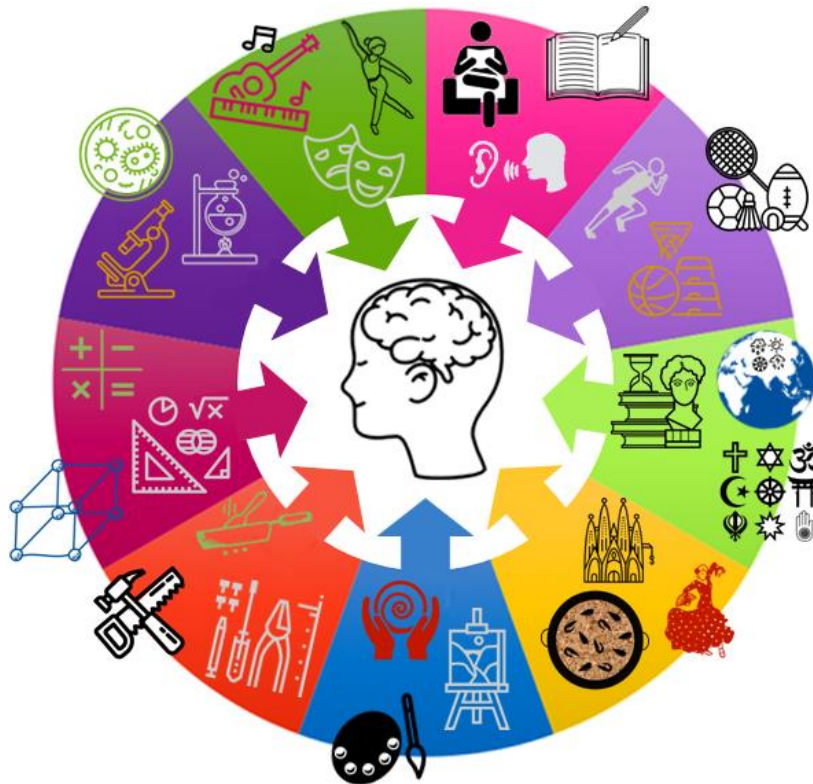


100% book - Year 11 Foundation

Aim to memorise 100% of the knowledge on these Knowledge Organisers.



Term 2

Swindon Academy 2024-25

Name:	
Tutor Group:	
Tutor & Room:	

"If you are not willing to learn, no one can help you.

If you are determined to learn, no one can stop you."

How to use your 100% book of Knowledge Organisers and Quizzable Organisers

Knowledge Organisers

Knowledge Organisers contain the essential knowledge that you MUST know in order to be successful this year and in all subsequent years.

They will help you learn, revise and retain what you have learnt in lessons in order to move the knowledge from your short-term memory to long-term memory.

Quizzable Knowledge Organisers

These are designed to help you quiz yourself on the essential Knowledge.

Use them to test yourself or get someone else to test you, until you are confident you can recall the information from memory.

Top Tip

Don't write on your Quizzable Knowledge Organisers! Quiz yourself by writing the missing words in your prep book. That way you can quiz yourself again and again!

Expectations for Prep and for using your Knowledge Organisers

1. Complete all prep work set in your subject prep book.
2. Bring your prep book to every lesson and ensure that you have completed all work by the deadline.
3. Take pride in your prep book – keep it neat and tidy.
4. Present work in your prep book to the same standard you are expected to do in class.
5. Ensure that your use of SPAG is accurate.
6. Write in blue or black pen and sketch in pencil.
7. Ensure every piece of work has a title and date.
8. Use a ruler for straight lines.
9. If you are unsure about the prep, speak to your teacher.
10. Review your prep work in green pen using the mark scheme.

How do I complete Knowledge Organiser Prep?

Step 1

Check Epraise and identify what words /definitions/facts you have been asked to learn. Find the Knowledge Organiser you need to use.

The image shows a screenshot of the Epraise website. On the left is a 'Planner' for the week of 20th May to 26th May 2020, with a grid for different subjects. On the right is a 'Knowledge Organiser' for 'What is particle theory?'. It contains various questions and answers, such as 'What is particle theory?', 'Describe the arrangement and movement of particles in the three states of matter.', and 'What are the different changes of state?'. There are also diagrams of particle arrangements for solid, liquid, and gas.

Step 2

Write today's date and the title from your Knowledge Organiser in your Prep Book.

The image shows a student's prep book. The date '29th May 2020' and the title 'Particle theory' are written in blue ink. The background is a printed version of the knowledge organiser from Step 1, with the student's handwriting overlaid on the text.

Step 3

Write out the keywords/definitions/facts from your Knowledge Organiser in FULL.

The image shows handwritten notes in a student's prep book. The date '29th May 2020' is written at the top. Below it, the title 'Particle theory' is underlined. The notes define particle theory as 'all matter is made of particles'. It then describes the three states of matter: Solid (regular pattern, particles vibrate in fixed position), Liquid (particles are arranged randomly but are still touching each other, particles can slide past each other and move around), and Gas (particles are far apart and are arranged randomly, particles carry a lot of energy and they move in all directions in a high speed).

Step 4

Read the keywords/definitions/facts out loud to yourself again and again and write the keywords/definitions/facts at least 3 times.

The image shows handwritten notes in a student's prep book. The definition of solid is written three times: 'Solid = regular pattern particles vibrate in fixed position'.

Step 5

Open your quizzable Knowledge Organiser. Write the missing words from your quizzable Knowledge organiser in your prep book.

The image shows a student's prep book. The quizzable knowledge organiser template is shown with handwritten answers. The questions are: 'What is particle theory?', 'What are the different changes of state?', and 'What are the different?'. The student has written 'Self quizzing' for the first question, and 'Arrangement/Movement of matter' for the second. The third question is partially answered with 'Solid = regular pattern' and 'Liquid ='. There are also diagrams of particle arrangements for solid, liquid, and gas.

Step 6

Check your answers using your Knowledge Organiser. Repeat Steps 3 to 5 with any questions you got wrong until you are confident.

The image shows handwritten notes in a student's prep book. The definition of particle theory is written at the top. Below it, the three states of matter are defined: Solid (regular pattern, particles vibrate in fixed position), Liquid (particles are arranged randomly but are still touching each other, particles can slide past each other and move around), and Gas (particles are far apart and are arranged randomly, particles carry a lot of energy). Checkmarks are placed next to the definitions to indicate they are correct.

Make sure you bring in your completed Prep notes to demonstrate that you have completed your prep.

KS4 MACBETH Foundation

1. Context

Playwright: Shakespeare (April 23rd 1564- April 23rd 1616)
Dates: written around 1606
Published: in 'The First Folio, 1623
Era: Jacobean
Genre: Tragedy = A play ending with the suffering and death of the main character.
Set: Scotland,
Structure: Five Act Play

Macbeth. The plot is partly based on fact. Macbeth was a real 11th Century king who reigned Scotland from 1040-1057. Shakespeare's version of the story originates from the Chronicles of Holinshed (a well known historian). The play was most likely written in 1606 – the year after the Gunpowder Plot of 1605 – and reflects the insecurities of Jacobean politics.

The Divine Right of Kings says that a monarch is not subject to earthly authority and that they have the right to rule directly from the will of God. It implies that only God can judge an unjust king and that any attempt to depose, dethrone or restrict his powers runs contrary to the will of God and may constitute a sacrilegious act. The action of killing a king is called regicide and is considered a terrible crime.

King James I of England (and VI of Scotland) came to the throne in 1603 following the death of Queen Elizabeth I. The play pays homage to the king's Scottish lineage. The witches' prophecy that Banquo will found a line of kings is a clear nod to James' family's claim to have descended from the historical Banquo. James was convinced about the reality of witchcraft and its great danger to him leading to witch trials. The play is probably not written simply to please James, but certainly looks at relevant ideas.

Shakespearean Tragedy. Macbeth is one of Shakespeare's tragedies and follows specific conventions. The climax must end in a tremendous catastrophe involving the death of the main character; the character's death is caused by their own flaw(s) (hamartia) yet the character has something the audience can identify with.

The Great Chain of Being was a belief in a strict religious hierarchy (see key vocabulary) of all things which was believed to have been decreed by God. This idea was important in Elizabethan and Jacobean beliefs. The chain starts from God and progresses downward to angels, demons (fallen/renege angels), stars, moon, kings, princes, nobles, commoners, wild animals, domesticated animals, trees, other plants, precious stones, precious metals, and other minerals.

Conventions of a Shakespearean Tragedy

A tragic hero who falls from greatness through a flaw of their own character.

Hamartia – the flaw in the tragic hero that destroys them.

A hero of status – the central characters are people of importance, with power and status to lose.

External conflict – his tragedies feature conflict between characters, and always lead to death.

Internal conflict – there are frequent moments of self-doubt or internal torment.

Supernatural elements – Many of Shakespeare's tragedies feature supernatural influences.

2. Key Characters

Macbeth: The eponymous protagonist is the tragic hero of this play. He is both ambitious and ruthless. He falls from loyal and respected warrior to a paranoid, tyrannical king, before dying in battle in Act V.

Lady Macbeth: A strong, ambitious and manipulative woman who exerts pressure on Macbeth to pursue his ambition of becoming king by murdering Duncan. Unable to deal with the guilt of these actions and is driven to madness and suicide.

The Witches / Weird Sisters: Supernatural and manipulative beings who seem to be able to predict the future. They are unearthly and omniscient.

Banquo: Macbeth's close friend and ally is astute and loyal. Macbeth sees him as a threat. He is virtuous, admired by audiences, and mistrustful of the supernatural witches.

Duncan: King of Scotland at the beginning of the play. He is a virtuous, strong and respected leader, held up as the model of good kingship by others in the play. He is murdered by Macbeth in Act 2.

Macduff: A soldier who is loyal to Duncan and is suspicious of Macbeth. His family is murdered by Macbeth's soldiers and he eventually exacts revenge by killing Macbeth. He was born by caesarian section and therefore was "not of woman born".

Malcolm: Duncan's son and next in line to the throne. He is described as a good man in the play.

3. Central Themes

Ambition
The play is about the corrupting power of ambition. Both Lady Macbeth and Macbeth are urged to action by the prophecies of the witches, but they still commit their crimes themselves because they want greater power. Their ambition leads them to violence and death.

Kingship and Tyranny
The play contrasts the kind and wise rule of Duncan, who is described as a virtuous (good) king, with the brutal rule of Macbeth, who quickly becomes called a tyrant. The play shows how Macbeth has no divine right to rule and upsets the natural order by killing Duncan.

Order and Disorder
The play subverts the natural order of the world. Macbeth's actions are based on a supernatural belief in a prophecy. It depicts an anarchic world: Macbeth inverts the order of royal succession; his wife inverts the patriarchal hierarchy; the unnatural world disrupts the natural. The disruption underpins the conflict that is not only external and violent but internal as Macbeth and his wife come to terms with what they've done.

Appearance and Reality
Characters in the play are often not what they seem. Lady Macbeth and Macbeth are duplicitous towards Duncan, the witches equivocate (not say what they really mean) and cannot be trusted, Lady Macbeth seeks to manipulate Macbeth.

4. Key Vocabulary

tyrant	cruel leader
duplicitous	deliberately dishonest
equivocation	a half truth
regicide	the act of killing a king
sceptical	someone who is unconvinced or doubtful
conflict	a serious disagreement or argument
valiant	great courage in the face of danger
ephemeral	lasting a very short time
transient	something that lasts for a short amount of time
androgyny	of indistinct gender
melancholy	deep sadness
emasculate	to deprive a man of his stereotypical role
catalyst	speeds up a reaction
sacrilege	destruction of something holy
motif	repeated image

5. Key Terminology, Symbols and Devices

Motif	A recurring image or idea that has symbolic importance. The best example in Macbeth would be blood.
Soliloquy	When a character is alone on stage and speaks their thoughts aloud to themselves.
Iambic Pentameter	A line of a play or poem that has ten syllables organised into five pairs of syllables, where the second in each pair is emphasised. e.g. "When you durst do it then you were a man"
Foreshadowing	When a hint or warning is given about a later event.
Dramatic Irony	When a character is unaware of something that the audience is aware of, so they don't know the full significance of their words.
Symbolism	When something symbolises a set of ideas e.g. "The raven himself is hoarse" – raven symbolic of death, supernatural.
Aside	When a character pauses in a conversation to speak only to the audience or another character, unheard by the rest.

KS4 MACBETH Foundation

1. Context		
Playwright:	Macbeth.	
Dates:		
Published:		
Era:		
Genre:		
Set:		
Structure:		
The Divine Right of Kings	King James I of England (and VI of Scotland)	
Shakespearean Tragedy.	The Great Chain of Being	
Conventions of a Shakespearean Tragedy		
A tragic hero.	Hamartia –	A hero of status –
External conflict –	Internal conflict	Supernatural elements –

2. Key Characters	
Macbeth:	
Lady Macbeth:	
The Witches / Weird Sisters:	
Banquo:	
Duncan:	
Macduff:	
Malcolm:	
3. Central Themes	
Ambition	
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Order and Disorder	
Appearance and Reality	

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Aside	

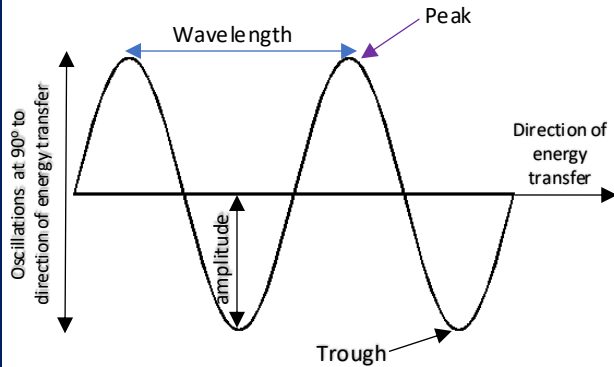
P6 – Waves

Transverse Waves

- Oscillations (vibrations) **perpendicular** to direction of energy transfer.

Examples:

- Electromagnetic waves
- Ripples on water.

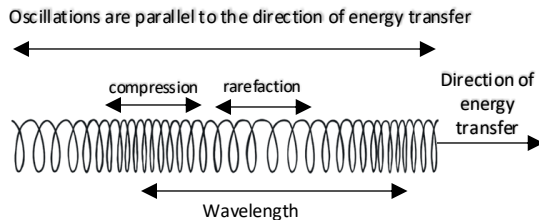


Longitudinal Waves

- Oscillations (vibrations) are **parallel** to direction of energy transfer.

Examples:

- Sound waves



Sound waves have areas of compression and rarefaction.

Compression = particles pushed closer together

Rarefaction = particles are further apart

Properties of Waves

Amplitude – maximum displacement from undisturbed position.

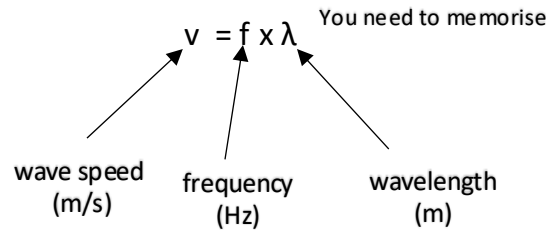
Wavelength – distance from a point on one wave to the equivalent point on the next wave.

Frequency – number of waves passing a point each second.

Frequency is measured in Hertz (Hz)

1Hz = 1 wave per second.

Wave speed – the speed at which energy is transferred through a medium.



Measuring speed of sound waves in air

air

- Stand 50m from a large flat wall.

- One person claps/bangs bricks

- Measure time taken to hear the echo.

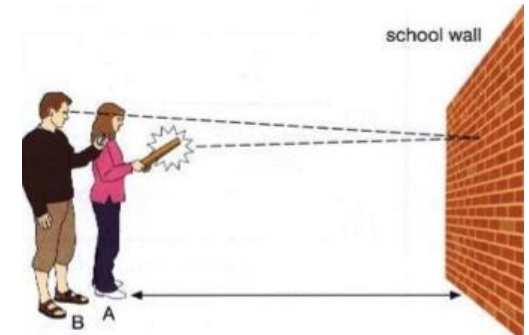
- Calculate speed of sound using:

$$\text{Speed} = \text{distance} \times \text{time}$$

- Remember distance is double (in this case, 100m) as it travels to the wall and back.

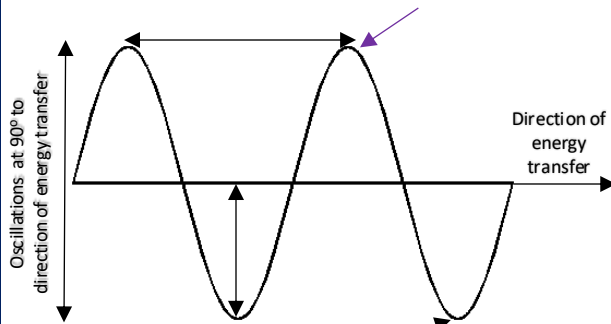
- Take several measurements and calculate the mean to reduce error.

This is unlikely to produce an accurate value for sound in air (330 m/s) as the reaction time of the person operating the stopwatch is likely to be a significant proportion of the time measurement.



P6 – Waves

1. How are transverse waves produced?
2. Label the wave features below.



1. Describe a longitudinal wave
2. Give an example of a longitudinal wave.
3. Label an area of compression and rarefaction in the diagram below



1. Define the following:

Amplitude

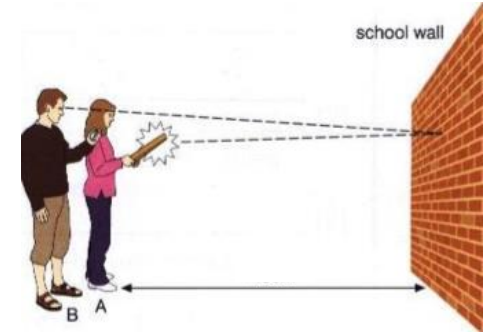
Wavelength

Frequency

2. What are the units for frequency?

3. What is the equation linking frequency, speed and wavelength?

1. Describe a method to investigate the speed of sound waves in air.



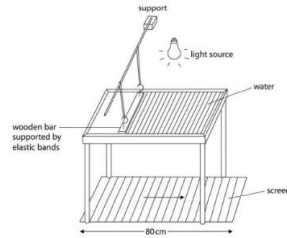
2. What is the biggest source of error in this investigation?
3. What is the speed of sound in air?

P6 – Waves – Required Practical – investigating wave in a solid and a ripple tank

Measuring waves in a liquid

Equipment

- Ripple tank
- Measuring ruler
- Stop watch



Method

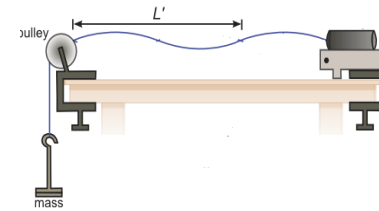
1. Set up the equipment as shown and turn on the motor to produce low frequency waves so that they are able to be counted.
2. Adjust the lamp until pattern is seen clearly on white screen underneath
3. Use a ruler to measure the length of a number of waves (e.g 10) and divide the length by the number of waves to give wavelength. This improves the accuracy of the measurement.
4. Record the waves using a camera or mobile phone. Count the number of waves passing a point in 10 seconds using a stopwatch and slowing the recording down.
5. Divide the number of waves counted by the time to give frequency.
6. Use $v = f \times \lambda$ to calculate the wave speed. Repeat for different frequencies of the motor.

Exp	Length of 10 waves (cm)	Wavelength of 1 wave (cm)	Number of waves in 10 s	Frequency (Hz)	Speed (cm/s)
1	65	0.65	121	12.1	7.9
2	50	0.5	155	15.5	7.9
3	42	0.42	187	18.7	7.9

Measuring waves in a solid

Equipment

- string, vibration generator, hanging mass set and pulley



Method

1. Set up the equipment as shown.
2. Turn on the vibration generator
3. Adjust the length of the string until a standing wave is achieved
4. The frequency can be read from the vibration generator
5. Measure as many complete waves as possible using a ruler
6. Divide the length by the number of waves to give wavelength
7. Calculate speed using $v = f \times \lambda$

Conclusion:

In both experiments, when you increase the frequency, the wavelength decreases – the speed remains the same in the same medium

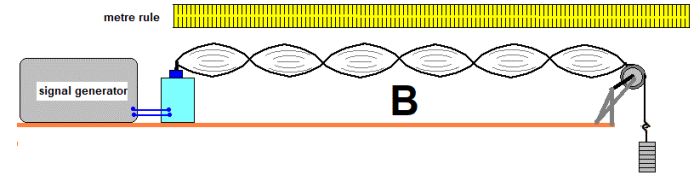
P6 – Waves – Required Practical – Ripple Tank

- Complete the table below to explain the method in calculating the speed of waves in a ripple tank.

Step	Reason
Fill the ripple tank with water, switch on a lamp and place white card underneath the tank.	
Switch on the motor and adjust it to give low frequency waves	
Place a stopwatch next to the card and record the waves, with the stopwatch in view for 10 seconds	
Play the recording in slow motion, count the number of waves passing a certain point and divide this by 10	
Measure the length of 10 waves by taking a picture of the card with a ruler on it.	
Divide the length by 10	

- If the length of 10 waves is 55cm, what is the wavelength of 1 wave?
- If there are 210 waves in 10 seconds, what is the frequency?

- When investigating waves produced by a vibration generator on a string, how do we know the frequency?

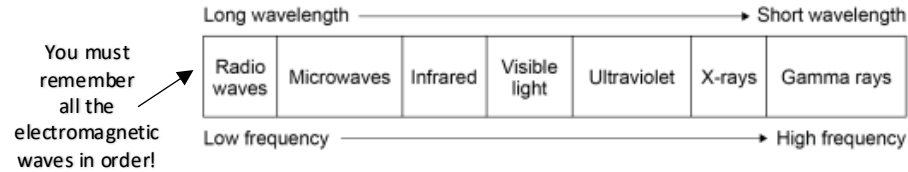


- How many complete waves are shown in the image above?
- If the length from the generator to the pulley was measured at 66 cm, what is the wavelength?
- Why is it better to measure multiple waves and divide to find wavelength rather than measure one single wave?
- What happens to wavelength when frequency increases?
- What happens to wavelength when frequency decreases?

P6 – Waves

The Electromagnetic Spectrum

- All **transverse waves**
- Transfer energy from the source of waves to an absorber.
- All travel at the same **velocity** through a vacuum or air – **speed of light**.
- Speed of light = 300,000,000 m/s



Wave	Use	Other information
Radio waves	Television and radio	Easily transmitted through the air. Harmless if absorbed by the body.
Microwaves	Satellite communications and cooking food	Can be harmful when internal body cells become heated by over exposure.
Infrared	Electrical heaters, cooking food and infrared cameras	Can cause burns to skin
Visible light	Fibre optic communications	Only EM wave detectable by human eye.
Ultraviolet	Energy efficient lamps, sun tanning	Causes skin tanning and can lead to burns or skin cancer .
X-rays	Medical imaging and airport security scanners.	Very little energy is absorbed by body tissues. Passes through the body.
Gamma rays	Sterilising medical equipment or food and treatment for some cancers.	They can lead to gene mutation and cancer.

Ray diagrams

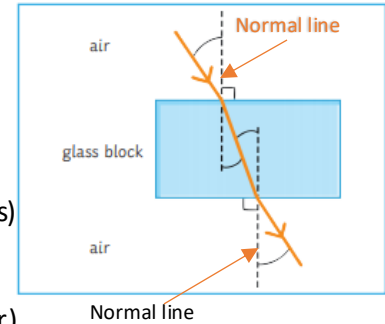
- You need to construct **ray diagrams** to show how a wave is **refracted** at the boundary of a different medium.

Less dense → More dense (e.g. air to glass)

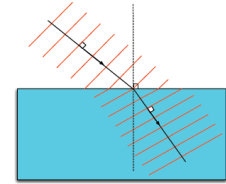
- Ray **slows down** and bends **towards the normal line**.

More dense → Less dense (e.g. glass to air)

- Ray **speeds up** and bends **away from the normal line**.



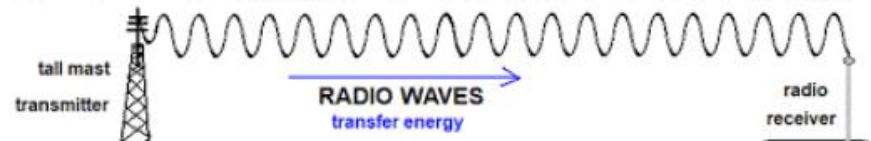
The ray bends because different parts of the wavefront cross the boundary at slightly different times –



If wave hits medium at an angle of 90° then the ray will slow down but will not be refracted.

Radio waves (HT only)

- Radio waves can be produced by **oscillations** in **electrical circuits**.
- Those radio waves can travel for long distances to receivers.
 - When absorbed by the receiver, the radio wave creates an **alternating current** with same **frequency** as the wave itself.
 - This is how TV and radio are broadcast.



P6 – Waves

1. State two properties of electromagnetic waves.
2. Write the EM spectrum in order of **increasing** wavelength
3. Write the EM spectrum in order of **increasing** frequency
4. How fast do electromagnetic waves travel?
5. State the uses of:
 - a) radio waves
 - b) microwaves
 - c) infrared
 - d) visible light
 - e) ultraviolet
 - f) x-rays
 - g) gamma rays

1. What happens when a ray goes from a less dense → more dense medium?
2. What happens when a ray moves from a more dense → less dense medium?
3. What is the line at 90° to a surface called?
4. 4. What happens if a ray hits a medium at 90° ?

1. What type of current do radio waves create when absorbed?
2. What is the frequency of the current produced by a radio wave of frequency 250Hz?

P6 – Waves – Required Practical – Infrared radiation

Aim

Investigate how the amount of infrared radiation **emitted** (given out) by a surface depends on the nature of that surface.

In this investigation you are finding out which type of surface emits the most infrared radiation:

- **Dark and matt**
- **Dark and shiny**
- **Light and matt**
- **Light and shiny**

Method

1. Place **Leslie cube** on a heat proof mat.
2. Once the kettle has boiled, fill the Leslie cube with water.
3. Hold the infrared thermometer 5cm from the first surface
4. Record the temperature
5. Repeat the experiment three times on each surface and calculate mean for each surface.

Independent variable: surface

Dependent variable: temperature of the air (infrared radiation emitted)

Control variables: Temperature of the water inside, the distance between the cube surface and the infrared thermometer



In this investigation you are finding out which type of surface absorbs the most infrared radiation:



Method

1. Fill a black and a silver can with water from the tap.
2. Take the temperature of the water in each can
3. Place the infrared thermometer 5cm from the cans
4. Leave for at least 10 minutes
5. Record the temperature of the water in each can and calculate the rise in temperature

Independent variable: surface of the can

Dependent variable: Temperature increase of the water (infrared radiation absorbed)

Control variables: Temperature of the water inside, the distance between the cube surface and the infrared thermometer

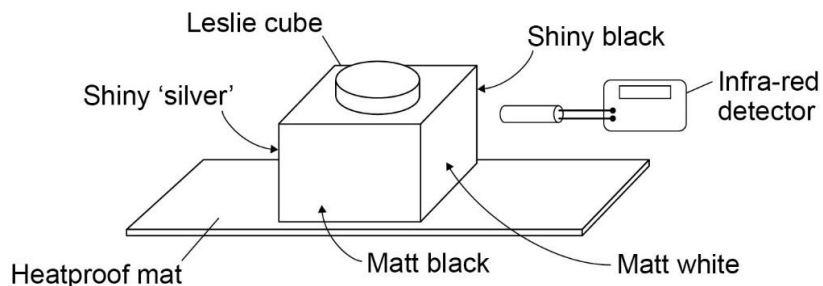
Conclusion

Black matt surfaces absorb and emit the most infrared radiation.

White/silver and shiny surfaces are poor emitters and poor absorbers of infrared radiation

P6 – Waves – Required Practical – Infrared radiation

1. Describe how you could use the equipment below to investigate the emission of infrared by different surfaces.



1. A student was investigating the amount of infrared radiation absorbed by water in cans with different surfaces.



Name the...

Independent variable:

Dependent variable :

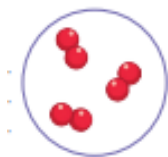
Control variables :

2. What kind of surfaces are the best emitters of infrared radiation?
3. Why does the water in the silver can heat up less than the black can?

C8 – Chemical Analysis

Pure substances

Pure = single element or compound – not mixed with any other substance.



Testing to see if a substance is pure:

- Pure substances have specific melting and boiling points

- Compare your data to a library of known values.

E.g. Water has a boiling point of 100°C, if it is above or below this, it is not pure.

Formulations

Formulation = a mixture that is designed as a useful product.

- Components mixed carefully to get the required **properties**.

Examples of formulations:

- Fuels
- Cleaning agents
- Paints
- Medicines
- Alloys
- Fertilisers
- Food



Chromatography

- Technique used to separate mixtures of **soluble substances**.
- How soluble a substance is determines how far it travels across paper.

More soluble = travels further (higher up paper)

Mobile phase

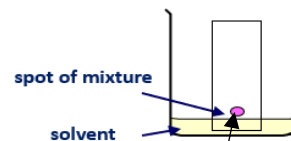
- **Solvent** is the mobile phase
- The substances dissolve in the solvent
- The solvent then moves through the stationary phase.

Stationary phase

- Does not move. The paper is the stationary phase.

Important – start line on paper must be drawn in **pencil** as pencil is **insoluble** and **will not run**

The spot and start line must be **above the solvent line** so the colours won't just wash into the solvent in the beaker.



X is a mixture as it contains 3 substances (3 spots)

Y is a mixture as it contains 2 substances (2 spots)

Z is pure as it only contains one substance (1 spot)

Three samples (x, y and z)

Rf Values

This is the ratio of the distance moved by a substance to the distance moved by the compound

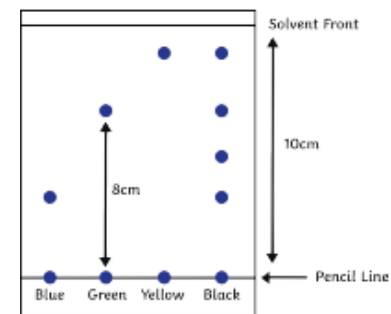
$$R_f = \frac{\text{distance travelled by substance}}{\text{distance travelled by solvent}}$$

- Should always be between 0 and 1.

- Each substance has a unique Rf value.

- Can compare Rf values to a library of known substances

- Can identify unknown substances.



Rf value of green:

$$8\text{cm} / 10\text{cm} = 0.8$$

C8 – Chemical Analysis

1. What is a pure substance?

2. How can you test that a substance is pure?

1. What is chromatography used for?

2. What determines how far the substance travels?

3. What is the mobile phase in paper chromatography?

4. What is the stationary phase in paper chromatography?

5. How would you be able to identify a pure substance on a chromatogram?

6. Draw and label a diagram of the experiment to investigate how many different colours there are in food colouring using paper chromatography.

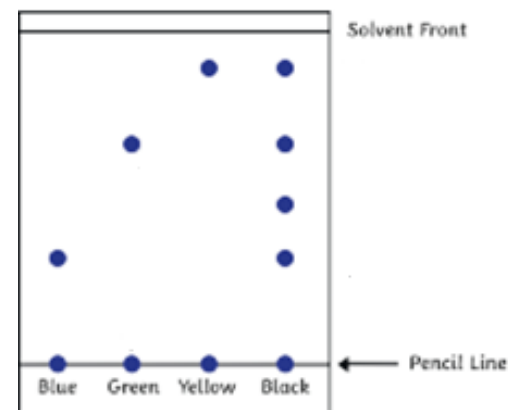
1. How do you calculate the Rf value?

2. Rf values should always be between...

3. Use a ruler to measure the distance the solvent moved in the diagram below.

4. Use a ruler to measure how far the yellow spot moved

5. Calculate the Rf value for yellow



1. What is a formulation?

2. Give 3 examples of formulations.

C8 – Chemical Analysis

Required Practical – Paper Chromatography

Aim: Investigate how paper chromatography can be used to separate and distinguish between coloured substances.

Method

- 1) Using a ruler, measure 1cm from bottom of chromatography paper and draw a line across the paper with a **pencil**.
- 2) Using a pipette, drop small spots of each ink onto pencil line (leave a gap so do not merge).
- 3) Pour solvent into a beaker, do not fill solvent above the pencil line on the paper.
- 4) Place chromatograph paper into beaker and allow solvent to move up the paper.
- 5) Remove paper just before solvent reaches top of the paper and leave to dry.
- 6) Calculate R_f values of all the spots using the equation below:

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

Common questions

Q1) Why is a pencil used instead of a pen?

A1) Ink in the pen would move up the paper with the substances.

Q2) Why do you not fill the solvent above the line?

A2) Substances would wash off into the solvent instead of rising up the paper

Q3) Why might water not work as a solvent?

A3) Some substances are **insoluble** in water.

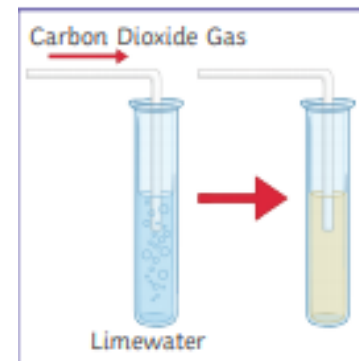
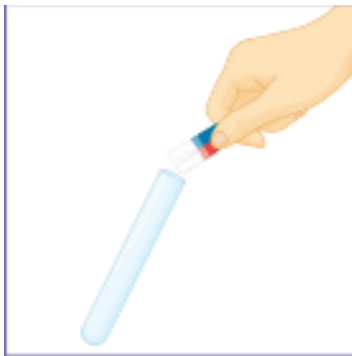
Identification of the Common Gases

Test for hydrogen – Place a **burning** splint at the opening of a test tube. If hydrogen gas is present, it will burn with a **squeaky-pop** sound.



Test for Oxygen – Place a **glowing** splint inside a test tube. The splint will **relight** in the presence of oxygen.

Test for Carbon Dioxide – Bubble the gas through the lime water – if the gas is carbon dioxide, the limewater turns **cloudy**.



Test for Chlorine – Damp litmus paper is held over the mouth of the test tube. If the tube contains chlorine, the litmus paper is **bleached** and **turns white**.

C8 – Chemical Analysis

1. Describe how you would carry out paper chromatography to separate and identify the different colours in food dye.

2. Why is a pencil used instead of a pen?

3. Why do you not fill the solvent above the pencil line?

4. Why might water not work as a solvent?

1. Describe the tests and the positive results for:

a) Hydrogen

b) Carbon dioxide

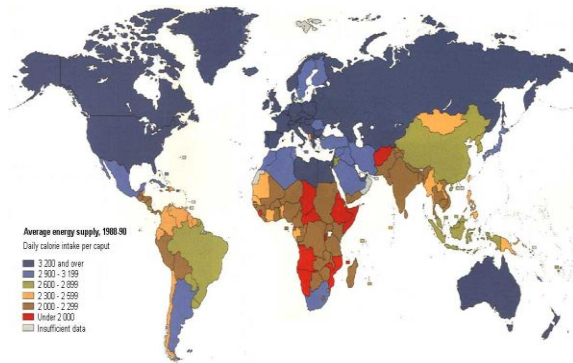
c) Oxygen

d) Chlorine

The significance of food, water and energy to economic and social well-being.

Everybody needs food, water and energy Resources, such as food, water and energy are needed for **basic human development**. People need food and water to **survive** and stay healthy. **Energy** is needed for a **basic standard of living**. Access to **food, water and energy** affects the **social well-being** of people and countries.

Food:

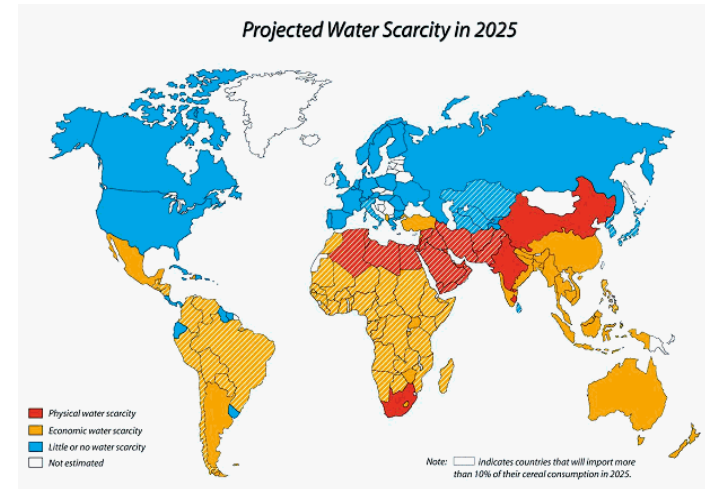


Map showing daily calorie intake world wide

- 1.As can be seen from the map, the daily calorie intake is **uneven** across the world. With many **LIC countries** having a very **low calorie intake**. Especially the Sub Saharan African countries.
- 2.Without access to enough safe, nutritious food people can become **malnourished** – which means to not have the right balance of nutrients in their diet, this can affect a child’s development.
- 3.Malnourishment** increases the likelihood of getting **diseases** – one third of all children under the age of 5 that die globally due to diseases linked to malnourishment.
- 4.People who may not get enough to eat will **not perform** as well in **school** or at **work**. Meaning the population will **lack** the **skills** needed to help a country’s economic development.
- 5.Overall a lack of food will have a **negative impact on social well** being of people. It may lead to social unrest and **civil war**, it leads to **health problems**, and forces people to **migrate** from their homes.
- 6.It can also have a **negative** impact on the **economic well-being** of the people, as people can’t work if they have no food, children can not attend school as they must either try to farm the land or find food. This **stops the country from developing**.

Water

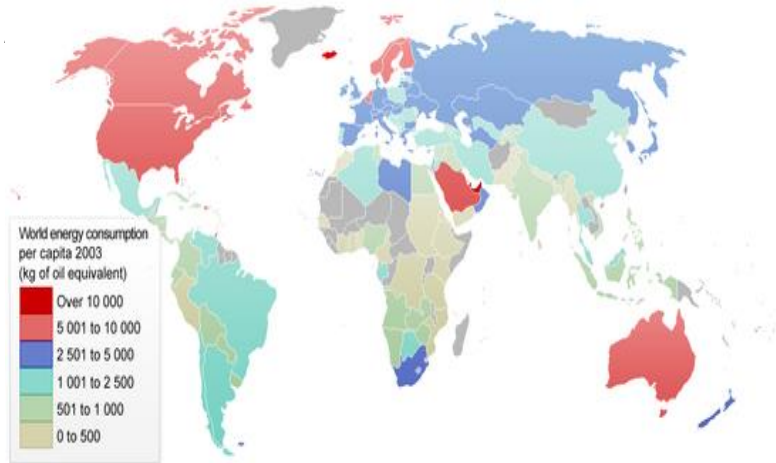
A map showing projected water scarcity



- 1.As can be seen from the map, water availability is **uneven** across the globe. Many north African countries may not have physical access to water by 2025.
- 2.Water is needed for **drinking, cleaning and cooking**.
- 3.Without sanitation**, water sources can also become **polluted** e.g. by raw sewage
- 4.Water borne diseases like **cholera and typhoid** kill millions of people each year.
- 5.A lack of water impacts the **social well being** in countries as **diseases and death** are common. Civil war can also take hold. It can lead to a lack of food and starvation.
- 6.It can also have a **negative** impact on the **economic well being**, as people spend all day **searching for water** meaning they can not work or attend school. This stops the country from developing.

The significance of food, water and energy to economic and social well-being.

Everybody needs food, water and energy Resources, such as food, water and energy are needed for **basic human development**. People need food and water to **survive** and stay healthy. **Energy** is needed for a **basic standard of living**. Access to **food, water and energy** affects the **social well-being** of people and countries.



Energy

1. The map shows that energy consumption is **uneven** globally, with the **highest rates** of consumption generally taking place in the **HICs**.
2. Energy is important for **industry, transport and homes**.
3. **Social well being** will be **negatively impacted without** energy as people will not be able to heat homes, or turn lights on during the night. Social unrest/ civil war can take place over the availability of resources
4. The **economic well being** in the country can be **negatively impacted**, as industries can not operate, meaning there are few jobs, which could help the country develop. Furthermore, people can not travel to jobs in other places, as the lack of energy makes travelling difficult.

An overview of global inequalities in the supply and consumption of resources.

1. The global distribution of resources is uneven
2. Some countries do not have energy reserves, others have **poor climates** meaning food production is difficult.
3. For some countries the only way to access these resources is to **import** them, which is **expensive**.
4. **Consumption** of resources therefore **depends on wealth** and their **availability**.
5. HIC's can afford to buy more resources, so consumption is greater to sustain their higher standards of living and social well being.
6. In NEE's like China consumption is growing quickly. Industry is developing very fast, which requires lots of energy) and population and wealth is also increasing rapidly
7. However, in **LICs** they **can not afford** to **exploit** their resources or **import** from other countries, so consumption is low.

Key word:

- **Consumption: the action of using up a resource**

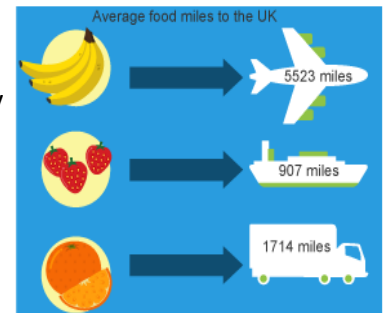
An overview of resources in relation to the UK: Food

Seasonal foods are now available all year round

1. The type of food that are in demand in the UK has changed. Before the **1960's** most fruit and veg sold in the UK was grown **locally**. **Seasonal foods could not be purchased all year round**, such as strawberries or Brussel sprouts. Seasonal foods are not available all year round, you can only buy it during the months it growth. This has now changed.
2. There has been a growing demand for **seasonal produce** to be supplied **all year round**. So now we import things like strawberries from Mexico and Apples from South Africa.
3. **Demand** has grown for high value foods like **exotic fruits**, vegetables and spices. These high value foods have become more popular in the UK as people's incomes have increased. These are often grown in **LICs** and **imported** to the UK.
4. There has been a **growing demand for organic food**. These are grown without the use of artificial fertilisers and the production of organic produce **does not have a negative impact** on the environment. Some organic food is produced in the UK, but lots is imported too.

The problems associated with our food – the carbon footprint!

1. The **growing, processing and packaging** of our food produces **C02** and other greenhouse gases. In 2013 9% of the UK's greenhouse emission came from growing food.
2. **Transporting food** from where it is grown to where it will be sold produces **C02**. This movement is called '**food miles**.'
3. The **amount of greenhouse gas** produced during growing, packaging and transporting is called it's **carbon foot print**. A larger carbon footprint means more greenhouse gases and more global warming.
4. **Imported foods** have to be transported along way, so have **high food miles** and a **large carbon footprint**.
5. Environmentalists are encouraging people to **buy locally** grown food. **Farmers markets**, farm shops and locally produced vegetable boxes are becoming more popular – reducing the carbon footprint of the food we eat.



Farming is becoming more industrialised

1. Since the 1960's there has been a growth in **large scale industrial farming** where processes from the production of seeds and fertilisers, to the processing and packaging of food is controlled by large firms, known as **agribusiness**.
2. This has caused **farm sizes to increase**. Small farms have been taken over and **field sizes made bigger**, so more can be produced.
3. The use of **chemicals** has increased – large amounts of **artificial fertilisers** and **pesticides** are added to crops to help them grow. and special feed to animals to encourage growth
4. The number of **workers has fallen**, as **modern technology** is capable of doing the work.
5. Industrial farming has had **negative environmental impacts**, including **hedgerow destruction** (loss of habitats), increased **soil erosion**, and **fertilisers** running into streams and ponds, causing algae to grow and the fish life to die.

An overview of resources in relation to the UK: Water

Demand for water across the UK

1. In the UK the places with the **best supply** of water are **not** the areas with the **greatest demand**.
2. The **highest demand** for water in the UK is in the **South East**, where the population is growing and there is little rainfall. The **highest** amount of **rainfall** is in the **north west**, where the population is actually declining.
3. The **south east** is an area of **water deficit** (there is a greater demand than can be supplied).
4. The **north and west** are areas of **water surplus** (there is a greater supply than demand).
5. The amount of **water used** in the UK has **increased by 70%** since 1975. Mainly due to new appliances like washing machines and dishwashers
6. The **UK's population** has also **increased by 10 million**, meaning more users.
7. The south east continues to grow, even though water supply is low. This is due to the north south divide.
8. Demand is increasing because of increased population, more crops required, Technology has changed (washing machines etc), power showers, central heating

The problems of polluted water in the UK

1. **Polluted or low quality water** reduces the amount available for use
2. The quality of water in the UK has been **improving**. However there are **still problems**, such as **nitrates** from fertilisers being **washed into rivers** and soaked into groundwater. Also, **pollutants from vehicles** being washed into water sources through run-off when it rains.
3. **80%** of water in southern parts of the UK comes from **groundwater**. However, **pollution** is affecting about **50%** of this. Many groundwater supplies have been closed, or expensive treatment of them has taken place.
4. Strategies used to improve water supply include, putting **stricter regulations** on how much **fertilisers** and pesticides can be used. Also, **higher taxes** have been introduced on the **most polluting cars**. This encourages people to buy newer, greener models.

Water transfer can help to maintain supplies

One way to **deal water deficit** issues, is to **transfer water** from areas of surplus to deficit. Water Transfer schemes meet the demand for water by **transferring water from areas of water surplus** (low population, high rainfall) to **areas of water of deficit** (high population, low rainfall and high industry). It first creates a reservoir in an area of water surplus and holds it. This water is then transferred to areas of water deficit. However, water transfer can cause problems: Dams can be **expensive** to build and the reservoirs lead to huge areas being flooded, damaging farm land, habitats and causing people to be relocated. **Political issues** can exist e.g. people may not want their water transferred to another area.

Conserving water is also being used to lower the demand. The UK is trying to conserve water by: fixing leaking pipes, teaching children in schools about not wasting water i.e turning off taps while brushing your teeth, Using technology, dual flushing systems on toilets or collecting and using rain and grey water, Banning the use of hose pipes during times of water stress

An overview of resources in relation to the UK: Energy

The UK's energy mix is changing – renewables!

1. Traditionally the UK relied on **fossil fuels** (coal, oil and gas) to supply its energy. In **1970**, 91% of our energy came from oil or coal.
2. The discovery of large **gas** reserves under the **North Sea** meant that by **1980**, 22% of the UK's energy was supplied by gas.
3. The use of **nuclear energy** to produce electricity also **increased** during the **1990's**.
4. Recently there has been a movement towards using **renewable energy supplies**, rather than fossil fuels. All coal fired power stations in the UK are due to close by 2025. In **2014**, **19%** of all electricity produced in the UK was generated by **renewable energy**.
5. **Wind and bioenergy** (energy from the burning of biological source e.g. food waste or oil rape seed) are the **biggest sources** of renewable energy, but the use of solar and hydroelectric power have also increased.

The UK's supplies of coal, oil and gas are running out

1. **North Sea** oil and gas reserves are rapidly **running out**.
2. The UK still has **coal reserves**, but the **use** of coal has declined rapidly since the 1950's. This **decline** has happened as we have tried to **reduce CO2** emissions and the cost of **mining** these reserves is very **expensive**. The last deep coal mine closed in the UK in December 2015..
3. The use of **shale gas** from underground in the UK is being considered. This is extracted using a process known as **fracking**: fluid is pumped into shale rock at high pressure, causing it to crack. This forces gas trapped in the rock to flow back out of a well, where it is collected. Much of the fracking in the UK would take place in the **North West** of the country, this has the potential to create **thousands of jobs** in an area of economic decline. Aberdeen is one of the most wealthiest places in the UK and this is linked directly to job creation and **taxes** from offshore oil and gas.

Exploiting energy sources causes economic and environmental issues.

Energy resources are very important for the UK, exploiting these **creates jobs** and **wealth** for areas of the UK. However this extraction can cause problems:

Economic issues:

1. The cost of extracting fossil fuels can be expensive. As the reserves run out extraction becomes more difficult and costs increase further.
2. North Sea oil is especially expensive to extract. If the price of oil drops (as it did between 2010-2013), it may cost more to produce than to sell. This could lead to job losses.
3. The cost of producing energy from renewables and nuclear is very high. This cost is often passed on to the consumer,
4. Money is needed to continue to research into alternative energy sources such as fracking, or building new nuclear power plants
5. Renewable energy can be unreliable and inefficient. This means the UK still has to pay high prices to import energy from other countries.
6. Nuclear waste is expensive to dispose of as it is highly dangerous. This pushes up the cost of producing electricity.

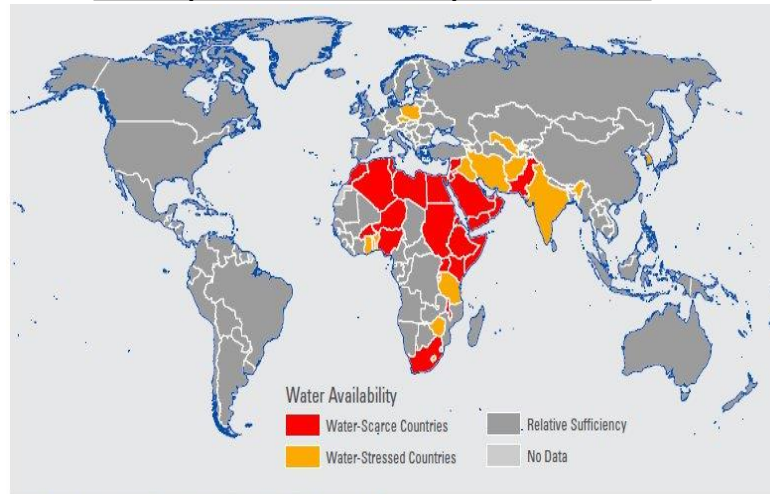
Environmental Issues

1. The burning of **fossil fuels** produces **CO2** and greenhouse gases, this is causing the greenhouse effect.
2. **Fracking** may **pollute groundwater** and cause **mini-earthquakes** – this has led to some people campaigning to ban it.
3. Large areas of land are needed to produce energy, this can **destroy habitats** and create a **scar on the landscape** (lowering house prices).
4. Accidents such as **oil spills** or **nuclear disasters**, can leak toxic chemicals into water sources, soils and the atmosphere, **killing animals** and posing a significant **risk to human health**.
5. Natural ecosystems can be damaged by **renewable energies**, like large wind farms, which **create noise** and **scare wildlife**. They can also ruin the landscape of coastal and countryside areas, putting tourists off visiting.

WATER: Areas of surplus (security) and deficit (insecurity): • global patterns of water surplus and deficit • reasons for increasing water consumption: economic development, rising population • factors affecting water availability: climate, geology, pollution of supply, over-abstraction, limited infrastructure, poverty.

Global patterns of water surplus and deficit

Water security – area with high rainfall and or very low population density e.g. Canada and Brazil



Source: Population Action International (PAI). *Mapping Population and Climate Change*. Washington, DC: PAI.

Water insecurity – areas with low rainfall and or very high population density e.g. Libya, Mexico

Global demand for water: Water insecurity is not having enough clean water

- **Water security** means having a reliable and sustainable **source** of enough **good quality water** to **meet** everyone's **needs** – for industry, agriculture and personal health.
- Water security depends on the amount of **water available** (e.g. from rainfall, rivers, groundwater etc.) and the **number of people** that need to use that water. It also depends on being able to **access** that water which can be hard if you are poor.
- Having **more water** than is needed is known as **water surplus**. When there is **not enough water** to meet everyone's needs it's called a **water deficit**.
- A **water deficit** can lead to **water insecurity** – when there is not enough clean water to keep everyone healthy, or enable them to make a living (e.g. to water their crops, provide energy etc.)
- When **demand** for water is **greater than** the **supply** during a certain period, or when water is not of high enough quality to use, places are said to experience **water stress**.

WATER: Areas of surplus (security) and deficit (insecurity): • global patterns of water surplus and deficit • reasons for increasing water consumption: economic development, rising population • factors affecting water availability: climate, geology, pollution of supply, over-abstraction, limited infrastructure, poverty.

Water demand is rising as there are more people with more money:

Rising population

- The world population is increasing. Each person needs water for drinking, washing, preparing food etc.
- More people also means that **more food** needs to be grown – **irrigation for agriculture** uses **70%** of the world's **freshwater resources**.

Economic development

- Countries are becoming **more industrialised** as they develop. This means they are producing more goods. **Manufacturing** uses a **lot of water**.
- Energy production – **15%** of all **water** withdrawn globally is used to **produce energy**, e.g. cooling in thermal power plants.
- **Rising living standards** – as countries develop, people's wealth increases and they can afford a higher standard of living. This **increases water use** as more people use **flushing toilets, showers, dishwashers** etc.

Factors affecting water insecurity:

Physical factors:	<ul style="list-style-type: none"> • Climate – most places rely on rainfall, which feeds lakes and rivers, for their water supply. If climates are hot, lots of water is lost from lakes and rivers due to evaporation. • Climate change is altering the total amount of rainfall in places, as well as how often it rains and how heavy it is. Many dry areas are getting drier, increasing the risk of droughts. • Geology – when rain falls on impermeable rock e.g. clay, it can't soak in, so flows off into rivers and lakes. These are easy to get water from. However, when rain falls on permeable rock e.g. sandstone, it infiltrates through them and forms underground water stores aquifers), which are harder to get to. However groundwater can make water available in very dry places e.g. the Sahara desert.
Economic and social factors	<ul style="list-style-type: none"> • Over extraction can take place, when more water is being used than is being replaced. This can be caused by population growth (which is common along the area of the Sahel – on the edge of the Sahara desert). Another cause can be improvements in sanitation and personal hygiene e.g. people take more showers. Finally, tourism and recreation can increase water stress, for example watering golf courses in dry areas – in Spain one golf course of the summer season uses as much water as a town with a population size of 20,000 in the UK. • The pollution of water from rapid industrial development, means less water is available for drinking. • Human and animal waste are a hazard where people share water sources with animals and do have access to sanitation. • Limited infrastructure – rapid urbanisation means that water pipes and sewers can not be built quickly enough. This means sewage contaminates the supply. • Poverty – water providers charge a fee for supplying water. People who are too poor to pay for the mains supply will look for other sources, which may not have been treated to make them safe.

Impacts of water insecurity – waterborne disease and water pollution, food production, industrial output, potential for conflict where demand exceeds supply.

- **Diseases** – where water is scarce, supplies of drinking water can become contaminated with sewage or industrial chemicals e.g. fertilisers. This can cause **cholera and typhoid**, leading to death.
- **Reduced food production** – A shortage of water means **less irrigation** can happen, therefore less crops produced which can lead to **starvation**.
- **Industrial output can decline** – Industries use huge amounts of water, when water is scarce it results in less being produced, causing **profits and wages to fall**, which is bad for the economy.
- It can cause **conflict** – When countries of water insecurity share the same water supplies e.g. a river or aquifer, water shortages can trigger conflicts. For example one country may decide to build a dam to trap more water, however this will mean the country further down stream will have less.

Overview of strategies to increase water supply: • diverting supplies and increasing storage, dams and reservoirs, water transfers and desalination

Water supplies can be increased

- Water is often not where it is needed. **Water diversion schemes** transfer water from areas of surplus to areas of deficit.
- **Seasonal variations** in rainfall can cause a water deficit at certain points during the year. One way to solve this is to **store water in tanks**, or in **reservoirs**. This gives a reliable source of water all year round.

Water transfer

- Water transfers are **large scale engineering** projects that move water from a river that has surplus water to a river that has a water shortage.
- The water is usually transferred in **canals and pipes**.
- Water transfer can **reduce the water deficit issue**, meaning farmers do not suffer crop failure and life can carry on as normal e.g. no hosepipe bans etc. In LICs this stops people being forced to drink dirty water.
- However, it can cause **social and economic problems**. For example, the cost of pipes can be **expensive** and this is **passed** on to the **consumer**, this means poorer people may struggle to buy the water. **Areas** where the water is being **transferred from** could end up in **drought**, during particularly dry periods. This causes **conflict** as local farmers may be angry that they can't grow crops as their water is being transferred.

Overview of strategies to increase water supply: • diverting supplies and increasing storage, dams and reservoirs, water transfers and desalination

Dams and Reservoirs

- Building a dam across a river **traps** a large amount **water** behind the dam, creating a **reservoir**.
- During times of **water surplus** the reservoir will fill. This is **stored** and can then be **released in times of water deficit**. Meaning there is a consistent flow of water all year round. This provides clean water for the population and allows crops to be grown.
- Water transfer from reservoirs is usually along **pipelines** and **pumping stations**. These are **expensive** to construct and maintain and push the price of water up for the local population.
- Most of **Birmingham's water comes from the Elan valley in mid-Wales**, where a series of dams and reservoirs provide a continuous supply for the city.
- Reservoirs cause **conflict** due to the huge area of **land** which is **flooded**. This destroys agricultural land, putting farmers out of business. It can drown settlements in the local area, meaning locals are forced to move, breaking up the community.

Desalination allows sea water to become a water source

1. Desalination is the **removal of salt from seawater** so that it can be used. There are **two ways** to do this. The first is to **heat** the seawater so it evaporates, the water is then condensed, this is collected and drinkable water has been achieved. The other method is to use a **special membrane** to remove the salt. This provides clean drinking water in areas of water deficit such as places like Dubai.
2. This is very **expensive** as the seawater must be **heated**, or enough **energy** is needed to push the water through the membrane. This means huge amounts of **fossil fuels** would be needed, **increasing CO2 levels**. However, in Saudi Arabia, they are currently building the world's first large scale solar powered desalination plant.
3. In the **UK**, **desalination** is mainly used during **droughts**. For example, London has a desalination plant on the banks of the river Thames. It can supply enough water for 400,000 homes in times of water shortage.
4. Wealthy desert countries such as Dubai, mainly use desalination as their main source of clean, drinking water. In **Dubai 98.8% of the water comes from desalination** with one supply plant creating 140 million gallons of desalinated water each day. This means that huge amounts of energy are being used to produce this.
5. The plants being used across the Arab countries are quite energy efficient, with the latest plant in Dubai being 82% efficient. However, it still has one of the **largest carbon footprints** in the world because of this. Also the amount of **salt in the sea is rising** rapidly as the water is taken out and the salt dumped back into the sea, this is threatening sea life in the area.
6. Dubai only has **4 days worth of back up supply of water at any time**, so if any problems were to arise at the desalination plants, the area would quickly run out of water.

An example of a large scale water transfer scheme to show how its development has both advantages and disadvantages.

China's south to north water diversion project – Large scale project

To cope with water insecurity, the Chinese government has planned a **\$62 billion project** that will transfer **44.8 billion cubic litres of water** every year **from the south to the north** of the country. Two of the three planned routes have been completed – the Central and Eastern Routes.

Advantages of the project

1. It provides water for people in the north, in major cities such as Beijing and Tianjin. In total over **50 million people will benefit** from the project, as they will have clean, uncontaminated water.
2. **Industry** can continue to **develop** in these large cities and across northern China, bringing **taxes** and wealth to the country allowing it to develop.
3. It provides a reliable source of water to **irrigate farmland**, meaning crops can be grown and food shortages do not happen.

Disadvantages if the project

1. Huge areas of **land** had to be **flooded** to create the **reservoirs**, one of the largest was part of the 3 gorges dam project. This caused **habitats to be ruined** and animals such as the **yellowfin dolphin** to become extinct.
2. The creation of the **Danjiangkou Reservoir flooded farmland**, causing farmers to lose jobs, as well as forcing 345000 people to move, destroying the communities within the area.
3. The **water supplied** to Beijing is **very expensive** for consumers as the project cost so much. The project **only supplies urban areas** and those that can afford it – this means that the **urban poor** and those in **rural areas have not got access to this clean water source** so still have the same problems as the past.
4. **Water stress in the south** will increase as so much water is being diverted. During severe droughts, there won't be enough drinking water or irrigation water for over 30 million people. This could cause crop failure and force people to drink dirty water causing disease.



sketchmap only—exact data unknown
 Current status:
 Eastern route: extensive work has been done
 Central route: work commenced in 2004

Moving towards a sustainable resource future: an example of a local scheme in an LIC or NEE to increase sustainable supplies of water.

Kenya: Sand Dams

Kenya is a LIC, with a hot, dry climate. Most rain falls in just a few heavy downpours each year. Most rivers therefore only flow in the rainy season, as in the dry season the water evaporates. It is difficult for rural communities to store water for future use. People in Kenya's Malaika near the town of Mitito Andei have been helped to build sand dams (African Sand Dam Foundation), which give them access to water all year round.

This is how:

1. A low dam (about 1 m high) is built across the river using locally found materials like rocks and cement
2. During the rainy season, when water is flowing in the river, coarse material like sand is trapped behind the dam.
3. Water gets trapped between the sand particles (about a third of what is trapped behind the dam is actually water)
4. Over many rainy seasons the sand builds up
5. The sand prevents the water from being evaporated by the hot sun during the dry season and filters the water
6. When the river stops flowing, water can be extracted from the sand by digging a well, piping the water through the dam to a tap or simply digging holes and scooping the water out
7. Eventually the water table also rises, which means that crops start to flourish in the area.
8. The dams are cheap to build, use local materials and don't require much maintenance
9. The height of the dam can be raised every year to trap more sand and water

Problems of the scheme:

1. Require the charity to supply the concrete and knowledge on how to build the dam
 2. Require the charity to educate local people on drought resistant crops
- Both of these depend on overseas aid donations from the public.

Moving towards a sustainable resource future: water conservation, groundwater management, recycling, 'grey' water

Water conservation:

1. Fixing **leaking reservoirs, pipes and dripping taps** helps to stop water being wasted. In the UK **3.3 billion litres** of water are lost every single day.
2. Fitting **dual flush toilets** reduces use, as they use less water. They save up to **3.5 litres** for every flush. Some urinals are also waterless now, such as in McDonalds, saving millions of litres of water per day.
3. More **efficient dishwashers and washing machines** are now used, and people are encouraged to only run these on full load.
4. Fitting homes and businesses with **water meters**, means people are more aware of the water which they are wasting/using. This means they are more likely to reduce their use.
5. **Educating people** to take shorter showers and turn off taps when not in use (e.g. brushing teeth).
6. **Building adaptations such as green roofs**, these filter rain water and allow it into the main supply. Where it can be used for cleaning.
7. **Water butts** can be used to catch rainwater which would from the downpipe of gutters. This can be used to water the garden, flush toilets etc.

Recycling and 'Grey' Water:

1. Recycling water means to **take what has already been used and using it again**, rather than returning it to a river or the sea. This makes water use more sustainable because less water needs to be taken from rivers or groundwater.
2. Water from homes and industries can be pumped to **water treatment plants**, where it is cleaned and made safe to reuse.
3. The recycled water is used for **irrigation, industry, power plants and toilet flushing**. However, it can be treated enough to make it re-drinkable and the process is expensive and polluting.
4. **'Grey' water** is a type of recycled water. It is usually **used immediately** rather than being treated first. It is normally waste water from people's homes, for example, from washing machines, showers or sinks. It does not include toilet water as this is contaminated.
5. Because it is quite clean it can be **used for irrigating gardens, farmland, washing cars and flushing toilets**. This can save thousands of litres of water.
6. This also **conserves the energy** needed to treat the water, which can be expensive.
7. This is also good as it **reduces the use of clean water**, which can be saved for drinking.
8. However, a negative is grey water **can not be used as drinking water** as it is far too dirty.

Ground water management:

1. **Monitoring groundwater extraction** means that you can ensure that extraction of the water is not faster than is naturally being replaced.
2. **Farmers** have been told to use **less artificial fertilisers and pesticides**, companies that leak toxic waste are fined. This stops the water supply becoming contaminated.
3. **International agreements** have been created where **groundwater is shared** between countries. This ensures that one country does not take an unsustainable amount of water leaving another country short. However, agreeing how much water each country can take from the aquifer can be very difficult.

AVERAGE UK HOUSEHOLD WATER CONSUMPTION



3. The Spanish Empire 1528-1555



Pizarro – First Expedition

Pizarro was with Balboa when they reached the Pacific. Pizarro was impressed by Cortes and his success in Mexico. Tales of vast wealth in Peru encouraged Pizarro to find his own success.

November 1524 – First expedition

Not a success. Only reached Columbia before a bad weather, lack of food and attacks by hostile natives forced Pizarro to turn back. The mangrove swamps put off any idea of establishing a settlement too.

Impact of Gold and Silver on Spain

Used to make 8 sided coins – ‘pieces of eight’. Widely accepted in Europe due to high silver content.

The Crown took 25% of bullion coming into Spain.

75% of wealth went to Spanish merchants and conquistadors.

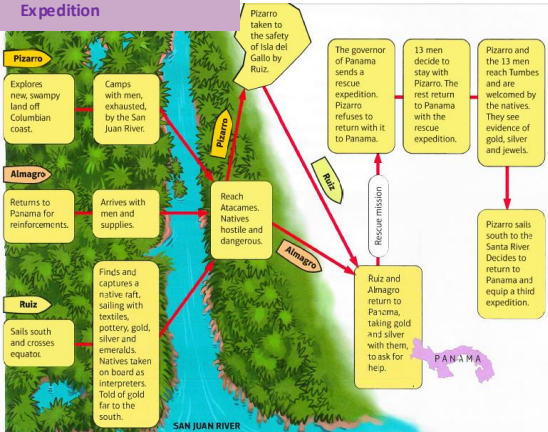
European traders put up prices for the wealthy Spanish merchants.

High prices led to inflation – workers demanded higher wages in Spain.

Charles I invested money in the military – not industry and business.

Spanish were getting wealthy by finding bullion instead of making products and selling.

Pizarro's Second Expedition



Governing the Empire

The Spanish needed to find a way to govern the discovered territories to restore peace and stability. They needed to make sure basic essentials were available, laws were in place, conquistadors didn't fight among themselves and ensure daily life was managed effectively.

Bartolome de las Casas – was a priest that tried to encourage the fair treatment of natives in the New World. 1527 he wrote a book 'A Short Account of the Destruction of the Indies'.

The New Laws:

- It was made illegal to enslave natives.
- The amount of tribute that could be collected was limited.
- Encomiendas had to be passed back to the Spanish government on the death of the encomendero.

The role of the Viceroy:

The Council of the Indies appointed two viceroys to govern Spanish territories: one in Mexico city and one in Lima (Peru). They acted on behalf of the government.

Justice was managed through the audiencias (courts), with judges who were independent of the viceroys.

The role of the **encomienda system**:

This was imposed officially across the Spanish Empire. An encomienda was land granted to a Spaniard, who was then called an encomendero. He could demand tribute from natives. In return he was responsible for their protection and their conversion to Christianity.

Significance of the New Laws 1542:

Laws introduced to improve the rights of native people, but encomenderos opposed them and the viceroy of Peru refused to implement them. Revolts in Peru: the most serious in 1544 had to be put down by the Spanish government and led to a temporary halt in the Spanish conquest of the New World in 1550. Although forced to suspend the laws, Charles I insisted encomiendas be passed back to the crown on the death of an encomendero. Natives continued to be exploited in the New World.

Pizarro's appeal to the Spanish King Charles I

In 1528 Pizarro returned to Spain with evidence of Inca wealth, including Llamas, silver and gold. Having been refused permission to launch a third expedition by the governor of Panama, he appealed to Charles I. Pizarro received a licence, the *Capitulacion de Toledo*, in July 1529, authorising him to conquer Peru.

Date	Event
Dec 1518	Smallpox epidemic in Haiti.
Sept 1520	First cases of smallpox in Mexico
1525-1527	Smallpox spreads along the Caribbean coast.
1527	Smallpox reaches Peru. Huayna Capac dies from smallpox after returning to help his people.
1529	Civil War breaks out between Huascar and Atahualpa (Huayna Capac's son).
April 1532	Huascar is captured and killed. Atahualpa takes over Cuzco.
Nov 1532	The Battle of Cajamarca – Pizarro's men hid in the town square of Cajamarca. When Atahualpa's men entered the town they met with a priest who showed them a bible. Atahualpa threw the bible on the floor which was the signal needed for Pizarro's men to attack and they took Atahualpa prisoner.
July 1533	Atahualpa promised to fill his prison with treasure in order to secure his release. Although he did this, the Spanish still sentenced him to death. On 26 th July he was garrotted.
1533	Manco made puppet ruler of the Inca Empire.

Founding of La Paz, 1548

La Paz was founded to symbolise the end of the revolt and to demonstrate that Spain had the overall authority in the New World, not the conquistadors. It became the administrative centre of the Spanish Empire. The Viceroy and the audiencias (courts) were based here. It was founded close to trade routes to ensure it maintained control over the silver mines based in Potosi and Oruro.

Discovery of silver in Bolivia and Mexico

By 1500 silver had been discovered in Potosi (Bolivia) and in Guanajuato and Zacatecas (Mexico). Some was sent back to Spain but most was kept by the conquistadors. Large mining towns developed to house workers for the mines. Colonisation of the New World increased as adventurers, merchants, speculators and their employees came in search of wealth. 25% of silver shipped to Spain went straight into the treasury.

Conquistador Revolt in Peru 1544

A serious revolt took place as the encomenderos were unhappy with the New Laws. This revolt was led by Gonzalo Pizarro, brother of Francisco Pizarro. It was a success and Gonzalo ruled over the Inca territory for 2 years. The arrival of a Spanish army resulted in his execution and the restoration of Spanish authority. The revolt raised the issue of control. Spain needed to govern its territories and control the rebellious conquistadors and encomenderos. This led to the founding of La Paz in 1548.

Pirates and Privateers

Spanish treasure was a target for Pirates and Privateers (funded by government/monarchy).

The ships were easy to find as they took well-defined and predictable routes across the Atlantic.

War with France (1542-46) meant Spain had to adapt ships and develop systems to deal with French privateers.

Galleons patrolled the sea routes and started carrying treasure as they were well armed.

Treasure fleet system developed: the **Tierra Firme** (went to S. America) and the **New Spain** (went to Mexico).



Revolt of the Incas 1536

The Spanish saw Manco as a puppet king who would rule on their behalf. When Manco escaped from the Spanish he assembled an army and attacked the base at Cuzco.

The Siege of Cuzco 1536-1537
-10,000 Inca warriors faced 150 Spanish and 1000 native allies.
-The Inca warriors broke into town, burning buildings to try to drive out the Spanish, but the Spanish were able to put the fires out.

-The Spanish used their cavalry to attack the Inca warriors.
-The Spanish captured the fortress of Sacsahuaman from the Incas, which the Inca army then besieged.

-The siege ended when Spanish forces exploring Chile returned.
-Manco withdrew and established a separate kingdom which lasted until 1572.

Growth of Seville

All goods imported to Europe had to go through Seville. Merchants travelled from all over Europe to buy and sell goods. This gave Spain a monopoly over trade with the New World.

The Slave Trade

Due to the number of deaths of natives in the New World, there was a labour shortage. Under the Treaty of Tordesillas, Spain could not directly get slaves from W. Africa. Spanish merchants could get licences (asientos) to supply slaves to the New World. Licences sold to the highest bidder who could then buy from Portuguese merchants and sell to merchants in the New World.

Casa de Contratacion (House of Trade)

Established in 1503 by Isabella. Collected colonial taxes. Approved voyages of exploration and trade and kept secret information on new lands and trade routes. Licenced captains of ships. In theory, no Spaniard could sail anywhere without the approval of the Casa.

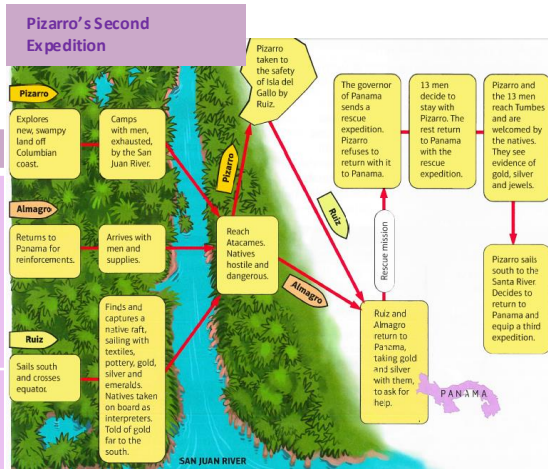
Council of the Indies

Formed in 1524 and based in Spain. Controlled all matters concerning the New World. Messages received from Viceroys would be discussed and advice given to the King. Decisions made were sent from the Council to the Viceroys. This was Spain's way of trying to maintain control over its empire in the New World.



3. The Spanish Empire 1528-1555

Pizarro – First Expedition



Pizarro's appeal to the Spanish King Charles I

Pizarro and the Conquest of the Inca Empire		Revolt of the Incas 1536
Date	Event	
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1533		

The Siege of Cuzco 1536-1537

Governing the Empire

Bartolome de las Casas –

The New Laws:

The role of the Viceroy's:

The role of the *encomienda* system:

Significance of the New Laws 1542:

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Keywords	
Tawhid	The belief in Islam that there is only one God who created everything
Omnipotent	God is all powerful and "has power over everything"
Immanent	God is active in the world and involved in its' creation.
Transcendent	God is outside of time and space. God cannot age or die or be located in one place.
Beneficent	Allah is compassionate, caring and good
Sunnah	The traditions and practices of the Prophet Muhammad
Qur'an	The Islamic sacred book
Hadith	A collection of traditions and sayings of the Prophet Muhammad
6 Articles of Faith	6 basic beliefs that shape the Islamic way of life
5 Roots of Usul Ad-Din	5 rules which explain how Muslims should act in daily life
Akhirah	Belief in the afterlife
Al Qadr	Supremacy of God's will and The belief in predestination which is slightly different for Sunni and Shi'a Muslims

What we are learning in this unit		
A. 6 Articles of Faith B. 5 Roots of Usul Ad-Din C. Sunnah and Hadith D. Risalah E. Torah, Psalms and Gospels F. Nature of Allah G. Qu'ran H. Torah, Psalms and Gospels I. Angels J. Al Qadir K. Day of Judgement, Paradise and Hell		

B. 5 Roots of Usul Ad-Din		
The 5 roots of Usul ad-Din are central to the Shi'a Muslim faith.		
Root	What is it?	Quote
1: Tawhid	The belief in the oneness of Allah	"He is God the One, God the eternal " Surah 112
2: Nubuwwah	Belief in prophethood: the chain of messengers from Adam to Muhammad	"We sent messengers to every community" Surah 16
3: Adl	Allah is just (fair) and will bring Divine Justice	"I advise you to being just towards both friend and foe " Imam Ali
4: Imamah	A term for God-given leadership	"obey God and the Messenger, and those in authority among you "
5: Mi'ad	The day of judgement and resurrection	"His is the judgement ; and to Hjm you shall be returned"

A. 6 Articles of Faith	
Article of faith	What is it?
1: Belief in one God	Allah is the creator and sustainer of life. There is no God but Allah
2: Belief in Angels	Angels do the work of Allah and do not have free will like humans. They obey Allah
3: Belief in God's revealed books	The Torah, the Psalms, the Gospels, the Scrolls of Abraham and the Qur'an.
4: Belief in the messengers of God	Prophets and messengers are chosen by Allah to deliver His message to humankind
5: Belief in the Day of Judgement	There will be a day when all people stand in front of Allah and are sent to Heaven or Hell
6: Belief in pre-destination	Allah knows everything. Everything is ordered by Allah – nothing is random or by chance

C. Sunnah and Hadith	
Sunnah	<ul style="list-style-type: none"> The practices, customs and traditions of Prophet Muhammad They give an example for Muslims to follow The Sunnah and Hadith are sources of Wisdom and authority alongside the Qur'an
Hadith	<ul style="list-style-type: none"> Reading the Hadith helps a Muslim to learn how Muhammad explained the teachings from the Qur'an The Hadith makes the Qur'an easier to understand
What does the Sunnah tell Muslims?	<ul style="list-style-type: none"> The Sunnah covers many areas of life It provides a guideline for Muslim life There is a Sunnah for everything



Keywords	
Tawhid	
Omnipotent	
Immanent	
Transcendent	
Beneficent	
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B.	<i>5 Roots of Usul Ad-Din</i>
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Root	What is it?	Quote
1:		
2:		
3:		
4:		
5:		

A.	6 Articles of Faith	
Article of faith	What is it?	
1:		
2:		
3:		
4:		
5:		
6:		

C.	Sunnah and Hadith	



D. <i>Risalah (Prophethood)</i>	E. <i>Torah, Psalms and Gospels</i>
<p>What is it</p> <ul style="list-style-type: none"> • Muslims believe there has been 124,000 prophets • Every Islamic prophet preached Islam and key beliefs • The first was Adam, the last was Muhammad (Box E) 	<p>Psalms (Zabur)</p> <ul style="list-style-type: none"> • The Psalms of Dawud are a collection of prayers to Allah • They contain lessons of guidance for the people
<p>Why are prophets important?</p> <ul style="list-style-type: none"> • Prophets are guided by Allah • Their love of Allah stops them from sinning • Some prophets are messengers who have been given revelation of news 	<p>Gospel (Injil)</p> <ul style="list-style-type: none"> • This is the good news about Isa (Jesus) • Muslims highly respect Isa because there are revelations in the Qur'an about him • Muslims believe he was the Masih, he was not the son of Allah, he was not crucified, he did not die to save sins • The gospels contain some mistakes because they were written many years after Isa died
<p>Adam</p> <ul style="list-style-type: none"> • The first prophet • The father of all humankind • He taught about the work of Iblis and how to protect themselves • He taught life on Earth was temporary, eternal life is in the next life • He built the Ka'aba as the first place of worship 	<p>Torah (Tawrat)</p> <ul style="list-style-type: none"> • The Tawrat is the Arabic word for the Torah • These are the revelations given to Moses by Allah on Mt Sinai • The Qur'an refers to the Tawrat as "guidance and light"
<p>Ibrahim</p> <ul style="list-style-type: none"> • Ibrahim was told in a dream to sacrifice Isma'il as a test of faith – remembered at Hajj every year • His son Isma'il is the ancestor of the prophet Muhammad 	<p>Scrolls of Ibrahim</p> <ul style="list-style-type: none"> • Revelations received by Ibrahim on the first day of Ramadan • Contained stories about worship and reflection • Not a book, individual revelations

F.	<i>The Nature of Allah</i>
Tawhid	<ul style="list-style-type: none"> • There is only one God and this God has no equal. • He created everything. • Only He should be worshipped: worshipping other Gods is a sin called shirk. • "There is no God but Allah, and Muhammad is his messenger". • "Allah witnesses that there is no deity except Him" • "Do they not see that Allah, who created the heavens and the Earth and was not wearied by their creation, has the power to raise the dead to life?"
2: Omnipotent	Allah is all powerful and has power over everything
3: Immanence	Allah is active in the world and able to control events
4: Transcendent	<ul style="list-style-type: none"> • Allah is outside of the universe • Not limited by time or space
5: Beneficence	God has love and good will
6: Mercy	<ul style="list-style-type: none"> • "In the name of Allah, the most compassionate, the most merciful" • God is forgiving and caring
7: Fairness and justice	<ul style="list-style-type: none"> • Allah is fair to all people • Allah has sent the same message to all prophets to allow humans numerous opportunities to submit to the will of Allah • Allah will ensure that judgement is fair and punishments are suitable



D.	<i>Risalah (Prophethood)</i>	E	<i>Torah, Psalms and Gospels</i>
What is it		Psalms (Zabur)	
Why are prophets important?		Gospel (Injil)	
Adam		Torah (Tawrat)	
Ibrahim		Scrolls of Ibrahim	

F.	<i>The Nature of Allah</i>
Tawhid	
2: Omnipotent	
3: Immanence	
4: Transcendent	
5: Beneficence	
6: Mercy	
7: Fairness and justice	



G.	<i>Qur'an</i>	I.	<i>Angels</i>
Revelation	<ul style="list-style-type: none"> Chapters of the Qur'an were revealed to Prophet Muhammad over 13 years in Makkah While Muhammad received the revelations, he was not able to change them because it was the will of Allah After Muhammad received them, he recited them, and somebody wrote them down. 	What are they?	<ul style="list-style-type: none"> Angels are made from light and have wings which can move at the speed of light They have no gender and are in the unseen world They always complete what Allah asks and they always obey Allah as they have no free will
Authority	<ul style="list-style-type: none"> It is the direct word of Allah so it has His authority It is without error and remains in its' original form A written book was needed to formalise the religion 	What do they do?	<ul style="list-style-type: none"> Watch over humans Bring peace to believers and instill fear in non-believers Angel of Death takes the soul at death Greet people entering paradise or throw people into the pits of hell Signify the end of the world by blowing a horn
What does it contain?	<ul style="list-style-type: none"> It covered every aspect of life It influences a person throughout their lives The basics of worship which Muhammad developed Shari'ah law and social systems It explains creations and other ultimate questions 	Jibril	<ul style="list-style-type: none"> Most important angel in Islam Always brings good news Helped Ibrahim when he was thrown in to a fire, opened up the Zamzam well for Hajar Told Maryam she would have a son (Isa) Dictated the Qur'an directly from Allah
Supreme authority	<ul style="list-style-type: none"> The Qur'an is believed to have supreme authority It is a timeless book – it is only the word of Allah if it is not translated from Arabic 	Mika'il	<ul style="list-style-type: none"> Assisted Muhammad with his spiritual mission Giver of rain and sustenance – in charge of plants and rain Helped Muhammad to fight for Makkah Will help to weigh peoples' actions on Judgement Day Mika'il prepared Muhammad by providing Jibril with purifying water

K.	<i>Day of Judgement, paradise and Hell</i>		J.	<i>Al Qadir</i>	
What will happen?	<ul style="list-style-type: none"> Muslims believe Judgement day will come on a Friday (Adam was created on a Friday) It will be announced by Israfil's trumpet Allah will refer us to the book of deeds to justify damnation or salvation Humans will go to paradise or Hell 		<ul style="list-style-type: none"> Everything happens as a result of Allah's will and nothing is ever random or without reason Allah is in charge of everything Everything is a part of Allah's plan "never will we be struck except by what Allah has decreed for us" 		
Jannah	<ul style="list-style-type: none"> Paradise No growing ill, old or dying – it is a reward and gift from Allah A person must live religiously and ask Allah for forgiveness Good beliefs and actions It is beyond human imagination 		E.	<i>Muhammad</i>	
Entry to Jannah	<ul style="list-style-type: none"> "enter among my servants! Enter my paradise!" People will arrive over the As-Sirat bridge There are 8 gates and you go through the one which represents your best action Two angels welcome people saying "peace be upon you" 		Why was he chosen?	<ul style="list-style-type: none"> Muhammad had characteristics such as responsibility, determination, patience, courage and honesty He was highly respected in his community He was extremely devoted to Allah – he prayed and fasted for long periods of time 	
Jahannam	<ul style="list-style-type: none"> Hell People wail in misery, 70x hotter than any flame on earth, boiling water poured on their heads, pain, dragged in chains Punishment for a life full of evil or rejecting the teachings of the Qur'an 		What did he do as a prophet?	<ul style="list-style-type: none"> He became the ruler of Madinah and set up the first Islamic community He converted the people of Makkah to Islam 	
			Why is Muhammad important?	<ul style="list-style-type: none"> He is seen as the perfect role model as he is trustworthy and obedient to Allah His influence can still be seen in the Hadith and Sunnah The night of power in Ramadan is to remember Muhammad's first revelation from the angel Jibril 	



G. <i>Qur'an</i>		I. <i>Angels</i>	
Revelation		What are they?	
Authority		What do they do?	
What does it contain?		Jibril	
Supreme authority		Mika'il	

K. <i>Day of Judgement, paradise and Hell</i>		J. <i>Al Qadir</i>	
What will happen?			
Jannah		E. <i>Muhammad</i>	
Entry to Jannah		Why was he chosen?	
Jahannam		What did he do as a prophet?	
		Why is Muhammad important?	

1. Types of Production

There are three main types of production:

Type of Production	Explanation
Job Production	Job production is one-off production for a one-off order. It is tailored-made to the specific requirements of a single customer. This can be a very costly method production however this means that the business has increased flexibility in terms of the product produced.
Batch Production	Batch production involves producing a limited number of the same item. This method of production is cheaper than job production however this method of production is not as flexible.
Flow Production	Flow production is continuous output of identical products. This is the cheapest method of production as production becomes fully automated. However this affords the business no flexibility in terms of product differentiation.

2. Types of Production (Advantages and Disadvantages)

There are three main types of production:

Type of Production	Advantages and Disadvantages
Job Production	Advantages: Highly flexible; gives the customer exactly what they want. Disadvantages: High production costs. Skills may be in short supply, making it hard for the business to grow
Batch Production	Advantages: Gain some cost advantages from producing several items at once...yet still able to offer customers the colour/size they want Disadvantages: May be limited scope for automation, making production costs far higher than with flow production. Not as flexible as job production.
Flow Production	Advantages: Can automate production fully, making it highly cost effective (which should be good for customers as well as suppliers). Many customers value consistency, and flow will provide an identical product each time. Disadvantages: Likely to be expensive to set up and inflexible to use; could be a disaster if a product life cycle proves much shorter than expected. Lacks flexibility in terms of meeting individual customer needs.

3. Managing Stock – Key Definitions

Term	Explanations
Bar Gate Stock Graph	A diagram used to manage stock.
Buffer (stock)	The minimum stock level always held to avoid running out.
Just in Time (JIT)	When new supplies must arrive 'just in time' moments before they are required.
Stock	Items held by a firm for use or sale, for example components for manufacturing or sellable products for a retailer

Managing Stock well is vital to the success of a business. Successful stock management requires the right balance between reliability and cost. **Too little stock and customers will feel let down. Too much stock and high costs will force high prices. Without stock, sales cannot happen. Manufacturers and retailers need to make sure they supply the right amount of goods to keep the shelves full.**

4. Procurement – Working with Suppliers

There are five main factors at the heart of a relationship between a company and its suppliers:

Quality	Suppliers must supply high quality products to businesses, suppliers will struggle to maintain a good relationship with a company if they are not supplying good durable products. First and fore most suppliers must supply high quality materials to businesses.
Delivery	Suppliers must deliver on time to clients, there is little point supplying at the right price and with the right product, if the product doesn't arrive on time. Failing to deliver supplies on time can bring manufacturing to a halt or leave shops with empty shelves.
Availability	Suppliers must be available and able to cope with varying orders in a timely fashion and sometimes within a short timeframe. Suppliers must be flexible and aware of the needs of their customers.
Cost	Cheaper supplies mean lower variable costs and higher profit margins. Therefore, the price charged by a supplier will be a key factor in the relationship between a firm and its suppliers. Price to highly and firms may look to alternative suppliers, price to low and firms may question the quality of merchandise. Pricing is key to the relationship between supplier and firm.
Trust	Trust is key for the relationship between firm and supplier. Most business transactions are on credit and not cash – therefore suppliers <u>have to be</u> able to trust that a firm will make a profit and be able to pay them back in cash.

5. Placing Strategy – Managing Quality within a Business

Type of Quality Control	Explanation:
Quality Control	Quality control is a system of inspection to try to make sure that customers don't experience a poor-quality product or service. Such controls may include Factory Inspectors at the end of a production line checking the quality of a product
Quality Assurance	Quality Assurance describes the system put into place by a company to assure quality within the production system. Every member of staff will have responsibilities to quality assure products. Over time this should lead to quality products as people become better at their roles.
Quality Culture	Quality culture means the general attitudes and behaviours among staff within a workplace is focussed on high quality production. Quality culture describes motivated, punctual, diligent and invested employees who care about the business and strive to improve it.

6. The Sales Process

Term	Definition
Customer Engagement	The attempt to make a customer feel part of something rather than an outsider.
Customer Feedback	Comments, praise or criticisms given to the company by its customers
Post-Sales Service	Service received after the purchase is completed because something has gone wrong or as a way of promoting customer engagement
Product Knowledge	How well staff know all the features of the products and service issues surrounding the products.

7. Customer Service

Great Customer Service is pivotal to any successful business, but there is far more than that to the sales process. To succeed in sales, a business must make sure it provides:

Component of Customer Service	Term
Product Knowledge	<p>Customers expect that staff will be sufficiently well trained and well-motivated to have good knowledge of the products and services being offered. In order to ensure staff, have good product knowledge, certain things are essential:</p> <p>Good Training – if businesses provide good training to staff, then staff will be knowledgeable about products and therefore will be able to improve the customer experience</p> <p>Loyal Staff – The longer staff stay working in a job the better they become. If staff only stay three to six months, they will never develop a rich understanding of the products and services that the business provides. Well managed businesses pay fairly and treat staff with respect.</p> <p>Committed Staff – Committed and enthusiastic staff are crucial to the smooth running of any business. This is affected by the quality of recruitment, the standard of training and the overall culture that exists within the company's workforce.</p>
Speedy and Efficient Service	<p>Good customer service is designed for the customer not the company.</p> <p>Efficient service:</p> <p>Gets products to customers exactly when you want them</p> <p>Gets products to customers in good condition</p> <p>If there is anything <u>wrong</u> - it will be sorted out as soon as possible and considerately</p>
Customer Engagement	<p>In the world of social media, it becomes possible to try to keep customers engaged with the business on a regular basis.</p> <p>Companies engage customers in a variety of ways:</p> <p>E-Mail</p> <p>Social Media (Facebook and Instagram)</p> <p>Post</p> <p>Text</p> <p>Television/Web advertisements.</p> <p>It is vital that customers feel up to date and informed about any product innovations</p>
Responses to Customer Feedback	<p>How companies respond to customer feedback is vital, providing great customers service where people feel listened too ensures customers continue to come back and buy products from the business.</p> <p>It can cost a lot of money to persuade new customers to come advertising is expensive and it's affects are hard to judge. Building up a reputation for responding to customer feedback can travel by word of mouth and this is much cheaper.</p>
Excellent Post Sales Service	

1. Types of Production

There are three main types of production:

Type of Production	Explanation
Job Production	
Batch Production	
Flow Production	

2. Types of Production (Advantages and Disadvantages)

There are three main types of production:

Type of Production	Advantages and Disadvantages
Job Production	<p>Advantages:</p> <p>Disadvantages:</p>
Batch Production	<p>Advantages:</p> <p>Disadvantages:</p>
Flow Production	<p>Advantages:</p> <p>Disadvantages:</p>

3. Managing Stock – Key Definitions

Term	Explanations
Bar Gate Stock Graph	
Buffer (stock)	
Just in Time (JIT)	
Stock	

Managing Stock well is vital to the success of a business. Successful stock management requires the right balance between reliability and cost. **Too little stock and customers will feel let down. Too much stock and high costs will force high prices. Without stock, sales cannot happen. Manufacturers and retailers need to make sure they supply the right amount of goods to keep the shelves full.**

4. Procurement – Working with Suppliers

There are five main factors at the heart of a relationship between a company and its suppliers:

Quality	
Delivery	
Availability	
Cost	
Trust	

5. Placing Strategy – Managing Quality within a Business

Type of Quality Control	Explanation:
Quality Control	
Quality Assurance	
Quality Culture	

6. The Sales Process

Term	Definition
Customer Engagement	
Customer Feedback	
Post-Sales Service	
Product Knowledge	

7. Customer Service

Great Customer Service is pivotal to any successful business, but there is far more than that to the sales process. To succeed in sales, a business must make sure it provides:

Component of Customer Service	Term
Product Knowledge	
Speedy and Efficient Service	
Customer Engagement	
Responses to Customer Feedback	
Excellent Post Sales Service	

How you are assessed

Assessment Objectives:

Each component is marked based on 4 assessment objectives: You will be assessed on how effectively you meet the criteria set out in each objective.

6 Key Words for this term

- | | |
|--------------------------|-----------------|
| 1 Observe | 4 context |
| 2 Develop | 5 inspiration |
| 3 Critical understanding | 6 juxtaposition |

A. What three techniques will you develop next in your project?

Art Analysis

Sentence Starters

Content

Form

Process

Mood

Context

G.	Assessment objectives A01, A02
A01	Assessment Objective 1 A01 is about developing ideas from a starting point through to a final outcome. This is achieved by responding in sketch format by taking inspiration from a variety of artists.
A02	Assessment Objective 2 A02 is about refining your ideas through the selection of appropriate media, materials, techniques and processes, and should be linked to the artists you have studied. You should be annotating your work showing clearly these connections



G.	Have you explored the following techniques
	Drawing
	Etching
	Collage
	Painting
	Sculpture
	Installation
	Photography
	Inks

G.	Assessment objectives A03, A04
A03	Assessment Objective 3 A03 is about recording your ideas, observations and insights. These can be visual shown through your use of materials, media and processes. As well as the way you develop your ideas, skills and techniques with written annotation.
A04	Assessment Objective 4 A04 is about presenting a personal, informed and meaningful response, from your initial research through to your final piece. This should be visible through suitable source material and media, the connections you made to your chosen artist and your ability to select appropriate media. Your work should be seen as a visual 'journey' from your starting point through to your final piece, that demonstrates your understanding of your particular area of study.

Key questions

If you are looking at an image and don't know how to respond to it break it down into its individual parts.

What colour is it? - could you make a response just looking at its colour or shape?

How does it make you feel? Could that trigger an instinctive/ expressive response

Could you respond to the shape or texture?

Could you delve deeper into the social or historical context of the piece of artwork?

Your key areas of focus should be on figuring out how you can turn your piece of artwork into something else. Your GCSE is a series of developments and experiments leading up to your exam

<p>Describe</p> <p>What did you do?</p> <p>I created.....</p> <p>I have worked on.....</p> <p>What did you use?</p> <p>I have used the following materials.....</p> <p>I created this by using.....</p>	<p>Analyse</p> <p>How does this process compare with the last item you made?</p> <p>This process differs from the last technique I used because.....</p> <p>This process builds on the last technique that I used because.....</p> <p>What did you think about working with this material?</p> <p>I have enjoyed working with this material because.....</p>	<p>Evaluate</p> <p>What was the benefit of working in this way?</p> <p>This material was good to work with, because.....</p> <p>How would you use the materials differently?</p> <p>I would like to try using..... in a different way because.....</p> <p>Working with..... could be improved by.....</p> <p>What was difficult about the task?</p> <p>The most difficult aspect of this task was.....</p> <p>The process I found most difficult was.....</p>	<p>Reflect</p> <p>Would you use this technique again?</p> <p>I could use this material again because.....</p> <p>How would you use the materials differently?</p> <p>I would like to try using..... in a different way because.....</p> <p>This technique would work well if used.....</p> <p>How could you adapt this technique to be with other materials you have used?</p> <p>I would like to try using this technique, in the same way I used.....</p>
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What we are learning this term:

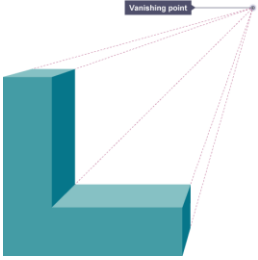
- A. One-Point Perspective B. Two-point Perspective C. Isometric Drawing
 D. Exploded Drawing E. Oblique Drawing F. CAD G. Orthographic Drawing

Design Strategies Introduction.

Design strategies are used to create technical drawings, to show an object in 3D on a 2D page. Perspective drawings show an object getting smaller in the distance. The rest are done to scale.

A. One-point Perspective Drawing

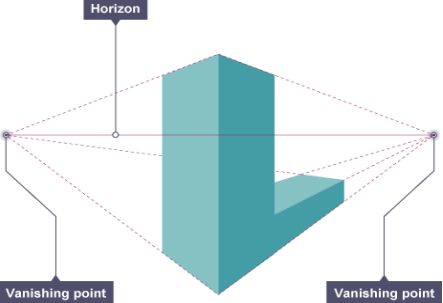
Single-point perspective shows an object from the front in a realistic way. The front view goes back towards a vanishing point on the horizon.



Commonly used by interior designers to show a view into a room.

B. Two-point Perspective Drawing

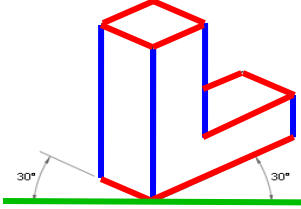
Two-point perspective shows an object from the side with two vanishing points. It gives the most realistic view of a product as it shows the item edge on, as we would see it. It is often used to produce realistic drawings of an object.



Commonly used by architects to show realistic building ideas.

C. Isometric Technical Drawing

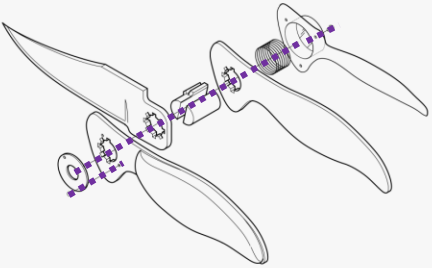
Made up of a series of parallel **vertical lines** and parallel **30-degree lines**. But no **horizontal lines**.



Used by architects and engineers to communicate their ideas to the client and manufacturer.

D. Exploded Technical Drawing

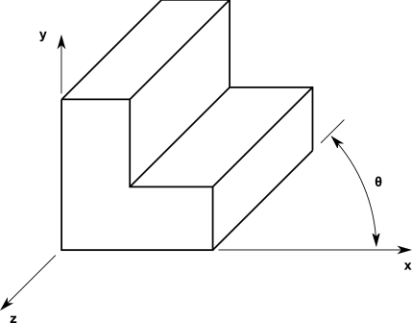
Exploded technical drawing is an Isometric drawing of all the parts and components of an object.



All parts are shown separately so you can see all aspects. **Dashed lines** indicate where everything goes and in what order.

E. Oblique Technical Drawing

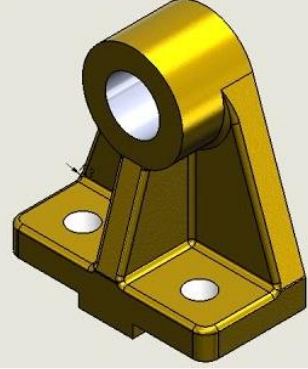
Consists of an object where the front view is drawn flat with height and width of the object drawn to the correct lengths. Diagonal lines are drawn at 45-degrees.



Commonly used by engineers for drafting ideas.

F. CAD (Computer Aided Design)

This is designing using a computer using a software such as 2D Design or Solidworks.

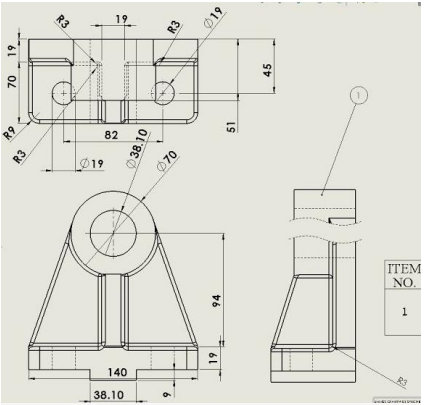


Commonly used to model, test and develop an idea before manufacture.

G. Orthographic Projection – 2D NOT 3D Drawing Strategy!

This shows 2D views of a 3D object from different angles – front, plan and end. Lines are dimensions have specific meaning to avoid confusion.

- Object Line
- - - Hidden Line
- · - · - Center Line
- Dimension Line
- Construction Line



Commonly used in industry to help the manufacturer understand the design.



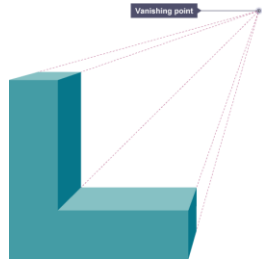
What we are learning this term:

- A. One-Point Perspective
- B. Two-point Perspective
- C. Isometric Drawing
- D. Exploded Drawing
- E. Oblique Drawing
- F. CAD
- G. Orthographic Drawing

Design Strategies Introduction.

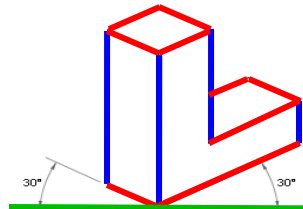
Design strategies are used to create technical drawings, to show an object in 3D on a 2D page. Perspective drawings show an object getting smaller in the distance. The rest are done to scale.

A. One-point Perspective Drawing



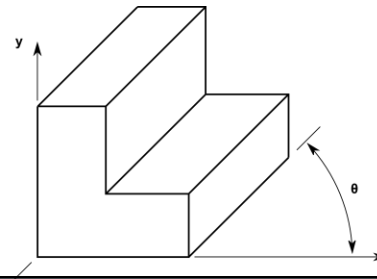
Commonly used by interior designers to show a view into a room.

C. Isometric Technical Drawing



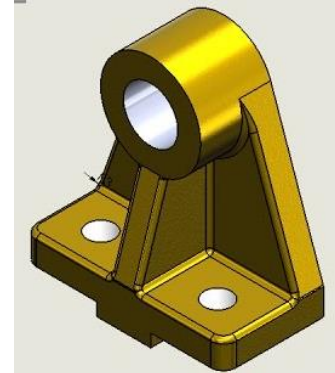
Used by architects and engineers to communicate their ideas to the client and manufacturer.

E. Oblique Technical Drawing



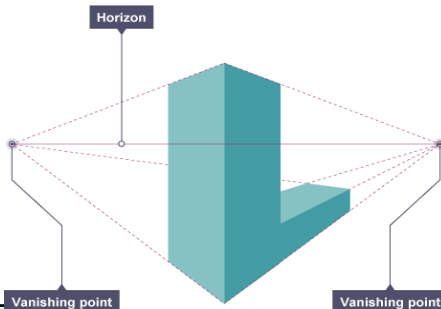
Commonly used by engineers for drafting ideas.

F. CAD (Computer Aided Design)



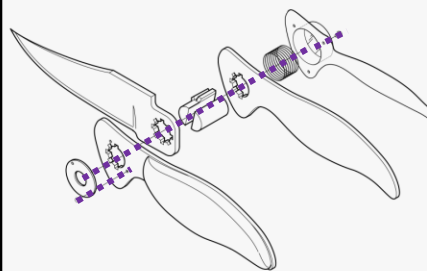
Commonly used to model, test and develop an idea before manufacture.

B. Two-point Perspective Drawing



Commonly used by architects to show realistic building ideas.

D. Exploded Technical Drawing

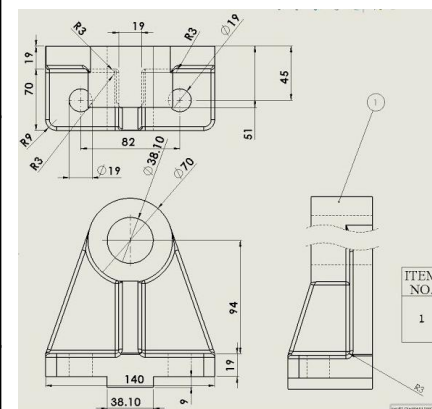


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G. Orthographic Projection – 2D NOT 3D Drawing Strategy!

- Object Line
- Hidden Line
- Center Line
- Dimension Line
- Construction Line

Commonly used in industry to help the manufacturer understand the design.





Year 11 Food & Nutrition Term 2



What we are learning this term:

A. Healthy Eating Guidelines B. Nutritional Needs of Different Age Groups C. Energy Needs and Portion Sizes D. Diet-Related Health Problems

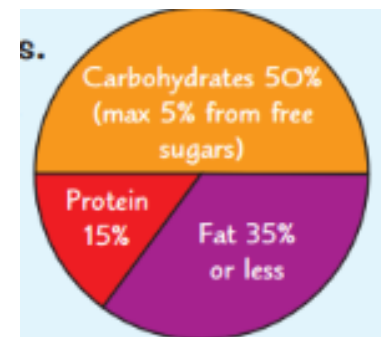
A. Healthy Eating Guidelines	
	5 portions of fruit and vegetables a day – making up 1/3 of daily food intake
	Using unsaturated oils and spreads , and not often
	Protein: lean cuts and unprocessed meat best, plus 2 portions of fish per week (1 oily)
	Having some dairy or alternatives and trying lower fat options
	1/3 of daily food intake being starchy carbs . Go for higher fibre/wholegrain options
	6-8 glasses of fluids a day (but no more than 1 being fruit juice)
	Eat less sugary, salty and fatty foods.

B. Nutritional Needs of Different Age Groups	
Children & Teens 	<ul style="list-style-type: none"> Still growing so need a lot of energy Young children need small and frequent meals Lots of calcium Stress during teenage years can affect eating habits
Adults 	<ul style="list-style-type: none"> Stop growing and nutritional needs don't vary much Should focus on maintaining a balanced and healthy diet
Elderly Adults 	<ul style="list-style-type: none"> Muscle decreases and exercising is harder – diet may change Taste and smell changing can affect the enjoyment of food
Other Factors	<ul style="list-style-type: none"> Males usually bigger/taller = more daily kcal needed Iron is lost during menstruation = higher iron requirements Bone density can be lost after the menopause = important to get lots of calcium and Vitamin D Towards the end of pregnancy, the body needs 200 more kcal per day to support baby's growth Active humans will need more kcal and protein

C. Energy Needs & Portion Sizes	
BMR	Basel Metabolic Rate is the amount of energy needed to live e.g. breathing . It's affected by many factors; age, sex, weight, exercise
PAL	Physical Activity Level measures how active you are. A higher PAL means more active .
Daily energy requirement (kcal) = BMR x PAL	
To maintain a healthy weight, energy intake must be balanced:	
Energy in > energy out = weight gain Energy in < energy out = weight loss	
Portion size: prepare the right amount e.g.	
<p>1 meat portion = size of palm 1 veg portion = size of fist</p> <p>Use scoops, dividers & cutters to portion meals</p>	

D. Diet-Related Health Problems		
	Example of cause	Health Problems
Obesity	Eating lots of sugary and fatty foods	High blood pressure and cholesterol
Coronary Heart Disease	Eating lots of saturated fats	Blood clots and heart attacks
Anaemia	Not eating enough iron-rich food	Tiredness, heart palpitations
Type 2 Diabetes	Being overweight or obese / too much sugar	Kidney failure, poor eyesight
Rickets (children)	Not enough Vitamin D or Calcium	Soft bones may lead to lowed legs
Osteoporosis (old age)	Malnutrition and not enough Calcium	Loss of bone density, brittle bones break easily
Tooth Decay	Plaque build-up from eating too many sugary foods	Fillers, loss of teeth

Recommended ratio for energy sources:





Year 11 Food & Nutrition Term 2



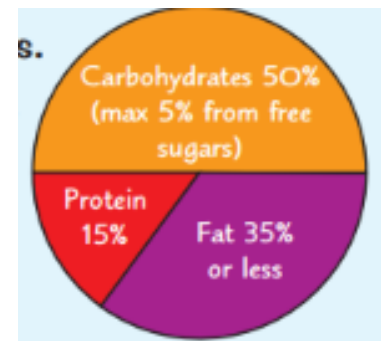
What we are learning this term:

A. Healthy Eating Guidelines B. Nutritional Needs of Different Age Groups C. Energy Needs and Portion Sizes D. Diet-Related Health Problems

A. Healthy Eating Guidelines	B. Nutritional Needs of Different Age Groups	C. Energy Needs & Portion Sizes
	Children & Teens 	BMR
	Adults 	PAL
	Elderly Adults 	Daily energy requirement (kcal) = BMR x PAL
	Other Factors	To maintain a healthy weight, energy intake must be balanced:
		Energy in > energy out = weight gain Energy in < energy out = weight loss
		Portion size: prepare the right amount e.g.
		<p style="text-align: center;">Use scoops, dividers & cutters to portion meals</p>

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Recommended ratio for energy sources:





What we are learning this term:	
A.	The values that can be promoted through sport
B.	The Olympic and Paralympic values
C.	Initiatives that promote values through sport
D.	The important of etiquette and sporting behaviour
E.	The use of performance enhancing drugs

A.	Key question from Assessment objectives?	
Key word	Key definition	
Etiquette	A code of polite behaviour	
Enhancing	To improve something	
Initiatives	A scheme to try and improve something	
Reputation	The opinions about something	
Creed	A belief in something	
Inclusion	Making sure everyone has an equal opportunity	
Sportsmanship	Fair and generous behaviour	
Gamesmanship	Winning by bending the rules	

A.	What is the Olympic creed?
<p>"The most important thing is not to win but to take part, just as the most important thing in life is not to triumph but the struggle. The essential thing is not to have conquered, but to have fought well."</p> <p>Pierre De Coubertin- Founder of the modern Olympic games</p>	

Main assessment objectives	
Learning outcome: Know about the role of sport in promoting values	
C.	What is the difference between sportsmanship and gamesmanship?
<p>Sportsmanship is the unwritten rules that players play by, whereas gamesmanship is bending the rules to gain an advantage</p>	
What is spectator etiquette?	
<ol style="list-style-type: none"> 1. Quiet at Wimbledon during rallies 2. Quiet during snooker 3. Quiet during national anthems 4. Clapping for a new batsman in cricket 	



A.	What are the values that can be promoted through sport?
<ol style="list-style-type: none"> 1. Team spirit 2. Fair play 3. Citizenship 4. Tolerance 5. Inclusion 6. National pride 7. Excellence 	



A.	What are the Olympic and Paralympic values?
<ol style="list-style-type: none"> 1. Respect 2. Excellence 3. Friendship 4. Courage 5. Determination 6. Inspiration 7. Equality 	

G.	Performance enhancing drugs
<p><u>Why do athletes use them?</u></p> <p>Pressure to succeed as an individual Pressure to succeed as a nation Pressure from sponsors</p> <p><u>Why they shouldn't be used?</u></p> <p>Long term health issues Consequences when found guilty Unfair advantage</p> <p><u>What is WADA?</u></p> <p>World Anti Doping Agency The organisation is charge of drug testing across the world</p> <p><u>How do they carry out drug testing?</u></p> <p>Blood sample Hair sample Nail sample</p>	



Sporting values	
Team spirit	Learning how to work together and support others
Fair play	Learning the importance of playing by the rules
Citizenship	Involved in your local community through sport
Tolerance and respect	Developing understanding of different countries and culture through sport
Inclusion	Initiatives to get under-represented social groups involved in sport
National pride	Supporters and performers unite behind a country in international events
Excellence	Striving to be the best you can be in your favourite sport

Values that can be promoted through sport



What we are learning this term:

- A. *The values that can be promoted through sport*
- B. *The Olympic and Paralympic values*
- C. *Initiatives that promote values through sport*
- D. *The important of etiquette and sporting behaviour*
- E. *The use of performance enhancing drugs*

A.	Key question from Assessment objectives?	
Key word	Key definition	
		A code of polite behaviour
		To improve something
		A scheme to try and improve something
		The opinions about something
		A belief in something
		Making sure everyone has an equal opportunity
		Fair and generous behaviour
		Winning by bending the rules

A.	What is the Olympic creed?
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Sportsmanship is the unwritten rules that players play by, whereas gamesmanship is bending the rules to gain an advantage	
What is spectator etiquette?	
1	
2	
3	
4	

A.	What are the values that can be promoted through sport?
1	
2	
3	
4	
5	
6	
7	

A.	What are the Olympic and Paralympic values?
1	
2	
3	
4	
5	
6	
7	

G.	Performance enhancing drugs
<u>Why do athletes use them?</u>	
1	
2	
3	
<u>Why they shouldn't be used?</u>	
1	
2	
3	
<u>What is WADA?</u>	
1	
2	
<u>How do they carry out drug testing?</u>	
1	
2	
3	

Sporting values	
	Learning how to work together and support others
	Learning the importance of playing by the rules
	Involved in your local community through sport
	Developing understanding of different countries and culture through sport
	Initiatives to get under-represented social groups involved in sport
	Supporters and performers unite behind a country in international events
	Striving to be the best you can be in your favourite sport

Values that can be promoted through sport

BUILDING BRICKS:

Exploring the Elements of Music and the Functions of a Keyboard
 Why? – To excel in listening, analysis, composition & performance



A. MELODY

Melody is a succession of pitches in rhythm. The melody is usually the most memorable aspect of a song, the one the listener remembers and is able to perform.

B. ARTICULATION

Articulation refers to the way that notes should be performed. There are many types of articulation, with each having a different effect on how the note is played.

C. DYNAMICS

The dynamics of a piece is the variation in loudness between notes or phrases. Musicians use a variety of dynamics to add excitement and emotion to songs.

KEYWORD	MEANING
Pitch	How high or low a sound is
Octave	A series of 8 notes e.g., C-C, D-D
Pentatonic	A musical scale with 5 notes
Range	The distance between the lowest and highest pitched note in a melody
Motif	A repeated theme that is memorable
Hook/Riff	A very catchy melodic phrase
Imitation	Repeated melody in a different instrument or voice

KEYWORD	MEANING
Staccato	Short and detached notes
Legato	Smooth and slurred notes
Accent	Emphasis placed on a particular note/beat
Pizzicato	Plucked strings
Arco	Bowed strings
Col Legno	Hitting strings with the wood of the bow
Glissando	Sweeping notes (think of the harp)
Vibrato	Subtly vibrating the sound by alternating the pitch between two notes

KEYWORD	MEANING	SYMBOL
Pianissimo	Very quiet	<i>pp</i>
Mezzo Piano	Moderately quiet	<i>mp</i>
Piano	Quiet	<i>p</i>
Mezzo Forte	Moderately loud	<i>mf</i>
Forte	Loud	<i>f</i>
Fortissimo	Very loud	<i>ff</i>
Crescendo	Gradually louder	
Diminuendo	Gradually quieter	

D. TEXTURE

Texture describes how layers of sound within a piece of music interact. Texture is determined by how many instruments are playing and how many different parts there are.

E. STRUCTURE

Structure is the order that different parts of the song are played in. The basic structure of a song can include an intro, verse, pre-chorus, chorus, and bridge.

F. HARMONY

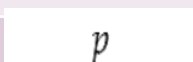
Harmony is the blending of simultaneous sounds of different pitch. A harmony differs from a melody in the way that it stacks multiple notes on top of one another to create a sound.

KEYWORD	MEANING
Unison	All playing or singing the same note
Thick/Thin	Number of layers of instruments/voices
Monophonic	A single line of musical notes
Homophonic	Moving together in chordal fashion
Polyphonic	Multiple layers, weaving melodic lines
Tutti	Meaning 'everyone' or 'all together'
Call & Response	Like question and answer – two parts having a musical conversation
Counter melody	A tune that complements the main melody

KEYWORD	MEANING
Binary	Two main sections, AB
Ternary	Three distinct sections, ABA
Rondo	Initial section that recurs, ABACADA
Theme & Variations	A melody is stated and is then repeated several times with changes
Verse	Tells the main story of a song
Chorus	A catchy part that is repeated in a song
Bridge	A contrasting section that prepares the listener for the return of the chorus

KEYWORD	MEANING
Chord	Three or more notes played together
Triad	Three notes: root, third, fifth
Arpeggio	Broken chord: notes are sounded individually
Perfect Cadence	Two chords at the end of a passage that sound as though the music has come to an end
Imperfect Cadence	Two chords at the end of a passage that make the music sound unfinished
Modulation	The change from one tonality to another
Dissonance	Two or more clashing notes

Question	Answer	Question	Answer
Identify this musical symbol		What is a Motif ?	
What does this symbol mean?		What does pizzicato mean?	
What does Homophonic mean?		What does Fortissimo mean?	
How many sections are there in a Binary form piece of music?	1 2 3 4	Draw the symbol for Fortissimo	
What sections are in a Ternary Form piece of music?	AB ABA ABACA	Identify this musical symbol	
Identify this musical symbol		What does the above symbol mean?	
What does this symbol mean?		Put these dynamic markings in order from quietest to loudest: p ff f mp pp mf	
What is the definition for a hook/riff ?		What is an accent ? The symbol is >	
How many beats is this note worth?		What's the musical term for notes that are played short and detached ?	
What is the musical term for notes that are played smooth and slurred ?		What does Pentatonic mean?	
What is an Octave ?		What texture has multiple layers and weaving melodic lines?	



G. INSTRUMENTS

H. RHYTHM

I. TIMBRE

Rhythm involves time—the duration of musical sounds. Rhythm can exist without melody, as in the drumbeats of music, but melody cannot exist without rhythm.

Timbre refers to the quality of a sound made by a particular voice or musical instrument. It is what makes a musical note sound different from another one.

KEYWORD	MEANING
Strings	Violin, Viola, Cello, Double Bass, Harp
Brass	Trumpet, French Horn, Trombone, Tuba
Woodwind	Piccolo, Flute, Clarinet, Oboe, Bassoon
Percussion	Timpani, Xylophone, Glockenspiel, Maracas
Soprano	Highest female singing voice
Alto	A lower female singing voice
Tenor	Standard male singing voice
Bass	Low male singing voice

KEYWORD	MEANING	SYMBOL
Semiquaver	¼ beat	
Quaver	½ beat	
Pair of Quavers	1 beat	
Crotchet	1 beat	
Minim	2 beats	
Dotted Minim	3 beats	
Semibreve	4 beats	
Breve	8 beats	

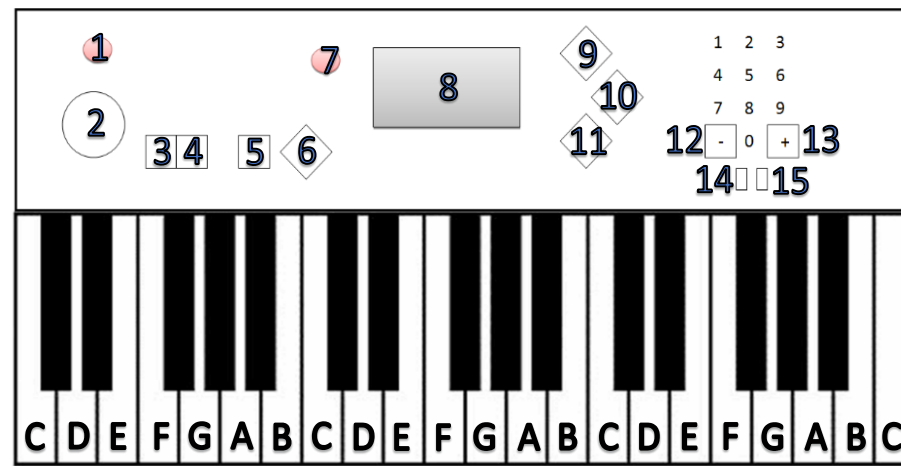
ADJECTIVE	INSTRUMENT	ADJECTIVE	INSTRUMENT
Sweet	Flute	Hollow	Xylophone
Nasal	Oboe	Booming	Bass Drum
Tinkly	Glockenspiel	Muted	French Horn
Pounding	Timpani	Dull	Viola
Brassy	Trumpet	Breathy	Saxophone
Mellow	Clarinet	Shrill	Piccolo
Rich	Cello	Pure	Violin
Crashing	Cymbals	Rattly	Maracas
Dark	Double Bass	Reedy	Bassoon

J. TEMPO

K. LAYOUT AND FUNCTIONS OF A KEYBOARD

Tempo means the speed at which a piece of music should be played. As with many other musical terms, Italian words are used to describe different tempos of music.

KEYWORD	MEANING	SYMBOL
Presto	Very fast	168-200bpm
Allegro	Fast	120-168bpm
Moderato	Moderate	108-120bpm
Andante	Walking pace	76-108bpm
Adagio	Slow	66-76bpm
Largo	Very slow	40-66bpm
Accelerando	Gradually faster	accel.
Rallentando	Gradually slower	rall.










1. Power Button (on/off)
2. Volume
3. Accompaniment
4. Intro/Ending
5. Sync. Start
6. Start/Stop Button
7. Tempo Button
8. Screen
9. Song
10. Voice
11. Style
12. Go left on options
13. Go right on options
14. Dual

L. DRILL TERMS

KEYWORD	MEANING
Treble Clef	Also known as the G Clef as it starts on the G line
Bass Clef	Also known as the F Clef as it starts on the F line
Stave	5 lines, 4 spaces that music notes are written on

KEYWORD	MEANING
Quaver	A note that lasts for ½ beat
Crotchet	A note that lasts for 1 beat
Minim	A note that lasts for 2 beats

KEYWORD	MEANING
Dotted Minim	A note that lasts for 3 beats
Semibreve	A note that lasts for 4 beats
Sharp/Flat	Higher/Lower by 1 semitone

Question	Answer	Question	Answer
How many Semi-quavers are in a Crochet ?		What Instrument has a Dark Timbre ?	
What does Accelerando mean?		What is the definition of Allegro ?	
Give the names of 4 Brass instruments ...		How many Quavers are in a Minim ?	
How many Beats is this note? 		What does Alto mean?	
What is the name the note? 		What Clef is also know as the F Clef ?	
What does the word Presto mean?		Identify this musical symbol 	
List 3 instruments found in the Brass section of an orchestra		How many beats is this symbol? 	
Solve this problem:  +  - 		List 3 instruments found in the Woodwind section of an orchestra	
What note lasts for 4 beats ?		What musical term is used for the highest female singing voice ?	
What does Sharp/Flat mean?		What Timbre does the Violin have?	
What does the key word Andante mean?		List 3 instruments that can be found in the string section	



What we are learning this term:

A. Health & Safety

B. Manufacturing processes

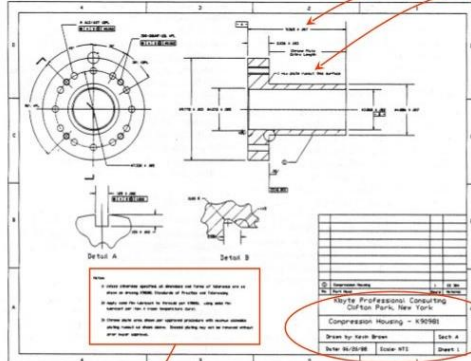
C. reading technical drawings

D. Tools & Equipment



A. Health & Safety	
Risk Assessment	A risk assessment is the analysis of the risks involved when using equipment or performing a process.
Hazard – something that may harm someone. Risk – how likely a hazard is to happen. Control measure – actions taken to reduce the risk of harm	
Ejection hazard – material being thrown out of the machine toward the user	Entrapment hazard – the user being caught and pulled into the moving parts of the machine
Inhalation hazard – people in the vicinity of the hazard breathe in harmful dust or chemicals	Sharp force hazard – the user is cut, stabbed or scraped by the sharp material.
Slip, trip and fall hazards – common hazards caused by unclean or cluttered workspaces.	Blunt force hazard – a victim is crushed, hit or bruised by the blunt object. Major blunt trauma can cause fractures or internal bleeding.

C. Reading technical drawings




Dimension & Notes

Technical drawings always include a border and title block to identify them and give the reader important information. You may also write notes on a technical drawing, if relevant.

Notes

Lec. Bhuiyan Shameem Mahmood

The scale factor shows how big the real product is compared to the drawing.

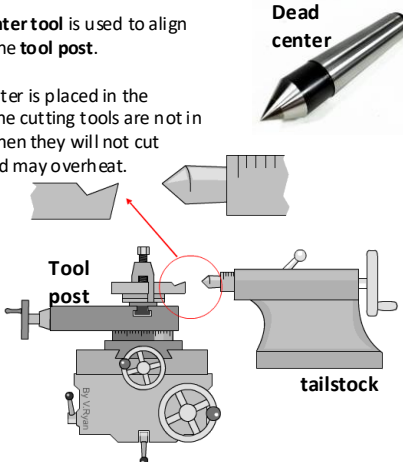
TITLE WHEEL BEARING	
NAME John Smith	CHECKED <i>[Signature]</i>
VERSION 1.1	DATE 16/10/98
NO NEED TO MEASURE - ALL MEASUREMENTS IN MM	SCALE 1:1
ITI ENGINEERING	

The type of orthographic drawing is shown by this symbol.

B. Manufacturing processes

The **dead center tool** is used to align the tools in the **tool post**.

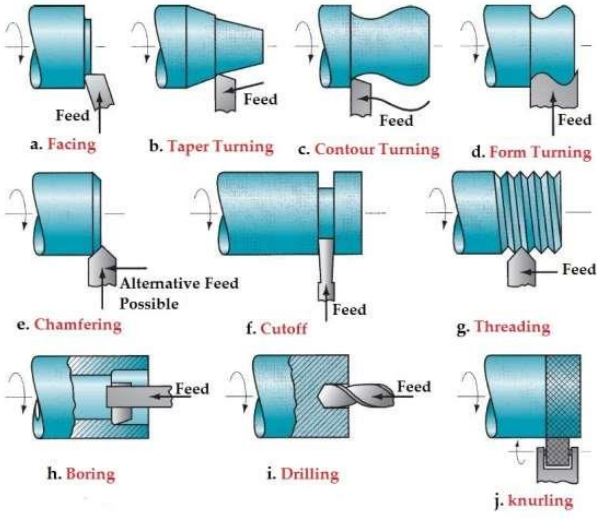
The dead center is placed in the **tailstock**. If the cutting tools are not in line with it, then they will not cut efficiently and may overheat.



Dead center

Tool post

tailstock







a. Facing b. Taper Turning c. Contour Turning d. Form Turning

e. Chamfering f. Cutoff g. Threading

h. Boring i. Drilling j. knurling

D. Tools & Equipment

External calliper – used for measuring the external dimensions of a workpiece

Lathe tools – cutting tools for a range of functions. From left to right; Parting tool, right-hand cutting tool, threading tool, left-hand cutting tool

Knurling tool - an attachment for the lathe that allows you to impress a diamond pattern into the material. Example shown here.

Tap and die set – these tools are attached to wrenches and allow you to cut an internal or external thread (spiral) in a hole. The hole must be pre-drilled 0.5mm smaller than the intended size of the final hole.



What we are learning this term:

A. Health & Safety

B. Manufacturing processes

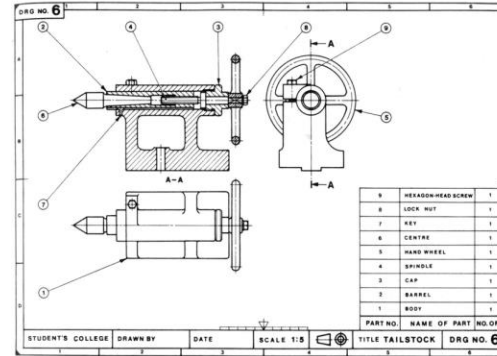
C. reading technical drawings

D. Tools & Equipment




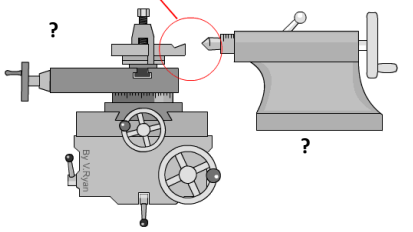
A. Health & Safety	
Risk Assessment	A risk assessment is the analysis of the risks involved when?
Hazard – Risk – Control measure –	
Give an example of an Ejection hazard –	Give an example of an Entrapment hazard –
Give an example of an Inhalation hazard –	Give an example of a Sharp force hazard –
Give an example of Slip, trip and fall hazards –	Give an example of a Blunt force hazard –

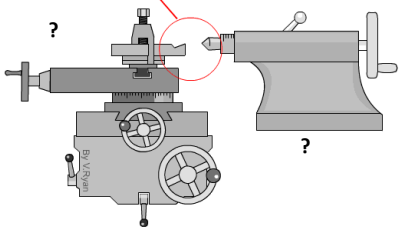
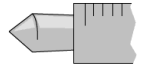
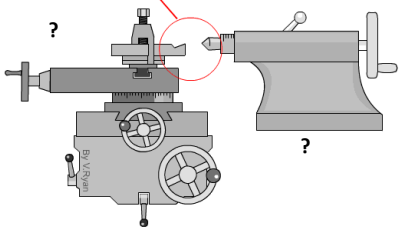
C. Reading technical drawings

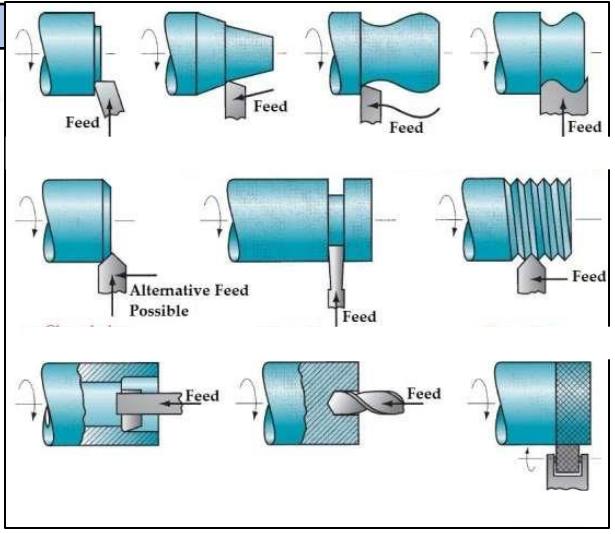


Task -Annotate this technical drawing










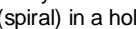
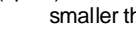
B. Manufacturing processes

The  is used for the tools in the .

The dead center is placed in the . If the cutting tools are not  then they will not cut efficiently and may .



D. Tools & Equipment

	– used for measuring the external dimensions of a workpiece
	– cutting tools for a range of functions. From left to right;  tool,  cutting tool,  tool,  cutting tool
	- an attachment for the lathe that allows you to impress a  pattern into the material. Example shown here.
	– these tools are attached to wrenches and allow you to cut an internal or external  (spiral) in a hole. The hole must be pre-drilled  smaller than the intended size of the final hole.



Remember:

The Component is externally assessed by an Examiner. It counts for 20% (60 marks in total).

Important Things!

Remember: Read your text, decide on your interpretation of the character and artistic intention. Be confident – full marks can be achieved in the Component.

YOUR DRAMA:

After deciding on the play you want to perform:

Remember: Read the whole play in order to understand the style, the playwright's intention, the period involved before analysing and interpreting your role.

Style: The style of the play - Naturalistic, Realistic, Absurd, Symbolic, Brechtian, Physical Theatre.

The Playwright's Intention: Discuss contemporary themes, e.g. mental health, family problem, anorexia, drugs. Discuss a historical theme, e.g. War and its impact on society?

Period: Historical, Political, Cultural

Research: Go online, look at Youtube clips and write rough notes.

ACTING ELEMENT:

Remember: Groups of 2 to 4

Time:

- groups of 2 actors – 5 to 10 minutes
- groups of 3 actors – 7 to 12 minutes
- groups of 4 actors – 9 to 14 minutes

You must: Perform two sections 10 minutes long that are key parts of the text.

You must: Perform a text that contrasts with the play you're studying for Component 3.

The play must: Be written by a different playwright, in different historical period and with different themes to the text in Component 3.

Why? To give you new experiences, and to be able to enjoy and challenge yourselves to learn and interpret different texts.

CHARACTERISATION:

Remember the criteria:

You will be marked on your physical skills, vocal skills, interaction, interpretation, communication with the audience and individual contribution.

Also remember:

Your artistic intention must be written and submitted to the examiner before or on the day of the examination.

Once you know your text, you will need to focus on your character. Remember to use a range of practice techniques that will help you develop your role and create the rounded character: The Red Chair, Role on the Wall, Improvisation, Mime Work, The Missing Scene, Emotional Memory, The Magic If.

During the rehearsal periods, develop your vocal and physical skills:

VOICE: pronunciation, emphasis, pauses, tone and tempo, accent, pitch, constructiveness, highlights.

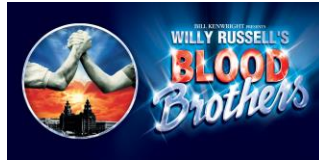
MOVEMENT: gesture, body posture, walk, position on the stage, characters' territories.

INTERACTION: distance, proximity, back turned, eye-rolling, facial response, moving away, approaching, physical gestures.

Discuss with your group what your stage shape will be, what type of set will be needed, stage equipment and props. It is also a good idea to use sound to create a mood and atmosphere either at the beginning, between scenes or at the end. You will need to carefully consider the costume, hair and make-up suitable for your role. Remember that you need consistent rehearsals and a full dress rehearsal before your final performance.



What we are learning this term:	
A.	How to develop our understanding of set design.
B.	How to apply the stanislavski system to character development.
C.	How to interpret the director's creative intention in Blood Brothers.
D.	How to reflect, analyse and evaluate our development.



Who is Willy Russell?	Other Plays by Willy Russell
William "Willy" Russell (born 23 August 1946) is an English dramatist, lyricist and composer. Russell was born in Whiston, Lancashire (which is now Merseyside). Aged 15, he became a ladies' hairdresser, eventually running his own salon, until the age of 20 when he decided to go back to college. This led to him qualifying as a teacher. During these years, Russell also worked as a semi-professional singer, writing and performing his own songs in folk clubs. At college, he began writing drama and, in 1972, took a programme of two one-act plays to the Edinburgh Festival Fringe, where they were seen by writer John McGrath, who recommended Russell to the Liverpool Everyman, which commissioned the adaptation, When The Reds..., Russell's first professional work for theatre.	<ol style="list-style-type: none"> 1. Educating Rita 2. Our Day Our 3. Shirley Valentine 4. Keep your eyes down 5. Stags and Hens

Key Words:
<p>Synchronisation – movement or speech that happens at the same time.</p> <p>Physical & Visual Theatre - a form of theatre that puts emphasis on movement rather than dialogue</p> <p>Chorus - those who perform vocally in a group as opposed to those who perform singly.</p> <p>Soundscape – layered voices and sounds to create a location or atmosphere</p> <p>Abstract – representational and symbolic, not life-like or naturalistic</p> <p>Sequence – an order of events/movements Pattern – a repeated phrase/sequence of movements.</p> <p>Naturalism- 'A slice of life onstage' Naturalistic performance that aims to be as true to life.</p> <p>Epic Theatre - didactic drama presenting a series of loosely connected scenes that avoid illusion and often interrupt the story line to address the audience directly with analysis, argument, or documentation</p> <p>Motivation - the reason a character does anything Revelations – when information is disclosed</p> <p>Narration – adding a spoken commentary for the audience about the action on stage or to help progress the story on.</p> <p>Climax – is a play or a specific scene's point of highest tension and drama</p> <p>Emotional Memory- to create a reservoir of memory from which to draw and on which to build. This memory can then be tapped into when the actor was working towards the creation of a character</p> <p>Narrative – the storyline and character's trajectory</p> <p>Symbols -are often used in drama to deepen its meaning and remind the audience of the themes or issues it is discussing.</p>

Key learning aims from Component 2	
<i>Learning aim A: Develop skills and techniques for performance</i>	A1: Development of physical, vocal and interpretative skills. Introduction to developing skills and techniques; participation in workshops as well as exploring symbolic and abstract performance.
<i>Learning aim B: Apply skills and techniques in rehearsal and performance</i>	B1: Interpretation of sections of Blood Brothers through a mixture of epic theatre techniques inspired by Brecht. Development of skills, techniques and interpretive skills leading to final performance in front of a live audience.
<i>Learning aim C: Review own development and performance</i>	C1: Review own development of skills and techniques for performance Evaluation of development of skills, responding to teacher/peer feedback and observations, identifying strengths and areas for development, setting actions and targets for improvement, referring to professional working practices.

	Keywords linked to Assignment Brief
Physical skills	The physical attributes you need to be able to practically move with technical accuracy. Rehearsal – Practising to improve your performance.
Performance skills	The performance attributes you need to be able to practically perform applying confidence, a character, a narrative etc.
Reflect	Look over your current work and the work of others and be able to reflect and comment on your own and others practice. How does reflection lead to improvement?
Analyse	Watch and then analyse your own, and the group, performance by seeing where your strengths and weaknesses are and how these can be improved.
Apply	How you can then physically apply the physical and performance skills to a live performance to make a successful practical performance.

Component 2 – Key focus
This component is designed to give students a practical overview of the skills, techniques and practices required for the discipline of drama. You will explore the techniques of Epic Theatre and apply them to the play: Blood Brothers. You will apply Brecht's non-naturalism to a section of the blood brothers script and perform to an audience. Through a series of workshops and rehearsals you will explore the different scenes of blood brothers as well as the director's creative intention. Using symbolism, non-naturalism, and minimalism you will explore the motivations behind these characters and their final fate.



What we are learning this term:	
A.	How to develop our understanding of set design.
B.	How to apply the stanislavski system to character development.
C.	How to interpret the director's creative intention in Blood Brothers.
D.	How to reflect, analyse and evaluate our development.



Who is Willy Russell	Other Shows by Willy Russell

Key Words:
<p>Synchronisation – _____</p> <p>Physical & Visual Theatre - a form of _____</p> <p>Chorus - those who perform _____</p> <p>Soundscape – layered _____</p> <p>Abstract – _____</p> <p>Sequence – an order of _____</p> <p>Naturalism - 'A slice of life' on stage. Naturalistic _____</p> <p>Motivation - the _____</p> <p>Epic Theatre- Didactic drama _____ to address the audience directly with analysis, argument, or documentation</p> <p>Climax – is a play or a specific scene's point of _____ and drama</p> <p>Narrative – the s _____ e and _____</p> <p>Narration- Adding _____</p> <p>Symbols -are often used in drama to _____ and remind the audience of the themes or issues it is discussing.</p> <p>Emotional Memory- to _____ . This memory can then be tapped into when the actor was working towards the creation of a character</p>

Key learning aims from Component 2	
<p><i>Learning aim A: Develop skills and techniques for performance</i></p>	
<p><i>Learning aim B: Apply skills and techniques in rehearsal and performance</i></p>	
<p><i>Learning aim C: Review own development and performance</i></p>	

	Keywords linked to Assignment Brief
Physical skills	
Performanc e skills	
Reflect	
Analyse	
Apply	

Expand your knowledge and understanding!

[Blood Brothers - GCSE English Literature Revision - AQA - BBC Bitesize](#)

Component 2 – Key focus

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What we are learning:	
A.	Key words
B.	What are the different types of health care services?
C.	What are the different types of social care services?
D.	What barriers are there to accessing care services?

A.	Key words for this Unit
Primary care	First point of contact when seeking health care
NHS	National Health Service – Tax funded health care in the UK.
Secondary care	Specialist health treatment and/or care
Tertiary care	Advanced specialist health treatment and/or care.
Allied health professionals	Professionals who are involved in patient care from diagnosis to recover
Clinical support staff	Support allied health professionals with the treatment and care of patients.
Foster care	A stable family home where care is provided on either a short or long-term basis.
Residential care	Accommodation and care for a number of children, young people or adults living together in one building.
Respite care	Short-term care which provides relief for family member who are carers.
Domiciliary care	Care received in the person's own home.
Sensory impairment	Difficulties with senses, most commonly vision and hearing.
Braille	Raised lettering to help visually impaired.
Occupational therapist	Offers support to develop independence for daily living activities.

B	What are the different types of health care services?
Primary Care	<ul style="list-style-type: none"> Primary care is the first point of contact a patient is likely to have with the NHS – you can refer yourself to primary care providers. Primary care providers include pharmacists, Registered GPs/doctors, walk-in centres, accident and emergency departments (A&E), dentists and Opticians.
Secondary Care	<ul style="list-style-type: none"> Secondary care is specialist treatment or care. A primary care provider will refer a patient for secondary care if they feel it is necessary for the patient to receive further advice, tests or treatment. Secondary care providers include cardiologists (heart), gynaecologists (female reproduction), paediatrics (children), obstetrics (childbirth and midwifery), psychiatry (mental health) and dermatology (skin).
Tertiary Care	<ul style="list-style-type: none"> Tertiary Care is advanced specialist treatment or care. A secondary care provider will refer a patient for tertiary care for long-term treatment and/or care. Tertiary care areas include spinal, cardiac (heart), cancer care, chronic pain, burns and neonatal (premature and ill new born babies).
Allied Health Professionals	<ul style="list-style-type: none"> Allied health professionals work in a range of specialities They support patients through all stages of care – from diagnosis to recovery. To work with the public they must register with the Health and Care Professions Council (HCPC). Allied health professionals include art therapists, dieticians, paramedics, physiotherapists, speech and language therapists and radiographers.
Clinical Support Staff	<ul style="list-style-type: none"> Clinical support staff work within a range of departments under the guidance of allied health professionals. They are trained in their roles but are not required to register with the HCPC. Clinical support staff include theatre support workers, prosthetic technicians, dietetic assistant, phlebotomist (collects blood samples), hearing aid dispensers and maternity support workers.








C.	What are the different types of social care services?
Children and young people	<ul style="list-style-type: none"> Children and young people may need support on a temporary or permanent basis because their parent or carer is ill; they have family problems, they have behavioural issues or additional needs. Types of support for children and young people include foster care, residential care and youth work.
Children or adults with specific needs	<ul style="list-style-type: none"> Children and adults may need support with specific needs including learning disabilities, sensory impairments and long-term health issues. Types of support for children and adults with specific needs include residential care, respite care and domiciliary care.
Older Adults	<ul style="list-style-type: none"> Older adults may need support with a range of needs including arthritis, cardiovascular disease, dementia and depression. Types of support for older adults include residential care, carers and personal assistants.
Informal Social Care	<ul style="list-style-type: none"> Not all carers get paid for what they do – they are known as informal carers and social services would rarely struggle without them. Informal carers include a spouse or partner, children, friends and neighbours. Informal carers do practical household duties, shopping, laundry, walk the dog and help with personal care.



D. What barriers are there to accessing care services?	
Physical Barriers 	<ul style="list-style-type: none"> • Difficulty accessing care due to mobility and/or disability. • Obstacles include uneven and rough pavements and services, narrow doorways, no lift and transport. • Access could be improved by planning journeys in advance and reporting any problems to the council.
Sensory Barriers 	<ul style="list-style-type: none"> • Sensory impairments can be a barrier to accessing care. • A person with poor vision may need glasses or documents in large print. Profound sight problems may benefit from Braille. • A person with a hearing impairment may benefit from a hearing aid or sign language interpreter.
Social, Cultural and Psychological Barriers 	<ul style="list-style-type: none"> • Social, cultural and psychological barriers may leave people feeling nervous about accessing support. • These can include: religion/cultural barriers, negative experience, self-diagnosis, substance misuse, opening hours. • Care services can give individuals opportunities to share their concerns, offer different gender practitioners, facilities to worship and show respect and understanding.
Language Barriers 	<ul style="list-style-type: none"> • Language can be a barrier to accessing care services because individuals and care providers may struggle to understand each other. • Support for individuals could include translated documents, translators and interpreters and support from family members.
Geographical Barriers 	<ul style="list-style-type: none"> • Individuals may struggle to reach care services because public transport may not run regularly, specialist treatments may require long distance travel and travel can be expensive. • Support could include being provided with direct travel or having travel costs reimbursed.
Intellectual Barriers 	<ul style="list-style-type: none"> • If an individual has a learning disability it can cause difficulty in them accessing care services. • Support might include a learning disability nurse, speech and language therapist or occupational therapist.
Resource Barriers 	<ul style="list-style-type: none"> • As the population ages and more disorders are being successfully treated, there is a huge strain on health and social care resources – at times it might seem that not everyone can access what they need. • There are huge staff shortages which puts strain on people that work in the health and social care sector.
Financial Barriers 	<ul style="list-style-type: none"> • Seeing a GP or using emergency services are free but some services, such as optical and dental care, often involve some payment. • This can be difficult for people if they are from a low-income household as they may not feel they can afford to access the care they need.

What we are learning:
E. Define the key words
F. What are the care values and how can they be implemented?

E.	Define the key words
Self-respect	Valuing yourself
Person centred approach	Planning care around the wants and needs of a service user
Empowerment	Supporting people to take control of their lives and futures by involving them decisions on their care and treatment
Confidentiality	Not passing on information or discussing a private conversation to anyone
Dignity	Being respected and treated with care
Safeguarding	Policies to ensure children and vulnerable adults are protected from harm, abuse and neglect
Discrimination	Treating a person or group of people unfairly or less well than others
Compassionate	Feeling or showing sympathy and concern for others
Competence	The ability to do something successfully and efficiently
Consequences	A result or effect, typically one that is unwelcome or unpleasant
Review	Involves assessing or inspecting something with the intention of making change if necessary
Empathy	Being able to understand and share feelings and views of another person.
Insomnia	Difficulties in sleeping

F.	What are the care values and how can they be implemented?
Empowering and promoting independence 	<ul style="list-style-type: none"> Empowerment is when an individual feels in control of their own life and have a say in what happens to them. Some people might need help with empowerment because of their age, circumstances or confidence e.g. elderly people, children, adult with learning disabilities. You can promote empowerment and independence by involving individuals, where possible, in making choices about their treatment.
Respect for others 	<ul style="list-style-type: none"> You can show respect for the individual by respecting their privacy, needs, beliefs and identity. Show respect by being patient when someone takes longer to perform simple tasks due to their age, disability or injury. Do not leave personal files around for others to see or discuss your patients' case with friends. Gain permission before entering a room, provide private place for personal conversations.
Maintaining confidentiality 	<ul style="list-style-type: none"> It is a person's right by law to have information about them kept confidential. Care workers are not allowed to talk about one service user to another, or someone who is not involved in helping them get better. This involves not having those private conversations in public places where other can overhear. Paper and electronic files are to be kept confidential and only shared with care workers which are involved in the treatment of the patient.
Preserving dignity 	<ul style="list-style-type: none"> Preserving the dignity of individuals to help them maintain self-worth, privacy and self-respect. You do this by involving the person in their own care; helping them go to the bathroom; giving the person time they need, checking what they would like to be called; closing door or curtain when they are changing; making sure their clothes are clean; dealing with embarrassing situations sensitively and professionally.
Effective communication 	<ul style="list-style-type: none"> In health and social care it is important to communicate effectively with service users in order to build trusting relationships. These can be lost if the care worker appears not to care or listen. Recognising different communication needs and trying to overcome them shows that care workers respect the individual e.g. when visually impaired providing a leaflet in braille; if can't speak English well, have a translator organised beforehand. Show you value the person through showing empathy, asking questions, not judging, smiling, using their name, giving appropriate eye contact, open body language, giving time to process.
Safeguarding and duty of care 	<ul style="list-style-type: none"> Health and social care workers have a legal duty to protect service users from harm, neglect or abuse. They must recognise the signs and symptoms of abuse so they can protect people. Signs of abuse include low self-esteem, STDs, unexplained injuries or bruises, insomnia, change in appetite, change of personality, self-harming, fear of being alone etc. What to do: report the abuse, never promise to keep the abuse secret, make it clear that you will have to tell someone e.g. your supervisor or the police. <p>DUTY OF CARE</p> <ul style="list-style-type: none"> Care workers must work in ways that never put individuals at any risk or harms. They need to know their responsibilities, procedures, deliver care as the care plan states and always report and record any concerns about the service user even if they appear minor.
Promoting anti-discriminatory practice 	<ul style="list-style-type: none"> Discrimination can be obvious but sometimes it can be subtle and hidden, and The Equality Act 2010 makes it illegal to discriminate against people because of their e.g. age, gender, race, disability, religion, sexual orientation, marital status etc. You can promote anti-discriminatory practice by: having patience with someone who doesn't speak English well; communicating in a way that the person will understand; showing tolerance towards people who have different beliefs and values from you; challenging unkind behaviour.

What we are learning:
G. How to apply care values in a compassionate way. H. Identifying own strengths and areas for improvement against the care values

G	How to apply care values in a compassionate way?
Show empathy and care by:	<ul style="list-style-type: none"> • Being patient • Showing sensitivity • Understanding • Actively listening • Having a positive outlook • Being encouraging • Having genuine concern for other people.
Care workers can check themselves against the ' Six C's of Compassionate Care ' checklist to make sure they are applying care values with compassion.	
Care	Helps to improve an individual's health and wellbeing. Care should be tailored to each person's needs and circumstances
Compassion	Shows the care worker understands what the individual is experiencing. Being empathetic to their situation shows care and value to the individual
Competence	Shows that care workers can safeguard and protect individuals from harm
Communication	How to adapt to individuals and their circumstances to ensure important information is given and shared- keeping the individual at the heart of everything that is done
Courage	Protecting individuals by speaking up if you think something is wrong; being brave enough to own up if you have made a mistake.
Commitment	Carrying out your duties to care for others to the best of your ability.

H	Identifying own strengths and areas for improvement against the care values
Working together	<ul style="list-style-type: none"> • All care works have the responsibility to uphold care values. If everyone works together, doing their 'bit', service users and colleagues alike will all be able to have positive experiences. • Put any feelings aside, some clients can show anger or aggressions towards you, continues to work in a way that respects each of the care values. <p>Staff training:</p> <ul style="list-style-type: none"> • Staff training keeps everyone updated. Even if they also ready had care values training it is important to have it again and remind them of their importance.
Making mistakes	<ul style="list-style-type: none"> • Everyone sometimes make mistakes. It is crucial that staff own up to mistakes that they have made, not matter how small. This is part of the duty of care to safeguard individuals, it demonstrates respect. • You need to be honest about your mistake, do not pretend it never happened and do not blame someone else. • You can: <ul style="list-style-type: none"> • Tell your supervisor, admit it and apologise • Be honest and accurate about what happened, • Suggest ways to avoid it happening again • Earn back the trust of the person involved • Prove you can do the job • Do no be too hard on yourself; seek help and guidance from others.
Reviewing own applications of care values	<ul style="list-style-type: none"> • One way to improve skills is to look carefully at the areas you are good at, what you are able to do well and things that you find difficult. • Knowing your strengths will allow you to take on task with ease and make you feel confident that you are doing a good job. • Knowing your weaknesses and what needs improving will help you work on them and develop. It is important to be open with yourself and others in order to progress further and be better at your job. • Regularly review your strengths and weaknesses because they change overtime
Receiving feedback	<ul style="list-style-type: none"> • The purpose of feedback is to let you know what you are doing well and the areas you need to improve. • This can be formal- like reports and following an observation at work and Informal- like chatting to colleagues at break time. • Both types encourage you to feel pleased with what you have done well and motivate you to improve in weaker areas, perhaps even provide a way forward. • Remember: when giving and receiving feedback, positives must be noted so that you know what you are doing well and continue to do so. Negatives are hard to uncomfortable to hear, but do not take them personally, you need them to get better at your job and feel more confident.
Using feedback	<ul style="list-style-type: none"> • Create yourself a SMART action plan to set yourself Specific, Measurable, Achievable, Realistic and Time-related targets or goals to help plan for your improvements

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Year 7



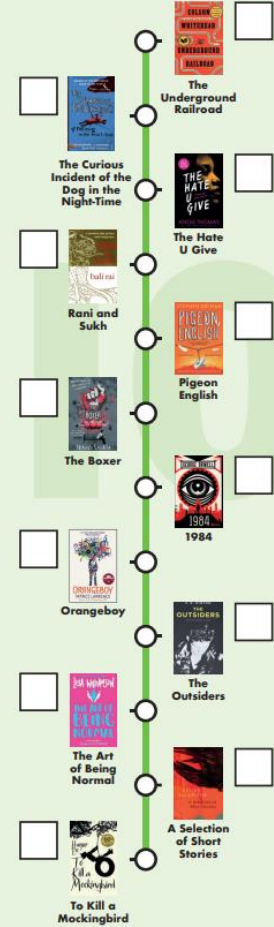
Year 8



Year 9



Year 10



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