/ agreement made with God.
Prophet	Someone who can speak to God/ receive messages from God.

KPI1: Introduction to Judaism and the Torah

Judaism is the second oldest of the six main world religions at roughly 4,000 years old.
They believe that it began with a man named Abraham.
Later in history, Jewish people had been enslaved in Egypt by the rulers known as the Israelites. Moses, a prophet, saved the Jewish people from this slavery by helping them escape across the red sea.
The Torah is the main Jewish Holy Text and is usually in form of a scroll. It is made up of sections (known as books). These sections are the same as the Old Testament of the Christian Bible.

KPI2: Abraham

Jewish people believe that their faith began with a man named Abraham who was the first man to believe in one God (monotheistic).Abraham was born at a time when most people believed in multiple Gods (polytheistic) and as a result he had to leave his family and travel so as to avoid being harmed.
Abraham had his faith tested by God when God asked him to sacrifice his own son Isaac for God. Abraham was about to kill his own son when God stopped him as he was simply happy Abraham was willing to put God above all else.
Abraham made a covenant (agreement with God) to follow God's laws and Jewish people believe that they all too now have this covenant with God.

KPI3: Jewish Festivals

One festival celebrated by Jewish people is Passover. This festival remembers how Moses saved the Jewish people from slavery and usually lasts 7-8 days. Jewish people celebrate by having family meals where they read a book called the Haggadah, sing songs and eat a special meal known as the Seder.
Another key festival is Hanukkah. Hanukkah remembers when the Maccabees (Jewish freedom fighters) fought against the Greek-Syrian Army to protect their faith and beliefs. After reclaiming their temples they lit a Menorah (7 branched candle) with enough oil for one day. However, it burned for eight days. Today, Jewish people will light a Menorah for Eight days in memory of this miracle.

KPI4 and 5: Israel's location and Jewish conflict

Israel is a country located in Western Asia in an area known as the Middle East. Within Israel is a city called Jerusalem that is important in Judaism, Christianity and Islam as they all believe in Abraham and this is where Abraham went to sacrifice his son Isaac.
Because of this shared belief, all three religions believe that the place is sacred and should be controlled by them.
This has led to Israel being split many times over history and today is intertwined with another country called Palestine which is mainly Islamic.
This shared belief has led to many conflicts over history and has contributed to the current war between Israel and Palestine today.

Year 8 French Term 3 - Future plans / Tourist attractions

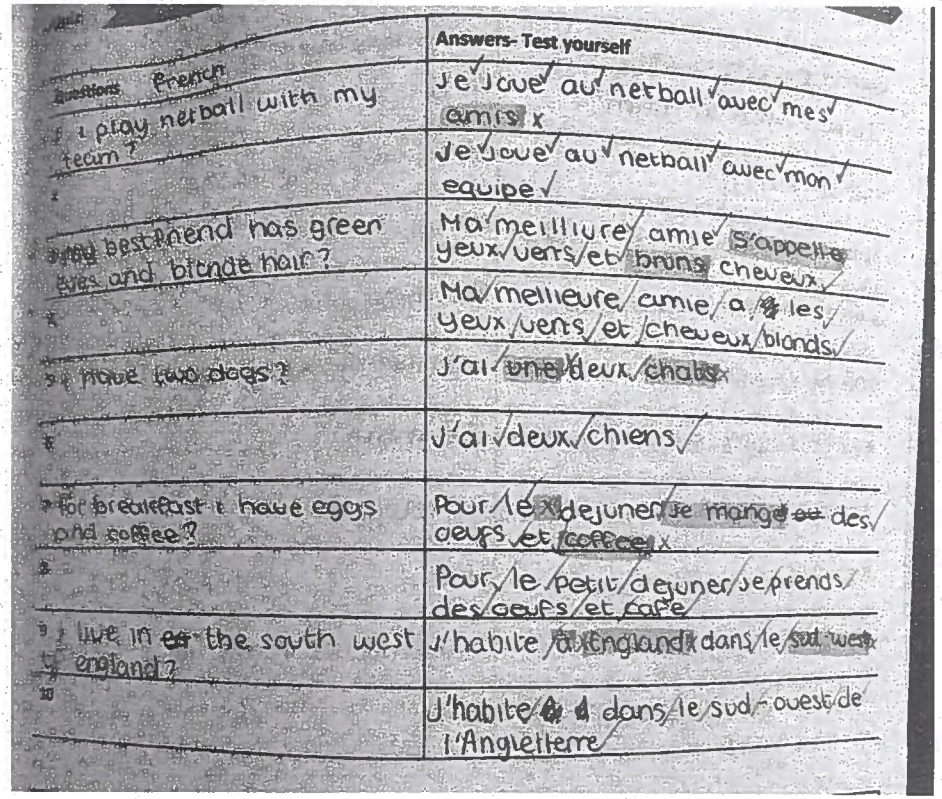
SB9	Next year I am going to study languages	L'année prochaine je vais étudier les langues
	After my exams I am going to learn DT	Après mes examens je vais apprendre la technologie
	If I go to university I am going to learn history	Si je vais à l'université je vais apprendre l'histoire
	which will be tiring	ce qui sera fatigant
SB10	Also I want to study maths	Aussi je veux étudier les maths
	because I would say it is useful	parce que je dirais que c'est utile
	One day I hope to have a good career	Un jour je voudrais avoir une bonne carrière
	I fancy having a good salary	J'ai envie d'avoir un bon solaire
	When I am older I want to be a boss	Quand je serai plus âgé(e) je veux être patron(ne)
	When I am 18 I am going to have a good education	Quand j'aurai (dix-huit) ans je vais avoir une bonne éducation
	I hope to work as a doctor	J'espère travailler comme médecin
	I want to work as a teacher	Je veux travailler comme professeur
	I fancy studying languages	J'ai envie d'étudier les langues
SB11	Last year I went to Paris	L'année dernière je suis allé(e) à Paris
	with my parents and my grandparents	avec mes parents et mes grands-parents
SB11	I travelled by plane	J'ai voyagé en avion

	I stayed in a hotel	Je suis resté(e) dans un hôtel
	We stayed in a campsite	On est resté dans un camping
	Every day I visited the stadium	Chaque jour j'ai visité le stade
	We visited the buildings and the shops	On a visité les bâtiments et les magasins

MFL key classroom language:

Example of a French LSQ:

Term 3.1 - Future plans and opportunities	**Term 3.2 - Tourist attractions**
Key term: Infinitive Definition: The 'to' form of the verb Example: étudier (to study)	Key term: Time phrase Definition: a word or phrase that tells us when and how often something happens. Example: Parfois je vais au musée



Questions - French	Answers- Test yourself
1 I play netball with my team?	Je joue au netball avec mes amis x
	Je joue au netball avec mon equipe
2 My best friend has green eyes and blonde hair?	Ma meilleure amie s'appelle yeux verts et bruns cheveux
	Ma meilleure amie a les yeux verts et cheveux blonds
3 I have two dogs?	J'ai une deux chats
	J'ai deux chiens
4 For breakfast I have eggs and coffee?	Pour le dejuner je mange ~~ou~~ des oeufs et coffee x
	Pour le petit dejuner je prends des oeufs et cafe
5 I live in ~~es~~ the south west of england?	J'habite a england dans le sud west
	J'habite dans le sud-ouest de l'Angleterre

Year 8 Spanish Term 3 - Future plans / Tourist Attractions

SB 9	Next year I'm going to study art	El año próximo voy a estudiar arte
	After my exams I'm going to study business studies	Después de mis exámenes voy a estudiar empresariales
	If I go to university I will learn history	Si voy a la universidad voy a aprender historia
	which will be tiring	que será agotador
	Also I want to study maths	También quiero estudiar matemáticas
	because I would say they are useful	porque diría que son útiles
SB 10	One day I hope to have a good career	Un día espero tener una buena carrera
	I am keen to have a good salary	Tengo ganas de tener un buen salario
	When I am older I want to be a boss	Cuando sea mayor quiero ser jefe
	When I am 18 I am going to have a good education	Cuando tenga dieciocho años voy a tener una buena educación
	I hope to work as a doctor	Espero trabajar como médico
	I want to work as a writer	Quiero trabajar como escritor/a
	I am keen to study languages	tengo ganas de aprender idiomas/ lenguas
SB 11	Last summer I went to Barcelona	El verano pasado fui a Barcelona
	with my parents	con mis padres

	I travelled by plane	Viajé en avión
	I stayed in a hotel	Me alojé en un hotel
	We stayed in a campsite	Nos alojamos en un camping
	I visited the stadium	Visité el estadio
	We visited the buildings	Visitamos los edificios

MFL key classroom language:

Future plans and opportunities Key term: Infinitive Definition: The 'to' form of the verb Example: estudiar (to study)	**Tourist attractions** Key term: Time phrase Definition: a word or phrase that tells us when and how often something happens. Example: A veces voy al museo

Art - Year 8 - Project 2: Places and Spaces

Big Idea 1: Technical Skill and Mastery

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 off 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.

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

Relief Printing
Carving/cutting into a surface. Carved/cut areas remain untouched by ink, only uncarved areas transfer colour e.g. poly-tile and lino printing.

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

Types of Perspective
The difference between one- and two-point perspectives is the number of vanishing points on the horizon line.

Vanishing Point
A vanishing point is a spot on the horizon where all receding parallel lines appear to meet or disappear.

Parallel
Lines that never touch or meet.

Horizon Line
The eye-level line that separates the ground from the sky.

Composition
This is where you decide to place 'things' within your work. Things can refer to lines, shapes, colours, textures, objects etc.

Big Idea 2: Art in Context

Thomas Denny (born 1956)
He is a professional stained-glass artist. He has several pieces within Gloucester Cathedral including the Gerald Finzi window.

Thomas Denny - Process of Working:

1. Chooses different bits of flash glass (clear glass with thin layer of colour)
2. Applies acid etching to remove or lighten colour.
3. Works into surface by:
   - Adding lines with paint
   - Adding tones with paint
   - Removing areas by rubbing or scratching them out with a needle.
4. Glass gets fired.
5. Led sections get added by a specialist to finish off the stain glass window.

Big Ideas 3: Critical Thinking & Evaluation

Analyse
To break something e.g. an artwork into smaller parts so you can examine it more easily.

In art we analyse a work by identifying the Formal Elements (**Form**), explaining how it is made (**Process**) and why it has been made (**Mood**).

Evaluate
To determine the quality of your work as well as your understanding of how you can develop and improve your work. This is often done during a project and at the end of a project.

Annotate
Providing written notes on your work as it develops as well as the process of writing notes during artist research.

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 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.

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

Blending
The smooth transition between tones.

Watercolour Wash
Making watercolours lighter by adding more water.

Stained Glass Windows
A decorative window made from pieces of coloured glass, often arranged into patterns or images.

Collage
Ripping/ Cutting materials such as paper, photographs or fabric and sticking them to a surface to create an image.

Abstract
Art that doesn't focus on representing reality but instead often focused on an idea or thought.

Acid Etching
A technique that uses a strong acid to cut into surfaces such as glass and metal.

Mixed Media
Using more than one material within a piece of work.

Kaleidoscope
A kaleidoscope can refer to a toy with angled mirrors that creates symmetrical patterns. A kaleidoscope effect in digital editing therefore creates patterns through mirroring and reflecting an image.

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

Kevin Atherton (born 1950)
His work 'Cathedral' hangs between the trees at Beechenhurst and is 5m x 3m tall. The imagery in the window is not explicitly religious but are actually from drawings and photographs which the artist did around the forest.

Damien Hirst (born 1965)
His Kaleidoscope series show butterflies arranged in the shape of a stained glass window and copy the pattern of coloured glass.

Anne Desmet (born 1964)
British artist who specialises in lino printing and mixed media collages. She was inspired by Kaleidoscopes and cut up her lino prints into triangles and rearranged them into more abstract compositions.

Big Idea 4: Personal Expression & Reflection

Personal Expression
The act of using your imagination, thoughts and feelings to develop your artwork.

Final Piece
The final outcome to a project where you apply what you have learnt throughout the project e.g. theme, skills & techniques and links to artists.

Links to Artists
Using elements of artist work e.g. theme, colour or techniques in your own work.

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** - when bacteria is transferred from one place to another / Clean - wash food preparation areas and equipment properly with hot, soapy water.
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 will be 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 along with soups and stews.

Year 8 - Food Technology

Macronutrients and Micronutrients

Macronutrients are: **Carbohydrates** **Protein** **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 but its main role is to help build and maintain muscles and cells. 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. Fat helps the body absorb vitamins that are soluble in fat (A,D,E and K). 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.

Vitamins and Minerals

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.

Year 8 Unit 1 - Computer systems		
Lesson 1	**What is a general purpose computing system?** The purpose of a general-purpose computer is to execute programs that operate on data. **Define "program" in terms of instructions, operations and data.** A program is a sequence of instructions that specify operations that are to be performed on data **What is the difference between a general-purpose computing system and a purpose-built device?** Special-purpose computers are designed for one specific task or class of tasks and wouldn't be able to perform general computing tasks. For example, a router is a special-purpose computer designed to move data around a network, while a general-purpose computer can be used for this task, as well as many others.	**Keywords** **The Antikythera mechanism:** complex geared mechanism that could predict solar eclipses, as well as the position of the moon and known planets. **General purpose computer:** A device that executes programs that operate on data. **Software:** Any program or app that can be used by a computer. **Operating system:** A piece of software that controls the operation of a computer, the software that the computer runs and data that the computer uses. Hardware: The physical components that a computer is made of. **Processor:** The processor is the component that executes program instructions. An instruction may: Perform arithmetic or logic operations on data Perform input/output of data Control program flow
Lesson 2	**Describe the hardware components used in computing systems and how they work together in order to execute programs** Computer hardware and software work together to process information in the following way: The hardware consists of the physical components of the computer, such as the processor (CPU), memory (RAM), hard drive, and other peripherals. The software consists of the instructions that tell the hardware what to do. **Explain how all computing systems, regardless of form, are similar in structure ('architecture')** All computing systems, regardless of form or capabilities, make use of the same components: a processor, memory, storage, input and output devices, and communication components.	
Lesson 3	**Explore how the processor, main memory, and storage interact to execute programs in real scenarios** Processors are responsible for executing instructions that make up computer programs. The instructions are stored in memory, and the processor fetches them from memory, one at a time, and executes them. Memory stores the program code and data that the processor needs to execute the program. **Define what an operating system is, and explain its role in controlling program execution.** An Operating System (OS) allows interaction between the computer user and computer hardware. It also controls the execution of programs. Its role includes file, memory and process management, handling input and output and controlling devices.	

Lesson 4	**What are NOT, AND, and OR logical operators.** The logical operators *AND and *OR specify the relationship between operands in a logical expression. The logical operator *NOT is used to negate logical variables or constants. **Explain what logic gates are.** A logic gate is a device that acts as a building block for digital circuits. They perform basic logical functions that are fundamental to digital circuits. **Describe how binary can be used to represent logic gate operations.** Most logic gates have two inputs and one output, and they are based on Boolean algebra. At any given moment, every terminal is in one of the two binary conditions: true or false. False represents 0, and true represents 1.	**Memory:** The main memory is the component that stores the programs and data currently in use. Memory is volatile: its contents are lost when the power is off. **Storage:** The storage (secondary memory) is the set of components that stores programs and data. Storage is persistent: it retains its contents when the power is off. **Operating system:** The operating system is a set of programs that controls the operation* of a computing system. **Boolean logic:** There are three fundamental logical operations: not (inversion) and (conjunction) or (disjunction) **Machine learning:** Programming computers to learn from experience should eventually eliminate the need for much of this detailed programming effort. **Artificial intelligence:** Any machine that performs tasks that typically require intelligence in humans **Source code:** The computer code that has been written to create an app or program.
Lesson 5	**What is 'artificial intelligence' and 'machine learning'?** Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision. Machine learning happens when computers have access to information. Over time, this lets them learn how to make decisions without a human telling it what to do. **What are the steps involved in training machines to perform tasks?** Step 1: Data Acquisition. The first step in the machine learning process is to get the data. ... Step 2: Data Cleaning. All real-world data is often unorganised, redundant, or has missing elements. ... Step 3: Model Training. ... Step 4: Model Testing. ... Step 5: Deployment. **How does machine learning differ from traditional programming?** Machine learning does not eliminate programming. It replaces the problem of programming a machine to perform a task with two separate problems: programming the machine to learn, and providing it with the necessary training **Describe one moral dilemma associated with the use of artificial intelligence.** Who is responsible in an accident? (Accountability) How can decisions be explained? (Transparency) How can we guarantee that machine training does not lead to discrimination? (Bias)	

	How will humans handle lower demand for labour? How will the benefits of AI be fairly distributed?	
Lesson 6	**What are the implications of sharing program code?** The creators of a program can choose to provide access to its source code: anyone can 'see inside' the program to understand how it works, check for errors, suggest improvements, and 'remix' it. This is called 'free' (as in 'freedom'), 'libre', or 'open source' software.	

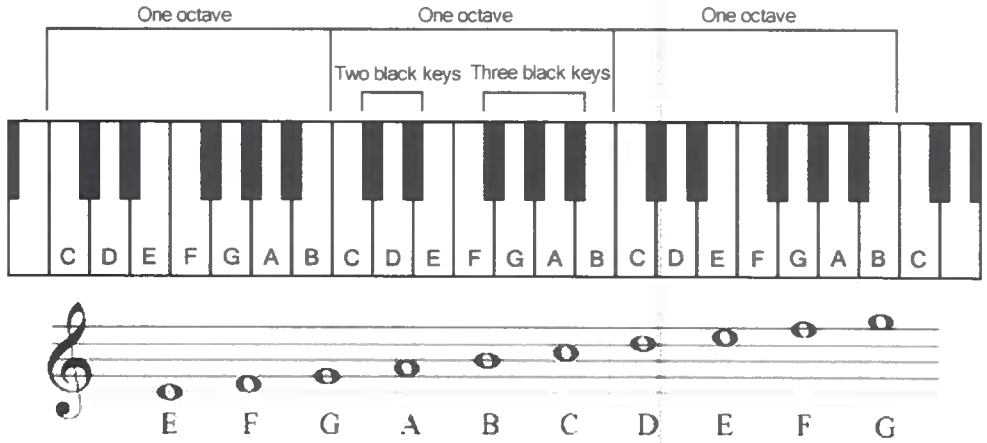
MUSIC - The Elements of Music

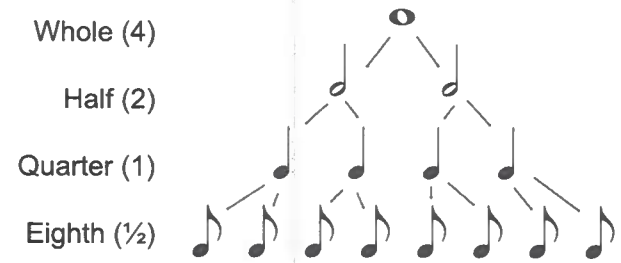
Key Terminology

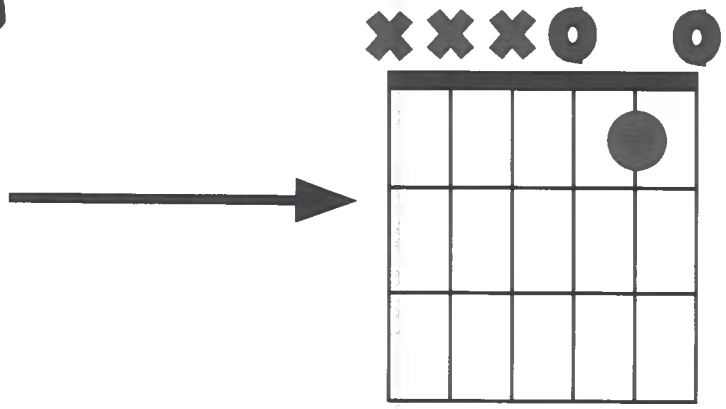
Conductor - A person who directs the performance.
Note - A singular sound.
Chord - A group of three or more notes played at the same time.
Harmony - Different notes played or sung together.
Melody - A small arrangement of notes that make a tune.
Scale - A series of eight notes starting somewhere between 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...***

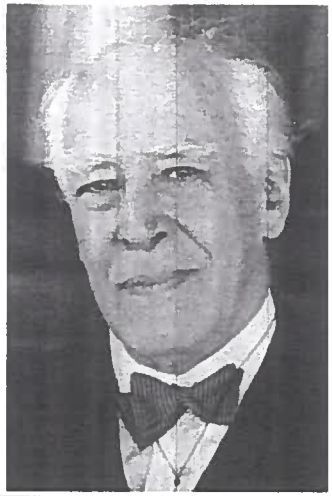






Stanislavski - *Naturalism Y8*

The System' (or 'The Method' in the US) is a systematic approach to training actors that the Russian theatre practitioner Konstantin Stanislavski developed in the first half of the 20th century. Stanislavski was the first in the West to propose that actor training should involve something more than merely physical and vocal training.



A pioneering actor and director who brought naturalism to the stage.

He believed that actors should research their scripts and relate to motivations by delving into their own emotions.

Co-founder of the Moscow Arts Theatre, Stanislavski created the first acting training programme called 'The System'.

It is a set of techniques used by actors to portray emotions on stage by putting themselves in the place of the character.

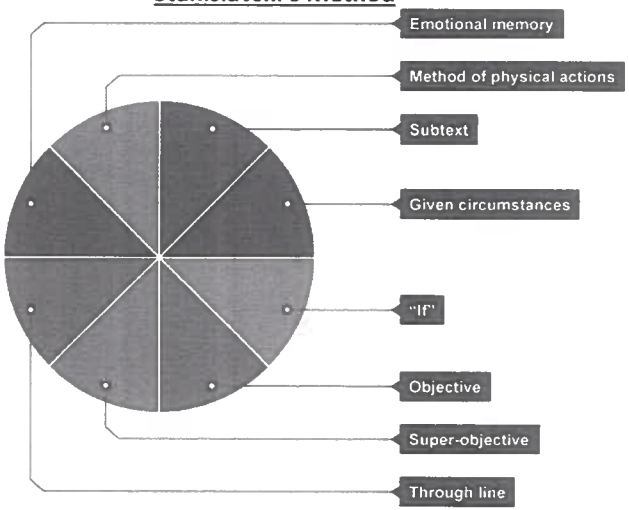
Firstly, the actor would have to enter the rehearsal or performance space with an open frame of mind and leave their personal issues at the door. They would then have to warm up and ensure that they are fully relaxed, ready to work. Only then would they begin to follow 'The System'.

Skills	Aspects of skills
Facial Expressions	Eye contact, eye brows, straight, emotions, gritting teeth, tense, relaxed, wrinkled, creased, staring, twitching.
Voice	Tone, pitch, pace, emotion, volume, projection, dialogue, dialect, accent, intonation, whistling, SFX, interjection.
Body language	Posture, blocking, positioning, front on, side on, emotions, age, open or closed.
Gestures	Hands, arms, speed, clicking, rubbing, waving, mannerisms
Movement	Speed, pace, acceleration, gait, mannerisms, special awareness, stage presence.

'There are no small parts, only small actors'

Konstantin Stanislavski

Stanislavski's Method



Terminology	Definition
Interpretation	Finding the meaning/action within a script
Stage directions	Guidelines/hints for actors within a script
Blocking	Where actors are positioned on stage
Proxemics	How close actors are on stage
Semiotics	Study of words and symbols
Characterisation	Skills used to create a character
Given circumstances	Stanislavski technique - looking at the script, what do we definitely know to be fact?
Status	The amount of power/dominance each character has over others
Levels	How high or low your body is positioned
Long term targets	What do you want to achieve by the end of this unit?
Short term targets	What do you want to achieve within the next few rehearsals?
Physical skills	Everything you can do with your face, hands, movement and body.
Vocal skills	Everything you can do with your voice—be specific with terms.
Interpretive skills	How well you interpret a script or a character. How do you become the character?