100% book - Year 11 Grammar Stream
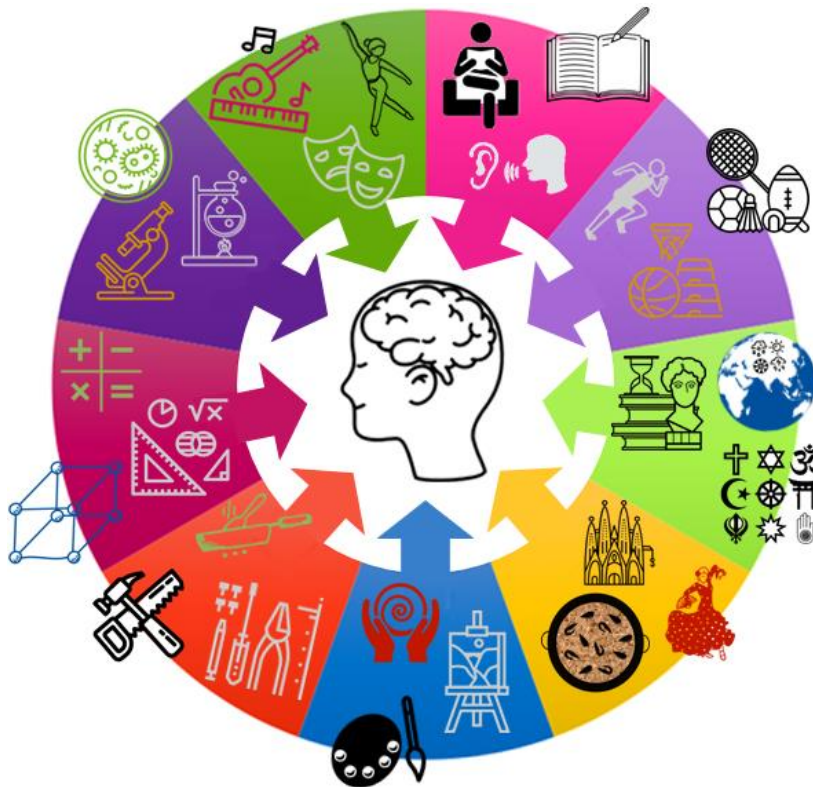
Aim to memorise 100% of the knowledge on these Knowledge Organisers.

Term 2

Swindon Academy 2023-24	
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	Step 2	Step 3
Check Epraise and identify what words/definitions/facts you have been asked to learn. Find the Knowledge Organiser you need to use.	Write today's date and the title from your Knowledge Organiser in your Prep Book.	Write out the keywords/definitions/facts from your Knowledge Organiser in FULL.

Step 4	Step 5	Step 6
Read the keywords/definitions/facts out loud to yourself again and again and write the keywords/definitions/facts at least 3 times.	Open your quizzable Knowledge Organiser. Write the missing words from your quizzable Knowledge organiser in your prep book.	Check your answers using your Knowledge Organiser. Repeat Steps 3 to 5 with any questions you got wrong until you are confident.

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

KS4 MACBETH Grammar

1. Context

Playwright: Shakespeare (April 23rd 1564-April 23rd1616)
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/renegade 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 him 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

Ambition	A desire to achieve something e.g. Macbeth and kingship
Hubris	Having excessive pride or self-confidence
Tyrant	A ruler who rules through fear and violence
Corrupt	Acting dishonestly OR being in a state of decay
Patriarchal	A society where power is in the hands of men
Duplicitous	Lying and being false. Two-faced. Deceitful
Façade	A false front, mask or illusion. Hiding one's true feelings
Prescient	Having knowledge of things before they happen – the witches
Nihilistic	The belief that everything is meaningless
Courageous	Being very brave
Supernatural	Things that are not a part of the natural world
Fate	Events being already decided and out of a person's control
Treachery	Betraying someone's trust
Regicide	The killing of a king

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.

The Big Ideas	Notes	The Methods	Notes
1. Shakespeare uses the play to demonstrate the terrible consequences of disrupting the **natural order**. His rule is unnatural and brings only disorder and sickness. His death restores balance.		1. Shakespeare **uses blood as a metaphor for guilt** through the play. As the guilt increases, the volume of blood increases.	
2. Shakespeare uses the play to demonstrate the consequences of engaging with **the supernatural.**		2. Shakespeare uses **apparitions** to present the consequences of ungodly behaviour and is ambiguous about whether they are real or imagined.	
3. Shakespeare uses Macbeth's role as a tragic hero to highlight how vulnerable people are to the destructive **temptation of power.**		3. Shakespeare's **characterisation of Macbeth and Lady Macbeth** establishes the idea that ungodly deeds do not go unpunished.	

T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

Cells and cell division
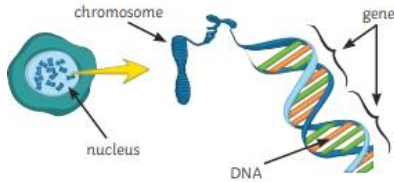
The chromosomes are in the nucleus of cells
Humans have 46 chromosomes.
Chromosomes contain genes, which code for proteins.
In body cells, chromosomes are in pairs – one from each parent.
In sex cells (gametes) they are not in pairs and there is half the number of chromosomes (e.g. 23 in humans)

Cell division – two types:

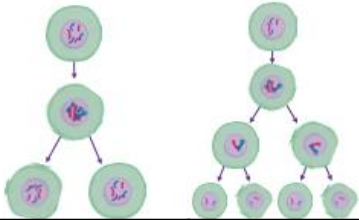| Mitosis (in all body cells)	Meiosis (in testes and ovaries)
2 daughter cells	4 daughter cells
Daughter cells = genetically identical	Daughter cells = not genetically identical
Cell divides once	Two divisions
Daughter cells **have same number** of chromosomes as original cell	Daughter cells **have half** the chromosomes as original cell
Used for growth and repair.	Produces gametes for sexual reproduction

Reproduction

Two types of reproduction – sexual and asexual.

	Sexual	Asexual
Number of parents	2	1
gametes used?	Yes	no
Variation in the offspring	lots	None (unless mutations occur) Offspring are clones

Sexual reproduction
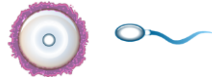
The sperm and egg have half of the genes for the offspring. (in humans 23 chromosomes)
At fertilisation, the sperm and egg nuclei join. (23 + 23 = 46 chromosomes)

There are two genes for any one characteristic – one on the chromosome from mum and one from Dad
Different forms of the same gene are called **alleles**
If the alleles are the same, the person is **homozygous**
If the alleles are different the person is **heterozygous**

E.g.:
B = brown hair (dominant)
b = red hair

Gene from each parent

BB = homozygous, brown hair
Bb = heterozygous, brown hair
bb = homozygous, red hair
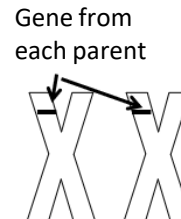
How to complete a punnet square

If A = blue eyes, a = green eyes
Calculate the probability of two heterozygous people having a green eyed child
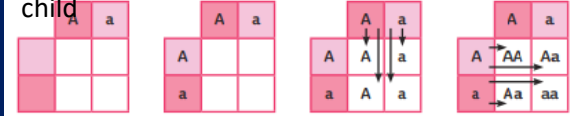
Step 1
Put one parents alleles into the boxes at the top

Step 2
Put the other parents alleles into the boxes down the side

Step 3
Write the alleles from parent one in all boxes underneath

Step 4
Put the alleles from the second parent into the boxes to the right

Probability

A green eyed child would have aa genotype.
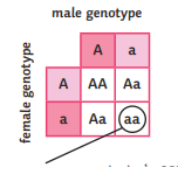
One of these four has the type aa – that's ¼ , 25% or 0.25.

Sex Determination
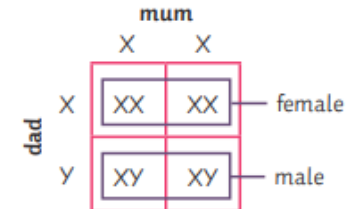
Females carry two X chromosomes (XX)
Males carry one X and one Y chromosome (XY)
50% chance of male and female.

T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

1. Put these in order from smallest to biggest:

   Allele, Cell, Chromosome, Gene, Nucleus

2. What are the two types of cell division?

3. When does mitosis take place?

4. Where does meiosis take place?

5. How does the number of chromosomes in a gamete differ from those of a body cell?

6. What do genes do?

---

1. What are the two types of reproduction?

2. How many parents are needed for asexual reproduction?

3. What are the offspring of asexual reproduction known as?

4. What is the term for when a sperm and an egg join?

5. How many genes do we have for any single characteristic?

6. What term is used to describe a person that has two alleles that are the same for a particular characteristic?

---

1. What two sex chromosomes do females carry?

2. What two chromosomes do males carry?

3. What is the probability of having a boy?

4. Complete the punnet square:

	D	d
d		
d		

5. What is the chance of having an offspring with the allele pair dd?

T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

Inherited disorders

Cystic fibrosis
Disorder of cell membranes
Caused by a recessive allele
Causes thick mucus to form in membranes
Main organs affected are lungs, digestive & reproductive organs – pancreas and intestines.

Alveoli get blocked with mucus
Increases diffusion path so less
O_2 gets into the blood

Father

	C	c
C	CC	Cc
c	Cc	cc
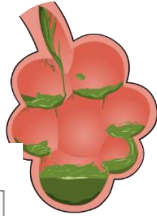
Mother

Polydactyly
Disorder of the hands and feet
Caused by a dominant allele
Causes extra digits, fingers and toes.

Embryo screening
Parents that have inherited disorders may opt for embryo screening

1. Multiple embryos are made in IVF
2. One cell is removed from each embryo
3. The cells are screened for faulty genes
4. Only embryos without the genes for disorders are transferred to the womb of the mother.

+ Babies born free of that inherited disorder
- no guarantee child will be free of other health issues
- Many embryos are destroyed, which are potential human lives

DNA Structure
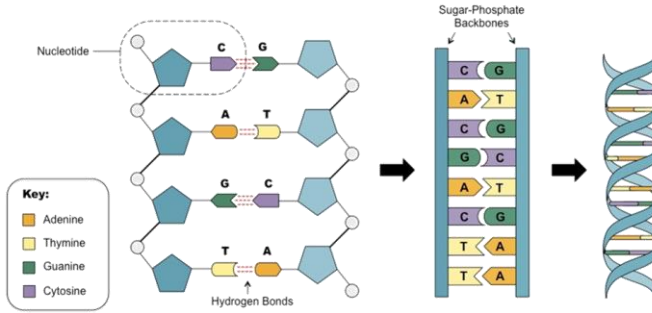
A strand of DNA consists of alternating sugar and phosphate sections with a base pair attached to each sugar.
There are four base pairs A, C, T & G
A nucleotide consist of a sugar, phosphate and base pair.
In a complimentary strand of DNA C is always linked with G and A is always linked with T.

Protein Synthesis

A sequence of three bases codes for an amino acid.
The order of bases controls the order in which the amino acids are joined to produce a particular protein.
Proteins are synthesised according to a template. Carrier molecules bring specific amino acids to add to the growing protein chain.

Genes in the DNA produce a template for the protein.

The template leaves the nucleus and travels to the ribosome

The template is decoded and the amino acids are joined together to make a protein in the ribosome.
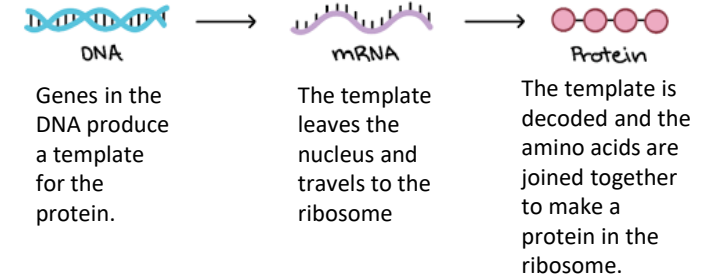
When the protein chain is complete it folds up to form a unique shape that enables the protein to carry out its function in the cell.

Gene expression

Not all parts of the DNA code for proteins. These non-coding parts switch genes on and off.
Variations within these non-coding regions can affect how a gene is expressed in the organism.
Variations in gene expression can affect the phenotype or biochemistry of an organism.

Mutation
Mutations are tiny changes in the sequence of bases in a starnad of DNA.
Mutations occur continuously. A change in the structure of DNA may result in a change in the protein that is synthesised.
Most mutations do not alter the protein or they alter it in such a small way that the function of the protein is not affected.
A few mutations code for an altered protein with a different shape. This affects its function.
Mutations may cause an advantage, disadvantage or have no effect at all.

T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

1. What is cystic fibrosis a disorder of?

2. Is the allele for cystic fibrosis dominant or recessive?

3. Why do cystic fibrosis sufferers struggle to get oxygen into the body?

4. What is polydactyly?

5. Is the allele for polydactyly dominant or recessive?

6. Give one advantage of embryo screening

7. Give one disadvantage of embryo screening

DNA Structure

1. What is DNA made up of?

2. What is a nucleotide?

3. What are the 4 bases?

4. How do the four bases pair up?

---

1. What does a sequence of three base pairs code for?

2. How does the code for the protein travel from the nucleus to the ribosome??

3. What are the 4 bases?

4. What happens to the protein once the amino acids have been joined in the correct sequence?

---

1. What do non-coding regions of DNA do?

2. How can variations in gene expression affect an organism?

1. What is a mutation?

2. What effect does a a change in DNA base sequence have on a protein?

3. Are all mutations harmful?

T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

Mendel
- Mendel was a monk that bred pea plants. The importance of his work was not recognised until after his death.
- He cross bred pea plants and counted the different number of offspring produced.
- He found that characteristics were inherited in predictable patterns.
- He explained this by suggesting that there were separate units of inherited material.
- He realised some characteristics were dominant over others.
- Mendel came to this conclusion before chromosomes and DNA had not been discovered.
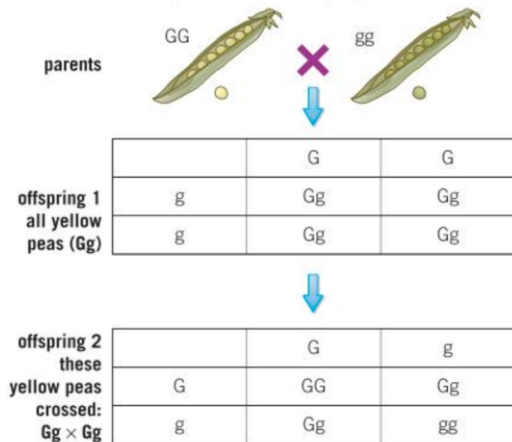
Discovering DNA

- Observations showed chromosomes and Mendel's 'units' behaved in a similar way.
- Discovery of the structure of DNA led to the idea of genes which explained the mechanism of inheritance.

Theories of evolution
Darwin
- Darwin's theory of evolution by natural selection was based on observations from around the world and fossil records.
- This was a controversial theory as it:
- challenged religious beliefs
- DNA/genes had not been discovered so the mechanism of inheritance could t be explained.
- There was not enough evidence

Wallace and Darwin
- Alfred Russel Wallace independently proposed the theory of evolution by natural selection.
- He worked worldwide gathering evidence for evolutionary theory.
- Darwin quickly published his book 'On the Origin of Species' after receiving a copy of Wallace's work.

Lamarck
- Jean-Baptiste Lamark's theory of evolution was based on the idea that change that occur in an organism during its lifetime can be inherited.
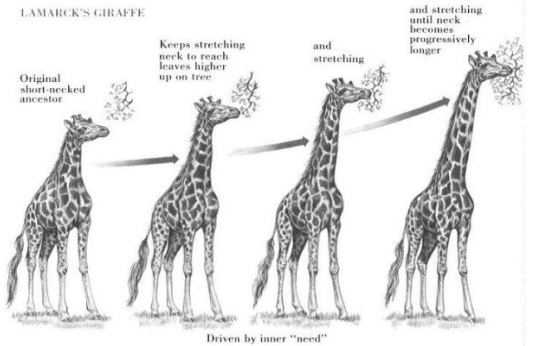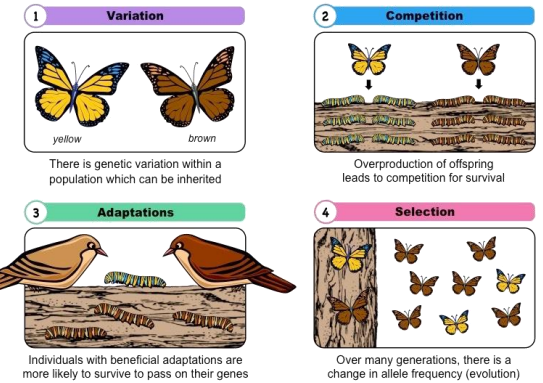
Speciation
- Wallace is best known for his work on speciation.
- A build up of evidence over time has led to out current understanding of the theory of evolution:
1. Isolation: two populations of a species become separated.
2. Genetic variation exists between the two populations.
3. Natural selection acts differently in the two populations
4. Speciation: th two populations become so different they cannot interbreed.
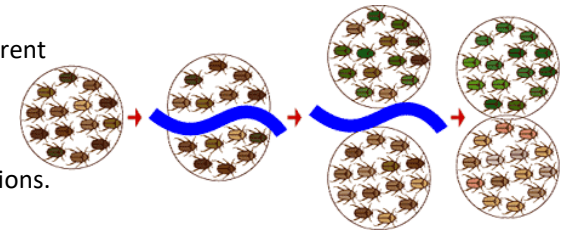
T2 Year 11 Grammar Biology B6 Inheritance, variation and Evolution

1. What plants did Mendel experiment on?

2. What did Mendel's experiments show?

3. Why was Mendel's work not recognised until after his death?

1. How did the discovery of DNA reinforce Mendel's observations?

1. What is the name of Darwin's theory of evolution?

2. Why was Darwin's theory not accepted at first?

3. Which scientist proposed a similar theory to Darwin?

4. What was Lamarck's theory of evolution based on?

1. How do new species arise?

Corrosion

Corrosion is the destruction of materials by chemical reactions with substances in the environment. Rusting is an example of corrosion. Both air and water are necessary for iron to rust.

Corrosion can be prevented by applying a coating that acts as a barrier, such as greasing, painting or electroplating.

Aluminium has an oxide coating that protects the metal from further corrosion. Some coatings are reactive and contain a more reactive metal to provide sacrificial protection, eg zinc is used to galvanise iron.

Alloys

Most metals in everyday use are alloys. Bronze is an alloy of copper and tin. Brass is an alloy of copper and zinc. Gold used as jewellery is usually an alloy with silver, copper and zinc. The proportion of gold in the alloy is measured in carats. 24 carat being 100% (pure gold), and 18 carat being 75% gold.

Steels are alloys of iron that contain specific amounts of carbon and other metals. High carbon steel is strong but brittle. Low carbon steel is softer and more easily shaped. Steels containing chromium and nickel (stainless steels) are hard and resistant to corrosion. Aluminium alloys are low density.

force applied here
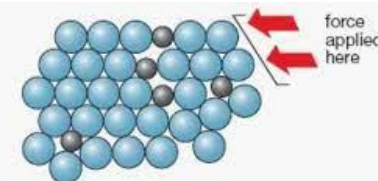
Slip cannot occur so easily in an alloy, because the structure has been distorted

T2 Year 11 Grammar Chemistry C10 Using our resources

1. What is corrosion?

2. What is bronze?

3. How can corrosion be prevented?

4. What is sacrificial protection?

1. What is can alloy?

2. What conditions are needed for corrosion to occur?

3. What is steel made from?

4. What is sacrificial protection?

5. What density are aluminium alloys?

Ceramics, polymers and composites

Most of the glass we use is soda-lime glass, made by heating a mixture of sand, sodium carbonate and limestone.

Borosilicate glass, made from sand and boron trioxide, melts at higher temperatures than soda-lime glass.

Clay ceramics, including pottery and bricks, are made by shaping wet clay and then heating in a furnace.

The properties of polymers depend on what monomers they are made from and the conditions under which they are made. For example, low density (LD) and high density (HD) poly(ethene) are produced from ethene.

High density: Low density:

Ethene

Poly(ethene)
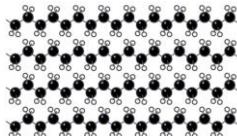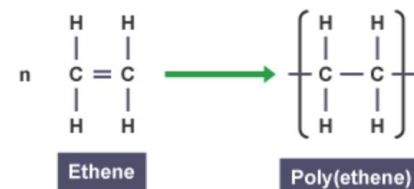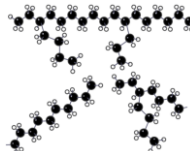
Thermosoftening polymers melt when they are heated. Thermosetting polymers do not melt when they are heated, they are used when resistance to heat is important (eg kettles, plugs, laptop chargers etc).

Most composites are made of two materials, a matrix or binder surrounding and binding together fibres or fragments of the other material, which is called the reinforcement.

Thermosoftening polymer   Thermosetting polymer

1. What is glass made from?

2. How are clay ceramics made?

1. What is a low density polyethene?

2. Draw the formation of poly(ethene) from ethene

3. What is the difference between thermosoftening and thermosetting polymers?

4. What are most composites made from?

T2 Y11 Grammar Physics P6 Waves

Reflection
Definition: The change of direction of a light ray or wave at a boundary when the incident ray stays within the medium.

Law of reflection
The angle of incidence = angle of reflection

Normal
Angle of Incidence
Angle of Reflection
Incident Ray
Reflected Ray
i°   r°
Mirror
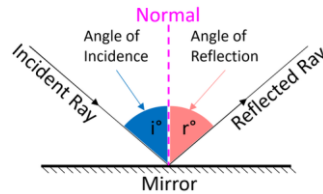
Specular reflection
Definition: Reflection from a smooth surface. Each light ray is reflected in a single ray.

specular reflection on a smooth surface
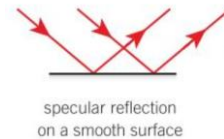
Diffuse reflection
Definition: Reflection from a rough surface. The light rays are scattered in different directions

diffuse reflection on a rough surface

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 –

Normal line
air
glass block
air
Normal line

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

Colour
White light can be split into the colours of the rainbow, each with a different wavelength

Visible Spectrum
Slit
Prism
White light source
400 nm
Violet
Blue
Green
Yellow
Orange
Red
750 nm
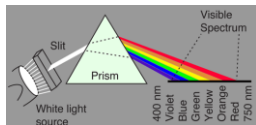
Primary and secondary colours
Red + yellow = green
Green + blue = cyan
Blue + red = magenta
Green + blue+ red = white

white light
white surface
white light
red surface
blue light
red surface
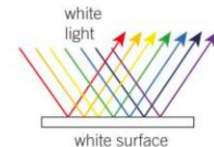
A white object looks white because it **reflects** all the wavelengths of visible light that reach it.
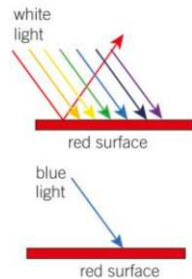
A red object looks red because it **absorbs** all the wavelengths of light except red. Only red light is **reflected**.

If only blue light is shone on a red surface it is **absorbed**, and no light is **reflected**, so the surface looks black

Filters
Filters change the colour objects appear as the only let certain wavelengths of light through. A green **filter absorbs** all colours except green, and **transmits** only green light

Spectrum of light
green filter
red filter
only green light passes through
no green light passes through

T2 Y11 Grammar Physics P6 Waves

1. What is reflection?

2. Draw a labelled diagram to show reflection of a ray of light by a mirror.

3. What is specular reflection?

4. What is diffuse reflection?

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 90º to a surface called?

4. 4. What happens if a ray hits a medium at 90º?

1. What are the primary colours of light?

2. Why does a red object look red?

3. Why does a blue filter make everything appear blue?

T2 Y11 Grammar Physics P6 Waves

Sound Waves

- The pitch of a note increases if the frequency of the sound wave increases.
- The loudness of a note increases if the amplitude of the sound wave increases.
- Sound waves cause the eardrum to vibrate, these vibrations send signals to the brain.
- The conversion of sound waves to vibrations of solids only works over a limited frequency rage, limiting the range of frequencies a human can hear. (20-20000 Hz)

Echo sounding

- Uses pulses of high frequency sound waves to measure the depth of objects in deep water.

Echo   d

$$d = ½vt$$
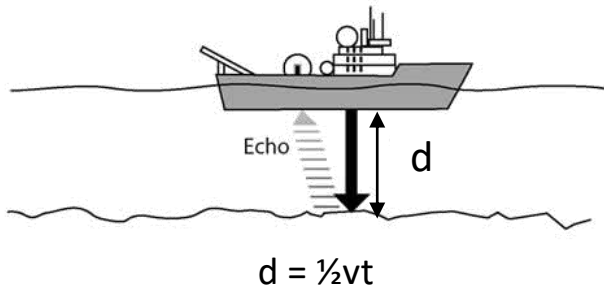
v = speed of the sound wave
t = time between transmitting the signal and receiving the echo.
d = distance to the object

Ultrasound

- Ultrasound waves are sound waves with a frequency above 20 00 Hz.
- Ultrasound waves are partly reflected at a boundary between two different types pf body tissue.
- Ultrasound waves reflected at boundaries are timed, and the timings are used to calculate distances.
- Ultrasound scans are non ionising so are safer than x-rays.

The diagram shows how a very high frequency sound wave can be used to check for internal cracks in a large steel bolt. The oscilloscope trace shows that the bolt does have an internal crack.
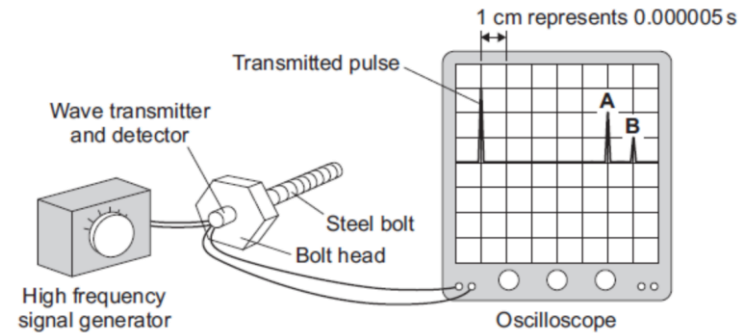
- Ultrasound is not only used in medicine, it can also be used to look for flaws or cracks in objects.

Seismic Waves

- Seismic waves are waves that travel through the Earth.
- Seismic waves are produced in an earthquake and spread out from the epicentre.
- Primary seismic waves (P-waves) are longitudinal
- Secondary waves (S-waves) are transverse waves.
- The movement of seismic waves through the Earth following an earthquake provide information on the inner structure of the Earth.
- P waves can movve through solids, but S waves cannot.
- Only P waves are detected opposite the epicentre of an earthquake, suggesting that the centre of the Earth is solid.
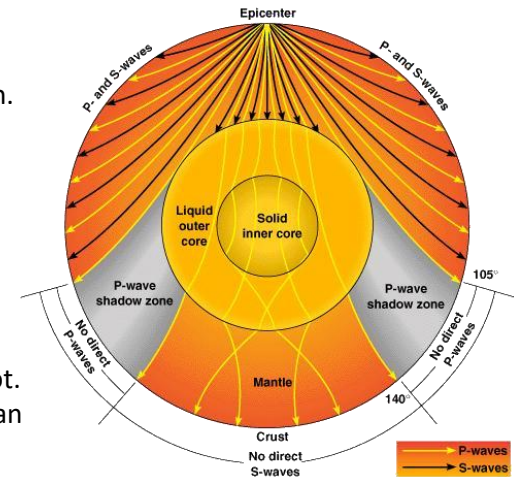
T2 Y11 Grammar Physics P6 Waves

Sound Waves

1. What part of a sound wave is related to the pitch of the note?

2. What part of a sound wave is related to the loudness of a note?

3. What is hearing range of a human?

Ultrasound

1. What frequency are ultrasound waves?Ultrasound waves are sound waves with a frequency above 20 00 Hz.

2. What happens to ultrasound waves when they hit a boundary between two mediums?

3. Why are ultrasound scans safer than x-rays?

4. Give a non-medical use of ultrasound waves.

Echo sounding

1. What is echo sounding?

Echo   d
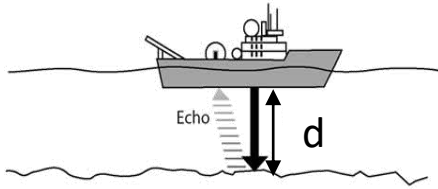
2. What is the equation used to find the depth of the ocean floor (d) under the boat?

Seismic Waves

1. What are seismic waves?

2. What is the difference between a P-wave and an S-wave?

3. What do seismic waves tell us about the structure of the Earth.
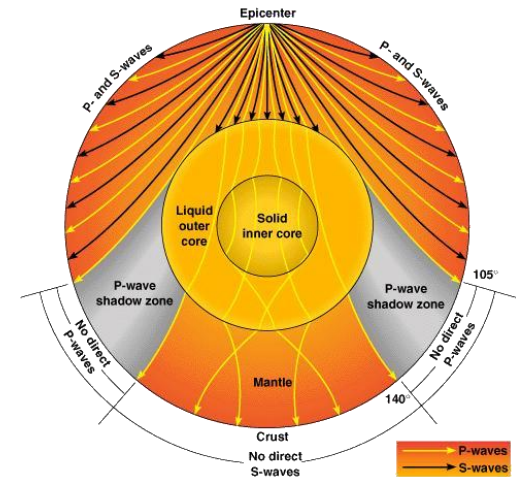
The significance of food, water and energy to economic and social well-being.

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:
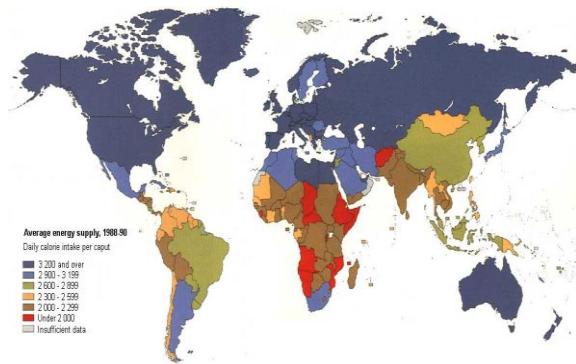
Map showing daily calorie intake world wide

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 preform** 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
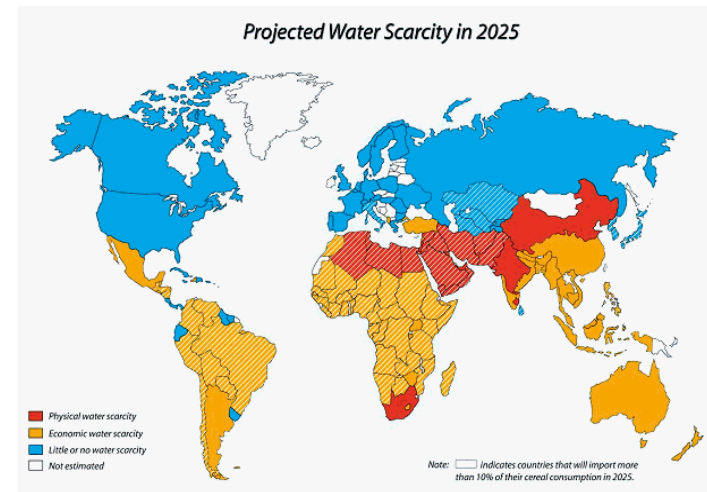
1.As can be seen from the map, water availability is **uneven** across the globe. Many north African countries may not have physical access to water by 2025.

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.

World energy consumption per capita 2003 (kg of oil equivalent)
- Over 10 000
- 5 001 to 10 000
- 2 501 to 5 000
- 1 001 to 2 500
- 501 to 1 000
- 0 to 500
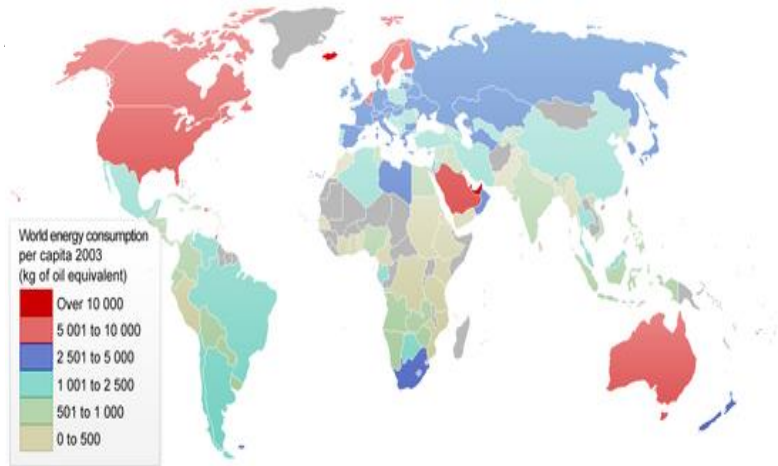
Energy

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. Theses 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.

Average food miles to the UK
5523 miles
907 miles
1714 miles
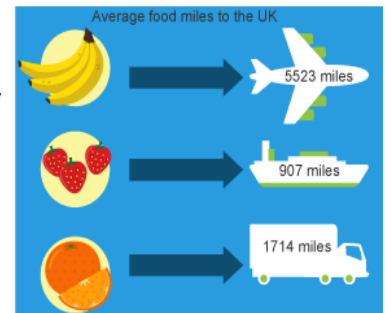
Farming is becoming more industrialised

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 but 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). Its 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, duel 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 it's 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 C02** 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 loses.

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 burring of **fossil fuels** produces **C02** 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 patters of water surplus and deficit

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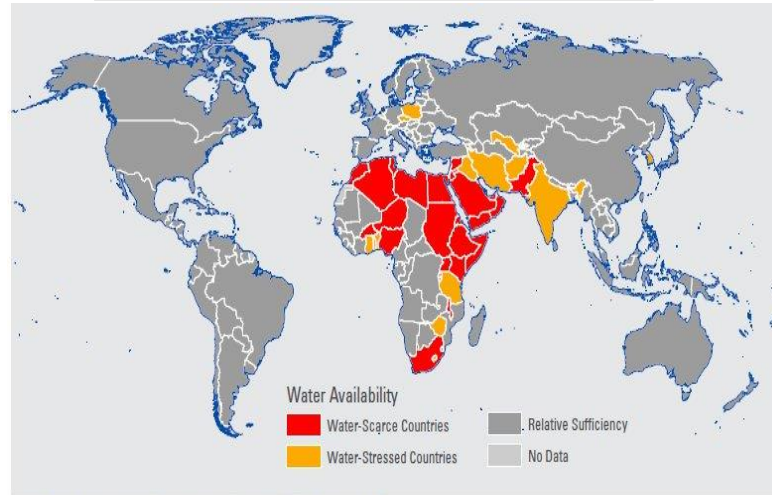
Water insecurity – areas with low rainfall and or very high population density e.g. Libya, Mexico

Water Availability
- Water-Scarce Countries
- Water-Stressed Countries
- Relative Sufficiency
- No Data

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

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.**

25

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:	• **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	• **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 C02 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 quiet 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 the 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.
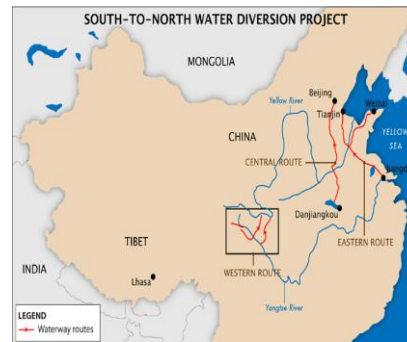
Moving towards a sustainable resource future: an example of a local scheme in an LIC or NEE to increase sustainable supplies of water.

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 storm 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 sorter 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 peoples 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 safe 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

2% Drinking Water — Mains Supply
32% Bath & Shower — Harvested Rainwater
33% Toilet Flushing
20% Cleaning — Harvested or Recycled Greywater
13% Car & Garden

2. The Conquistadors 1513-1528

Balboa the Conquistador

1509
Balboa rescues Spanish expedition in trouble on mainland America.
1510
Founds first permanent settlement on mainland America, Santa Maria de la Antigua del Darien.
1511
Confirmed, by King Ferdinand, as captain general and governor of Darien.
1513
Expedition across Isthmus of Panama – finds the Pacific and claims it and surrounding lands for Spain.
1514
Plans an expedition to sail south on the Pacific. Replaced as governor by Pedrarias.
Arrested for treason, tried and beheaded.

Pedrarias and Espinosa: the significance of Panama

Pedrarias and Espinosa explored the south coast separately, but both ended up on the same point on the Pacific coast – this became Panama.
Panama significant because:
-Situated on Pacific coast – closest in distance to Nombre de Dios on the Caribbean Sea.
-a route between Panama and Nombre de Dios was the quickest way of moving goods, people and messages between the Pacific and the Caribbean sea.
-land surrounding Panama was fertile and had sea rich in fish.
-Panama was a port, well situated for Spanish treasure ships to off-load.

Velázquez conquers Cuba

1511 – Hatuey a native chief living in Haiti, flees to Cuba with 400 natives to escape Spanish cruelty. Velázquez and 300 conquistadors pursue them.	**1512** – After strong native resistance, Hatuey is captured and burned alive.
1513 – Massacre at Canao – thousands of natives killed.	**1514** – Conquest of Cuba complete. City of Santiago de Cuba founded and becomes capital of Cuba.

1515 – City of Havana founded.

Cortes' expedition to Mexico 1519

1519 February – Cortes sails from Cuba, despite Velázquez attempts to stop him.	**March** – Lands on Yucatan Peninsula and claims land for Spain.	**April** – Fights Tabascan natives and takes control of the city of Pontonchon. Makes peace with Tabascans. Given Malinche.
July – Re-establishes a Spanish settlement at Vera Cruz. Cortes also sinks his ships.	**August** – Cortes is met by cheering natives at Cempoala and allies with them.	**September** – Fights Tlaxcalans – enemies of the Aztecs – makes peace and allies with them.

Aztec religion

Quetzalcoatl

What beliefs did the Aztecs have towards the Spanish?

Some Aztecs wanted to treat Cortes and the Conquistadors as returning gods; others as dangerous invaders.
Aztecs worshipped many gods. They were usually connected to nature. Human sacrifices were common among the Aztecs.
The god Quetzalcoatl was the god of life. Aztecs believed he had vanished into the sea and would one day return.
Many Aztecs believed that Cortes and the conquistadors were returning gods.
Cortes and the conquistadors appeared from the same sea, and in the same spot, from which Aztecs believed Quetzalcoatl disappeared.

Magellan
Magellan and his ships managed to circumnavigate the world between 1519 and 1522 and claim the Phillipines for Spain.
This was important because:
- It meant that Spain could claim the Spice Islands – as they had found a western route to it.
- It brought prestige to Spain – Magellan and his ships were the first to complete a voyage of global circumnavigation.

Cortes removed as governor

Cortes had many enemies which were causing him problems back in Spain. In 1528 he was removed as governor because:
- Velázquez became a determined enemy.
- Rumours of greed reached the Spanish court.
- The king wanted to control Cortes.
In 1528 Cortes returns to Spain. Charles I was impressed with what Cortes had found but did not trust him. Cortes was no longer governor but he kept his land. An enemy of Cortes was installed so they could keep an eye on both, and to prevent one gaining too much power.

Date	Event
1519	
Feb	**Cortes sails from Cuba**
March	**Lands on Yucatan peninsula and claims land for Spain**
April	**Fights Tabascan natives and takes control of Pontonchon. Makes peace with Tabascans. Given Mayan woman, Malinche.**
July	**Re-establishes Spanish settlement at Vera Cruz. Sinks his ships.**
August	**Met by cheering natives at Cempoala and allies with them.**
Sept	**Fights Tlaxcalans – enemies of the Aztecs – makes peace and allies with them.**
October	**Cortes and his forces massacre 3000 natives in the town of Cholula.**
8th Nov	**Cortes and his forces enter Tenochtitlan – welcomed by Montezuma.**
14th Nov	**Montezuma taken prisoner by Cortes – becomes a puppet emperor.**
1520	
April	**Spanish troops arrive at Vera Cruz under instructions from Velázquez, intending to arrest Cortes.**
May	**Cortes leaves Tenochtitlan to oppose Velázquez's troops. Cortes deputy, Alvarado, massacres thousands of Aztec nobles.**
24-29 June	**Spaniards trapped in Tenochtitlan as Aztecs rise against them.**
29th June	**Montezuma killed.**
30th June	**The Night of Tears: Spaniards are massacred as they flee from Tenochtitlan and spend nearly a year re-grouping and planning.**
1521	
22nd May	**Battle for Tenochtitlan begins.**
1st Aug	**Spaniards fight their way into the centre of Tenochtitlan.**
13th Aug	**Tenochtitlan falls to the Spaniards and the Aztecs surrender.**

Cortes strengthens Spanish control

In the years to 1528, Cortes strengthened control in many ways:
-He continued killing Aztecs and natives that supported them.
-He took tribute from remaining Aztec chiefs.
-Tenochtitlan was rebuilt on the ruins of the Aztec city.
-He encourages exploration and establishment of new communities.
-Agriculture was developed.
-Industry was developed.
-He helped with the spread of Christianity.

The fall of the Aztec Empire

- Aztec priests killed
- Temples pulled down
- The Spanish impose the encomienda system of landholding
- Aztec leaders killed and Aztecs ruled by Spaniards
- Millions of Aztecs die from smallpox
- Christian priests and friars convert Aztecs to Christianity
- Forced labour kills millions of Aztecs

A.	*Can you define these key words?*

Key word	**Key definition**
Forgiveness	Pardoning someone for wrongdoing
Greed	Going to war to gain land or natural resources such as oil
Holy War	A war that is fought for religious reasons, usually backed by a religious leader
Just War	A Christian theory that asks whether a war is fought justly
Justice	Bringing about what is right and fair, according to the law or God's will
Pacifism	A belief that all forms of violence are wrong, commonly held by Quakers
Conflict	A serious disagreement
Jihad	The struggle to defend against that which threatens Islam/ the internal struggle to defend against temptation that might lead you away from God
Protest	A public expression of disapproval, often in a big group, can be peaceful or violent
Reconciliation	Restoring friendly relationships after a war or conflict
Retaliation	Deliberately harming someone as a response to them harming you
Self-Defence	Protecting yourself or others from harm
Terrorism	Using violence in order to further a political or religious message

What we are exploring this term: Pacifism . Protest. Terrorism. Weapons of mass destruction Just war

C	Is violent protest or terrorism acceptable?	
	1. A small minority of Christians may say yes if it truly brings an end to suffering- love thy neighbour and 'free the oppressed' 2. A small minority of Muslims may agree due to the duty of jihad to defend the faith against true oppression. 3. A humanist may agree in a rare occasion if it truly had the best consequences for humanity as a whole 4. Hindus may point to their warrior class to justify a god given right to fight if needed	1. Most Christians consider terrorist acts of violence to be wrong, as Jesus did not accept violence. He said 'put your sword pack in its place' when his disciple tried to protest against his arrest. 2. Muslims do not agree with terrorism because terrorist acts of violence are considered to be wrong and against the wishes of God, especially as the victims are usually innocent people. There is no justification for terrorist acts in the teachings of Islam- Qur'an says that innocents much not be harmed. 3. Humanists might say that it does not help human wellbeing as it created disorder and fear. As such the consequences are rationally seen to be not worth it. 4. Hindus might argue that all violence is wrong (Ahimsa) as it causes bad karma and keeps us in the cycle of samsara

E	Is pacifism wrong? Yes	*No*
	1. The Muslim duty of Jihad suggests pacifism can be wrong 2. Christians are called to 'free the oppressed' and 'protect the weak and needy 3. Humanists may argue that pacifism is not reasonable or realistic in a world of violence and may not help humanity protect each other	1. It works- see Ghandi and Martin Luther King 2. Christians believe 'blessed are the peacemakers' 3. Muslims believe that greater Jihad is the struggle to defend the faith against the internal struggle to fall from the right path 4. Innocent people should not be harmed in all religions and pacifism is the only way to truly ensure this

D	*What are the rules of the just war theory?*	*Can just war theory make war fair?*	
	1. There must be a just cause such as to defend 2. Intentions must be to do good and overcome evil 3. War must be started by legitimate authority 4. Innocents must not be harmed 5. Force and damage must be proportionate to the good done by the war 6. War must be the last resort 7. There must be a reasonable chance of success	1. Yes as it protects innocents 2. Yes as it allows us the right to self defence 3. Yes as it has to be the last resort so it is really is the only option left 4. It will mean the war is for a good/fair reason and not pointless greed 5. It means nuclear weapons can't be used	1. No as innocents will always be harmed in war 2. A 'legitimate' authority could still be corrupt 3. You never know the harm of war until many years later so you can't calculate whether it is proportionate 4. You cannot know whether it will be successful until you have fought it 5. For success someone will have to use a greater force so the 'proportionate ' rule will never be followed

B.	*Religious and non religious beliefs about weapons of mass destruction*
1	It is wrong to damage the environment which is God's perfect creation. It would be a form of blasphemy to destroy God's Sacred work.
2	They hurt many innocent people and this is against all religious teachings. Lif e is a sacred God given gift and only God has the right to take life.
3	For humanists, if their use means we can end more human suffering than the weapons cause, then there might be a possible circumstance in which they could be deemed acceptable.

A. Can you define these key words?

Key word	Key definition
Forgiveness	
Greed	
Holy War	
Just War	
Justice	
Pacifism	
Conflict	
Jihad	
Protest	
Reconciliation	
Retaliation	
Self-Defence	
Terrorism	

What we are exploring this term: Pacifism . Protest. Terrorism. Weapons of mass destruction Just war

C. Is violent protest or terrorism acceptable?

1.	1.
2.	2.
3.	3.
4,	4.

E. Is pacifism wrong? Yes / No

Yes	No
1.	1.
2.	2.
3.	3.
	4.

D.

What are the rules of the just war theory?	Can just war theory make war fair?	
1. 2. 3. 4. 5. 6. 7.	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

B. Religious and non religious beliefs about weapons of mass destruction

1	
2	
3	

What we are learning this term:

A. Talking about travelling to holiday destinations
B. Talking about the weather
C. Talking about holiday accommodation
D. Talking about the regions of Spain
E. Understanding tourist leaflets and websites

6 Key Words for this term

1. alojarse	4. vacaciones
2. veranear	5. un folleto
3. la pensión	6. el AVE

Key Verbs

Quedarse To stay	Ir To go	Veranear To summer holiday	Hacer – to do/make	Volar To fly
Me quedo I stay	Voy I go	Veraneo I summer holiday	Hago I do	Vuelo I fly
Te quedas You stay	Vas You go	Veraneas You summer hol	Haces You do	Vuelas You fly
Se queda He/she/it stays	Va s/he goes	Veranea He/she summer hol	Hace s/he does	Vuela He/she/ it flys
Nos quedamos We stay	Vamos They go	Veraneamos We summer hol	Hacemos We do	Volamos We fly
Se quedan They stay	Van They go	Veranean They summer hol	Hacen They do	Vuelan They fly

8.1F ¿Dónde te alojas?

el abrebotellas bottle-opener
el abrelatas tin-opener
el aeropuerto airport
a la derecha on the right
a la izquierda on the left
el albergue juvenil youth hostel
Alojarse to stay (in a hotel)
el bañador swimming costume
la cama de matrimonio double bed
camping campsite, camping
la estación de servicio petrol station
la estrella star
fatal awful, terrible
el folleto leaflet
la gasolina (sin plomo) (unleaded) petrol
el guía / la guía guide (person)
la guía guidebook
la habitación (doble/ (double/single) room individual)
la llave key
mojarse to get wet
la oficina de turismo tourist office
el papel higiénico toilet paper
el parador state-owned hotel (in Spain)
el pasaporte passport
la pensión boarding house, B & B
ponerse en camino to set off
por desgracia unfortunately
la recepción reception
la reserva reservation
el saco de dormir sleeping bag
los servicios toilets
la tarjeta de embarque boarding card
la tienda (de campaña) tent
la taquilla ticket office

8.1G ¡Me voy de vacaciones!

el aire acondicionado air conditioning
el andén platform
el asiento seat
el autocar coach
el AVE (tren de alta velocidad) high-speed train
el avión plane
barato/a cheap
el barco boat
la bici(cleta) bike, bicycle
el coche car
la consigna left-luggage office
el crucero cruise
desde luego of course
echar de menos to miss
Escocia Scotland
estrecho/a narrow
el equipaje luggage
el ferrocarril railway
el invierno winter
la maleta suitcase
el metro underground
no fumador non smoking
el otoño autumn
la primavera spring
la sala de espera waiting room
Sudamérica South America
el tranvía tram
las vacaciones holidays
el verano summer
viajar to travel
el viaje journey

8.2G ¿En qué región vives?

el desempleo unemployment
la diversión entertainment
muy poblado crowded
nacer to be born
Nací I was born
nació he/she was born
el país country
Pescar to fish
el río river
la sierra mountain range
tanto so much, so many

8.2F Un folleto turístico

abrir to open
abierto/a open
callado/a quiet, reserved
cargar to load
cerrar to close, shut
la cocina cuisine, cooking
conocer to know (a person /a place)
el cultivo crop
entero/a entire, whole
gruñón/oña grumpy
ir de paseo to go for a walk
la mina mine
el monasterio monastery
el monte hill, mountain
la oveja sheep
Pintoresco picturesque
recomendar to recommend
el recuerdo memory, reminder, souvenir
la refinería (de petróleo) (oil) refinery
la sombrilla sunshade, parasol
el taller workshop
tranquilo/a peaceful
la vaca cow
el valle valley
el/la visitante visitor

8.2H Describiendo tu región

acostumbrado/a accustomed to, used (adj) to
la barca pesquera fishing boat
casero/a home-made
la cita amorosa date (with someone)
el clima climate

8.1H ¿Qué hiciste y qué te gustaría hacer durante las vacaciones?

aburrirse to get bored
acabar de (+ infinitive) to have just (done something)
broncearse to get a tan
coger to catch, to take
el crucero cruise
descansar to rest
el esquí acuático water skiing
extranjero/a foreign
el extranjero (en el __, abroad al__)
Francia France
genial brilliant, great
Grecia Greece
la insolación sunstroke
la isla island
las Islas Canarias Canary Islands
a mediados de in the middle of (time)
el Mediterráneo Mediterranean
ocupado/a busy, engaged
el oro gold
la plata silver
regresar to return
relajarse to relax
la sombrilla sunshade, parasol
el vestuario changing room, cloakroom
la vida nocturna night life
volver to return
el vuelo flight
colocar to place, to put
la empresa company, firm
la época era, age, time

What we are learning this term:

A. Talking about travelling to holiday destinations
B. Talking about the weather
C. Talking about holiday accommodation
D. Talking about the regions of Spain
E. Understanding tourist leaflets and websites

6 Key Words for this term

1. alojarse	4. vacaciones
2. veranear	5. un folleto
3. la pensión	6. el AVE

8.1G ¡Me voy de vacaciones!

el aire acondicionado _____
el andén _____
el asiento _____
el autocar _____
el AVE (tren de alta velocidad) _____
_____ plane
_____ cheap
_____ boat
_____ bike, bicycle
_____ car
_____ left-luggage office
_____ cruise
desde luego _____
echar de menos _____
_____ Scotland
_____ narrow
_____ luggage
_____ railway
el invierno _____
la maleta _____
_____ underground
_____ non smoking
el otoño _____
_____ spring
la sala de espera _____
_____ South America
_____ tram
las vacaciones _____
_____ summer
viajar _____
el viaje _____

8.1F ¿Dónde te alojas?

el abrebotellas _____
_____ tin-opener
el aeropuerto _____
_____ on the right
a la izquierda _____
el albergue juvenil _____
Alojarse _____
_____ swimming costume
la cama de matrimonio _____
camping campsite, camping
la estación de servicio _____
la estrella _____
_____ awful, terrible
el folleto _____
la gasolina (sin plomo) _____
el guía / la guía _____
la guía _____
_____ (doble/ (double/single) room individual)
la llave _____
_____ to get wet
la oficina de turismo _____
el papel higiénico _____
_____ state-owned hotel (in Spain)
el pasaporte _____
_____ boarding house, B & B
ponerse en camino _____
_____ unfortunately
la recepción _____
_____ reservation
el saco de dormir _____
los servicios _____
la tarjeta de embarque _____
la tienda (de campaña) _____
la taquilla ticket _____

8.2G ¿En qué región vives?

_____ unemployment
_____ entertainment
_____ crowded
nacer _____
Nací _____
_____ he/she was born
el país _____
pescar _____
_____ river
la sierra _____
_____ so much, so many

Key Verbs

Quedarse To stay	____ To go	_____ To summer holiday	Hacer – to do/make	Volar _____
Me quedo _____	Voy I go	_____ I summer holiday	Hago _____	_____ I fly
Te _____ You stay	Vas ____	Veraneas _____	_____- You do	Vuelas _____
____ queda He/she/it stays	_____ s/he goes	_____ He/she summer hol	Hace s/he does	Vuela He/she/ it flys
Nos quedamos We stay	Vamos They go	Veraneamos We summer hol	_____ We do	_____ We fly
Se _____ They stay	_____ They go	_____ They summer hol	Hacen They do	_____ They fly

8.2F Un folleto turístico

abrir to _____
_____ open
_____ quiet, reserved
cargar _____
_____ to close, shut
_____ cuisine, cooking
_____ to know (a person /a place)
el cultivo _____
_____ entire, whole
gruñón/oña _____
_____ to go for a walk
la mina _____
_____ monastery
el monte _____
_____ sheep
pintoresco _____
_____ to recommend
_____ memory, reminder,souvenir
_____ (de petróleo)   (oil) refinery
_____ sunshade, parasol
el taller _____
tranquilo/a _____
_____ cow
_____ valley
el/la visitante _____

8.2H Describiendo tu región

_____ accustomed to, used (adj) to
la barca pesquera _____
_____ home-made
_____ date (with someone)
_____ climate

8.1H ¿Qué hiciste y qué te gustaría hacer durante las vacaciones?

aburrirse _____
_____ (+ infinitive) to have just (done something)
broncearse _____
_____ to catch, to take
_____ cruise
descansar _____
el esquí acuático _____
_____ foreign
el extranjero (en el __, abroad al__)
Francia _____
_____ brilliant, great
Grecia _____
la insolación _____
_____ island
las Islas Canarias _____
a mediados de _____
_____ Mediterranean
_____ busy, engaged
el oro _____
la plata _____
_____ to return
relajarse _____
_____ sunshade, parasol
_____ changing room, cloakroom
la vida nocturna _____
volver _____
el vuelo _____
colocar to place, _____
la empresa _____
la época _____

What we are learning this term:

A. Giving your opinion about different subjects
B. Talking about your studies
C. Talking about your school life and daily routine
D. Talking about school rules and uniform
E. Translating into English

6 Key Words for this term

1. asignaturas	4. suspender
2. notas	5. licienciatura
3. aprobar	6. elegir

9.1G El instituto y las asignaturas

el arte dramático   drama
la asignatura   subject
la carrera   career, university course
las ciencias   science
la clase   class
la cocina   cooking, food technology
continuar   to continue, carry on
los deberes   homework
dejar   to drop
el dibujo   art
difícil   difficult, hard
divertido/a   fun
la educación física   PE
Escoger   to choose
el español   Spanish
estudiar   to study
fácil   easy
el francés   French
la geografía   geography
la historia   history
el inglés   English
las matemáticas   maths
práctico/a   practical
próximo/a   next
la selección   choice
Útil   useful

9.1F ¿Cómo ser buen estudiante?

abrir   to open
Afectar   to affect
el apoyo   support
aprender   to learn
los apuntes   notes
asistir a   to attend
la biblioteca   library
el/la compañero/a   classmate
completar   to complete
Consultar   to consult
el debate   discussion
los deberes   homework
el diccionario   dictionary
la duda   doubt, query
el ejercicio   exercise
entender   to understand
la escuela   school
Esperar   to hope, to wait, to expect
el examen, exámenes   exam, exams
la excursión trip
faltar a clase   to miss lessons
la frase   sentence
Intentar   to try
interrumpir   to interrupt
el instituto   school
levantar la mano   to raise your hand
la literatura   literature
llevar   to take, to carry, to wear
mejorar   to improve
mirar   to look at
el mundo   world
necesitar   to need
la nota   grade
ofrecer   to offer
el ordenador   computer
organizar   to organise
la palabra   word
la pantalla   screen
participar   to take part
pedir   to ask for, to request
pegado/a   a glued to
perder   to lose, miss
la pizarra   blackboard
la pizarra interactiva   smartboard
Preguntar   to ask
el/la profesor(a)   teacher
el progreso   progress
la prueba   test
Repasar   to revise

Key Verbs

Aprobar To pass	Elegir To choose	Suspender To fail	Estudiar To study	Pensar To think
Apruebo I pass	Eligo I choose	Suspendo I fail	Estudio I study	Pienso I think
Apruebas You pass	Eliges You choose	Suspendes You fail	Estudias You study	Piensas You think
Aprueba He/she/it passes	Elige He/she/it chooses	Suspende He/she/it fails	Estudia He/she/it studies	Piensa He/she/it thinks
Aprobamos We pass	Elegimos We choose	Suspendemos We fail	Estudiamos We study	Pensamos We think
Aprueban They pass	Eligen They choose	Suspenden They fail	Estudian They study	Piensan They think

9.1F ¿Cómo ser buen estudiante?

el repaso   revision
responsable   responsible
resultar en   to end up with, to lead to
saber   to know
sacar buenas / to get good / bad grades
malas notas
serio/a   serious
las tareas   homework
el trabajo   work, piece of work
la tutoría   tutorial
Usar   to use
el vocabulario   vocabulary

9.1H ¿Qué tal el instituto?

preocupar   to worry
la sala de informática   IT room
sencillo/a   simple
Sentirse   to feel
usar to   use
el viaje   journey
la zona   área

9.1H ¿Qué tal el instituto?

el/la alumno/a   pupil
antiguo/a   old
asustado/a   frightened
asustar to frighten
el atasco   traffic jam, blockage
atento/a   attentive
el aula   (fem.) classroom
ayudar   to help
buscar   to look for
cambiar   to change
cansado/a   tired
conocer   to meet, to get to know
contento/a   glad, happy
contestar   to answer
el curso   school year, course
los deberes   homework
deteriorado/a   dilapidated, shabby
distinto/a   different
la emoción   excitement
emocionante   exciting
encima   on top
encontrar   to find
explicar   to explain
feo/a   ugly
el gimnasio   sports hall, gym
hambriento/a   hungry
el idioma   language
inmenso/a   immense
el laboratorio   laboratory
largo/a   long
mejor   better
nervioso/a   anxious, nervous
el patio del recreo   the school yard, playground
la pregunta   question

Translation Practice. G – blue F – orange H - Green

Me _____ el francés	I **like** French
La historia es _____ divertida que el inglés	History is **more** fun than English
_____ a estudiar las matemáticas	**I am** going to study maths
La literatura es más _____ que el francés	Literature is more **fun that** French
Me encanta dibujo. Voy a _____ en Septiembre	I love art. I'm going to **study it** in September.
No, no _____ elegir esa opción	No, **I don't want** to pick that option
Pienso que las ciencias son muy _____	I think that science is really **useful**
No creo que voy a _____	I don't believe that I'm going to **fail**
_____ informática en la escuela primaria	**I used to study** ICT in primary school
Ayer _____ mis deberes	Yesterday **I did** my homework
La semana pasada _____ con mi profesora	Last week **I spoke** with my teacher
Voy a _____ estudiando tecnología	I'm going to **continue** studying technology
Si necesitas algo, _____ al profesor.	If you need anything **ask** the teacher
_____ mucho estudiar ciencias	**I enjoy** studying science a lot
Ya _____ hablado con el profesor	**I have** already spoken with the teacher
Va a _____ muy interesante	It's going to **be** very interesting
He _____ esta opción	I have **chosen** this option
Quiero _____ mucho	I really want to **do it** a lot
No sé _____ hacer	I don't know **what** to do

Key Questions: Answer the following in your own words. Use these model answers

¿Qué estudias ahora, que te gustaría estudiar en el futuro, que vas a dejar?	Ahora en el colegio, estudio unas asignaturas obligatorias. Las asignaturas obligatorias son las matemáticas, las ciencias y el ingles. También he elegido estudiar el español, la geografía, la historia, la tecnología, el arte, el dibujo …. La asignatura que me interesa más es …… porque …. La asignatura que me molesta/irrita más es …. porque …
¿Cómo es tu colegio, las reglas, los edificios, las instalaciones?	Mi colegio es un colegio grande que tiene circa ochocientos alumnos. Está en las afueras de Swindon en los barrios de Pinehurst y Penhill. Tenemos una biblioteca nueva, una cantina acogedora, un patio grande … En el colegio no debes comer chicle, no debes acosar, no tienes que gritar, no deberías comportarse mal… En el colegio tienes que comportarse bien, llevar el uniforme, ir al baño solo durante el recreo, llegar al colegio a hora ….
¿Describe tu primer día en tu colegio?	El primer día, estaba un poco nervioso porque me preocupaban los profesores, los otros alumnos, las clases, .. me preocupaba que los profesores serian estrictos, me preocupaban los exámenes, me preocupaba que el colegio sería tan inmenso
Es obligatorio estudiar matemáticas. ¿Crees que es una buena idea? … ¿Por qué (no)?	Si, en mi opinión me parece una buena idea porque … las matemáticas son muy importantes en el futuro/para un buen trabajo bien pagado/para mi futuro/para ir a una buena universidad/porque las matemáticas se usan en todos los trabajos
En tu opinión, ¿cuáles son las características más importantes de un buen profesor?	En mi opinión, un buen profesor es siempre simpático, nunca malhumorado, es de vez en cuando gracioso, es comprensivo y cariñoso, es siempre alegre y no es nunca antipático
¿Qué cambiarías de tu colegio si tuvieras la oportunidad?	Si tuviera la oportunidad, cambiaría/me gustaría cambiar las reglas. Me gustaría cambiar el uniforme porque me parece que es tan feo, me gustaría cambiar las reglas porque son demasiadas estrictas, me gustaría cambiar unos profesores porque son tan antipáticos

Key Grammar

Imperfect Tense (Past, ongoing actions, descriptions, 'used to' or 'was doing')	-ar -aba, -abas, -aba, -ábamos, - abais, -aban -er and –ir -ía, -ías, -ía, -íamos, - íais, -ían
Forming the conditional ('would like to' tense). Always remove the –AR, -ER, -IR endings first	Remember the conditional ('would') tense endings for –AR, -ER, -IR verbs. They are: -AR, -ER, -IR: -ía, -ías, -ía, -íamos, -íais, -ían
Future Tense ('will…')	**All verb groups:** -é, -ás, -á, -emos, -éis, -án *With this tense, do NOT take the verb ending away but ADD it on to the infinitive.*

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 have to be 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	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: **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 **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. **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.
Speedy and Efficient Service	**Good customer service is designed for the customer not the company.** **Efficient service:** Gets products to customers exactly when you want them Gets products to customers in good condition If there is anything wrong - it will be sorted out as soon as possible and considerately
Customer Engagement	**In the world of social media, it becomes possible to try to keep customers engaged with the business on a regular basis.** **Companies engage customers in a variety of ways:** E-Mail Social Media (Facebook and Instagram) Post Text Television/Web advertisements. **It is vital that customers feel up to date and informed about any product innovations**
Responses to Customer Feedback	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. 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.

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	Advantages: Disadvantages:
Batch Production	Advantages: Disadvantages:
Flow Production	Advantages: Disadvantages:

3. Managing Stock – Key Definitions

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

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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	

Term	Definition
Arithmetic Operator	A mathematical character to perform a calculation. Example: +
Array	A set of values, of the same data type, stored in sequence. A list.
Casting	Setting or changing the data type of a variable.
Concatenation	Connecting strings of characters together.
Condition	A statement which is either true or false. A computation depends on whether a condition is true or false.
Constant	A value which does not change whilst the program is running.
Element	An individual item in an array. A value in a list.
File	Anything you can save. Document, piece of music, data etc.
Identifier	A name, usually for part of the program such as a constant, variable, array etc.
IF Statement - **Selection**	A statement that lets a program select an action depending on whether it is true or false.
Loops - **Iteration**	Repeating an action, activity or section within a program.
Operator	A character which determines what action is to be considered or determined. Example: =
Relational Operator	An operator which compares two values. Example: <
Subroutine	A section of code written outside of the main program. Covers procedures and functions.
Variable	A memory location within a computer where values are stored.

Term	Definition
Fibre-Optic Cable	A cable that carries data transmitted as light.
File Sharing	Sharing access to files via a network.
Hub / Switch	A piece of hardware used in Computer Networks to connect multiple devices.
LAN - Local Area Network	A network that covers a small area, e.g. a school or office.
Modem	Meaning modulator/ demodulator allowing computers to connect to a network via a telephone line.
Network	A group of two or more computers connected together and communicating with each other.
NIC – Network Interface Card	A circuit board installed in a computer allowing it to connect to a network.
PAN - Personal Area Network	A network of personal devices, such as Bluetooth etc.
Router	A device for connecting multiple networks together.
WAN - Wide Area Network	A network which spans across a large geographical area. Multiple buildings, national, internet. Etc.
Wired	A connection which requires wires/ cables to transmit data.
Wireless	A connection which does not require wires and transmits data using radio signals.
WAP - Wireless Access Point	A device which connects computers to a network with a wireless connection.

Cybersecurity Terms	Definition
Adware	Software which causes advertising popups.
Anti-virus	Software which scans storage devices for malware and attempts to remove them.
Biometrics	Authentication technique which relies on physical characteristics like fingerprints.
Hacking	Gaining unauthorised access to a system.
Keylogger	Software which records all keystrokes on a computer keyboard.
Malware	Software which is designed to cause damage or harm to a computer system or its user's interests.
Patch	An update to a piece of software. Usually to fix bugs or improve it.
Pharming	Cyberattack which redirects a user from a genuine website to a fake one.
Phishing	An email which pretends to be from a legitimate source such as a bank to gain personal information.
Ransomware	Malware which encrypts a user's files then demands a ransom to decrypt them.
Social Engineering	Tricking people into giving away sensitive information.
Spyware	Malware which collects information about the user and their activities.
Trojan	Malware which appears legitimate but performs malicious activity when running.
Virus	Malware which replicates itself and damages computer systems and files.

Variable	A memory location within a computer where values are stored.

Input/Output and Calculation

```
userInputName = nput("Enter your name: ") userNum =
int(input("Enter an integer: ")) userDec = float(input("Enter a
decimal number: "))

calculation = userNum + userDec

print("Hello", userInputName, "the result is", calculation)

Enter your name: Mr. Weston Enter an integer: 3 Enter a decimal
number: 15.2 Hello Mr. Weston the result is 18.2
```

IF Statements

```
print("Press 1 for a greeting. Press 2 for a farewell.") userChoice =
int(input("Awaiting Input: "))

if userChoice == 1: print("Hello User!")

elif userChoice == 2: print("Goodbye User!")

else:
    printf'Error - T or '2' not detected.")_
```

```
Press 1 for a greeting. Press 2 for a farewell Awaiting Input: 1
Hello User!
>>>
Press 1 for a greeting. Press 2 for a farewell Awaiting Input: 2
Goodbye User!
>>>
Press 1 for a greeting. Press 2 for a farewell
Awaiting Input: 3
Error - '1' or '2' not detected.
```

LOOPS

```
(userChoice = "Yes"

while userChoice == "Yes":
    userChoice = input ("Do you want to repeat this? ")
```

```
userCount = int(input("How many times do you want to use this
    loop? "))
forx in range (1, userCount+1): print("You asked for this many.")
```

```
Do you want to repeat this? Yes Do you want to repeat this? Yes
Do you want to repeat this? No thank you.
How many times do you want to use this loop? 3 You asked for
this many.
You asked for this many.
You asked for this many.
```

Term	Definition
	A mathematical character to perform a calculation. Example: +
	A set of values, of the same data type, stored in sequence. A list.
	Setting or changing the data type of a variable.
	Connecting strings of characters together.
	A statement which is either true or false. A computation depends on whether a condition is true or false.
	A value which does not change whilst the program is running.
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	A device for connecting multiple networks together.
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	Authentication technique which relies on physical characteristics like fingerprints.
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	Software which is designed to cause damage or harm to a computer system or its user's interests.
	An update to a piece of software. Usually to fix bugs or improve it.
	Cyberattack which redirects a user from a genuine website to a fake one.
	An email which pretends to be from a legitimate source such as a bank to gain personal information.
	Malware which encrypts a user's files then demands a ransom to decrypt them.
	Tricking people into giving away sensitive information.
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>>>
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Awaiting Input: 3
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```

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```

```
Do you want to repeat this? Yes Do you want to repeat this? Yes
Do you want to repeat this? No thank you.
How many times do you want to use this loop? 3 You asked for
this many.
You asked for this many.
You asked for this many.
```

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

G.	Assessment objectives A01, A02	
A01		Assessment Objective 1 AO1 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.
AO2		Assessment Objective 2 AO2 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. You 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

Year 11 PRODUCT DESIGN Term 2

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 a 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 draw to the correct lengths. Diagonal lines are drawn at 45-degrees.

Commonly used by engineers for drafting ideas.

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.

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.

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 a show a view into a room.

B.	Two-point Perspective Drawing

Commonly used by architects to show realistic building ideas.

C.	Isometric Technical Drawing

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

D.	Exploded Technical Drawing

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

Commonly used by engineers for drafting ideas.

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.

F.	CAD (Computer Aided Design)

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

Food science

Functions of ingredients
Ingredients provide a variety of functions in recipes.

Carbohydrate, protein and fat
Carbohydrate, protein and fat all have a range of properties that make them useful in a variety of food products.

Carbohydrates perform different functions in food.
They can:
- help to cause the colour change of bread, toast and bakery products (dextrinisation);
- contribute to the chewiness, colour and sweet flavour of caramel;
- thicken products such as sauces and custards (gelatinisation).

Maillard reaction
Foods which are baked, grilled or roasted undergo colour, odour and flavour changes. This is primarily due to a group of reactions involving amino acids (from protein) and reducing sugars.

Dextrinisation
When foods containing starch are heated they can also produce brown compounds due to dextrinisation. Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins which produce a brown colour.

Caramelisation
When sucrose (table sugar) is heated above its melting point it undergoes physical and chemical changes to produce caramel.

Gelatinisation
When starch is mixed with water and heated, the starch granules swell and eventually rupture, absorbing liquid, which thickens the mixture. On cooling, if enough starch is used, a gel forms.

Proteins perform different functions in food products.
They:
- aerate foods, e.g. whisking egg whites;
- thicken sauces, e.g. egg custard;
- bind ingredients together, e.g. fishcakes;
- form structures, e.g. gluten formation in bread;
- gel, e.g. lime jelly.

Gluten formation
Two proteins, gliadin and glutenin, found in wheat flour, form gluten when mixed with water. Gluten is strong, elastic and forms a 3D network in dough. In the production of bread, kneading helps untangle the gluten strands and align them. Gluten helps give structure to the bread and keeps in the gases that expand during cooking.

Gelation
Gelatine is a protein which is extracted from collagen, present in animal connective tissue. When it is mixed with warm water, the gelatine protein molecules start to unwind. On cooling, a stable, solid network is formed, trapping the liquid.

Denaturation
Denaturation is the change in structure of protein molecules. The process results in the unfolding of the protein's structure. Factors which contribute to denaturation are heat, salts, pH and mechanical action.

Coagulation
Coagulation follows denaturation. For example, when egg white is cooked it changes colour and becomes firmer (sets). The heat causes egg proteins to unfold from their coiled state and form a solid, stable network.

Aeration
Products such as creamed cakes need air incorporated into the mixture in order to give a well-risen texture. This is achieved by creaming a fat, such as butter or baking spread, with sugar. Small bubbles of air are incorporated and form a stable foam.

Fats performs different functions in food.
They help to:
- add 'shortness' or 'flakiness' to foods, e.g. shortbread, pastry;
- provide a range of textures and cooking mediums;
- glaze foods, e.g. butter on carrots;
- aerate mixtures, e.g. a creamed cake mix;
- add a range of flavours.

Plasticity
Fats do not melt at fixed temperatures, but over a range. This property is called plasticity.

Colloidal systems
Colloidal systems give structure, texture and mouthfeel to many different products.

System	Disperse phase	Continuous phase	Food
Sol	Solid	Liquid	Unset jelly
Gel	Liquid	Solid	Jelly
Emulsion	Liquid	Liquid	Mayonnaise
Solid emulsion	Liquid	Solid	Butter
Foam	Gas	Liquid	Whipped cream
Solid foam	Gas	Solid	Meringue

Raising agents
Raising agents include anything that causes rising within foods, and are usually used in baked goods. Raising agents can be:
- biological, e.g. yeast;
- chemical, e.g. baking powder;
- mechanical, e.g. adding air through beating or folding.

Functional ingredients
These are ingredients that are specifically included in food for additional health benefits. They include:
- probiotics – 'good' bacteria that may have a positive impact on human health;
- prebiotics – food ingredients that promote the growth of beneficial microorganisms in the gut;
- sterols/stanols – compounds that can lower cholesterol;
- healthy fats (e.g. omega-3);
- added vitamins and minerals (more than in the original food).

Food is prepared and cooked to:
- make the food more palatable – improves flavour, texture and appearance;
- reduce the bulk of the food;
- provide variety and interest to meals.

Methods of cooking food
The methods of cooking are divided up into groups. These are based on the cooking medium used.
They are:
- moist/liquid methods, e.g. boiling;
- dry methods, e.g. grilling;
- fat-based, e.g. frying.

Selecting the most appropriate way of preparing and cooking certain foods is important to maintain or enhance their nutritional value.
- Vitamins can be lost due to oxidation during preparation or leaching into the cooking liquid.
- Fat-based methods of cooking increase the energy (calories) of the food.
- The use of different cooking methods affects the sensory qualities of the food.
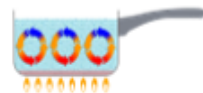
Key terms
Conduction: the exchange of heat by direct contact with foods on a surface.
Convection: currents of hot air or hot liquid transfer the heat energy to the food.
Functional ingredients: Included in food for additional health benefits.
Heat transfer: transference of heat energy between objects.
Radiation: energy in the form of rays.

Tenderisation
- Mechanical tenderising – a meat cleaver or meat hammer may be used to beat the meat. Cutting into small cubes or mincing can also help.
- Chemical tenderisation (marinating) –the addition of any liquid to flavour or soften meat before cooking.

There are three ways that heat is transferred to food.
- Conduction – the exchange of heat by direct contact with foods on a surface.
- Radiation – energy in the form of rays.
- Convection – currents of hot air or hot liquid transfer the heat energy to the food.

Tasks
- Choose a recipe that you enjoy or have made recently and explain in detail the functions of the ingredients.
- Explain the function of raising agents, giving examples of recipes.

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-
-
-

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Key terms
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Convection:

Functional ingredients:

Heat transfer:

Radiation:

Food is prepared and cooked to:
-

-

-

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• Mechanical tenderising

• Chemical tenderisation (marinating)

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Colloidal systems ……………………………………………to many different products.

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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?*

"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."

Pierre De Coubertin- Founder of the modern Olympic games

Main assessment objectives

Learning outcome: Know about the role of sport in promoting values

C.	*What is the difference between sportsmanship and gamesmanship?*

Sportsmanship is the unwritten rules that players play by, whereas gamesmanship is bending the rules to gain an advantage

What is spectator etiquette?

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?

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?

1. Respect
2. Excellence
3. Friendship
4. Courage
5. Determination
6. Inspiration
7. Equality

G.	*Performance enhancing drugs*

Why do athletes use them?

Pressure to succeed as an individual
Pressure to succeed as a nation
Pressure from sponsors

Why they shouldn't be used?

Long term health issues
Consequences when found guilty
Unfair advantage

What is WADA?

World Anti Doping Agency
The organisation is charge of drug testing across the world

How do they carry out drug testing?

Blood sample
Hair sample
Nail sample

WORLD ANTI-DOPING AGENCY

	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:

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B. *The Olympic and Paralympic values*
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C.	*What is the difference between sportsmanship and gamesmanship?*

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*

Why do athletes use them?

1
2
3

Why they shouldn't be used?

1
2
3

What is WADA?

1
2

How do they carry out drug testing?

1
2
3

WORLD ANTI-DOPING AGENCY

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

Unit 1: The Music Industry

BTEC

What we are learning during this unit:

A. Job Roles in the Music Industry
B. Employment Patterns
C. Record Labels (Pros and Cons)
D. Venues / Health and Safety / Security
E. Unions/Agencies/Trade Bodies
F. Publishing (Pros and Cons)

6 Key Words for this term

1 Employment
2 Major
3 Independent
4 Responsibility
5 Union
6 Publishing

A. Job Roles in the Music Industry

Key word	Key definition
✓ Musician	*Plays an instrument or voice*
✓ Composer	*Writes music e.g. films*
✓ Songwriter	*Writes songs*
✓ Record producer	*Directs recording sessions*
✓ Conductor	*Directs an orchestra / ensemble*
✓ Live Sound Technician	*Monitors sound at live events*
✓ Roadie	*Moves equipment /sets up*
✓ Instrument Technician	*Fixes stuff like guitars/drums*
✓ Artistic Manager	*The boss of the artist/band!*
✓ Venue Manager	*Responsible for health/safety*
✓ Studio Manager	*Book recordings/H&S*
✓ Promoter / Marketer	*Sells tickets to live events!*
✓ A&R	*Finds new talent to sign to labels*
✓ Sound Engineer	*Records the music in studio*
✓ Session Musician	*Plays in recordings or live shows*
✓ Mastering Engineer	*Perfects finished recording*
✓ Manufacturer	*Makes the CD's to sell*
✓ Music Journalist	*Writes about music / reviews*
✓ Blogger/Vlogger	*Blogs about music / reviews*
✓ Broadcaster	*E.g. Radio Presenters*
✓ Software Programmer	*Codes musical software*
✓ DJ	*Mixes/plays live music*
✓ Retailer	*Sells merchandise!*
✓ Distributer	*Gets finished CD's to shops to sell (now also done online!)*
✓ Stylist	*Works on the band/artist image*
✓ Accompanist	*Attends auditions, plays for a solo musician e.g. piano*

B. Employment Patterns

Fulltime	5 days a week, Contract (holidays/sick pay and pension)
Part time	1-4 days a week, Contract like full time.
Freelance	Self-employed, no long-term contracts! No work = no pay
Permanent Vs Casual	Permanent = guaranteed work / security whereas casual is not secure, varies but does give more flexibility

C. Record Labels (pros and cons)

Major	Independent
e.g. Warner, Sony, Universal	*Smaller labels*
Pros = lots of money, links with companies to promote and publish, lots of contacts, get the best deals for manufacturing, good links with advertising and media to promote and market artist/band	Pros = individual style of artist is important, more control over music, closer relationships, contracts more artist friendly
Cons = difficult to stand out, less control over your music, contracts can be unfair	Cons = not as much money, less publicity and promotion, not as organised/connected, less media contacts

D. Venues/Health and Safety/Security

Large Venue = Arena
Small Venue = school hall/pub

Health and Safety

Risk Assessment = to identify and minimise risks
HSE = health and safety executive

Security

ID/Bags/Crowd Control

E. Unions/Agencies/Trade Bodies

Agencies

MCPS / PRS
Mechanical-Copyright Protection Society and the Performing Right Society. *Collects royalties for musicians for physical formats like CD (MCPS) and live music (PRS)*

PPL = Phonographic Performance Limited. *Licenses the right to perform recorded music*

Unions

Unions provide support for lots of people, they provide things like advice for freelancers on NI/TAX, handling disputes, and support in negotiating contracts

MU = Musicians Union
Equity
BECTU = Broadcasting Entertainment Cinematograph Theatre Union

Trade bodies

MPG = *Music Producers Guild*
Represents people involved in producing recorded music

PLASA = *Professional Lighting and Sound Association*
Represents those who work/supply technologies

APRS = *Association of Professional Recording Services*
Represents those who work in the audio industry, e.g. recording studios/producers

F. Publishing (pros and cons)

Major	Self-Publishing
Remember: Publishing Company = Composition OWNERSHIP	
Pros = good distribution, payment often upfront (in advance), marketing and promotion is good	Pros = no need for an agent, send work directly, done on social media, more in control of editing, stepping stone to a larger company
Cons = signed through an agent (which means they take a cut!), harder to get published when the company is huge, more editing done on your work so less control	Cons = less money, less marketing and promotion

Unit 1: The Music Industry

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A. Job Roles in the Music Industry
B. Employment Patterns
C. Record Labels (Pros and Cons)
D. Venues / Health and Safety / Security
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6 Key Words for this term

1	E_____	4	R_____
2	M_____	5	U_____
3	I_____	6	P_____

A. Job Roles in the Music Industry

Key word	Key definition
✓ M_____	*Plays an instrument or voice*
✓ C_____	*Writes music e.g. films*
✓ S_____	*Writes songs*
✓ Record p_____	*Directs recording sessions*
✓ C_____	*Directs an orchestra / ensemble*
✓ L_____ Technician	*Monitors sound at live events*
✓ R_____	*Moves equipment /sets up*
✓ I_____ Technician	*Fixes stuff like guitars/drums*
✓ Artistic M_____	*The boss of the artist/band!*
✓ V_____ Manager	*Responsible for health/safety*
✓ S_____ Manager	*Book recordings/H&S*
✓ P_____ / Marketer	*Sells tickets to live events!*
✓ A&_	*Finds new talent to sign to labels*
✓ Sound E_____	*Records the music in studio*
✓ Session M_____	*Plays in recordings or live shows*
✓ M_____ Engineer	*Perfects finished recording*
✓ M_____	*Makes the CD's to sell*
✓ Music J_____	*Writes about music / reviews*
✓ B_____/Vlogger	*Blogs about music / reviews*
✓ B_____	*E.g. Radio Presenters*
✓ S_____ Programmer	*Codes musical software*
✓ D__	*Mixes/plays live music*
✓ R_____	*Sells merchandise!*
✓ D_____	*Gets finished CD's to shops to sell (now also done online!)*
✓ S_____	*Works on the band/artist image*
✓ A_____	*Attends auditions, plays for a solo musician e.g. piano*

B. Employment Patterns

	__ days a week, Contract (holidays/sick pay and pension)
	___ days a week, Contract like full time.
	Self-employed, no long-term c_____! No work = no p____
	P_____ = guaranteed work / security whereas casual is not secure, varies but does give more flexibility

C. Record Labels (pros and cons)

M_____	I_____
e.g. _____	*Smaller labels*
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L_____ Venue = _____
S_____ Venue = _____

Health and Safety

_____ = to identify and minimise risks
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_____

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## What we are learning this term:

A.   Health & Safety   C. Orthographic   E. Materials and properties
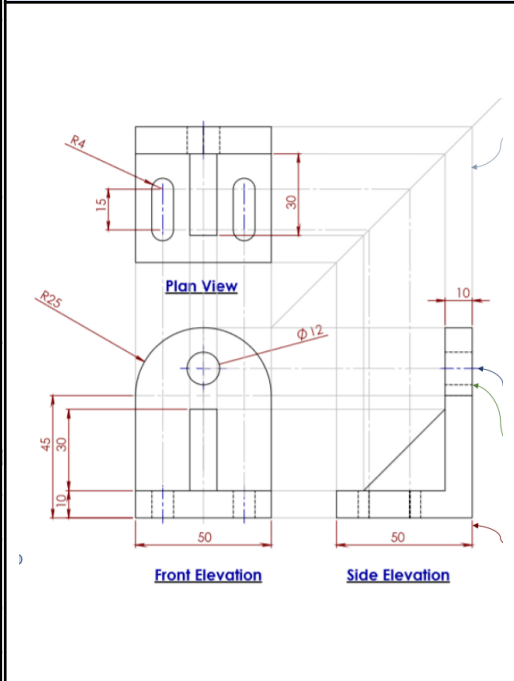B.   Manufacturing processes D. Tools & Equipment

A.	Health & Safety	
Risk Assessment	A risk assessment is the analysis of the risks involved when using equipment or performing a process.	
Signage	Signage is the word used for all the signs that you may see in a workshop environment. sowing how to translate and understand the signs in a workshop is vital when dealing with potentially dangerous equipment and processes.	

	Mandatory sign- Specific instruction on behaviour		**Prohibition sign-** Prohibiting or actions
	Warning sign- Giving warning of hazard or danger	First aid	**No danger sign-** Information on exits, first aid etc

B.   Manufacturing processes

Pillar drill

Pillar drills are free standing machine tools that use high powered motors to rotate drill bits at varying speed

Milling machine

A milling machine is a device that rotates a circular cutting tool that has a number of cutting edges. The workpiece is held in a vice or similar device clamped to a table that can move in directions. X, Y & Z axis

Centre lathe

A centre lathe is used to manufacture cylindrical product /objects and is 'turned' to create different shapes. Different cutting tools can be used such as **facing**, **parting** and **knurling.**

C.   Orthographic

The study of human measurements to ensure the products and environments are the correct size for the intended user.

Plan View

Front Elevation   Side Elevation
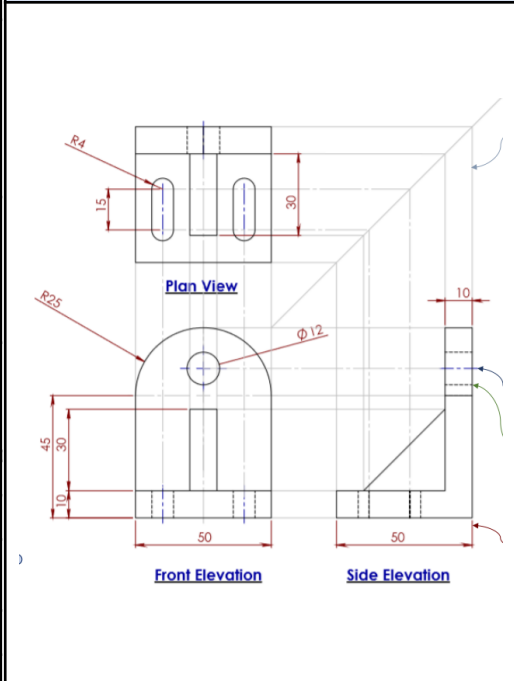
Ø12	The symbol ø on this dimension represents **Diameter** – so it is telling us how wide the circle is overall.
R25	The letter R on this dimension tells us the **Radius** of the curve or circle – the distance from the centre to the outside

D.   Tools & Equipment

	Battery/cordless drill - A drill is a tool used for making round holes or driving fasteners. It is fitted with a bit, either a drill or driver chuck. Battery for ease of use
	Checking for true (i.e. straight and accurate) alignment of edges, planes and angles is by far the most common engineer square use.
	A scriber (scribe) is a hand tool used for marking-out areas ready for machining/cutting/drilling, etc. on workpieces made from metal. The scriber is made from high-carbon steel and is hardened to make sure it can score the surface of the metal.
	The centre punch is made from mild steel, with the point hardened and tempered, so that it withstands impact with the material it is marking. It is normally used to mark the centre of a hole to be drilled
	Divider, instrument for measuring, transferring, or marking off distances, consisting of two straight adjustable legs hinged together and ending in sharp points.

E.   Materials and properties

Strength	Ability of a material to withstand compression, tension and shear
Hardness	Ability to withstand impact without damage
Toughness	Materials that are hard to break or snap are tough & can absorb shock
Malleability	Being able to bend or shape easily would make a material easily malleable
Ductility	Materials that can be stretched are ductile
Elasticity	Ability to be stretched and then return to its original shape

What we are learning this term:

A. Health & Safety
B. Manufacturing processes
C. Orthographic
D. Tools & Equipment
E. Materials and properties

A.	Health & Safety
Risk Assessment	
Signage	

_____ sign- **Specific instruction on behaviour**	_____ sign- **Prohibiting or actions**
_____ sign- **Giving warning of hazard or danger**	First aid _____ sign- **Information on exits, first aid etc**

B. Manufacturing processes

Pillar drill

Milling machine

Centre lathe

C. Orthographic

The study of human measurements to ensure the products and environments are the correct size for the intended user.

R4
15
30
Plan View
R25
Ø12
10
45
30
10
50
50
Front Elevation
Side Elevation

Ø12	
R25	

D. Tools & Equipment

E. Materials and properties

Strength	
Hardness	
Toughness	
Malleability	
Ductility	
Elasticity	

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?

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.

Other Plays by Willy Russell

1. Educating Rita
2. Our Day Our
3. Shirley Valentine
4. Keep your eyes down
5. Stags and Hens

Key Words:

Synchronisation – movement or speech that happens at the same time.
Physical & Visual Theatre - a form of theatre that puts emphasis on movement rather than dialogue
Chorus - those who perform vocally in a group as opposed to those who perform singly.
Soundscape – layered voices and sounds to create a location or atmosphere
Abstract – representational and symbolic, not life-like or naturalistic
Sequence – an order of events/movements Pattern – a repeated phrase/sequence of movements.
Naturalism- 'A slice of life onstage' Naturalistic performance that aims to be as true to life.
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
Motivation - the reason a character does anything Revelations – when information is disclosed
Narration – adding a spoken commentary for the audience about the action on stage or to help progress the story on.
Climax – is a play or a specific scene's point of highest tension and drama
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
Narrative – the storyline and character's trajectory
Symbols -are often used in drama to deepen its meaning and remind the audience of the themes or issues it is discussing.

Key learning aims from Component 2

Learning aim A: Develop skills and techniques for performance	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.
Learning aim B: Apply skills and techniques in rehearsal and performance	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.
Learning aim C: Review own development and performance	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 Brechts 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 direction'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.

WILLY RUSSELL'S BLOOD Brothers

Who is Willy Russell	Other Shows by Willy Russell

Key Words:

Synchronisation – _____
Physical & Visual Theatre - a form of _____

Chorus - those who perform _____

Soundscape – layered_____
Abstract – _____

Sequence – an order of
_____

Naturalism - 'A slice of life' on stage. Naturalistic
_____

Motivation - the _____

Epic Theatre- Didactic drama
_____ to address the
audience directly with analysis, argument, or documentation

Climax – is a play or a specific scene's point of
_____
and drama
Narrative – the s_____
e and _____
Narration- Adding
_____

Symbols -are often used in drama to
_____
and remind the audience of the themes or issues it is discussing.
Emotional Memory- to
_____. This
memory can then be tapped into when the actor was working towards
the creation of a character

Expand your knowledge and understanding!

Blood Brothers - GCSE English Literature Revision - AQA - BBC Bitesize

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

	Keywords linked to Assignment Brief
Physical skills	
Performance skills	
Reflect	
Analyse	
Apply	

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 Brechts 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 direction'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:

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		• 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		• 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		• 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		• 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		• 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		• Children and young people may need support on a temporary or permanent basis because their parent of 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		• 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		• Older adults may need support with a range needs including arthritis, cardiovascular disease, dementia and depression. • Types of support for older adults include residential care, carers and personal assistants.
Informal Social Care		• Not all carers get paid for what they do – they are known as informal carers and social services would really 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	• 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	• 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	• 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	• 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	• 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	• If an individual has a learning disability is can cause difficulty in them accessing care services. • Support might include a learning disability nurse, speech and language therapist or occupational therapist.
Resource Barriers	• 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	• 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	• 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	• 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	• It is a person's right by law to have information about them kept confidential. • Care workers and 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	• 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	• In health and social care it is important to communicate effectively with service used in order to build trusting relationships. These can be lost of the care worker appears not to care or listen. • Recognising different communication needs and trying to overcome them shows that cares 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	• 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. DUTY OF CARE • 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	• 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:	• 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

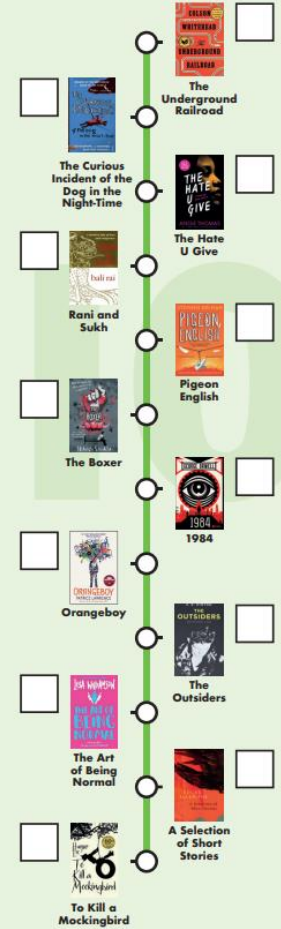| Working together	• All care works have the responsibility to uphold care values. If everyone works together, doing their 'bit', service users and colleagues alike will all be able to have positive experiences. • Put any feelings aside, some clients can show anger or aggressions towards you, continues to work in a way that respects each of the care values. Staff training: • 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	• 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:
	  • 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	• 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	• 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	• 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

SWINDON ACADEMY
READING CANON

Year 7

- The Canterbury Tales
- War Horse
- Adventures of a Young Naturalist
- A Monster Calls
- The Pearl
- Number the Stars
- The Hunger Games
- Chinese Cinderella
- Sir Gawain and the Green Knight

Year 8

- The Dark Lady
- Trash
- The Diary of a Young Girl
- Ghost Boys
- The Amazing Maurice
- The Bone Sparrow
- Salt to the Sea
- The Giver
- Witch Child

Year 9

- Skin
- I am Malala
- Noughts and Crosses
- Liccle Bit
- Fahrenheit 451
- The Black Flamingo
- One
- Simon vs the Homo Sapiens Agenda
- Long Way Down
- Northern Lights
- The Boy Who Steals Houses
- The Woman in Black
- The Book Thief

Year 10

- The Underground Railroad
- The Curious Incident of the Dog in the Night-Time
- The Hate U Give
- Rani and Sukh
- Pigeon English
- The Boxer
- 1984
- Orangeboy
- The Outsiders
- The Art of Being Normal
- A Selection of Short Stories
- To Kill a Mockingbird

#ReadingisPower