

KNOWLEDGE

ORGANISER

Year 11
Half Term 2



Name:

Tutor Group:

Academic Year:



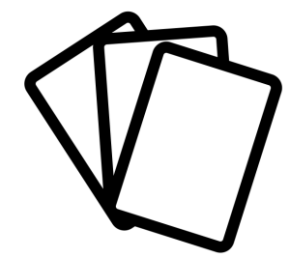
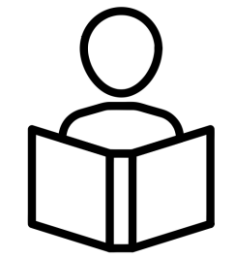
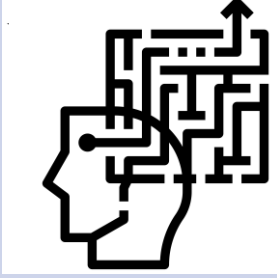
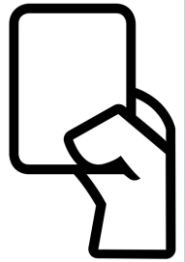



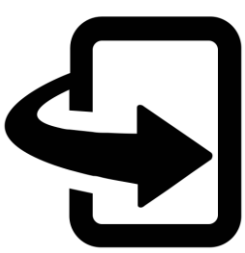
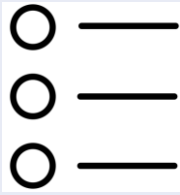

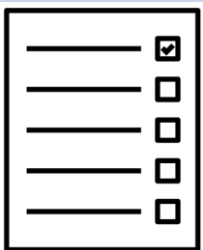
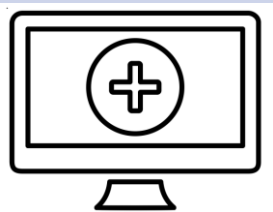
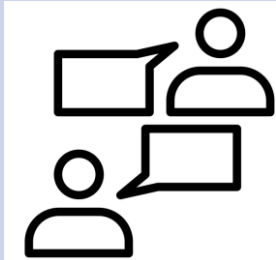
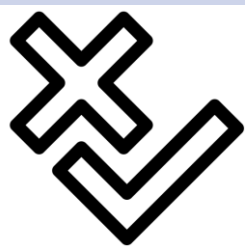
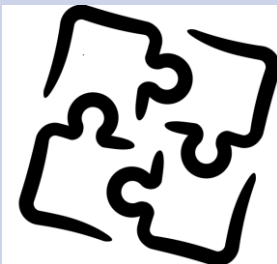

How to use your Knowledge Organiser



The aim of the knowledge organiser is to ensure that **ESSENTIAL KNOWLEDGE** is stored and retrieved over a long period of time.






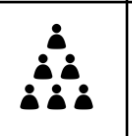
You need to ensure that you keep your knowledge organiser in your bag, ready for revision, quizzing and to refer to at any time in all of your subjects.

| | Look, Cover, Write, Check | Definitions to Key Words | Flash Cards | Self Quizzing | Mind Maps | Paired Retrieval |
|--------|---|--|--|--|--|---|
| Step 1 | <p>Look at and study a specific area of your knowledge organiser</p>  | <p>Write down the key words and definitions.</p>  | <p>Use your knowledge organiser condense and write down key facts and/or information on your flash cards.</p>  | <p>Read through a specific area of your knowledge organiser</p>  | <p>Create a mind map with all the information that you can remember from your knowledge organiser.</p>  | <p>Ask a partner or someone at home to have the quiz questions or flash cards in their hands.</p>  |
| Step 2 | <p>Flip the knowledge organiser and write everything you can remember.</p>  | <p>Try not to use the solutions to help you.</p>  | <p>Add diagrams or pictures if appropriate. Write the solutions on the back of the cards.</p>  | <p>Turn over and answer the questions related to that area.</p>  | <p>Check your knowledge organiser to correct or improve your mind map.</p>  | <p>Ask them to test you by asking questions on the section you have chosen from your knowledge organiser.</p>  |
| Step 3 | <p>Check what you have written. Correct mistakes and add extra information. Repeat.</p>  | <p>Check your work. Correct using red pen and add more information if appropriate.</p>  | <p>Self quiz using the cards or ask some to help by quizzing you.</p>  | <p>Turn back over and mark your quiz. Keep quizzing until you get all questions correct.</p>  | <p>Try to make connections that links information together.</p>  | <p>Either say or write down you answers.</p>  |




CORE

A Christmas Carol

Context

| | |
|--|--|
|  | <p>Poverty: Dickens had a comfortable childhood until the age of twelve, when his father was sent to a debtors' prison and Charles had to work in a factory. The harsh conditions made a lasting impression: through his works of social criticism, he sought to draw attention to the plight of the poor.</p> |
|  | <p>The Poor Law: In order to deter people from claiming financial help, the government made claimants live in workhouses – essentially prisons for the poor. Dickens spent 1843 touring factories and mines in England and wished to highlight the situation facing the poor. 'A Christmas Carol' was published in December of that year. "Are there no Prisons?...and the Union workhouses?"</p> |
|  | <p>The Victorian era was between 1837 and 1901 (most of Dickens' life). Whilst this was a time of industrial revolution, it was also an extremely harsh time to live, with huge differences between the lifestyles of the rich and poor. The Victorian era was a period of great change. In this time, the population of England doubled – from 16.8 million 1851 to over 30 million in 1901. Rapid population growth fuels concerns that there would not be enough food to go around: "If they would rather die," said Scrooge, "they had better do it, and decrease the surplus population."</p> |
|  | <p>Social Class: Despite industrial changes altering the social landscape, there were still relatively distinct social classes in operation: the nobility upper class, the middle class, and the working class. Life was terrible for the poorest: lack of money resulted in a negligible food supply. For some working families, money was so tight that they required their children to work in order to survive.</p> |


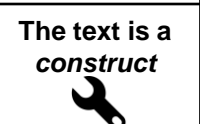
Big Ideas

| | |
|---|---|
| <p>Poverty and Greed</p>  | <p>Dickens wanted to highlight the plight of the poor in Victorian England, and how they are exploited by the greed of the wealthy. He used the harshness of winter to further emphasise this. He also uses Scrooge as a vehicle to show that financial wealth does not mean contentment; Scrooge is impoverished in other ways (family, friends, happiness). "Darkness was cheap, and Scrooge liked it."</p> |
| <p>Redemption</p>  | <p>Characters like Fred and Bob demonstrate compassion and forgiveness towards Scrooge; both are seen to live happy lives – they demonstrate the path to Scrooge's redemption. Scrooge's kindness towards Bob Cratchit in Stave 5 is the antithesis of his treatment of Bob in Stave 1, with each act emphasising his redemption. "I am as light as a feather, I am a happy as an angel, I am as merry as a school-boy. I am as giddy as a drunken man."</p> |
| <p>Isolation vs. Family</p>  | <p>Scrooge is "solitary as an oyster" – isolated and unhappy. Scrooge was Marley's "sole friend and sole mourner". The warmth and emotional richness of families is used as a contrast to Scrooge's self-determined isolation. The disruption to Scrooge's childhood and family life may also have contributed to his future behaviour. Dickens' message may be that family is the cornerstone of a happy society.</p> |

Key Quotes

- "Hard and sharp as flint" (Description of Scrooge, Stave 1)
- "I wear the chain I forged in life" (Jacob Marley, Stave 1)
- "From the crown of its head there sprung a bright clear jet of light" (Stave 2)
- "...the master passion, Gain, engrosses you." (Belle to Scrooge, Stave 2)
- "Scrooge entered timidly, and hung his head before this spirit." (Stave 3)
- "The boy is Ignorance. The girl is Want. Beware them both." (Ghost of Christmas Present, Stave 3)
- "Avarice, hard dealing, griping cares? They have brought him to a rich end, truly!" (Scrooge, Stave 4)
- "I will not shut out the lessons that they teach." (Scrooge, Stave 4)

Transferable knowledge

| | |
|--|---|
| <p>Allegory</p>  | <p>A story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one.</p> |
| <p>The text is a construct</p>  | <p>Don't forget! Nobody in the novella is real: every character has been <i>created</i> by Dickens in order to make a specific point or serve a purpose. For example, Fred embodies the ideas of kindness, generosity and the importance of family that Dickens was eager to communicate.</p> |

A Christmas Carol

Context



- What happened to Dickens' father when Dickens was 12?
- In what year was 'A Christmas Carol' published?
- What did the Poor Law require of people who claimed financial support?
- What happened to the population of England during the Victorian era?
- Briefly describe living conditions for the poorest families in Victorian England.
- Research Thomas Malthus and his views on population growth. How do his ideas relate to 'A Christmas Carol'?



Big Ideas

Poverty and Greed



- What does Dickens use the character of Scrooge to show?
- How does the setting in Stave 1 reflect Scrooge's own attitudes?

Redemption



- What is the significance of the characters of Bob Cratchit and Fred?
- Examine Scrooge's treatment of Bob Cratchit in Stave 1. Compare this with his actions in Stave 5. What do you notice?
- Using a page of your reflection log, write down all the factors that influence Scrooge's redemption. At what point does he begin to change? Which spirit do you think has the most impact? Why?

Isolation vs. Family



- Why does Scrooge live in isolation? What are the events in his life that have caused this?
- In what way do Scrooge's attitudes differ to Fred's in Stave 1?
- Describe Scrooge's experience of childhood. How might this have influenced his actions as an adult?
- Write a page of your reflection log on the Cratchit family. How do their ideas and attitudes differ to Scrooge's? What point might Dickens be making?
- Re-read Stave 3. How does Dickens show that family and friendships are vital?

Key Quotes

- For each of the key quotations listed on the knowledge organiser (highlighted in yellow and in the 'key quotes' box), write down the quotation and then complete an 'explosion' task, exploring its links to themes and characters.
- Use a page of your reflection log to copy out the quotes from memory – categorise them by theme or character.

Transferable knowledge

Allegory



- What is an allegory? How does this term apply to 'A Christmas Carol'?

The text is a construct



- Explain what is meant by this phrase.
- For each character, explain why they have been constructed – what might Dickens have wanted to achieve through each one?

Vocabulary

Key vocabulary is included on the knowledge organiser in bold and italics.

- Find each word and write a list of key vocabulary.
- Look up and write down a definition for any word you don't understand or are unsure of.
- Write a new sentence for each word, relating it to an aspect of 'A Christmas Carol'.

Extra research: Characters

- What is the significance of the charity collectors in Stave 1?
- Write a page of your reflection log on the character of Fred and what he represents.
- How is Bob Cratchit treated in Stave 1? How does this compare with Scrooge's treatment of him in Stave 5?
- Write a page of your reflection log on the characters of Belle, Fan and Mrs Cratchit – how are the women in the text presented by Dickens?
- How does Fezziwig contrast with Scrooge as an employer?
- What is meant by 'The boy is Ignorance. The girl is Want.'? What does this say about Victorian society?

Biology Knowledge Organiser

Year 11: Ecology

Ecology: *eco-* (Gk. OIKOS, house) + *-logy* (the study of)

KEY VOCAB

Adaptations – Features that enable organisms to survive. Functional, structural or behavioural.

Community - Group of interdependent organisms in an ecosystem.

Competition - The process by which organisms compete for resources e.g. food, light.

Extremophile - Organisms that can survive in extreme conditions.

Biomass – Mass of biological material in an organism.

Ecosystem – Interaction of living organisms with the non-living parts of the environ..

Carbon Cycle - cycling of carbon through the living and non living world.

Environment - surrounding air, water and soil where an organism lives.

Biodiversity - The variety of living things. The differences between individuals of the same species, or the number of different species in an ecosystem.

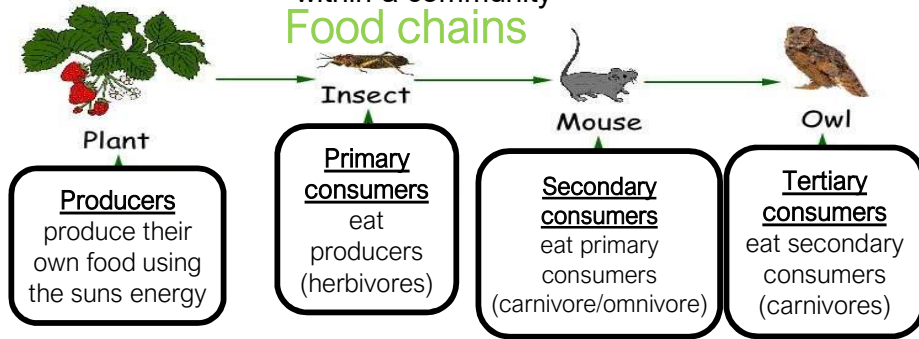
Population - Group of same species living in an area.

Decomposer - Organism that breaks down dead plant and animal material; nutrients are recycled.

Habitat – The place where an organism lives.

INTERDEPENDENCE - relationships between different organisms within a community

Food chains

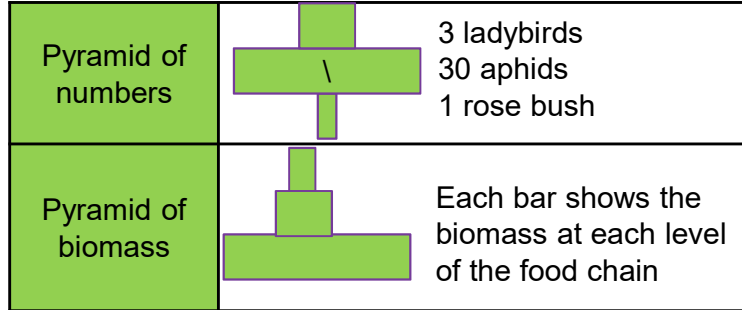


A food web is the interaction of multiple food chains within a habitat
Photosynthetic organisms are the producers of biomass for life on Earth

Biotic factors (Living) | Abiotic factors (Non-Living)

availability of food
new predators arriving
new pathogens

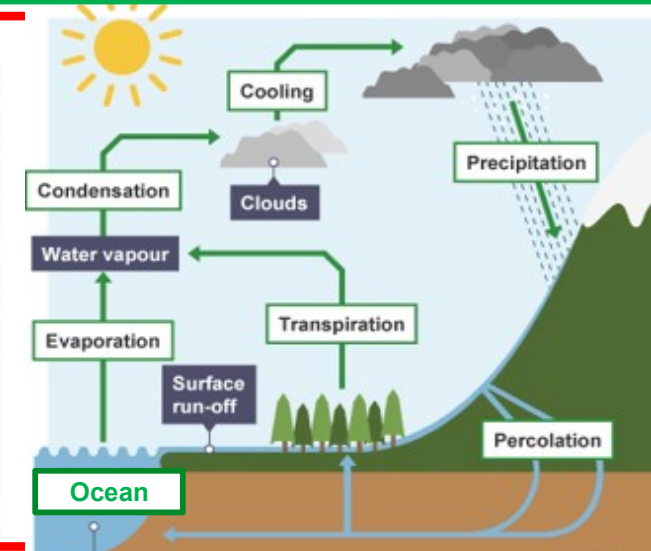
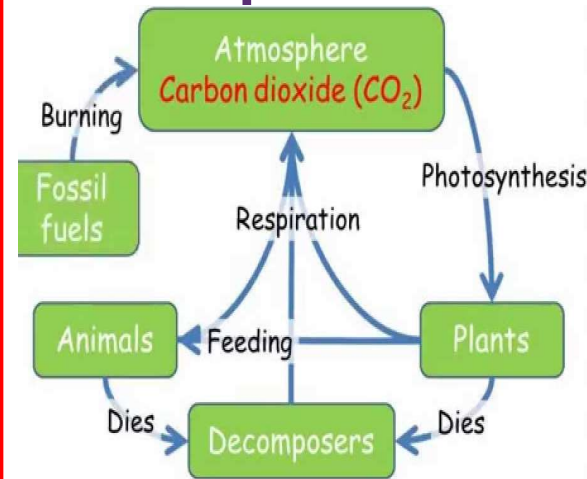
- light intensity
- Temperature
- moisture levels




HUMAN IMPACT

| Pollution type | Examples |
|----------------|---------------------------------|
| Water | Sewage |
| | Fertilisers |
| | Toxic chemicals |
| Air | Smoke |
| | Acidic gases (SO ₂) |
| Land | Landfill |
| | Toxic chemicals |

THE CARBON AND THE WATER CYCLE



SAMPLING

| | | |
|---|------------------|---|
|  | Quadrats | Organisms are counted within a randomly placed square |
| | Transects | Organisms are counted along a belt (transect) of the ecosystem. |



| | |
|--|--|
| Destruction of peat bogs | Reduction in biodiversity Burning the peat releases CO ₂ |
| Deforestation for agriculture and biofuels | Reduction in biodiversity Reduces ability to absorb CO ₂ |
| Global warming | Extreme weather Famine |

Key vocabulary

1. What is a community?
2. Name the three types of adaptations
3. What is an ecosystem?
4. Define extremophile
5. Give an example of what living organisms compete for.

Interdependence

1. Which type of organism is always at the start of a food chain?
2. What is the name given to an animal that eats producers?
3. What do secondary consumers eat?
4. What do the arrows in a food chain represent?
5. What is a food web?
6. List 4 abiotic factors
7. List 4 biotic factors

The carbon and the water cycle

1. What is the scientific name for rain, sleet, snow and hail?
2. Which process occurs in clouds?
3. Where does water evaporate from in the water cycle?
4. Name two processes, in the carbon cycle, that put carbon back into the atmosphere
5. Name the three fossil fuels
6. How do plants remove carbon from the atmosphere?
7. How does carbon from plants get into animals?

Human impact

1. What are the three types of pollution?
2. State the two effects of global warming
3. Give three examples of water pollution

Sampling

1. What is a quadrat?
2. What is a transect?

Further opportunities

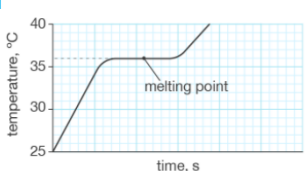
1. Visit Oak Academy and work through the Ecology lessons. <https://classroom.thenational.academy/units/ecology-a6da>
2. Describe how to use a quadrat to determine the abundance of a particular plant species in a large area. Use the following link to help you: <https://www.youtube.com/watch?v=-PqLJZrsOqY>
3. Choose 3 organisms and describe their structural, functional and behavioural adaptations. Explain how these adaptations enable them to survive in the habitat in which they live. This short video may help: <https://www.kayscience.com/vb16-functional.html>

KS4 Chemistry – Topic 8 -Chemical Analysis

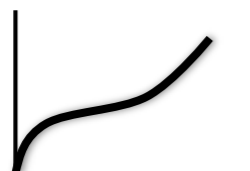
Pure substances

A pure substance is a single element or compound, not mixed with any other substance.

Pure substances melt and boil at specific temperatures. Heating graphs can be used to distinguish pure substances from impure.



Melting point of a pure substance



Melting point of an impure substance

Formulations

A formulation is a mixture that has been designed as a useful product.

Formulations are made by mixing chemicals that have a particular purpose in careful quantities

Examples of formulations: **Fuels, cleaning agents, paints, medicines and fertilisers**

Flame tests

Different metal ions (cations) produce different flame colours when they are heated strongly.

| Metal ion | Colour flames |
|--------------------------|-------------------|
| Lithium Li ⁺ | <i>Crimson</i> |
| Sodium Na ⁺ | <i>Yellow</i> |
| Potassium K ⁺ | <i>Lilac</i> |
| Calcium Ca ²⁺ | <i>Orange-red</i> |
| Copper Cu ²⁺ | <i>Green</i> |

If a mixture of ions is present, some of the flame colours may not be clearly visible. One colour tends to 'mask' the other(s).

Instrumental techniques

Elements and compounds can be detected and identified using instrumental methods.

Instrumental methods are

- **Accurate**
- **Rapid**
- **Sensitive**

Flame emission spectroscopy is an example of an instrumental method used to analyse metal ions.

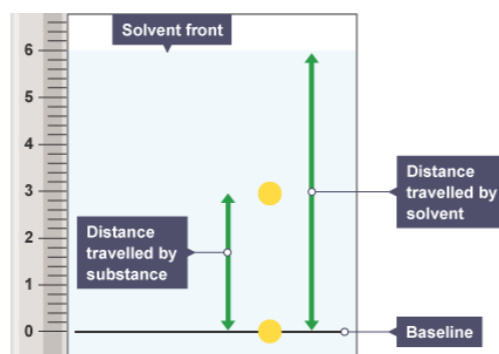
Chromatography

Can be used to separate mixtures and help identify substances.

Involves a **mobile phase** (e.g. water or ethanol) and a **stationary phase** (e.g. chromatography paper).

R_f Values= *The ratio of the distance moved by a compound to the distance moved by solvent.*

$$R_f = \frac{\text{distance moved by substance}}{\text{distance moved by solvent}}$$



A pure substance will produce a single spot in all solvents whereas an impure substance will produce multiple spots.

Gas Tests

| Gas | Test | Positive result |
|----------------|---|---|
| Hydrogen | <i>Burning splint</i> | 'Pop' sound. |
| Oxygen | <i>Glowing splint</i> | Re-lights the splint. |
| Chlorine | <i>Litmus paper (damp)</i> | Bleaches the paper white. |
| Carbon dioxide | <i>Limewater (Calcium hydroxide (aq))</i> | Goes cloudy (as a solid calcium carbonate forms). |

Metal Hydroxides

Sodium hydroxide solution can be added to solutions to identify some metal ions (cations).

Insoluble metal hydroxide precipitates of different colours are formed.

| | |
|------------------------------|---|
| White precipitates | Aluminium, calcium and magnesium ions form this with sodium hydroxide solution. If you continue to add sodium hydroxide until it is in excess the aluminium re-dissolves to form a colourless solution. |
| Coloured precipitates | Copper (II) = blue Iron (II) = green Iron (III) = brown |

Testing for anions- Carbonates, sulfates, halides

| | |
|--|--|
| Carbonate ions (CO₃²⁻) | React with dilute acids to form carbon dioxide, which turns limewater cloudy. |
| Halide ions (Cl⁻, Br⁻, I⁻) | <ul style="list-style-type: none"> • Add a couple of drops of dilute nitric acid. • Follow with a couple of drops of silver nitrate solution. • Chloride = white precipitate • Bromide = Cream precipitate • Iodide = Yellow precipitate. |
| Sulfate ions | <ul style="list-style-type: none"> • Add a couple of drops of dilute hydrochloric acid. • Add a couple of drops of barium sulfate solution. • A white precipitate will form if sulfate ions are present. |

KS4 Chemistry – Topic 8 -Chemical Analysis

Pure substances

1. What is meant by a pure substance?
2. Describe the melting and boiling point of a pure substance.
3. Sketch a graph to show the melting point of a pure substance.
Extension: Describe what is happening.
4. Sketch a graph to show the melting point of an impure substance

Formulations

1. Define the term formulation.
2. How are formulations made?
3. Give 3 examples of formulations.

Flame tests

1. What colour flame do lithium ions produce?
2. What colour flame do sodium ions produce?
3. What colour flame do potassium ions produce?
4. What colour flame do calcium ions produce?
5. What colour flame do copper ions produce?
6. What happens if a mixture of ions are present?

Instrumental techniques

1. What are instrumental methods used for?
2. Give 3 words that describe instrumental methods.
3. Give an example of an instrumental method and what is used for.

Gas Tests

1. Describe the test and positive result for hydrogen gas.
2. Describe the test and positive result for oxygen gas.
3. Describe the test and positive result for carbon dioxide gas.
4. Describe the test and positive result for chlorine gas

Chromatography

- What is chromatography used for?
How can we calculate the R_f value of a substance?
How many spots will a pure substance produce?
What are the names of the 2 phases involved in chromatography?
Give an example of each of the above phases.

Carbonates, sulfates, halides

1. Which solution can be used to identify some metal ion?
2. Solutions of which ions form white precipitates when sodium hydroxide solution is added?
3. Which ion redissolves when excess sodium hydroxide is added?
4. Give the colour of the precipitate formed with Copper (II) ions.
5. Give the colour of the precipitate formed with Iron (II) ions
6. Give the colour of the precipitate formed with Iron (III) ions

Testing for anions- Carbonates, sulfates, halides

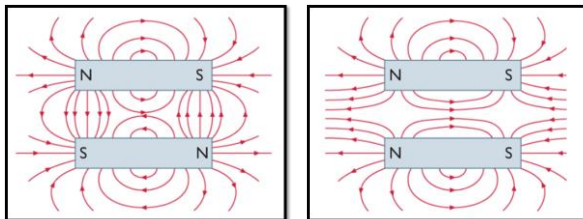
1. What do carbonates react with and what do they form?
2. How can we test for carbon dioxide?
3. Describe how to test for halide ions.
4. What colour precipitate do chloride ions form?
5. What colour precipitate do bromide ions form?
6. What colour precipitate do iodide ions form?
7. Describe how to test for sulfate ions and give the colour of the precipitate produced.

Further Opportunities

1. Complete Oak Academy lessons-
<https://classroom.thenational.academy/units/chemical-analysis-cf8d>
2. Research how flame emission spectroscopy works.
3. Complete Seneca for this topic – C8 Chemical Analysis.

Poles of a Magnet

- The poles of a magnet are the places where the magnetic forces are strongest.
- When two magnets are brought close together they exert a force on each other.
- Two like poles repel each other.
- Two unlike poles attract each other.
- Attraction and repulsion between two magnetic poles are examples of non-contact force.
- A **permanent magnet** produces its own magnetic field.
- An **induced magnet** is a material that becomes a magnet when it is placed in a magnetic field.
- **Induced magnetism always causes a force of attraction.**
- When removed from the magnetic field an induced magnet loses most/all of its magnetism quickly



Magnetic field lines show the volume of space around a magnet in which magnetic forces act

Magnetic field lines of force show:

- the shape of the magnetic field.
- the direction of the field lines - north to south.
- the strength of the magnetic field - closer together = stronger.

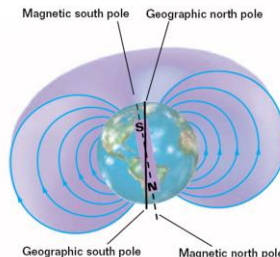
Magnetic Fields

The region around a magnet where a force acts on another magnet or on a magnetic material (iron, steel, cobalt and nickel) is called **the magnetic field**.

The **force** between a magnet and a magnetic material is always one of **attraction**.

- The strength of the magnetic field depends on the distance from the magnet.
- The field is strongest at the poles of the magnet.
- The direction of the magnetic field at any point is given by the direction of the force that would act on another north pole placed at that point.
- The direction of a magnetic field line is from the north (*seeking*) pole of a magnet to the south (*seeking*) pole of the magnet. -
- A magnetic compass contains a small bar magnet.
- The Earth has a magnetic field.
- The compass needle points in the direction of the Earth's magnetic field.

The magnetic field pattern produced by compass needles leads us to conclude that the Earth's core is magnetic.



The origin of the Earth's magnetic field is thought to be the movement of molten iron in the core.

Electromagnetism

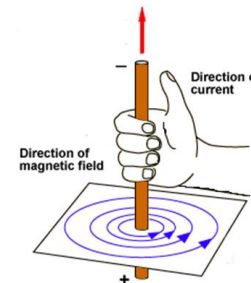
When a current flows through a conducting wire a magnetic field is produced around the wire.

The strength of the magnetic field depends on the current through the wire and the distance from the wire.

Increasing the current through the wire

increases the strength of the magnetic field.

Increasing the distance from the wire **decreases the strength** of the magnetic field.



Shaping a wire to form a solenoid (coil of wire) increases the strength of the magnetic field created by a current through the wire. The magnetic field inside a solenoid is strong and uniform. The magnetic field around a solenoid has a similar shape to that of a bar magnet - though the magnetic field extends inside the solenoid and is **strong & uniform**. It is possible to increase the strength of a solenoid's magnetic field by...

1. Adding an iron core to a solenoid.
2. Increasing the current through the solenoid.
3. Increasing the number of turns of wire on the solenoid.

An electromagnet is a solenoid with an iron core.

Self Quizzing Questions

Draw the magnetic field diagram for a bar magnet.

What are the strongest parts of a magnet called?

What is a permeant magnet?

What is induced magnetism?

What happens to the strength of the magnetic field as you move further away from the magnet?

What is a magnetic field?

Which way does the magnetic field point?

What is a solenoid?

Draw the magnetic field for a solenoid.

What increases the magnetic field strength of a solenoid?

What happens to the magnetic field when the current is reversed?

Challenge.

Complete the oak academy lessons on the magnetism topic.

<https://classroom.thenational.academy/lessons/magnetism-75jpad>

<https://classroom.thenational.academy/lessons/magnetic-fields-61jkcc>

<https://classroom.thenational.academy/lessons/electromagnetism-cgv64r>

12. What is Fleming's Left Hand Rule?

13. What is a generator?

14. What type of current does a generator produce?

15. What is a microphone?

Higher Tier:

16. What is the motor effect?

17. How does a motor work?

18. What is the equation to calculate the force of a motor?

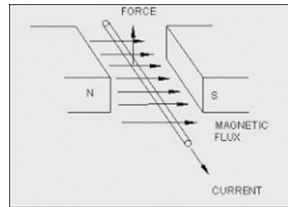
19. What is magnetic flux density?

20. Explain how a loudspeaker compares to a microphone.

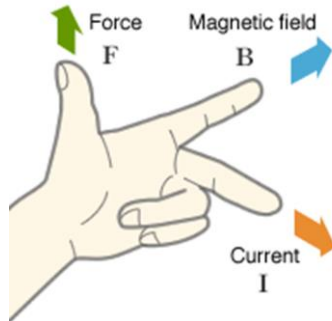
Knowledge Organiser - Magnetism & Electromagnetism HT

Fleming's Left Hand Rule (HT):

When a conductor carrying a current is placed in a magnetic field the magnet producing the field and the conductor exert a force on each other. This is called the motor effect.



The direction of the force can be found if the direction of the current flow and the direction of the magnetic field are known.



In the diagram the thumb, first finger and second finger are held at right angles to each other.

First Finger - Field (magnetic N to S)
 Second Finger - current flow (+ to -)
 Thumb - Force (motion)

Electric Motors (HT) -

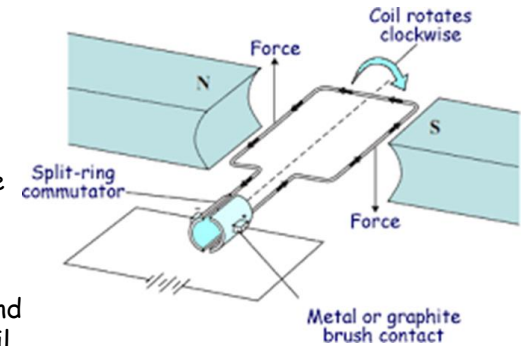
A coil of wire carrying a current in a magnetic field tends to rotate.

This is the basis of an electric motor.

As the coil of wire carrying a current is in a magnetic field, the coil will experience a force (the direction of which can be found from Fleming's left-hand rule).

The coil of wire shown will experience an upwards force on the left-hand side of the coil and a downwards force on the right-hand side of the coil.

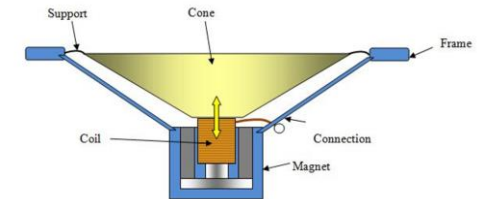
As the coil will be fixed to an axle the coil of wire will rotate in a clockwise direction.



Loudspeakers & headphones-

Using the motor effect to produce sound waves.

1. A fluctuating electric current flows through the coil of wire. The coil of wire then becomes an electromagnet of variable strength.
2. The electromagnet is then attracted or repelled away from the permanent magnet.
3. This causes the cone to move - producing a sound.



Equation (HT)

Force (N) = Magnetic flux density (T) x Current (A) x Length (m)

$$F = B I l$$

Magnetic Flux Density (B) in tesla

Current (I) in amperes

Length of Conductor (l) in metres

Mathematics Knowledge Organiser

Year 11 Foundation: Number

Fractions

Adding or subtracting

For example:

$$\frac{3}{4} + \frac{1}{8}$$

We need to change $\frac{3}{4}$ into an equivalent fraction with a denominator of 8.

$$\frac{3}{4} = \frac{6}{8}$$

(Diagram showing $\frac{3}{4}$ being multiplied by 2 to get $\frac{6}{8}$)

Now we have:

$$\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$$

Multiplying

$$\frac{1}{2} \times \frac{1}{4} = \frac{(1 \times 1)}{(2 \times 4)} = \frac{1}{8}$$

Dividing

$$\frac{3}{4} \div \frac{2}{7}$$

Keep

$$\frac{3}{4}$$

Change

$$\times$$

Flip

$$\frac{7}{2} = \frac{21}{8}$$

Indices

| Rule | Example |
|--|--|
| $a^m \times a^n = a^{m+n}$ | $2^5 \times 2^3 = 2^8$ |
| $a^m \div a^n = a^{m-n}$ | $5^7 \div 5^3 = 5^4$ |
| $(a^m)^n = a^{m \times n}$ | $(10^3)^7 = 10^{21}$ |
| $a^1 = a$ | $17^1 = 17$ |
| $a^0 = 1$ | $34^0 = 1$ |
| $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$ | $\left(\frac{5}{6}\right)^2 = \frac{25}{36}$ |
| $a^{-m} = \frac{1}{a^m}$ | $9^{-2} = \frac{1}{81}$ |
| $a^{\frac{x}{y}} = \sqrt[y]{a^x}$ | $49^{\frac{1}{2}} = \sqrt{49} = 7$ |

Percentages

| Percentage | Fraction | How to find it... |
|------------|---------------------------------|------------------------------|
| 50% | $\frac{50}{100} = \frac{1}{2}$ | Divide by 2 |
| 25% | $\frac{25}{100} = \frac{1}{4}$ | Divide by 4 |
| 75% | $\frac{75}{100} = \frac{3}{4}$ | Find 25%, then multiply by 3 |
| 10% | $\frac{10}{100} = \frac{1}{10}$ | Divide by 10 |
| 20% | $\frac{20}{100} = \frac{1}{5}$ | Divide by 5, or double 10% |
| 5% | $\frac{5}{100} = \frac{1}{20}$ | Divide by 20, or half 10% |
| 1% | $\frac{1}{100}$ | Divide by 100 |

Rounding - Significant figures

| | to 1 s.f. | to 2 s.f. | to 3 s.f. |
|------------|-----------|-----------|-----------|
| 6.3528 | 6 | 6.4 | 6.35 |
| 34.026 | 30 | 34 | 34.0 |
| 0.005708 | 0.006 | 0.0057 | 0.00571 |
| 150.932 | 200 | 150 | 151 |
| 0.00007835 | 0.00008 | 0.000078 | 0.0000784 |
| 850 951 | 900 000 | 850 000 | 851 000 |
| 1 624 564 | 2 000 000 | 1 600 000 | 1 620 000 |
| 6 446 767 | 6 000 000 | 6 400 000 | 6 450 000 |

Ratio

Divide in a given ratio

Example

Divide £150 in the ratio 3 : 2

$$5 \text{ parts} = \text{£}150$$

$$3 \text{ parts} = \text{£}30 \times 3 = \text{£}90$$

$$1 \text{ part} = \text{£}30$$

$$2 \text{ parts} = \text{£}30 \times 2 = \text{£}60$$

Rounding - Decimal places

| Number | 1 decimal place | 2 decimal places | 3 decimal places |
|---------|-----------------|------------------|------------------|
| 0.40567 | 0.4 | 0.41 | 0.406 |
| 0.45067 | 0.5 | 0.45 | 0.451 |
| 9.45067 | 9.5 | 9.45 | 9.451 |

KEY VOCABULARY/TERMS

Improper fraction

Simplify

Ascending

decrease

increase

mixed fraction

descending

Mathematics Knowledge Organiser

Year 11 Foundation : Number

Fractions

$$\frac{2}{7} + \frac{4}{14}$$

$$\frac{2}{3} - \frac{1}{6}$$

$$\frac{1}{3} \div \frac{1}{3}$$

$$\frac{1}{8} \times \frac{1}{8}$$

$$\frac{3}{18} \times \frac{1}{3}$$

$$\frac{5}{11} + \frac{1}{2}$$

$$\frac{2}{3} \div \frac{5}{6}$$

$$\frac{6}{9} - \frac{7}{18}$$

Indices

$$1^5 \times 1^3 =$$

$$10^8 \times 10^{12} =$$

$$17^8 \times 17^{14} =$$

$$2^{15} \div 2^{10} =$$

$$16^{17} \div 16^2 =$$

$$5^{20} \div 5^5 =$$

$$) m^4 \times m^3$$

$$) (m^4)^3$$

Percentages

Find 10%, 5% and 35% of the following amounts

£60

850g

\$4500

1.8 kg

Rounding – Significant figures

| Number | To 1 s.f. | To 2 s.f. | To 3 s.f. |
|--------|-----------|-----------|-----------|
| 4213 | | | |
| 6435 | | | |
| 23.65 | | | |
| 43.89 | | | |
| 0.0465 | | | |
| 0.9649 | | | |
| 0.4054 | | | |

Ratio

Tim, Shula and Carol share the running costs of the car in the ratio 1 : 2 : 3.

Last year it cost £1860 to run the car.

How much did Carol pay?

Rounding – Decimal places

| Number | 2d.p. | 1d.p. |
|---------|-------|-------|
| 512.715 | | |
| 623.819 | | |
| 293.214 | | |
| 90.432 | | |
| 678.63 | | |

KEY VOCABULARY/TERMS

Give three examples of the following
a) Integer, b) improper fraction c) mixed fraction

Mathematics Knowledge Organiser

Year 11 (Higher) – Equations and Inequalities

Factorising Quadratics

T - Times to make the
E - End value
A - Add to make the
M - Middle value



Example

Factorise: $x^2 + 5x + 6$

T (+6)

E (1 x 6) (2 x 3) (-1 x -6) (-2 x -3)

A (+5) (1+6=7) (**2+3=5**) (-1+(-6)=-7) (-2+(-3)=-5)

M So $(x + 2)(x + 3)$

Solving Quadratics

Solve: $x^2 + 5x + 6 = 0$

$$(x + 2)(x + 3) = 0$$

$$x + 2 = 0$$

$$x = -2$$

$$x + 3 = 0$$

$$x = -3$$

Put each bracket equal to 0 to find both values of x .

Completing the square

EG: $x^2 + 2x - 5$

$$= (x + 1)^2 - 1^2 - 5$$

half the coefficient of x term

$$= (x + 1)^2 - 6$$

simplify

Solving simultaneous equations

Solve $4x + 3y = 15$ ①

$7x + 9y = 30$ ②

You must make the number of x 's or the number of y 's the same

$① \times 3 \quad 12x + 9y = 45$ ③

Signs the Same so $12x + 9y = 45$ ③

Subtract $7x + 9y = 30$ ②

$③ - ② \quad 5x = 15$ ④

$x = 3$

Substitute $x = 3$ into one equation ①

$4 \times 3 + 3y = 15$

$3y = 15 - 12$

$3y = 3$

$y = 1$

Check using $x = 3$ and $y = 1$ into the other equation ②

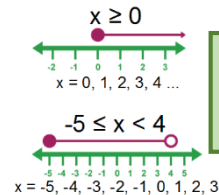
Inequalities

< less than

> greater than

≤ less than or equal to

≥ greater than or equal to



Filled dot
means ≤ or ≥
Hollow dot
means < or >

Solve $2(2c + 2) \leq 5$

Expand the bracket: $4c + 4 \leq 5$

Subtract 4 from each side: $4c \leq 1$

Divide each side by 4: $c \leq \frac{1}{4}$

KEY VOCABULARY/TERMS

Factorise, solve, quadratic, complete the square, substitute, simultaneous, equation, inequality, integer

Mathematics Knowledge Organiser

Year 11 (Higher)– Equations and Inequalities

Factorising Quadratics

1) $x^2 + 7x + 10$

2) $x^2 + 5x + 5$

3) $x^2 + 7x + 12$

4) $x^2 - 7x + 12$

5) $x^2 + 6x + 8$

6) $x^2 + 2x - 8$

7) $x^2 - 2x - 8$

8) $x^2 - 6x + 8$



1) $2x^2 + 11x + 12$

2) $3x^2 + 10x - 8$

3) $3x^2 + 7x + 2$

4) $4x^2 - 23x + 15$

5) $6x^2 + 7x + 2$

Solving Quadratics

Factorise and solve:

1) $x^2 + 7x + 15 = 0$ 4) $x^2 - 7x + 10 = 0$

2) $x^2 - 5x + 6 = 0$ 5) $x^2 + 6x + 8 = 0$

3) $x^2 - 6x + 9 = 0$ 6) $x^2 + 2x - 15 = 0$

1) $2x^2 + 5x + 3 = 0$ 2) $3x^2 + 8x + 4 = 0$

Completing the square

Solve the following equations (use completing the square).

(a) $x^2 + 4x + 1 = 0$ (b) $x^2 + 8x - 10 = 0$

(c) $x^2 + 14x - 4 = 0$ (d) $x^2 - 8x - 2 = 0$

Solving simultaneous equations

Solve the following pairs of simultaneous equations

$$\begin{aligned} x + 2y &= 8 \\ 2x + 3y &= 14 \end{aligned}$$

$$\begin{aligned} 2x + 5y &= 24 \\ 4x + 3y &= 20 \end{aligned}$$

$$\begin{aligned} 5x - 7y &= 27 \\ 3x - 4y &= 16 \end{aligned}$$

$$\begin{aligned} 5x + 3y &= 23 \\ 2x - 4y &= 12 \end{aligned}$$

For 5 adult tickets and 3 child tickets to a concert costs £99. 8 adult tickets and 6 child tickets costs £168. How much do adult and child tickets cost?

Inequalities

Solve these inequalities and show the solutions on number lines.

(a) $5(x - 3) \geq 40$ (b) $6(x + 2) < 42$ (c) $2(5x + 1) \leq 36$

(a) $4x + 3 > 2x + 11$ (b) $x + 1 \geq 3x - 18$

(c) $13x - 12 < 3x + 13$ (d) $7x - 5 \geq 3x + 11$

Find the range of values of x that satisfies **both**

$$3(x + 2) \leq 30 \quad \text{and} \quad 4x + 3 > 21$$

KEY VOCABULARY/TERMS

Factorise, solve, quadratic, complete the square, substitute, simultaneous, equation, inequality, integer

EBACC

Prior Knowledge

Using different time frames

| present | perfect | near future |
|-----------|-----------------|-----------------|
| je visite | j'ai visité | je vais visiter |
| je fais | j'ai fait | je vais faire |
| je vois | j'ai vu | je vais voir |
| je prends | j'ai pris | je vais prendre |
| je vais | je suis allé(e) | je vais aller |

The conditional

Remember, you use the conditional to say 'would':

J'aimerais travailler comme ...
I would like to work as a ...

Je ne voudrais pas travailler dans un bureau.
I would not like to work in an office.

Je préférerais travailler seul(e).
I would prefer to work alone.

Ce serait bien/affreux/super/parfait pour moi.
That would be good/terrible/great/perfect for me.

Au collège

Direct object pronouns

To say 'him', 'her', 'it' or 'them', you need a direct object pronoun. This comes before the verb.

Je **le** déteste. I hate **him/it**.
Je **la** déteste. I hate **her/it**.
Je **les** aime. I like **them**.

The pronouns *le* and *la* shorten to *l'* before a vowel.

Je **l'**adore. I love **him/her/it**.

Adverbs

You use adverbs to say how you do something. In English, most adverbs end in '-ly'. In French, many of them end in *-ement*:

sainement (healthily)
rarement (rarely)

The following adverbs are irregular: *bien* (well), *mal* (badly), *tôt* (early).

NB In French, adverbs usually go straight after the verb:
Je bois uniquement de l'eau. (I only drink water).

Using il faut and il est interdit de

il faut it is necessary to/you must ...
il est interdit de it is forbidden to/you must not ...

Both expressions are followed by the infinitive.

Il faut être à l'heure. You must **be** on time.

Il est interdit de manquer les cours. You must not **skip** lessons.



| | | |
|---|--|---|
| Ma matière préférée est ... | c'est | facile/fascinant/ difficile/utile/inutile. |
| J'adore/J'aime/Je n'aime pas/Je déteste ... | je suis | fort(e)/faible/doué(e) en ... |
| Je trouve ... | intéressant(e)s passionnant(e)s ennuyeux/euse(s) | parce que/qu' |
| Je pense que ... | est sont | le/la prof est bon(ne)/sympa/marrant(e)/ sévère/gentil(le)/impatient(e). |
| | | on a trop de devoirs. |

Au bahut

The pronoun on

On can mean 'one', 'you' or 'we'. It is used a lot in French: much more than we would use the pronoun 'one' in English.

It is used when talking about people in general and takes the same verb form as *il/elle*:

On améliore ses compétences en langue.
You improve your language skills.

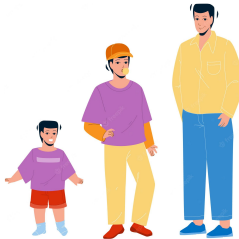


The imperfect tense

The imperfect tense is used to describe what things were like in the past or what used to happen. You need to be able to recognise the imperfect endings, e.g. *chanter* (to sing):

| | |
|---|--|
| je chantais tu chantais il/elle/on chantait nous chantions vous chantiez ils/elles chantaient | I used to sing you used to sing he/she/we used to sing we used to sing you used to sing they used to sing |
|---|--|

The key verbs that you need to be able to **use** are:
avoir → *j'avais* (I had/I used to have)
être → *j'étais* (I was/I used to be)
faire → *je faisais* (I did/made/I used to do/make)



Les boulots

Verbs followed by à or de

Some verbs are followed by *à* or *de* before the infinitive.

apprendre à ... (to learn to ...)
commencer à ... (to start to ...)
décider de ... (to decide to ...)
essayer de ... (to try to ...)

Job nouns

The words for jobs often change according to gender. The most common patterns are:

| masculine | feminine | (English) |
|--------------------|----------------------|-----------------|
| électricien | électricienne | (electrician) |
| coiffeur | coiffeuse | (hairdresser) |
| acteur | actrice | (actor/actress) |
| boulangier | boulangère | (baker) |
| patron | patronne | (boss) |

Jobs that end in *-e* don't change, e.g. *dentiste* (dentist), *secrétaire* (secretary).

The following jobs are also the same in both genders:
agent de police (policeman/-woman), *médecin* (doctor), *professeur* (teacher), *soldat* (soldier).



The relative pronoun qui

Qui means 'who', 'which' or 'that' when 'who', 'which' or 'that' is the subject of the sentence.

Le secteur qui m'intéresse, c'est le commerce.

The area **that interests** me is business.

Mes projets pour l'avenir

The future tense

To describe future plans, you can use either the **near future tense** (*je vais + infinitive*), or the **simple future tense** to say 'will ...' or 'shall ...':

Je passerai mes examens puis j'irai à la fac.
I will take my exams, then I will go to uni.

To form the simple future tense of regular verbs, add the following endings to the infinitive 'stem':

je passerai nous passerons
tu passeras vous passerez
il/elle/on passera ils/elles passeront

The following important verbs are irregular. Learn to recognise them!

aller → *j'irai* (I will go)
avoir → *j'aurai* (I will have)
être → *je serai* (I will be)
faire → *je ferai* (I will do/make)

| | |
|-----------------------------------|--------------------------|
| Je crois que | je voudrais |
| Je pense que | j'aimerais |
| Le secteur qui m'intéresse, c'est | |
| Je suis | assez plutôt très un peu |

travailler dans (le commerce/ le sport et les loisirs, etc.).

le commerce/la médecine et la santé (etc.).

| | |
|-------------------|--------------------|
| actif/-ive. | motivé(e). |
| ambitieux/-euse. | sérieux/-euse. |
| bien organisé(e). | sociable. |
| créatif/-ive. | timide. |
| indépendant(e). | travailleur/-euse. |

| | |
|-------------|---|
| Je voudrais | avoir un métier bien payé. |
| J'aimerais | faire un métier à responsabilité (etc.). travailler en plein air (etc.). |

J'aime le contact avec les gens.

★ Translate these sentences into English.

- 1 Je la déteste.
- 2 Je ne l'aime pas.
- 3 Je les ai.
- 4 Je lui parle en français.
- 5 Je leur ai donné le livre.
- 6 J'y suis allé hier.
- 7 J'en ai bu ce matin.
- 8 Je la leur offre.

2 Put the words in the correct order to translate each

- 1 je déteste les (*I hate them.*)
- 2 ? aimes tu l' (*Do you like it?*)
- 3 le elle regarde (*She watches him.*) **English sentence.**
- 4 avons nous l' (*We have it.*)
- 5 lui je devoirs donne les (*I give the homework to her.*)
- 6 je parlé leur ai (*I spoke to them.*)
- 7 ai hier j' vu en (*I saw some yesterday.*)
- 8 y j' demain vais (*I am going there tomorrow.*)

● Maria has written some sentences in French but has made a mistake in each one. Rewrite each sentence, correcting her mistake. Explain in English what her mistake is.

Example: *Il faut reste à la maison.*

*Il faut **rester** à la maison.* – She didn't use the infinitive.

- | | |
|--------------------------------------|---|
| 1 Il faut arrive à 8h. | 5 Nous pouvez aider le prof. |
| 2 Je peut venir au concert avec toi. | 6 Les enfants doit apprendre le latin. |
| 3 On doit ne fumer pas au collège. | 7 Il faut ne arriver pas en retard. |
| 4 Tu veux parle sur Skype ce soir? | 8 Antoine et Annie peuvent travaillent ce samedi. |

★ Choose a suitable ending for each sentence. Then translate each sentence into English.

- 1 J'avais intelligent / un journal / Paris.
- 2 J'étais intelligent / une table / Manchester.
- 3 Je faisais beau / mes devoirs / arriver.
- 4 Elle avait les yeux bleus / petite / boire.
- 5 C'était les yeux bleus / monter / super!
- 6 Il faisait froid / me / pleut.
- 7 Il y avait poli / les cheveux bruns / un concert.
- 8 C'était impossible / sortir / vais.

● Translate these sentences into French using the imperfect tense.

- 1 It was interesting.
- 2 There was a restaurant.
- 3 It was hot.
- 4 I was in the garden.
- 5 I had two friends.
- 6 We used to have a cat.
- 7 He used to be a teacher.
- 8 My mum was nine years old.

★ Translate this story into English.

Hier, ma famille a décidé de faire un pique-nique au bord de la mer. J'adore aller à la mer. J'ai essayé de contacter mon cousin mais il n'a pas répondu au téléphone. J'ai aidé mon père à préparer les sandwichs mais à 11h, il a commencé à pleuvoir. On a choisi de rester à la maison. Je préfère rester à l'intérieur quand il pleut mais j'aimerais aller à la mer aujourd'hui.

★ Translate each sentence into English.

- 1 Ma sœur, qui s'appelle Annette, est à l'université.
- 2 Le livre que je préfère s'appelle *Studio*.
- 3 La voiture qui est la plus pratique, c'est une Renault.
- 4 La voiture que je veux, c'est une Porsche.
- 5 Où est la fille qui était ici?
- 6 Où est le garçon que j'ai vu hier?

★ What will things be like for Sofia in 10 years' time? Translate what she says into English.

- 1 J'aurai trois enfants.
- 2 Je serai agent de police.
- 3 J'habiterai à Londres.
- 4 Je ferai beaucoup de sport.
- 5 J'irai à la salle de sport régulièrement.
- 6 On sera riche.
- 7 On aura une grande maison.
- 8 Mon compagnon travaillera pour Renault.

★ Choose the correct form of the adjective to complete each sentence.

- | | |
|-------------------------------------|--|
| 1 Mon frère est grand / grande. | 4 Mes sœurs sont amusants / amusantes. |
| 2 Ma sœur est joli / jolie. | 5 Nous sommes contente / contents. |
| 3 Mes frères sont absent / absents. | 6 J'ai les cheveux blond / blonds. |

★ Copy out the text, changing the adjectives in the description so that they agree.

Ma prof (*préfère*) s'appelle Madame Black. Elle est (*amusant*) mais parfois (*sévère*): quand les élèves sont (*méchant*), elle devient (*furieux*). Mais en général, elle est (*compréhensif*) et (*aimable*). Ma copine Anna n'est pas très (*travailleur*) et de temps en temps, elle est (*agaçant*) mais elle est (*gentil*).

★ Translate these sentences into French.

Example: They don't want to take the bus. → Ils ne veulent pas prendre le bus.

- | | |
|------------------------------------|---------------------------------|
| 1 I can take the bus. | 5 Alex can take the bus. |
| 2 We must take the bus. | 6 I don't want to take the bus. |
| 3 She wants to take the bus. | 7 We can't take the bus. |
| 4 My friends want to take the bus. | 8 I would like to take the bus. |

History Knowledge Organiser

From war to peace and back again 3. Causes of WW2.

Hitler was to blame

In Mein Kampf Hitler vowed to overturn Versailles and take Lebensraum (living space). This was the basis of his foreign policy and meant he would have to invade countries. This could start a war. He also vowed to make Germany strong again.

Hitler hated Communism and wanted to stop it by invading Russia which would start a war.

Appeasement

The policy of appeasement aimed to prevent another war and is linked particularly with Chamberlain. Many believe he made a mistake by trusting Hitler. Britain and France could have stopped Germany. Opportunities such as the Rhineland were missed and Chamberlain even worked with Hitler in Munich to give him the Sudetenland. This prompted the Nazi Soviet Pact.

Key dates

| | |
|--------------|--|
| 1933 | Hitler leaves League of Nations disarmament conference |
| 1935 | Rearmament Rally |
| 7/3/1936 | Remilitarisation of the Rhineland |
| October 1936 | Rome-Berlin Axis |
| 12/3/1938 | Anschluss with Austria |
| Sep 1938 | Munich Agreement |
| 15/3/ 1939 | Hitler invades Czechoslovakia |
| 1939 | Nazi Soviet Pact |
| 1/9/1939 | Germany invaded Poland |
| 3/9/1939 | Britain declares war on Germany |

The failure of the League

Its structure and organisation made the League weak. Its lack of army meant it could not force nations to comply. Membership - countries could leave, the USA never joined and USSR and Germany were not allowed to join at first. Manchuria showed that the League was weak and would not deal with a member of the council. Abyssinia showed Britain and France undermine it.

The Nazi Soviet Pact

Stalin felt alienated by the Munich Agreement and this encouraged him to sign the pact even though he and Hitler hated each other. It was a truce to agree to share Poland. This would help Hitler avoid a war on two fronts and give him back up from the USSR. This made him more confident about invading Poland even though Britain and France had promised to protect them.






The Depression

The Wall Street Crash and subsequent depression made countries around the world look inwards and desperate to sort their own problems. This meant there was less international cooperation. Desperate people turned to extremist parties and Leaders including Hitler and Mussolini. The League also could not afford to put effective economic sanctions on aggressors.

Treaty of Versailles

By the 1930's many people believed that Germany had been treated too harshly including Britain. As a result they didn't stop the Anschluss. Germany had lost land to create new countries like Poland (also the USSR who wanted the land back) and Czechoslovakia. Hitler has promised to overturn the Treaty of Versailles and reunite all German speaking peoples in a greater Germany.

Key people

| | |
|----------------|---|
| Mussolini |  |
| Lord Lytton |  |
| Emperor |  |
| Haile Selassie | |
| Pierre Laval |  |
| Samuel Hoare |  |

KEY VOCABULARY/TERMS

Tier 2 - significant, conclude, imply, attitude, contrast, overall, cooperate, furthermore, infer, bias, widespread, trigger
 Tier 3 - Communism, Mein Kampf, Lebensraum, Treaty of Versailles, Manchuria, Abyssinia, Depression, aggressors, economic sanctions, international cooperation, appeasement, Nazi-Soviet Pact, Anschluss, dictators, extremist.

History Knowledge Organiser

From war to peace and back again 3. Causes of WW2.

| Questions | Answers | |
|-----------|---|--|
| 1 | What was the name of the book Hitler wrote? | |
| 2 | What was Lebensraum? | |
| 3 | What was Hitler's opinion of Communism? | |
| 4 | What made the League of nations weak? | |
| 5 | What had Manchuria shown us about the League? | |
| 6 | What had Abyssinia demonstrated about the League? | |
| 7 | What did the Wall Street Crash lead to? | |
| 8 | What types of political parties did people turn to? | |
| 9 | Did the Wall Street Crash help or hinder international cooperation? | |
| 10 | What was the policy of appeasement? | |
| 11 | When was the Anschluss with Austria? | |
| 12 | When was the Munich Agreement? | |
| 13 | When was the Nazi Soviet Pact? | |
| 14 | Why was this pact surprising? | |
| 15 | How had people's attitudes to the Treaty of Versailles changed? | |
| 16 | Who was the leader of Abyssinia (Ethiopia) who asked the League for help? | |
| 17 | Who was the dictator of Italy? | |
| 18 | Who was the leader of the USSR? | |
| 19 | Who wrote a report about the Manchurian crisis? | |
| 20 | Which two men tried to complete a secret deal over Abyssinia? | |

What is development?

Development is an improvement in living standards through better use of resources.

| | |
|----------------------|--|
| Economic | This is progress in economic growth through levels of industrialisation and use of technology. |
| Social | This is an improvement in people's standard of living. For example, clean water and electricity. |
| Environmental | This involves advances in the management and protection of the environment. |

Measuring development

These are used to compare and understand a country's level of development.



Economic indicators examples

| | |
|--|---|
| Employment type | The proportion of the population working in primary, secondary, tertiary and quaternary industries. |
| Gross Domestic Product per capita | This is the total value of goods and services produced in a country per person, per year. |
| Gross National Income per capita | An average of gross national income per person, per year in US dollars. |

Social indicators examples



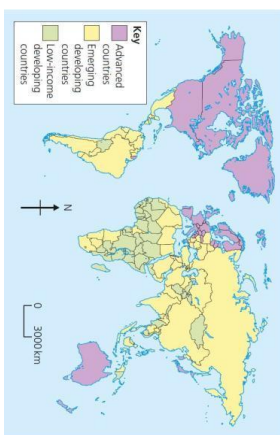
| | |
|-------------------------|---|
| Infant mortality | The number of children who die before reaching 1 per 1000 babies born. |
| Literacy rate | The percentage of population over the age of 15 who can read and write. |
| Life expectancy | The average lifespan of someone born in that country. |

Mixed indicators

| | |
|--------------------------------------|--|
| Human Development Index (HDI) | A number that uses life expectancy, education level and income per person. |
|--------------------------------------|--|

Variations in the level of development

| | |
|-------------|--|
| LICs | Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living. |
| NEEs | These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages. |
| HICs | These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services. |



Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries.

Unit 2b

The Changing Economic World



Physical factors affecting uneven development

| | |
|--|---|
| Natural Resources <ul style="list-style-type: none"> Fuel sources such as oil. Minerals and metals for fuel. Availability for timber. Access to safe water. | Natural Hazards <ul style="list-style-type: none"> Risk of tectonic hazards. Benefits from volcanic material and floodwater. Frequent hazards undermines redevelopment. |
| Climate <ul style="list-style-type: none"> Reliability of rainfall to benefit farming. Extreme climates limit industry and affects health. Climate can attract tourists. | Location/Terrain <ul style="list-style-type: none"> Landlocked countries may find trade difficulties. Mountainous terrain makes farming difficult. Scenery attracts tourists. |

Human factors affecting uneven development

| | |
|---|---|
| Aid <ul style="list-style-type: none"> Aid can help some countries develop key projects for infrastructure faster. Aid can improve services such as schools, hospitals and roads. Too much reliance on aid might stop other trade links becoming established. | Trade <ul style="list-style-type: none"> Countries that export more than they import have a trade surplus. This can improve the national economy. Having good trade relationships. Trading goods and services is more profitable than raw materials. |
| Education <ul style="list-style-type: none"> Education creates a skilled workforce meaning more goods and services are produced. Educated people earn more money, meaning they also pay more taxes. This money can help develop the country in the future. | Health <ul style="list-style-type: none"> Lack of clean water and poor healthcare means a large number of people suffer from diseases. People who are ill cannot work so there is little contribution to the economy. More money on healthcare means less spent on development. |
| Politics <ul style="list-style-type: none"> Corruption in local and national governments. The stability of the government can effect the country's ability to trade. Ability of the country to invest into services and infrastructure. | History <ul style="list-style-type: none"> Colonialism has helped Europe develop, but slowed down development in many other countries. Countries that went through industrialisation a while ago, have now develop further. |

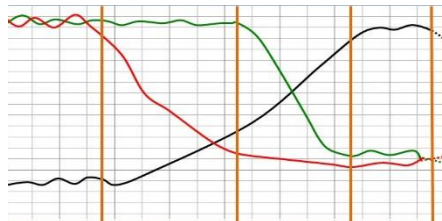
Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

| | |
|------------------|--|
| Wealth | People in more developed countries have higher incomes than less developed countries. |
| Health | Better healthcare means that people in more developed countries live longer than those in less developed countries. |
| Migration | If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living. |

The Demographic Transition Model

The demographic transition model (DTM) shows population change over time. It studies how birth rate and death rate affect the total population of a country.



| | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|-------------------|-------------|------------------------|--------------------|---------|-------------------|
| DR | High DR | BR Low Declining DR | Rapidly falling DR | Low DR | Slowly Falling DR |
| BR | High BR | Very High | Low BR | Low BR | Low BR |
| Population | Steady | | High | Zero | Negative |
| Example | e.g. Tribes | e.g. Kenya | e.g. India | e.g. UK | e.g. Japan |

Reducing the Global Development Gap

Microfinance Loans



This involves people in LICs receiving smalls loans from traditional banks.

+ Loans enable people to begin their own businesses

- Its not clear they can reduce poverty at a large scale.

Foreign-direct investment



This is when one country buys property or infrastructure in another country.

+ Leads to better access to finance, technology & expertise.

- Investment can come with strings attached that country's will need to comply with.



Debt Relief

This is when a country's debt is cancelled or interest rates are lowered.

+ Means more money can be spent on development.

- Locals might not always get a say. Some aid can be tied under condition from donor country.

Aid

This is given by one country to another as money or resources.

+ Improve literacy rates, building dams, improving agriculture.

- Can be wasted by corrupt governments or they can become too reliant on aid.

Fair trade



This is a movement where farmers get a fair price for the goods produced.

+ Paid fairly so they can develop schools & health centres.

-Only a tiny proportion of the extra money reaches producers.

Technology

Includes tools, machines and affordable equipment that improve quality of life.

+ Renewable energy is less expensive and polluting.

- Requires initial investment and skills in operating technology



CS: Reducing the Development Gap In Jamaica



Location and Background

Jamaica is a LIC island nation part of the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches



Tourist economy



-In 2015, 2.12 million visited.
-Tourism contributes 27% of GDP and will increase to 38% by 2025.
-130,000 jobs rely on tourism.
-Global recession 2008 caused a decline in tourism. Now tourism is beginning to recover.

Multiplier effect

Jobs from tourism have meant more money has been spent in shops and other businesses.
-Government has invested in infrastructure to support tourism.
-New sewage treatment plants have reduced pollution.

Development Problems

- Tourists do not always spend much money outside their resorts.
- Infrastructure improvements have not spread to the whole island.
- Many people in Jamaica still live in poor quality housing and lack basic services such as healthcare.

Case Study: Economic Development in Nigeria



Location & Importance

Nigeria is a NEE in West Africa. Nigeria is just north of the Equator and experiences a range of environments.

Nigeria is the most populous and economically powerful country in Africa. Economic growth has been base on oil exports.



Influences upon Nigeria's development

Political

Suffered instability with a civil war between 1967-1970. From 1999, the country became stable with free and fair elections. Stability has encouraged global investment from China and USA.

Social

Nigeria is a multi-cultural, multi-faith society. Although mostly a strength, diversity has caused regional conflicts from groups such as the Boko Haram terrorists.

Cultural

Nigeria's diversity has created rich and varied artistic culture. The country has a rich music, literacy and film industry (i.e. Nollywood). A successful national football side.

Industrial Structures

Once mainly based on agriculture, 50% of its economy is now manufacturing and services. A thriving manufacturing industry is increasing foreign investment and employment opportunities.

The role of TNCs

TNCs such as Shell have played an important role in its economy.
+ Investment has increased employment and income.
- Profits move to HICs.
- Many oil spills have damaged fragile environments.



Changing Relationships

Nigeria plays a leading role with the African Union and UN. Growing links with China with huge investment in infrastructure. Import includes petrol from EU, cars from Brazil and phones from China.

Environmental Impacts

The 2008/09 oil spills devastated swamps and its ecosystems. Industry has caused toxic chemicals to be discharged in open sewers - risking human health. 80% of forest have been cut down. This also increases CO₂ emissions.

Aid & Debt relief

+ Receives \$5billion per year in aid.
+ Aid groups (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV.
- Some aid fails to reach the people who need it due to corruption.

Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

Case Study: Economic Change in the UK



UK in the Wider World

The UK has one of the largest economies in the world. The UK has huge political, economic and cultural influences. The UK is highly regarded for its fairness and tolerance. The UK has global transport links i.e. Heathrow and the Eurostar.



Causes of Economic Change

De-industrialisation and the decline of the UK's industrial base. Globalisation has meant many industries have moved overseas, where labour costs are lower. Government investing in supporting vital businesses.

Towards Post-Industrial

The quaternary industry has increased, whilst secondary has decreased. Numbers in primary and tertiary industry has stayed the steady. Big increase in professional and technical jobs.

Developments of Science Parks

Science Parks are groups of scientific and technical knowledge based businesses on a single site.

- Access to transport routes.
- Highly educated workers.
- Staff benefit from attractive working conditions.
- Attracts clusters of related high-tech businesses.

CS: UK Car Industry



Every year the UK makes 1.5 million cars. These factories are owned by large TNCs. i.e. Nissan.

- 7% of energy used there factories is from wind energy.
- New cars are more energy efficient and lighter.
- Nissan produces electric and hybrid cars.

Change to a Rural Landscape

Social

Rising house prices have caused tensions in villages. Villages are unpopulated during the day causing loss of identity. Resentment towards poor migrant communities.

Economic

Lack of affordable housing for local first time buyers. Sales of farmland has increased rural unemployment. Influx of poor migrants puts pressures on local services.



Improvements to Transport



A £15 billion 'Road Improvement Strategy'. This will involve 10 new roads and 1,600 extra lanes. £50 billion HS2 railway to improve connections between key UK cities. £18 billion on Heathrow's controversial third runway. UK has many large ports for importing and exporting goods.

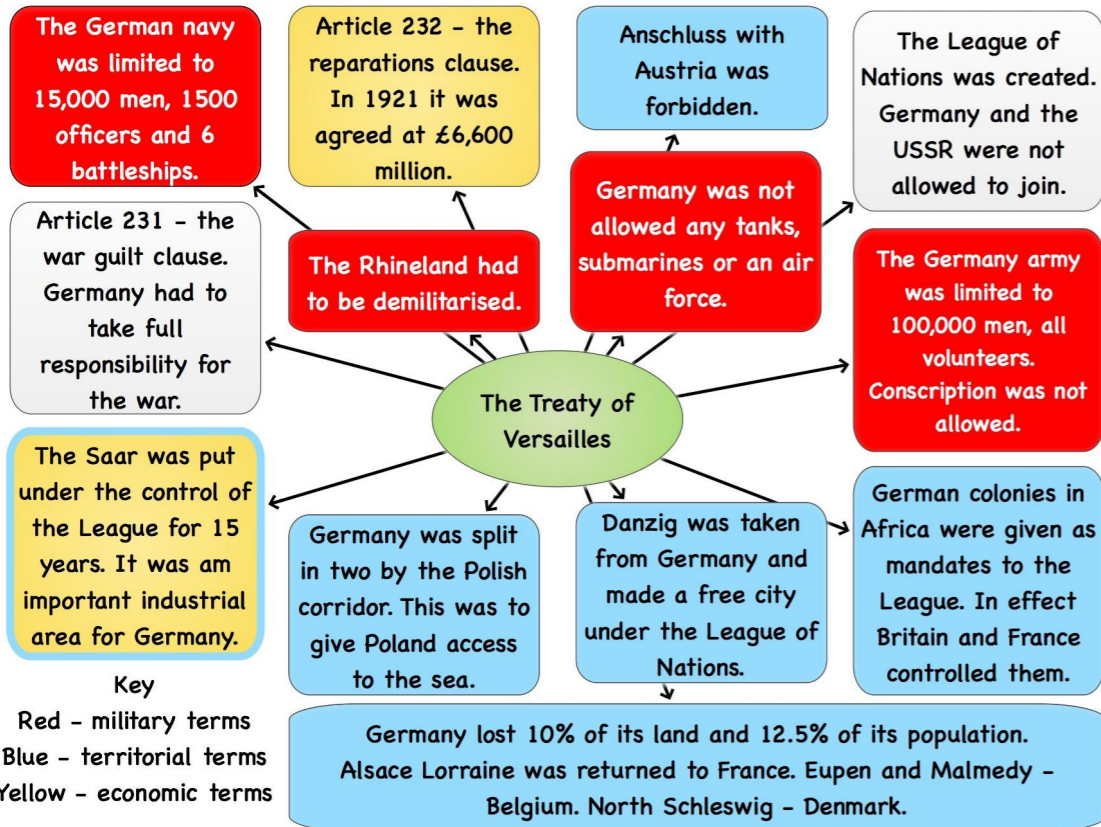
UK North/South Divide

- Wages are lower in the North.
- Health is better in the South.
- Education is worse in the North.
+ The government is aiming to support a Northern Powerhouse project to resolve regional differences.
+ More devolving of powers to disadvantaged regions.

History Knowledge Organiser

From war to peace and back again - The peace treaties

The Treaty of Versailles



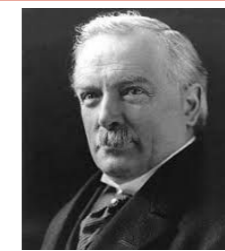
Key people - the big three



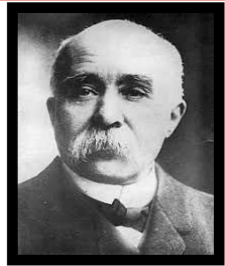
Woodrow Wilson
USA



David Lloyd George
Britain



Georges Clemenceau
France



Aims - world peace. He wanted self-determination for countries to rule themselves and suggested the creation of the League of Nations.

Opinion - so harsh that Germany would seek revenge leading to another war. Happy league was established but sad that USA did not join.

Aims - elected by promising to punish the Germans but wanted them to be strong enough to trade with. To protect the empire and navy.

Opinion - felt it was too harsh, that Britain would have to fight another war in 25 years' time. Pleased with military terms and Empire larger than ever.

Aims - Germany destroyed so that it would never again be able to invade France. Wanted them to pay for the damage caused to French land.

Opinion - felt it was not harsh enough as Germany was not destroyed. More money wanted and the Rhineland should be independent. Voted out.

Key dates

| | |
|-----------|----------------------|
| 28/6/19 | Treaty of Versailles |
| 10/9/19 | Treaty of St Germain |
| 27/11/19 | Treaty of Neuilly |
| 4/6/20 | Treaty of Trianon |
| 10/8/20 | Treaty of Sevres |
| July 1923 | Treaty of Lausanne |

The other peace treaties

| |
|---|
| St Germain - Austria. Land to Italy, Romania, Czechoslovakia, Yugoslavia and Poland. Army 30,000 no conscription, no navy. No anschluss with Germany. Reparations but amount not fixed. |
| Neuilly - Bulgaria. Land to Yugoslavia, Greece and Romania. £100 million. Army 20,000, no conscription, no air force, 4 battleships. |
| Trianon - Hungary. Land to Romania, Czechoslovakia, Yugoslavia and Austria. Reparations not fixed. Army 30,000, no conscription, 3 patrol boats. |
| Sevres - Turkey. Land to Greece and all European land except area around Constantinople. Army 50,000 7 sail 6 torpedo boats. |
| Lausanne. Turkey regained some land from Greece, control of Dardanelles, Bosphorus straits and armed forces. Reparations cancelled. |

KEY VOCABULARY/TERMS

Diktat, demilitarise, Anschluss, conscription, mandates, League of Nations, isolationism, clause, armistice, Rhineland, disarmament, self determination

History Knowledge Organiser

From war to peace and back again - The peace treaties

Questions

Answers

| | | |
|----|---|--|
| 1 | What were the territorial terms of the treaty of Versailles? | |
| 2 | What were the economic terms of the Treaty of Versailles? | |
| 3 | What were the military terms of the Treaty of Versailles? | |
| 4 | What other terms were there? | |
| 5 | Which terms do you think the Germans hated most and why? | |
| 6 | What was the aim of Woodrow Wilson at Versailles? | |
| 7 | What was Wilson's opinion of the Treaty of Versailles? | |
| 8 | What was the aim of Georges Clemenceau at Versailles? | |
| 9 | What was Clemenceau's opinion of the Treaty of Versailles? | |
| 10 | What was the aim of David Lloyd George at Versailles? | |
| 11 | What was Lloyd George's opinion of the Treaty of Versailles? | |
| 12 | What did the Germans call the Treaty of Versailles? | |
| 13 | Which treaty dealt with Austria? | |
| 14 | Which treaty dealt with Bulgaria? | |
| 15 | Which treaties dealt with Turkey? | |
| 16 | What did Turkey get back in the second treaty? | |
| 17 | What international peacekeeping organisation was established as a part of the peace treaties? | |
| 18 | Who wanted to introduce this organisation? | |
| 19 | Which key country did not join this organisation? | |
| 20 | When was the last treaty signed and how long after WW1 was this? | |

History Knowledge Organiser

Conflict and tension 1918 - 1939 The League of Nations

1920's

1920 Vilna - capital city of Lithuania. The majority of people were Polish and a Polish army took control. Lithuania asked the League for help and they told Poland to leave. They refused and kept Vilna

1921 Upper Silesia - on the border of Germany and Poland. Both countries wanted it for its iron and steel. A plebiscite was held and 60% voted for Germany. However the rural areas were given to Germany and Poland the industrial areas. Neither side was happy but had to accept it.

1921 Åland Islands - Both Sweden and Finland claimed the islands and were threatening war. The League investigated and gave it to Finland but no forts were allowed. Sweden agreed.

1923 Corfu - An Italian surveyor Tellini and his team were murdered on the border between Greece and Albania. Mussolini blamed Greece, demanded compensation and invaded Corfu. The League made Greece apologise and pay Italy compensation.

1925 Bulgaria - Greek soldiers were killed on the Bulgarian border. Greece invaded but the League condemned them, made them withdraw and pay compensation to Bulgaria.

1929 Wall Street Crash - The American Stock Market crashed. The US had lent money to many countries around the world and wanted the money back. This led to a global depression.

1930's Manchuria

Japan was suffering the effects of the depression, much of its trade had been in luxury goods. So it looked to Manchuria in China, that had natural resources. The army generals dominated the Japanese government and wanted land. On 18th September 1931 there was an explosion on the South Manchurian Railway, owned by Japan. They blamed China and invaded Manchuria which they renamed Manchuko in 1932. China went to the League and Lord Lytton was sent to investigate and write a report. The report was published in October 1932 and said Japan should not have invaded. Japan ignored the report, left the League and then continued their invasion of China. By 1938 most major Chinese cities were controlled by Japan's army. **FAIL**

Key people

Mussolini



Lord Lytton



Emperor



Haile Selassie

Pierre Laval



Samuel Hoare



1930's Abyssinia

Mussolini wanted an empire in the sun for Italy and they had previously tried to invade Abyssinia unsuccessfully in 1896. After signing the Stresa Front with Britain and France he did not think they would stand in his way. In December 1934 Italian and Abyssinian troops clashed at Wal Wal. Emperor Haile Selassie addressed the League on 30th June 1935 asking for help. Despite moral condemnation from the League Italian troops entered Abyssinia on 3rd October 1935 using the latest weapons including chemical. In December the British and French Foreign Ministers secretly agreed to give half of Abyssinia to Italy. This was leaked to the press with both men resigning. Still the League failed to act and did nothing when on 5th May 1936 Italian troops took the capital Addis Ababa. They could have stopped Italy using the Suez Canal or impose trade sanctions on oil, steel, iron and coal but it did nothing. **FAIL**

Key dates

| | |
|-------------|---|
| 1921 - 1922 | <u>Washington Treaty</u> Japan, USA, Britain Limited size of Japanese Navy to USA and Britain 5 boats for every 3 Japan had. made the League look weak and unnecessary. |
| 1922 | <u>Treaty of Rapallo</u> Germany and USSR Agreed to stay friends and secretly agreed to trade weapons and military information. Against Treaty of Versailles and very damaging for the League. |
| 1925 | <u>Locarno Treaty</u> France, Britain, Belgium, Italy and Germany. Germany, France and Belgium agreed to keep to the borders set in the Treaty of Versailles. Germany was now a member and the League stronger. |
| 1928 | <u>Kellogg-Briand Pact</u> 65 countries agreed not to use war to solve disputes. Looked promising but made the League look weak as it was not set up by them. |

KEY VOCABULARY/TERMS

Assembly, unanimous, veto, Secretariat, civil service, Council, Geneva, collective security, Permanent Court of International Justice, Covenant, mitigation, moral condemnation, economic sanctions, plebiscite, border,

History Knowledge Organiser

Conflict and tension 1918 - 1939 The League of Nations

Quiz questions

| | | |
|----|---|--|
| 1 | Which two countries wanted Vilna in 1920? | |
| 2 | Which area had a plebiscite in 1921 to decide between Poland and Germany? | |
| 3 | Which islands were in dispute between Finland and Sweden in 1921? | |
| 4 | Which land was invaded by Italy in a dispute over murdered surveyors? | |
| 5 | In what year did Bulgaria and Greece come into conflict? | |
| 6 | When was the Wall Street Crash? | |
| 7 | What was the Washington Treaty of 1921 - 22 about? | |
| 8 | Who was the 1922 Treaty of Rapallo between? | |
| 9 | What was decided at the Locarno Treaty of 1923? | |
| 10 | What did the 1928 Kellogg-Briand Pact agree? | |
| 11 | When was the Manchurian Crisis? | |
| 12 | Which countries were involved in the Manchurian Crisis? | |
| 13 | Who was sent to write a report about the incident? | |
| 14 | What was the results of the Manchurian Crisis? | |
| 15 | When was the Abyssinian Crisis? | |
| 16 | Who were the key people involved? | |
| 17 | What did the League do and not do? | |
| 18 | What was the result of the Abyssinian Crisis? | |

History Knowledge Organiser

From war to peace and back again 2. The League of Nations

Key facts

The idea of American President Woodrow Wilson to bring the world together in peace. It would be a group of countries that would work together to solve world problems.

Aims

- To stop war from breaking out again
- To encourage disarmament
- To improve working conditions
- To tackle deadly diseases

Based in Geneva, Switzerland where the Red Cross was also based.

The USA never joined when the Senate refused to agree.

The plan was to keep peace through collective security, where the countries worked together to keep the peace and look after the interests of every nation.

Structure

The Assembly

Worked like an international parliament. It met once a year on the first Monday of September.
Every country sent one member and had one vote.
All votes had to be unanimous.
When it began there were 42 countries involved.

The Council

The Assembly was too big to react quickly in an emergency. The Council met more regularly and had the power of veto to stop and Assembly vote.
There were four permanent members: Britain, France, Italy and Japan. Four and later nine other countries were non-permanent members.

The Secretariat

The civil service of the League. It was in charge of administration and organising any action the League wanted to take.
It had experts who were responsible for carrying out decision except military issues.



The Permanent Court of International Justice

This was a court of law that would settle international arguments. Any country could bring an issue to the eleven judges and four deputy judges.
The court came to a verdict but this was not compulsory but without an army they could not force countries to follow it. It was elected by the assembly for 11 years.

Special commissions

Special groups to tackle issues the League was worried about including:
The International Labour Organisation (ILO)
The Disarmament Commission
The Health Organisation
The Slavery Commission
The Commission for Refugees
The Permanent Central Opium Board

Membership

Britain 1919 - 1945
France 1919 - 1945
Japan 1919 - 1933
Italy 1919 - 1937
Germany 1926 - 1933
USSR 1934 - 1939
USA never joined
At its largest it had 63 member states.

Strengths

It was written into all of the peace treaties at the end of WW1.
It had a large membership which could work well with mitigation, moral condemnation, and economic sanctions.

Weaknesses

Membership. The USA did not join. The USSR and Germany were not allowed to join. Countries could leave when they wanted to. No army so could not enforce decisions.
Decisions were difficult due to unanimous votes and the structure made it slow.

Key dates

| | |
|-----------------------------|--|
| 25 th March 1919 | Lloyd George issued the Fontainebleau Memorandum in support of the League. |
| 1921 | Helped free 427 000 prisoners of war. |
| 1922 | Recommended banning white lead in paint. Set up refugee camps in Turkey and created the Nansen Passport. |
| 1925 | Other drugs now tackled by the newly named Permanent Central Narcotics Board |
| 1928 | 77 countries set a minimum wage. |
| 1930 | Helped Greece set up social insurance. |
| 1933 | Tried to appoint a High Commissioner for refugees - mainly Jews from Germany (who voted against it) |
| 1935 | Attempted 8 hour day. |

KEY VOCABULARY/TERMS

Assembly, unanimous, veto, Secretariat, civil service, International Labour Organisation (ILO), slavery, refugee, Council, Geneva, collective security, Permanent Court of International Justice, Covenant, mitigation, moral condemnation, economic sanctions

History Knowledge Organiser

From war to peace and back again 2. The League of Nations

| Questions | Answers |
|-----------|--|
| 1 | Whose idea was the League of Nations? |
| 2 | Which part of the League met once a year with all members? |
| 3 | What did all votes have to be? |
| 4 | Which countries were permanent members of the Council? |
| 5 | Which countries were not allowed to join at the start? |
| 6 | Which countries chose to leave the League? Bonus - do you know why? |
| 7 | Give two aims of the League. |
| 8 | Give two strengths of the League. |
| 9 | Give two weaknesses of the League. |
| 10 | Which country was considered to be the most powerful after WW1 but did not join? |
| 11 | When was Germany a member? |
| 12 | When was Japan a member? |
| 13 | When was Italy a member? |
| 14 | When was the USSR a member? |
| 15 | What was the role of the Secretariat? |
| 16 | Give three examples of special commissions. |
| 17 | What was the role of the Permanent Court of International Justice? |
| 18 | What did the League do in 1921? |
| 19 | What did the League do in 1922? |
| 20 | What did the League try to do in 1933? |

GCSE Computer Science

Topic 2.1 Algorithms



To find middle item:
 $(\text{amount of data items} + 1) / 2$

MERGE SORT example (ascending)

| | | | |
|----|---|----|---|
| 13 | 3 | 50 | 7 |
|----|---|----|---|

COMPUTATIONAL THINKING:

tackling a problem through abstraction, decomposition and algorithmic thinking.

ABSTRACTION: picking out important bits of information

DECOMPOSITION: breaking down a problem into smaller parts.

ALGORITHMIC THINKING: coming up with an algorithm to solve a problem.

ALGORITHM: a step by step set of instructions to solve a problem

BINARY SEARCH example:

| | | | | |
|---|---|---|---|---|
| 1 | 3 | 5 | 7 | 9 |
|---|---|---|---|---|

Find 7:

INSERTION SORT example (ascending)

| | | | |
|----|---|----|---|
| 13 | 3 | 50 | 7 |
|----|---|----|---|

LINEAR SEARCH example

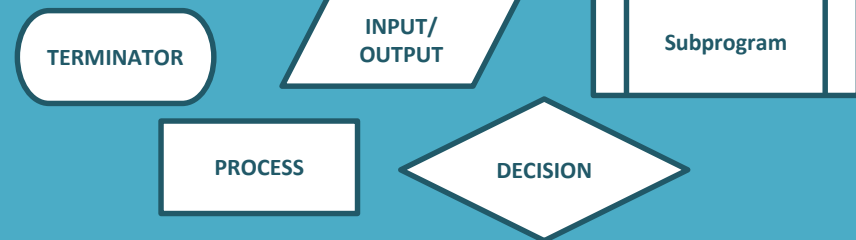
| | | | | |
|---|---|---|---|---|
| 1 | 3 | 5 | 7 | 9 |
|---|---|---|---|---|

Find 7:

BUBBLE SORT example (ascending)

| | | | |
|----|---|----|---|
| 13 | 3 | 50 | 7 |
|----|---|----|---|

FLOWCHART: a visual way of representing algorithms.



Fake

Pseudocode

A set of instructions in the style of programming language, written in plain English.

INPUT , OUPUT, IF, THEN, ELSE

What I need to know:

- Define computational thinking.
- Define abstraction.
- Define decomposition.
- Define algorithmic thinking.
- Define algorithm.
- Name the two most common ways of displaying algorithms.
- Define flowchart.
- Define pseudocode.
- Outline the steps of a binary search.
- Write an ordered list of numbers or words and perform a binary search to find an item.
- Outline the steps of a linear search.
- Write a list of numbers or words and perform a binary search to find an item.
- Outline the steps of a bubble sort.
- Perform a bubble sort on a list of unordered numbers / words to put them into ascending/descending order.
- Outline the steps of an insertion sort.
- Perform an insertion sort on a list of unordered numbers / words to put them into ascending/descending order.
- Outline the steps of a merge sort.
- Perform a merge sort on a list of unordered numbers / words to put them into ascending/descending order.
- Draw and label the shapes used in flowcharts.
- List the keywords used in pseudocode.

Warm-Up

Cross out the commands that don't go with the flow diagram symbol.



Bernard has written the algorithm on the right using pseudocode.

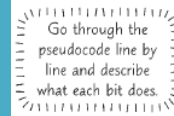
```
VAR height, width, area as INT
height = INPUT("Enter the height.")
width = INPUT("Enter the width.")
area = height * width
print(area)
```

a) Define what is meant by an 'algorithm'.

.....

..... [1]

b) Describe what Bernard's algorithm does.



.....

..... [3]

Nicola has a list of numbers: 2, 3, 7, 5, 13, 11.

a) She says, "I can't use a binary search to find 13." Why is this the case?

..... [1]

b) Show the steps of a linear search to find 13 in the list above.

..... [2]

[Total 3 marks]






Sonia has a sorted list of ice cream flavours that she sells in her shop.

a) Show the stages of a binary search to find the word 'butterscotch' in the list below.

| | | | | |
|--------------|-----------|------|------------|---------|
| butterscotch | chocolate | mint | strawberry | vanilla |
|--------------|-----------|------|------------|---------|

INNOVATION

LANDSCAPE ARTISTS

| | | | |
|---|---|---|---|
|  | <p style="text-align: center;">David Hockney</p> <p>One of Britain’s most prominent painters of the 20th century is David Hockney. Born in Bradford, his works include not just paintings but also prints, stage designs and photography.</p> | <p style="text-align: center;">Leonid Afremov</p> <p>Leonid Afremov is a Russian–Israeli modern impressionistic artist who works mainly with a palette knife and oils. He has developed his own unique technique and style which is unmistakable and cannot be confused with other artists.</p> | <p>Hockney</p>  |
|  | <p>In the 1990’s he produced oil on canvas paintings showing views of East Yorkshire. With vibrant colours, there can be seen a winding and rippling roads that run up through the middle of the paintings. Features of the villages look like a patchwork of shapes. And the bright colours help make these features stand out. He also provides a sense of perspective by varying the size of the different features ,so that the smaller the image is, the further away it appears. Equally, as something gets further away, there is less detail than something closer.</p> | <p>He works from photographs taken from his world travels, with his paintings reflecting a personal memory and emotion, focusing on the feeling rather than a story. He combines the use of a palette knife with bright colors along with a positive reflection of his surroundings to make each work appealing to almost any person. Each of his paintings brings different moods, colours, and emotions as he loves to express the beauty, harmony, and spirit of the world in his paintings.</p> | <p>Afremov</p>  |
|  | <p>Born - 1937</p> | <p>Born - 1955</p> | |

KEY VOCABULARY

Landscape – a major theme in art with many artists using techniques such as drawing, painting, collage, video and photography to explore the ways we relate to the places we live in.

Perspective – The way of drawing three-dimensional objects on a two-dimensional surface, to show height, width and depth.

Impressionism – A way of painting using relatively small, thin, yet visible brush strokes to show an accurate depiction of light and dark.

ASSESSMENT CRITERIA

ASSESSMENT OBJECTIVE 1 - Develop ideas through investigations, demonstrating critical understanding of sources.

ASSESSMENT OBJECTIVE 2 - Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.

ASSESSMENT OBJECTIVE 3 - Record ideas, observations and insights relevant to intentions as work progresses.

ASSESSMENT OBJECTIVE 4 - Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

Write 3 relevant facts about each artist

Hockney:

Afremov:

Write the definitions for these words

Landscape –

Perspective –

Impressionism –

**Write about your likes/dislikes
of the different artist's work**

Hockney



Afremov



**Sketch part of one of these
pictures**

Individual nutritional needs, calories & the amount of energy they need varies from person to person. The factors that affect nutritional needs are:

Age: This affects our nutritional needs as you grow your body develops & it requires more energy. However, after the age of 40, the metabolic rate slows down & then not as much food (energy) is required

Gender: Males usually require more energy than females as they tend to have greater muscle mass & be more heavily built.

Activity Levels: The more active a person is the more energy they require, which is provided by the food they eat.

Health Conditions: This is affected depending if you have an allergy, intolerance or specific needs e.g. coeliac, diabetic. People maybe on a diet for specific reasons e.g. obesity; high cholesterol, coronary heart disease or high blood pressure.

Pregnant Women

Pregnancy does not mean eating for 2, but caring for 2 instead. The baby's brain, heart & lungs are developed even before the 6 week point. During the first 12 weeks the baby's growth is rapid. At 12 weeks the placenta takes over from the nutrients in the sac & extracts the nutrients from the blood supply. **Folic acid** aids the development of the spinal system & the neural motor tubes.

Need slightly more food intake for energy, increase in protein.

Enough iron, calcium, vitamin D and Folic Acid for foetal development*

Daily requirements of pregnant women:

Calories = additional 300 in 2nd & 3rd trimester

Calcium = 1200 milligrams

Folate (Folic Acid) = 600-800 micrograms

Iron = 27 milligrams.

The increased Iron intake form red blood cells & the babies iron store is produced during pregnancy, then lasts for 6mnths after birth



Babies & Infants-totally reliant on parents to provide food

Breast-feeding is optimum feeding for first 6 months this provides the baby with protein, and vitamins. Fat soluble vitamins are essential to help support the babies growth. The advantages for baby are a lower risk of infection, protection against allergens, provides correct mix and quantity of nutrients, plus baby only takes what it needs. Advantages for mother are no preparation needed, help with weight loss after birth & it is associated with lower risk of certain cancers; eg. Breast & ovarian.

Vitamin A, C & D and calcium all important for infants.



Toddlers/Pre-school children

Toddlers and pre-school children grow at a slower rate than infants. Toddlers are Growing fast & require a lot of energy from their food but need a balanced diet that provides **complex carbohydrates** to provide this energy. (**Complex carbohydrates** are found in foods such as whole grains, vegetables like peas & beans.) They need enough energy or calories to fuel their active play and their various stages of growth, but they do not need adult-size portions. Servings for these children should be a quarter to a third the size of an adult portion. Avoid giving large amounts of sweet desserts, soft drinks, fruit-flavored drinks, sugarcoated cereals, chips, or candy. These foods have little to no nutritional value and will fill a child up quickly, leaving little room for more nutritious foods. Younger children usually like plain, unmixed foods, as well as finger-foods that make eating easier. The Eatwell guide can be used to model a balanced diet for this group of people. Offer them meals with plenty of variety from each of the food groups. If your children don't like spinach, don't assume they don't like vegetables. Just offer another vegetable.



School-Age Children

School-aged children are still reliant on parents but can be influenced by media & their peers. They need a variety of foods that are based on the eat well guide & they need to take regular physical activity to maintain a healthy body weight. It is recommended that a school-age child should partake in exercise for a minimum of 60 mins per day. Through school-age children eating a healthy diet it can enhance their growth and optimize development. When children eat too many calories & not enough nutrients it can lead to malnutrition, obesity or both. Malnutrition in children can result in difficulty learning, poor growth, fatigue, dizziness, weakness, a low body weight and decaying teeth.



Use the information to answer the questions in your reflection log. Use full sentences.

1. What factors affect nutritional requirements?
2. Which gender requires the most energy and why?
3. What is the importance of taking folic acid when you are pregnant?
4. What type of foods should toddlers eat to provide energy?
5. What foods should toddlers and pre-school children avoid? Explain why?
6. How many minutes of exercise should a school age child do per day?
7. Why is exercise important for a child?
8. What issues can occur for a child who doesn't eat the right amount of calories/nutrients?
9. What is the impact of malnutrition in children? How does it affect them?

KEY VOCABULARY/ TERMS
Learn the spelling of each word and look up any you do not know.

| | |
|----------------------|--------------|
| Gender | Activity |
| Requirement | Extract |
| Complex Carbohydrate | Malnutrition |
| Obesity | Metabolic |
| Development | Intolerance |

Music Knowledge Organiser

Year 11 : Mozart Clarinet Concerto

INSTRUMENTATION

- Clarinet in A, meaning it is transposing and has a different key signature to the other instruments.
- At b160, all registers of clarinet are showcased - chalumeau (low), clarion (mid) and altissimo (high).
- Scored for violins (C major), cello (C major) flutes (C major), fagotti (C major).

RHYTHM

- 6/8 time signature.
- Extremely quaver and semiquaver based, creating a lively atmosphere and allowing the clarinet to show off.
- Waltz-like 'um-cha-cha' accompaniment at b84.

STRUCTURE

- Rondo structure ABACADAEA etc... The Rondo theme is 8 bars long
- The 3rd movement as a whole is part of a concerto
- Silence often marks the beginning of a new section (b127)

MELODY

- Balanced phrases of antecedent and consequent – very typical of Cl
- Heavy use of major scales – typical of Cl
- As it's highly scalar, it is also highly conjunct
- Rondo theme starts on anacrusis - lively
- Chromatic at times – cheeky and colourful
- Mixture of staccato and slurs – playful
- Triadic melody in last bar of Rondo theme - affirms major key
- Heavy use of major arpeggios (b20)
- Use of acciaccaturas, tremolos and trills for playfulness
- At bar 77, flute plays Rondo theme as clarinet accompanies with a descending sequence.

TEXTURE

- Tutti sections where everyone plays together
- Several examples of call and response between the clarinet and orchestra
- When clarinet is doing its thing over the orchestra, this is generally homophonic

HARMONY

- A major - happy
- Moves to several predictable/related keys such as E major (the dominant), D major (subdominant) and F# minor (relative minor)
- Several examples of perfect cadences for finality
- Use of tonic pedals (A) to confirm the A major key
- Use of Neapolitan 6th chord for colour
- At b230, there is dissonance that is quickly resolved – typical of classical music.
- Uses several dominant 7th chords

TEMPO

- Titled as 'allegro' – lively

Music Knowledge Organiser

Year 11 : Mozart Clarinet Concerto

Example Questions (8 marks):

- How is this typical of the Classical Era?
- How does this showcase the clarinet?
- How does the Rondo theme create optimism?
- Describe the melody and harmony.



Extension Tasks

- Regularly listen to the Clarinet Concerto with your score in front of you
- Watch the Youtube video with annotations and explanations.
- Transfer your knowledge organiser notes onto your Mozart score

CLARINET IN A

Explain the features of the clarinet in Mozart's time.








- Clarinet in A is a transposing.
- What is written will sound a 3rd higher.
- The chalumeau (low) register of the clarinet is lower than modern clarinets today.
- This clarinet was less likely to have accurate intonation.

BALANCE AND CONTRAST

- List each elements of music.
- Create two columns to show how Mozart used each element of music in balance/contrast
- E.g dynamics – quiet vs loud.
rhythm – long vs short note values.

VOCABULARY

Melody with accompaniment Tutti Clarinet in A Transposing instrument Chalumeau register Rondo form
A major Modulation F# minor (relative minor) A minor (tonic minor) 6/8 time signature Allegro Perfect and
imperfect cadences Neapolitan 6th chord Anacrusis Scalic movement Triadic movement Some chromatic movement

| Artists | | Themes | Techniques | Vocabulary | Explained |
|--|------------------------|----------------------|-----------------------|-----------------------|--|
|  | Sandra Meech | <i>Trees</i> | Painting and collage | Composition | The arrangement of a piece of work or the 'layout'. |
|  | Rosie James | <i>Figures</i> | Stencil printing | Linear drawing | A drawing created with lines. |
|  | Cas Holmes | <i>Found Objects</i> | Mixed-media collage | Mixed-media | Work that combines various visual art media —for example, one that combines paint, ink, and collage. |
|  | Naomi Renouf | <i>Coast</i> | Fabric pastels | Tonal | The degree of lightness or darkness of an area. Tone varies from the bright white of a light source through shades of grey to the deepest black shadows. |
|  | Tilleke Schwarz | <i>Doodles</i> | Hand stitching | Narrative | A spoken or written account of connected events; a story. |
|  | Gwen Hedley | <i>Abstraction</i> | Wax resist | Abstract | Not representing reality, but exploring shape, colour and textures. |
|  | Nicola Henley | <i>Birds</i> | Mixed-media paintings | Expressive | Conveying thought or feeling in the work. |

Answer the following questions in your reflection log.

What does the word 'composition' mean?

What does the word 'mixed-media' mean?

Which artist uses figures as one of her main themes? What techniques does she use?

What word could you use to describe showing thought or feeling in the work?

Naomi Renouf likes to work using pastels. What theme inspires her work?

R184 | CONTEMPORARY ISSUES IN SPORT

TOPIC AREA 1

Understand the issues which affect participation in sport

User Groups



Gender

The characteristics of males, female, boys and girls that are socially constructed.

People from different ethnic groups

A group within a community which has different national or cultural traditions from the main population.

Retired people/people over 60

A retired person is an older person who has left his or her job and has usually stopped working completely.

Families with children

Adults with dependent children under eighteen, including pregnant and parenting teens.

Carers

A family member or paid helper who regularly looks after a child or a sick, elderly, or disabled person.

People with family commitments

A person who has responsibilities of looking after a family.

Young Children

A young human being below the age of puberty or below the legal age of majority.

Teenagers

A person aged between 13 and 19 years.

People with disabilities

A person having a physical or mental condition that limits their movements, senses, or activities.

Parents (Singles or Couples)

a person(s) bringing up a child or children.

People who work

A person(s) having a paid job.

Unemployed/economically disadvantaged

Without a paid job but available to work. Or someone hasn't got a lot of money.

Possible Barriers



These are possible **barriers** which affect participation in sport

Employment and unemployment

Employed people may have a lack of time to take part in physical activity or sport. On the other hand, unemployed people may have a lack of disposable income to take part in sport.

Family commitments

People with family commitments may have a lack of time to take part in sport or physical activity for many reasons.

Lack of disposable income

Sports can be expensive to play. For example, golf memberships can really expensive so some people may not be able to play.

Lack of transport

Some people may find it difficult to take part in sport due to the access to sporting facilities.

Lack of positive sporting role models

People may not be inspired to take part in sport due to the lack of role models in a particular sport.

Lack of positive family role models or family support

If a person has a negative family role model, they are less likely to take part in sport.

Provision of activities

If an activity is not available or provided for a certain group or sport, people may find it difficult to take part.

Awareness of activity provision

If a particular group of people are not aware of what sports/physical activity that is available then they won't be able to participate.

Portrayal of gender issues by the media

The media may portray that certain sports are only played by males, or stereotyping particular ethnicities for certain sports.

Possible barrier solutions

The **solutions** to barriers which affect participation in sport, i.e.

Provision

Programming sessions for use by different user groups (e.g. sessions for wheelchair sports).

Providing appropriate sessions options for the demands of specific user groups (e.g. different age groups want different options).

Providing appropriate activity having appropriate activities for different user groups e.g. Walking football for over 60s

Planning of times to suit different user groups (e.g. for parents with young children, midmorning after the school run).

Promotion

Targeted promotion (e.g. by advertising in appropriate places to increase visibility to different user groups)

Using role models to encourage participation among different user groups

Initiatives aimed at promoting participation and inclusion (e.g. free swimming for under16s and over-60s)

Access

Access to facilities (e.g. ramps for wheelchair access to buildings)

Access to equipment (e.g. a hoist for swimming pool access)

Sensible pricing/concessions (e.g. reduction of charges for unemployed people or young children)

Popularity



Factors

These are the factors which can impact upon the popularity of sport in the UK, i.e.

Participation (e.g. football has widespread mass participation due to strong infrastructure being in place).

Provision (e.g. tennis lacks easily accessible courts impacting on base level participation).

Environment/climate (e.g. snow sports may be a problem in some countries).

Live spectator opportunities (e.g. live professional rugby matches readily accessible).

The amount and range of media coverage (e.g. BBC1 has sole coverage of Wimbledon, The Ashes not on free to air TV).

Success for both teams and individuals (e.g. Sir Chris Hoy's success at the Olympics has increased participation in cycling).

The number and range of positive role models available (e.g. If the number of role models in a particular sport increase then so will the participation).

Social acceptability (e.g. boxing may seem not acceptable).

Trends

Current trends in the popularity of different sports in the UK (e.g. studies and statistics in recent years have suggested that recreational walking, fishing/angling, cycling and swimming are the most popular sports in the UK in terms of numbers participating).

New/Emerging sports

Growth of new/emerging sports and activities in the UK (e.g. For example, footgolf, pickleball and skateboarding are all new/emerging sports in the UK).

Key Terms

■ **Disposable income** - the amount of money that a person or household has to spend or save after income taxes are deducted.

■ **Accessibility** - being easy to obtain or use.

■ **Role model** - a person looked to by others as an example to be imitated.

■ **Provision** - the action of providing or supplying something for use.

■ **Awareness** - knowledge or perception of a situation or fact.

■ **Promotion** - the publicising of a something to raise public awareness.

■ **Trends** - a general direction in which something is developing or changing.

■ **Emerging/New sport** - Refers to non-tradition sports.

10 KEY QUESTIONS

R184 | Issues which affect participation in sport | Topic Area 1

- 1 Name all the user groups who participate in sport.
- 2 Name all the barriers in sport.
- 3 Link the most likely barrier for each user group.
- 4 Name all the possible barriers solutions.
- 5 Name all the user groups and identify 2 barriers for each.
- 6 Name 2 user groups, identify 2 barriers and come up with 1 solution for each.
- 7 What are all the factors that impact the popularity of sport in the UK.
- 8 How can the factors have a positive and negative impact on the sport?
- 9 What are the current trends of sport in the UK?
- 10 Name 2 emerging sports.

Answer all the above question without using your knowledge organiser first. Then, turn to your knowledge organiser and find the answers.



Definition

The use of images and design to convey certain ideas and information is called illustration. Illustrations are used to highlight a particular point; to advertise on packaging for example.

Characteristics

- Illustrations are;
 - *Decorative and stylised
 - *Accompaniments to literary work
 - *Created from scratch on paper or technology
 - *Unique and suited to a purpose
 - *Usually coloured or shaded
 - *Not usually found with text in them



Purpose

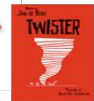
Illustrations are used to help a person understand the content of the work they are reading or listening to. They introduce an involvement and physical representation of what the artist or creator wants you to think, feel or do when looking at the art. Therefore, illustrations can be professional, childish or creative depending on what the creator's goal is.

Illustration



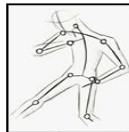
Designers

- Some successful illustrators are;
 - *Gail Armstrong (paper sculpture)
 - *Stan Lee (Marvel Comics)
 - *Saul Bass (book/film covers)
 - *Shepard Fairey (posters/art)
 - *Ralph Steadman (art)
 - *Quentin Blake (children book illustrations)



Process

Illustration deeply depends on having a clear idea or objective in the person's mind from which they brainstorm sketches from. These ideas can be outlined and edited physically (on paper) or drawn out digitally and worked on that way. Illustrators experiment with colours and the textures they can create with these to produce a final piece of art for their specific purpose.



Types

- Illustration can be presented as;
 - *hand-drawn or digital art-
 - *packaging and advertisements-
 - *children's books-
 - *book and magazine covers-
 - *comic book or manga pages-
 - *album covers-



ASSESSMENT CRITERIA

Competence - How you complete and improve your work using the project activities.

Technical ability – Using one area of graphic design develop a successful graphic design for Unit 2.

KEY VOCABULARY

Definition, Characteristics, Purpose, Process

Components of graphic design

What are three characteristics of Illustration?

-
-
-

What is the purpose of Illustration?

.....
.....
.....
.....
.....

Name three areas of graphic design that Illustration can be used?

-
-
-

Explain the definition of Illustration. (answer in your own words)

.....
.....
.....

Name four successful Illustrators

-
-
-
-

Research your favourite Illustrator.

What is the name of your favourite Illustrator?

.....
.....

When were they active?

.....
.....

What style did they use? (realism, abstract, childish)

.....
.....

What different areas did they work in? (Book covers, posters/ advertising, album artwork.)

.....
.....

What medias did they use? (paint, ink, digital art, collage ect.)

.....
.....

Give three examples of their work

-

