



**LIONHEART**  
EDUCATIONAL  
TRUST


















**MARTIN**  
HIGH SCHOOL  
Lionheart Educational Trust

# Knowledge Organiser Booklet

Year 9  
Autumn Term

# Ways to use your knowledge organiser

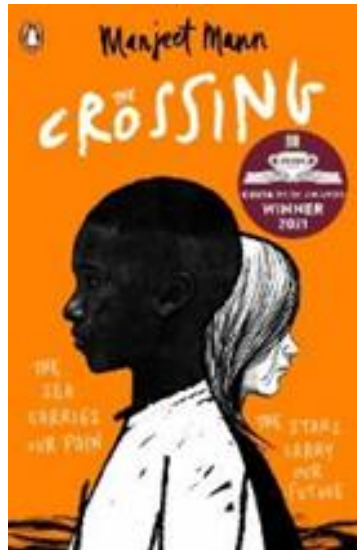
	Look, Cover, Write, Check	Self Quizzing	Mind Maps	Paired Retrieval	Definitions to Key Words
Step 1	<p>Look at and study a specific area of your knowledge organizer.</p> 	<p>Use your knowledge organizer to create a mini quiz. Write down questions using your knowledge organizer.</p> 	<p>Create a mind map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

# Lionheart Literary Canon: Curating a Lifelong Love of Literature

Recommended books to have read by the end of Year 9



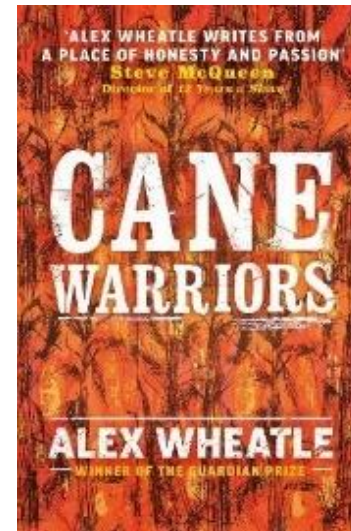
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**The Crossing**  
Manjeet Mann



**Black and British**  
David Olusoga



**Cane Warriors**  
Alex Wheatle



**Pet**  
Akwaeke Emezi

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

The study of narratology is the study of the choices a writer has made about how they tell their stories. Aspects of Narrative translates as ‘ways of telling a story.’ Significance is about what is signified, what meanings arise in terms of values and ideas and how these meanings are produced by what writers do and the methods they use.

Narrative Voice	Genre	Structure	Setting
First person – introspective, extradiegetic or intradiegetic? Third person – focalised, authorial or narrator? Tense – retrospective (past tense) or present tense immediate? Multiperspectivity – a story told from many points of view Reliable or unreliable (bias)? Omniscient (all knowing) or inadequate (doesn’t know the whole story)? Who? Known/unknown? A character?	Romantic or pastoral – ideal images of the natural world romance – associated with romantic love Gothic – creation of darkness and fear Realism – portrays the real world with all its flaws Comedy – intention to make people laugh Tragedy – solemn and mournful tone Crime - deals with crimes, their detection, criminals, and their motives. Thriller – readers feel heightened feelings of suspense, excitement, surprise, anticipation and anxiety.	Chronological or fragmented? Complete or with narrative gaps? Openings and endings? Climatic moments? Anti-climaxes? Narrative frame? Media-res opening? Flashbacks or flash-forwards? Resolution or narrative-hook? Deus ex Machina? (ends tied up or ends on a Q) Order of events within the plot Change of narrators or use of dialogue or just description?	Wider setting – (country, city community) Place – precisely where? House, room, seat? Time – specified?, unstated, present day, past, present? Historically/geographically accurate or entirely fictional? Setting change - from where to where? Use of specific languages or place-specific references Use of place names

#### What not to do with narrative method and useful sentence frames

When discussing narrative method it is important to avoid feature spotting. Instead evaluate the impact of the writers choice.

#### Useful sentence frames

The introduction of the new setting at this point in the narrative allows the writer to show that the character has evolved because...

The gap in the narrative allows the writer to create a sense of confusion and means the reader is unsure who is the victim and who the villain because...

The shift into using typically Romantic generic conventions allows the writer to comment on the importance of the natural world when...

By employing a focalised narrator the writer allows the reader access to the character’s unspoken thoughts meaning pity is created when...

#### How to access “significance” in your analysis

You could consider an extract’s significance in terms of the plot – what has happened earlier to instigate these events?

What happens later as a result of these events?

You could consider what messages are being endorsed? Are any characters or ideas being given preferential treatment or being side-lined?

You could reference any cultural, moral or social contexts that are being endorsed by the book.

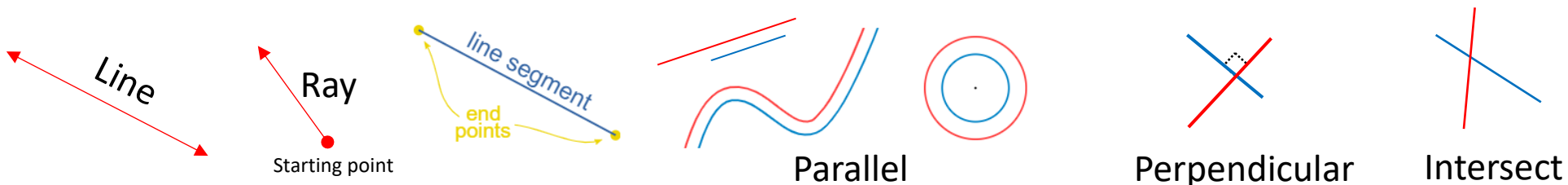
You could consider authorial intent or approval – is the writer advocating any specific ideologies?

You could consider whether a text fits into a traditional genre or whether it borrow from a few and what the effect of that is on the meaning

## Year 9 Aspects of Narrative – Djinn Patrol

superstitious	inequality	authentic	prestigious
persistent	intimidation	depiction	poignant
disadvantaged	concealment	ascertained	instinctive
urban	Incorporeal	unnerving	malevolent
influential	naive	insinuate	perpetuates
exploitation	exclusion	impulsive	accountability
basti	possession	inglorious	foreboding
Dickensian	minority	inevitable	culpability
dislocated	intuition	powerlessness	pessimistic

<b>Line</b>	Is straight entity that has no thickness and extends in both directions without end (infinitely).
<b>Line segment</b>	A line with two ends
<b>Ray</b>	A part of a line with a start point but no end point (it goes to infinity)
<b>Parallel</b>	Lines, curves, surfaces that are always the same distance apart and will never meet. The lines do not need to be the same length.
<b>Perpendicular</b>	A line that is at right angles to another line.
<b>Intersect</b>	To cut a line, curve or surface with another.

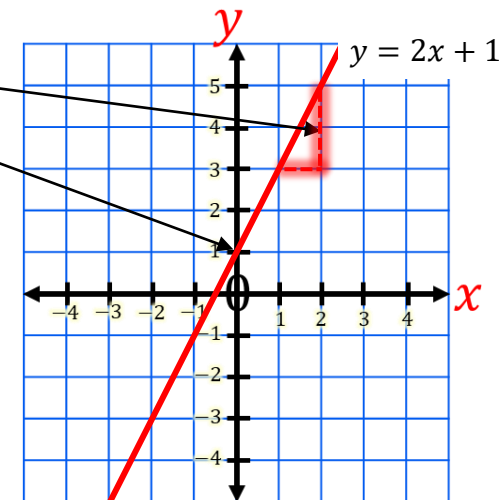


<b>Graph</b>	A diagram showing the relationship between (two) variables
<b>Midpoint</b>	The midpoint is halfway between the two end points of a <b>line segment</b>

<b>Gradient</b>	The steepness of the line. Change in $y$ for every one increase in $x$
<b>Y - Intercept</b>	Where the graph crosses the Y-axis

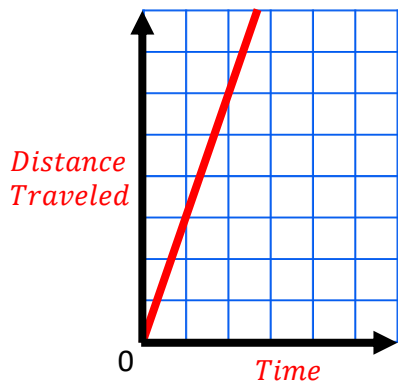
$$y = 2x + 1$$

↑ Gradient      ↑ y-intercept



<b>Direct Proportion</b>	The relationship between two variables where the scale factor between them is constant.
<b>Inverse Proportion</b>	The relationship between two variables where the product of the variables is constant.

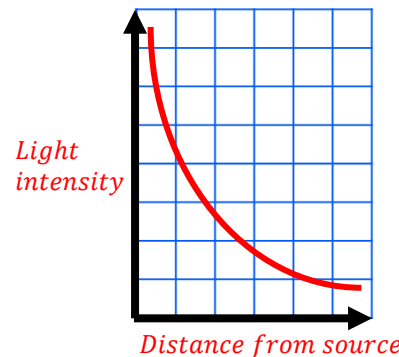
Direct Proportion



$$\text{Distance (miles)} = 3 \times \text{Time (hours)}$$



Inverse Proportion



$$\text{Light intensity} = 3 \div \text{Distance from source}$$



<b>Standard Index Form</b>	A form where a number is expressed as a multiplication of a number between 1 to 10 by a power of 10. $A \times 10^n$ where $1 \leq A < 10$ and $n$ is an integer.
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$$3.04 \times 10^5 = \underline{304,000}$$

$$3.04 \times 10^{-5} = \underline{0.0000304}$$

**KNOWLEDGE**


**ORGANISER**






Media Industry Products	
Product	Description
<b>Video</b>	Recording, editing and production of moving visual images.
<b>Audio</b>	Recording, editing and production of vocal and or other sounds or noises.
<b>Music</b>	Recording, arrangement and production of vocal and/or instrumental sounds.
<b>Animation</b>	Digital photographing or computer generation of drawings or models to create the illusion of movement.
<b>Special Effects (SFX)</b>	An illusion created by props, camerawork, or lighting.
<b>Visual Effects (VFX)</b>	Computer-generated imagery to enhance a video recording.

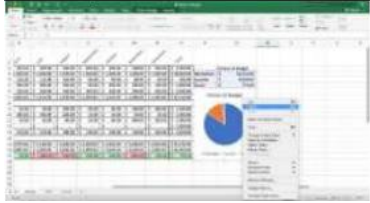
Creating meaning, impact, and engagement	
<b>Animations</b>	Used to enhance a message or meaning for an audience.
<b>Audio</b>	The sounds which are used when recording or broadcasting media.
<b>Movement</b>	How characters move around a scene to provide engagement with the audience.
<b>Transitions</b>	Techniques used to move from one scene to another. Including cuts, fades, wipes, dissolves.
<b>Typography</b>	The style of text used to make text clear and readable.

Typography Terminology	
<b>Serif fonts</b>	Lettering which includes flicks or strokes attached to the end of letters. Commonly used for print media as they have a traditional appearance. <b>Seif font example</b>
<b>Sans serif fonts</b>	Lettering which does not have decorative flicks <b>Sans Serif example</b>

Camera Shots	
<b>Long/wide</b>	Shows the whole subject of a shot.
<b>Establishing</b>	A shot with a clear location to set a scene.
<b>Medium/Mid</b>	Shows the actor from waist upwards to emphasise body language and facial expressions.
<b>Close up</b>	A shot of just a face to suggest emotions.
<b>Extreme close up</b>	A shot of a single body part or key important part of a sequence.
<b>Over the shoulder</b>	The camera is placed behind the character to show what the character is seeing.

Key terminology	
<b>Pixel</b>	A small element of colour in an image displayed by a light on a screen/projector.
<b>Resolution</b>	The concentration (amount of pixels in a certain area) of pixels in an image. Measured in DPI and PPI.
<b>DPI</b>	Dots Per Inch. Used to measure the number of dots of ink per inch in a printed image. The standard for printed documents is 300 DPI.  Increasing Dots Per Inch
<b>PPI</b>	Pixels Per Inch. Used to measure the number of pixels in each inch of an image. You may have heard of 72 PPI – this is the standard for a computer screen.

<b>CAMERA SHOTS</b>	<b>ESTABLISHING SHOT</b>	<b>FULL SHOT</b>
		
<b>MID SHOT</b>	<b>CLOSE UP</b>	<b>EXTREME CLOSE UP</b>
		

Key Term	Definition	Example															
Spreadsheet	An electronic document in which data is arranged in the rows and columns of a grid and can be manipulated																
Row	A horizontal line of cells within a spreadsheet	<table border="1" data-bbox="1615 486 1989 605"> <tr> <td></td> <td>Column</td> <td></td> </tr> <tr> <td>Row</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>		Column		Row											
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Column	A vertical line of cells within a spreadsheet	<table border="1" data-bbox="1615 625 1989 743"> <tr> <td></td> <td>Column</td> <td></td> </tr> <tr> <td>Row</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>		Column		Row											
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Cell reference	The specific location of a cell within a spreadsheet (e.g. D2)	<table border="1" data-bbox="1615 758 1989 833"> <tr> <td></td> <td>A</td> <td></td> </tr> <tr> <td>1</td> <td>A1</td> <td></td> </tr> </table>		A		1	A1										
	A																
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Range	A cell reference which links to a group of connected cells (eg. A1: A4)	<table border="1" data-bbox="1615 886 1893 1079"> <tr> <td></td> <td>A</td> <td></td> </tr> <tr> <td>1</td> <td>A1</td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>A4</td> <td></td> </tr> </table>		A		1	A1		2			3			4	A4	
	A																
1	A1																
2																	
3																	
4	A4																
Formula	An expression used in a spreadsheet to perform a calculation	=(A1 + B1)															
Sort	To organise data or information into order.	Not sorted – 1, 3, 4, 5, 2 Sorted, 1, 2,3,4, 5															
Conditional formatting	A tool that allows you to apply formatting to a cell or range of cells and have that formatting change depending on the value of the cell or the value of a formula	<table border="1" data-bbox="1615 1243 1849 1408"> <tr> <td></td> <td>A</td> <td></td> </tr> <tr> <td>1</td> <td>Pass</td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Fail</td> <td></td> </tr> </table>		A		1	Pass		2			3			4	Fail	
	A																
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4	Fail																

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

Key learning content	Description / Explanation/ Example
<p><b>Stages of a warm up</b></p> <ul style="list-style-type: none"> <li>• Stage 1 – pulse raiser (5 mins)</li> <li>• Stage 2 – mobility exercises</li> <li>• Stage 3 – stretching (10s+)</li> <li>• Stage 4 – dynamic movement</li> <li>• Stage 5 – skills practice</li> <li>• Names of muscles</li> </ul>	<p><b>Examples of warm up</b></p> <ul style="list-style-type: none"> <li>• Stage 1 – (Low intensity exercise) A 5 minute jog around a netball court.</li> <li>• Stage 2 – (To a move a joint through its full range of motion) Arm circles, ankle circles, hip circles.</li> <li>• Stage 3 – (Static or dynamic stretches) quadriceps stretch.</li> <li>• Stage 4 – (high intensity exercise) Shuttle runs</li> <li>• Stage 5 – (Practice the skills you will be using) Chest/ shoulder passes (netball)</li> <li>• Names of muscles: quadriceps, hamstrings, biceps, triceps</li> </ul>
<p><b>Benefits of a warm up</b></p> <ul style="list-style-type: none"> <li>• Increase temperature and HR</li> <li>• Decreased chance of injury</li> <li>• Increased oxygen transport</li> <li>• Increased flexibility</li> <li>• Increased speed / strength of muscle contractions</li> <li>• Mental preparation</li> </ul>	<p><b>Benefits explained</b></p> <ul style="list-style-type: none"> <li>• Allow more oxygen to reach muscles</li> <li>• Better for overall health. Can maintain involvement in physical activity .</li> <li>• More oxygen gets to muscles, so can create more energy.</li> <li>• Increased flexibility can enhance performance (Reach higher to catch a ball)</li> <li>• Faster/ stronger movements - perform skills more effectively.</li> <li>• Mental preparation – feel more alert/ focussed/ confident/ concentrating/ motivated/ relaxed etc.</li> </ul>
<p><b>Stages of a cool down</b></p> <ul style="list-style-type: none"> <li>• Stage 1 – Low intensity exercise</li> <li>• Stage 2 – Stretching</li> <li>• Names of movements – flexion and extension</li> </ul>	<p><b>Examples of cool down</b></p> <ul style="list-style-type: none"> <li>• Stage 1 – Steady jog on netball court, can move onto a walk</li> <li>• Stage 2 – (Static stretches) Quadriceps stretch, hamstring stretch.</li> <li>• Flexion = bending at an elbow or knee. Extension = straightening at an elbow or knee</li> </ul>
<p><b>Benefits of cool down</b></p> <ul style="list-style-type: none"> <li>• Gradually lower heart rate</li> <li>• Gradually lower breathing rate and temperature.</li> <li>• Speeds up removal of waste products.</li> <li>• Speeds up recovery</li> <li>• Names of joints</li> </ul>	<p><b>Benefits explained</b></p> <ul style="list-style-type: none"> <li>• Gradually lower heart rate from 150bpm when working to 70bpm when resting.</li> <li>• To maintain blood flow/ oxygen transport/ carbon dioxide removal</li> <li>• Carbon dioxide and lactic acid removed faster. Reduces aching, recovery is faster.</li> <li>• Joints: Elbow and knee = hinge. Shoulder and hip = ball and socket</li> </ul>
<p><b>Preparing for physical activity</b></p> <ul style="list-style-type: none"> <li>• Wear appropriate PE kit</li> <li>• Long hair tied back</li> <li>• Jewellery removed</li> <li>• No chewing gum or food</li> <li>• Water for hot weather</li> </ul>	<p><b>Preparation explained</b></p> <ul style="list-style-type: none"> <li>• Sports trainers, shorts, t-shirt to avoid injury yourself or others.</li> <li>• So you can see when playing</li> <li>• Earrings taken out, bracelets off to avoid injuring yourself or others.</li> <li>• To avoid chocking when active.</li> <li>• To stay hydrated /avoid headaches/ feeling weak</li> </ul>
<p><b>Risks and hazards to check for</b></p> <ul style="list-style-type: none"> <li>• Area free from rubbish</li> <li>• Equipment tidied away</li> <li>• Equipment undamaged</li> <li>• Surface dry/ undamaged</li> </ul>	<p><b>Hazards explained</b></p> <ul style="list-style-type: none"> <li>• Check there is no debris such as broken glass on football pitch, to avoid someone injuring themselves.</li> <li>• 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.</li> <li>• Check the trampoline is up properly, to avoid injury to a player.</li> <li>• Check there is no water spilled on the badminton court, to avoid a player slipping and hurting an arm.</li> </ul>

## Year 9: 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.



# KNOWLEDGE ORGANISER

## CHEMISTRY: Advanced Chemical Reactions

Name: \_\_\_\_\_

### Vocabulary

**Chemical Reaction:** Transfer of energy between reacting substances and the surroundings.

**Reactants:** Starting substances in a reaction.

**Products:** Substances that are made at the end of a reaction.

**Fuel:** A substance that can store energy and can release it when burnt.

**Combustion:** The process of burning.

**Thermal Decomposition:** A process in which a single substance is broken down on heating into smaller compounds /elements.

**Exothermic:** Energy transferred to the surroundings.

**Endothermic:** Energy transferred from the surroundings.

**Conservation of mass:** The total mass of the products in a chemical reaction will be the same as the total mass of the reactants as no mass is lost or gained

### Types of Reaction

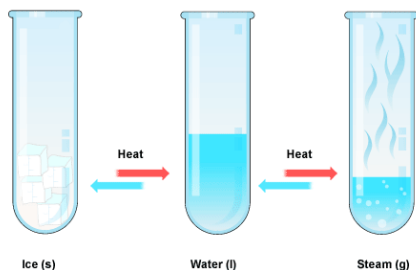
**Chemical Reactions:** atoms are rearranged to create a new substance. These reactions are NOT easily reversed.

**Physical Reactions:** no new substance is made but there is a change in appearance of a chemical. These reactions are easily reversed.

### Signs of physical and chemical reactions:

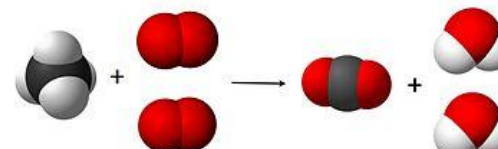
Physical	Chemical
<ul style="list-style-type: none"> <li>Solid dissolving</li> <li>Change in state</li> </ul>	<ul style="list-style-type: none"> <li>Change in appearance (colour)</li> <li>Change in energy (temperature, sound ect.)</li> </ul>

### Physical Change: Dissolving or state change



e.g. Change in state of water

**Chemical Change:** forming a new substance



e.g. Combustion of Methane (Natural Gas)

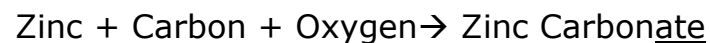
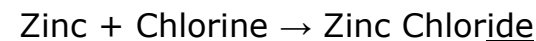
### Word Equations:

### Reactants $\rightarrow$ Products

A chemical equation tells you which chemicals reacted together (the **reactants**) and the new chemicals that were made in the reaction (the **products**).

The simplest equation is a word equation.

For example:



### Combustion:



### Fire Triangle

**Fuel :** A material that can be burnt to release energy by heating.

EG. Glucose, Methane , Petrol

**Combustion:** Is another name for burning. It is where a fuel is burnt in oxygen and heat to release energy.

### Testing for combustion

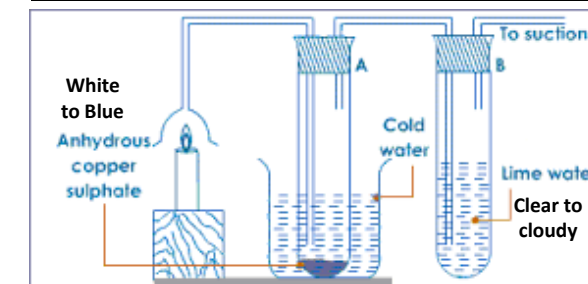


Fig. 5.9 To prove that water and carbon dioxide are formed when a candle burns

**When Coal, oil and natural gas undergo combustion ;**

- the hydrogen atoms combine with oxygen to make water vapour, H<sub>2</sub>O [TEST A]
- the carbon atoms combine with oxygen to make carbon dioxide, CO<sub>2</sub> [TEST B]
- the maximum amount of energy is release

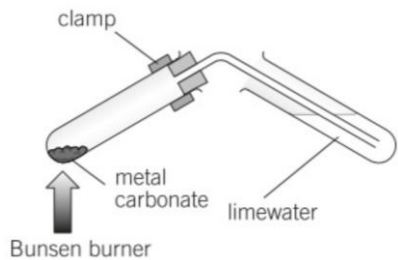


# KNOWLEDGE ORGANISER

## CHEMISTRY: Chemical Reactions

Name: \_\_\_\_\_

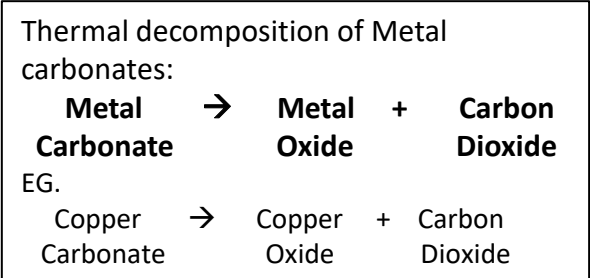
### Thermal Decomposition:



#### Thermal Decomposition:

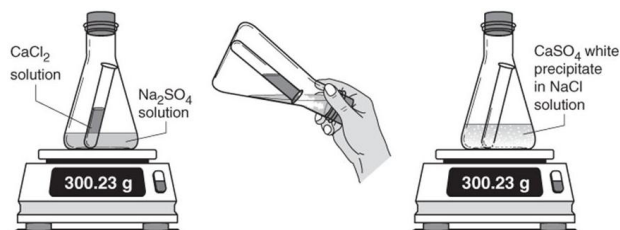
Type of reaction in which a compound breaks down to form two or more substances when it is heated.

**Many metal carbonates can take part in thermal decomposition reactions:**



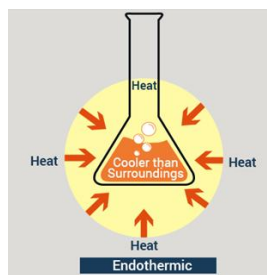
### Conservation of mass:

Atoms are not created or destroyed just rearranged in a reaction so the total mass of the products will be the same as the total mass of the reactants.



mass (g) of reactants = mass (g) of products

### Exo- and endo-thermic reactions:



#### Endothermic:

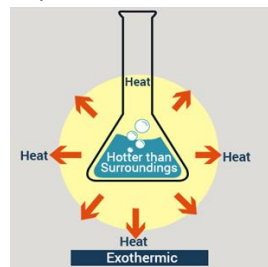
Reaction in which energy is taken in from the surroundings.

#### Examples:

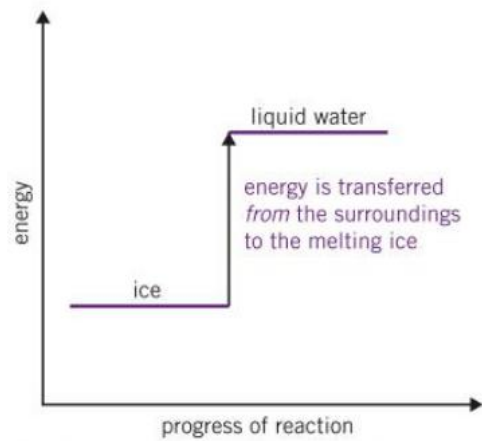
Exo	Endo
<ul style="list-style-type: none"> <li>burning</li> <li>neutralisation reactions</li> <li>respiration</li> </ul>	<ul style="list-style-type: none"> <li>thermal decomposition</li> <li>carbonates and acids</li> <li>photosynthesis</li> </ul>

#### Exothermic :

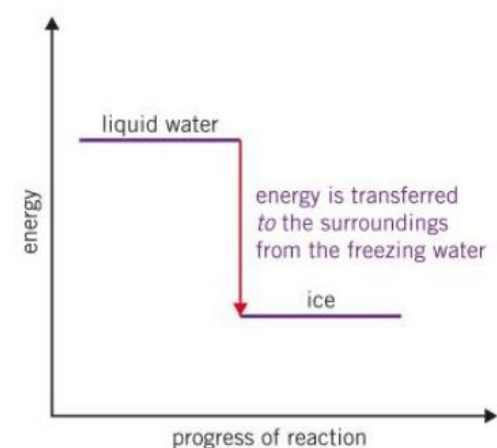
Reaction in which energy is given out to the surroundings. The surroundings then have more energy than they started with so the temperature increases.



### Energy Level Diagrams



Endothermic Reaction e.g water melting



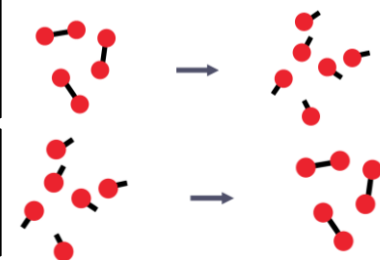
Exothermic Reaction e.g water freezing

Energy level diagrams help us to show the changes that occur during a reaction

### Making and Breaking Bonds:

Breaking Bonds = Endo

Making Bonds = Exo



Whether a reaction is endo or exo depends on which energy is greater- the making or the breaking of the bonds. Each chemical bond that is broken or made is given a value in kJ.

**Catalysts:**  
Speed up chemical reactions. They alter the rate of reaction without being changed by the reaction.  
**Enzymes: biological catalysts that speed up cellular reactions**

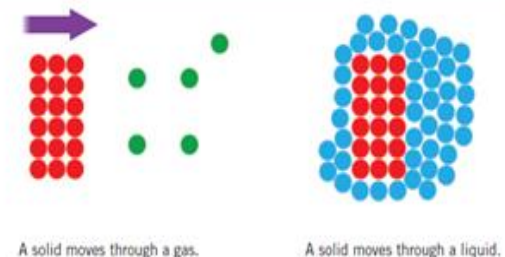


<b>Contact force</b>	These forces only act when two things are touching.
<b>Non-contact force</b>	These forces can act when things are not touching
<b>Newtons</b>	The units for measuring forces
<b>Drag force</b>	The force acting on an object moving through air or water that causes it to slow down.
<b>Friction</b>	The forces that slows things down when they move on a surface e.g. a car on a road.
<b>Streamlined</b>	When something is shaped to reduce friction or air resistance
<b>Law of moments</b>	An object is in equilibrium if the clockwise moments equal the anticlockwise moments.
<b>Upthrust</b>	The force on an object in liquid or gas that pushes them up
<b>Moment</b>	A measure of the ability of a force to rotate an object around a pivot.
<b>Elastic</b>	Something which stretching and springs back to its normal shape
<b>Deform</b>	When something changes shape
<b>Compress</b>	When an object is squashed
<b>Extension</b>	The difference between the original length of an object and the length when you apply a force.
<b>Pressure</b>	The ratio of force to surface area, in $\text{N/m}^2$ , and how it causes stresses in solids.
<b>Liquid pressure</b>	The pressure produced by collisions of particles in a liquid.
<b>Equilibrium</b>	When all of the forces on something are balanced and cancel out.

### Friction and drag

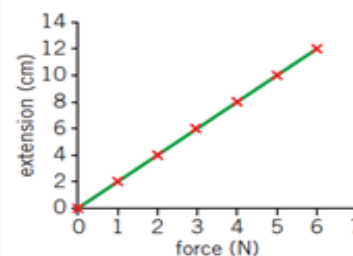
- **Friction** is a force which will slow down a moving object due to two surfaces rubbing on one another
- The greater the friction, the faster an object will slow down, or the greater the force it will need to overcome the force of friction. For example, it is easier to push a block on ice than on concrete, as the ice is smoother and causes less friction

- When an object is moving through a fluid, either liquid or gas, the force which slows it down is known as **drag**
- The fluid particles will collide with the moving object and slow it down, meaning that more force is needed to overcome this
- Both drag and friction are **contact forces** as the two surfaces in friction, and the object and fluid particles in drag, come into contact with one another
- Both drag and friction are forces so they are measured in **Newtons (N)**

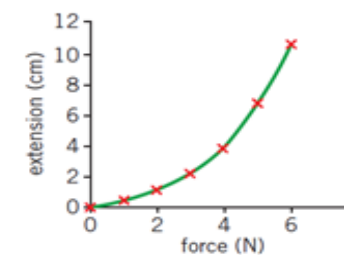


### Hooke's law

- Some objects, like springs, can be stretched, the amount that they stretch is known as their **extension**
- A force needs to be applied to the spring for it to be stretched, we can achieve this by adding masses which exert the force weight
- A spring will continue to stretch until it passes its **elastic limit**
- If an object obeys **Hooke's law** it will have a **linear relationship**: if the force applied to the spring is doubled, the extension will double too
- If an object does not obey Hooke's law, it will not have a linear relationship



This graph shows how the extension of a spring changes as you pull it



This graph shows the relationship between force and extension

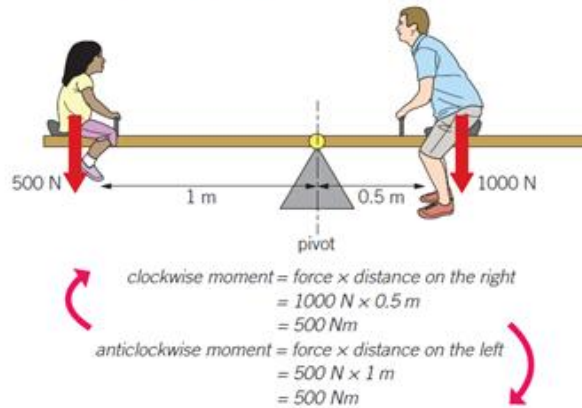


### Turning forces

- A **moment** is the turning effect of a force, it is measured in Newton meters
- We can calculate a moment with the equation:  

$$\text{moment (Nm)} = \text{force (N)} \times \text{distance from the pivot (m)}$$

- The size of the moment will increase as the distance from the **pivot** or the size of the force increases
- When an object, such as a seesaw, is balanced, the clockwise and the anticlockwise moments will be equal and opposite, which is known as **equilibrium**
- When forces are equal and opposite to each other, there is no **resultant force**

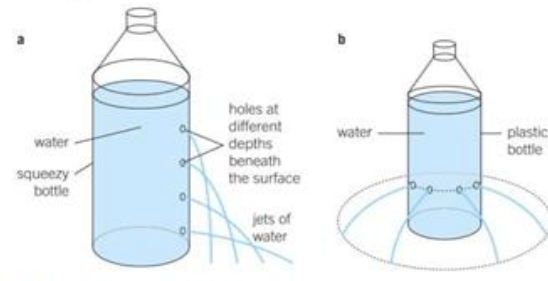
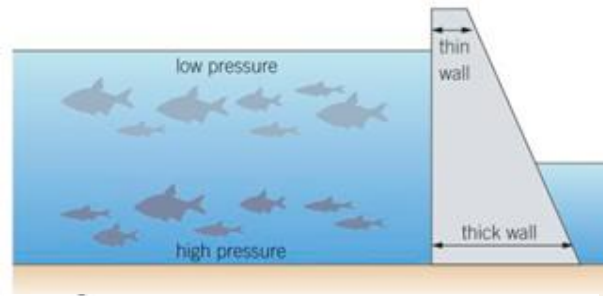


### Gas pressure

- Gas pressure** is caused by the particles of a gas colliding with the wall of the container which they are in
- The more often that the particles collide with the wall of the container, the higher the pressure of the gas will be
- Gas pressure can be increased by:
  - Heating the gas so the particles move more quickly and collide with the container with a higher energy
  - Compressing the gas so there are the same amount of particles within a smaller volume meaning that there are more collisions
  - Increasing the amount of particles within the same volume so there are more collisions
- Atmospheric pressure** is the pressure which the air exerts on you all of the time, nearer the ground there are more particles weighing down on you so the pressure is greater
- The higher you go, the smaller the atmospheric pressure, this is because there will be less particles weighing down on you

### Pressure in liquids

- Liquids are **incompressible**
- The particles in a liquid are already touching, meaning that there is little space between them to compress
- Liquids will transfer the pressure applied to them, this is seen in hydraulic machines
- As the ocean gets deeper, the pressure will increase, this is because the pressure depends on the weight of the water above
- The greater the number of water molecules above, the higher the pressure will be



### Pressure in solids

- The pressure which is exerted on a solid is known as **stress**
- The greater the area over which the force is exerted over, the lower the pressure, this is why snowshoes have a large area to prevent you sinking into the snow
- Pressure** can be calculated using the following equation:

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

$$\text{pressure (N/m}^2\text{)} = \frac{\text{force (N)}}{\text{area (m}^2\text{)}}$$

#### Worked example

A caterpillar vehicle of weight 12000 N is fitted with tracks that have an area of 3.0 m<sup>2</sup> in contact with the ground. Calculate the pressure of the vehicle on the ground.

**Solution**

$$\text{pressure} = \frac{\text{force}}{\text{area}} = \frac{12000 \text{ N}}{3.0 \text{ m}^2} = 4000 \text{ Pa}$$



BE REFLECTIVE: Review your learning

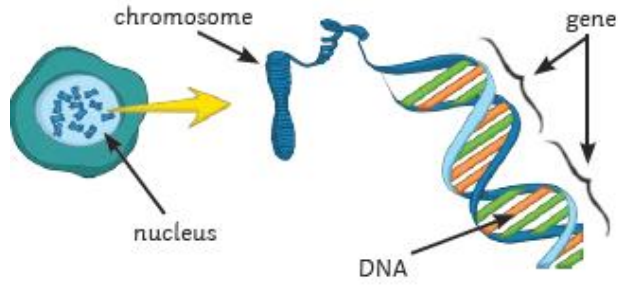


# KNOWLEDGE ORGANISER

## BIOLOGY: ORGANISMS - Genetics

Name: \_\_\_\_\_

### Structure of DNA



### Genetic modification

Altering an organisms genes to gain a desired characteristic of feature. GM crops are crops that have been produced by genetic engineering e.g.

#### Examples of genetic modification:

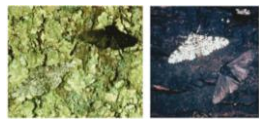
- Bacterial cells have human **insulin gene** inserted into them so that they produce insulin for diabetics.
- Frost resistant tomatoes
- Plants, such as rice, that have had genes inserted that make them **resistant to disease, insects, herbicides or more nutritious.**

#### Examples of desired characteristics :

- Disease resistance in food crops.
- Animals which produce more meat or milk.
- Domestic dogs with a gentle nature.
- Large or unusual flowers.

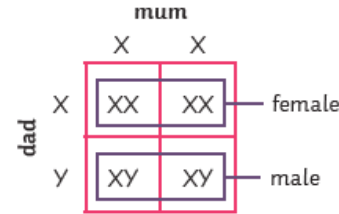
### Evolution

Scientific analysis of fossils shows that species have changed over long periods of time. This change is evolution. Charles Darwin first proposed this theory called **natural selection**. If a variation in the genes of an organism is advantageous in an environment, e.g. beak shape of finches beaks changed to allow them to find food easier, then it more likely to survive and pass that characteristic to its offspring.

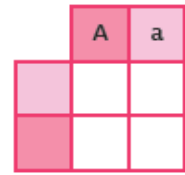


After the industrial revolution, the increased soot resulted in dark peppered moths being camouflaged more than light peppered moths, so they were less likely to be eaten and more survived and passed on their advantageous genes via **natural selection**

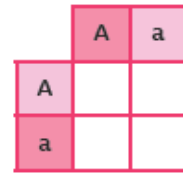
### Inheritance and Punnet squares



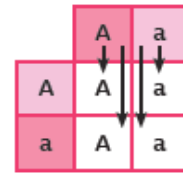
Females carry two X chromosomes.  
Males carry one X and one Y chromosome.



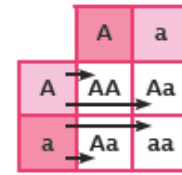
**Step 1:**  
Put the two alleles from one parent into the boxes at the top. This parent has one dominant allele and one recessive allele



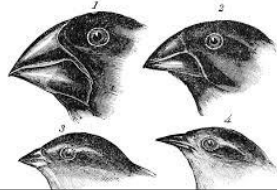
**Step 2:**  
Put the two alleles from the second parent into the boxes on the left. This parent also has one dominant and recessive allele.



**Step 3:**  
Put the alleles from the first parent into the two boxes underneath them.



**Step 4:**  
Put the alleles from the second parent into the boxes next to the letters from the first parent (capital letters first).



### Extinction and conservation

**Extinction:** A species becomes extinct when there are no more individuals of that species left, so we must rely on fossils to prove existence.



**Conservation and biodiversity**  
Seed banks are a conservation measure for plants. Seeds are carefully stored so that new plants may be grown in the future.

### Key vocabulary

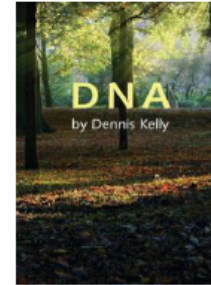
<b>DNA</b>	<b>Genetic material.</b> DNA is a <b>polymer</b> made up of <b>two strands</b> forming a <b>double helix</b> . The DNA makes up chromosomes.
<b>Gene</b>	A gene is a <b>small section of DNA</b> on a chromosome..
<b>Chromosome</b>	A <b>long coil of DNA</b> . Found in the nucleus.
<b>Allele</b>	<b>Different versions of the same gene</b> – dominant and recessive.
<b>Dominant</b>	A dominant allele is <b>always expressed</b> . Only <b>one copy</b> is needed.
<b>Recessive</b>	Only <b>expressed if two copies are present</b> .
<b>Allele</b>	<b>Different versions of the same gene</b> – dominant and recessive.
<b>Mutation</b>	A <b>random change</b> in the <b>DNA</b>
<b>Genetic modification/ Engineering</b>	A process which involves <b>modifying the genome</b> of an organism by <b>introducing a gene</b> from another organism to give a desired characteristic.
<b>Evolution</b>	The <b>change in the genes of a population over time</b> . Occurs through natural selection.
<b>Fossil</b>	The preserved remains of an organism from many thousands of years ago. They can also show changes/evolution over time
<b>Gene banks</b>	Conservation method that stores genetic examples of different species

Drama Year 9 – Topic 1  
Features of a performance text –  
DNA by Dennis Kelly

**Script** – The story that has been written for actors to perform  
**Devised** - Scene, dialogue or movement made up by the performer/director

**Storyline:**

DNA was written in 2007 and is set in the early 21st Century. It's about a group of teenagers, who could be described as a 'gang', who think they've killed one of their classmates. When they realise the terrible mistake they have made, they try to cover up this crime, but inadvertently implicate an innocent man in the process. At each moment when they could come clean, the group instead weaves a darker, more complex web of lies.



**Themes:**

**Responsibility:** The characters don't take responsibility for their actions or for their treatment of others. As a result, Adam dies and the postman is wrongly arrested.

**Bullying:** The play shows the destructive consequences of bullying and how it can be used to hurt and manipulate people. It shows how it can affect bullies too, e.g. some characters feel guilty.

**Power:** Kelly suggests that power brings out the worst in people and can cause them to act immorally.

**Identity:** The characters face a struggle between trying to fit in with the group while acting in a way that is morally right. They suppress their individual identities in order to protect the group as a whole.

**Genre:** DNA contains elements of tragedy and comedy



**Style:** DNA includes naturalistic elements. Naturalism is a style of theatre that aims to recreate real life on stage.

**Structure:** The play follows a linear narrative and is divided into 4 parts.

Introduction → Problem → Crisis → Resolution

**Locations:**

The wood – isolated from society and hidden from view



The field – is open compared to the wood.



The street - makes it seem ordinary and familiar for audiences.



## Year 9 Soundtracks Knowledge Organiser



Famous  
composer:  
John Williams

### Key Knowledge

Early films had no soundtrack ("SILENT CINEMA") and music was provided live, usually IMPROVISED by a pianist or organist.

The first SOUNDTRACKS appeared in the 1920's and used existing music (BORROWED MUSIC - music composed for other (non-film) purposes) from composers such as Wagner and Verdi's operas and ballets.

In the 1930's and 1940's Hollywood hired composers to write huge Romantic-style soundtracks. JAZZ and EXPERIMENTAL MUSIC was sometimes used in the 1960's and 1970's.

Today, film music often blends POPULAR, ELECTRONIC and CLASSICAL music together in a flexible way that suits the needs of a particular film.

### Key Skills

- ♪ Understanding the need for film music.
- ♪ Understanding sound effects
- ♪ Performing the 'James Bond' theme
- ♪ Performing the 'Titanic' theme
- ♪ Composition with a silent movie stimulus.
- ♪ Appropriate instrumentation for film themes.
- ♪ Understanding and using chords and backing beats with intro and ending.
- ♪ Composing using music IT



Charlie Chaplin  
Silent Movie  
Star

### Key Vocabulary

**SOUNDTRACK** - The music and sound recorded on a motion-picture film. The word can also mean a commercial recording of a collection of music and songs from a film sold individually as a CD or collection for digital download

**MUSIC SPOTTING** - A meeting/session where the composer meets with the director and decides when and where music and sound effects are to feature in the finished film

**STORYBOARD** - A graphic organiser in the form of illustrations and images displayed in sequence to help the composer plan their soundtrack

**CUESHEET** - A detailed listing of MUSICAL CUES matching the visual action of a film so that composers can time their music accurately

**CLICK TRACKS** - An electronic METRONOME which helps film composers accurately time their music to on-screen action through a series of 'clicks' (often heard through headphones) - used extensively in cartoons and animated films

**DIEGETIC FILM MUSIC** - Music within the film for both the characters and audience to hear e.g. a car radio, a band in a nightclub or sound effects

**NON-DIEGETIC FILM MUSIC** - Music which is put over the top of the action of a film for the audience's benefit and which the characters within a film can't hear - also known as **UNDERScore** or **INCIDENTAL MUSIC**.



### Key Dates

28 June 1914	Assassination of Archduke Franz Ferdinand, heir to Austro-Hungarian throne.
4 August 1914	Germany invades France. Britain declares war on Germany.
1 July – 18 Nov 1916	Battle of the Somme
11 November 1918	Armistice declared. End of World War One.

### Causes of World War One

#### Long Term Causes

Militarism	Building up of armies
Alliances	Friendships between countries
Imperialism	One country trying to take over another country
Nationalism	Love for your own country

#### Short Term Cause

Assassination of Archduke Franz Ferdinand .



### Key Concepts

**Cause & Consequence** – Why things happen in History, what causes them, what the effects are.

**Similarity & Difference** – How the lives of different groups of people in the past are different and how they are different to today.

**Significance** – How important events and people are in the past and how much of an impact they have today.

### Key Words

**Cause** - An event which makes another event happen

**Long-term cause** - A cause which took place a long time ago / had been taking place over a long time.

**Short-term cause** - A cause which happened just before the event it triggered e.g. assassination of Franz Ferdinand.

**Artillery** – Large guns which could fire explosive shells for miles.

**Bayonet** – A type of long knife soldiers attached to their rifles to attack the enemy.

**Machine Gun** – Type of gun which could fire up to 600 bullets per minute.

**Mustard Gas** – A type of poison gas developed by the Germans in 1917.

**Rifle** – long-range gun used by ordinary soldiers in the trenches.

**Shells** – Explosives which could be fired by the artillery and which would explode when they hit an object.

**Shell-shock** – A condition where soldiers who had been traumatised with the fighting would often have nightmares, or even stop talking. Now known as Post-traumatic stress disorder.

**Trench** – A ditch dug by soldiers to protect them from the enemy. Most men fighting in Europe in World War One stayed in trenches on the battlefield.

**Western Front** – The battlefields in West Europe (France, Belgium and Holland) where many British soldiers fought.

### Key People

**Franz Ferdinand** – Archduke of Austria-Hungary. Assassinated in June 1914 in Sarajevo, Bosnia by Gavrilo Princip.

**Gavrilo Princip** – Serbian freedom fighter/terrorist who assassinated Franz Ferdinand.

**Black Hand Gang** – Group of Serbian freedom fighters/terrorists led by General Apis.

**Kaiser Wilhelm II** – Ruler of Germany.

**Tsar Nicholas II** – Ruler of Russia.

**King George V** – Ruler of Britain and the British Empire.

**Raymond Poincaré** – President of France.

**Lord Herbert Kitchener** – British Secretary of State for War and responsible for recruiting British troops.

**Walter Tull** – First black officer in British army in World War One.

**Flora Sandes** – Only British woman to fight on the frontline in World War One.





### How did the war start?

#### Militarism

Britain spent £50million building up their armed forces to protect themselves against Germany. They developed a highly trained unit called the British Expeditionary Force. Germany built battleships based on the British design of the Dreadnought.

#### Alliances

In 1888 Germany, Austria-Hungary and Italy formed the Triple Alliance. In 1907 Britain, France and Russia formed the Triple Entente. Germany had developed the Schlieffen Plan to deal with a war on both fronts against France and Russia.

#### Imperialism

France, Germany and Britain had fought against each other for control of Africa. In 1905 and 1911 Germany threatened Britain and France by supporting Moroccan independence.

#### Nationalism

All countries believed their countries should be the most powerful and have the largest empire. This caused tension between France, Britain and Germany.

In the Balkans, Serbia was the strongest country and wanted to free fellow countries like Bosnia from the rule of the Austro-Hungarian Empire. This led to the Assassination of Franz Ferdinand.

#### Assassination of Franz Ferdinand

On 28<sup>th</sup> June 1914 the heir to the Austro-Hungarian throne, Franz Ferdinand was assassinated in Sarajevo in Bosnia. His killer was Gavrilo Princip from Bosnia who claimed he wanted to free Serbia from Austria-Hungary.

Austria then decided to punish Serbia for his death by bombing them. This led Russia to come in to defend Serbia. This led Germany to come in to defend Austria-Hungary. Germany then used the Schlieffen Plan to attack France before Russia had a chance to attack too. This led Britain to defend France. By 4<sup>th</sup> August all major European countries were at war.

It became a World War because these countries all got their empires to support them.



### Key Words



**Battle of the Somme** – One of the worst battles in the First World War. Around 125,000 men were killed and at least 300,000 were wounded.

**Blockades** – using submarines and battleships to stop supply ships getting through. Germany and Britain used this against each other.

**'Conchies' / Conscientious Objectors** – people who refused to fight in the war due to strong religious or moral beliefs.

**Creeping Barrage** – Tactic developed by the British in the Battle of the Somme where artillery would fire ahead of troops so that German soldiers could not see the British advancing.

**Going 'over the top'** – Phrase meaning that men would climb out of their trenches to go to fight the enemy.

**Home Front** – The experience of the war back in Britain.

**Munitions** – Weapons and guns.

**No-Man's Land** – Area between the trenches which neither side owned.

**Rationing** – Government control of the amount of food people could get to prevent shortages.

**Stalemate** – A war where no-one is winning.

**U-boats** – Submarines.

**WAAC** – Women's Auxiliary Army Corps – formed in 1917 to put women in jobs in the army which men had previously done in order to free up men to fight.

**War of Attrition** – a slow war where each side tries to wear the other down by sending more and more soldiers to fight.

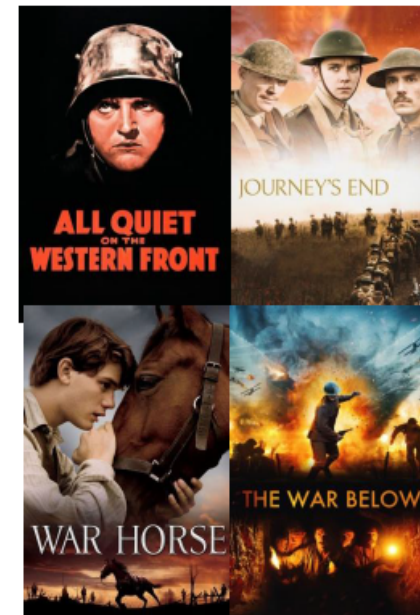
### Key People

**Field Marshal Douglas Haig** – leader of the troops at the Battle of the Somme; nicknamed 'The Butcher of the Somme' due to the high death toll.

**Queen Mary** – wife of George V. Sponsored the creation of the WAAC.

**Queen Alexandra** – Danish mother of George V. Sponsored the creation of the Queen Alexandra's Nursing Corps.

**Princess Sophia Duleep Singh** – former Suffragette who also volunteered as a nurse in WW1.



### Conditions in the Trenches

#### Western Front

- Most fighting for British soldiers took place in the trenches which stretched south from Belgium to the borders of Switzerland.
- Conditions were horrible with mud, cold, fleas and rats causing problems for soldiers. Soldiers would often wait weeks before they could 'go over the top' to fight in 'No-man's land'.
- One of the bloodiest battles was the Battle of the Somme 1<sup>st</sup> July to 18<sup>th</sup> November 1916.
- It was a war of attrition where most battles won very little ground. This largely resulted in a stalemate until the USA joined on the side of Britain and France in April 1917.
- Around 5,700,000 British men (from England, Scotland, Wales and Ireland) fought in World War One.
- Around 880,000 men from Britain and the British empire died in the war; around 1,700,000 were wounded.

#### Home Front

- Women had to take over many men's roles including firefighters, police officers, coal delivery workers.
- Food shortages were a problem by 1917 due to German blockades of supplies and the Women's Land Army was set up to provide food.
- Bombings by Germany by plane and torpedoes from u-boats killed civilians in Britain. Around 16,000 British civilians died on the Home Front.

#### Role of Women

- Around 1 million women served in munitions factories dealing with dangerous chemicals such as TNT. Women's hands were dyed yellow resulting in 'canaries' nickname.
- Around 2,000 women served as nurses in World War One; in 1914 there were around 1,000 female doctors – some treated soldiers at home and some on the battlefields abroad.
- Women also served at the battlefields as ambulance drivers such as Mairi Chisholm and Elsie Knocker.
- Only one British woman served as frontline soldier. Flora Sandes served in the Serbian army until she was wounded.



### Role of Empire

#### India

- Over 1 million Indian soldiers served Britain in World War One. They fought in France and Belgium, Egypt and East Africa, Gallipoli, Palestine, China, Singapore and Mesopotamia. Many of them served in the Indian Expeditionary Force which was formed in Egypt in 1914 to protect the Suez Canal.
- Around 700,000 Indian soldiers lost their lives in World War One.
- Indian regiments included Sikhs, Muslims and Hindus although sometimes regiments were divided along religious lines such as the 36<sup>th</sup> Sikhs.
- There were a number of specific Sikh regiments including the Black Lions who fought in East Africa and Mesopotamia. Around 100,000 Sikhs served in the British army in World War One.
- Muslim regiments from India, Yemen and Somalia served in the British army in France, Belgium, Gallipoli, Salonica, East Africa, Mesopotamia, Egypt and Persia. At least 400,000 British Muslim soldiers served in World War One.
- Indian regiments fought alongside British regiments from mainland Britain but also from other countries in the British Empire.

#### Africa

- Around 60,000 black South Africans served in the British Army, with around 120,000 other black African soldiers also serving. They came from other British colonies such as Nigeria, the Gold Coast, Sierra Leone, Gambia and Somalia.
- Lionel Turpin was a sailor from British Guiana. He served in the No.32 British Expeditionary Force in the Battle of the Somme and was awarded two medals for bravery.

#### West Indies

- The British West Indies Regiment was made up of over 15,000 people from British colonies in the Caribbean – over 10,000 people came from Jamaica.
- Most British West Indies Regiment soldiers were used in essential non-combat roles in Egypt, Mesopotamia and some areas of Europe.



### The End of World War One

World War One ended on the 11<sup>th</sup> November 1918 when Germany and France agreed to sign an Armistice. This is why Remembrance Day is the 11<sup>th</sup> November each year and we remember the war at 11 o'clock on that day.



Lest We Forget.

# History

## Why did dictators rise to power in early 20<sup>th</sup> century Europe?

### RUSSIA

#### 1905 Revolution

- Russia is an autocracy ruled by Tsar Nicholas II
- Starts after the Russians lose the Russo-Japanese war in 1905, Nicholas refuses to listen to protestors and instead shoots them in bloody Sunday incident.
- Nicholas publishes the October Manifesto promising elections to the Duma (parliament) but he doesn't listen to the organization.

#### February 1917 Revolution

- Reasons:
  - Tsar takes charge of failing WWI effort, is blamed for losing it.
  - Tsar leaves Tsarina in charge of country, she is inexperienced and unpopular.
  - War causes food shortages and prices to rise.
  - Soldiers begin to protest and a 'hooligan' movement starts
- Tsar Nicholas abdicates and is replaced by a Provisional Government made up of elected members of the Duma.
- A rival Soviet (workers council) is formed in Petrograd to oppose the Government

#### October 1917 Revolution

- Reasons:
  - Bolshevik Communists become dominant party in Soviet
  - Government fails in ending war, lowering prices and stopping food shortages.
  - Lenin manages to sneak back into the country to inspire the revolt
- Seize winter palace, and announce new elections.
- Instantly make peace and begin sharing out land.
- After not winning elections, Bolsheviks get rid of democracy and take power.



### ITALY

#### Fascism in Italy

- After WWI Italians are given the right to vote in 1918- leads to the Red Years. Arguments over communism and socialism lead to riots, strikes and many deaths. People were scared of Communism
- The voting system is proportional meaning % of votes=% of seats. This meant no strong Government was ever formed.
- In response Mussolini's Fascist party became popular for promising to restore order and instead have a strong leader.
- They took over the Government by marching on Rome in 1922 and creating the Acerbo law meaning they automatically got a majority of seats in 1924.



### GERMANY

#### The rise of Hitler and the Nazis

- Inspired by Italian Fascism, Hitler helped to create the National Socialist party.
- He tried to recreate the March on Rome, through attempting to overthrow the Munich Government in 1924, but he failed and 16 people were killed.
- He sought to win through elections, and gains popularity through: Being anti-communist, promising work and bread, and promoting a strong leader.
- He becomes a dictator by blaming the Reichstag fire on the Communists, ensuring he has a majority. This allows him to pass the Enabling Act and mean he can pass any law in 1933



Keyword	Definition
<b>Democracy</b>	System where people have the power to vote for their Government and help choose those who make decisions. People-Rule
<b>Communism</b>	System where everyone is equal and all things are shared, and there is no need for a Government
<b>Autocracy</b>	System where one person holds all the political power
<b>Fascism</b>	System where there is no democracy and there is instead a strong leader who makes sure people work together to make the country stronger.
<b>Dictatorship</b>	Where there is no freedom of speech and no elections. The government is controlled by one person/party and any opposition is violently put down
<b>Socialism</b>	System where things are shared by the Government, but there are still elections and not everyone is completely equal

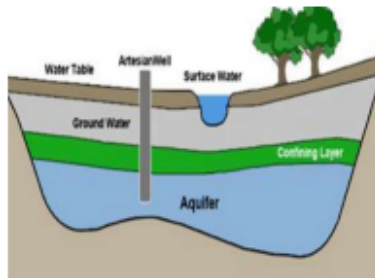
## Year 9

The Middle East knowledge organiser



### C) Maths

- 1- Range – take the lowest number away from the highest number
- 2- Mean – add up all of the numbers and divide by how many numbers there are
- 3- Median – place the numbers in numerical order and select the middle number



### D) Causes of war/conflict

- Economic gain (to take control of another country's wealth)
- Territorial gain (to take control of land)
- Nationalism (to prove your country is superior/better than another country)
- Civil war (fighting between different groups of people within the same country)
- Revolutionary war (when large numbers of people in a country tries to topple the government or leader of a country)

### A) Middle East's physical geography

- The Middle East is a transcontinental region, located where Asia, Africa and Europe meet.
- This region is rich in oil
- There are two seasons. Winter and summer. Even winters are hot.
- The climate can be described as arid. There is little rainfall in the region.
- The northern countries receive the most rainfall including Turkey and Syria.

### B) Water stress and drought

- Many countries are facing water stress including Saudi Arabia, Yemen and Oman.
- **Water stress** is where the demand for water **exceeds** the availability
- **Exceeds** means to go above
- Population growth and falling rainfall is causing an increase in water stress
- The level of water in underground **aquifers** is falling. In some places this decreasing by 6 metres per year
- An **aquifer** is an ancient supply of water deep beneath the ground
- Water stress will impact on the **social** and **economic** development of countries in the Middle East
- Farmers will not be able to grow crops or rear animals. This could lead to a rise in food prices and eventually food shortages.
- In the future water shortages could lead to conflict in the region.

### E) Causes of the civil war in Syria

- 1- Many people in Syria had been unhappy with President Assad for a long time. There was high unemployment and corruption.
- 2- In 2011 15 school children were arrested for writing anti-government graffiti on a wall. People were unhappy with this and so started to protest.
- 3- The government responded angrily opening fire and killing 4 protesters.
- 4- People demanded that the president resign. Fighting broke out between the president's supporters and those against the president (called rebels)
- 5- Russia and Iran became involved. Carrying out air strikes against cities held by rebel groups
- 6- The USA has shipped weapons to support the rebels
- 7- The UK and France carried out air strikes against government forces after they reportedly used chemical weapons against civilians (people not involved in the fighting)

### F) Key terms

- Refugee – a person fleeing from war, persecution or natural disasters. They are protected by law. People have to prove they are a refugee if they want a safe country to accept them
- Asylum seeker – someone who claims to be a refugee, looking for a safe place to live. But whose case has not yet been proven.
- Migrant – A migrant is a person who moves from one place to another. Refugees are a type of migrant. Another type is an economic migrant. Someone who moves to another country for a job there. Refugees are very different to economic migrants.

### G) Refugee movements from Syria

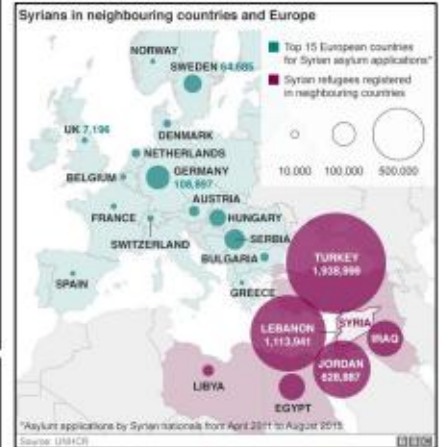
- Around 6 million refugees have now left Syria. 2.7 million are in Turkey and 1 million are in Jordan.
- Germany, Bulgaria and Sweden are the European countries that have accepted the most refugees from Syria.
- Only 3000 Syrian refugees have applied for asylum (safety) in the UK in comparison to 160,000 in Germany.

### Areas of control in Yemen



### I) Taking action

- There are a number of things people in the UK can do to support people in Yemen and Syria
1. Write a letter to your local MP asking them to urge the government to support a ceasefire
  2. Email the foreign secretary Jeremy Hunt through Oxfam's website asking him to ensure peace talks are successful
  3. You can donate to charities like Oxfam that are busy providing lifesaving supplies to people in Yemen and Syria



### H) Conflict in Yemen

The conflict in Yemen has caused a **humanitarian crisis**. It is threatening people's health, safety and well-being on a large scale.

It has a number of social and economic consequences for the people of Yemen

1. At least 10,000 people have died in the 3 and a half years since the conflict begun. This is an estimate figure and it is expected to be more
2. Around 20 million people are **food insecure**
3. **Food security** is having reliable access to food at an affordable price
4. Hospitals and schools have been destroyed by air strikes
5. Transport infrastructure has been destroyed by air strikes making it difficult for aid to get to the places it is needed most.
6. 50% of the population struggle daily to get enough water to drink and grow food



### Introduction to climate change: key words

**Greenhouse effect:** the trapping of the Sun's outgoing radiation by a layer of greenhouse gases in the atmosphere. These gases include carbon dioxide and methane.

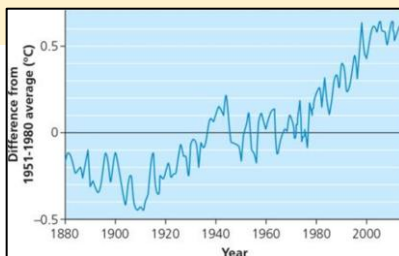
**Global warming:** an increase in the temperature of the Earth due to more heat being trapped by greenhouse gases.

**Climate change:** significant changes in global temperature, precipitation (rainfall) and winds.

Climate change is a **controversial issue** as people have different opinions as to whether it is a natural process or if it is caused by human activity.

### Evidence for climate change

- Temperature increase is key evidence that climate is changing.
- Significant reduction in Arctic sea ice cover.
- These indicators will all **increase**; air temperature, humidity, temperature over oceans and ocean heat content.
- These indicators will all **decrease**; glacier cover, snow cover and sea ice cover.



### Causes of climate change

Earth's temperature has fluctuated (changed) over time during **glacials** – cold periods when much of the Earth was covered in ice, and **interglacials** – warmer periods such as today.

Since the Industrial Revolution the concentration of greenhouse gases in the atmosphere has increased which has led to global warming.

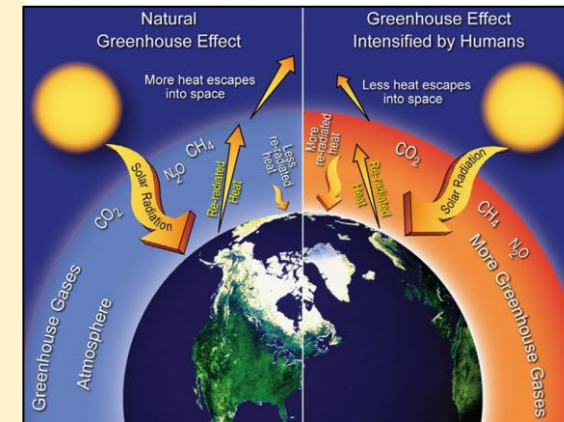
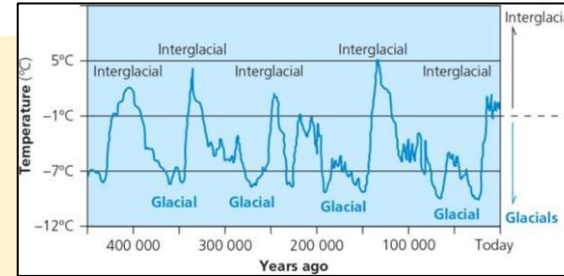
The main differences between the natural and human enhanced greenhouse effects are:

- Human enhanced has a thicker layer of greenhouse gases.
- Human enhanced has more heat reflected back down to Earth.
- Human enhanced has less heat escaping to space.

### Global impacts of climate change

#### **Social impacts**

- Sea level rise will affect 80 million people – causing homes to flood and people to relocate.
- Tropical storms will increase in magnitude (strength) – destroying houses and making people homeless.
- Some areas will receive less rainfall so there will be more water shortages.
- Some crops will not be able to be grown leading to hunger.
- Diseases such as malaria increase, an additional 280 million people may be affected



### Global impacts continued

#### **Environmental impacts**

- Species in affected areas (e.g. Arctic) may become extinct
- Some animals may not be able to adapt to changes in climate and their habitats could be destroyed.

#### **Economic impacts**

- Increased cost of flood defences for low lying cities e.g. Venice, and repairing damage caused by natural disasters.
- Some countries may not be able to sell food and have to import more food.
- Cost of relocating people who have had to leave their homes.

### Impacts of climate change in the UK

#### **Social impacts**

- Droughts and floods could be more common, especially droughts in London and the south east.
- Flooding of coastal areas and rivers will increase.
- Summers will be warmer so more people may stay in the UK and not go overseas.

#### **Environmental impacts**

- Bird migration patterns may change.
- Trees and plants will flower earlier.

#### **Economic impacts**

- New crops can be grown e.g. oranges meaning less food needs to be imported.
- Cost of protecting against flooding will increase.
- More money may need to be spent on ensuring sufficient water supplies in some areas.

### Impacts of climate change in Antarctica

- Temperatures have increased by 3 degrees Celsius.
- Large chunks of ice shelves are breaking away each summer and since 1950s, 25 000 kilometer squared has melted.
- Adelie penguin numbers have declined, as have Emperor penguin numbers in the south.
- Krill numbers have decreased by 80% since the 1970s. These creatures are an important source of food for whales, seals and penguins.
- Ice melting in Antarctica can cause sea level in other parts of the world to increase at a rate of 3mm per year.

### Climate change adaptation and mitigation

**Adaptation:** These strategies aim to respond to climate change by limiting negative impacts, e.g. barriers against sea level rise.

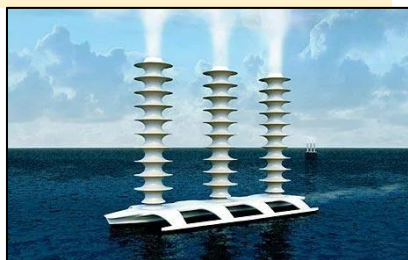
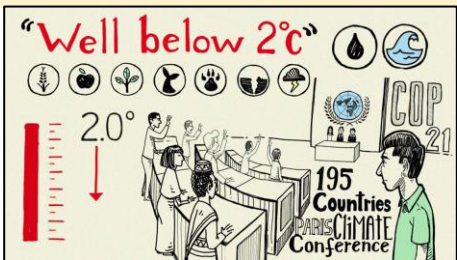
**Mitigation:** Actions to reduce climate change. E.g. planting trees and international agreements.

#### **The Paris Climate Agreement:**

- Signed in 2015 by 189 countries.
- Agreed to keep global warming below 2 degrees Celsius.
- Wealthier countries would help support countries with less money to meet their target.

#### **Geo-engineering:**

- Deliberate manipulation (changing) of the Earth's climate.
- E.g. covering roofs and roads to reflect sunlight.
- Spraying sea water into clouds to make it rain.



### Plastic pollution in the oceans

- Plastic pollution has increased dramatically in recent years as more and more products are made of plastic as it is cheap and strong. However, plastic is often thrown away and not recycled.
- Plastic is transported by spiralling ocean currents or gyres and it breaks down into tiny particles which are eaten by fish and sea creatures who think they are food.
- Solutions to the problem; boycott (avoid) single-use plastic, use re-usable bottles and coffee cups, buy products made from recycled materials.

### Plastic pollution in the oceans

- In recent years deforestation has significantly increased in Malaysia to clear land to grow palm oil which is widely used in food and beauty products, for logging, mining and hydro-electric power.
- This deforestation has had many impacts; reduced biodiversity as species have lost habitats, forest fires as trees can be burned to clear them and these get out of control, disruptions to the water cycle, soil erosion and an increase in greenhouse gas emissions.
- Solutions to deforestation include buying products with sustainable palm oil or using alternatives to palm oil, paying people to protect the forest e.g. through eco-tourism.

### Climate change and the Earth's future summary

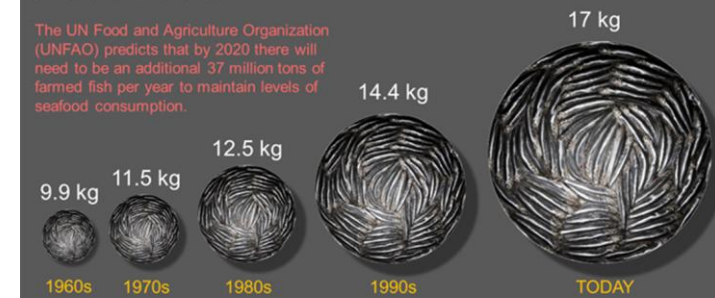
This topic has focused on climate change and some of the other challenges facing our planet.

A key theme for this topic is the idea of sustainability; **Using resources responsibly so that the needs of the present generation are met without compromising the ability of future generations to meet their needs.**

The amount of fish we all eat is **increasing** each decade

(average per person per year)

The UN Food and Agriculture Organization (UNFAO) predicts that by 2020 there will need to be an additional 37 million tons of farmed fish per year to maintain levels of seafood consumption.



### Overfishing

- As world population has increased there is increasing demand for fish which is the main source of protein for 3 billion people.
- As a result of this demand, 70% fish stocks are being overfished or exploited.
- **Overfishing - the process of depleting (significantly reducing) the amount of fish available by fishing too much.**
- Solutions - creating marine reserves (these currently only make up 1% of Earth's oceans) where fish are protected, setting quotas or limits on number of fish that can be caught or marking tins of fish with whether they have been sustainably caught or not – pole and line tuna is most sustainable.



CORE																																					
<b>Time phrases/Sequencers</b>		<b>Key verb phrases</b>	<b>Connectives</b>																																		
normally often usually from time to time sometimes tomorrow next week Summer / Autumn Winter / Spring morning/afternoon/evening then always/still at the moment later in the future yesterday last night last week last year next firstly after before lastly	<u>normalement</u> <u>souvent</u> <u>d'habitude</u> <u>de temps en temps</u> <u>quelquefois/parfois</u> <u>demain</u> <u>la semaine prochaine</u> <u>en été / en automne</u> <u>en hiver / au printemps</u> <u>le matin/l'après-midi/le soir</u> <u>puis</u> <u>toujours</u> <u>en ce moment</u> <u>plus tard</u> <u>a l'avenir</u> <u>hier</u> <u>hier soir</u> <u>la semaine dernière</u> <u>l'année dernière</u> <u>ensuite</u> <u>d'abord</u> <u>après ça</u> <u>avant</u> <u>enfin / finalement</u>	I have I have not I am I am not I would like it is it is not there is there is not it will be I'm going to.... you must you must not you can you cannot it was it wasn't there was there wasn't it would be it would not be if I was rich in an ideal world in my dreams	but and because also however therefore as or however on the other hand fortunately unfortunately in addition  <b>Negatives</b> not never  <b>Comparisons</b> more... than less... than																																		
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<b>Quantifiers/ Intensifiers</b>		<b>Opinions</b>	<b>Idioms</b>																																		
very too quite a bit really a lot	<u>très</u> <u>trop</u> <u>assez</u> <u>un peu</u> <u>vraiment</u> <u>beaucoup</u>	In my opinion I think that I Like I love I don't like I hate I prefer My favourite ... is I find that	How awful ! What luck ! What a surprise ! What an idiot! It's brilliant ! It's not my thing ! It's a waste of time! It's a waste of money!																																		
		à mon avis / selon moi <u>je pense que</u> <u>j'aime</u> <u>j'adore</u> <u>je n'aime pas</u> <u>je déteste</u> <u>je préfère</u> <u>ma/mon.... préféré(e) est</u> <u>je trouve que</u>	Quelle horreur ! Quelle chance ! Quelle surprise ! Quel imbécile ! C'est le pied ! Ce n'est pas mon truc ! C'est une perte de temps ! C'est une perte d'argent !																																		

CHALLENGE					
Time phrases/ Sequencers		Key verb phrases		Opinions	
today	<u>aujourd'hui</u>	you can see	<u>on peut voir</u>	for me	<u>d'après moi</u>
each/every	<u>chaque</u>	if it is	<u>si c'est</u>	I believe that	<u>je crois que</u>
currently	<u>actuellement</u>	there would be	<u>il y aurait</u>	according to...	<u>selon...</u>
the next day	<u>le lendemain</u>	there would not be	<u>il n'y aurait pas de</u>	I really hate	<u>j'ai horreur de</u>
in my dreams	<u>dans mes rêves</u>	you could	<u>on pourrait +infinitive</u>	I really love	<u>j'apprécie</u>
in an ideal world	<u>dans un monde idéal</u>	you couldn't	<u>on ne pourrait pas</u>	I can't stand	<u>je ne supporte pas</u>
when I was little	<u>quand j'étais petit ( e )</u>	you should	<u>on devrait +infinitive</u>	my friends say that	<u>mes copains disent que</u>
when I'm older	<u>quand je serai plus âgé ( e )</u>	you shouldn't	<u>on ne devrait pas</u>	my parents say that	<u>mes parents disent que</u>
for 5 years	<u>depuis 5 ans</u>	you must	<u>il faut +infinitive</u>	my teachers say that	<u>mes profs disent que</u>
since I was 5 years old	<u>depuis l'âge de 5 ans</u>	you must not	<u>il ne faut pas</u>	my mum tells me that	<u>ma mère me dit que</u>
				my dad tells me that	<u>mon père me dit que</u>
Quantifiers/ Intensifiers		Negatives		I would say	<u>je dirais que</u>
so	<u>si</u>	no...more/longer	<u>ne... plus</u>	I like /love it / them	<u>j'aime/j'adore ça</u>
rather	<u>plutôt</u>	nothing	<u>ne... rien</u>	I am for	<u>je suis pour</u>
extremely	<u>extrêmement</u>	no one/nobody	<u>ne... personne</u>	I am against	<u>je suis contre</u>
frankly	<u>franchement</u>	neither ...nor	<u>ne... ni... ni</u>	I agree with	<u>je suis d'accord avec</u>
hugely	<u>énormément</u>			I disagree with	<u>je ne suis pas accord avec</u>
incredibly	<u>incroyablement</u>			what I like is	<u>ce que j'aime c'est</u>
				it seems that	<u>il semble que</u>
				as far as... is concerned	<u>en ce qui concerne...</u>
Connectives		Comparisons/ Superlatives		Idioms	
nevertheless	<u>néanmoins</u>	best	<u>meilleur ( e )</u>	Although it is...	<u>Bien que ce soit...</u>
whereas	<u>tandis que</u>	worst	<u>pire</u>	That's life !	<u>C'est la vie !</u>
even if	<u>même si</u>	the best thing is	<u>la meilleure chose est</u>	What a shame !	<u>Quel dommage !</u>
furthermore	<u>de plus</u>	the most important	<u>la chose la plus</u>	What a disaster !	<u>Quelle catastrophe !</u>
since	<u>puisque</u>	thing is	<u>importante est</u>	What a pain !	<u>Quel ennui !</u>
not at all	<u>pas du tout</u>	what I like the most is	<u>ce que j'aime le plus est</u>	It was so boring !	<u>C'était la barbe !</u>
				I was over the moon!	<u>J'étais aux anges !</u>
				I was bored to death!	<u>Je m'ennuyais à mourir !</u>
				I've had enough!	<u>J'ai le cafard !</u>
				I was so fed up!	<u>J'en avais marre !</u>



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