



HOUSTONE
SCHOOL

Year 10 – 100% Book Term 1 - 2022

NAME	
FORM GROUP	



The Science of Learning

How to do Retrieval Practice

1. Study the material you are trying to learn first. Take about 20 minutes the first time BUT this will get less and less each time as you get to know the material.

You can study the material by;

- Reading it again, over and over
- Look/cover/write/check
- Creating flashcards that you test yourself on

2. Pick up and use a **black pen**.

Put away all the answers and test yourself writing everything you remember in the blank spaces provided. Do not cheat!

3. Now pick up and use a **green pen**.

Check your answers:-

- Tick all of your correct answers
- Amend any incorrect answers (even if they are slightly wrong)
- Fill in any blank spaces with the correct answer copying the answer word for word
- Check all spellings are correct

4. Repeat the process as many times as you need to, pay special attention to your previous green pen answers (as these are the bits you need to learn!)

5. *Tip:- Lay blank pieces of paper over the answers in order to re-use the quiz again and again*

Tip: - Even if you think you know it test yourself a week or so later to check you do.

Tip: - Do not leave it until the last minute – do some every week in the summer holidays (this is called Spaced Practice)

Tip: - Once you think you know it test yourself on everything AGAIN

Retrieval practice feels hard but it is a really effective way to learn and commit knowledge to long term memory!



KNOWLEDGE ORGANISER

Art & Design

Year 10 – The Formal Elements 2D (Half Term 1)

Prior Learning Check

- How to use a pencil to create tone
- How to use symmetry to plot and draw objects

Key Knowledge

DEVELOP ideas: AO1

You will learn:

- How to describe and construct artworks using the Formal Elements
- About key artists who use line, shape, colour, texture and tone
- How to explain connections between artist research and your own work

EXPLORE ideas: AO2

You will learn to:

- Use tools and materials to convey different linear qualities
- Use tools and materials to convey different and textural qualities
- Render with pencil, biro and other tonal media

RECORD ideas: AO3

You will study approaches to drawing which focus on:

- How to observe
- How to use line in a varied way for descriptive effect
- How to analyse shape and proportion
- How to see positive and negative space and use this to check accuracy
- How to suggest form and texture through mark-making such as cross-hatch.
- How to create illusion of depth on a flat surface
- How to record thoughts/observations in annotation

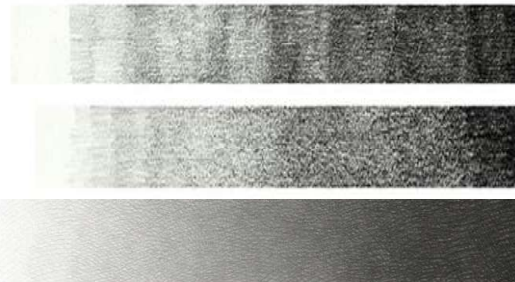
PRESENT ideas: AO4

- Use a sketchbook to layout work and show the development of your skills/project
- To compose imagery using the Rule of Thirds

POSSIBLE OUTCOMES: examples of excellence

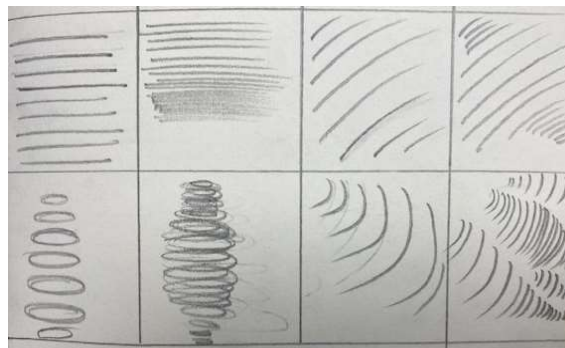


Motor Skills 1: Tonal Gradients



Controlling pressure, layering and mark to create seamless transitions between tone without smudging

Motor Skills 2: Form and Contour Gestures



1. Medium	The materials and methods used to make a piece of art or design e.g paint (Plural = media)
2. Line	The path left by a moving point. Lines can vary in thickness, length and direction to convey different qualities.
3. Shape	A line which meets itself. A shape is flat and has no depth (2D). It can be regular like a circle, square or triangle, or irregular
4. Texture	The way something feels or looks like it feels.
5. Tone	The lightness or darkness of colour. This can be used to suggest 3D form.
6. Observation	The power to see clearly or take notice of something
7. Scale	The physical size of an artwork or objects in the artwork.
8. Proportion	the different sizes of the individual parts that make up one object and how they relate to each other
9. Contour	Lines that are used to define the shape or form of an object
10. Render	The process of creating the effects of light, shade and light source to achieve contrast in drawings. Linked to contour.
11. Study	An observational drawing in any medium/ format
12. Composition	How visual elements are laid out to create a visually pleasing artwork

ENGLISH LITERATURE 1

Knowledge Organiser: *An Inspector Calls*

WHO'S WHO? KEY CHARACTERS	
1. Mr Arthur Birling	The patriarch of the Birling family. Factory owner and capitalist. Birling is arrogant, avaricious and ignorant
2. Mrs Sybil Birling	Arthur's wife, from a higher social background. Chairwoman of a Brumley Women's Charity. Mrs Birling is prejudiced, snobbish and supercilious
3. Gerald Croft	Son of Lord and Lady Croft. Engaged to be married to Sheila Birling. Gerald is handsome, privileged and traditional
4. Sheila Birling	Arthur and Sybil Birling's daughter. Engaged to be married to Gerald Croft. Sheila is naïve, inquisitive and open-minded
5. Eric Birling	Arthur and Sybil Birling's son. Seems to have a drinking problem. Eric is unstable, uncertain and reckless
6. Edna	The Birling family's maid. Has very few lines in the play. Edna is a visual representation of the voiceless underclass
7. Inspector Goole	A mysterious Inspector who arrives to investigate the death of Eva Smith. Embodies Priestley's own socialist values. The Inspector is enigmatic, authoritative and influential
8. Eva Smith/Daisy Renton	Suicide victim, involved with the lives of all the Birling family. Does not physically appear on stage. Eva is sympathetic, vulnerable and tragic

WHAT HAPPENS?	
9. Act One	We are introduced to the privileged Birling family, who are celebrating Sheila's engagement to Gerald Croft. Their celebrations are interrupted by the arrival of a Inspector, who is here to investigate the suicide of a working class woman, Eva Smith. It is revealed that Eva once worked at Mr Birling's factory, but was sacked for becoming involved in strike action. She was then dismissed from another job in a clothes shop after Sheila made a complaint about her. Whilst Sheila feels immensely guilty for her actions, Mr Birling does not. Act One concludes when it becomes obvious that Gerald Croft also knew Eva Smith too, once she changed her name to Daisy Renton.
10. Act Two	It is revealed that Gerald Croft and Eva/Daisy had an affair, though due to their class differences Gerald had no intention of continuing it beyond the summer. Sheila gives him back the engagement ring. The Inspector reveals that Eva was due to have a child, and went to Mrs Birling's charity committee for help. Mrs Birling turned her away. The final reveal of Act Two is that Eric was the father of Eva's unborn child.
11. Act Three	Eric is confronted for his role in Eva Smith's death – he forced himself upon her, got her pregnant and stole money from his father's company to offer to her. When realising that Eva's child was his, and that Mrs Birling turned her away, Eric is distraught. The Inspector leaves, telling the Birlings that they all must share the responsibility for what they did and that they have a wider social responsibility. After the Inspector leaves, the older Birlings and Gerald try to deflect the blame, but Sheila and Gerald are horrified by their elders' actions. Whilst Gerald discovers that the Inspector may have been a hoax and that no girl has apparently died, the play ends with the reveal that an Inspector is in fact on his way to interrogate the family for real...

ENGLISH LITERATURE 2

KEY THEMES AND CONCEPTS

12. Social Responsibility	The extent to which people should look after others in their community
13. Duty	One's responsibility to one's family and wider community
14. Class	One's social position, determined by their money, birth, environment, education and opportunities
15. Gender Roles	The expected behaviour and roles of men and women within society
16. Generational Differences	The expected behaviour and roles of older and younger people within society
17. Power	The use (and abuse) of positions of authority and privilege
18. Change	The ability for individuals and societies to evolve and progress
19. Exploitation	The abuse of power over those in lower social positions

KEY CONTEXT

20. Edwardian Era - 1912	A time of great social division, where the rich got richer and the poor got poorer. When Priestley set the play
21. Post-war era - 1945	A time of potential social change and rebuild, following the Second World War. When Priestley wrote the play
22. The Titanic	An enormous cruise ship, built to show off Britain's industrial might in the Edwardian era. Sank on its maiden voyage when it hit an iceberg, killing 1500 people (mostly lower class citizens)
23. The Suffragettes	A group of women, led by Emmeline Pankhurst, who campaigned for women's rights (especially the right to vote) during the Edwardian era
24. Strikes	Many industrial strikes occurred in Britain during the early part of the twentieth century, as workers protested against low pay and poor conditions

KEY VOCABULARY

25. privilege	a special right, advantage, or immunity granted or available only to a particular person or group
26. prejudice	preconceived opinion that is not based on reason or actual experience
27. capitalism	an economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state
28. socialism	a political and economic theory of social organization which advocates that the means of production, distribution, and exchange should be owned or regulated by the community as a whole
29. conscience	a person's moral sense of right and wrong, viewed as acting as a guide to one's behaviour
30. hierarchy	a system in which members of an organization or society are ranked according to relative status or authority
31. individualism	social theory favouring freedom of action for individuals over collective or state control
32. collectivism	the practice or principle of giving a group priority over each individual in it
33. conceited	excessively proud of oneself; vain
34. brazen	bold and without shame
35. mouthpiece	a person or organization who speaks on behalf of another person or organization
36. open-minded	willing to consider new ideas; unprejudiced
37. misogynistic	strongly prejudiced against women
38. microcosm	a community, place, or situation regarded as encapsulating in miniature the characteristics of something much larger
39. omniscient	knowing everything

ENGLISH LANGUAGE

Knowledge Organiser: Creative Reading and Writing

Key Skills	
1. Retrieve	To find and re-state explicit information
2. Analyse	To explore the possible meaning and effect of a writer's choices
3. Language	The choice and meaning of words, and the effect they generate on a reader
4. Structure	The sequencing and order of a text, and the effect this generates on a reader
5. Evaluate	To make a judgement relating to an idea or statement. To express and justify your own opinion
6. Story	A short piece of fictional writing
7. Description	A short piece of writing focusing on building a detailed, multi-sensory image of a character, setting, event and/or atmosphere

Key Language Techniques	
8. simile	A comparison between two things using 'like' or 'as'
9. metaphor	A direct comparison between two things
10. personification	The use of language to give life or personality to an inanimate object
11. onomatopoeia	A word whose sound reflects the sound it describes
12. imagery	Descriptive language that creates a multi-sensory image for a reader
13. hyperbole	Exaggeration; going over the top
14. repetition	A word or phrase is used more than once in quick succession
15. alliteration	A letter or sound is used more than once in quick succession
16. emotive language	Language that is designed to trigger a particularly strong feeling or emotion in the reader
17. rhetorical question	A question phrased in such a way that the questioner does not expect an answer (usually because the answer is implied)
18. tone	The general character or 'feel' of a piece of writing

Key Structural Techniques	
19. opening sentence	The first sentence of a piece of writing
20. foregrounding	The focus of a section of text – placed in the 'foreground'
21. establishing setting	The writer focuses on building a description of place
22. establishing character	The writer focuses on building a description of one or more characters
23. exposition	The writer provides backstory or additional information needed to understand the story
24. dialogue	The written form of conversation between two or more characters
25. spatial and temporal shifts	A significant change, or 'shift' during the story. Spatial shifts are changes in setting; temporal shifts are changes in time
26. flashback	The writer 'goes back in time' to describe something that happened earlier
27. thought tracking	The writer allows the reader an insight into the thought process of a character
28. perspective	The point of view from which the piece of writing is told
29. pace	The speed at which the story is told, and/or the reader is encouraged to read
30. contrast/juxtaposition	Opposite ideas, concepts, characters and settings are placed in close proximity to one another to emphasise the difference between them
31. closing sentence	The final sentence of a piece of writing
32. foreshadowing	The writer provides hints, references or clues to events that will happen later in the piece of writing

Key Parts of a Story	
33. Introduction	The characters and/or setting are introduced
34. Rising action	Events occur that build tension and lead to a problem or conflict
35. Climax	The main problem or conflict in action. Tension and excitement are at their peak
36. Falling action	Characters work to solve the problem or conflict
37. Conclusion	How the story ends

SCIENCE 1

CB1a Microscopes	
1. Eyeiece lens	The part of the microscope you look down.
2. Magnification	How much bigger something appears compared with its actual size.
3. Objective lens	The part of the microscope that is closest to the specimen.
4. Resolution	Smallest change that can be measured by an instrument. For example, in a microscope it is the smallest distance between two points that can be seen as two points and not blurred into one point.
5. Stain	A dye used to colour parts of a cell to make them easier to see.
CB1b Plant and Animal Cells	
6. Aerobic respiration	A type of respiration in which oxygen is used to release energy from substances, such as glucose.
7. Cell (surface) membrane	The membrane that controls what goes into and out of a cell. It is often called the cell surface membrane because eukaryotic cells contain other structures with membranes.
8. Cell sap	Liquid found in the permanent vacuole in a plant cell.
9. Cell wall	A tough layer of material around some cells, which is used for protection and support. It is stiff and made of cellulose in plant cells. Bacteria have a flexible cell wall.
10. Chlorophyll	The green substance found inside chloroplasts. It traps energy transferred by light.
11. Chloroplasts	A green disc containing chlorophyll, found in plant cells. Where the plant makes glucose, using photosynthesis.
12. Chromosome	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule.
13. Cytoplasm	The watery jelly inside a cell where the cell's activities take place.
14. DNA	A substance that contains genetic information. Short for deoxyribonucleic acid.
15. Eukaryotic	A cell with a nucleus is eukaryotic. Organisms that have cells like this are also said to be eukaryotic.
16. Field of view	The circle of light you see looking down a microscope.
17. Mitochondrion	A sub-cellular structure (organelle) in the cytoplasm of eukaryotic cells, where aerobic respiration occurs. Plural is mitochondria.
18. Nucleus	The 'control centre' of a eukaryotic cell.
19. Ribosome	Tiny sub-cellular structure that makes proteins.

20. Scale bar	A line drawn on a magnified image that shows a certain distance at that magnification.
21. Scientific paper	An article written by scientists and published in a science magazine called a journal. It is like an investigation report but usually shows the results and conclusions drawn from many experiments.
22. Vacuole	A storage space in cells. Plant cells have a large, permanent vacuole that helps to keep them rigid.
CB1c Specialised Cells	
23. Acrosome	A small vacuole in the tip of the head of a sperm cell, which contains enzymes.
24. Adaptation	The features that something has to enable it to do a certain function (job).
25. Adapted	If something has adaptations for a certain function (job), it is said to be adapted to that function.
26. Ciliated epithelial cell	A cell that lines certain tubes in the body and has cilia on its surface.
27. Cilium	A small hair-like structure on the surface of some cells. Plural is cilia.
28. Digestion	A process that breaks molecules into smaller, more soluble substances.
29. Diploid	Describes a cell that has two sets of chromosomes.
30. Egg cell	The female gamete (sex cell).
31. Embryo	The tiny new life that grows by cell division from a fertilised egg cell (zygote).
32. Enzyme	A substance that can speed up some processes in living things (e.g., Breaking down molecules).
33. Epithelial cell	A cell found on the surfaces of parts of the body.
34. Fertilisation	Fusing of a male gamete with a female gamete.
35. Gamete	A cell used for sexual reproduction.
36. Haploid	Describes a cell that has one set of chromosomes.
37. Microvillus	A fold on the surface of a villus cell. These folds increase the surface area so that digested food is absorbed more quickly. Plural is microvilli.
38. Oviduct	A tube that carries egg cells from the ovaries to the uterus in females. Fertilisation happens here.
39. Specialised cell	A cell that is adapted for a certain specific function (job).
40. Sperm cell	The male gamete (sex cell).

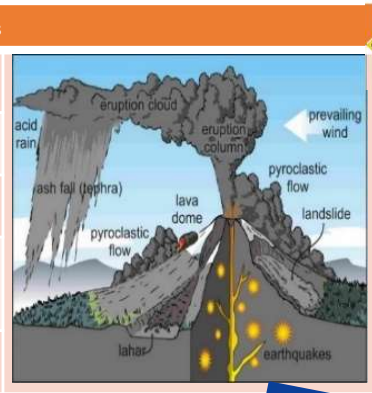
SCIENCE 2

CB1d Inside Bacteria	
41. Chromosomal DNA	DNA found in chromosomes but the term is often used to describe the large loop of DNA found in bacteria.
42. DNA	A substance that contains genetic information. Short for deoxyribonucleic acid.
43. Flagellum	A tail-like structure that rotates, allowing a unicellular organism to move. Plural is flagella.
44. Index	A small raised number after a unit or another number to show you how many times to multiply it by itself. For example, 10^3 means multiply 10 together 3 times ($10 \times 10 \times 10$).
45. Plasmid	A small loop of DNA found in the cytoplasm of bacteria.
46. Plasmid DNA	DNA found in plasmids.
47. Prokaryotic	A cell with no nucleus is prokaryotic. Organisms such as bacteria, which have cells like this, are also said to be prokaryotic.
48. Standard form	A very large or very small number written as a number between 1 and 10 multiplied by a power of 10.
CB1e Enzymes and Nutrition	
49. Biological catalyst	A substance found in living organisms that speeds up reactions (an enzyme).
50. Catalyst	A substance that speeds up the rate of a reaction, without itself being used up.
51. Digest	To break down large molecules into smaller subunits, particularly in the digestive system.
52. Monomer	A small molecule that can join with other molecules like itself to form a polymer.
53. Polymer	A substance made up of very long molecules containing repeating groups of atoms. (formed by joining monomer molecules together.)
54. Product	A substance formed in a reaction.
55. Substrate	A substance that is changed during a reaction.
56. Synthesis	To build a large molecule from smaller subunits.
CB1f Enzyme Action	
57. Active site	The space in an enzyme where the substrate fits during an enzyme-catalysed reaction.
58. Denatured	A denatured enzyme is one where the shape of the active site has changed so much that its substrate no longer fits and the reaction can no longer happen.

59. Lock-and-key model	Model that describes the way an enzyme catalyses a reaction when the substrate fits within the active site of the enzyme.
60. Specific	Where an enzyme only reacts with one kind of substrate.
CB1g Enzyme Activity	
61. Optimum pH	The pH at which an enzyme-catalysed reaction works fastest.
62. Optimum temperature	The temperature at which an enzyme-catalysed reaction works fastest.
CB1h Transporting Substances	
63. Active transport	The movement of particles across a cell membrane from a region of lower concentration to a region of higher concentration (<i>against</i> the concentration gradient). The process requires energy.
64. Diffusion	When particles spread and mix with each other without anything moving them. Diffusion into and out of cells occurs for particles that are small enough to pass through the cell surface membrane.
65. Concentration	The amount of a solute dissolved in a certain volume of solvent. Measured in units such as g/cm^3 .
66. Concentration gradient	The difference between two concentrations. There will be an overall movement of particles <i>down</i> a concentration gradient, from higher concentration to lower concentration.
67. Osmosis	The overall movement of solvent molecules in a solution across a partially permeable membrane, from a dilute solution to a more concentrated one.
68. Passive	A process that does not require energy is passive. A passive process is the opposite of an active process (which requires energy).
69. Semi-permeable	Describes something that will allow certain particles to pass through it but not others. Another term for 'partially permeable'.
70. Solute	The solid that has dissolved in a liquid to make a solution.
71. Solvent	The liquid in which a substance dissolves to make a solution.

The structure of the Earth	
The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

Volcanic Hazards	
Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.



Managing Volcanic Eruptions	
Warning signs	Monitoring techniques
Small earthquakes are caused as magma rises up.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases.	Gas samples may be taken and chemical sensors used to measure sulphur levels.
Preparation	
Creating an exclusion zone around the volcano.	Being ready and able to evacuate residents.
Having an emergency supply of basic provisions, such as food	Trained emergency services and a good communication system.

Convection Currents

LIC-CS: Haiti Earthquake 2010

The crust is divided into tectonic plates which are moving due to convection currents in the mantle.

- Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
- When lower parts of the mantle molten rock (Magma) heat up they become **less dense** and **slowly rise**.
- As they move towards the top they cool down, become **more dense** and **slowly sink**.
- These **circular movements** of semi-molten rock are **convection currents**
- Convection currents create **drag** on the base of the tectonic plates and this causes them to move.

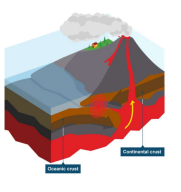
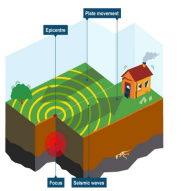
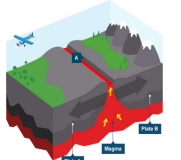
Causes
On a conservative plate margin, involving the Caribbean & North American plates. The **magnitude 7.0 earthquake** was only **15 miles** from the capital Port au Prince. With a very **shallow focus of 13km deep**.

Effects
230,000 people died and 3 million affected. Many **emotionally affected**. **250,000 homes** collapsed or were damaged. **Millions homeless**. Rubble blocked roads and shut down ports.

Management
Individuals tried to recover people. Many countries **responded with appeals or rescue teams**. Heavily relied on **international aid**, e.g. **\$330 million** from the EU. **98% of rubble** remained after **6 months**.

GEOGRAPHY

Types of Plate Margins

Destructive Plate Margin	When the denser plate subducts beneath the other, friction causes it to melt and become molten magma . The magma forces its way up to the surface to form a volcano. This margin is also responsible for devastating earthquakes .	
Constructive Plate Margin	Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge .	
Conservative Plate Margin	A conservative plate boundary occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.	

What is a Natural Hazard

A natural hazard is a natural process which could cause death, injury or disruption to humans, property and possessions.

Geological Hazard	Meteorological Hazard
These are hazards caused by land and tectonic processes.	These are hazards caused by weather and climate.

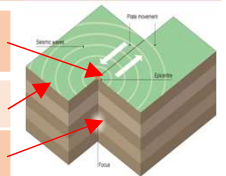
Causes of Earthquakes

Earthquakes are caused when two plates become **locked** causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.




Earthquake Management

PREDICTING

Methods include:

- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.




PROTECTION

You can't stop earthquakes, so earthquake-prone regions follow these three methods to reduce potential damage:

- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

HIC - CS: Eyjafjallajökull (E15) Eruption, Iceland 2010

Causes
The North-American and Eurasian plates move apart on a conservative plate. The disruption caused by Eyjafjallajökull was the result of a series of small volcanic eruptions from March to October.



Effects
The **thick ice cap** melted which caused major flooding. **No reported deaths**. Airspace closed across Europe, with at least **17,000 flights** cancelled. Costed insurers **£65m** to cancelled flights.

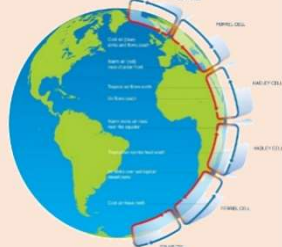
Management
Iceland had a good warning system with **texts being sent** to residents within **30 minutes**. Large sections of **European airspace were closed** down due ash spread over the continent. Airlines developed **ash monitoring equipment**.



Global pattern of air circulation

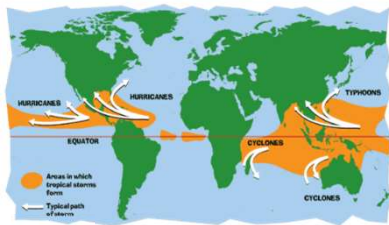
Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

Hadley cell	Largest cell which extends from the Equator to between 30° to 40° north & south .
Ferrel cell	Middle cell where air flows poleward between 60° & 70° latitude.
Polar cell	Smallest & weakest cell that occurs from the poles to the Ferrel cell.



Distribution of Tropical Storms.

They are known by many names, including **hurricanes (North America)**, **cyclones (India)** and **typhoons (Japan and East Asia)**. They all occur in a band that lies roughly **5-15°** either side of the Equator.



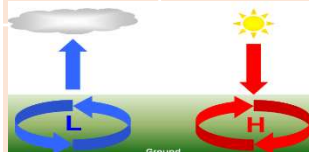
High and Low Pressure

Low Pressure

Caused by **hot air rising**. Causes **stormy, cloudy weather**.

High Pressure

Caused by **cold air sinking**. Causes **clear and calm weather**.



Formation of Tropical Storms

- The sun's rays heats large areas of ocean in the summer and autumn. This causes **warm, moist air** to rise over the particular spots
- Once the **temperature is 27°**, the rising warm moist air leads to a **low pressure**. This eventually turns into a thunderstorm. This causes air to be sucked in from the **trade winds**.
- With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to **spin**.
- When the storm begins to **spin faster than 74mph**, a tropical storm (such as a hurricane) is officially born.
- With the tropical storm growing in power, **more cool air sinks** in the centre of the storm, creating calm, clear condition called the **eye of the storm**.
- When the tropical storm hits land, it **loses its energy source** (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Changing pattern of Tropical Storms

Scientists believe that **global warming is having an impact on the frequency and strength of tropical storms**. This may be due to an **increase in ocean temperatures**.

Management of Tropical Storms



Protection Preparing for a tropical storm may involve construction projects that will improve protection.	Aid Aid involves assisting after the storm, commonly in LIDs.
Development The scale of the impacts depends on the whether the country has the resources cope with the storm.	Planning Involves getting people and the emergency services ready to deal with the impacts.
Prediction Constant monitoring can help to give advanced warning of a tropical storm	Education Teaching people about what to do in a tropical storm.

Primary Effects of Tropical Storms

- The intense winds of tropical storms can destroy whole **communities, buildings** and **communication networks**.
- As well as their own destructive energy, the winds can generate abnormally high waves called **storm surges**.
- Sometimes the most destructive elements of a storm are these subsequent **high seas and flooding** they cause to coastal areas.

Secondary Effects of Tropical Storms

- People are **left homeless**, which can cause distress, poverty and ill health due to lack of shelter.
- Shortage of clean water** and **lack of proper sanitation** makes it easier for diseases to spread.
- Businesses are damaged** or destroyed causing employment.
- Shortage of food as **crops are damaged**.

Case Study: Typhoon Haiyan 2013



Causes

Started as a tropical depression on **2nd November 2013** and gained strength. Became a Category 5 "**super typhoon**" and made landfall on the Pacific islands of the Philippines.

Effects

- Almost **6,500 deaths**.
- 130,000 homes destroyed**.
- Water and sewage systems destroyed had caused **diseases**.
- Emotional grief** for dead.

Management

- The UN raised **£190m** in aid.
- USA & UK **sent helicopter carrier ships** deliver aid remote areas.
- Education** on typhoon preparedness.

Case Study: UK Heat Wave 2003



Causes

The heat wave was caused by an anticyclone (areas of high pressure) that stayed in the area for most of August. This blocked any low pressure systems that normally brings cooler and rainier conditions.

Effect

- People suffered from heat strokes and dehydration.
- 2000 people died from causes linked to heatwave.
- Rail network disrupted and crop yields were low.

Management

- The NHS and media gave guidance to the public.
- Limitations placed on water use (hose pipe ban).
- Speed limits imposed on trains and government created 'heatwave plan'.



What is Climate Change?

Climate change is a **large-scale, long-term shift in the planet's weather patterns or average temperatures**. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Recent Evidence for climate change.

Global temperature	Average global temperatures have increased by more than 0.6°C since 1950 .
Ice sheets & glaciers	Many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by 10% in 30 years .
Sea Level Change	Average global sea level has risen by 10-20cms in the past 100 years. This is due to the additional water from ice and thermal expansion.

Enhanced Greenhouse Effect



Recently there has been an increase in **humans burning fossil fuels** for energy. These fuels (gas, coal and oil) emit **greenhouse gases**. This is making the Earth's atmosphere thicker, therefore trapping more solar radiation and causing **less to be reflected**. As a result, the Earth is becoming warmer.

Evidence of natural change

Orbital Changes	Some argue that climate change is linked to how the Earth orbits the Sun, and the way it wobbles and tilts as it does it.
Sun Spots	Dark spots on the Sun are called Sun spots. They increase the amount of energy Earth receives from the Sun.
Volcanic Eruptions	Volcanoes release large amounts of dust containing gases . These can block sunlight and results in cooler temperatures.

Managing Climate Change



Carbon Capture This involves new technology designed to reduce climate change.	Planting Trees Planting trees increase the amount of carbon is absorbed from atmosphere.
International Agreements Countries aim to cut emissions by signing international deals and by setting targets.	Renewable Energy Replacing fossil fuels based energy with clean/natural sources of energy.

HISTORY 1

Question	Answer
1 What was the Witan?	A council of nobles that advised the king
2 Which Anglo-Saxon kingdom became dominant?	Wessex
3 How was the king chosen in Anglo-Saxon England?	He was chosen by the Witan, and was usually the richest and most powerful noble
4 Why was the Church so important to Anglo-Saxon kings?	It had a significant influence on popular opinion and had a near-monopoly on literacy
5 What was the role of the king in Anglo-Saxon England?	To defend the kingdom, protect the Church and enforce the law
6 Which Viking king came to rule England in the 11th century? How did Cnut secure his control of England during his absences?	King Cnut
7 Which two changes did Edward the Confessor introduce to English government?	He divided the country into four earldoms Sheriffs and writs
9 Why did Henry II fall out with Thomas Becket?	They disagreed about benefit of clergy
10 How was Thomas Becket killed?	He was attacked by four knights in Canterbury Cathedral
11 Did the Becket dispute pose a major challenge to Henry II's power?	No - Henry still had the power to appoint some bishops and collect money from vacant bishoprics Because he did not consult them, taxed them highly and abused the justice system
12 Why did the barons rebel against King John?	The king could not sell justice, and was to be monitored by a council of 25 barons
13 What was agreed in Magna Carta? Identify three years in the thirteenth century in which Magna Carta was reissued.	1225, 1265 and 1297
14 Why did Simon de Montfort lead a rebellion against Henry III?	He and many other barons resented Henry's high taxes and unwillingness to consult his nobles
16 What were the Provisions of Oxford?	A set of constitutional reforms forced on Henry III by his barons. They required him to defer to a council of 24 advisors.
17 How was Edward I's parliament different to Henry III's?	He summoned it voluntarily
18 Why did Wat Tyler lead the Peasants' Revolt against Richard II?	He and the rebels resented high taxation
19 Who overthrew Richard II and why?	Henry Bolingbroke because Richard was arresting and killing his opponents
20 What were the Wars of the Roses?	A three-decade-long dispute between the houses of York and Lancaster over the throne
21 How was the power of the monarchy challenged during the Wars of the Roses?	Several times, members of the nobility attempted to overthrow the monarch and place their own preferred candidate on the throne by force
22 What was the Act of Supremacy?	The act that made Henry VIII supreme head of the new Church of England
23 What is the 'Political Nation'?	The people who have a say in government
24 What was the 'divine right of kings'?	The idea that kings were appointed by God and only answerable to God
25 What was the Petition of Right?	An agreement by Charles not to tax the people without parliament's approval
26 When was Charles I's 'Personal Rule'?	1629-1640
27 What action by Charles I triggered the Civil War in January 1642?	The attempted arrest of 5 MPs (involved in the Grand Remonstrance)
28 What was the New Model Army?	The well-disciplined and well-trained parliamentary army that won the Civil War
29 What influence did the execution of Charles I have on the idea of divine right?	It profoundly challenged the idea of divine right
30 Who were the Whigs?	A political group that wanted more restrictions on the power of the king, and greater powers for parliament
31 Who were the Tories?	A political group that wanted more power for the king and less power for parliament

HISTORY 2

32	Why was the monarchy restored in 1660?	Richard Cromwell was extremely unpopular, many people wanted stability, and the country was still being run in many ways like a monarchy
33	What was the Glorious Revolution?	A bloodless revolution in which William and Mary were invited to take the throne from James II
34	What was agreed in the Bill of Rights?	Parliament was to meet at least once a year, and had to approve taxation every four years
35	What is parliamentary monarchy?	A system of government in which the monarch is notionally in charge but in practice elected ministers do most of the business of running the country
36	Give two examples of features of the British electoral system in the eighteenth century which facilitated corruption.	There was no secret ballot and rotten boroughs enabled the rich to 'buy' elections
37	What impact did the French Revolution have on the campaign for electoral reform in Britain?	It inspired some people to campaign for reform (as it led to a significant increase in the number of people who could vote in France), but for others, especially in government, the French Revolution intensified fear of reform, as it led to terrible violence
38	Who were the Radicals?	People who wanted to reform the electorate
39	Who was elected in 1830 and oversaw the passing of the Great Reform Act?	The Whig Party, led by Earl Grey
40	How was the Great Reform Act passed through the House of Lords?	Earl Grey created more Whig lords so that it could pass
41	Why might the 1832 Reform Act be described as a 'stepping stone'?	Although only 18% of men could now vote, it was the first significant reform to the electoral system, proving that change was possible
42	What did the Chartists campaign for?	Universal male suffrage, no property qualification to become an MP, equal representation for constituencies, and the secret ballot
43	What did the 1867 Reform Act change?	Electorate rose from 20% of men to 40%. All men who rented a house in a borough could vote.
44	What did the 1884 Reform Act change?	Electorate rose from 3 million to 5 million. It redistributed seats more fairly based on population.
45	Who made up the majority of the membership of the Independent Labour Party (ILP)?	Working men, driven by the New Unions
46	What was the effect of the Parliament Act of 1911?	It stopped the House of Lords blocking measures that the House of Commons had approved
47	How did government control increase during the First World War?	Conscription, rationing and censorship
48	How did the relationship between people and government change with the First World War?	People grew used to the involvement of the state in their everyday lives
49	What was the result of the 1945 general election?	The Labour Party won a landslide victory
50	What significant reforms did the Labour government introduce from 1945?	National Insurance, the NHS and nationalisation
51	How did Thatcher challenge the post-war consensus?	She argued that the government should play a smaller part in solving social and economic problems
52	Why did Thatcher fall from power?	Thatcher fell from power following controversy over the Poll Tax, and clashes with her advisors on foreign affairs
53	How did 'New Labour' change the Labour Party?	It followed Thatcher in challenging the post-war consensus
54	What does CND stand for?	Campaign for Nuclear Disarmament
55	What led to the Miners' Strike in 1984?	The closure of mines that were not profitable at the instruction of Thatcher's government
56	Why did Greenpeace campaign against British Nuclear Fuels Limited (BNFL)?	They believed that the Sellafield plant was releasing radioactive water into the sea
57	Why did pressure groups become so influential?	They organised campaigns about particular issues and held parliament to account
58	How did the regions begin to pose a challenge to the British parliament?	Regions began to demand devolved power and/or independence
59	What impact did professional politicians have on engagement with politics?	Some people became more disillusioned with politics as they did not believe that their politicians would really stand up for them
60	What was the result of the 2010 general election?	No party won more than 50% of the votes, leading to a hung parliament. The Conservatives and Liberal Democrats formed a coalition government.

IT

A user interface is the method by which the user and the computer exchange information and instructions. There are three main types - command-line, menu driven and graphical user interface (GUI)

A

A user interface is the software that you can see when using a device. It allows you to respond to a device by entering information. This can include using a mouse, keyboard or touchscreen. You can now also use sound with some modern devices, where you enter commands by using your voice.

Menu based interface

A text interface works by the user entering special commands with the keyboard. When these have been entered, the user interface will then respond.

B

Features of Menu Driven Interfaces

- The user interface is made up of text and does not contain any graphics.
- The user enters commands with a keyboard.
- The user interface will respond instantly with an output.
- Text interfaces do not require powerful hardware as they don't contain graphics.

Good user interfaces

A good user interface should:

D

- Be attractive and pleasing to the eye
- Allow the user to try out different options easily
- Be easy to use
- Use suitable colours for key areas
- Use words that are easy to understand aimed at the type of user
- Have help documentation
- It should also consider the needs of the users. For example, young children are likely to prefer pictures to words and people with disabilities may benefit from particular input or output devices.

Command-line interfaces

A command-line interface allows the user to interact with the computer by typing in commands. The computer displays a prompt, the user keys in the command and presses enter or return.

C

Features of a command-line interface

- Commands must be typed correctly and in the right order or the command will not work.
- **Experienced** users who know the commands can work very quickly without having to find their way around menus.
- An **advantage** of command driven programs is that they do not need the memory and processing power of the latest
- A command-line interface can run many programs, for example a batch file could launch half a dozen programs to do its task.
- An **inexperienced** user can sometimes find a command driven program difficult to use because of the number of commands that have to be learnt.

Graphical user interface

Sometimes shortened to GUI. The user chooses an option usually by pointing a mouse at an icon representing that option.

D

Features of GUIs include:

- They are much easier to use for beginners.
- They enable you to easily exchange information between software using cut and paste or 'drag and drop'.
- They use a lot of memory and processing power. It can be slower to use than a command-line interface if you are an expert user.
- They can be irritating to experienced users when simple tasks require a number of operations

CATEGORIES OF DEVICES WITH USER INTERFACES

E

1. **Computers**
2. **Handheld devices** to include smartphones, tablets, laptops, e-readers
3. **Entertainment systems** to include games console, home theatre system
4. **Domestic appliances** to include air conditioners, dishwashers, tumble dryers, freezers, washing machines, microwave ovens
5. **Controlling devices** to include security lights, central heating controllers
6. **Embedded systems** to include electronic parking meters, traffic lights, vending machines, smartwatches/digital wristwatches, robotic vacuum cleaners.

GUI



F

MENU COMMAND



