LIONHEART EDUCATIONAL TRUST

MARTIN HIGH SCHOOL
Lionheart Educational Trust

Knowledge Organiser Booklet

Year 8

Autumn Term

Ways to use your knowledge organiser

	Look, Cover, Write, Check	Self Quizzing	Mind Maps	Paired Retrieval	Definitions to Key Words
Step 1	Look at and study a specific area of your knowledge organizer. 	Use your knowledge organizer to create a mini quiz. Write down questions using your knowledge organizer. 	Create a mind map with information from your knowledge organiser. 	Like self quizzing, use your knowledge organizer to create a quiz. 	Write down the key words and definitions. 
Step 2	Cover or flip the knowledge organizer over and write down everything you remember. 	Cover or flip the knowledge organizer over and answer the questions and remember to use full sentences and key words/vocabulary. 	Add pictures to represent different facts, knowledge. Try to categorise different areas in different colours. 	Ask a family member to ask you the questions and tell you which ones you get right and which ones you get wrong. 	Try not to use your knowledge organiser to help you. 
Step 3	Check what you have written down. Correct any mistakes in a different coloured pen and add anything you missed. Repeat. 	Check your answers. Correct any mistakes in a different coloured pen and add anything you missed. Repeat. 	Try to make connections that link information together. 	Following the quiz, summarise which areas you got wrong and need to revise further. 	Use a different coloured pen to check you work and correct any mistakes you may have made. 

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Lionheart Literary Canon:
Curating a Lifelong Love of Literature

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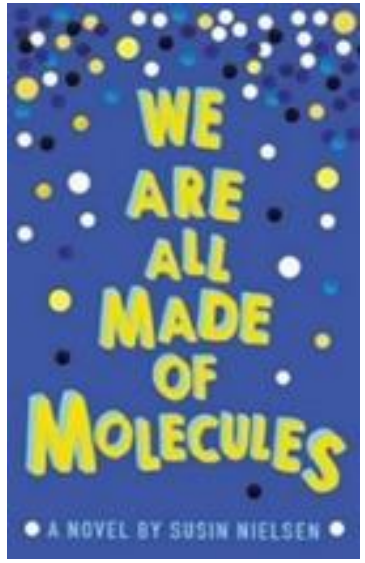
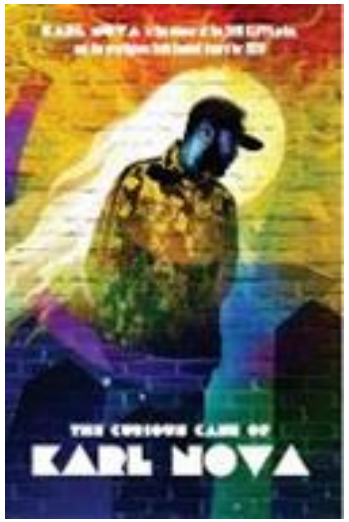
Recommended books to have read by the end of Year 8



We Are All Made Of Molecules
Susan Nielsen

The Girl of the Ink and the Stars
Kiran Millwood Hargrave

The Acrobats of Agra
Robin Scott-Elliot



The Curious Case of Karl Nova
Karl Nova

All books can be purchased online, or loaned from our library

English

English – Year 8

Modern and Post-Modern Theatre

Definition of Modern and Post-Modern Theatre: *Post-modern performances are often non-narrative and technically busy. Modern performances are realistic and narrative. Both feature social themes such as power, alienation and disconnection from society.*

Modern Drama

Realism or Naturalism: dealing with the real problems of life in a realistic technique
The Problem Play deals with conflict in marriage, justice, law and the strife between capitalists and labour
A Play of Ideas the play is used to give expression to ideas which the playwright wants to spread to society
Often used the construction of **The Well Made Play**

Post Modern Drama

The accepted norms of seeing and representing the world are challenged and disregarded, while **experimental perceptions and representations** are created.
The narrative needs not be complete but can be **fragmented**, paradoxical and imagistic. There is a movement away from **linearity to multiplicity** in plotlines.
Characters are fragmented, forming a collection of contrasting and parallel voices stemming from a central idea, theme or traditional character
The play steps back from reality to create its own **self-conscious atmosphere** and can be called **meta-theatre.**

Physical Theatre

A form of theatre which emphasizes the use of **physical movement, as in dance and mime**, for expression
Challenges the traditional performer/audience relationship, **often known as breaking the fourth wall**
Encourages audience participation and involvement in the performance
It is often **abstract in style**, using movement in a stylised and representational way.

History of Modern and Post Modern Theatre

Modern drama usually means a period between 1850 and WW2.
Plays during this time moved towards realism, depicting real life environments and real time dramatic plots; the characters became psychologically realist and the themes became social criticisms
These plays were often 'well made plays' where the story depends upon a key piece of information kept from some characters, but known to others (and to the audience). Most of the story takes place before the action of the play begins, making the beginning of the play a late point of attack.
In the later 20th and 21st century plays moved from a 3 act structure to a 2 act structure and playwrights began to explore the more temporary ideas of 'before' and 'after', rather than exposition, development, resolution
Stylistically, the realistic style started to give way towards the 'absurdist', here themes were more concerned with the way the universe worked in relation to human existence
Postmodern theatre emerged as a reaction against modernist theatre. Most postmodern productions are centred on highlighting the fallibility of definite truth, instead encouraging the audience to reach their own individual understanding.

Dramatic Method

Setting – location (country, city, house, room), time of day (how much light?)
On stage action - who is on stage? Who can hear what is being said? Does any character **enter or exit**? For what reason?
Who speaks? What **kind of speech** is it –stately, informal, conspiratorial, friendly, insincere?
Character's speech - who dominates? Who speaks the most? Is there anyone who is silent? Is this relevant in any way?
How do the **stage directions** function? Are they precise or nonspecific?
Implicit stage directions - indications from the dialogue about stage directions, **props** or **tone of voice**

Modern Plays (in chronological order)

A Doll's House – Henrick Ibsen, **1879**
Pygmalion – George Bernard Shaw, **1913**
Mother Courage – Bertold Brecht, **1941**
An Inspector Calls – J B Priestley, **1945**
Waiting for Godot – Samuel Beckett, **1953**
A View from a Bridge – Arthur Miller**, 1955**
Rhinoceros- Eugene Ionesco **1959**
Saraf – Vijay Tendulkar, **1991**
Blasted – Sarah Kane, **1995**
Pretty Fire – Charlayne Woodard, **1995**
The Coast of Utopia – Tom Stoppard, **2002**
The Curious Incident of the Dog in the Night-Time – Simon Stephens, **2012**
The Trial – Steven Berkoff, **2015**

English

Year 8 Modern and Post-Modern Theatre Vocabulary Lists			
experimental	inflexible	prime	improvisation
fragmented	vivid	alienation	didactic
self-conscious	rhetoric	vulnerable	pathos
mundane	police-procedural	scuffle	articulate
idiomatic	unorthodox	spontaneous	deftly
conflicted	problematic	interlude	ardently
revelation	perspective	disconnection	impassively
maternal	implicit	paradoxical	wearily
marital	intertwined	authentic	belligerently

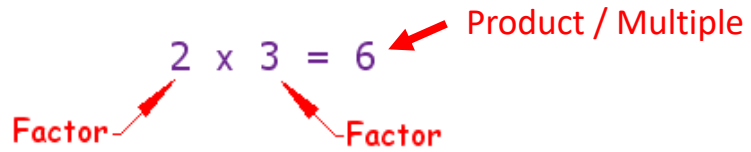
Maths – Year 8

Block 6 – Percentages

Equal division	When a number line is divided into parts that are an equal distance apart.
Interval	The distance between two values or points. *This might or might not include the end values.*
Scale	A (linear) scale with equal divisions for equal values.
Equal division	When a number line is divided into parts that are an equal distance apart.

Fraction	(from Latin fractus, "broken") represents a part of a whole or, more generally, any number of equal parts.
Equivalent	**Equivalent** is to have the same value even though it may be presented differently.
Decimal	A **decimal** is a fraction written in a special form. The **decimal** system, therefore, has 10 as its base and is sometimes called a base-10 system.
Percentage	(from Latin per centum "by a hundred") is a number or ratio expressed as a fraction of 100. It is often denoted using the **percent** sign, "%“.
Convert	To change the form of a measurement, different units, without a change in the size or amount.

Factor	An integer that divides exactly into that number
Product	The result of multiply factors together
Scaling	The act of multiplying by a scale factor



Key conversions to remember:

$1 = 1.00 = 100\%$

$\frac{1}{2} = 0.5 = 50\%$

$\frac{1}{3} = 0.\dot{3} = 33.\dot{3}\%$

$\frac{1}{4} = 0.25 = 25\%$

$\frac{1}{100} = 0.01 = 1\%$

Computer Science

KS3 – Developing for the Web

KNOWLEDGE

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Key terms	Definitions
HTML	Hyper Text Mark-up Language: the language used to write and display web page documents.
Website	A collection of web pages and related content.
Web page	A hypertext document connected to the world wide web.
Web browser	The software which displays a webpage or website on a computer
URL	Uniform Resource Locator – web address
Hyperlink	A word/phrase/image that you can click on to jump to a new web page or document.
Navigation bar	A user interface element within a web page that contains links to other sections of the website.
Search bar	The place where items being searched for are entered
Search term	Keywords that need to be searched for on web pages
Child pages	Related subpages from the main results page that a searcher might find useful
Crawler/spider	A program a search engine uses to find content on the world wide web.
Spam	Irrelevant messages sent to a large number of internet users for illegitimate advertising.


```
<html>
    <body>
        <h1>Hello world</h1>
        <p>This is my first webpage</p>
    </body>
</html>?
```

Key terms	Definitions
<HTML>	States that the document is a HTML document.
<body>	States that the information appears in the body of the page.
<h1>	States that the text will appear as a prominent heading.
<p>	States that this is the beginning of a new paragraph.

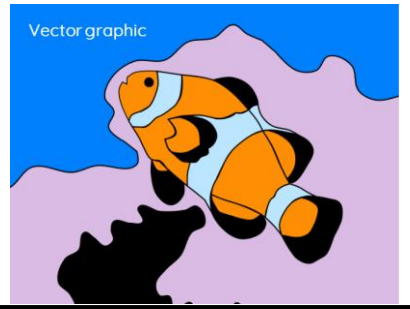
Computer Science

KS3 – Vector Graphics

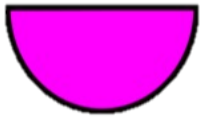
KNOWLEDGE

ORGANISER

Keywords for Vector Graphics	
Vector Graphic	A computer made image that is made up of points, lines and curves based upon mathematical equations.
Raster Graphic	A detailed image created with pixels.
Pixel	A tiny square of colour.
Logo	A symbol that is used to represent an organisation or product.
Union	An operation used to combine two or more paths to create a single path.
Intersection	An operation use to create a single path from the overlapping portion of two paths.
Scalable	When an object or image is able to be made bigger or smaller.
Path	A line or a shape used to create vector graphics.
SVG	Scalable Vector Graphic



Six-cornered star
Rounded corners
Green fill
Red dotted stroke

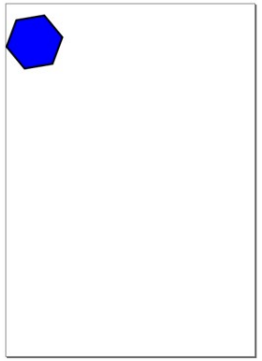


Arc
Pink fill
Black stroke

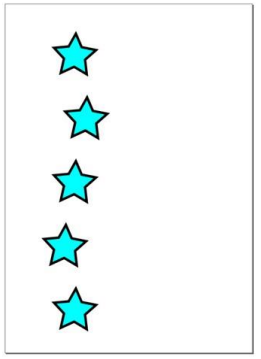
Three-cornered polygon
Rounded corners
Yellow fill
Blue dashed stroke

Vector	Raster
Made up with paths	Made up with pixels
Simple images	Detailed/complex images
Maintains image quality when scaled	Loses image quality when scaled
Used for logos, icons and illustrations	Used for real photos

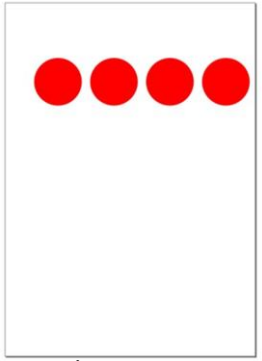
Alignment



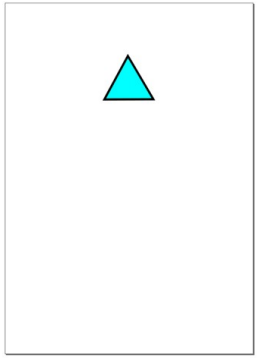
Align left edges to page



Distribute centres equidistantly vertically



Distribute centres equidistantly horizontally



Centre on vertical axis to page

PE

Unit 1 Physical Education- Knowledge Organiser: Staying safe in Physical Activity

Key learning content	Description / Explanation/ Example
Stages of a warm up • Stage 1 – pulse raiser (5 mins) • Stage 2 – mobility exercises • Stage 3 – stretching (10s+) • Stage 4 – dynamic movement • Stage 5 – skills practice • Names of muscles	**Examples of warm up** • Stage 1 – (Low intensity exercise) A 5 minute jog around a netball court. • Stage 2 – (To a move a joint through its full range of motion) Arm circles, ankle circles, hip circles. • Stage 3 – (Static or dynamic stretches) quadriceps stretch. • Stage 4 – (high intensity exercise) Shuttle runs • Stage 5 – (Practice the skills you will be using) Chest/ shoulder passes (netball) • Names of muscles: quadriceps, hamstrings, biceps, triceps
Benefits of a warm up • Increase temperature and HR • Decreased chance of injury • Increased oxygen transport • Increased flexibility • Increased speed / strength of muscle contractions • Mental preparation	**Benefits explained** • Allow more oxygen to reach muscles • Better for overall health. Can maintain involvement in physical activity . • More oxygen gets to muscles, so can create more energy. • Increased flexibility can enhance performance (Reach higher to catch a ball) • Faster/ stronger movements - perform skills more effectively. • Mental preparation – feel more alert/ focussed/ confident/ concentrating/ motivated/ relaxed etc.
Stages of a cool down • Stage 1 – Low intensity exercise • Stage 2 – Stretching • Names of movements – flexion and extension	**Examples of cool down** • Stage 1 – Steady jog on netball court, can move onto a walk • Stage 2 – (Static stretches) Quadriceps stretch, hamstring stretch. • Flexion = bending at an elbow or knee. Extension = straightening at an elbow or knee
Benefits of cool down • Gradually lower heart rate • Gradually lower breathing rate and temperature. • Speeds up removal of waste products. • Speeds up recovery • Names of joints	**Benefits explained** • Gradually lower heart rate from 150bpm when working to 70bpm when resting. • To maintain blood flow/ oxygen transport/ carbon dioxide removal • Carbon dioxide and lactic acid removed faster. Reduces aching, recovery is faster. • Joints: Elbow and knee = hinge. Shoulder and hip = ball and socket
Preparing for physical activity • Wear appropriate PE kit • Long hair tied back • Jewellery removed • No chewing gum or food • Water for hot weather	**Preparation explained** • Sports trainers, shorts, t-shirt to avoid injury yourself or others. • So you can see when playing • Earrings taken out, bracelets off to avoid injuring yourself or others. • To avoid chocking when active. • To stay hydrated /avoid headaches/ feeling weak
Risks and hazards to check for • Area free from rubbish • Equipment tidied away • Equipment undamaged • Surface dry/ undamaged	**Hazards explained** • Check there is no debris such as broken glass on football pitch, to avoid someone injuring themselves. • Check there are no equipment such as bibs left out on a basketball court from a previous activity, to avoid someone slipping/ tripping over when warming up. • Check the trampoline is up properly, to avoid injury to a player. • Check there is no water spilled on the badminton court, to avoid a player slipping and hurting an arm.

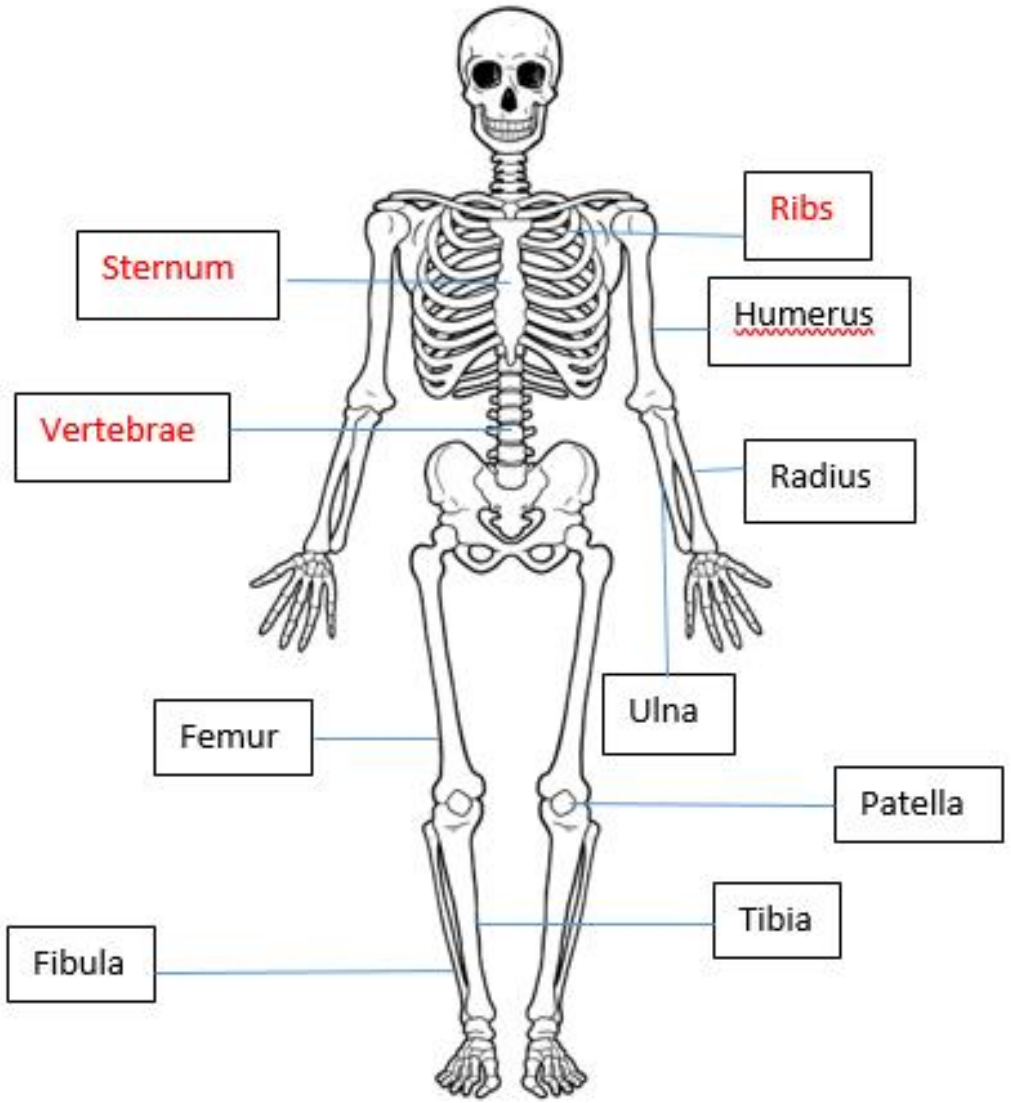
PE

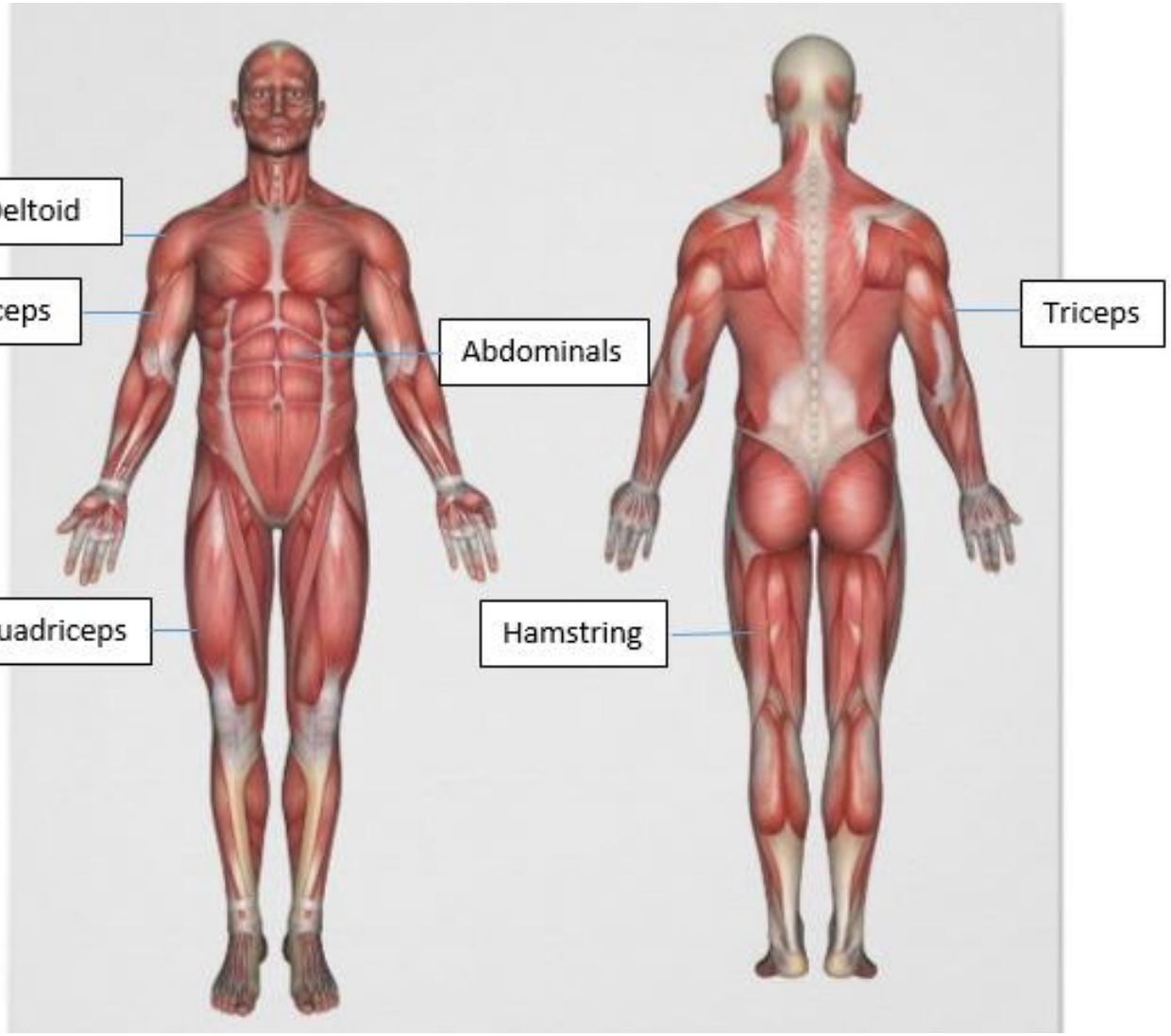
Year 8: Physical Activity- Key terminology

Key word	Description
Aerobic	Use of oxygen for the duration of the exercise. Usually at moderate intensity at a continuous rate e.g. long distance running. Can be performed for a long period of time.
Anaerobic	Exercise which creates energy without the use of oxygen. Usually high or very high intensity for a short period of time. E.g. sprinting up a hill.
Flexibility	Range of movement available around a joint.
Mobility	The ability to move freely.
Dynamic movement	Movements performed at high speed/ intensity.
Oxygen	The gas we breathe in, transport and use to create energy.
Oxygen transport	Oxygen is transported through blood vessels within the red blood cells.
Gaseous exchange	The movement of oxygen and carbon dioxide within the lungs, muscles and vital organs.
Contraction	A muscle contracts and (usually) gets shorter to apply a force and create movement.
Heart rate	Number of heart beats per minute.
DOMS	Delayed Onset Muscle Soreness. Usually occurs 1 or 2 days after high intensity exercise.
Lactic acid	A waste product produced in the muscle tissues during anaerobic exercise.
Waste products	Bi-products of aerobic exercise are carbon dioxide and water. Lactic acid is also a bi-produce of anaerobic exercise.
Carbon dioxide	We produce carbon dioxide as a waste product. We transport it back to the lungs and breathe it out.
Recovery process	Returning the body to resting levels.
Intensity	How hard you work.
Team work	Working together to achieve a common goal. Requires good communication skills.
Reciprocity	Working positively with others as a group.
Demonstration	Showing someone how something should be done.
Communication	Transferring information by speaking, writing, demonstrating and using body language.
Risk	The chance or probability that someone will be harmed.
Hazard	A source of potential danger.
Injury	Damage or harm to the body.
Sprain	Damage to a ligament.
Mental Preparation	Getting your mind ready for competition through visualising the skills and imagining yourself being successful.

PE

Unit 2: Muscles and movement knowledge organiser (Black = key content, red = extension)



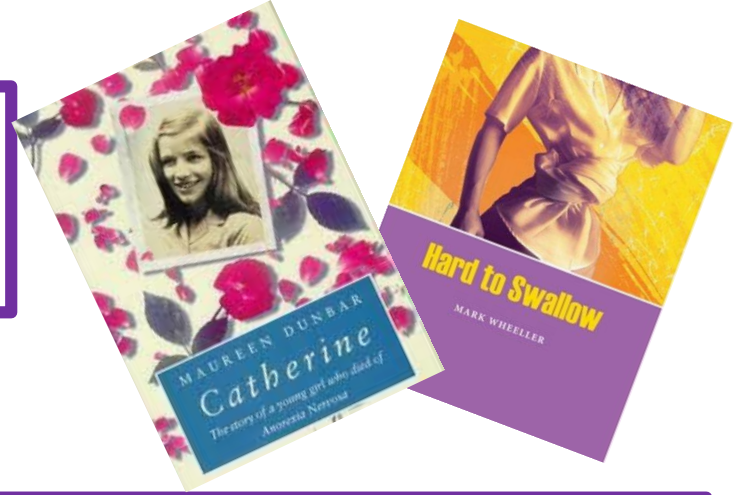


PE

	Description/ Location/ Role
Muscle pair	Muscles that work together to produce a movement. Also called antagonistic pairs.
Hamstrings	A group of muscles located at the back of your thigh. Muscle pair with quadriceps
Quadriceps	A group of muscles located at the front of the thigh. Muscle pair with hamstrings
Biceps	A muscle located at the front of your upper arm.
Triceps	A muscle located at the back of your upper arm.
Abdominals	A group of muscles at the front of your body between the ribs and pelvis.
Deltoids	A group of muscles located at the shoulder.
Femur	A bone in your thigh
Tibia	A bone in your lower leg on the inside
Fibula	A bone in your lower leg on the outside
Patella	A small bone at the front of your knee
Humerus	A bone in your upper arm
Ulna	One of 2 bones in your forearm. The ulna runs down to your little finger
Radius	One of 2 bones in your forearm. The radius runs down to your thumb.
Ribs	Lots of bones in the chest protecting your lungs.
Vertebrae	Lots of bones in your back, sometimes referred to as your spine.
Sternum	Bone down the front of your chest protecting your heart.
Flexion	Bending a joint. This occurs when the angle of a joint decreases. For example, the elbow flexes when performing a biceps curl.
Extension	Straightening a joint. This occurs when the angle of a joint increases, for example, at the elbow when putting a shot.
Contraction	When a muscle produces a force which pulls on a bone.
Agonist	The name given to a muscle which is contracting and causing a movement/ producing a force.
Antagonist	The name given to a muscle which is relaxing while it's paired muscle contracts to perform an action.
Hinge Joint	These include the elbow and knee. They allow flexion and extension to occur.
Ball and Socket Joint	These include the shoulder and hip and allow flexion, extension, abduction, adduction, rotation and circumduction.
Abduction	Movement away from the midline of the body. This occurs at the hip and shoulder joints during a star jump.
Adduction	Movement towards the midline of the body. This occurs at the hip and shoulder, returning the arms and legs back to the centre from a star jump position.
Circumduction	This occurs at the shoulder and hip and involved the arm or leg moving in a circle.
Rotation	This is where the arm or leg moves in a twisting movement around the shoulder or hip. E.g. twisting foot to side to pass a football.
Concentric	A type of muscle contraction where the muscle shortens while it is contracting. E.g. biceps when lifting a weight.

Drama

Year 8 Drama
'Hard to swallow' by Mark Wheeler
Knowledge Organiser



Key Knowledge

- Hard to Swallow by Mark Wheeler
- Based on a novel by Maureen Dunbar "Catherine"
- Style is Documentary theatre, Theatre-In-Education, Non – Naturalistic Physical Theatre Sequences as well as naturalistic acting style
- Structure – quick transition between scenes needed so minimalistic staging required. Minimal props and stage furniture

The Dunbar Family

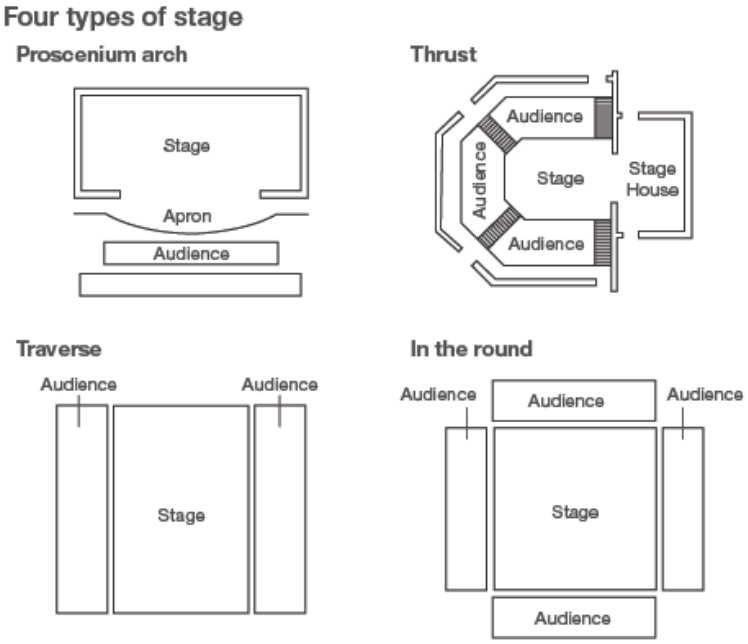
Well-educated / refined / middle-class / privileged / strong-minded / polite / well-mannered / strong Christian belief / close / pragmatic / resourceful / loving / faithful determined / emotionally conflicted / emotionally drained / wealthy / successful / aspirational / conservative

Key Vocabulary

- Rehearsal Techniques
- Tone
- Tempo
- Mood and Atmosphere
- Motivation
- Style and Structure
- Voice
- Movement
- Interaction
- Sound and Lighting Design
- End-on
- Proscenium Arch
- Theatre in the round
- Traverse
- Thrust
- No naturalistic
- Stylised
- Quick transition between scenes

Key Skills

- Hot Seating
- Role Reversal
- Still Image
- Status Games (1 -10)
- Thought Tracking
- Conscience Alley
- Role on the Wall
- Split Screen
- Tempo Rhythms
- Devils and Angels
- Flashback/Flash-Forward
- Proxemics
- 3rd Person

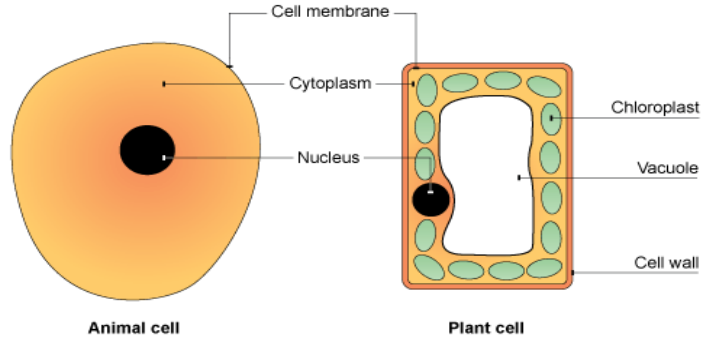


Science

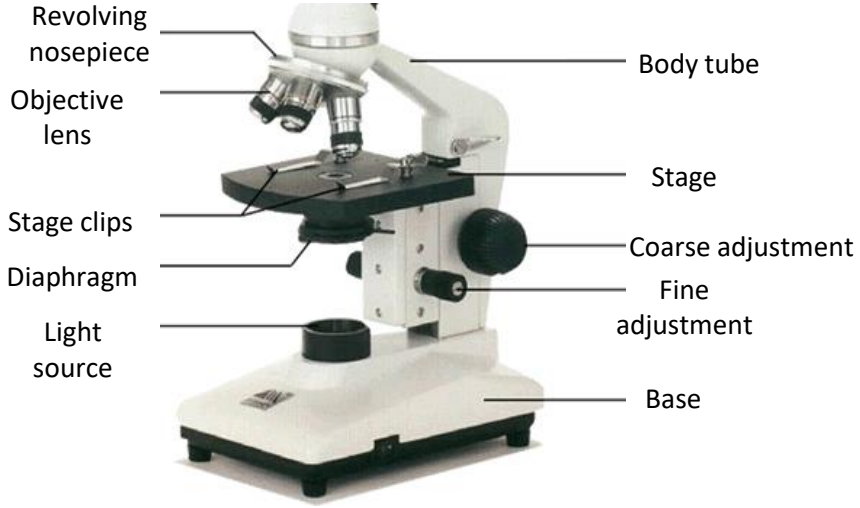
KNOWLEDGE ORGANISER
BIOLOGY: CELLS

Key word	Definition
amoeba	A unicellular organism.
cell wall	The plant cell component that surrounds the cell, providing support.
cells	The smallest functional units in an organism – the building blocks of life.
Cell membrane	The cell component that surrounds the cell and controls movement of substances in and out.
chloroplasts	The plant cell component where photosynthesis takes place.
concentration	A measure of the number of particles of a substance in a given volume.
Cytoplasm	Jelly like substance in cells where most chemical processes happen
diffusion	The movement of liquid or gas particles from a place of high concentration to a place of low concentration.
euglena	Unicellular organism that performs photosynthesis.
flagellum	A tail-like structure that allows euglenas to move.
leaf cell	The plant cells that contain chloroplasts, where photosynthesis takes place.
microscope	An optical instrument used to magnify objects, so small details can be seen clearly.
nerve cell	An animal cell that transmits electrical impulses around the body.
nucleus	The cell component that controls the cell and contains genetic material.
observation	Carefully looking at an object or process.
organisms	Living things.
red blood cell	An animal cell that transports oxygen around the body.
root hair cell	A plant cell that takes in water and minerals from the soil.
specialised cell	A cell whose shape and structure enable it to perform a particular function.
sperm cell	A cell containing male genetic material.
unicellular	Consisting of just one cell.
vacuole	The plant cell component that contains cell sap and helps to keep the cell firm.

Animal 'V' Plant Cells



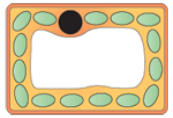
Microscopes

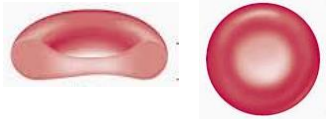
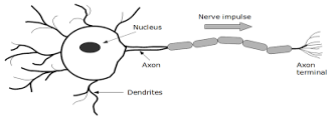
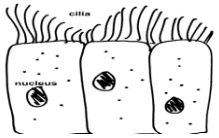


Total magnification =
magnification of eye piece lens x magnification of objective lens

Science

KNOWLEDGE ORGANISER
BIOLOGY: CELLS

Type of plant cell	Function	Special features
Root hair cell 	To absorb water and minerals	Large surface area
Leaf cell 	To absorb sunlight for photosynthesis	Large surface area Lots of chloroplasts

Type of animal cell	Function	Special features
Red blood cells 	To carry oxygen	Large surface area, for oxygen to pass through. Contains haemoglobin, which joins with oxygen
Nerve cells 	To carry nerve impulses to different parts of the body	Long Connections at each end. Can carry electrical signals
Female reproductive cell (egg cell) 	To join with male cell, and then to provide food for the new cell that's been formed	Large Contains lots of cytoplasm
Male reproductive cell (sperm cell) 	To reach female cell, and join with it	Long tail for swimming. Head for getting into the female cell
Ciliated Cells 	The hairs sweep hair, mucus, trapped dust and bacteria up to the back of the throat where it can be swallowed	Hair like structures Present in many structures e.g. ear, nose, trachea

Movement of substances

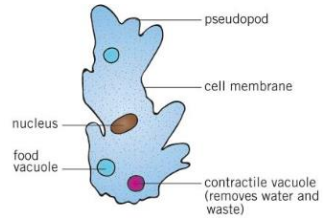
Substances move from an area where they are in high concentration to an area where they are in low concentration. This process is called **diffusion**.

Oxygen diffuses into cells from an area of high concentration outside the cell to a low concentration of oxygen inside the cell. Carbon dioxide moves out of the cell.

Water moves into a plant from a high concentration of water in the soil to a low concentration of water in the root hair cells.

Unicellular Organisms

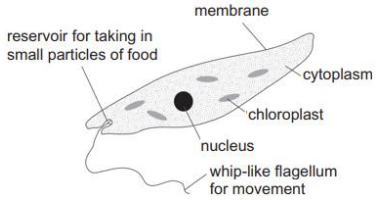
Amoebas and Euglenas are examples of unicellular organisms. This means that they are only made up of one cell.



Amoeba

Both organisms reproduce by binary fission.

Amoebas have to find food to survive but Euglenas can carry out photosynthesis to produce their own food.



Euglena

Science

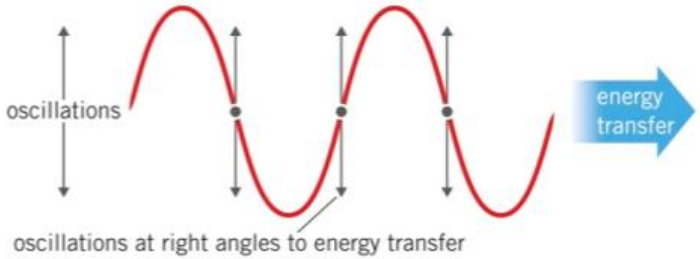
Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER
PHYSICS: SOUND

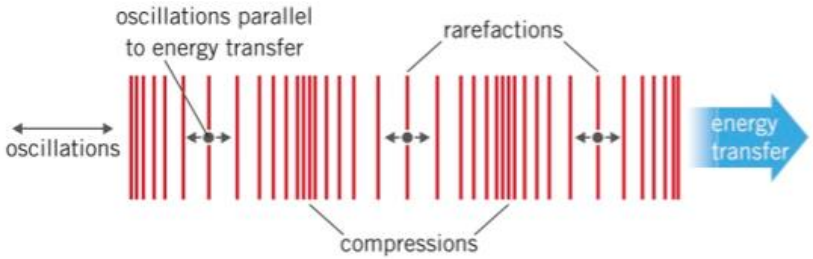
Name:

Properties of Waves

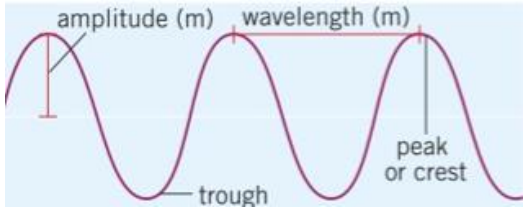
Waves are **oscillations** (vibrations) that transfer **energy**. They can be **transverse**:



or **longitudinal**:



Waves have **wavelength**, **amplitude** and **frequency**:



Frequency is how many waves pass a point in 1 second.

Sound Waves

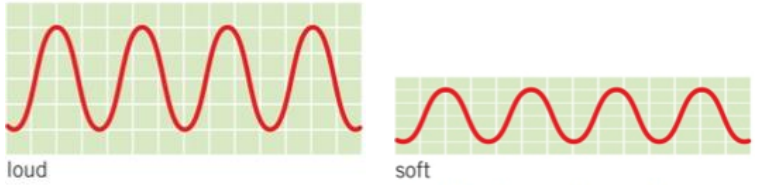
Sound waves are longitudinal.

Sound cannot travel through a **vacuum**, it must travel through a material (**medium**).

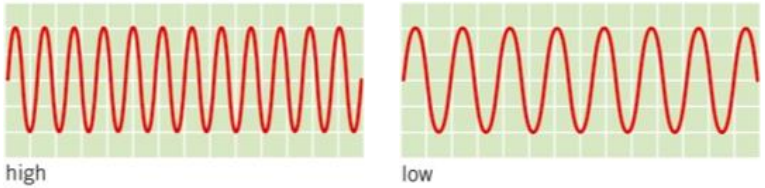
Its speed depends on the medium, e.g.:
air - 340 m/s, water - 1500 m/s, steel - 5000 m/s

Loudness and Pitch

The larger the amplitude of a wave, the louder the sound:



The higher the frequency of a wave, the higher pitched the sound is:



Science

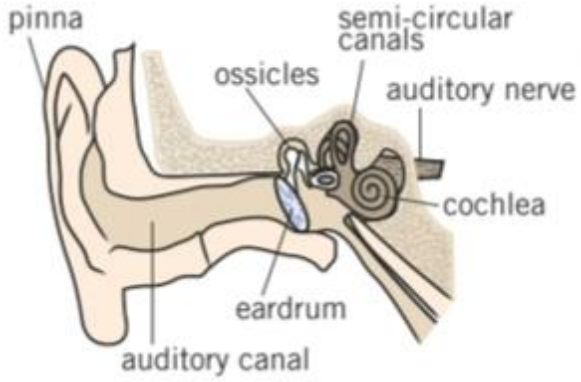
Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER
PHYSICS: SOUND

Name:

Detecting Sound

We hear sounds using our **ears**.



We measure how loud a sound is in **decibels** (dB). If you are exposed to loud sounds for too long you can permanently damage your hearing.

0 dB	20 dB	40 dB	60 dB	80 dB	100 dB	120 dB	140 dB
cannot be heard	leaves rustling	talking quietly	normal speech	heavy traffic	jet taking off	pain threshold	gun shot

An increase of 10 dB means that the sound has got 10 times louder!

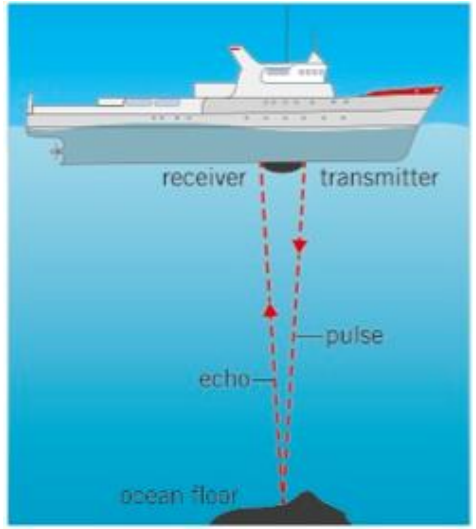
Microphones have a **diaphragm** that acts in a similar way to the eardrum to detect sound. An **amplifier** then makes the detected sound louder.

Echoes and Ultrasound

We can only hear sounds in the human **audible range**: 20-20 000 Hz. Any sound above 20 000 Hz cannot be heard by humans and is known as **ultrasound**.

An **echo** is heard when sound **reflects** off of a surface and you hear it again as it travels back to you. Echoes can be used to measure distances.

Usually it the echo of an ultrasound wave that is used to measure distances, e.g. in sonar:



Transmitters send out beams of ultrasound, which travel through the water and hit the seabed. These reflect back up to **receivers** on the ship.

The time this takes is used to calculate the depth of the ocean.

A similar technique is used to image unborn babies.

Science

Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER
PHYSICS - LIGHT

Name:

1. Light

Something that gives out light is called a luminous object. Most objects are non-luminous, you only see them because they reflect light into your eyes. Light travels in straight lines.

Objects that do not give out light are non-luminous.

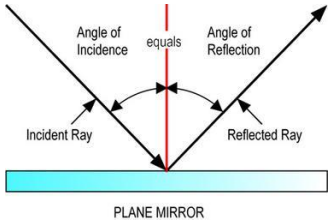
How does your eye see non-luminous objects such as a book?

Light from the light source strikes the book and some of the light is reflected into your eye.

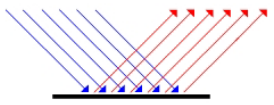
When you look through a window, light travels through the glass and into your eye. The glass transmits the light and is transparent. Materials like frosted glass are translucent. Light can travel through it but is scattered so you can't see clearly. Materials that do not transmit light (light cannot pass through) are opaque.
Light can travel through gases like air, some liquids like water and some solids like glass. Light can even travel through empty space, which is called a vacuum.
The speed of light is 300 000 km/s. Sound travels slower than light. A light year is the distance that light travels in 1 year.

2.Reflection

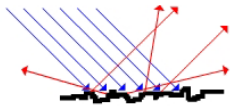
When you look into a mirror it looks like there is someone just like you behind the mirror, this is a virtual image. The image looks the same size and shape as you are, it appears to be as far behind the mirror as you are in front of the mirror. Left and right appear swapped.



The ray that hits the mirror is called the incident ray. The ray that reflects off the mirror is called the reflected ray. There is an imaginary line at 90° to the mirror called the normal line. The law of refection is that when light is directed at a mirror the angle of incidence is equal to the angle of reflection.
Reflection from a smooth surface like a mirror is called specular reflection, the rays of light reflect off the surface in the same way so an image is seen in the surface.
Reflection from a rough surface like a wall is called diffuse scattering, the rays are reflected at different angles so you won't see an image.



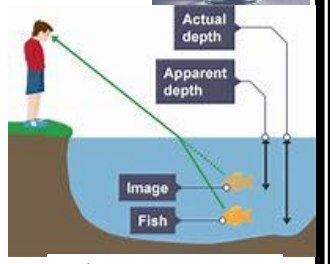
Specular Reflection (smooth surfaces)



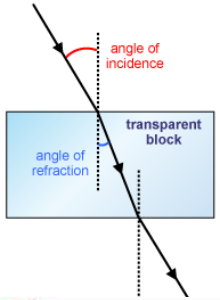
Diffuse Reflection (rough surfaces)

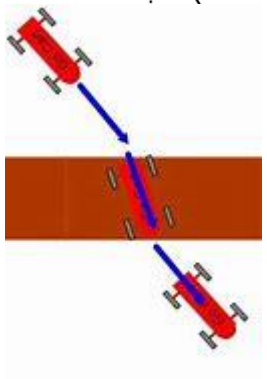
3. Refraction

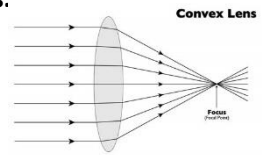
A pencil looks bent when you put it into a glass of water. The pencil reflects light and the light travels from the pencil through the water. It then travels through the air into your eye. As light leaves the water it changes direction, this is called refraction. Refraction happens whenever light travels from one medium (material) to another medium. Refraction also explains why a fish looks higher up than it actually is.



When light travels into a glass block it slows down when it goes in and speeds up when it comes out. Light bends towards the normal when it goes into the glass and away from the normal when it comes out of the glass. The 2 rays outside the block are parallel.
This is similar when a car goes from the road where it travels quickly to mud where it travels slowly. The first wheels hit the mud and travel slowly, the back wheels keep going at the same speed so the car is pushed in another direction.
There is a lens in your eye, this is a convex or converging lens. It focuses light into a point called the focal point, this allows you to see. The light is refracted as it goes into and out of the lens.







Science

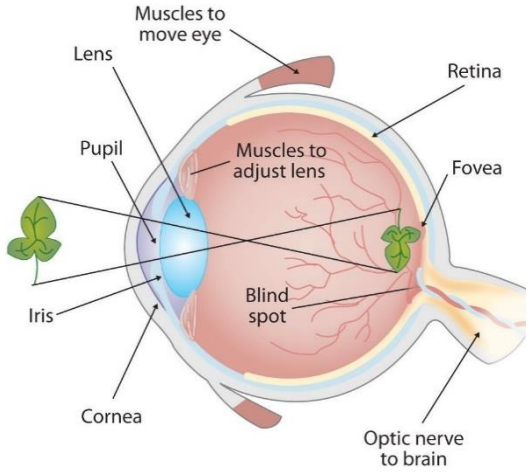
Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER
PHYSICS - LIGHT

Name:

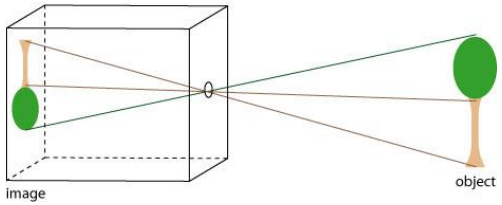
1. The eye

When you look at a leaf, an image of the leaf is formed on the retina of your eye. Light reflected from the leaf goes through the pupil of your eye. The iris is a muscle that controls the size of your pupil. The cornea (the transparent outer part of the eye) and the lens focus the light onto the retina. There are photoreceptors (sensitive to light) called rods and cones in the retina. Rods and cones are sensitive to movement and dim light and cones are sensitive to colour and bright light. When light hits the retina an electrical impulse is made that travels along the optic nerve to the brain. The image that forms is inverted (upside down) but your brain sorts it out so you see the leaf the right way up.



2. The camera

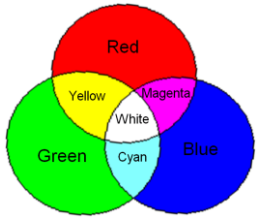
A camera makes an image just like your eye.



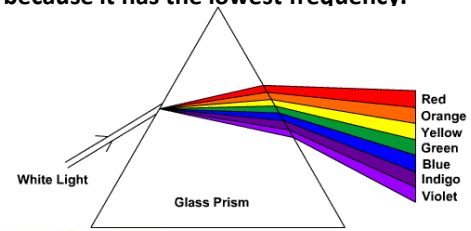
Light travels through the pinhole from the object in a straight line. This is just like the light travelling through your pupil. An image forms on the screen of the camera, this is like the image forming on the retina in your eye. The image is real, this means that it can be made on a screen. The image formed in a mirror is not a real image. Cameras used to contain photographic film, when light hit the film there was a chemical reaction that made the image.
Cameras now have a grid of photosensitive picture elements called pixels. When light hits a pixel it makes a charge which is stored.

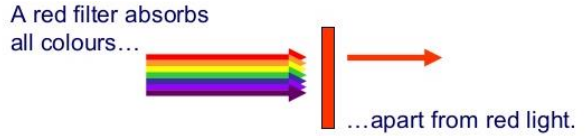
3. Colour

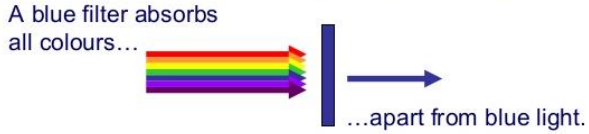
Red, blue and green are primary colours. When you mix primary colours you make secondary colours.



White light is made up of 7 different colours of light. We can show the colours that make white light by using a prism to split white light into a spectrum. This is called dispersion. Dispersion happens because violet light is refracted more because it has a higher frequency and red light is refracted least because it has the lowest frequency.

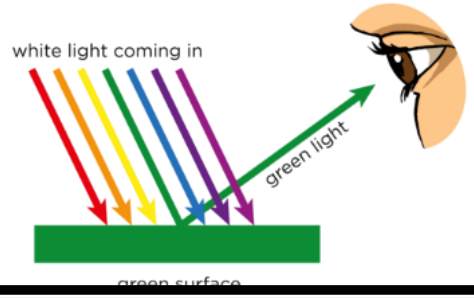






A red object would look black in blue light because the red object would absorb the blue light and there would not be any other colours of light to reflect in blue light.

White objects appear white because they reflect all colours of light. Black objects appear black because they absorb all colours of light. A green object appears green because it reflects green light and absorbs the other colours.



Science

Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER

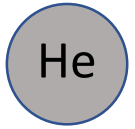
MATTER - Elements

Key Word	Definition
Element	An element contains only **one type of atom**.
Chemical symbol	A one of two letter code for an element that is issued by scientists in all countries.
Atom	The smallest part of an element that can still be recognised as that element.
Compound	Two or more elements chemically bonded with each other.
Molecule	A group of two or more atoms strongly bonded together.
Chemical formula	A formula that shows the elements present in a compound and their relative proportions.
Physical property	A property of a material that you can observe or measure.
Hydroxide	A compound that includes hydrogen and oxygen atoms. There is one atom of oxygen for every atom of hydrogen. E.g. NaOH
Nitrate	A compound that includes nitrogen and oxygen atoms. There are three atoms of oxygen for every atom of nitrogen. E.g. $NaNO_3$
Sulfate	A compound that includes sulphur and oxygen atoms. There are four atoms of oxygen for every atom of sulphur. E.g. $MgSO_4$
Carbonate	A compound that includes carbon and oxygen atom. There are 3 atoms of oxygen for every atom of carbon. E.g. $MgCO_3$
Polymer	Very large molecules made by joining up thousands of smaller molecules in a repeating pattern.
Natural polymer	A polymer made by plants or animals. E.g. starch, wool, cotton, silk and rubber.
Synthetic polymer	A polymer made by people, often in a factory. E.g. plastic, poly(ethene) and poly(propene).

Elements

An element is a substance that cannot be broken down into other substances. An element is a substance made of one type of atom only.
All matter (solids, liquids and gases) in the universe is made up of a combination of different elements.
All elements are found on the periodic table.
Every element has its own symbol. This is a 1 or 2 letter code for the element. The first letter of a symbol is a capital letter and the second letter is lower case, e.g. Na is the symbol for sodium.

Hydrogen is an element and a molecule and is made up of 2 hydrogen atoms strongly bonded to each other.



Helium is an element, it is made from 1 atom of helium.

Atoms

The smallest part of an element that can exist is called an atom. All atoms of an element are the same. The atoms of one element are different to atoms of all other elements.

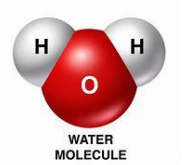
Science

Be REFLECTIVE: Review your learning

KNOWLEDGE ORGANISER
MATTER - Elements

Compounds

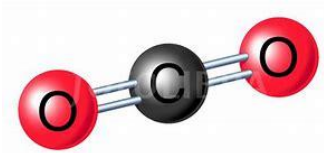
A compound is a substance made up of atoms of two or more elements, strongly joined or bonded together. The properties of a compound are different to the properties of the elements that its made up from. For e.g. the boiling point of water is higher than the boiling point of hydrogen and oxygen because there are stronger forces between water molecules than hydrogen and oxygen molecules. So more energy is needed to separate water molecules from each other compared to the energy required to separate hydrogen and oxygen molecules from each other.



Water is a compound because it is made from 2 different atoms (2 hydrogen atoms and 1 oxygen atom) that are strongly bonded to each other. Water is also a molecule, not all molecules are compounds.

Chemical formulae

The chemical formula shows the number of atoms of each element in a compound.



The formula of carbon dioxide is CO_2. This shows that a molecule of carbon dioxide is made up of 1 carbon atom and 2 oxygen atoms strongly bonded to each other.

Compounds made up of oxygen and another element have two word names. The second word is oxide. E.g. Magnesium oxide MgO

Compounds made up of chlorine and another element have 2 word names. The second word is chloride. E.g. Sodium chloride NaCl

Poly(ethene)

Molecules in Low-density Poly(ethane) LDPE slide over each other making the polymer flexible. LDPE is strong and is used for carrier bags.

High-density Poly(ethene) HDPE is also strong and flexible but is harder than LDPE. It is also smooth and used in artificial knee joints.

Naming compounds

To name simple compounds of metals and non-metals:

1. Write down the name of the metal
2. Write down the name of the non-metal, changing the ending of the word to –ide e.g. Magnesium oxide, sodium chloride.

Many compounds contain more than two elements. For elements containing two elements plus oxygen, the ending of he other non-metal usually changes to **–ate**.

E.g. Nickel, sulphur and oxygen = nickel sulfate
Magnesium, nitrogen and oxygen = Magnesium nitrate

Polymers

A polymer is a substance with very long molecules. A polymer molecule has identical groups of atoms repeated many times.

The properties of polymers depend on its molecules.

- Polymers are big and heavy so they melt at higher temperatures than substances with smaller molecules

Natural polymers are made by plants and animals. Examples include wool, cotton, starch and rubber.

Wool fibres trap air between them so heat is trapped making it useful for jumpers and socks.

Synthetic polymers are man made and are produced in chemical reactions.

Examples include plastics like **Poly(ethene)** and Poly(propene)

Religious Studies

Year 8 Knowledge Organiser Islam

Key Topics:

- Introduction to Islam
- The nature of Allah
- Prophethood
- The prophet Muhammad
- The Qur'an
- The Five Pillars of Islam
- Wealth and poverty
- 21st century Muslim

Islam and Muslims

Muslims can be from any nation or race, anywhere in the world. Islam is an international faith. The religion is called 'Islam,' and a follower of it is a 'Muslim'.

Islamic Symbol:

This is the **symbol** of the Muslim faith:

- The five-pointed star can represent the **five pillars**, or main beliefs of Islam
- The moon and the star speak about **God's creation**
- A new star rises as the moon fades. Muslims believe that their religion **renewed** God's message on Earth, as had been taught by many prophets over the ages. The last of these was Muhammad.

Subject Specific Key Terms:

Muslim	Means 'one who finds peace' or 'one who submits.'
Monotheism	The belief in only one God
Halal	An act that is allowed e.g. animals are slaughtered in a way that their blood is drained away. Meat produced in this way is called halal.
Haram	An act that is forbidden e.g. gambling
Qur'an	The most important source of authority as it is believed to be the revealed word of God
Surahs	Chapters in the Qur'an
Tawhid	The Islamic term for the oneness of Allah
The al-Fatihah	The first surah (chapter) in the Qur'an. It means 'the opening'.
Risalah	Prophethood or the belief in prophets.
Sources of authority	People can go to for guidance and help e.g. friends, religious leaders, scripture etc.
Shahadah	saying the declaration of faith, 'there is no God but Allah and Muhammad is the prophet of God'.
Salah	Performing the five daily prayers
Zakat	Giving 2.5% of your wages to charity every year
Sawm	Fasting during the month of Ramadan
Hajj	The religious journey to Mecca in Saudi Arabia
Islamophobia	The fear or hatred of Islam or Muslims

Religious Studies

Year 7 Christianity Knowledge Organiser

Key Topics:

- God the Creator
- Jesus
- Holy Spirit
- Salvation and Atonement
- The Omni's
- The Judge

Christians believe there is only one God, this belief is known as **monotheism**, so Christianity is a **monotheistic** religion.

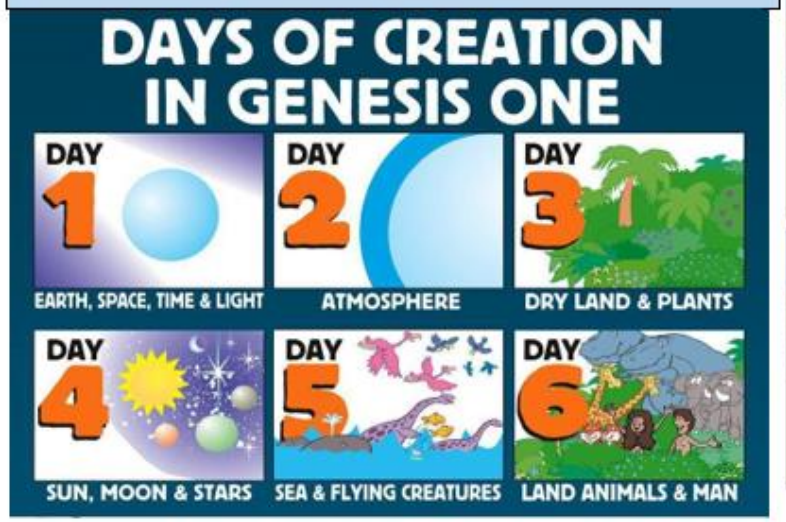
All Christians believe that God created everything and is still involved with the world in a mysterious way.

Subject Specific Key Terms:

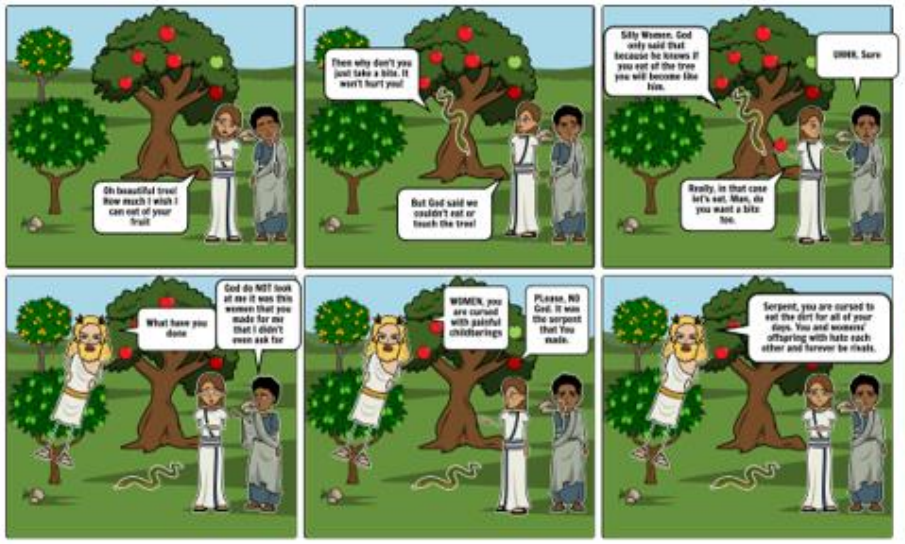
Monotheism	The belief in one God
Omnipotent	All-powerful God
Incarnation	God becoming human in the form of Jesus
Miracle	An extraordinary event that can't be explained by science
Saviour	Jesus' role was to save humans
The Holy Trinity	The belief that God is one but made up of three person: the Father, the Son and the Holy Spirit
The Holy Spirit	The part of God that guides Christians to live their lives in the best way possible
Atonement	The belief that Jesus' death on the cross healed the broken relationship between God and humans
Salvation	Taking away sins and consequences of bad behaviour
Gospel	The teachings of Jesus and the apostles
Omniscient	All-knowing God
Omnipresent	God is everywhere
Omnibenevolent	God is all-loving

The Christian Creation Story: Genesis 1

For all Christians what is important is that God is the creator of the universe. They believe that however the universe was created, it was created by God.
They believe that God is omnipotent, which means that God is all-powerful. This is shown in the creation story because God creates everything out of nothing (ex nihilo).



The Fall: Genesis 3



The Incarnation: The birth of Jesus

Some Christians believe that Jesus was God incarnated. This means 'God made flesh' or God in human form.

History

Knowledge Organiser – 1. Elizabethan England (1558-1603)

Problems for Elizabeth

Background and family

- Elizabeth's mother, Anne Boleyn, was executed by her father king Henry VIII when she was only two years old
- Her step-mother Catherine Howard was also executed by Henry
- Elizabeth was arrested and locked in the Tower of London during the reign of her half-sister Mary I

Problems when Elizabeth became queen (1558):

1. **Bad harvests –** in 1554 and 1556 had caused widespread starvation in England
2. **Disease –** outbreaks of the plague in 1558 and influenza in 1556 had led to more deaths in her kingdom
3. **Dissolution of the monasteries –** Henry VIII had shut down all the religious monasteries that used to help the poor and the sick, Elizabeth would have to find new ways to take care of them
4. **Population growth –** the population of England grew by 1 million during her reign causing unemployment and homelessness
5. **Enclosure of land –** rich landowners forced peasants off their land so they could farm sheep, peasants were forced to move to towns to look for work
6. **Vagabonds –** homeless people who travelled across England looking for work were labelled vagabonds – they were feared by many people
7. **Religion –** there were major divisions between Catholics and Protestants in England and Elizabeth would struggle to keep both sides happy

Elizabeth and Marriage

- Elizabeth did not get married throughout her reign
- She rejected some suitors because they were Catholic and foreign rulers who English people might reject
- However, the key reason was that Elizabeth did not want to share power with a man and wanted to maintain her independence and make her own decisions

Religious Divisions

- Catholics and Protestants were both Christians but there were major disagreements between them
- **Language** – Catholics believed that the Bible and church services should be in Latin whereas Protestants believed they should be in English
- **Church decoration** – Protestants wanted their churches to be plain and simple whereas Catholics favoured elaborate decoration
- **Leadership** – Catholics believed that priests were above ordinary people and that they should not marry, but Protestants believed that all were equal in God's eyes

Religion and Plots

Religious Settlement (1559)

Compromise – Elizabeth's religious settlement attempted to find a 'middle-way' that would keep both Protestants and Catholics happy

Governor – Elizabeth gave herself the title of Governor of the church of England rather than supreme head this was designed to keep Catholics happy as they saw the Pope as supreme leader

Church services – would be conducted in English and priests were allowed to marry which pleased Protestants

Catholic plots

Many Catholics were still angry about their treatment under Elizabeth and there were a number of plots to remove her as queen:

1. **Revolt of the northern earls (1569)** – 4600 Catholic rebels took over Durham in the north of England and Elizabeth had to send loyal troops to crush the revolt
2. **Ridolfi plot (1571)** – Duke of Norfolk and Roberto Ridolfi tried to organise an army of foreign Catholics to invade England and overthrow the queen but the plot was discovered and Norfolk was executed
3. **Throckmorton plot (1583) and Babington plot (1586)** were further attempts by Catholics to remove Elizabeth and replace her with the Catholic Mary, Queen of Scots

Sir Francis Walsingham – Elizabeth's spymaster helped to keep the queen safe by uncovering plots against her.

Walsingham used spies to find Catholic rebels and codebreakers to read their secret messages

History

Knowledge Organiser - 2. Elizabeth and the world

Relations with Spain

Why were relations between England and Spain at breaking point by the 1580s?

1. **Personal differences** – the Catholic king of Spain Philip II was angry that Elizabeth had made England Protestant and that she refused to marry him
2. **English privateers** – had been sailing to the 'new world' and stealing from Spanish ships
3. **War in the Netherlands** – Elizabeth gave her support to Protestants in the Netherlands who were fighting against the Spanish

The Spanish Armada (1588) – battleplan

- Philip II organised a huge Armada of 130 Spanish galleons (warships) to attack England
- 7,000 sailors and 21,000 soldiers came with the Armada
- The plan involved sailing to the Netherlands to collect more Spanish troops before landing in England
- The Spanish forces would then march on London and overthrow Elizabeth
- English navy led by Admiral Howard and Sir Francis Drake would resist the attack

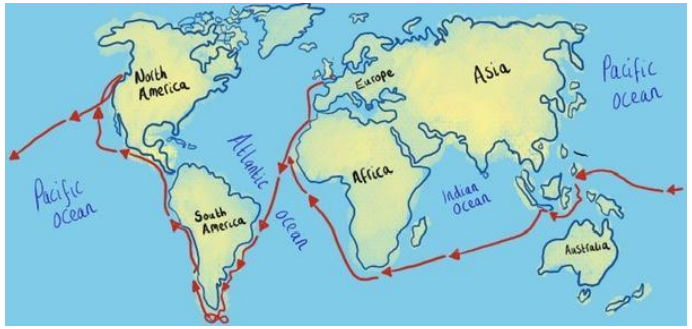
Why was the Armada defeated?

- **Leadership** – Spanish commander of the Armada was inexperienced
- **English ships** were faster and more manoeuvrable
- **Fireships** were used to break up the Spanish formation
- **Bad weather and storms** wrecked the Armada off the coast of Ireland and Scotland

Elizabethan Exploration

Why was the Elizabethan era a time of great exploration?

1. Improvements in **shipbuilding** meant sailors could make longer journeys
2. New equipment for reading the stars and greatly **improved maps** helped sailors to find where they were at sea
3. **Empire and colonies** – Elizabeth's reign saw the early beginnings of empire as English people tried to establish settlements in the 'New World' (North America)



Slavery

- Elizabeth's reign saw the early stages of England's involvement in the slave trade
- English sailors travelled to Africa and bought African slaves
- These Africans were then transported to the 'New World' and forced to work without pay, and in poor conditions
- John Hawkins and Sir Francis Drake were both very prominent in the slave trade

James I and Jamestown

James I became king of England in 1603 when Elizabeth died

Jamestown

- 1607 – a successful English colony is established in North America
- Settlement was named Jamestown in honour of the king of England
- Early years of the colony were tough as the settlers struggled to grow food, winters were difficult and there were large numbers of deaths
- Eventually the colony is a success and grew crops such as tobacco which could be traded with Europe
- More settlements were built and by 1624 the colony of Virginia had been established

Native Americans

- The Jamestown settlers managed to collaborate with local native American tribes
- Europeans often assumed that they were more civilised and their way of life was superior to the Native Americans
- However, without the help and support of the Native Americans it is unlikely that the Jamestown settlers would have been able to survive

History

Knowledge Organiser – 1. Stuart England (1603-1645)

Gunpowder Plot (1605)

- James I became king of England and Scotland after Elizabeth's death in 1603
- James passed a number of anti-Catholic laws and a small number of Catholics began plotting against the king
- Robert Catesby led the plot - planned to blow up the king and Parliament using gunpowder
- Guy Fawkes was given the task of loading gunpowder into a cellar under Parliament

How was the plot uncovered?

- One of the plotters sent a warning letter to Lord Monteagle warning him not to attend Parliament on November 5th
- The king's men searched the cellars under Parliament and captured Fawkes who was tortured
- The other plotters were killed or captured, put on trial for treason and hung, drawn and quartered when found guilty

Role of Robert Cecil

- Cecil was the king's chief minister and adviser at the time of the plot
- Some historians believe that he may have known about the plot all along and even helped the plotters to obtain gunpowder and rent the cellar
- This theory is linked to Cecil's desire to force James to take a tougher line against Catholics by proving their threat to this throne
- However, not all historians agree with this theory and we cannot be sure about Cecil's role in the plot

Causes of the Civil War (1625-42)

Charles I (1625-49)

- Charles I became king in 1625 after the death of his father James I
- He believed in the Divine Right of Kings and married a Catholic which upset many Puritans in Parliament
- Personal Rule – from 1629-40 Charles ruled without consulting Parliament and introduced the hated Ship Money tax

Short-term causes of the Civil War

1640 – Charles was forced to recall Parliament
Nov. 1640 – Parliament publishes **Grand Remonstrance** a document attacking Charles and his ministers
1641 – **Lord Strafford** (Charles closest adviser) was executed on the orders of Parliament – led by John Pym (Puritan)
January 1642 – Charles took troops into Parliament to try and **arrest the 5 leading MPs** who opposed him (including John Pym)
August 1642 – Charles gathered his forces in Nottingham and Parliament organised their own army to fight against the king signalling the start of the Civil War

English Civil War (1642-45)

Cavaliers vs Roundheads

Royalists/Cavaliers – fought for the king
Parliamentarians/Roundheads – fought for Parliament

Three types of soldier:

1. **Pikemen** – fought with a long, wooden spike
2. **Musketeer** – used a musket (an early type of gun) as their main weapon
3. **Cavalry** – fought on horseback armed with a heavy sword and two pistols

Key battles of the Civil War:

Battle of Edgehill (1642) – ended with no obvious winner, both sides lost about 1,500 men
Battle of Newbury (1643) – Charles missed a key opportunity to defeat Parliament's army when he withdrew and retreated back to Oxford
Battle of Marston Moor (1644) – largest battle of the civil war, Oliver Cromwell attacked the Royalists from the rear and won an important victory
Battle of Naseby (1645) – New Model Army defeated the Royalist army over 5,000 Royalist soldiers were captured and 1,000 killed – the Royalists had lost the Civil War

Why did Parliament win the Civil War?

1. **New Model Army –** created by Cromwell and Fairfax to fight for Parliament it was disciplined and religious – e.g. their men often prayed together before battle and believed God was on their side
2. **Leadership –** Charles and Prince Rupert made a number of tactical errors during the war whereas Cromwell used clever tactics
3. **Money** – Parliament controlled London – the richest city in England – they could therefore pay their soldiers more and give them better weapons

History

Execution of Charles I

The Trial

- Charles was accused of treason because evidence was discovered that he had been encouraging the Scots and the French to attack England to restore him to the throne
- Charles did not defend himself as he did not believe the trial was legal
- He was executed on 30th January 1649

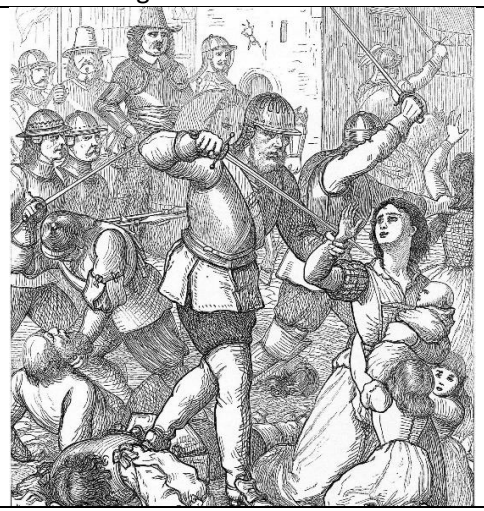
Oliver Cromwell – Lord Protector

- After Charles' execution Parliament ran the country – England was a republic (ruled without a king)
- Disagreement between MPs meant that Parliament did not rule effectively
- 1653 – Cromwell seized power and made himself Lord Protector which he meant he ruled England just like a king
- Cromwell's major-generals helped him to rule the country and strict Puritan laws were introduced
- Theatre, bear-baiting, drinking alcohol and Christmas celebrations were all banned

Painting showing Charles' execution in 1649

Cromwell and Ireland

- Ireland was a mainly Catholic country but James I had tried to give Irish land to English Protestant settlers
- 1641 – Irish Catholics rebelled against the English and killed thousands of Protestants
- 1649 – after the end of the Civil War many English Protestants called for action against the Irish – they wanted revenge for the Protestants killed during the rebellion



Cromwell 'the curse of Ireland'

- August 1649 – Cromwell and his New Model Army of 12,000 soldiers invade Ireland
- Siege of Drogheda – Cromwell laid siege to this Irish Catholic town and when it refused to surrender he ordered his men to slaughter the people inside the town
- 3,500 people were killed in the siege including civilians
- Over the next ten years the New Model Army went on to kill or starve about one-third of the Irish population

Witchcraft in the 16th and 17th centuries

- Belief in witchcraft seems to have peaked in the 17th century
- Maleficium – evil acts people believed were performed by witches by working with the Devil
- Single women who were widowed and elderly were most likely to be accused of witchcraft
- Women who had pets were treated with suspicion because people believed they were a Familiar (a small demon given to her by the Devil)
- Witches were blamed for farm animals dying or crops failing

Why did people believe in witches?

1. **Uncertainty –**people were scared that everything was changing after the Civil War and were convinced that witches were at work
2. **The Church –** encouraged a belief in witches so people would turn to them for help
3. **Attitudes –** people did not have an understanding of science so they blamed witches for negative events
4. **Royalty –** James I was an avid witch-hunter and wrote a popular book called Demonologie all about the dangers of witches
5. **Literature –** theatre became very popular in the 1600s and many plays included witches e.g. Shakespeare's Macbeth had three witches as main characters

Geography

Development

Knowledge Organiser

Key word definitions

Development: People reaching an acceptable standard of living through the use of resources.

Quality of life: This is the general well-being of people and includes income, health, education and the environment.

Extreme poverty: People living on less than $1.90 or £1.40 per day meaning they lack essentials such as shelter, food, clean water.

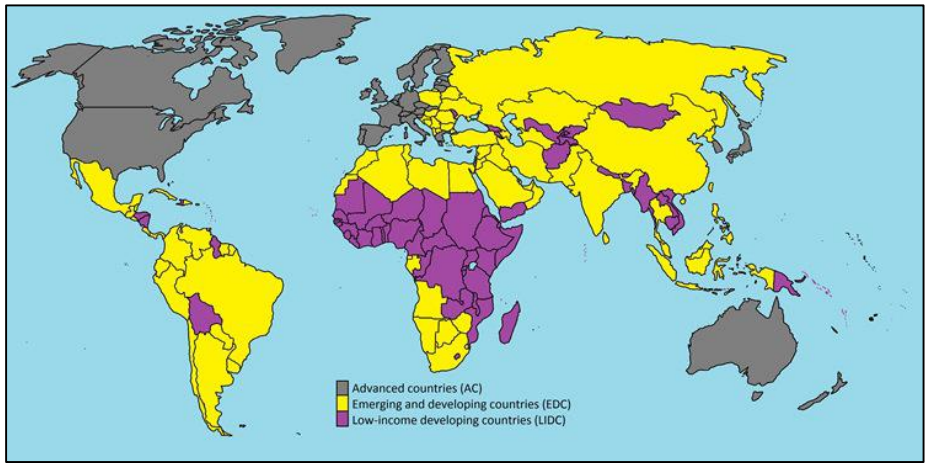
Classifying countries

The International Monetary Fund divides countries into one of three categories;

Advanced Countries (ACs): Countries with higher incomes and many people working in service sector e.g. UK, USA, Japan.

Emerging and Developing Countries (EDCs): These countries' economies are rapidly growing and many people work in secondary industries e.g. China and India.

Low Income Developing Countries (LIDCs): These are the least developed countries with many people working in primary industries e.g. Nepal, Sudan.

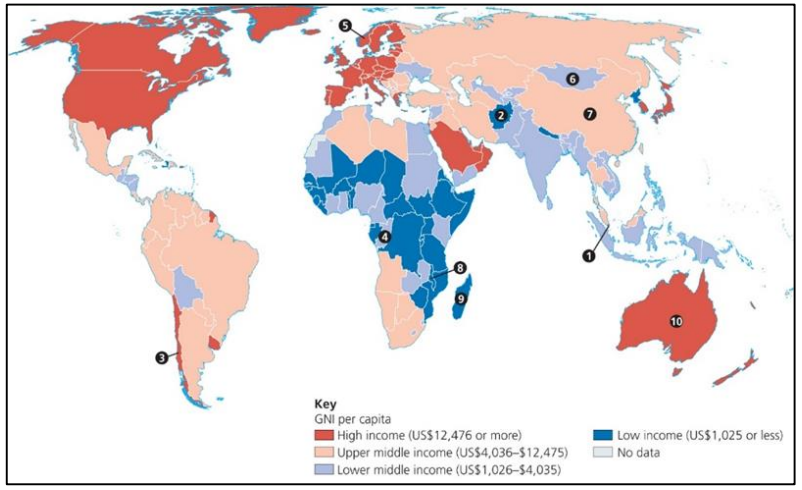


Economic measures of development

GNI/capita: This is a country's final income in a year divided by its population.

- It is an economic measure as it focuses on money in the country.
- The 3 countries with the highest GNI/capita = Norway, Switzerland and Luxembourg.
- The 3 countries with the lowest GNI/capita = The Gambia, Mozambique and Sierra Leone.
- The map shows the distribution of GNI/capita globally.

Key to the map:
Red = high income
Pink = upper middle income
Pale blue = lower middle income
Dark blue = low income



Other ways of measuring development: Human Development Index

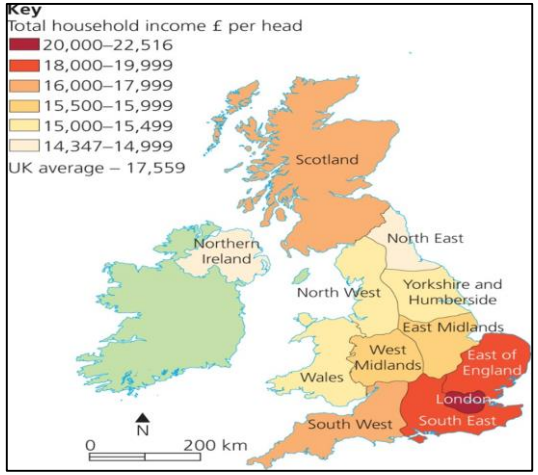
- **The Human Development Index (HDI) is a composite indicator which measures 3 different aspects of a country's development. It includes;**
- **Living Standards: GNI per capita**
- **Health: Life expectancy (average age people live to)**
- **Education: Average number of years of schooling children receive.**
- HDI values range from 0 to 1 with numbers closest to 1 representing highest values.
- It is a better measure of development than GNI/capita as it includes more aspects of a country's development and gives a better indication of the quality of life for people in terms of healthcare and education. GNI/capita is simply an economic measure.

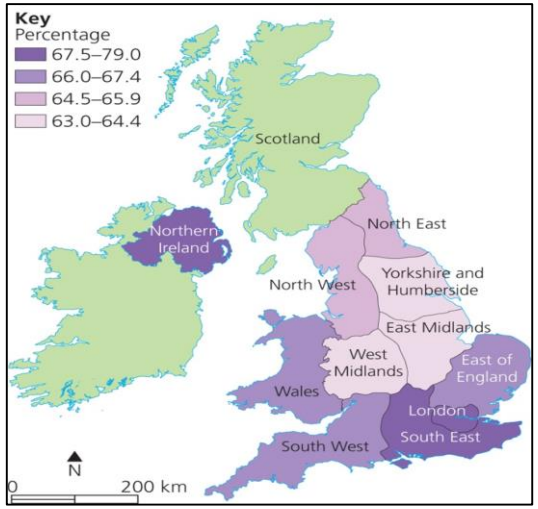
Development over time: BRICS and MINT countries

- Some countries are developing rapidly and have been grouped together to reflect the pace of their development.
- **The BRICS refers to Brazil, Russia, India, China and sometimes South Africa.**
- **The MINT countries are Mexico, Indonesia, Nigeria and Turkey. The economies of these countries are also growing rapidly but not as rapidly as those of the BRICS countries.**
- These countries are developing rapidly as they are able to benefit from global ideas such as the shipping container which means goods can be transported all around the world.
- Many of these countries are increasing the number of people working in manufacturing.

Inequalities within countries

- As well as differences in development between countries there are also differences **within** countries, e.g. the UK.
- The North-South divide refers to an imaginary line drawn across the UK to divide the UK into the north and south.
- There are variations in factors such as life expectancy, % GCSE grades (bottom map) and house prices.
- Evidence suggests that in societies that are more unequal people are unhappier.





What are the causes of poverty?

- There are often several reasons why a country may experience poverty, these can be physical or human factors.
- **Physical; natural hazards** – countries that experience earthquakes, floods or hurricanes frequently have to rebuild after disasters which costs money and makes it harder for them to develop, leading to poverty.
- **Physical; climate** – in extreme climates such as Ethiopia it can be hard to grow crops as there is often drought and so the price of food increases, meaning more people experience poverty.
- **Human; war** – countries that are affected by war such as Syria suffer from people being killed and injured and then cannot work, buildings collapsing, and thousands of people are forced to flee their homes leaving their belongings.
- **Human; access to education** – a lack of education means there may be fewer people to do the skilled jobs and so it can be harder to maintain good healthcare for the population.

How does gender equality promote development?

Gender inequality is when people are treated differently and given different opportunities just because they are male or female.

- Gender inequality may be present in education or in the opportunities that are given to some people and not others.
- For example, One in five teenage girls around the world is denied access to education.
- In the UK for every £1 earned by a man, a woman earns 81p.
- Gender equality means treating people equally.
- This can promote development as it means a country is taking full advantage of the skills of its population and so more money can be earned, which improves the economy, and helps with the overall development of the country.

How do countries and NGOs support development?

Aid is the donation of money or resources to people in need - 2 types;

1. **Bilateral Aid** – a government provides aid to the government of a foreign country.
2. **Non-Governmental Aid** – charities called Non-Governmental Organisations (NGOs) raise money from the public to support development projects in other countries.

Aid provides money and/or resources e.g. education materials, food, shelter when countries are suffering from natural disasters, war .
It helps development as more money can be spent on other costs.

What are the Sustainable Development Goals?

Sustainable development: Development that meets the needs of present generations without compromising (reducing) the ability of future generations to meet their needs.

- The Sustainable Development Goals are a set of 17 goals that aim to end poverty, fight inequality and injustice, and tackle climate change by 2030.
- The goals are not legally binding, but governments are monitored to see if they are working towards them.

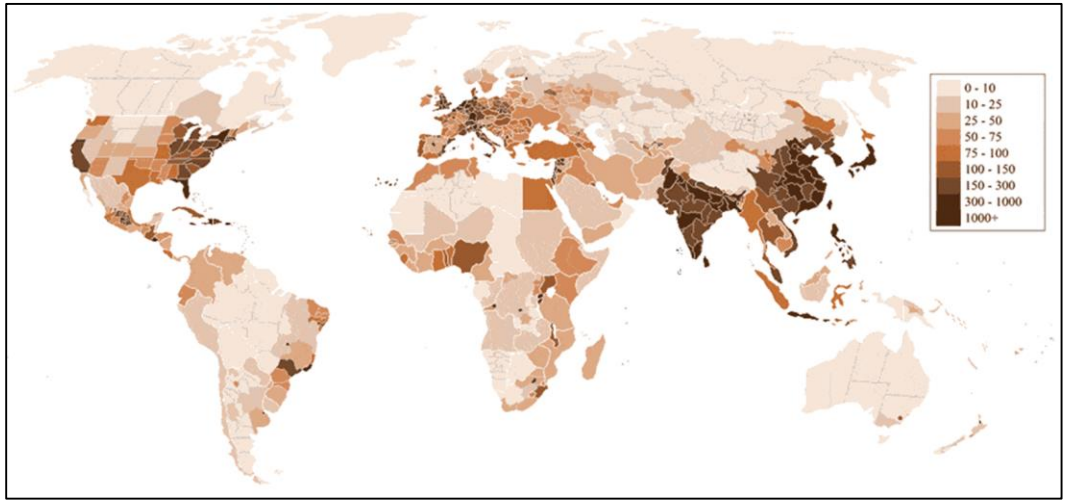
Geography

Population

Knowledge Organiser

Key word definitions

Population density: The amount of people living in a given area, normally a kilometre squared.
Birth rate: The number of births per 1000 people per year.
Death rate: The number of deaths per 1000 people per year.
Migration: The movement of people from one place to another.
Push factor: Reasons to leave a place e.g. fewer jobs and schools in rural areas.
Pull factor: Reasons that attract people to a new place e.g. higher paid jobs and better schools in urban areas.
Urbanisation: An increase in the proportion of people living in urban areas.

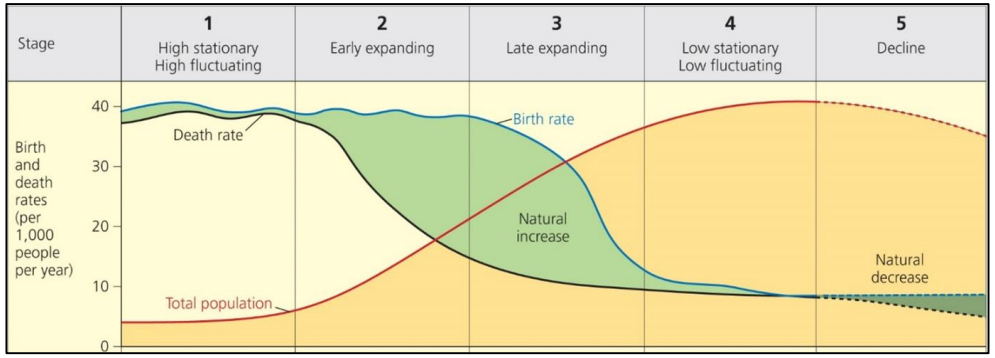


The world's population

- The world's population in 2022 is 7.9 billion.
- The world's population has grown rapidly over time from 1 billion in 1800, to 7 billion in 2011.
- The UN predict that by 2050 the population will be 9.8 billion, with 50% world's population growth expected to be in Africa, but the population of Europe is ageing (average age increasing).

The Demographic Transition Model

- This is a model that shows how a country's population changes as it becomes more developed.
- It shows the birth rate, death rate and total population.
- Over time the death rate falls as medical care improves and people live longer.
- The birth rate then falls as there is better access to family planning.
- By stage 5 there is natural decrease - population starts to decline as birth rate is very low.



Example countries

Stage 1: Tribes in the Amazon.
Stage 2: Niger
Stage 3: Brazil
Stage 4: UK
Stage 5: Japan

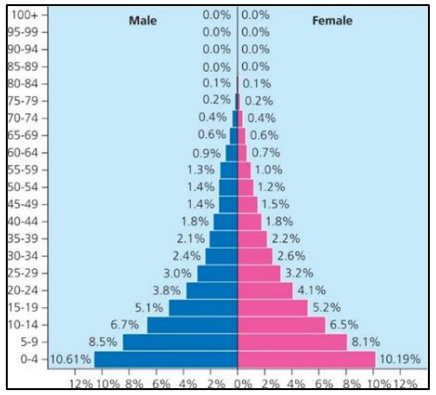
Reasons for world population distribution

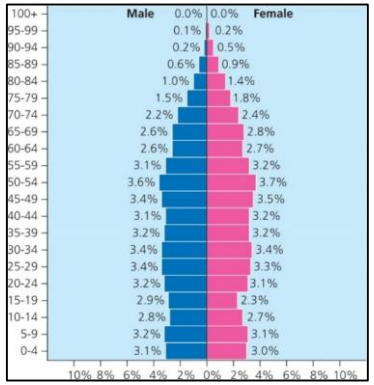
- As the map shows the world's population is not evenly spread around the world.
- Some areas such as Eastern China and India have high population densities, whilst parts of Canada, Russia and Australia have much lower population densities.

Physical reasons:
Climate: Some places have very hot climates such as the Sahara desert, whilst areas such as Canada have very cold climates which makes it harder to grow food.
Relief: Steep slopes in mountain ranges such as the Himalayas and Andes make it harder to build houses.
Human reasons:
Employment: Jobs and industry can attract people in search of work e.g. factories in eastern China.
Infrastructure: Places that are better connected make it easier for people to work so attract more people to live there.

Population pyramids

Population pyramids show the number of males and females in each age group. We can then identify the young dependents (aged 0-14), the independent or working population (15-64) and the elderly dependents (65 and over). This allows governments to plan how many schools and other facilities are needed for their population.





The left pyramid has a high birth rate, low life expectancy and high death rate. The right pyramid has a lower birth rate, higher life expectancy and lower death rate.

What is urbanisation and how is it changing over time?

- Urbanisation is an increase in the proportion of people living in cities. It is caused by rural to urban migration – the movement of people from the countryside (rural area) to the city (urban area).
- The number of megacities is increasing – these are cities with more than 10 million people living there.
- By 2030, 7 of the top 10 largest cities will be in Asia, 2 will be in Africa and 1 will be in S. America.
- Tokyo is the world's largest city with an expected population of 37.2 million by 2030.
- 828 million people currently live in informal settlements or slums and the number keeps rising.
- Rapid urbanisation puts pressure on fresh water supplies, sewage, the living environment, and public health.

China's strategy to manage their population

- In 1970 China's population was 800 million and it was growing very rapidly so it was at risk of over population when there are too many people for the resources available.
- In 1979 a law was brought in to make it a legal requirement that families only had one child.
- The policy lasted until 2015 and it is thought it reduced population by 400 million.
- Some families wanted a son to carry on the family name which created a gender imbalance with too many males and not enough females, as well as more elder people and less workers.
- The policy was changed to 2 children in 2015 and has recently been changed to 3 children.

Russia's strategy to manage their population

- Russia was experiencing population decline as there 16 deaths for every 10.4 births. This is called under population when there is not enough people to make use of the available resources.
- They introduced a policy to provide mothers with $11 000 if they had more than one child. This money could be put towards buying a house, the child's education or the mother's pension.
- By 2015 there were 1.9 million births a year, up from 1.5 million in 2005.
- The death rate also fell due to promotion of a healthier lifestyle but

Why do people migrate from Central America to Mexico/USA?

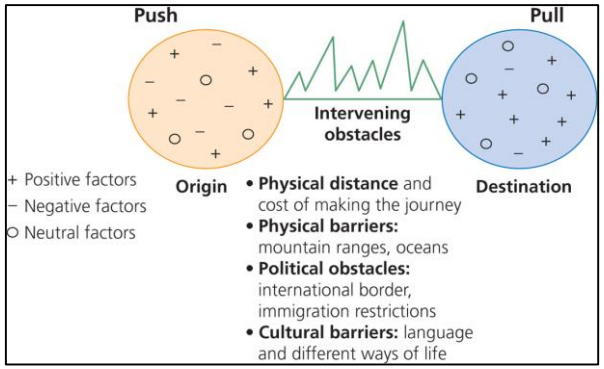
- Migration is the movement of people from one place to another. There are several different types of migration and reasons that people migrate e.g. refugees move due to war, people migrate for a better job or to join family.
- Push factors make people leave a place while pull factors draw them in to a new place.

Push factors:

- Work on banana plantations in Honduras is low paid - $5/day.
- Widespread corruption in Honduras so peoples' needs are not always prioritised by the government.
- High rates of violence in Honduras.

Pull factors:

- The "American Dream" idea that the USA offers lots of opportunities for people migrating.
- There are more jobs available in Mexico and USA.
- USA has a much lower crime rate.



French

Lionheart Modern Languages Year 7-9 High Frequency Words – FRENCH CORE

CORE

Time phrases/Sequencers

normally	**normalement**
often	**souvent**
usually	**d'habitude**
from time to time	**de temps en temps**
sometimes	**quelquefois/parfois**
tomorrow	**demain**
next week	**la semaine prochaine**
Summer / Autumn	**en été / en automne**
Winter / Spring	**en hiver / au printemps**
morning/afternoon/evening	**le matin/l'après-midi/le soir**
then	**puis**
always/still	**toujours**
at the moment	**en ce moment**
later	**plus tard**
in the future	**a l'avenir**
yesterday	**hier**
last night	**hier soir**
last week	**la semaine dernière**
last year	**l'année dernière**
next	**ensuite**
firstly	**d'abord**
after	**après ça**
before	**avant**
lastly	**enfin / finalement**

Key verb phrases

I have	**j'ai**
I have not	**je n'ai pas de**
I am	**je suis**
I am not	**je ne suis pas**
I would like	**je voudrais**
it is	**c'est**
it is not	**ce n'est pas**
there is	**il y a**
there is not	**il n'y a pas de**
it will be	**ce sera**
I'm going to….	**je vais** *+infinitive*
you must	**on doit** *+infinitive*
you must not	**on ne doit pas** *+infinitive*
you can	**on peut** *+infinitive*
you cannot	**on ne peut pas** *+infinitive*
it was	**c'était**
it wasn't	**ce n'était pas**
there was	**il y avait**
there wasn't	**il n'y avait pas de**
it would be	**ce serait**
it would not be	**ce ne serait pas**
if I was rich	**si j'étais riche**
in an ideal world	**dans un monde idéal**
in my dreams	**dans mes rêves**

Connectives

but	**mais**
and	**et**
because	**car/ parce que**
also	**aussi**
however	**cependant**
therefore	**donc**
as	**comme**
or	**ou**
however	**pourtant**
on the other hand	**par contre**
fortunately	**heureusement**
unfortunately	**malheureusement**
in addition	**en plus**

Negatives

not	**ne….jamais**
never	**ne…pas**

Comparisons

more… than	**plus … que**
less… than	**moins … que**

Quantifiers/ Intensifiers

very	**très**
too	**trop**
quite	**assez**
a bit	**un peu**
really	**vraiment**
a lot	**beaucoup**

Opinions

In my opinion	**à mon avis / selon moi**
I think that	**je pense que**
I Like	**j'aime**
I love	**j'adore**
I don't like	**je n'aime pas**
I hate	**je déteste**
I prefer	**je préfère**
My favourite … is	**ma/mon…. préféré(e) est**
I find that	**je trouve que**

Idioms

How awful !	**Quelle horreur !**
What luck !	**Quelle chance !**
What a surprise !	**Quelle surprise !**
What an idiot!	**Quel imbécile !**
It's brilliant !	**C'est le pied !**
It's not my thing !	**Ce n'est pas mon truc !**
It's a waste of time!	**C'est une perte de temps !**
It's a waste of money!	**C'est une perte d'argent !**

French

Lionheart Modern Languages Year 7-9 High Frequency Words – FRENCH CORE

CHALLENGE

Time phrases/ Sequencers

today	**aujourd'hui**
each/every	**chaque**
currently	**actuellement**
the next day	**le lendemain**
in my dreams	**dans mes rêves**
in an ideal world	**dans un monde idéal**
when I was little	**quand j'étais petit (e)**
when I'm older	**quand je serai plus âgé (e)**
for 5 years	**depuis 5 ans**
since I was 5 years old	**depuis l'âge de 5 ans**

Quantifiers/ Intensifiers

so	**si**
rather	**plutôt**
extremely	**extrêmement**
frankly	**franchement**
hugely	**énormément**
incredibly	**incroyablement**

Connectives

nevertheless	néanmoins
whereas	tandis que
even if	même si
furthermore	de plus
since	puisque
not at all	pas du tout

Key verb phrases

you can see	**on peut voir**
if it is	**si c'est**
there would be	**il y aurait**
there would not be	**il n'y aurait pas de**
you could	**on pourrait** *+infinitive*
you couldn't	**on ne pourrait pas**
you should	**on devrait** *+infinitive*
you shouldn't	**on ne devrait pas**
you must	**il faut** *+infinitive*
you must not	**il ne faut pas**

Negatives

no…more/longer	**ne… plus**
nothing	**ne… rien**
no one/nobody	**ne… personne**
neither …nor	**ne… ni… ni**

Comparisons/ Superlatives

best	**meilleur (e)**
worst	**pire**
the best thing is	**la meilleure chose est**
the most important thing is	**la chose la plus importante est**
what I like the most is	**ce que j'aime le plus est**

Opinions

for me	**d'après moi**
I believe that	**je crois que**
according to…	**selon…**
I really hate	**j'ai horreur de**
I really love	**j'apprécie**
I can't stand	**je ne supporte pas**
my friends say that	**mes copains disent que**
my parents say that	**mes parents disent que**
my teachers say that	**mes profs disent que**
my mum tells me that	**ma mère me dit que**
my dad tells me that	**mon père me dit que**
I would say	**je dirais que**
I like /love it / them	**j'aime/j'adore ça**
I am for	**je suis pour**
I am against	**je suis contre**
I agree with	**je suis d'accord avec**
I disagree with	**je ne suis pas accord avec**
what I like is	**ce que j'aime c'est**
it seems that	**il semble que**
as far as… is concerned	**en ce qui concerne…**

Idioms

Although it is…	**Bien que ce soit…**
That's life !	**C'est la vie !**
What a shame !	**Quel dommage !**
What a disaster !	**Quelle catastrophe !**
What a pain !	**Quel ennui !**
It was so boring !	**C'était la barbe !**
I was over the moon!	**J'étais aux anges !**
I was bored to death!	**Je m'ennuyais à mourir !**
I've had enough!	**J'ai le cafard !**
I was so fed up!	**J'en avais marre !**

Spanish

Lionheart Modern Languages Year 7-9 High Frequency Words – SPANISH CHALLENGE

CORE

Time phrases / Sequencers

normally	**normalmente**
often	**a menudo**
usually	**generalmente**
from time to time	**de vez en cuando**
sometimes	**a veces**
tomorrow	**mañana**
next week	**la semana próxima**
summer / autumn	**en verano / otoño**
winter / spring	**en invierno / primavera**
morning/afternoon/evening	**por la mañana/ tarde/ noche**
then	**luego / después**
always/still	**siempre / aún**
at the moment	**en este momento / ahora**
later	**más tarde / después**
in the future	**en el futuro**
yesterday	**ayer**
last night	**anoche**
last week	**la semana pasada**
last year	**el año pasado**
two years ago	**hace dos años**
next	**luego**
firstly	**primero**
after	**después (de)**
before	**antes (de)**
lastly	**finalmente**

Key verb phrases

I have	**tengo**
I have not	**no tengo**
I am	**soy / estoy**
I am not	**no soy / estoy**
I would like	**me gustaría**
it is	**es / está**
it is not	**no es / está**
there is	**hay**
there is not	**no hay**
it will be	**será**
I'm going to	**voy a** *+ infinitive*
you must	**se debe** *+ infinitive*
you must not	**no se debe** *+ infinitive*
you can	**se puede** *+ infinitive*
you cannot	**no se puede** *+ infinitive*
it was	**fue**
it wasn't	**no fue**
there was	**había**
there wasn't	**no había**
it would be	**sería**
it would not be	**no sería**
if i was rich	**si fuera rico/a**
in an ideal world	**en un mundo ideal**
in my dreams	**en mis sueños**

Connectives

but	**pero**
and	**y**
because	**porque / ya que**
also	**también**
however	**sin embargo**
therefore	**por lo tanto / por eso**
as	**como**
or	**o**
however / although	**aunque**
on the other hand	**por otro lado**
fortunately	**por suerte**
unfortunately	**por desgracia**
in addition	**además**

Negatives

not	**no...**
never	**no... nunca**

Comparisons

more... than	**más... que**
less... than	**menos... que**

Quantifiers / Intensifiers

Very	muy
Too	demasiado
Quite	bastante
A bit	un poco
so	tan
Really	*adjective ending* -ísimo/a(s)
A lot	mucho

Opinions

In my opinion	en mi opinión
I think that	pienso que
I like	me gusta(n)
I love	me encanta(n)
I don't like	no me gusta(n)
I hate	odio
I prefer	prefiero
My favourite is	mi... favorito/a es...
I find it	me parece

Idioms

How great !	**¡ Qué bien !**
How bad !	**¡ Qué mal !**
How funny !	**¡ Qué divertido !**
How cool !	**¡ Qué guay !**
How boring / annoying !	**¡ Qué aburrido! ¡Qué rollo !**
How dreadful !	**¡ Qué horror !**
It's crazy !	**¡ Es una locura !**
It's a waste of time!	**¡ Es una pérdida de tiempo !**
It's a waste of money!	**¡ Es una pérdida de dinero !**

Spanish

Lionheart Modern Languages Year 7-9 High Frequency Words – SPANISH CHALLENGE

CHALLENGE

Time phrases / Sequencers

today	**hoy**
each/every	**cada**
currently	**actualmente**
the next day	**al día siguiente**
in my dreams	**en mis sueños**
in an ideal world	**en un mundo ideal**
when i was little	**cuando era pequeño/a**
when i'm older	**cuando sea mayor**
for 5 years (now)	**desde hace 5 años**
since i was 5 years old	**desde que tenía 5 años**

Quantifiers / Intensifiers

so	**tan**
rather	**bastante**
extremely	**extremadamente**
frankly	**francamente**
entirely/ totally	**totalmente**
incredibly	**increíblemente**

Connectives

nevertheless	**aun así**
whereas	**mientras que**
even if	**aunque**
additionally	**asimismo**
since	**dado que / ya que**
not at all	**en absoluto**

Key verb phrases

you can see	**se puede(n) ver**
if it is	**si es**
there would be	**habría**
there would not be	**no habría**
you could	**podría** + *infinitive*
you couldn't	**no podría** + *infinitive*
you should	**debería** + *infinitive*
you shouldn't	**no debería** + *infinitive*
you must	**hay que** + *infinitive*
you must not	**no hay que** + *infinitive*

Negatives

no...more/longer	**ya no...**
nothing	**no... nada**
no one/nobody	**no... nadie**
neither... nor	**no... ni...**

Comparisons / Superlatives

best	**mejor**
worst	**peor**
the best thing is	**lo mejor es**
the most important is	**lo más importante es**
what I like the most is	**lo que más me gusta es**

Opinions

for me	**para mí**
as I see it	**a mi modo de ver / a mi juicio...**
I believe that	**creo que**
according to...	**según / para...**
I really hate	**detesto**
I really love	**me chifla/ me mola**
I can't stand	**no aguanto / no soporto**
my friends say that	**mis amigos dicen que**
my parents say that	**mis padres dicen que**
my teachers say that	**mis profesores dicen que**
my mum/dad tell me that	**mi madre /mi padre me dice que**
i would say	**diría que**
I like/love it / them	**me gusta(n) / me encanta(n)**
I am for	**estoy a favor de**
I am against	**estoy en contra de**
I agree with	**estoy de acuerdo con**
I disagree with	**no estoy de acuerdo con**
what I like...	**lo que me gusta..**
it seems that	**me parece que**
as for me	**por mi parte / en cuanto a mí**

Idioms

No more excuses !	**¡ Basta de excusas !**
I am fed up !	**¡ Estoy harto/a !**
What a shame !	**¡ Qué lástima !**
What a disaster !	**¡ Qué desastre !**
It sounds funny /curious !	**¡ Suena muy gracioso / curioso !**
A dream come true !	**¡ Es un sueño hecho realidad !**
It is the most exciting thing I have ever seen!	**¡ Es lo más emocionante que he visto jamás !**
It has been the most important / unforgettable experience of my life!	**¡ Ha sido la experiencia más importante / inolvidable de mi vida !**
I have enjoyed it a lot	**¡ Lo he disfrutado muchísimo !**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