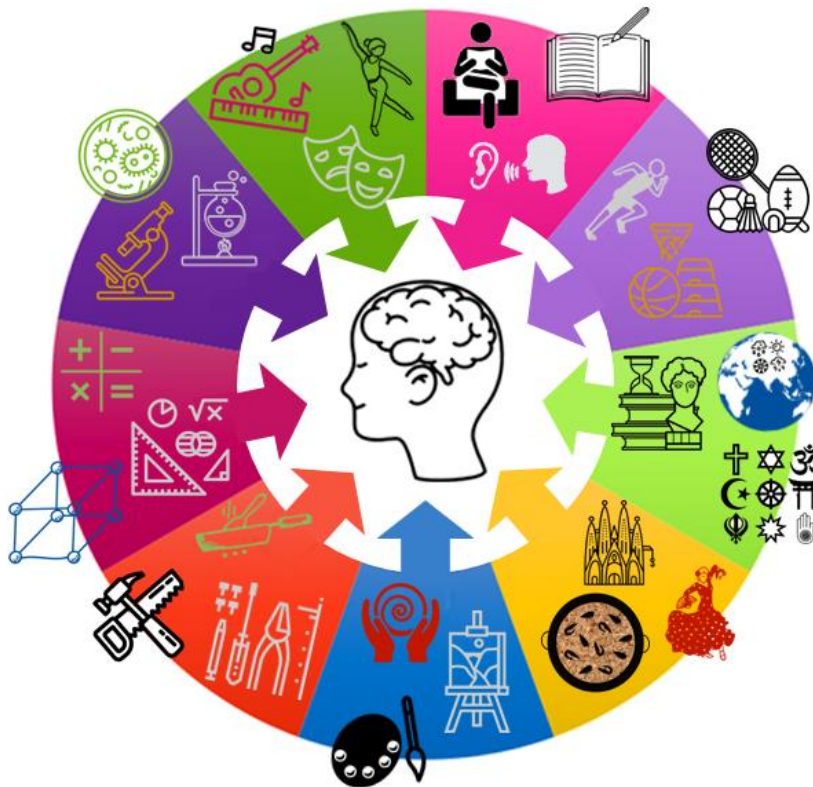


# 100% book - Year 11 GS

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

## Term 1



### Swindon Academy 2022-23

Name:

Tutor Group:

Tutor & Room:

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

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

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

## Knowledge Organisers

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

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

## Quizzable Knowledge Organisers

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

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

### Top Tip

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

## Expectations for Prep and for using your Knowledge Organisers

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

# How do I complete Knowledge Organiser Prep?

## Step 1

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

The image shows the Epraise website interface. On the left is a 'Planner' for the week of 20th May to 26th May 2020, with columns for Sun, Mon, Tue, Wed, Thu, and Fri. On the right is a 'Knowledge Organiser' for 'Particle Theory'. It contains several sections: 'What is particle theory?', 'What is the law of conservation of mass?', 'What are the different states of matter?', 'What are the differences between the states of matter?', and 'What are the differences between the states of matter?'. Each section includes text and diagrams of particle arrangements for solid, liquid, and gas states.

## Step 2

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

This image shows a printed page from the knowledge organiser with handwritten notes. At the top, the date '29th May 2020' and the title 'Particle theory' are written. The page includes sections for 'What is particle theory?', 'What is the law of conservation of mass?', and 'What are the different changes of state?'. A diagram shows the transitions between solid, liquid, and gas states with arrows indicating the direction of change and the energy involved (gaining or losing energy).

## Step 3

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

Handwritten notes on lined paper. At the top, the date '29th May 2020' is written. Below it, the title 'Properties of the states of matter' is underlined. The notes define 'Particle theory = all matter is made of particles'. It then describes the three states: 'Solid = regular pattern particles vibrate in fixed position', 'Liquid = particles are arranged randomly but are still touching each other particles can slide past each other and move around', and 'Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy'.

## Step 4

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

Handwritten notes on lined paper showing the definition of 'Solid' repeated three times: 'Solid = regular pattern particles vibrate in fixed position'.

## Step 5

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

This image shows a printed page from the quizzable knowledge organiser with handwritten answers. The questions are: 'What is the law of conservation of mass?' (answered: Self quizzing), 'What are the different changes of state?' (answered: Arrangement/movement of matter), and 'What are the differences between the states of matter?' (answered: Solid = regular pattern, Liquid =, Gas =). The diagram at the bottom shows the transitions between solid, liquid, and gas states.

## Step 6

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

Handwritten notes on lined paper showing the definition of 'Solid' with corrections. The text is: 'Particle theory = all matter is made of particles', 'Solid = regular pattern particles vibrate in fixed position', 'Liquid = particles are arranged randomly but are still touching each other particles can slide past each other and move around', and 'Gas = Particles are far apart and are arranged randomly. Particles carry a lot of energy'. There are checkmarks and an 'X' indicating corrections.

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

# Y11 ENGLISH - MACBETH Grammar

## 1. Context

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

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

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

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

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

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

### Conventions of a Shakespearean Tragedy

<b>A tragic hero</b> who falls from greatness through a flaw of their own character.	<b>Hamartia</b> – the flaw in the tragic hero that destroys them.	<b>A hero of status</b> – the central characters are people of importance, with power and status to lose.
<b>External conflict</b> – his tragedies feature conflict between characters, and always lead to death.	<b>Internal conflict</b> – there are frequent moments of self-doubt or internal torment.	<b>Supernatural elements</b> – Many of Shakespeare's tragedies feature supernatural influences.

## 2. Key Characters

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

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

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

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

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

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

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

## 3. Central Themes

<b>Ambition</b>	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.
<b>Kingship and Tyranny</b>	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.
<b>Order and Disorder</b>	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.
<b>Appearance and Reality</b>	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

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

## 5. Key Terminology, Symbols and Devices

<b>Motif</b>	A recurring image or idea that has symbolic importance. The best example in Macbeth would be blood.
<b>Soliloquy</b>	When a character is alone on stage and speaks their thoughts aloud to themselves.
<b>Iambic Pentameter</b>	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"
<b>Foreshadowing</b>	When a hint or warning is given about a later event.
<b>Dramatic Irony</b>	When a character is unaware of something that the audience is aware of, so they don't know the full significance of their words.
<b>Symbolism</b>	When something symbolises a set of ideas e.g. "The raven himself is hoarse" – raven symbolic of death, supernatural.
<b>Aside</b>	When a character pauses in a conversation to speak only to the audience or another character, unheard by the rest.

## Y11 ENGLISH - MACBETH Grammar

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





# T1 Y11 Biology B4.14 – Variation and Evolution

## Variation

May be due to differences in:

- Genes that have been inherited (genetic causes)
- Conditions which they have lived in (environmental causes)
  
- Combination of genes and the environment.

**Mutation** = a change in the DNA during copying (randomly). Often has no effect on the gene, but sometimes leads to new proteins being made and a new characteristic being seen

## Evolution

Evolution = a change in inherited characteristics of a population over time through natural selection – could lead to a new species.

A **species** is a group of organisms that can successfully breed.

Theory of evolution states that all species have evolved from a simple life forms more than 3 billion years ago.



## Natural Selection

Described by Darwin

1. **Variation** within a species – different genes. (due to **mutation**)

2. One gene may give characteristics that are better **adapted** for survival in the environment.

3. Those with **advantageous genes** will survive and reproduce – passing genes to **offspring**.

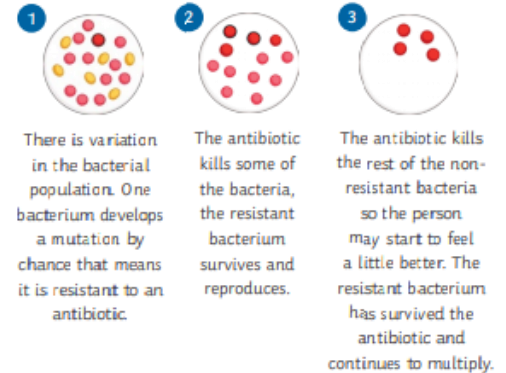
4. Over long periods of time, all members of that species have the characteristic, may even lead to a new **species**.

## Resistant Bacteria

- Bacteria **evolve** rapidly as they reproduce at a fast rate. (reproduce approx. every 20 mins)
- Mutations of bacteria can produce new strains.

- Some strains are **resistant** to antibiotics (so are not killed).
- They **survive** and **reproduce** – population of resistant strain rises.
- Resistant strain will spread because people are not **immune** and there is no effective treatment.

- **MRSA is resistant** to antibiotics.



## **How to reduce antibiotic resistant strains:**

- Doctors should not prescribe antibiotics for viral infections
- Patients must complete courses of antibiotics
- Agricultural use of antibiotics should be restricted.

## QUESTIONS

1. What are the two causes of variation?
  2. What is a mutation?
  3. Which scientist proposed the theory of evolution by natural selection?
  4. What is the theory of evolution?
  5. What is a species?
  6. Why do mutations sometimes lead to new characteristics being seen?
1. Why do bacteria evolve rapidly?
  2. What can cause new strains of bacteria?
  3. Name a bacteria which is resistant to antibiotics.
  4. What are the three ways to reduce antibiotic resistance strains?

# T1 Y11 Biology B4.14 – Variation and Evolution

## Genetic Engineering

- Process which involves modifying the **genome** of an organism by introduction a gene from another organism to give a **desired characteristic**.

### Uses of genetic engineering:

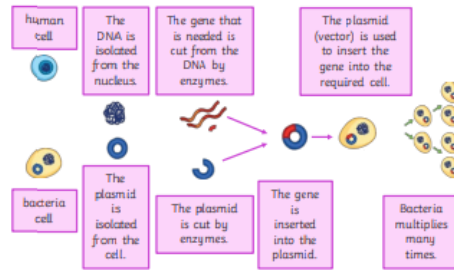
- Plant crops to be **resistant** to diseases or produce bigger, better fruits.

- Bacteria cells to produce useful substances, such as human insulin to treat diabetes.

### Genetically modified (GM) crops

Advantages	Disadvantages
Resistant to insect attack	Not sure on long term effects when eating GM crops
Produce increased yields	Could affect populations of wild flowers and insects

### Process of Genetic Engineering (HT only)



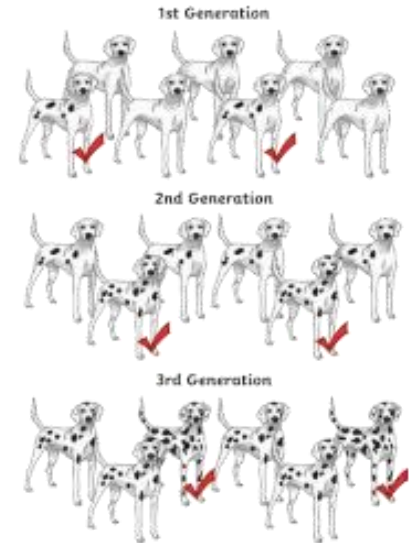
1. What is genetic engineering?
2. State two uses of genetic engineering.
3. What does 'GM' stand for?
4. State two advantages of GM crops.
5. State two disadvantages of GM crops.
6. Describe the stages of genetic engineering (HT only).

## Selective Breeding

- Process which humans breed plants and animals for particular **genetic characteristics**.

### Steps of selective breeding:

1. Choose a male and female with **desired characteristics**.
2. Breed together
3. Pick the offspring which have the desired characteristic and breed together.
4. Continue over many generations, selecting the best offspring each time, until all offspring show desired characteristics.



1. What is selective breeding?
2. Describe the four stages of selective breeding.
3. Why might a characteristic be chosen?
4. Give 3 examples of characteristics humans may choose.

# T1 Y11 Biology B4.14 – Variation and Evolution

## Cloning

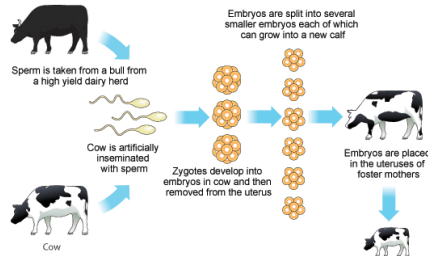
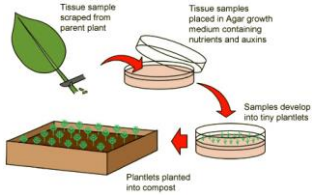
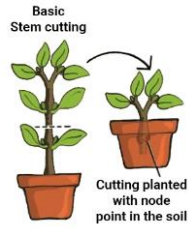
A clones are **genetically** identical individuals.

### Cloning Plants

Plants can be clones by taking cuttings or tissue culture

**Cuttings:** a section of a plant is cut off using a scalpel. The cutting is then placed in soil to grow. The cutting can be dipped in hormone powder before planting to encourage root development.

**Tissue culture:** This method allows you to make thousands of clones from on small piece of plant tissue. This expensive.



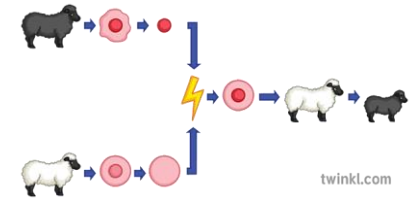
### Cloning Animals

**Embryo cloning:** This method allows you to make multiple clones from one embryo.

Embryonic cloning is highly skilled and expensive. However, it allows the same cow to produce 30+ calves in a year.

## Adult cell cloning

This process produces a whole new animal from the cell of another adult animal. This is how dolly the sheep was made.



### Steps of adult cell cloning:

1. The nucleus is removed from an unfertilised egg. At the same time, the nucleus from the animal is inserted in the empty egg cell.
2. The nucleus from the animal is inserted in the empty egg cell.
3. The new egg cell is given an electric shock which stimulates cell division to form an embryo.
4. The embryo is inserted into the uterus of a surrogate adult female to continue its development.

### Benefits

1. It can be used to save animals from extinction.
2. It can be used to clone pets.
3. It can be used to clone useful genetically engineered organisms.

### Risks

1. People are concerned that the technology may be used to clone human babies.
2. Cloning reduces the genetic variation of the population..

1. What is a clone?
2. Describe the process of taking cuttings.
3. Describe the process of tissue cloning.

1. Describe the process of embryo cloning.

1. What is adult cell cloning?
2. Describe the steps involved in adult cell cloning,
3. What are the risks and benefits associated with adult cell cloning.





## T1 Y11 Chemistry C4.15- Using our resources

### 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.

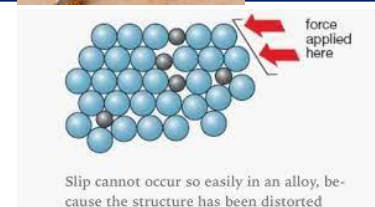
Aluminium has an oxide coating that protects the metal from further corrosion. Some coatings are reactive and contain a more reactive metal to provide sacrificial protection, eg zinc is used to galvanise iron.



### 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.



1. What is corrosion?
2. What is bronze?
3. How can corrosion be prevented?
4. What is sacrificial protection?

1. What is an 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?



## T1 Y11 Chemistry C4.15- Using our resources

### 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.

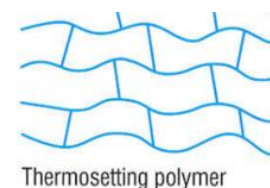
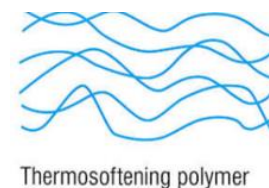
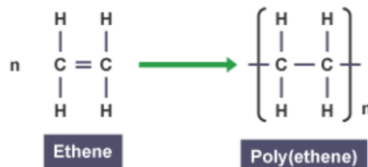
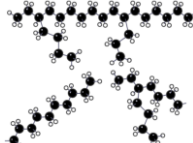
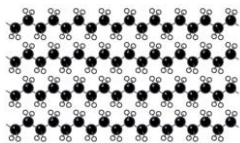


The properties of polymers depend on what monomers they are made from and the conditions under which they are made. For example, low density (LD) and high density (HD) poly(ethene) are produced from ethene.

High density:                      Low density:

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.



1. What is glass made from?
2. How are clay ceramics made?
3. What is a low density polyethene?
4. Draw the formation of poly(ethene) from ethene
5. What is the difference between thermosoftening and thermosetting polymers?
6. What are most composites made from?

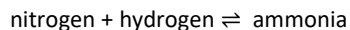


## T1 Y11 Chemistry C4.15- Using our resources

### The Haber process and the use of NPK fertilisers

The Haber process is used to manufacture ammonia, which can be used to produce nitrogen-based fertilisers. The raw materials for the Haber process are nitrogen (extracted from the air) and hydrogen (obtained from natural gas).

The purified gases are passed over a catalyst of iron at a high temperature (about 450°C) and a high pressure (about 200 atmospheres). Some of the hydrogen and nitrogen reacts to form ammonia. The reaction is reversible so some of the ammonia produced breaks down into nitrogen and hydrogen:



On cooling, the ammonia liquefies and is removed. The remaining hydrogen and nitrogen are recycled.

### Production and uses of NPK fertilisers

Compounds of nitrogen, phosphorus and potassium are used as fertilisers to improve agricultural productivity. NPK fertilisers contain compounds of all three elements.

Industrial production of NPK fertilisers can be achieved using a variety of raw materials in several integrated processes. These fertilisers are formulations of various salts.

Ammonia can be used to manufacture ammonium salts and nitric acid. Potassium chloride, potassium sulphate and phosphate rock are obtained by mining, but phosphate rock cannot be used directly as a fertiliser.

Phosphate rock is treated with nitric acid or sulfuric acid to produce soluble salts that can be used as fertilisers.

1. What does the Haber process make?
2. What are the raw material from the Haber process?
3. Where does the nitrogen come from?
4. Where does the hydrogen come from?
5. What is the reaction for the Haber process?
6. What are the conditions for the Haber process?
7. How is the ammonia extracted from the reaction?

1. What fertilisers made from?
2. What is an NK fertiliser?
3. What can ammonia be used to manufacture?
4. How are potassium chloride, potassium sulphate and phosphate rock obtained?
5. What is phosphate rock treated with to obtain salts for fertilisers?

## T1 Y11 Physics P4.14 Light

### 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

#### Specular reflection

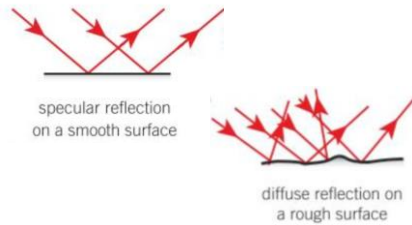
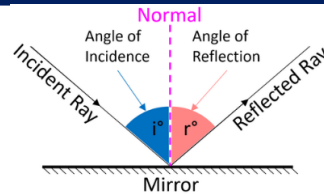
Definition: Reflection from a smooth surface. Each light ray is reflected in a single ray.

#### Diffuse reflection

Definition: Reflection from a rough surface. The light rays are scattered in different directions

Questions:

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?



### Ray diagrams

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

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

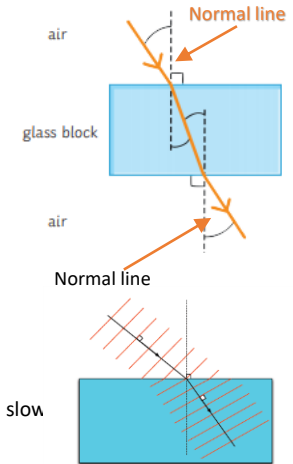
- Ray **slows down** and bends **towards the normal line**.

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

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

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

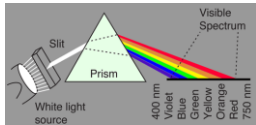
If wave hits medium at an angle of 90° then the ray will slow refracted.



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

## Colour

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



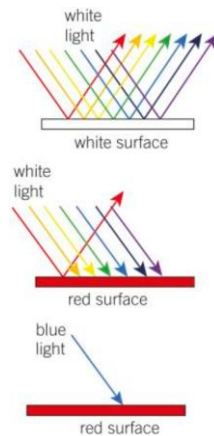
### Primary and secondary colours

Red + yellow = green

Green + blue = cyan

Blue + red = magenta

Green + blue + red = white



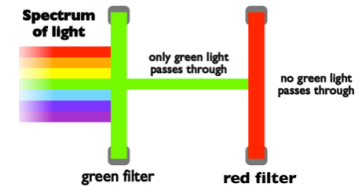
A white object looks white because it **reflects** all the wavelengths of visible light that reach it.

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

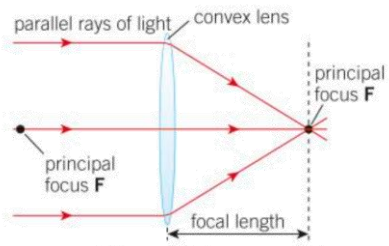
#### Filters

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



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?

## T1 Y11 Physics P4.14 Light

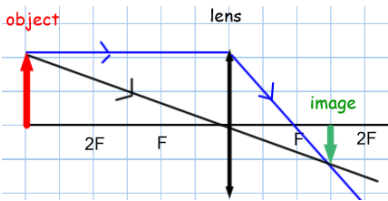


**Convex (Converging) Lenses** make parallel rays of light converge to meet at the principal focus. Focal length = distance from centre of lens to principal focus

### To draw a ray diagram:

Draw two rays from the top of the object

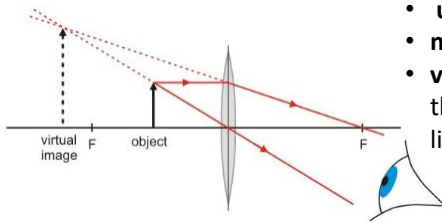
1. A ray parallel to the principal axis, which is refracted through the principal focus.
2. A ray through the centre of the lens, which does not change direction.
3. To create the image, draw an arrow from the principal axis to the point where the rays meet.



The image above is **inverted** (upside down), **diminished** (smaller than the object) and **real** (the rays of light pass through it).

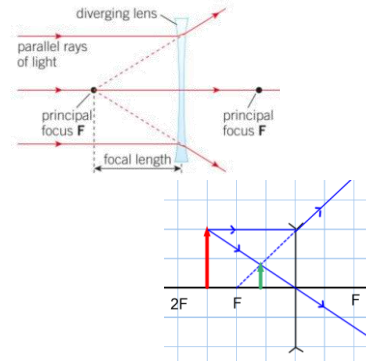
This image is

- **upright** (right way up),
- **magnified** (larger than the object)
- **virtual** (rays of light don't pass through it); represented by dotted lines



**Convex** lenses can produce **real** or **virtual** images.

**Concave (Diverging) Lenses** make parallel rays of light diverge (spread out), as if they have come from the principal focus of the lens



### To draw a ray diagram:

Draw two rays from the top of the object

1. A ray parallel to the principal axis, which is refracted as if it came from the principal focus on the same side of the lens.
2. A ray through the centre of the lens, which does not change direction
3. To create the image, draw an arrow from the principal axis to the point where these rays appear to meet.

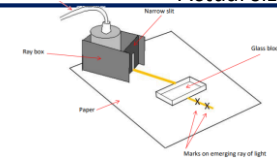
**Concave** lenses always produce **virtual** images.

**Magnification:** If the image is bigger than the object the magnification is greater than 1. If the image is smaller than the object, the magnification is less than 1.

Magnification is a ratio and so does not have units.

$$\text{Magnification} = \frac{\text{Image size}}{\text{Actual size}}$$

**Required Practical:** use different substances and surfaces to investigate refraction and reflection of light



Questions:

1. What does a convex lenses do to parallel rays of light?
2. How do you draw a ray diagram for a convex lens?
3. What is a real image?
4. What is a virtual image?
5. What type of does a concave lens produce?
6. 1. What does a concave lenses do to parallel rays of light?
7. 2. How do you draw a ray diagram for a concave lens?
8. What is the formula to calculate magnification?
9. What does a magnification of less than 1 mean?

# T1 Y11 Physics P4.15 Electromagnetism

## Magnets

- Have two poles - **north** and **south**.



- **Like poles** will **repel** each other (e.g. N-N or S-S)
- **Opposite poles** will **attract** (e.g. N-S)
- Magnetism is a **non-contact** force – magnets do not need to be touching for effect to be observed.

**Magnetic materials:** only **iron/steel, cobalt** and **nickel** are magnetic.

## Types of magnets

### Permanent magnet

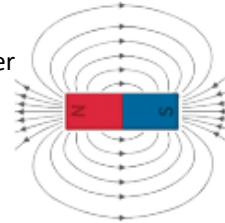
- Produces its own magnetic field.
- Magnetism cannot be turned on or off.

### Induced magnet

- Induced magnet = a material which becomes magnetic when placed in a magnetic field.
- Induced magnets only attract other materials and lose magnetism when removed from the magnetic field.

## Magnetic Fields

**Magnetic field** = the area surrounding a magnet where the force will act on another magnet or magnetic material.



- Magnet field is strongest at the **poles** where the field lines are **closest together**.
- Field lines always go away from **magnetic north** and towards **magnetic south**.

## Earth's Magnetic Field

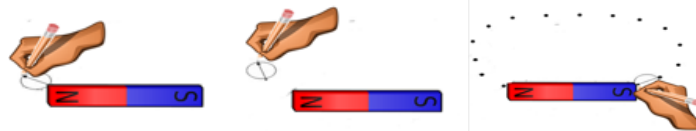
- Earth produces a magnetic field.
- Magnetic compasses use this to help navigation.
- The core of the Earth is made of **iron** (magnetic).

## Plotting Magnetic Field Lines

A magnetic compass can be used to plot and draw the magnetic field lines around a magnet.

**You need to be able to describe this method!**

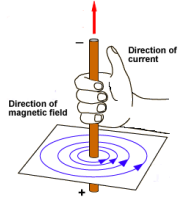
1. Place the bar magnetic in centre of paper.
2. Place a plotting compass at one end of the magnet.
3. Put a pencil dot at the place the compass arrow is pointing to
4. Move the compass to line up the tail of the compass needle to the dot you just made.
5. Repeat until you reach the other end of the magnet



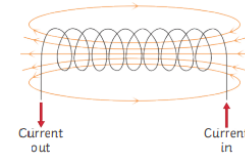
6. Join the dots using a line – this is the magnetic field line. Mark on the direction the arrow pointed – it should run N→S

## Electromagnetism

- When a current passes through a wire, a **magnetic field** is produced
- The direction of the field can be found by the right hand thumb rule
- curl the fingers of the right hand around the wire and point the thumb in the direction of the current (+ to -)
- The direction of the circular field is shown by the fingers
- Strength of magnet can be increased by increasing the current
- When the current is switched off, the magnetic field is lost



Coiling the wire will form a **solenoid**.



To increase strength of magnetic field around a solenoid you can:

- Add an **iron core**
- **Increase number of turns** in coil
- **Increase the current** passing through wire

## Electromagnets

- Electromagnet is a solenoid with an iron core.
- Are **induced magnets** (can be turned on and off)

Uses = electric motors, loudspeakers, electric bells, scrapyards.





## T1 Y11 Physics P4.15 Electromagnetism

1. Name the two poles on a magnet.
2. What will like poles do?
3. What will opposite poles do?
4. Why is magnetism a 'non-contact' force?
5. Which metals are magnetic?

1. What is a magnetic field?
2. Where is the magnetic field the strongest?
3. Which direction do the field lines go?
4. Draw the magnetic field around a bar magnet.
5. What is the Earth's core made of?
6. What can the Earth's magnetic field be used for?

1. What is produced when a current flows through a wire?
2. How can you increase the strength of a magnetic field of a straight wire?
3. What is produced when you coil the wire?
4. How can you increase the magnetic field around a solenoid? (3 ways)

1. What are the two types of magnets?
2. Name two differences between these two types of magnets.

1. Describe a method to plot the magnetic field of a bar magnet.

5. What is an electromagnet?
6. What is meant by induced magnet?
7. State 2 uses of electromagnets.

# T1 Y11 Physics P4.15 Electromagnetism

## The Motor Effect (HT only)

- When a wire carry a **current** is placed in a magnetic field, the two magnetic fields interact and a **force** is exerted on the wire. .
- This is called **motor effect**.

- The force produced by the motor effect can be calculated using:

$$\text{Force (N)} = \text{magnetic flux density (T)} \times \text{current (A)} \times \text{length (m)}$$

$$F = B \times I \times l$$

For example:

A current of 8A is flowing through a wire that is 75cm long. The magnetic field acting at a right angle on the wire is 0.5T. Calculate the force.

Remember: the equation uses length in m. The question has given you the length in cm so you need to convert it before you answer.

$$F = 0.5 \times 8 \times 0.75$$

$$F = 3\text{N}$$

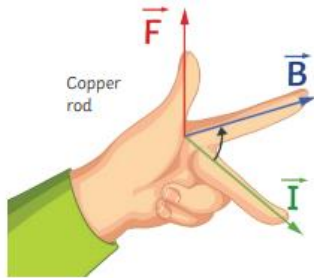
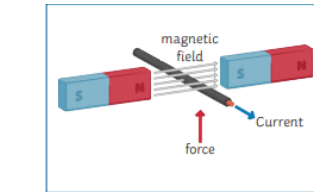
- If current flowing through wire is **parallel** to magnetic field, **no force** is produced.

## Fleming's left-hand rule.

- You may be asked a diagram and asked to indicate direction of force.
- You can use Fleming's left-hand rule to do this (picture)

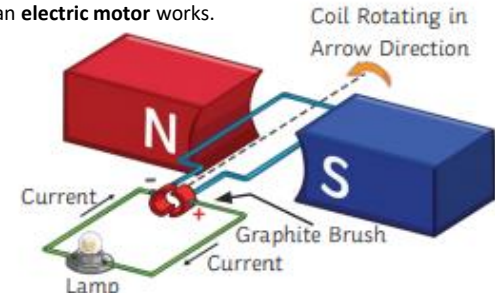
Remember ( **F B I** ):

- Use your **left hand!**
- The angle between index and middle should be **right angle**.
- Thumb = direction of **force**
- First finger = direction of **magnetic field**
- Second finger = direction of **current** through wire.



## Electric Motors (HT only)

- When wire carrying current is **coiled**, the motor effect causes wire to **rotate**.
- This is how an **electric motor** works.



- Current flows force produced acts in **opposite directions** causing coil to **rotate** overall.

- When coil reaches a **vertical position**, force is parallel so would be zero – stops rotating.

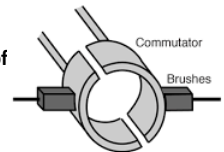
- A gap in the **split ring commutator** in the motor cuts the current temporarily.

- Momentum ensures the coil carries on moving

- The commutator reconnects and **changes the direction of** maintain a **constant rotation** in one direction overall.

- Increase speed of rotation by increasing the:

- current
- strength of magnet
- number of turns on the coil



## Questions

1. What is the 'motor effect'?
2. State the equation for calculating the force produced by the motor effect.
3. What happens to the force if the current flowing through the wire is parallel to the magnetic field?
4. What is Fleming's left-hand rule used to indicate?
5. What does your thumb represent?
6. What does your first finger represent?
7. What does your second finger represent?

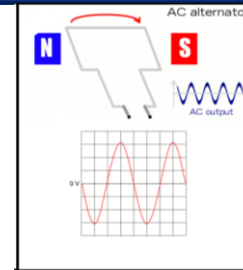
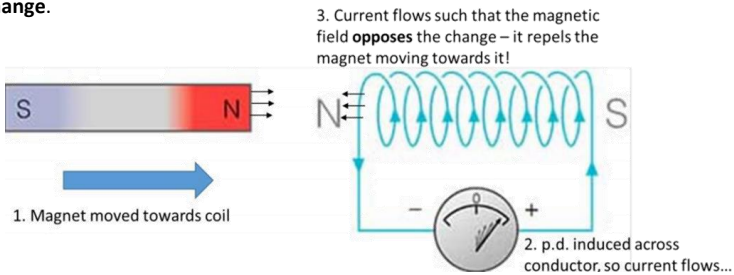
1. What happens when a wire carrying a current is coiled?
2. How does an electric motor work?
3. Why is a **split ring commutator** used?
4. How can we increase the speed of rotation of the motor?



## T1 Y11 Physics P4.15 Electromagnetism

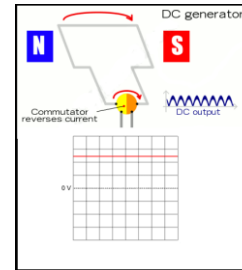
### The generator effect

- Movement can be used to produce a current in a wire.
- When a coil of wire spins in a magnetic field an electrical current is produced. An alternating current is **induced**.
- This is called the **generator effect**.
- This also works if you keep the coil still and move the magnetic field.
- The current in the conductor produces a magnetic field, which **acts to oppose the change**.



### Alternating current generator

- An alternating current is also called an alternator.
- Each end of the coil of wire spins inside the magnetic field and makes contact with a complete loop of conductor that is connected to the rest of the circuit.
- Every 180° turn the current flips direction.
- This produces an alternating current.



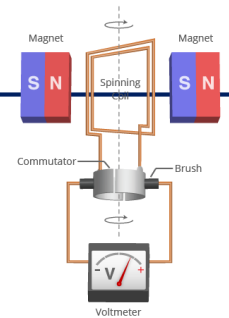
### Direct current generator

- A direct current generator is also called a dynamo
- A commutator can be used to generate a direct current.
- The commutator prevents the current flipping direction every half turn.
- This ensures the current only flows in one direction.

### Factors affecting induced potentials

The size of the induced potential in the generator effect depends on:

- The size/strength of the magnetic field (increasing the magnetic field increases the induced potential)
- The number of turns on the solenoid (increasing the number of turns increases the induced potential)
- The speed of movements/changes to the magnetic field faster changes increases the induced potential)



## T1 Y11 Physics P4.15 Electromagnetism

1. What is the generator effect?

1. How does an alternating current generator work?

1. What factors affect the size of an induced potential?

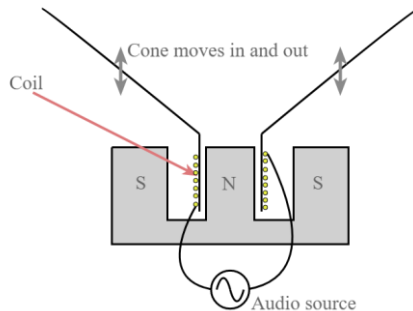
2. How does a direct current generator work?

## T1 Y11 Physics P4.15 Electromagnetism

### Moving coil sound devices

- Microphones and speakers are moving coil devices.
- The moving coil is attached to a cone.
- In loudspeakers and headphones an induced current causes the cone to vibrate the air around it causing a sound wave.
- In microphones sound waves move the cone causing a changing current to be induced on the coil.

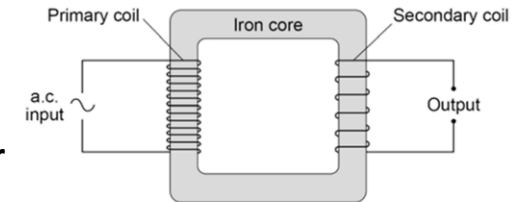
### How a moving coil device works



1. A force is produced in the coil of a wire by placing it in a magnetic field and turning on the current.
2. The current alternates in direction, varying the size of the current.
3. The coil moves back and forth.
4. The coil is joined to a cone which moves with it.
5. The cone vibrates the air according to the current.
6. The current transfers the information about the sound.

### Transformers

- A transformer is a device used to change an alternating voltage.
- They contains two coils of wire wrapped around an iron core.
- Transformers are used in the National Grid to distribute electricity.



### Step Up Transformer

- A step-up transformer increases the voltage and decreases the current of the a.c. input
- The primary coil has less coils than the secondary coil.
- This increases efficiency by reducing the amount of energy wasted as heat

### Step Down Transformer

- A step-down transformer decreases the voltage and increases the current of the a.c. input
- The primary coil has more coils than the secondary coil.
- This lowers the voltage so it is safe to use.

### Transformer Equation

$$\frac{\text{primary potential difference}}{\text{secondary potential difference}} = \frac{\text{number primary turns}}{\text{number secondary turns}}$$

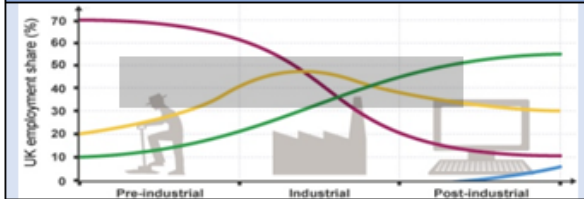
$$\frac{V_p}{V_s} = \frac{n_p}{n_s}$$

1. What is a moving coil device?
2. How does a speaker work?

1. What is a transformer?
2. What is the difference between a step-up and a step-down transformer.
3. Why are step-up transformers used in the National Grid?
4. Why are step-down transformers used in the National Grid?



### 1. Economic change in the UK



Primary	↘ due to mechanisation.
Secondary	↗ due to industrial revolution then ↘ due to de-industrialisation.
Tertiary	↗ due to wealth (↗ disposable income)
Quaternary	High-tech jobs including research and IT. ↗ due to government policies and the increase in technology.

#### Why has our economy changed?

De-industrialisation	The decline of a country's traditional manufacturing industry due to exhaustion of raw materials, loss of markets and competition from NEEs.
Government policies	A plan decided by a government to manage issues in a country.
Globalisation	The process which has created a more connected world; with increases in the movement of goods/people worldwide

### 2. Post industrial economy

Tertiary and quaternary sector employed 81% in 2011.	
IT	Employs over 60,000 people.
Services	Retail is the largest sector. Employs 4.4mill
Finance	London is the world's leading centre. HSBC
Research	Government invested £30bill in 2013.
Science parks	Groups of <u>high tech</u> industries and those doing scientific research. Located near universities (for graduates, share facilities).
Business parks	Purpose built areas of offices and warehouses (on edge of cities as less congestion, cheaper, good transport links).

### 3. Environmental impact of industry

Air and water pollution. Soil degradation.	
Releases CO <sub>2</sub> increasing the rate of global warming.	
Transport of materials is by road ↗ air pollution.	
<b>Example of modern industry being environmentally sustainable</b>	
Google	London Landscaper started 2018.
686 bikes spaces	Encourages cycling to work.
4 car spaces	< congestion/CO <sub>2</sub> emissions.
Solar panels.	Reduces fossil fuel consumption and reduces carbon footprint.
19,800 kWh	
Rooftop gardens	Urban greening. < CO <sub>2</sub> . Collects rainwater. Encourages wildlife.

### 4. Changes in the rural landscape

Population decline	Outer Hebrides (away from cities, limited opportunities).
Social changes	<ul style="list-style-type: none"> <li>⚡ Declined by &gt;50% since 1901.</li> <li>⚡ ↑ aging population = care issues.</li> <li>⚡ Less children &gt; schools shut.</li> </ul>
Economic changes	<ul style="list-style-type: none"> <li>⚡ Services close ie post offices.</li> <li>⚡ ↑ tourists but infrastructure not there.</li> <li>⚡ Government subsidies cost of ferries.</li> </ul>
Population growth	South Cambridgeshire (near large cities, people can commute).
Social changes	<ul style="list-style-type: none"> <li>⚡ Migrants from Cambridge, some now from Eastern Europe too.</li> <li>⚡ Proportion of elderly increasing (&gt;65).</li> <li>⚡ 80% car ownership = &gt; congestion.</li> <li>⚡ Young people are costed out.</li> </ul>
Economic changes	<ul style="list-style-type: none"> <li>⚡ ↑ house prices. Less affordable housing</li> <li>⚡ Petrol prices ↑.</li> </ul>

### 5. Improvements in infrastructure

Road	Upgrading 'Smart motorways' M4. Variable speeds, reducing accidents, extra lanes. 2014 Road investment strategy £15 bill. New construction jobs, boost economy.
Rail	Crossrail in London. Puts extra 1.5 million within 45 mins commute of capital city. HS2 to reduce journey times. London to Manchester in 1 hr 8 minutes.
Port	Liverpool 2. Doubles capacity to over 1.5 million containers a year. 96% of UK imports/exports through ports.
Airports	Heathrow expansion. 3 <sup>rd</sup> runway £18.6bill

### 6.. North-South divide

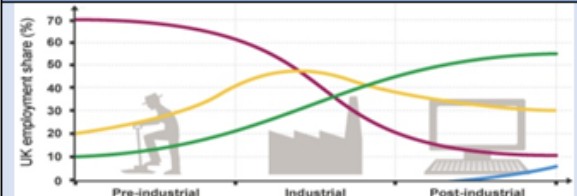
Causes	Decline of heavy industry in North (coal) Investment in finance and service industry in the South Investment in infrastructure in South
Impacts in north	Higher unemployment / lower wages (40%) Poor health, lower life expectancy (10 yrs) Poor education. There are SOME exceptions

#### Strategies attempting to resolve regional differences

Devolving more powers	Give more power to local councils and Welsh and Scottish governments. Plan best how to use their money.
Northern Powerhouse	A plan to attract investment to north. Improve transport links to northern cities. e.g. HS2, Liverpool2. BUT just a CONCEPT not a plan.
Enterprise Zones	55 EZs to encourage businesses to set up in areas of high unemployment. Reduce taxes, simple planning rules, superfast broadband to the area. Created more than 15,000 jobs.



### 1. Economic change in the UK



Primary	
Secondary	
Tertiary	
Quaternary	

#### Why has our economy changed?

De-industrialisation	
Government policies	
Globalisation	

### 2. Post industrial economy

Tertiary and quaternary sector employed 81% in 2011.	
IT	
Services	
Finance	
Research	
Science parks	
Business parks	

### 3. Environmental impact of industry


#### Example of modern industry being environmentally sustainable

Google	
686 bikes spaces	
4 car spaces	
Solar panels.	
19,800 kWh	
Rooftop gardens	

### 4. Changes in the rural landscape

Population decline	
Social changes	
Economic changes	
Population growth	
Social changes	
Economic changes	

### 5. Improvements in infrastructure

Road	
Rail	
Port	
Airports	

### 6.. North-South divide

Causes	
Impacts in north	

#### Strategies attempting to resolve regional differences

Devolving more powers	
Northern Powerhouse	
Enterprise Zones	





# Year 11 History : 1. Spain reaches the New World, c1490-1512

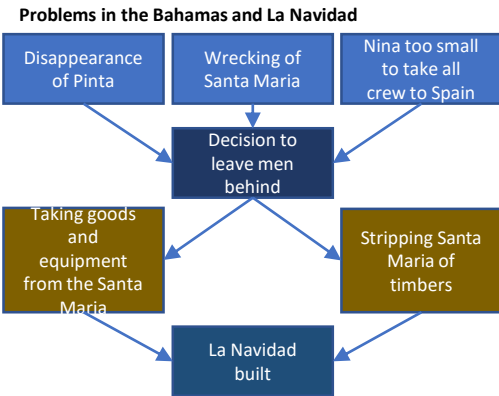


Spain c1490: exploration, religion and ambition
<ul style="list-style-type: none"> <li>Most people knew the world was round</li> <li>Most of Europe was mapped</li> <li>The Spice Trade with the East Indies was well established</li> <li>Portugal and Spain were rivals – both wanted to find a sea route to the East Indies</li> <li>The Catholic Church had 2 concerns in the 2<sup>nd</sup> half of the 15<sup>th</sup> Century:             <ul style="list-style-type: none"> <li>Defend Christendom</li> <li>Spread Christianity to new lands</li> </ul> </li> </ul>



Why did Spain agree to sponsor Columbus?	
<b>Christianity</b>	Isabella was keen to continue spreading Christianity to the East Indies.
<b>Priest</b>	Juan Perez, a priest and friend to Isabella, helped Columbus while he made his case.
<b>Status</b>	Finding the sea route to the East Indies before Portugal would give Spain international status.
<b>Wealth</b>	A successful voyage would bring riches to the Spanish treasure and wealth to Spanish merchants.

Columbus' First Voyage 1492	
<b>Finding ships and crew</b>	Martin and Vicente Pinzon helped Columbus get ships and crew. 2 caravels – the Nina and the Pinta 1 carrack – the Santa Maria (flagship)
<b>Rivalry at sea</b>	Columbus had to change routes to avoid Portuguese caravels.
<b>Sailors' fears</b>	Columbus kept 2 different logs to stop sailors getting worried: -1 was accurate and he kept secret -The other log recorded shorter distances
<b>Possible Mutiny</b>	As the sailors had not spotted land for so long, they came close to mutiny. They allowed Columbus 2 more weeks.
<b>Quarrels</b>	Columbus and Martin Pinzon disagreed on the route.
<b>Land</b>	On the 10 <sup>th</sup> October, after 6 weeks at sea, the crew spotted land.



Columbus' return to Spain 1493	
4 <sup>th</sup> March 1493 Columbus lands in Portugal and meets King John. Columbus is sent congratulatory letters and is cheered by crowds in his way to Barcelona.	<b>The role of the pope</b> The Pope gives Isabella and Ferdinand his support for the new 'Spanish Indies'. He is excited by Columbus' discoveries and wanted Christianity to spread to these lands.
<b>Rivalry with Portugal</b> King John believed he had claim to the lands Columbus had discovered. This led to talks with Spain to determine who had rights over what lands as Spain were getting ready to send Columbus back to govern.	<b>Columbus' Rewards</b> Isabella and Ferdinand encouraged Columbus to carry out another voyage. Columbus was given new titles, a new coat of arms and issued a pension for life. He was also given powers to govern lands in the New World.

Effects of Spanish Settlements	
1	Gold mines set up in Haiti – most of the work done by natives.
2	Tainos and Carib societies destroyed in order to provide work for the Spanish.
3	Columbus had captured natives to sell as slaves – Isabella not pleased and sent slaves back to Haiti.
4	Encomienda system set up. Nicolas de Ovando set this up in 1502.
5	Diseases like smallpox killed many natives. 1492 around 500,000 natives. By 1507 only 60,000.

Impact of contact with the Natives		
Gold, cotton and tobacco	Tainos and Caribs	Incident at Samana
Natives wore gold but would not tell the Spaniards where it came from. Kapock was used by the natives – it could be spin into thread and woven into cloth. Spaniards sailing with Columbus quickly picked up the habit of smoking tobacco.	Tainos – considered friendly and peaceful, allowed Columbus to build La Navidad, found at San Salvador. Caribs – mainly found east of the Bahamas, raided the Tainos taking women, rumours that they were cannibals.	On way back to Spain – Samana, Haiti. Men went ashore and found dried human heads and large canoes. An exchange went wrong and erupted in violence. They learnt that the natives could be hostile.

The Treaty of Tordesillas 1494
On 7 <sup>th</sup> June an agreement was reached between Spain and Portugal. An imaginary line was drawn from the North to the South pole. All lands to the west were for Spain. Lands to the east were for Portugal.

Columbus as governor	
La Navidad and Isabela	Santo Domingo
La Navidad found burned to the ground on 28 <sup>th</sup> Nov 1493. A new settlement was named Isabela. It failed as Spaniards wanted adventure and gold. Columbus went exploring and found Jamaica. He returned to Haiti in September 1494.	Bartholomew left in charge when Columbus returned to Spain. He built Santo Domingo. Columbus returned in 1498 to problems – Tainos and Spaniards not cooperating. Order restored by giving Spanish rebels land and providing native labourers to work the land. Rebellions kept breaking out so Columbus carried out executions on both natives and Spaniards. September 1500 – Bobadilla sent to take over from Columbus, Columbus arrested and sent back to Spain in chains.

Imperial Policy towards the Caribbean	
<b>Importance of Santo Domingo</b> It became the centre of Spanish administration in the Caribbean. -Wide roads and squares surrounded impressive stone buildings -The building housed administration offices were rules were issued and taxes collected. -Courts were established to control the laws	<b>Establishment of a monopoly</b> In 1503, the Casa de Contractacion (House of Trade) was established in Seville, Spain. The aim was to control all trade from the Caribbean. Powers included: -Approve all voyages to the Caribbean. -Collect up to date trade routes. -Collect taxes. -Control who travels to the Indies. However, there was smuggling and people worked out ways to avoid paying the taxes.
<b>Catholic Missionaries</b> In 1503, Ferdinand and Isabella issued a series of rules about educating the Indians: -Indians were to live in towns and pay taxes. -Taught about Christianity and expected to live as Christians. -Taught how to read, write and dress. Reports reached Spain about the abuses of Indians. Dominicans were sent to stop the mistreatment. Spaniards shocked at the mistreatment of natives.	<b>Regulation of Exploration</b> Ferdinand and Isabella needed to establish Spanish control over exploration and discovery in the New World. -Every ship sailing to the Caribbean had to leave from Cadiz, Spain and had to register with the Spanish. -Anyone could live in the Indies freely. If the discovered gold, 2/3 had to go to the Spanish government, 1/3 could be kept by the discoverer. 1/10 of all other products had to be sent to Spain. -1/10 if all cargo carried by ship sailing to the New World had to be Spanish.



# Year 11 History : 1. Spain reaches the New World, c1490-1512



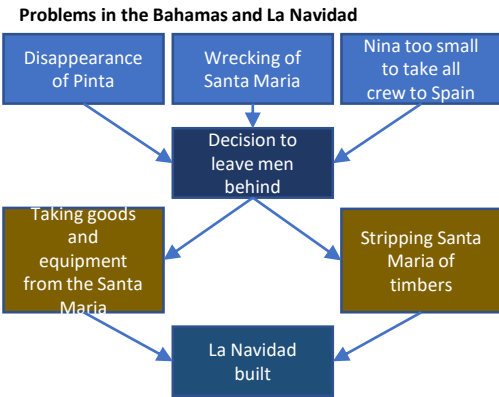
Spain c1490: exploration, religion and ambition

- Most people knew the world was round
- Most of Europe was mapped
- The Spice Trade with the East Indies was well established
- Portugal and Spain were rivals – both wanted to find a sea route to the East Indies
- The Catholic Church had 2 concerns in the 2<sup>nd</sup> half of the 15<sup>th</sup> Century:
  - Defend Christendom
  - Spread Christianity to new lands



Why did Spain agree to sponsor Columbus?	
Christianity	
Priest	
Status	
Wealth	

Columbus' First Voyage 1492	
Finding ships and crew	
Rivalry at sea	
Sailors' fears	
Possible Mutiny	
Quarrels	
Land	



Columbus' return to Spain 1493	
4 <sup>th</sup> March 1493 Columbus lands in Portugal and meets King John. Columbus is sent _____.	<b>The role of the pope</b> The Pope gives Isabella and Ferdinand his support for _____.
<b>Rivalry with Portugal</b> King John believed he had _____ This led to _____.	<b>Columbus' Rewards</b> Isabella and Ferdinand encouraged _____ Columbus was given _____.

Effects of Spanish Settlements	
1	
2	
3	
4	
5	

Impact of contact with the Natives		
Gold, cotton and tobacco	Tainos and Caribs	Incident at Samana
Natives wore _____ but would not tell the _____ where it _____.	Tainos – considered _____, allowed Columbus to build La Navidad, found at San Salvador.	On way back to Spain – Samana, Haiti. Men went ashore and found _____ heads and _____.
_____ was used by the natives – it could be spun into _____.	Caribs – mainly found east of the Bahamas, _____ the Tainos _____.	_____. An exchange went wrong and _____.
Spaniards sailing with Columbus quickly picked up the habit of _____.	_____	_____. They learnt that the natives _____.

**The Treaty of Tordesillas 1494**  
On 7<sup>th</sup> June an agreement was reached between \_\_\_\_\_ to the \_\_\_\_\_ to the \_\_\_\_\_.

All lands to the west were for Spain. Lands to the east were for Portugal.

Columbus as governor	
La Navidad and Isabela	_____
La Navidad found burned to the ground on 28 <sup>th</sup> Nov 1493. A new settlement was named Isabela. It failed as Spaniards wanted adventure and gold. Columbus went exploring and found Jamaica. He returned to Haiti in September 1494.	Bartholomew left in charge when Columbus returned to Spain. He built _____.

Imperial Policy towards the Caribbean	
<b>Importance of Santo Domingo</b> It became _____ of Spanish administration in the C _____ n. -Wide roads and squares surrounded impressive stone buildings -The building housed _____ where rules were issued and taxes collected. -Courts were established to _____.	<b>Establishment of a monopoly</b> In 1503, the Casa de Contractacion (House of Trade) was established in Seville, Spain. The aim was to control all trade from the Caribbean. Powers included: -Approve all voyages to the Caribbean. -Collect up to date trade routes. -Collect taxes. -Control who travels to the Indies. However, there was smuggling and people worked out ways to avoid paying the taxes.

<b>Catholic Missionaries</b> In 1503, F _____ and I _____ a issued a series of _____: -Indians were to _____ to live as Christians. -Taught how to _____.	<b>Regulation of Exploration</b> Ferdinand and Isabella needed to _____. -Every ship sailing to the Caribbean had to leave from Cadiz, Spain and had to register with the Spanish. -Anyone could live in the _____.
Reports reached Spain about the _____ s. Dominicans were sent to stop the _____.	_____ discovered gold, 2/3 had to go to the Spanish government, 1/3 could be kept by the discoverer. 1/10 of all other products had to be sent to Spain.
_____ shocked at the mistreatment of natives.	-1/10 if all cargo carried by ship sailing to the New World had to be Spanish.



A.	Can you define these key words?
Key word	Key definition
Forgiveness	Pardoning someone for wrongdoing
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 or moral values
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 a relationship after 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 and to achieve an aim

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

C	Is violent protest or terrorism acceptable?	
	<ol style="list-style-type: none"> <li>1. A small minority of Christians may say yes if it truly brings an end to suffering- love thy neighbour and 'free the oppressed'</li> <li>2. A small minority of Muslims may agree due to the duty of jihad to defend the faith against true oppression.</li> <li>3. A humanist may agree in a rare occasion if it truly had the best consequences for humanity as a whole</li> <li>4. Hindus may point to their warrior class to justify a god given right to fight if needed</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>4. Hindus might argue that all violence is wrong (Ahimsa) as it causes bad karma and keeps us in the cycle of samsara</li> </ol>

E	Is pacifism wrong? Yes	No
	<ol style="list-style-type: none"> <li>1. The Muslim duty of Jihad suggests pacifism can be wrong</li> <li>2. Christians are called to 'free the oppressed' and 'protect the weak and needy</li> <li>3. Humanists may argue that pacifism is not reasonable or realistic in a world of violence and may not help humanity protect each other</li> </ol>	<ol style="list-style-type: none"> <li>1. It works- see Ghandi and Martin Luther King</li> <li>2. Christians believe 'blessed are the peacemakers'</li> <li>3. Muslims believe that greater Jihad is the struggle to defend the faith against the internal struggle to fall from the right path</li> <li>4. Innocent people should not be harmed in all religions and pacifism is the only way to truly ensure this</li> </ol>

D	What are the rules of the just war theory?	Can just war theory make war fair?	
	<ol style="list-style-type: none"> <li>1. There must be a just cause such as to defend</li> <li>2. Intentions must be to do good and overcome evil</li> <li>3. War must be started by legitimate authority</li> <li>4. Innocents must not be harmed</li> <li>5. Force and damage must be proportionate to the good done by the war</li> <li>6. War must be the last resort</li> <li>7. There must be a reasonable chance of success</li> </ol>	<ol style="list-style-type: none"> <li>1. Yes as it protects innocents</li> <li>2. Yes as it allows us the right to self defence</li> <li>3. Yes as it has to be the last resort so it is really is the only option left</li> <li>4. It will mean the war is for a good/fair reason and not pointless greed</li> <li>5. It means nuclear weapons can't be used</li> </ol>	<ol style="list-style-type: none"> <li>1. No as innocents will always be harmed in war</li> <li>2. A 'legitimate' authority could still be corrupt</li> <li>3. You never know the harm of war until many years later so you can't calculate whether it is proportionate</li> <li>4. You cannot know whether it will be successful until you have fought it</li> <li>5. For success someone will have to use a greater force so the 'proportionate ' rule will never be followed</li> </ol>

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
	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	



Year 11 RE Christianity Quotes: Peace and Conflict	
"Obey the authorities, for God is the one who put it there. All governments have been placed in power by God." Romans 13:1	Jesus said he was sent to 'free the oppressed' Old Testament 'let justice roll down like the waters, and righteousness like an ever-flowing stream.'
Genesis 9:5-6 From his fellow man I will require a reckoning for the life of man. "Whoever sheds the blood of man, by man shall his blood be shed, for God made man in his own image."	But I tell you, do not resist an evil person. If anyone slaps you on the right cheek, turn to them the other cheek also.
Beat your swords into ploughshares, and their spears into pruning hooks: nation shall not lift up sword against nation,	Old testament : 'When thou goest out to battle against thine enemies, be not afraid of them: for the LORD thy God is with thee'

Christianity Quotes For religion, peace and conflict	
'And the soldiers likewise demanded of him, saying, And what shall we do? And Jesus said unto them, "Put your sword back into its place; for all those who live by the sword, die by the sword."	Thou shalt not kill.
Luke 6:27 "But I say to you who hear, Love your enemies, do good to those who hate you,	New testament Blessed are the peacemakers: for they shall be called the children of God.
The catholic church and Church of England accept war under the conditions of just war theory.	Many weapons destroy the environment eg nuclear weapons. The quote below can be applied to this issue; 'You shall not defile the land in which you live, in the midst of which I dwell'
Jesus violently protested when 'he made a whip out of cords, and drove all from the temple courts, he scattered the coins of the money changers and overturned their tables '	The Lord will fight for you; you have only to be still.'
'protect the weak and needy'	Peace alone, not war, is holy (said by Pope Francis in the 2000s)

Year 11 RE Christianity Quotes: Peace and Conflict	
"..... the authorities, for God is the one who put it there. ....have been....."	Jesus said he was sent to '..... the oppressed' Old Testament 'let .....roll down like....., and righteousness like an ever-flowing stream.'
Genesis 9:5-6 From his fellow man I will require a reckoning for the life of man. "Whoever sheds the blood of man, ....., for God made man....."	But I tell you, do not ..... on the right cheek, turn to them the other cheek also.
Beat your ..... into ....., and their spears into pruning hooks: nation shall not .....against .....,	Old testament 'When thou goest out to battle against thine enemies, be not afraid of them: for .....'

Christianity Quotes For religion, peace and conflict	
'And the soldiers likewise demanded of him, saying, And what shall we do? And Jesus said unto them, "Put your sword.....; for those who .....by the sword, ..... by the sword	Thou .....kill.
Luke 6:27 "But I say to you who hear, Love your enemies, do good to those who hate you,	New testament ..... are the peacemakers: for they shall be called the .....of God.
The catholic church and Church of England accept war under the conditions of just war theory.	Many weapons destroy the environment eg nuclear weapons. The quote below can be applied to this issue; 'You shall not ..... in which you live, in the midst of which I dwell'
Jesus violently protested when 'he made a whip out of cords, and drove all from the temple courts, he scattered the coins of the money changers and overturned their tables '	The Lord will .....for you; you have only to be .....'
'protect the .....and needy'	..... alone, not war, is holy (said by Pope Francis in the 2000s)

Key Verbs				
Salir To go out	Ir To go	Jugar To play	Hacer – to do/make	Tocar To play (ins)
Salgo I go out	Voy I go	Juego I play	Hago I do	Toco I play
Sales You go out	Vas You go	Juegas You play	Haces You do	Tocas You play
Sale He/she goes out	Va s/he goes	Juega He/she plays	Hace s/he does	Toca He/she plays
Salimos We go out	Vamos They go	Jugamos We play	Hacemos We do	Tocamos We play
Salen They go out	Van They go	Juegan They play	Hacen They do	Tocan They play

What we are learning this term:
A. Talking about free time B. Talking about your plans for the weekend C. Talking about eating out D. Talking about special occasion meals E. Extending what you can say about sport F. Talking about sport in the world

3.1F ¿Qué haces en tu tiempo libre?
a veces sometimes bastante quite cada each, every cenar to have an evening meal charlar to chat el coro choir descansar to rest los dibujos animados cartoons el documental documentary el fin de semana weekend genial great las noticias news nunca never ocupado/a occupied, busy policíaco/a police, detective, crime (adj.)

6 Key Words for this term	
1. disfrutar 2. jugar 3. los deportes	4. campeones 5. formentar 6. a selección

3.2G Comer y Beber
poner to put por lo general in general siempre always el teatro theatre la telenovela soap opera terminar to finish el tiempo time todo/a/os/as all, every tonto/a silly, stupid la vez time, occasion

3.1G ¿Qué te gusta hacer?
aburrido/a boring bailar to dance cantar to sing el cine cinema de vez en cuando from time to time, occasionally entretenido/a entertaining estimulante challenging jugar to play (game, sport) leer to read libre free odiar to hate la película film practicar to practise salir to go out la tarde afternoon, evening el teclado keyboard tocar to touch, to play(an instrument) ver to see, watch

3.2G Comer y Beber
el (fem.) agua (mineral) (mineral) water beber to drink el bocadillo sandwich la carne meat la cena evening meal cenar to have supper / to have an evening meal comer to eat la comida lunch, food, meal desayunar to have breakfast el desayuno breakfast después afterwards el helado ice cream el huevo egg el jamón ham la leche milk las legumbres pulses la mantequilla butter la manzana apple la mermelada jam, marmalade las patatas fritas chips, fries

3.3G ¿Haces deporte?
activo/a active al aire libre in the open air, outdoors ayudar to help el baloncesto basketball el campo countryside, playing field la cancha court los deberes homework la equitación horse riding el estadio stadium montar a caballo to ride a horse montar en bicicleta to ride a bike

3.2F Vamos a comer fuera
el atún tuna el bacalao cod la barra loaf el bistec steak los calamares squid la cebolla onion el cerdo pork la cerveza beer los champiñones mushrooms el chorizo chorizo la chuleta chop el cordero lamb el filete fillet la fresa strawberry las gambas prawns el gazpacho chilled tomato soup los guisantes peas el jamón serrano cured ham las judías verdes green beans

3.2G Comer y Beber
el perrito caliente hot dog el pescado fish el pollo chicken el postre dessert, pudding el queso cheese la sopa soup el té tea tomar to take, to have (food, drink) la tortilla omelette la tostada toast el vaso glass las verduras vegetables

3.1H Hablando del tiempo libre y de los planes
aburrido/a boring agradable pleasant al aire libre in the open air, outdoors la batería drums la canción song dar un paseo to go for a walk de vez en cuando from time to time, occasionally desafiante challenging divertido/a fun emocionante exciting

3.2F Vamos a comer fuera
el alpinismo rock climbing cansado/a tired la carrera race el concurso competition contestar to answer durante during el ejercicio exercise el entrenamiento training entrenar to train el equipo team el esquí skiing este, esta this ganar to win el jugador player mañana tomorrow el miembro member el partido match probar to try, to test

3.3F ¿Qué deportes harás?
el alpinismo rock climbing cansado/a tired la carrera race el concurso competition contestar to answer durante during el ejercicio exercise el entrenamiento training entrenar to train el equipo team el esquí skiing este, esta this ganar to win el jugador player mañana tomorrow el miembro member el partido match probar to try, to test



Key Verbs				
Salir _____	Ir _____	To play _____	Hacer – to do/make _____	Tocar _____
I go out _____	Voy _____	Juego I play _____	Hago _____	I play _____
You go out _____	You go _____	Juegas _____	Haces You do _____	Tocas You play _____
Sale He/she goes out _____	Va s/he goes _____	Juega He/she plays _____	_____ s/he does _____	_____ He/she plays _____
Salimos _____	They go _____	Jugamos We play _____	Hacemos _____	Tocamos _____
Salen _____	Van They go _____	They play _____	Hacen They do _____	They play _____

**What we are learning this term:**

A. Talking about free time  
 B. Talking about your plans for the weekend  
 C. Talking about eating out  
 D. Talking about special occasion meals  
 E. Extending what you can say about sport  
 F. Talking about sport in the world

**3.1F ¿Qué haces en tu tiempo libre?**

a veces \_\_\_\_\_  
 bastante \_\_\_\_\_  
 cada \_\_\_\_\_  
 \_\_\_\_\_ to have an evening meal  
 \_\_\_\_\_ to chat  
 \_\_\_\_\_ choir  
 descansar \_\_\_\_\_  
 los dibujos animados \_\_\_\_\_  
 el documental \_\_\_\_\_  
 \_\_\_\_\_ weekend  
 \_\_\_\_\_ great  
 las noticias nunca \_\_\_\_\_  
 ocupado/a \_\_\_\_\_  
 policia/co/a \_\_\_\_\_  
 \_\_\_\_\_ to put  
 \_\_\_\_\_ in general  
 \_\_\_\_\_ always  
 el teatro \_\_\_\_\_  
 la telenovela \_\_\_\_\_  
 \_\_\_\_\_ to finish  
 el tiempo \_\_\_\_\_  
 todo/a/os/as \_\_\_\_\_  
 \_\_\_\_\_ silly, stupid  
 \_\_\_\_\_ time, occasion

**6 Key Words for this term**

1. disfrutar	4. campeones
2. jugar	5. formentar
3. los deportes	6. a selección

**3.1G ¿Qué te gusta hacer?**

aburrido/a \_\_\_\_\_  
 bailar \_\_\_\_\_  
 \_\_\_\_\_ to sing  
 \_\_\_\_\_ cinema  
 de vez en cuando \_\_\_\_\_  
 entretenido/a \_\_\_\_\_  
 \_\_\_\_\_ challenging  
 \_\_\_\_\_ to play (game, sport)  
 leer \_\_\_\_\_  
 libre \_\_\_\_\_  
 odiar \_\_\_\_\_  
 la película \_\_\_\_\_  
 \_\_\_\_\_ to practise  
 salir \_\_\_\_\_  
 \_\_\_\_\_ afternoon, evening  
 el teclado \_\_\_\_\_  
 \_\_\_\_\_ to touch, to play(an instrument)  
 ver \_\_\_\_\_

**3.2G Comer y Beber**

el perrito caliente \_\_\_\_\_  
 el pescado \_\_\_\_\_  
 el pollo \_\_\_\_\_  
 \_\_\_\_\_ dessert, pudding  
 \_\_\_\_\_ cheese  
 \_\_\_\_\_ soup  
 el té \_\_\_\_\_  
 \_\_\_\_\_ to take, to have (food,  
 drink) \_\_\_\_\_  
 la tortilla \_\_\_\_\_  
 la tostada \_\_\_\_\_  
 el vaso \_\_\_\_\_  
 \_\_\_\_\_ vegetables

**3.1H Hablando del tiempo libre y de los planes**

aburrido/a \_\_\_\_\_  
 agradable \_\_\_\_\_  
 al aire libre in the open air,  
 outdoors \_\_\_\_\_  
 la batería \_\_\_\_\_  
 la canción \_\_\_\_\_  
 \_\_\_\_\_ to go for a walk  
 de vez en cuando from time to time,  
 occasionally \_\_\_\_\_  
 desafiante \_\_\_\_\_  
 divertido/a \_\_\_\_\_  
 \_\_\_\_\_ exciting

**3.3G ¿Haces deporte?**

activo/a \_\_\_\_\_  
 \_\_\_\_\_ in the open air,  
 outdoors \_\_\_\_\_  
 ayudar \_\_\_\_\_  
 el baloncesto \_\_\_\_\_  
 \_\_\_\_\_ countryside, playing  
 field \_\_\_\_\_  
 la cancha \_\_\_\_\_  
 \_\_\_\_\_ homework  
 la equitación \_\_\_\_\_  
 el estadio \_\_\_\_\_  
 \_\_\_\_\_ to ride a horse  
 \_\_\_\_\_ to ride a bike

**3.2G Comer y Beber**

el (fem.) agua (mineral) \_\_\_\_\_  
 beber \_\_\_\_\_  
 \_\_\_\_\_ sandwich  
 la carne \_\_\_\_\_  
 \_\_\_\_\_ evening meal  
 \_\_\_\_\_ to have supper / to have  
 an evening meal \_\_\_\_\_  
 comer \_\_\_\_\_  
 la comida \_\_\_\_\_  
 desayunar \_\_\_\_\_  
 \_\_\_\_\_ breakfast  
 \_\_\_\_\_ afterwards  
 \_\_\_\_\_ ice cream  
 el huevo \_\_\_\_\_  
 el jamón \_\_\_\_\_  
 la leche \_\_\_\_\_  
 las legumbres \_\_\_\_\_  
 \_\_\_\_\_ butter  
 \_\_\_\_\_ apple  
 la mermelada \_\_\_\_\_  
 \_\_\_\_\_ chips, fries

**3.2F Vamos a comer fuera**

el atún \_\_\_\_\_  
 el bacalao \_\_\_\_\_  
 \_\_\_\_\_ loaf  
 \_\_\_\_\_ steak  
 los calamares \_\_\_\_\_  
 la cebolla \_\_\_\_\_  
 el cerdo \_\_\_\_\_  
 \_\_\_\_\_ beer  
 \_\_\_\_\_ mushrooms  
 el chorizo \_\_\_\_\_  
 la chuleta \_\_\_\_\_  
 \_\_\_\_\_ lamb  
 el filete \_\_\_\_\_  
 \_\_\_\_\_ strawberry  
 \_\_\_\_\_ prawns  
 el gazpacho \_\_\_\_\_  
 los guisantes \_\_\_\_\_  
 \_\_\_\_\_ cured ham  
 \_\_\_\_\_ green beans

**3.3F ¿Qué deportes harás?**

el alpinismo \_\_\_\_\_  
 cansado/a \_\_\_\_\_  
 la carrera \_\_\_\_\_  
 el concurso \_\_\_\_\_ (contest)  
 contestar \_\_\_\_\_  
 \_\_\_\_\_ during  
 \_\_\_\_\_ exercise  
 \_\_\_\_\_ training  
 entrenar \_\_\_\_\_  
 el equipo \_\_\_\_\_  
 el esquí \_\_\_\_\_  
 este, esta \_\_\_\_\_  
 \_\_\_\_\_ to win  
 \_\_\_\_\_ player  
 \_\_\_\_\_ tomorrow  
 el miembro \_\_\_\_\_  
 el partido \_\_\_\_\_  
 \_\_\_\_\_ to try, to test



Name:

Date:

## Macronutrients, fibre and water

### Macronutrients

Macronutrients provide energy. The macronutrients are:

- [carbohydrate](#);
- [protein](#);
- fat.

Macronutrients are measured in grams (g).

### Alcohol

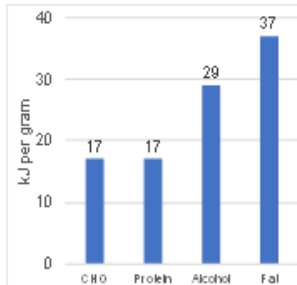
Alcohol is not considered a [nutrient](#). [but](#) is a source of energy in the diet.

The government recommends no more than 14 units of alcohol per week for both men and women.

### Energy from food

- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with Calories (kcal).
- Different macronutrients, and alcohol, provide different amounts of energy.

	Energy per gram
Carbohydrate	16kJ (3.75 kcals)
Protein	17kJ (4 kcals)
Alcohol	29kJ (7kcals)
Fat	37kJ (9 kcals)



### Protein

- Made up of building blocks called amino acids.
- There are 20 amino acids found in protein.
- Eight amino acids have to be provided by the diet (called essential amino acids).

The essential amino acids are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. In young children, additional amino acids, e.g. histidine and tyrosine, are sometimes considered to be essential (or 'conditionally essential') because they may be unable to make enough to meet their needs.

### Recommendations

- 0.75g/kg bodyweight/day in adults.

Sources:

**Animal sources:** meat; poultry; fish; eggs; milk; dairy food.

**Plant sources:** soya; nuts; [seeds](#); pulses, e.g. beans, lentils; mycoprotein.

### Protein complementation

Different food contains different amounts and combinations of amino acids.

Vegans and vegetarians can get all the amino acids they need by combining different protein types at the same meal. This is known as protein complementation.

Examples are:

- rice and [peas](#);
- beans on [toast](#);
- hummus and pitta [bread](#);
- bean chilli served with rice.

### Carbohydrate

All types of carbohydrate are compounds of carbon, hydrogen and oxygen. They can be divided into three main groups according to the size of the molecule.

These three types are:

- monosaccharides (e.g. [glucose](#));
- disaccharides (e.g. [lactose](#));
- polysaccharide (e.g. sucrose).

The two types main of carbohydrate that provide dietary energy are starch and sugars. Dietary fibre is also a type of carbohydrate.

Starchy carbohydrate is an important source of energy.

Starchy foods - we should be choosing wholegrain versions of starchy foods where possible.

### Recommendations

- Total carbohydrate - around 50% of daily food energy.
- Free sugars include all sugars added to foods plus sugars naturally present in honey, syrups and unsweetened fruit juice (<5% daily food energy).
- Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine (30g/day for adults).

### Fibre

- Dietary fibre is a type of carbohydrate found in plant foods.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; and, seeds.

Dietary fibre helps to:

- reduce the risk of heart disease, diabetes and some [cancers](#);
- help [weight control](#);
- bulk up [stools](#);
- prevent [constipation](#);
- improve gut health.

### Fat

Sources of fat include:

- saturated [fat](#);
- monounsaturated [fat](#);
- polyunsaturated fat.

Fats can be saturated, when they have no double bonds, monounsaturated, when they have one double bond, or polyunsaturated, when they have more than one double bond.

### Recommendations

- <35% energy, Saturated fat <11% energy.

A high saturated fat intake is linked with high blood cholesterol levels.

### Sources:

**Saturated fat:** fatty cuts of meat; skin of poultry; butter; hard cheese; biscuits, cakes and pastries; chocolate.  
**Monounsaturated fat:** edible oils especially olive oil; avocados; nuts.  
**Polyunsaturated fatty acids:** edible oils especially sunflower oil; [seeds](#); [margarine](#); spreadable fats made from vegetable oils and oily fish.

**Dietary reference values (DRVs)** are a series of estimates of the energy and nutritional requirements of different groups of healthy people in the UK population. They are not recommendations or goals for individuals.

**Reference Intakes** are guidelines for the maximum amount of energy (calories), fat, saturated fat, sugars and salt consumed in a day (based on a healthy adult female).

### Key terms

**Dietary reference values:** Estimated dietary requirements for [particular groups](#) of the population.

**Essential amino acids:** 8 of the different amino acids found in proteins from plants and animals that [have to be provided](#) by the diet.  
**Macronutrients:** Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.

**Protein complementation:** combining different protein types at the same meal to ensure all EAAs are ingested.

**Reference Intakes:** Guidelines for the maximum amount of nutrients consumed.

### Hydration

- Aim to drink 6-8 glasses of fluid every day.
- Water, lower fat milk and sugar-free drinks including tea and coffee all count.
- Fruit juice and smoothies also count but should be limited to no more than a combined total of 150ml per day.

20% of water is provided by food such as soups, yogurts, fruit and vegetables.

The other 80% is provided by drinks such as water, milk and juice.

Drinking too much water can lead to 'water intoxication' with potentially [life threatening](#) hyponatraemia.

This is caused when the concentration of sodium in the blood gets too low.

## Micronutrients

**Micronutrients** are needed in the body in tiny amounts. They do not provide energy, but are required for a number of important processes in the body.

There are two main groups of micronutrients:

- vitamins;
- minerals and trace elements.

Micronutrients are measured in milligrams (mg) and micrograms ( $\mu\text{g}$ ) with  $1\text{mg} = 0.001\text{g}$  and  $1\mu\text{g} = 0.001\text{mg}$ .

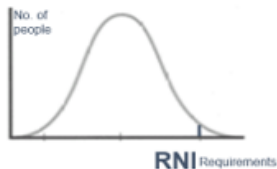
**Micronutrient recommendations**  
People have different requirements for each micronutrient, according to their:

- age;
- gender;
- physiological state (e.g. pregnancy).

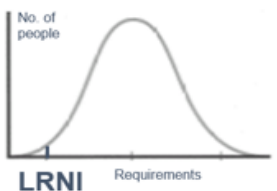


### Micronutrient recommendations

The recommendations for vitamins and minerals are based on the **Reference Nutrient Intake (RNI)**.



When looking at low intakes of micronutrients, the **Lower Reference Nutrient Intake (LRNI)** is used.



For more information, go to: <https://bit.ly/36KUnjj>

### Vitamins

Vitamins are nutrients required by the body in small amounts, for a variety of essential processes.

Most vitamins cannot be made by the body, so need to be provided in the diet.

Vitamins are grouped into:

- fat-soluble vitamins (vitamins A, D, E and K);
- water-soluble vitamins (B vitamins and vitamin C).

### Minerals

Minerals are inorganic substances required by the body in small amounts for a variety of different functions.

The body requires different amounts for each mineral.

Some minerals are required in larger amounts, while others are needed in very small amounts and are called 'trace elements'.

### Vitamins

Nutrient	Function	Sources
<b>Vitamin A</b>	Helps the immune system to work as it should and with vision.	Liver, cheese, eggs, dark green leafy vegetables and orange-coloured fruits and vegetables.
<b>B vitamins</b>	Thiamin, riboflavin, niacin, folate, and vitamin B12 have a range of functions within the body.	Different for each B Vitamin.
<b>Vitamin C</b>	Helps to protect cells from damage and with the formation of collagen.	Fruit (especially citrus fruits), green vegetables, peppers and tomatoes.
<b>Vitamin D</b>	Helps the body to absorb calcium & helps to keep bones strong.	Oily fish, eggs, fortified breakfast cereals and fat spreads.
<b>Vitamin E</b>	Helps to protect the cells in our bodies against damage.	Vegetable and seed oils, nuts and seeds, avocados and olives.
<b>Vitamin K</b>	Needed for the normal clotting of blood and is required for normal bone structure.	Green vegetables and some oils (rapeseed, olive and soya oil).

### Minerals

Nutrient	Function	Sources
<b>Calcium</b>	Helps to build and maintain strong bones and teeth.	Dairy, calcium-fortified dairy-alternatives, canned fish (where soft bones are eaten) and bread.
<b>Iron</b>	Helps to make red blood cells, which carry oxygen around the body.	Offal, red meat, beans, pulses, nuts and seeds, fish, quinoa, wholemeal bread and dried fruit.
<b>Phosphorus</b>	Helps to build strong bones and teeth and helps to release energy from food.	Red meat, poultry, fish, milk, cheese, yogurt, eggs, bread and wholegrains.
<b>Sodium</b>	Helps regulate the water content in the body.	Very small amounts found in foods. Often added as salt.
<b>Fluoride</b>	Helps with the formation of strong teeth and reduce the risk of tooth decay.	Tap water, tea (and toothpaste).
<b>Potassium</b>	Helps regulate the water content in the body and maintain a normal blood pressure.	Some fruit and vegetables, dried fruit, poultry, red meat, fish, milk and wholegrain breakfast cereals.
<b>Iodine</b>	Helps to make thyroid hormones. It also helps the brain to function normally.	Milk, yogurt, cheese, fish, shellfish and eggs.

### Key terms

**Micronutrients:** Nutrients needed in the diet in very small amounts.

**Lower Reference Nutrient Intake (LRNI):** is the amount of a nutrient that is enough for only the small number of people who have low requirements (2.5%). The majority of people need more.

**Reference Nutrient Intake (RNI):** the amount of a nutrient that is enough to ensure that the needs of nearly all the group (97.5%) are being met. The RNI is used for recommendations on protein, vitamins and minerals.

### Vitamin D

Vitamin D is a pro-hormone in the body. It can be obtained in two forms:

- ergocalciferol (vitamin D<sub>2</sub>);
- cholecalciferol (vitamin D<sub>3</sub>).

Vitamin D<sub>3</sub> is also formed by the action of sunlight. Different to most vitamins, the main source of vitamin D is synthesis in the skin following exposure to sunlight. The wavelength of UVB during the winter months in the UK does not support vitamin D synthesis.



### Frayer Model Key Words

<b>Protein</b>	A macronutrient that is essential to building muscle mass.
<b>Fat</b>	A macronutrient which supplies the body with energy.
<b>Carbohydrates</b>	A macronutrient that is required by all animals. It is made in plants by the process of photosynthesis.
<b>Vitamin</b>	Vitamins are split into two categories, water soluble and fat soluble. Fat soluble vitamins (A, D E, and K) dissolve in fat. Water soluble vitamins (the B group and vitamin C) dissolve in water.
<b>Nutritional</b>	Providing or obtaining the food necessary for health and growth.
<b>Energy</b>	The strength and vitality required for sustained physical or mental activity.



## QUIZ

### Macronutrients

Macronutrients provide energy. The macronutrients are:

- .
- .
- .

Macronutrients are measured in..... ( ).

**Micronutrients** are needed in the body in .....amounts. They do not provide....., but are required for a number of important.....in the body.

There are two main groups of micronutrients:

- .
- .

Micronutrients are measured in ..... (mg) and ..... (µg) with 1mg = 0.001g and 1µg = 0.001mg.

### Key terms

**Dietary reference values:**

**Essential amino acids:**

**Macronutrients:**

**Protein complementation:**

**Reference Intakes:**

### Protein

Made up of building blocks called .....

There are ..... amino acids found in protein. Eight amino acids have to be provided by the diet (called..... amino acids).

Sources:

**Animal sources:**

**Plant sources:**

### Vitamins

Vitamins are nutrients required by the body in small amounts, for a variety of essential processes.

Most vitamins cannot be made by the body, so need to be provided in the diet.

Vitamins are grouped into:

-

-

### Protein complementation

Different food...

Vegans and vegetarians can get all the amino acids they need by combining different protein types at the same meal. This is known as protein complementation.

Examples are:

- .
- .
- .
- .
- .

### Carbohydrate

All types of carbohydrate are compounds of carbon, hydrogen and oxygen. They can be divided into three main groups according to the size of the molecule.

These three types are:

- 
- 
- 

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Starchy carbohydrate is an important source of energy.

Starchy foods –

### Recommendations

- Total carbohydrate – around.....of daily food energy.
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### Key terms

**Micronutrients:**

.

**Lower Reference Nutrient Intake (LRNI):**

**Reference Nutrient Intake (RNI):**

### Fat

Sources of fat include: saturated fat; monounsaturated fat; polyunsaturated fat.

Fats can be saturated, when they have no double bonds, monounsaturated, when they have one double bond, or polyunsaturated, when they have more than one double bond.

### Recommendations

<35% energy, Saturated fat <11% energy.

A high saturated fat intake is linked with high blood cholesterol levels.

**Sources:**





## PRIMARY DATA

Information and data that are gathered from Primary sources is usually more specific to a design task as the investigation can be tailored to the design brief and/or design specification:

### Primary Sources include

- Interviews – User/Client
- Questionnaire – Target market
- Focus groups – Target market
  - Product Analysis
  - Material testing

## SECONDARY DATA

Secondary sources of information use data already found by other people or organisations that are relevant:

### Secondary Sources include

- Books
- Magazines
- Websites
- Statistics
- News radio
- Television
- Reviews

## DESIGN BRIEF

The design brief is written in consultation with the user/client. The design brief should outline the **Problem, Need and Design Opportunity. Set out your design brief in 3 sections:**

- Project name
- Problem/context
- Task and time-frame

What is the aim of the design task



## DESIGN SPECIFICATION

The design specification is a list of criteria that your design and final product must meet in order to be successful.

Your design specification points should be carefully thought out and justified. Specification points should include:

- User requirements
- Aesthetic requirements
- Function
- Size



## MARKET RESEARCH

Gathering **Market Research** is an important exercise in any design process, by conducting market research you can find out whether your ideas are **commercially viable** and make the necessary amendments to your approach to suit the needs of the **user**.

### INTERVIEWS AND QUESTIONNAIRES

Asking questions in the form of focus groups allows you to gather as much data as needed from a range of people. You may need to conduct a few interviews throughout the design and manufacture of the product. Focus groups are often recorded and getting the user group to interact with prototypes to give feedback.

### PRODUCT ANALYSIS

This involves looking at what is already available on the market and critically analysing to see how it performs functionally and aesthetically as well as how commercially viable it is. Reviews help pinpoint good and bad points to allow the designer to develop their idea

## ERGONOMICS

Take a look around your environment now. Everything that you can see that has ever been designed has been designed to fit the end user. From the handle of a coffee mug, to the shape and the size of the room that you are in

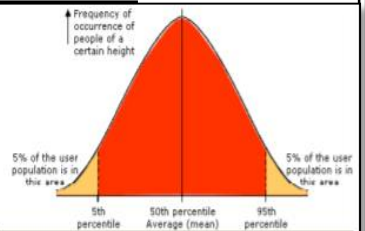
**Ergonomics** means special attention has been given to the design to make sure it is the best possible fit for the user. This is where they take anthropometric data into consideration



## Anthropometric data

**Anthropometric data** is 'The study of human measurements' **Anthropometric data** is used to ensure the **products and environments are the correct Size for the intended user.**

The data is split into **3** categories  
 The 5<sup>th</sup> percentile (smallest)  
 The 50<sup>th</sup> percentile (mid)  
 The 95<sup>th</sup> percentile (largest)  
 Opposite are examples of the various percentiles could be used to ensure the maximum amount of people can use the space or product



**5<sup>th</sup> Percentile – Fire Guard:** If the smallest peoples fingers cant fit through neither can the mid or high.  
**50<sup>th</sup> Percentile – Public Bench:** To ensure it's not too short and not too high for the average person to sit.  
**95<sup>th</sup> – Door Frame:** If the tallest person can fit through then so can the smallest and mid.

## USER CENTRED DESIGN

User centred design focuses specifically on the wants and needs of the end user. The end user is consulted at every stage of the design process to gather feedback on how they think the product is progressing



## COLLABORATION

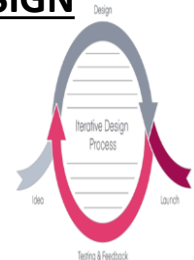
Working with others is a good way to get ideas flowing. By working with others in the 'design team' you can maximise initial ideas.

Designers can feed off the ideas of colleagues and inspire others around them

Key word	Definition
Analysis	Product analysis means asking questions about a product and forming answers.
Summary	A brief statement or account of the main points of something
Specification	A design specification is a detailed document providing a list of points regarding a product or process
Perspective	The art of representing three-dimensional objects on a two-dimensional surface to give the right impression of their height, width, depth, and position in relation to each other.
Modelling	A simple mock-up of an idea using basic materials to show an idea
Iterative	A flexible way of designing through reflection and evaluation then redesign

## ITERATIVE DESIGN

Iterative design involves constant refining and development of ideas. Design, evaluate, Re-design



## MATERIAL PROPERTIES

- Strength** - the ability of a material to withstand compression, tension and **Shear**, e.g., in woven fabrics cotton isn't as strong as wool when pulled
- Hardness** - the ability to withstand impact without damage, e.g., pine is easier to dent with an impact than oak; therefore, oak is harder
- Toughness** - materials that are hard to break, or snap are tough and can absorb shock, e.g., Kevlar in bulletproof vests is a very tough material
- Malleability** - being able to bend or shape easily would make a material easily malleable, e.g., sheet metal such as steel or silver is malleable and can be hammered into shape
- Ductility** - materials that can be stretched are ductile, e.g., pulling copper into wire shows it is ductile
- Elasticity** - the ability to be stretched and then return to its original shape, e.g., elastane in swimming costumes is a highly elastic material

## SURFACE FINISHES

**Finishing** is usually one of the last stages of a making project. It will usually involve sanding and applying a surface coating to **protect** your material and **improve its visual appearance**

- Some examples of finishes are:  
**Paint, Stain, Varnish, Oil, Wax, Polish & Dip coating**

## THE 6R'S

The term 'the 6 Rs' can be applied to the design of new products or when a product is finished with, used up or no longer wanted. Here are some questions to prompt 6-Rs thinking:

- Reduce** - Can the amount of material used be reduced? Can it be bought locally to reduce product miles?
- Reuse** - Can the material be reused for another purpose once a product is finished with?
- Recycle** - Can the material be disposed of correctly so that it can be recycled?
- Rethink** - Can the way a product is made be redesigned so that less material is used?
- Refuse** - Refusing to use material could be a consideration; could a material that is sustainable be used instead?
- Repair** - When a product is broken, can it be repaired rather than discarded?



## TOLERANCE

Tolerance is the amount of 'error' that is allowed for a specific component.  
 Example  
 A part is to be produced for a TV set. It is intended to be **56.1mm** long.  
 The part has tolerance **56.1 + 0.4mm**  
 This means that the largest acceptable size for the part is **56.1 + 0.4 = 56.5m**  
 The smallest acceptable size for the part is **56.1mm** long.  
 The smallest acceptable size for the part is **56.1 - 0.4 = 55.7mm**



## QUALITY CONTROL

In manufacturing, quality control is a process that ensures customers receive products free from defects and meets their needs. went down the wrong way, it can put consumers at risk. For example, the recent defect found in takata airbags resulted in the biggest automotive recall in history. The recall includes almost 69 million airbag inflators.

Major recalls like these can be prevented through effective quality control in manufacturing. Customers expect and demand high quality products. When customers receive quality products you will:

- increase customer loyalty
- game repeat business
- game new customers from referral/reviews
- improve safety
- contribute to overall positive branding of your product



Manufacturers with quality control procedures in place are far less likely to face product recalls or place customers at risk from poorly made products.

## CAD

Advantages of CAD	Disadvantages of CAD
Increases productivity bracket faster than manual workers closed bracket whilst	Card software is complex to learn
Often higher quality or more complex designs can be achieved	software can be very expensive
Designs can be edited/reused easily	compatibility issues with software
CAD files can be easily shared	security issues risk of data being corrupted or hacked
Links to CAM seamlessly	Takes time to draw

## SCALES OF PRODUCTION

- ONE OFF:** when you make a unique item
- BATCH:** when you make a few/set amount
- MASS:** when you make thousands
- CONTINUOUS:** open ended production

## SUSTAINABILITY

Our planet has to provide all of our basic human needs, such as food, shelter and warmth. designers know how a much better understanding of which materials are sustainable and which are not. The general principle is that resources fall into two categories

- Finite resources** – are ones which are limited supply or cannot be reproduced
- Non-finite resources** – l ones which are in abundant supply unlikely to be exhausted





**Primary and secondary research**

- What is primary research
- Give 3 examples of primary research
- 1.
- 2.
- 3.
- What is secondary research
- Give 3 examples of secondary research
- 1.
- 2.
- 3.

**Market research**

- Why would a designer conduct market research?
- Name 2 types of market research
- 1.
- 2.

**Anthropometric data**

- What is anthropometric data?
- What are the 3 categories that anthropometric data is split in to
- 1.
- 2.
- 3.

**Ergonomics**

- What is ergonomics?
- Name 3 ways in which a Dyson Vacuum has been ergonomically designed
- 1.
- 2.
- 3.

**Sustainability**

- Why is sustainability important?

**Design brief**

- What are the 3 sections of a design brief
- 1.
- 2.
- 3.

**Design specification**

- What is a design specification?
- Give 5 areas of a design specification
- 1.
- 2.
- 3.
- 4.
- 5.

**User centred design**

- What is meant by a user centred design
- Explain collaboration in design

**Iterative design**

- What is meant by iterative design
- Why is feedback important in iterative design?

**Tolerance**

Why is accuracy important in manufacturing –

What is the allowable tolerance for the following sizes –

a. 130 mm      2mm =  
 b. 10 mm      1mm =  
 c. 5 mm      0.1 mm =

**Surface finish**

- What is meant by a surface finish?
- Give 4 examples of a surface finish
- 1.
- 2.
- 3.
- 4.

<u>Material properties</u>	Definition
Strength	
Elasticity	
Ductility	
Malleability	
Hardness	
Toughness	

**CAD**

Advantages	Disadvantages

**6R's**

- What are the 6 R's?
- What is it important for a designer to consider the 6R's

**Scales of production**

What are the 4 scales of production

- 1.
- 2.
- 3.
- 4.

Key word	Definition
Analysis	Product analysis means asking _____ about a product and forming _____.
Summary	A _____ or account of the main _____ of something
_____	A design specification is a _____ document providing a _____ of points regarding a product or process
Perspective	The art of representing _____ on a two-dimensional surface to give the right impression of their _____, _____, _____, and position in relation to each other.
_____	A simple _____ of an idea using to show an idea
Iterative	A flexible way of _____ through _____ and _____ then redesign



What we are learning this term:	
A.	How to develop our physical and visual story telling techniques.
B.	The Frantic Assembly devising process through rehearsals.
C.	How to interpret the director's creative intention in A Curious Incident of a Dog in the Night-time.
D.	How to reflect, analyse and evaluate our development.



Who are Frantic Assembly?		Other Shows by Frantic Assembly:
<p>Formed in 1994, Frantic Assembly's beliefs are built on the notion of collaboration. There is a great sense of ensemble work evident in all that they do. They aim to make their work accessible. Frantic Assembly is one of UK's leading contemporary theatre companies producing thrilling, energetic and uncompromising theatre constantly attracting new theatre.</p>		<ol style="list-style-type: none"> <li>I think We're Alone</li> <li>The Unreturning Beautiful Burnout</li> <li>Pool No Water</li> <li>Love Song</li> <li>Little Dogs</li> </ol>

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' on stage. Naturalistic performances should aim to look like real life and do not acknowledge the audience.

**Motivation** - the reason a character does anything **Revelations** – when information is disclosed

**Thought-tracking** - Actors speak the thoughts of the characters they are representing. This is a useful way of finding out more about a character's reactions to other characters of the events they are experiencing. Other characters cannot hear the thought tracking, only the audience.

**Climax** – is a play or a specific scene's point of highest tension and drama

**Narrative** – the storyline and character's trajectory

**The story Motif** – A symbolic movement that captures the essence of a character or moment **Symbol** – is something which stands for, or represents something else.

**Symbols** -are often used in drama to deepen its meaning and remind the audience of the themes or issues it is discussing.

**Essence Machine** – A group performance that combines symbolic movement and sound to capture the essence of a something – this could be anything, for example, a character, a place, a feeling.

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 physical and visual story telling workshops. Exploration of: **Chair Duets, Blind Hands, Round By Through, Push Hands, Fluff Picking, Lifts.**

**Learning aim B: Apply skills and techniques in rehearsal and performance**

B1: Interpretation of 45 minutes of A Curious Incident of a Dog in the Night-time through the use of physical and visual story telling. Application, through rehearsal, of Frantic Assembly physical and Visual storytelling techniques. 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 Frantic Assembly and apply them to the play: A Curious Incident of a Dog in the Night-time. You will apply Frantic Assembly's building blocks for devising as well as their recognisable style to a 45 minute section of the play. Through a series of workshops and rehearsals you will explore the different scenes of A Curious Incident of a Dog in the Nighttime as well as the direction's creative intention. Using the physical and visual story telling techniques of Frantic Assembly you will bring to life the many facets of Christopher's brain.

**Expand your knowledge and understanding!**

BBC Bitesize - <https://www.bbc.com/bitesize/subjects/zbckjxs> - covers everything from creating to evaluating, and lots of handy videos.

Techniques, Practitioners, Video Links -

<https://www.bgsperformingarts.com/drama.html> Frantic Assembly – <https://www.youtube.com/user/franticassembly>

National Theatre - <https://www.youtube.com/user/ntdiscovertheatre>



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 and drama  
**Narrative** – the s \_\_\_\_\_  
 e and \_\_\_\_\_  
**The story Motif** – A \_\_\_\_\_  
 that captures the essence of a character or moment Symbol – is something which stands for, or represents something else.  
**Symbols** -are often used in drama to \_\_\_\_\_  
 and remind the audience of the themes or issues it is discussing.  
**Essence Machine** – A \_\_\_\_\_  
 that combines symbolic movement and sound to capture the essence of a something – this could be anything, for example, a character, a place, a feeling.

**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 Frantic Assembly and apply them to the play: A Curious Incident of a Dog in the Night-time. You will apply Frantic Assembly's building blocks for devising as well as their recognisable style to a 45 minute section of the play. Through a series of workshops and rehearsals you will explore the different scenes of A Curious Incident of a Dog in the Nighttime as well as the direction's creative intention. Using the physical and visual story telling techniques of Frantic Assembly you will bring to life the many facets of Christopher's brain.

**Expand your knowledge and understanding!**

BBC Bitesize - <https://www.bbc.com/bitesize/subjects/zbckjxs> - covers everything from creating to evaluating, and lots of handy videos.

Techniques, Practitioners, Video Links -

<https://www.bgsperformingarts.com/drama.html> Frantic Assembly – <https://www.youtube.com/user/franticassembly>

National Theatre - <https://www.youtube.com/user/ntdiscovertheatre>

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	4 Responsibility
2 Major	5 Union
3 Independent	6 Publishing

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

E. Unions/Agencies/Trade Bodies	
<b>Agencies</b>  <b>MCPS / PRS</b> Mechanical-Copyright Protection Society and the Performing Right Society. Collects royalties for musicians for physical formats like CD (MCPS) and live music (PRS)	
<b>PPL</b> = Phonographic Performance Limited. Licenses the right to perform recorded music 	
<b>Unions</b> Unions provide support for lots of people, they provide things like advice for freelancers on NI/TAX, handling disputes, and support in negotiating contracts 	
<b>MU = Musicians Union</b> <b>Equity</b> <b>BECTU = Broadcasting Entertainment Cinematograph Theatre Union</b>	
<b>Trade bodies</b>  <b>MPG = Music Producers Guild</b> Represents people involved in producing recorded music  <b>PLASA = Professional Lighting and Sound Association</b> Represents those who work/supply technologies  <b>APRS = Association of Professional Recording Services</b> Represents those who work in the audio industry, e.g. recording studios/producers	

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	
✓ Technician	The boss of the artist/band!	
✓ Artistic Manager	Responsible for health/safety	
✓ Venue Manager	Book recordings/H&S	
✓ Studio Manager	Sells tickets to live events!	
✓ Promoter / Marketer	Finds new talent to sign to labels	
✓ A&R	Records the music in studio	
✓ Sound Engineer	Plays in recordings or live shows	
✓ Session Musician	Perfects finished recording	
✓ Mastering Engineer	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	

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 Cons = difficult to stand out, less control over your music, contracts can be unfair	Pros = individual style of artist is important, more control over music, closer relationships, contracts more artist friendly 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









**F. Publishing (pros and cons)**

Major	Self-Publishing
<b>Remember: Publishing Company = Composition OWNERSHIP</b>	
Pros = good distribution, payment often upfront (in advance), marketing and promotion is good 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	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 = less money, less marketing and promotion

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 E _____	4 R _____
2 M _____	5 U _____
3 I _____	6 P _____

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)	


E. Unions/Agencies/Trade Bodies	
<b>Agencies</b>  <b>MCPS / PRS</b> _____ and the Performing Right S_____. Collects royalties for musicians for physical formats like CD (MCPS) and live music (PRS)	
 <b>PPL</b> = Phonographic Performance Limited. Licenses the right to perform recorded music	
<b>Unions</b> Unions provide support for lots of people, they provide things like advice for freelancers on _____, handling disputes, and support in _____	
 <b>MU = Musicians Union</b> <b>Equity</b> <b>BECTU = Broadcasting Entertainment Cinematograph Theatre Union</b>	
<b>Trade bodies</b>  _____ = Music Producers Guild Represents people involved in producing recorded music	
 _____ = Professional Lighting and Sound Association Represents those who work/supply technologies	
 _____ = Association of Professional Recording Services Represents those who work in the audio industry, e.g. recording studios/producers	

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 _____	Monitors sound at live events
Technician	Moves equipment /sets up
✓ R _____	Fixes stuff like guitars/drums
✓ I _____	The boss of the artist/band!
Technician	Responsible for health/safety
✓ Artistic M _____	Book recordings/H&S
✓ V _____ Manager	Sells tickets to live events!
✓ S _____ Manager	Finds new talent to sign to labels
✓ P _____ / Marketer	
✓ A&_____	Records the music in studio
✓ Sound E _____	Plays in recordings or live shows
✓ Session M _____	
✓ 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 _____	Codes musical software
Programmer	Mixes/plays live music
✓ D _____	Sells merchandise!
✓ R _____	Gets finished CD's to shops to sell (now also done online!)
✓ D _____	
✓ S _____	Works on the band/artist image
✓ A _____	Attends auditions, plays for a solo musician e.g. piano

M _____	I _____
e.g. _____	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 Cons = difficult to stand out, less control over your music, contracts can be unfair	Pros = individual style of artist is important, more control over music, closer relationships, contracts more artist friendly Cons = not as much money, less publicity and promotion, not as organised/connected, less media contacts


**D. Venues/Health and Safety/Security**

L \_\_\_\_\_ Venue = \_\_\_\_\_  
 S \_\_\_\_\_ Venue = \_\_\_\_\_



**Health and Safety**  
 \_\_\_\_\_ = to identify and minimise risks  
 HSE = health and safety \_\_\_\_\_

**Security**



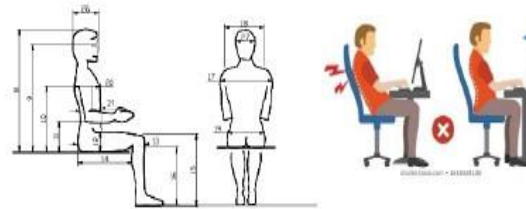
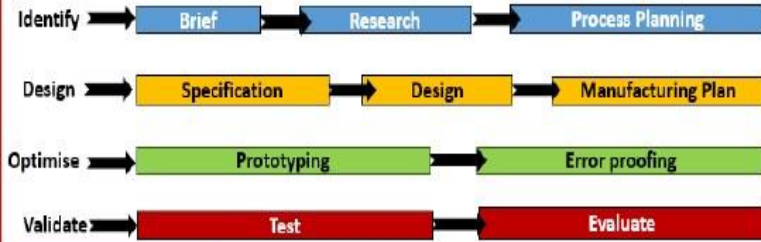
**F. Publishing (pros and cons)**

M _____	S _____
Remember: Publishing Company = Composition O _____	
Pros = good distribution, payment often upfront (in advance), marketing and promotion is good 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	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 = less money, less marketing and promotion



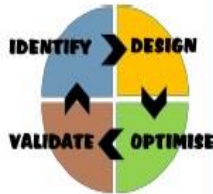
R105: OCR Engineering design Examination Subject Knowledge

Quality Control: a system of maintaining standards in manufactured products by testing and checking throughout the making stages.



Anthropometrics is the study of measurements of the human body  
Ergonomics is the application of anthropometrics in order to make products and places efficient, comfortable and safe to use

Technology Push is when new developments in materials and technologies improve existing products/ create new ones  
Market Pull is when consumers demand improvements/new products. Often found by conducting market research



- A Design Brief is a *statement of how you are going to solve the Design Problem.*
- Research findings and Client feedback can be used to create a **Process Plan.**
- A Design Specification is a *list of requirements your product has to meet in order to be successful.*
- After a Specification has been developed, the **designing** of the product will begin.
- Once the final design has been chosen, a **Manufacturing Plan** is then created.
- **Prototyping** is the creation of a **model** or “**mock-up**” of a product after the Design Process
- **Error Proofing** is ensuring that the product cannot be assembled or used in an incorrect way
- **Testing** and **Evaluation** happens because designers need to ensure the product is successful before being released, and is competitive with the market.

 British Standards Kitemark shows that a product has consistently met the requirements of the British Standards Institute. These regulations are of a higher standard than European ones.	 European Conformity Symbol shows that a product has consistently met the minimum requirements of the EU.
Sales and Supply of Goods Act 1994	All Products have to be of a "satisfactory quality. They have to be safe, fit intended purpose, not be faulty"
 TOWER STRUCTURE	 SPECIALIST JEWELLERY
 BESPOKE CHAIR	One-off Production This is the manufacture of one item This item can be custom made/ designed (bespoke manufacture)

Trade Descriptions Act	False or misleading information must not be given out about products. E.g. accurate information must be given out who made the product
Consumer Protection Act 1987	The right to claim compensation if a defective product causes death, damage or injury
The Waste Electrical and Electronic Equipment Regulations 2013	The government regulate the amount of electronics going to landfill as the chemicals and electronics can harm the environment and wildlife Companies must provide electronic disposal for their products

 SPECIAL EDITION CAR	 KNOCKDOWN FURNITURE
Batch Production This is where small quantities of identical items are made (10s-1000s) To ensure all items are identical, jigs, moulds and templates to aid workers	

Specification Points	Meaning
Aesthetics	What the product will look like, style, colour, etc.
Customer	Who the <b>Target Market</b> is, how it will appeal to them, what <b>Anthropometrics</b> and <b>Ergonomics</b> will be used, etc.]
Cost	Cost to make, as well as cost to sell
Environment	Where it will be used
Safety	How it will be safe to use, what standards and regulations it will have to meet
Size	What dimensions it will be, as well as components and parts
Function	What the purpose of the product will be, and what <b>Features</b> it will have
Materials	What is will be made from
Manufacture	How it will be made

Product requirements are what a product has to meet/ must do. Common requirements are:

- Features – *what makes a product unique and sellable*
- Performance – *how well it completes its function*
- Target Market – *how it appeals to its customers*
- Working Environment – *how it is suitable for where it will be used*
- Constraints – *what is must do or must not do*
- Ergonomics – *how its comfortable and safe to use*
- Lifecycle – *what environmental impact it makes (and how that can be reduced)*

 <b>Mass Production (High-Volume Production)</b> This is where large quantities of products are made (10,000s-100,000s) There are often assembly lines (for the main product) and sub-assembly (for small pieces and components)	 <b>Continuous Production</b> This is when large quantities of products is produced (100,000s +) However, unlike Mass Production this is <b>never ending</b> production e.g. power plants
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**Just-in-time production (JIT)**  
 This is when products made to order, but can be used in conjunction with any other scale of production







What we are learning this term:	
<b>A. The different user groups who may participate in sport</b> <b>B. The barriers which affect participation</b> <b>C. The solution to these barriers</b> <b>D. Factors affecting the popularity of a sport</b> <b>E. Current trends in the popularity of sport</b> <b>F. Growth of new and emerging sports</b>	

A. Key question from Assessment objectives?	
Key word	Key definition
Ethnic minorities	A group that has different national or cultural traditions
Disposable income	Money left over after paying all bills
Accessibility	How easy something is to access
Provision	Providing or supplying something
Infrastructure	The available space and facilities to take part in sport. EG- Tennis courts
Acceptability	How accepted and tolerated something is
Emerging	Becoming more mainstream
Concessions	Providing something cheaper for certain groups

A. What sports are growing in popularity in the UK?	
<ol style="list-style-type: none"> <li>1. Ultimate frisbee</li> <li>2. American Football</li> <li>3. Climbing</li> <li>4. Handball</li> </ol>	

Main assessment objectives	
<b>Learning outcome: Understand the issues which affect participation in sport</b>	

C. What are the most popular sports in the UK?	
Football, Rugby, Cricket, Netball, Walking, Cycling and fishing	
How the factors can impact on the popularity of sport in the UK	
<ol style="list-style-type: none"> <li>1. Climate- Lack of snow in the UK means the opportunities for snow sports are limited</li> <li>2. Provision- Lack of facilities such as tennis courts limit who can access them</li> <li>3. Elite success- cycling success at the Olympics leads to increased participation in cycling</li> </ol>	

A. The user groups who may participate in sport are...	
<ol style="list-style-type: none"> <li>1. Ethnic minorities</li> <li>2. Retired people/ over 50</li> <li>3. Families with young children</li> <li>4. Single parents</li> <li>5. Children</li> <li>6. Teenagers</li> <li>7. Disabled people</li> <li>8. Unemployed/ economically disadvantaged</li> <li>9. Working singles and couples</li> </ol>	

A. The possible barriers which affect participation...	
<ol style="list-style-type: none"> <li>1. Employment/time</li> <li>2. Work restrictions</li> <li>3. Disposable income</li> <li>4. Accessibility of facilities</li> <li>5. Lack of role models</li> <li>6. Provision of activities</li> <li>7. Awareness of activity provision</li> <li>8. Portrayal of gender issues</li> </ol>	

G. The possible solutions to barriers...	
<b>Provision-</b>  <i>Programming of sessions</i> <i>Appropriate activity for user groups</i> <i>Timing of sessions</i>  <b>Promotion-</b>  <i>Targeted promotion</i> <i>Using role models</i> <i>Initiatives aimed at promoting participation</i>  <b>Access-</b>  To facilities To equipment Sensible pricing and concessions	

Factors affecting popularity	
Participation	Football has high participation rates due to the infrastructure already in place
Provision	The available equipment and facilities required to play
Environment/ climate	The UK weather is suitable for certain sports and not suitable for others
Spectatorship	The amount of people going to watch the sport
Media coverage	How much coverage the sport gets across various media platforms
Elite level success	Olympic success usually increase participation
Role models	A lack of role models can restrict participation levels
Acceptability	Some sports are not accepted in UK culture due to the nature of the sport



**What we are learning this term:**

A. *The different user groups who may participate in sport*  
 B. *The barriers which affect participation*  
 C. *The solution to these barriers*  
 D. *Factors affecting the popularity of a sport*  
 E. *Current trends in the popularity of sport*  
 F. *Growth of new and emerging sports*

**Main assessment objectives**

Learning outcome: Understand the issues which affect participation in sport

**Factors affecting popularity**

A. Key question from Assessment objectives?

C. What are the most popular sports in the UK?

Participation	
Provision	

Key word	Key definition
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How the factors can impact on the popularity of sport in the UK

Environment/ climate	
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Ethnic minorities	
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1	
2	
3	

Spectatorship	
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Disposable income	
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A. The user groups who may participate in sport are...

G. The possible solutions to barriers...

Accessibility	
---------------	--

1	
2	
3	
4	
5	
6	
7	
8	

Provision-

1	
2	
3	

Media coverage	
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Provision	
-----------	--

Promotion-

1	
2	
3	

Elite level success	
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Infrastructure	
----------------	--

A. The possible barriers which affect participation...

Access-

1	
2	
3	

Role models	
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Acceptability	
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Emerging	
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Concessions	
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A. What sports are growing in popularity in the UK?

1	
2	
3	
4	
5	
6	
7	
8	

Acceptability	
---------------	--

1	
2	
3	
4	




**What we are learning in LAA:**

- A. Key words
- B. Definitions of health and wellbeing
- C. Genetic inheritance

**A. Key words for this Unit**

Genetic inheritance	The genes a person inherits from their parents
Predisposition	Someone is more likely to suffer from a particular condition
Chronic	Gradual illness that is long term (longer than 3 months) and generally can be treated but not cured
Acute	A short-term illness that can be cured
Monitor	To check progress over a period of time.
Person-Centred	Planning care around the wants and needs of a service user
Bereavement	The process of coming to terms with the death of someone close.
Circumstances	Events that change your life, over which you have no control
Physiological	Relates to how a person and their bodily parts function normally.
Interpret	understand an action, mood, or way of behaving as having a particular meaning
Collaboratively	Working well together with other people or services
Obstacles	Difficulties a person might face when they implement a plan.
Goal	What you want to achieve in the long term
Norm	Something that is usual, typical or standard
Targets	Challenges to help you reach your goal

**B Definitions of health and well-being**

Positive Definition 	Looks at how physically fit and mentally stable a person is. You have a positive attitude towards health and wellbeing if you realise that there is something you can do to improve your health and wellbeing and do it.
Negative definition 	Looks at the absence of physical illness, disease, and mental distress. You have a negative attitude towards your health and wellbeing if you: <ul style="list-style-type: none"> <li>• Base your attitude on not having anything wrong with you.</li> <li>• Continues as you are- Inc. keeping bad habits like smoking.</li> <li>• Assume that because you currently feel fine you will stay healthy in the future.</li> </ul>
Holistic definition 	It is a combination of physical health and social and emotional wellbeing. It is not just the absence of disease or illness; it looks at all aspects of a person's health and wellbeing. You have a holistic attitude towards health and wellbeing if you look after your: <ul style="list-style-type: none"> <li>• <b>Physical Health:</b> Be meeting the needs we have to keep our bodies working as well as they can, e.g. Food, water, shelter, warmth, clothing, rest, exercise and good personal hygiene.</li> <li>• <b>Intellectual health:</b> By meeting the needs we have to develop and keep our brains working as well as possible; these include mental stimulation to keep us motivated and interested.</li> <li>• <b>Emotional aspects of wellbeing:</b> By meeting the needs we have that make us feel happy and relaxed, e.g. being loved, respected and secure. Knowing how to deal with negative emotions, having positive self-concept and being respected by others.</li> <li>• <b>Social aspects of wellbeing:</b> By meeting the needs we have to help us develop and enjoy good relationships with others, including mixing with others in appropriate environments and having access to leisure facilities/ activities.</li> </ul>



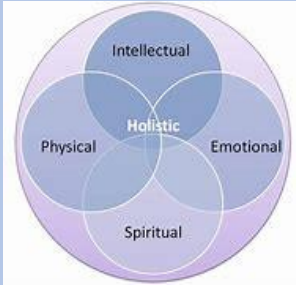
**C. Genetic inheritance**

Inherited physical Characteristics		Genes and environment	
<ul style="list-style-type: none"> <li>• Children inherit their physical; characteristics from their parents e.g. height, skin and eye colour and hair type and colour.</li> <li>• These characteristics can affect social and emotional wellbeing because they influence a person's self-concept (self-image and esteem).</li> </ul>		<ul style="list-style-type: none"> <li>• Chromosomes carry genes that determine aspects of persons physical makeup.</li> <li>• Gene is a section of DNA that carries a code. Different versions of a gene are called <b>alleles</b> (they can be faulty).</li> <li>• Environmental factors such as diet, also influence physical appearance. For example, a person may not grow to their full, genetically determined height if they do not have enough food.</li> </ul>	
Allele type	Dominant: If a gene is dominant a child inheriting it from only one birth parent will have the condition, e.g Huntington's disease.	Effects of inherited disorders	<ul style="list-style-type: none"> <li>• Physical health: Body systems, growth and mobility</li> <li>• Intellectual wellbeing: learning, thinking, problem solving and decision making.</li> <li>• Emotional wellbeing: how people feel about themselves.</li> <li>• Social wellbeing: the ability to build relationships and maintaining them.</li> </ul>
	Recessive: If the gene is recessive a child would only develop the condition if it was inherited from both birth parents, e.g. Cystic fibrosis.		

<b>What we are learning in LAA:</b>
A. Key words
B. Definitions of health and wellbeing
C. Genetic inheritance

<b>A.</b>	<b>Define the key words for this Unit</b>
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Genetic inheritance	
Predisposition	
Chronic	
Acute	
Monitor	
Person-Centred	
Bereavement	
Circumstances	
Physiological	
Interpret	
Collaboratively	
Obstacles	
Goal	
Norm	
Targets	

<b>B</b>	<b>Definitions of health and well-being</b>	
Positive Definition		
Negative definition		
Holistic definition		<b>Definition:</b>  <ul style="list-style-type: none"> <li>• <b>Physical Health:</b></li> <li>• <b>Intellectual health:</b></li> <li>• <b>Emotional aspects of wellbeing:</b></li> <li>• <b>Social aspects of wellbeing:</b></li> </ul>

<b>C.</b>	<b>Genetic inheritance</b>		
	<b>Inherited physical Characteristics</b>		<b>Genes and environment</b>
	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>
Allele type	Dominant:	Effects of inherited disorders	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>
	Recessive:		





**What we are learning in LAA:**

- D. Balanced diet
- E. Chronic and acute illness
- F. What are the effect of exercise?
- G. What are the effect of excessive substance use?

D.	Balanced diet
<b>What is a balanced diet?</b>	<ul style="list-style-type: none"> <li>• Diet that contains the correct nutrients in the right proportions to keep out bodies and minds healthy.</li> <li>• It is also a lifestyle choice</li> <li>• Choosing to eat too much or too little might make us less able to take all the opportunities that life offers.</li> </ul>
<b>Overweight or underweight may:</b>	<p>A person over weight or under weight may:</p> <ul style="list-style-type: none"> <li>• Be prone to illness and conditions</li> <li>• Have their life expectancy reduced</li> <li>• Be less able to exercise effectively</li> <li>• Miss out on learning experiences</li> <li>• Miss out on some sporting activities</li> <li>• Be less successful in job interviews</li> <li>• Feel embarrassed and self-conscious about their appearance in social situations.</li> </ul>
<b>Essential parts of a healthy diet:</b>	<ul style="list-style-type: none"> <li>• Fats (saturated and unsaturated)</li> <li>• Carbohydrates (sugars and starches)</li> <li>• Minerals</li> <li>• Vitamins</li> <li>• Proteins</li> </ul>
<b>Est well guide says you should eat:</b>	<ul style="list-style-type: none"> <li>• Eat at least 5 portions of a variety of fruit and vegetables every day.</li> <li>• Base meals on potatoes, bread, rice, pasta or other starchy carbohydrates; choosing wholegrain versions where possible.</li> <li>• Have some dairy or dairy alternatives (such as soya drinks); choosing lower fat and lower sugar options.</li> <li>• Eat some beans, pulses, fish, eggs, meat and other proteins (including 2 portions of fish every week, one of which should be oily).</li> <li>• Choose unsaturated oils and spreads and eat in small amounts.</li> <li>• Drink 6-8 cups/glasses of fluid a day.</li> </ul>
<b>If you eat more than you need:</b>	<ul style="list-style-type: none"> <li>• The body will store food as fat and this can lead to:</li> <li>• Obesity, heart disease, high blood pressure, Strokes, Tooth decay or cancer</li> </ul>
<b>If you eat less than you need</b>	<ul style="list-style-type: none"> <li>• The body does not get enough nutrients to grow and develop properly and this can lead to:</li> <li>• Eating disorders, stunted growth, anaemia, heart failure, depression, tiredness, cancer or rickets.</li> </ul>

E	Chronic or Acute Illness	
	<p><b>Chronic illness-</b> Illness comes on gradually, is long term (more than 3 months) and generally can be treated but not cured. E.g Asthma, Diabetes, epilepsy, bipolar disease, Alzheimer’s disease</p>	<p><b>Acute illness-</b> Illness comes on quickly, is short term and can be cured. E.g. Cold, flue, broken bones, heartburn, appendicitis or Diarrhoea.</p>
<p>Some chronic conditions are acute but may develop because of chronic conditions. For example: osteoporosis (a chronic condition that weakness bones) masking their bones fragile and more likely to break. Broken bones are then an acute condition.</p>		
Possible negative effects of chronic illness		
<p>Physical:</p> <ul style="list-style-type: none"> <li>• poor rate of growth</li> <li>• Unusual physiological change during puberty</li> <li>• Restricted movement</li> </ul>		<p>Emotional:</p> <ul style="list-style-type: none"> <li>• Negative self-concept</li> <li>• Stress</li> <li>• Decision making</li> </ul>
<p>Intellectual:</p> <ul style="list-style-type: none"> <li>• Disturbed learning because of missing school</li> <li>• Difficulties in thinking and problem solving</li> <li>• Memory problems.</li> </ul>		<p>Social</p> <ul style="list-style-type: none"> <li>• Isolation</li> <li>• Loss of independence</li> <li>• Difficulties developing relationships</li> </ul>

F.	What are the effect of exercise?	
<p>Positive effects of exercise</p>	<p><b>Physical:</b> maintain a healthy weight, reduce BMI, boosting energy levels. Improved flexibility, stamina, endurance and stronger bones and muscles. Reduce risk of heart disease and diabetes.</p> <p><b>Intellectual:</b> improved brain function like mentor and thinking skills.</p> <p><b>Emotional:</b> improves confidence and mood and reduces stress. Aid relaxation and sleep and lead to better self concept.</p> <p><b>Social:</b> encourages social interaction, reducing isolation and improving social skills.</p>	
	<p>Negative effects of exercise</p>	<p><b>Physical:</b> Obesity and associated health problems.</p> <p><b>Intellectual:</b> Reduced pain performance, hard to concentrate and retain information.</p> <p><b>Emotional:</b> poor self-concept and reduced ability to cope with stress.</p> <p><b>Social:</b> Fewer opportunities for social interactions.</p>

G.	What are the effect of excessive substance use?	
<p>Negative effects of excessive alcohol consumption</p>	<p><b>Physical:</b> Alcohol dependence, damage to major organs: liver, heart, kidneys, pancreas. Cancers: mouth, throat, oesophagus, liver, breast. Infertility and impotence, weight gain.</p> <p><b>Intellectual:</b> difficulty in making decisions, depression and anxiety, chance of stroke and brain damage, impaired brain development of unborn baby.</p> <p><b>Emotional:</b> poor self-concept, poor judgement leading to a risk of accidents and unsafe sex, can have an impact on relationships, depression.</p> <p><b>Social:</b> breakdown of relationships, domestic violence, social isolation</p>	





**What we are learning in LAA:**

- D. Balanced diet
- E. Chronic and acute illness
- F. What are the effect of exercise?
- G. What are the effect of excessive substance use?

<b>D.</b>	<b>Balanced diet</b>
<b>What is a balanced diet?</b>	
<b>Overweight or underweight may:</b>	
<b>Essential parts of a healthy diet:</b>	
<b>Est well guide says you should eat:</b>	
<b>If you eat <u>more</u> than you need:</b>	
<b>If you eat <u>less</u> than you need</b>	

<b>E</b>	<b>Chronic or Acute Illness</b>	
<b>Chronic illness-</b>		<b>Acute illness-</b>

Explanation:

<b>Possible negative effects of chronic illness</b>	
Physical:	Emotional:
Intellectual:	Social

**F. What are the effect of exercise?**

Positive effects of exercise  	<b><u>Physical:</u></b>
	<b><u>Intellectual:</u></b>
	<b><u>Emotional:</u></b>
	<b><u>Social:</u></b>

Negative effects of exercise	<b><u>Physical:</u></b>
	<b><u>Intellectual:</u></b>
	<b><u>Emotional:</u></b>
	<b><u>Social:</u></b>

**G. What are the effect of excessive substance use?**

Negative effects of excessive alcohol consumption  	<b><u>Physical:</u></b>
	<b><u>Intellectual:</u></b>
	<b><u>Emotional:</u></b>
	<b><u>Social:</u></b>

**What we are learning in LAA:**

- H. The effects of social interactions on wellbeing
- I. What are the effects of stress on health and wellbeing
- J. What are the hazards of smoking
- K. What are the effects of personal hygiene

**H. The effects of social interactions on wellbeing**

Social integration	When people feel they belong to a group and can interact with others. Social interactions can happen between family members and friends, work colleagues, school learners, members of a community or interest groups.
Social isolation	Occurs when people do not have regular contact with others. This may be because they don't go out much because of physical illness, reduced mobility or unemployment. They might have a difficulty in communicating if they have a mental illness, depression or learning difficulties. Lastly, a person might be discriminated against because of culture, religion or disability.

**Positive effects of relationships**



**Physical:** physical support and day to day care and practical assistance.  
**Intellectual:** shared experiences, supported learning and thinking  
**Emotional:** unconditional love, security and encouragement, positive self-concept, feeling content, ability to build relationships with people outside the family, independence and confidence.  
**Social:** Companionship, social circle increases.

**Negative effects of social isolation**

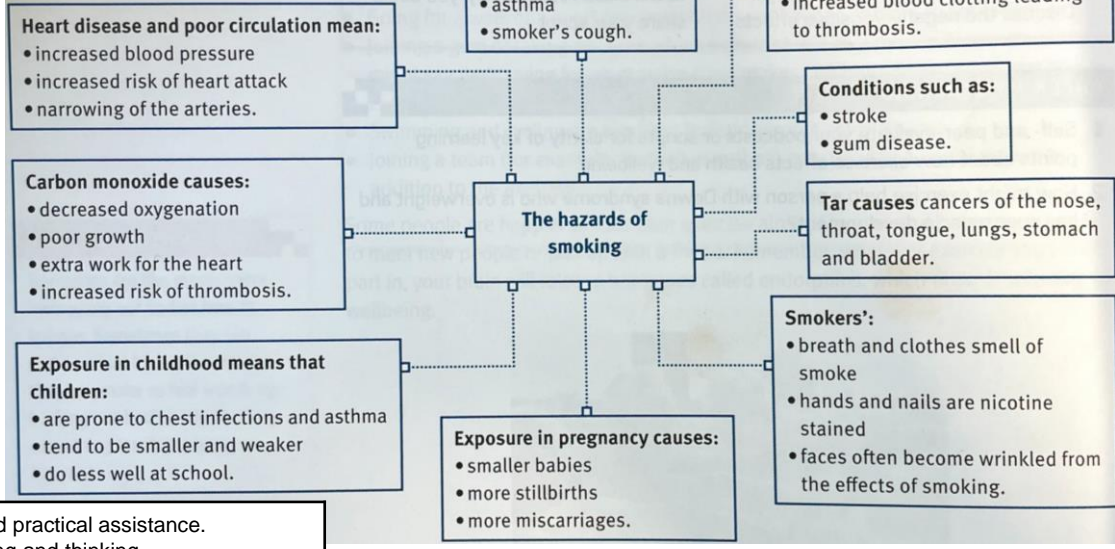


**Physical:** poor lifestyle choices like smoking and drinking, poor diet that can cause eating disorders.  
**Intellectual:** reduced ability to use thinking skills, missing school/work  
**Emotional:** feelings insecure, depression, anxiety, negative self-concept, feeling of hurt, loneliness and distrust, lack of independence, difficulty in controlling emotions.  
**Social:** difficulties in building relationships as lack skills.

**I. What are the effects of stress on health and wellbeing**

Physical effects	Intellectual effects	Emotional effects	Social effects
Increased heartbeat Increased breathing rate Tense muscles Sweaty palms Dry mouth High blood pressure Loss of appetite Sleeplessness Digestive problems	Forgetfulness Poor concentration Difficulty in making decisions	Difficulty in controlling emotions Feeling insecure Negative self-concept Feeling anxious and frightened Loss of confidence	Difficulty in making friends and building relationships Breakdown of close relationships Social isolation

**J. What are the hazards of Smoking**





**K. What are the effects of Personal Hygiene?**

Positive effects of good personal hygiene  	<ul style="list-style-type: none"> <li>• Helps prevent the spread of infection</li> <li>• Improves self-concept</li> <li>• Reduces number of bacteria that lives on us.</li> </ul> <p><b>You must:</b></p> <ul style="list-style-type: none"> <li>• Brush you teeth</li> <li>• Shower daily or bath</li> <li>• Wash your hair regularly</li> <li>• Keep fingernails and toenails clean and trimmed</li> </ul>
Negative effects of poor personal hygiene	<p><b>Physical:</b> catching and spreading disease like food poisoning, sore throat, meningitis and athlete's foot. Bad body odour, bad breath and tooth decay.</p> <p><b>Emotional:</b> loss of friendships and social isolation. Might be bullied and poor self-concept.</p> <p><b>Social:</b> low social interactions as people don't want to be friends with someone that neglects their hygiene. Social isolation.</p>
When caring for others:	<ul style="list-style-type: none"> <li>• Bad hygiene can stop effective communication.</li> <li>• Negative effect on the person being cared for and their health and wellbeing- pass on infection</li> <li>• Discomfort for the person being cared for because of the odour or visible dirt under fingernails.</li> </ul>


J. What are the hazards of Smoking- draw out the mind map in the space below:

**What we are learning in LAA:**  
 H. The effects of social interactions on wellbeing  
 I. What are the effects of stress on health and wellbeing  
 J. What are the hazards of smoking  
 K. What are the effects of personal hygiene

H. The effects of social interactions on wellbeing	
Social integration	
Social isolation	

<b>Positive effects of relationships</b> 	<u>Physical:</u>  <u>Intellectual:</u>  <u>Emotional:</u>  <u>Social:</u>
<b>Negative effects of social isolation</b> 	<u>Physical:</u>  <u>Intellectual:</u>  <u>Emotional:</u>  <u>Social:</u>

I. What are the effects of stress on health and wellbeing			
Physical effects	Intellectual effects	Emotional effects	Social effects

K. What are the effects of Personal Hygiene?	
Positive effects of good personal hygiene 	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> You must:
Negative effects of poor personal hygiene	<u>Physical:</u>  <u>Emotional:</u>  <u>Social:</u>
When caring for others:	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>

What we are learning in LAA:	
L.	What are the barriers to seeking help.
M.	What are the effects of unexpected life events on health and wellbeing
N.	What are the effects of economic factors (e.g, income) on health and wellbeing
O.	What are the effects of expected life events on health and wellbeing
<b>L.</b>	<b>What are the barriers to seeking help.</b>
<b>Culture</b>	Accessing HSC services can be influenced by values, traditions, way of life and beliefs of the society or group. <ul style="list-style-type: none"> <li>Some may have received discrimination when accessing other services.</li> <li>Some may not speak English well enough.</li> <li>Values and traditions not understood e.g. eye contact means respect in some cultures but not others.</li> <li>Some cultures a woman must be treated only by a female professional.</li> <li>Alternative therapies are used in some cultures</li> </ul>
<b>Gender</b>	Research shows that men are less likely to talk about their health and wellbeing than woman. This is because men are: <ul style="list-style-type: none"> <li>Often less open about their feelings</li> <li>Sometimes reluctant to appear vulnerable by asking for help</li> <li>Not aware of poor health signs as health campaigns target women's health more</li> <li>Unhappy to be examined by a female health worker.</li> </ul>
<b>Education</b>	Research shows that people who are better educated are more likely to seek help. This is because: <ul style="list-style-type: none"> <li>They like to research symptoms and know when help is needed</li> <li>Understand the importance of early diagnosis and treatment</li> <li>Know how and where to access services.</li> </ul>
<b>Stigma</b>	In some cultural groups there is a stigma attached to certain condition like depression. Stigma is a word used to describe something that people feel embarrassed about. Therefore, they wouldn't seek help.

M. What are the effects of unexpected life events on health and wellbeing		
Life event	Positive Effects:	Negative Effects:
<b>Imprisonment</b>	<ul style="list-style-type: none"> <li>Depression</li> <li>Loss of contact with family and friends</li> <li>Social isolation</li> <li>Restrictions on physical activity</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to study</li> <li>Improvement in health through balanced diet, lack of alcohol, reduced use of nicotine</li> </ul>
<b>Redundancy</b>	<ul style="list-style-type: none"> <li>Poor self-concept</li> <li>Anxiety about finances</li> <li>Fewer opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities to study or train for a new job</li> <li>More time to spend with family and friends</li> </ul>
<b>Exclusion or dropping out of education</b>	<ul style="list-style-type: none"> <li>Loss of contact with friends</li> <li>Social isolation</li> <li>Poor self-concept</li> <li>Lack of learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Catalyst for change of behaviour</li> <li>Opportunities for more suitable study or work situation</li> </ul>

N. What are the effects of economic factors (e.g, income) on health and wellbeing		
	Positive Effects:	Negative Effects:
<b>Physical</b>	<ul style="list-style-type: none"> <li>Better financial resources can result in good housing conditions and healthy diet</li> <li>Manual jobs may improve muscle tone and stamina.</li> </ul>	<ul style="list-style-type: none"> <li>Low wages can affect diet and housing, leading to poor health.</li> <li>Manual jobs can cause muscular and skeletal problems</li> <li>Desk jobs lead to less activity and weight gain.</li> </ul>
<b>Intellectual</b>	<ul style="list-style-type: none"> <li>Better financial resources can result in more leisure time for intellectual activities</li> <li>Work, education or training helps to develop problem solving and thinking skills</li> </ul>	<ul style="list-style-type: none"> <li>Some people work very long hours to improve their financial position, leading to less leisure time and reduced learning opportunities.</li> <li>Being unemployed can result in poor mental health.</li> </ul>
<b>Emotional</b>	<ul style="list-style-type: none"> <li>A well-paid job gives a feeling of security.</li> <li>Being financially secure promotes positive self-concept</li> </ul>	<ul style="list-style-type: none"> <li>Financial worried can result in stress and breakdown of relationships.</li> <li>Unemployment or low-status work can lead to low self-concept</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>Better financial resources provide opportunities for socialising.</li> <li>Work gives opportunities for socialising with colleagues.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of financial resources reduces opportunities for socialising.</li> <li>Unemployment reduces opportunities for relationships, leading to social isolation.</li> </ul>

O. What are the effects of expected life events on health and wellbeing		
Life event	Positive Effects:	Negative Effects:
<b>Starting school, college or uni</b>	<ul style="list-style-type: none"> <li>Build new relationships</li> <li>Extend knowledge and learning</li> <li>Develop new skills</li> <li>Improve confidence</li> </ul>	<ul style="list-style-type: none"> <li>Anxiety about new routines and meeting new people</li> <li>Insecurity about leaving parents and other families</li> </ul>
<b>Start a new job or career</b>	<ul style="list-style-type: none"> <li>Develop independence</li> <li>Improve thought processes</li> <li>Improve self-concept</li> </ul>	<ul style="list-style-type: none"> <li>Stress about learning new skills and routines</li> <li>Anxiety about meeting new people</li> </ul>
<b>Moving to a new house or area</b>	<ul style="list-style-type: none"> <li>Excitement</li> <li>Develop new friendships and relationships</li> </ul>	<ul style="list-style-type: none"> <li>Unhappiness at loss of old life</li> <li>Stress of moving</li> <li>Social isolation</li> </ul>
<b>Retirement</b>	<ul style="list-style-type: none"> <li>Reduced stress</li> <li>Time to socialise with family and friends</li> <li>Opportunities for leisure of physical activities</li> </ul>	<ul style="list-style-type: none"> <li>Loss of relationships with colleagues</li> <li>Possible loss of fitness and mobility</li> <li>Loss of intellectual stimulation and status</li> </ul>

**What we are learning in LAA:**

L. What are the barriers to seeking help.  
 M. What are the effects of unexpected life events on health and wellbeing  
 N. What are the effects of economic factors (e.g, income) on health and wellbeing  
 O. What are the effects of expected life events on health and wellbeing

L.	What are the barriers to seeking help.
Culture	
Gender	
Education	
Stigma	

M.	What are the effects of unexpected life events on health and wellbeing	
Life event	Positive Effects:	Negative Effects:
Imprisonment		
Redundancy		
Exclusion or dropping out of education		

N.	What are the effects of economic factors (e.g, income) on health and wellbeing	
	Positive Effects:	Negative Effects:
Physical		
Intellectual		
Emotional		
Social		

O.	What are the effects of expected life events on health and wellbeing	
Life event	Positive Effects:	Negative Effects:
Starting school, college or uni		
Start a new job or career		
Moving to a new house or area		
Retirement		