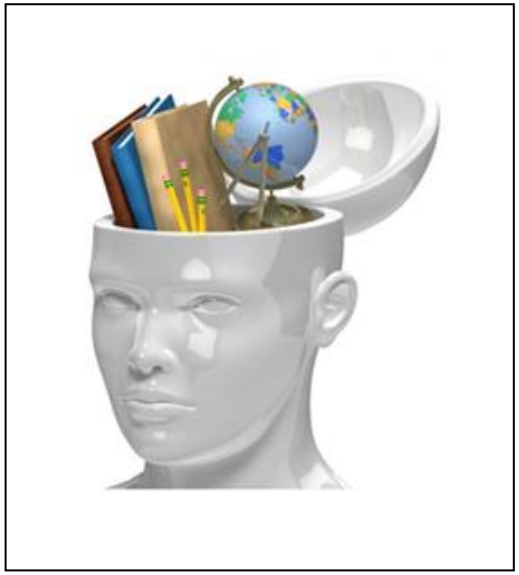
Name: **Form class:**

Year 10

Knowledge Organiser Autumn Term



Instructions for using your Knowledge Organiser

Self-testing

You can use your knowledge organisers and exercise book in a number of different ways but you should not just copy from the Knowledge Organiser into your book.

Below are some possible tasks you could do in your workbooks

- Ask someone to write questions for you
- Write your own challenging questions and then leave it overnight to answer them the next day
- Create mindmaps
- Create flashcards
- Put the key words into new sentences
- Look, cover, write and check
- Mnemonics
- Draw a comic strip of a timeline
- Use the 'clock' template to divide the information into smaller sections. Then test yourself on different sections
- Give yourself spelling tests
- Definition tests
- Draw diagrams of processes
- Draw images and annotate/label them with extra information
- Do further research on the topic
- Create fact files
- Create flowcharts

Presentation

You should take pride in how you present your work; each page should be clearly labelled with underlined title and date. There should be an appropriate amount of work.

The Knowledge Organisers are designed to help you learn a wide range of knowledge which in turn will mean you are more prepared for your lessons as well as the new style GCSEs that you will sit in the future.

To get the most out of your Knowledge Organiser, you should be learning sections and then self testing in your workbook.

Do not just copy into your workbook

Always check and correct!

Year 10

Subject: Pop Art Food

BTEC Art

Oasis Academy Enfield

Brief: A **new restaurant** is opening in London.

You have been asked to enter a **competition.**

This is to **promote** the **opening night.**

In order to **enter** the **competition** you must produce a piece of artwork around the theme of **pop-art food**. It should **clearly show links** to the style of traditional **pop-artists** but also be creative, original and interesting.

Key Pop Artists

Andy Warhol: His Coca Cola prints remind us of the commercial strength of a product and the simple print design of Warhol's repetitive technique, that is **recognised** around the world.
Patrick Caulfield: His use of colour and tone in its simplest shapes convey beauty, compositional structure and form.
Ron Magnes: His work uses the unique **Pop Art** style. He takes a more zoomed in approach to looking at popular food products, displaying their **construction** and **consumption qualities**.

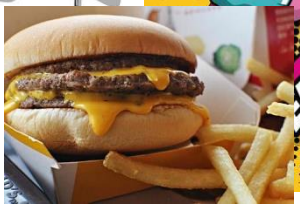
Alternative artists are: **Wayne Thiebaud**. His work will be how you are other artist's have used other vicious (thick) mediums that have been used to show food Art.

In component 2 you are required to work in work in a wide range of 2-D mediums, oil-pastels, paint, mono-printing, photography and lino print-making.

You will need to show **knowledge and understanding** of how meanings, ideas and intentions can be communicated using a wide range of practical and technical processes.

Process, Techniques and Materials

- Drawing in the style of Pop Artists
- Mono-printing
- Risk Assessment Sheet
- Outline of Intentions
- Development of Ideas
- Final piece(s)
- Meeting Clients Expectations



consumption

commercial

Year 10 Business
1.1 Being an Entrepreneur

What do I need to know?

1. What is an entrepreneur?
2. What motivates an entrepreneur?
3. What skills and characteristics are important for an entrepreneur to have?
4. How can these skills and characteristics be applied to the business world?

Skills and Characteristics	Application to the Business World
Confident	Believing ideas will become successful
Motivated	Wanting the business to do well
Determined	Not allowing difficulties to affect the business
Results-focused	Taking action with the end result in mind
Initiative	Taking action without being told
Decision-making	Make decisions quickly and under pressure
Analytical ability	Using logical reasoning
Communication	Able to communicate with a variety of stakeholders

Financial Motivator	Personal Motivator	Social Motivator
An entrepreneur who is motivated to do well by the money they can earn. *e.g. Jahmilla is motivated to work hard so that she can earn £100,000 to buy a private jet.*	An entrepreneur who is motivated through personal reasons of their own. *e.g. Anson is motivated to work hard at his new business idea so he can finally take his mum on holiday to Thailand.*	An entrepreneur who is motivated by helping other people. *e.g. Emre is motivated to work hard at his entrepreneurial idea because he wants to help others.*

Key Words	
1) Entrepreneur	Someone who is willing to put their career and financial security at risk to pursue a business idea.
2) Motivation	The reason or driving force behind an individual's behaviour or actions e.g. Miss Paras gets up at 4:00 am every morning to go to the gym because she is motivated to lose weight for her holiday to Jamaica.
3) Skills	The ability to do something well e.g. time-management
4) Characteristics	A quality that someone may have e.g. honesty

Year 10 Business: 1.2 Business Aims and Objectives - Financial

What do I need to know?
1. What are aims? 2. What are objectives? 3. What financial aims and objectives might a business have? 4. What is the difference between break even and profitability? 5. What is the difference between revenue and profit maximisation?

Aims	Objectives
Aims are the bigger goals that the business wants to achieve *Eg. Increase revenue*	Objectives are the smaller steps required to meet the aim *Eg. promote the product using social media to create more awareness*

Breakeven	Profitability
This is where the business' total revenue is equal to its total costs **TR = TC** Formula: $\frac{\text{Fixed costs}}{\text{Selling price – variable costs}}$	Profit is the owners reward for investing in the business **Profit or loss = Sales revenue – Total costs**
Increasing Revenue	**Profit Maximisation**
Over time a business needs to increase the money they are making from sales (sales revenue). To do this they could: • Increase prices • Up-sell their products • Cross sell • Offer bundle deals • Increase marketing/advertising	A business will try to ensure they make the most possible profit from each product/service they sell

Year 10 Business: 1.2 Business Aims and Objectives - Financial

What do I need to know?
1. What is customer satisfaction? 2. What is business expansion? 3. What are the different ways business can expand? 4. What is employee engagement and satisfaction? 5. What is diversification in business? 6. How can a business diversify? 7. What is corporate social responsibility?

Non-financial aims/objectives	Application to the Business World
Customer satisfaction	Making customers happy so they are more likely to return and be loyal to the business
Expansion	Purchasing new premises or employing new staff
Employee engagement/ satisfaction	Happy employees provide excellent customer service and work harder. Often satisfied employees stay in the business longer
Diversification	Expanding the range of products sold within the market
Ethical/corporate responsibility	Consider social and environmental factors when completing their business operations

Market segmentation / Diversification:
Reasons why businesses need to segment their market: • Benefits they require • Amount of money they are able/willing to pay • Quantity of goods they require • Quality of goods they require • Time and location at which they wish to purchase the goods

CSR = Corporate social responsibility

Stakeholder	Ethical / corporate responsibility
Investors/ shareholders	To provide a good return for the money they have invested in the business
Employees/ manager	Paid a fair wage and have safe working conditions
Customers	Good quality products at a fair price
Suppliers	To purchase goods on a regular basis and pay all invoices on time
Environmental groups	Have environmentally friendly operations

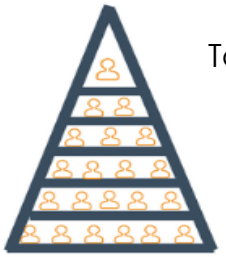
Year 10 Business: 1.3 — Legal Structures

What do I need to know?
1. What is a sole trader?
2. What is a partnership?
3. What is a PLC and LTD?
4. What is a franchise?
5. What is a co-operative?
6. What are the features of a flat organisational structure?
7. What are the features of a tall organisational structure?
8. Why a business might restructure?

Public sector	Private sector
Businesses that are owned by the government – there are very few remaining E.g. Royal mail	Businesses that are owned by private individuals E.g. Sole traders, partnerships, PLCs, LTDs

Key Words	
1) Hierarchy	Refers to the number of layers of authority within the organisation
2) Chain of command	The line of communication and authority within a business
3) Span of control	The number of people for which an individual or organisation is responsible
3) Delayering	When businesses remove layers of authority to allow faster and more effective communication
4) Redundancy	When the business reduces the number of workers as there is no longer any work for certain employees

Organisational structure	Definition and examples
Sole trader	A business owned and controlled by one person E.g. plumber or electrician
Partnership	A business owned and controlled by 2-20 individuals E.g. solicitor or estate agents
Public limited company	A business owned by shareholders that can be anyone E.g. Marks and Spencer
Private limited company	A business owned by shareholders who are friends and family of the entrepreneur E.g. JCB ltd
Franchise	The franchisor grants a licence to another business so they can sell its brand or business idea E.g. McDonalds
Co-operative	A business owned by their staff, who are members of the firm Eg. Co-operative Press



Tall organisation Vs Flat organisation

Year 10 Business: 1.4 Stakeholder engagement

What do I need to know?
1. What is an internal stakeholder? 2. What is an external stakeholder? 3. What are the interests of each stakeholder?

Internal stakeholder	External stakeholder?
These are stakeholders within an organisation • Owners • Managers • Employees • Workers	These are stakeholders outside of an organisation • Customers • Suppliers • Shareholders • Local community • Government • Financial providers

Businesses that engage with their stakeholders are likely to:
- Have increased staff motivation and retention
- A good reputation
- New ideas
- Increased share price

Stakeholder	Engagement
Owners	Interested in how the business is doing e.g. profit and loss each year.
Shareholders	Interested in if the business is likely to continue in the future. They want to know that their share investment is safe and how much dividends they will earn.
Management	Managers require up-to-date information so they can plan for the long term future of the business.
Government	Checks compliance with legislation eg. health and safety and finance records
Employees / workers	Need to be assured of their job security. They are interested in the working conditions of the business and being paid on time.
Customers	Need to be certain the business will sell them a high quality product that gives 'value for money'
Suppliers	Need to ensure the business will pay on time and assured that the business will purchase from them in the future.
Local community	Mostly provide the employees for the organisation. Also concerned about pollution and noise.

Year 10 BTEC Performing Arts
Musical Theatre

Singing Skills

- Tuning, rhythm and timing
- Following an accompaniment
- Communicating the meaning of a song
- Learning songs (music and lyrics)
- Projection and placing of the voice
- Interpreting lyrics
- Phrasing
- Musicality
- Characterisation
- Expression

Dance Skills

- Posture and Alignment
- Coordination and Balance
- Spatial Awareness
- Rhythm and Timing
- Learning Choreography
- Projection
- Phrasing
- Musicality
- Characterisation

Acting Skills

- Movement Skills – use of movement, gesture and facial expression to communicate meaning
- Vocal Skills – clarity of delivery, communicating meaning through words
- Learning Lines
- Developing a Character
- Exploring relationships with other characters.

Scan the QR codes below

Revolting Children Performance

Defying Gravity Performance

Subject: English

Year: 10 & 11

Macbeth

Main Characters

Macbeth	Begins the play as the Thane of Glamis, a warrior loyal to King Duncan.	*aspirant rapacious obdurate jaded nihilistic callous merciless ambitious remorseless*
Lady Macbeth	At first, cajoles and manipulates Macbeth into taking power; later, loses control.	*manipulative Machiavellian nonchalant coercive aberrant self-reproachful pitiless*
Banquo	Macbeth's close friend who also receives prophecies—but does not act upon them.	*loyal virtuous ethical principled honourable incorruptible high-minded*
Duncan	The true King of Scotland, who puts his trust in the wrong men.	*trusting unsuspecting unguarded credulous respected sanctified venerated reverenced*
Malcolm	Duncan's son and true heir to the throne. Goes to England to raise an army.	*dignified intelligent resourceful capable inventive*
Macduff	A loyal warrior of King Duncan's and the Thane of Fife. Suspicious of Macbeth.	*vengeful remorseful Macbeth's nemesis consumed guilt-ridden implacable compelled*
Witches	Three women who seem to have supernatural knowledge and influence.	*prophetic cryptic enigmatic ambiguous double-dealing duplicitous disingenuous*

Some Themes

violence	The play begins and ends with violence. Macbeth and Banquo are praised for their violence by Duncan. Manhood and political power seem to be expressed by violence.
ambition	Political ambition is what seems to drive both Macbeth and Lady Macbeth. Ambition seems to be Macbeth's tragic flaw (*hamartia*).
evil	Macbeth clearly commits evil. Lady Macbeth is destroyed by her sense of her own evil. The witches seem to represent a form of evil.
regret	Macbeth, at the start, sees the murder of Duncan as regrettable. Lady Macbeth seems less concerned at the start, but becomes an isolated, remorseful character. Macbeth world views seems empty and nihilistic by the end of the play.
the supernatural	The witches: do they make Macbeth commit evil or just prompt something inside him? Do they need to be "magical" for the play to take place? Are the dagger and the ghost supernatural or psychological in origin?
appearance and reality	King Duncan admits that he was taken in by the former Thane of Cawdor. Lady Macbeth uses her skills of deception to murder the king. Macbeth comes to doubt the witches.
the unnatural	Lady Macbeth is unnatural in her discussion of herself. Macbeth's usurpation of the proper king is unnatural. Unnatural events occur surrounding the murder.
gender	Lady Macbeth seems to dislike her femininity. She also accuses Macbeth of lacking manly bravery. The play seems to equate masculinity with violent action.

Plot

Act 1	The play opens with three witches who set the scene and atmosphere for the play. Macbeth and Banquo have just helped win a battle for King Duncan. Returning from the battle, they meet the witches — who provide prophecies for both Banquo and Macbeth. King Duncan is so grateful for Macbeth he decides to stay at their castle when Macbeth returns. Macbeth writes a letter to his wife about the prophecies and being King. Lady Macbeth creates a plan to murder the King so they will become King and Queen. Macbeth does not want to kill Duncan to begin with, but lady Macbeth cleverly manipulates him into doing so.
Act 2	Macbeth is unsure about murdering Duncan — even seeing a ghostly bloody dagger — but finally he goes through with the plan. He is deeply disturbed by his actions, so Lady Macbeth finishes the plan by wiping blood on the guards. Macduff arrives in the morning and finds the slaughtered king; Macbeth kills the guards, helping make them seem guilty. Malcolm and Donalbain, the kings' sons, flee Scotland in order to stay alive.
Act 3	After Duncan's death, Banquo begins to think that Macbeth was the true murderer. In order to keep this a secret, Macbeth pays murderers to kill Banquo and his son, Fleance — but Fleance escapes. Macbeth holds a banquet for all the other lords at his castle. At this banquet, Macbeth sees the ghost of Banquo. Macbeth begins to rant and rave, making the guest uneasy. Macbeth notices that Macduff did not attend their feast. He decides to visits the witches again.
Act 4	Macbeth becomes obsessed with power and begins to ask the witches for more prophecies. The witches tell Macbeth that he should be fearful of Macduff, that he cannot be killed by man, and that he should only fear when the Dunsinane wood begin to move. Macbeth sends murderers to kill Macduff's family. In England, Macduff joins Malcolm to defeat Macbeth. Macduff learns of his family's murder and vows revenge upon Macbeth.
Act 5	Lady Macbeth has become insane over her involvement in the murders. Outside Macbeth's castle, an army gathers to attack. Macbeth is not overly worried as he believes the prophesy that no man can kill him, will protect him. Lady Macbeth kills herself. The battle begins—and Macbeth sees the wood advance towards the castle. Macduff confronts Macbeth and learns that Macduff was ripped from his mother's side and not naturally born. Macduff then kills Macbeth in a final battle where he beheads him. Malcolm now becomes the rightful king of Scotland.

Some Context

- first performed 1606; Jacobean period
- belief in the Great Chain of Being and the Divine Right of Kings and...
- the threat of chaos if these are ignored
- religion and the fear of divine punishment
- belief in witchcraft and King James I's *Demonologie*
- the Gunpowder Plot of 1605 and the fear of regicide and political turmoil

Some Tragic Theory

- **hamartia:** error of judgement, tragic flaw
- **hubris:** excessive pride or self-confidence
- **anagnorisis:** moment of realisation of wrong-doing
- **catharsis:** purging of emotions of the audience
- **tragic hero:** the main protagonist in the tragic action (not necessarily "heroic" in usual terms)
- **fate:** a cause of downfall which is outside of the control of the tragic hero
- **pathos:** feelings of pity and sympathy
- **peripeteia:** the reversal of fortune experienced by the tragic hero
- **megalopsychia:** the greatness of soul of the tragic hero, the qualities which could have made him great and honourable

Some Useful Terms

- **soliloquy:** character speaks their own, usually exploring deepest thoughts
- **aside:** character says something on stage which others cannot hear
- **dramatic irony:** when the audience understands more than characters on stage
- **foreshadowing:** when a text hints forward to later events/ideas

Module 1- Islam Beliefs

The importance of belief in life after death

Belief in life after is one of the six articles of faith for Sunni Muslims and one of the five roots of 'Usul ad-Din in Shi'a Islam. It is an important belief because it encourages human responsibility and accountability; the idea that people must be responsible for their own actions, as God will hold them accountable.

Belief in life after death urges people to avoid sin and do the right thing. It also satisfies a deep human need for justice. Sometimes it seems that some people get away with almost anything in life; the belief in God's judgement means that one day they will be held accountable and punished for their wrongdoing. For those good people who have suffered in life, there is something better to look forward to in paradise.

How does believing in the Tawhid affect the way a Muslim lives their life?

"Say, He is God the One, God the eternal. He begot no one nor was He begotten. No one is comparable to Him" (Qur'an 112:1-4)

A Muslims duty is to declare faith in one God. It is not enough to just believe in one God: they must show that belief in the way they live their lives. This means that only God should be worshipped. Muslims must never make anything in their lives more important than God, including their family, money or jobs.

Give three differences between Sunni and Shia

The 6 articles of faith for Sunni Islam

1. **Tawhid**- There is only one God.

2. **Angels**- communicate the message of God to humans

3. **Authority of holy books**- is the most important writing and highest authority in Islam

4. **The Prophets of God**- Muhammad whose name means 'highly praised', is the most important prophet of God

5. **The Day of Judgement**- is when all humanity will be judged by God and sent to paradise or hell

6. **The supremacy of God's will**- means that God already knows but also makes things happen in the world and human lives.

The five roots of 'Usul ad-Din in Shia Islam

Usul ad-Din means the principles or roots of religion. The roots of a tree keep it alive and firmly attached to the source of life. For Shi'a Muslims, these five principles keep them firmly rooted in God.

1. Tawhid- means God is one; God is not made up of different person.

2. Prophethood- accepting Muhammad as

Predestination

"Only what God has decreed will happen to us. He is our Master: let the believers put their trust in God".

This quote means that, **God determines everything in life including our actions.** Sunni Muslims believe in the supremacy of God's will. This shows **God's omniscience and there is less human freedom.**

Shi'a Muslims do believe that God knows everything that is going to happen, that does not mean he decides what is going to happen. **Humans were given freewill** so they **make their own choices in life.**

Akhirah (Life after death)?

When a Muslim dies, they will enter a state of waiting called Barzakh which means 'a barrier' no one will cross the barrier to amend things they have done wrong or warn the living. They are waiting until the day of Judgement.

Muslims believe that as they lie in the grave, God sends two angels to question them about their faith. If people answer correctly, they will see the rewards to come, but if they deny God, they will see punishments they will have to endure.

Some believe the punishments start right away. Others think that people sleep in their graves until the end of the world when the day of judgement comes.

The Day of Judgement and resurrection

Muslims believe that a day will come when God's purpose for the universe has been fulfilled. A trumpet will be blown by Israfil to confirm the world is going to be destroyed. The present will be transformed in a new world (Akhirah). Everyone who has ever lived will be rasied from the dead (resurrected) and judged by God.

Subject GCSE Religious Studies — Year 10 Islam - Beliefs

is not enough to just believe in one God: they must show that belief in the way they live their lives. This means that only God should be worshipped. Muslims must never make anything in their lives more important than God, including their family, money or jobs.

Give three differences between Sunni and Shia Muslims?

Sunni

- Pray 5x a day
- Elected Abu Bakr to be their leader
- Teachings from the Hadith equality important

Shia

- Pray 3x a day
- Believed Muhammad' cousin Ali was their leader
- Shahadah is slightly changed- ***There is no God but Allah; Muhammad is the Messenger of Allah; Ali is the Friend of Allah***

"Misfortunes can only happen with God's permission" (Qur'an 64:11)

This quote means Muslims that to believe in the supremacy of God's will means that Muslims must try and accept that even bad things happen in life are 'meant to be'. God is in charge and he allows bad things to happen. This develops your faith in God.

Angels

Facts about Jibril and Mik'ail

Jibril was a trusted messenger of God. Revealed the Qur'an to Muhammad from God	Mika'il is the angel of mercy. He asks Allah to forgive people's sins.
He told Maryam (mary) she was pregnant with Isa (Jesus)	God assigned Mika'il to reward righteous people for the good they do during their lives.
Jibril first appeared to Muhammad when the prophet was a child.	Mika'il has the responsibility for sending rain and thunder and lightning to earth.

Muslims, these five principles keep them firmly rooted in God.

1. **Tawhid**- means God is one; God is not made up of different person.

2. **Prophethood**- accepting Muhammad as the last prophet

3. **The Justice of God**- God is just and wise, and hold humans accountable for their actions

4. **The Imamate**- means accepting that the 12 imams are the leaders of Islam and guard the truth of the religion without error.

5. **Resurrection**- Shi'a Muslims believe that after death they will be resurrected to be judged by God.

What are the seven names of God to describe God's nature?

1. **Immanent**- God is present and involved in the world.
2. **Transcendent**- God is above everything and outside space and time.
3. **Omnipotent**- God is all-powerful; he created the universe so he is in control.
4. **Benevolent**- God is all loving
5. **Merciful**- God is compassionate, show forgiveness to humans.
6. **Fairness**- God treats people fairly and impartially without favour or discrimination
7. **Justice (Adalat in Shi'a Islam)**- God is just and fair and judges humans rewarding the good and punishing the bad.

Role of Angels

1. Angels bring the direct word of God to prophets or messengers of God. They are pure and sinless.
2. Angels are in the lives of human beings from conception until death.
3. Angels have no freewill, so they cannot displease God
4. Angels have the power from God to appear as human form to give the messages.

The Day of Judgement and resurrection

Muslims believe that a day will come when God's purpose for the universe has been fulfilled. A trumpet will be blown by Israfil to confirm the world is going to be destroyed. The present will be transformed in a new world (Akhirah). Everyone who has ever lived will be raised from the dead (resurrected) and judged by God.

People will be given new bodies and the book of their life (deeds) will be handed to them to read out. If the book of deeds is given in their **right hand they will go to heaven;** if they receive it in their **left hand they will go to hell.**

Heaven (Al-Jannah)- garden of happiness
Hell (Al-Jahanam) – place of fire and torment

Risalah (Prophethood)

Who are the important prophets?

Adam, Ibrahim (Abraham), Musa (Moses), Isa (Jesus).

The last prophet- Muhammad

"Muhammad is not the father of anyone of you men; he is God's messenger and the seal of the prophets; God knows everything" (Qur'an 33:40)

This shows the God is the ultimate being and only he should be worshiped. Muhammed is there to be followed as he was the final prophet of Islam and the Quran was revealed to him.

Muhammad began preaching the words of the Qur'an

The holy books in Islam

Muslims believe there are other holy books that have been revealed by God. These books include the **Torah (revealed to Moses), Psalms (revealed to David) and the Gospel (revealed to Jesus).**

Some Muslims think that these books have been lost. Others believe they can be found in the Christian Bible (although the original text has been corrupted or distorted, so does not have the same authority as the Qur'an)

Who revealed the Qur'an to Muhammad?

Angel Jibril

How many Surahs (chapters) does the Qur'an contain?

114 surahs

Why are the Hafiz important in sharing the words of Allah?

They have chosen to learn the Qu'ran word for word so the interpretation is not lost.

Subject: GCSE Food Tech

Year 10

In this project you will cover:

The hospitality environment
How hospitality and catering provisions operate
Health and safety practise and legislation
Food causing ill health
Role of the EHO
Nutrients – function and sources and specific needs of group of people
Impact of cooking method on nutritional value
Practical activities – making food dishes
Food presentation techniques

Key Vocabulary

Equipment	Food Safety
Knife	Use by date
Table spoon	Best before date
Butter Knife	Frozen Food
Measuring Jug	Chilled Food
Chopping Board	High risk foods
Saucepan	Low risk foods
Mixing Bowl	Salmonella
Wooden Spoon	E Coli
Frying pan/Wok	Vitamins & Minerals
Food Mixer	Carbohydrates
Baking tray	Gluten in
Rolling Pin	Gluten

Weighing and measuring are skills needed by food scientist and chefs and are practised during the mise en place stage of cooking. This is facilitated by teacher demonstrations and students following recipes. The investigative work done on the impact of cooking methods on nutritional value also links to the job role of a food scientists.

By studying about nutrients and healthy eating using the Eat well guide as a framework, students are to the role of a dietitian and a nutritionists. These lessons will be delivered through home learning, group work activities, power points presentations and a visiting speaker.

Researching where our food comes from give students the opportunity to hone the skills of a food writer, culinary librarian and food journalist. This piece of work will be done through classwork (market place activity and home learning.

Food presentation skills are encouraged by adding a finishing technique to dishes made. This is within the remit of a food stylist, food photographer, food artist as well as a molecular gastronomist.

Students practise being a health and safety officer when conducting risk assessment of the food room before their practical tasks. Through role play, students will study the role of an Environmental Health Officer. Linked to these two careers, is the unit of work on health and safety and bacteria and food poisoning .

Conducting sensory analysis gives students insights into the job of a food taster and a quality assurer. This activity is conducted after practical activities in class as well as at home.

Careers in the hospitality industry include managers, administrators, front house staff as well as back house staff. These careers are studied at KS4 through power point presentations, trips, role plays, independent work and home learning activities.

Key Skills & Knowledge

By the end of the project you should have gained the skills and knowledge to be able to do the following:

The hospitality environment
How hospitality and catering provisions operate

Health and safety practise and legislation
Food causing ill health
Role of the EHO

Nutrients – function and sources and specific needs of group of people

Impact of cooking method on nutritional value

Practical activities – making food dishes

Food presentation techniques

Social Problems					
1	**les SDF**	homeless people	18	**dégoûtant**	disgusting
2	**le tabagisme**	smoking	19	**l'entraînement [m]**	training
3	**le cancer**	Cancer	20	**la musculation**	weight training
4	**le cancer des poumons**	lung cancer	21	**quotidien(ne)**	daily
5	**la crise cardiaque**	heart attack	22	**s'entraîner**	to train
6	**le sida**	AIDS	23	**l'anorexie**	anorexia
7	**la douleur**	pain	24	**tenter**	to attempt
8	**déprimé**	depressed	25	**il s'agit de**	it's a question of
9	**manifester (contre)**	to protest (against)	26	**valoir mieux**	to be better/preferable
10	**le racism**	racism	27	**surveiller**	to watch
11	**le droit**	right	28	**le conseil**	advice
12	**la loi**	law	29	**l'enquête [f]**	enquiry
13	**la grève**	protest/strike	30	**la dette**	debt
14	**la pancarte**	placard	31	**mener**	to lead
15	**les gilets jaunes**	yellow vests	32	**cacher**	to hide
16	**l'injustice**	injustice	33	**la voix**	voice
17	**l'inégalité**	inequality	34	**coupable**	guilty

Subject French

Social Problems					
35	**l'alcool [m]**	alcohol	52	**l'obésité [f]**	obesity
36	**la drogue**	drug	53	**les matières grasses [f]**	fats
37	**se droguer**	to take drugs	54	**le chocolat**	chocolate
38	**vomir**	to be sick	55	**le bonbon**	sweet
39	**le tabac**	tobacco	56	**gras**	fatty
40	**l'odeur [f]**	smell	57	**sucré**	sugary
41	**l'habitude [f]**	habit	58	**éviter**	to avoid
42	**(s')arrêter**	to stop	59	**malade**	ill ; sick
43	**fumer**	to smoke	60	**la maladie**	illness
44	**tuer**	to kill	61	**le médecin**	doctor
45	**l'alimentation [f]**	food	62	**le médicament**	medicine
46	**le repas**	meal	63	**aller mieux**	to be better
47	**le petit déjeuner**	breakfast	64	**combattre**	to combat
48	**le déjeuner**	lunch	65	**garder**	to look after
49	**le dîner**	evening meal	66	**la forme**	fitness
50	**équilibré**	balanced	67	**la santé**	health
51	**faire un régime**	to be on a diet	68	**(se) sentir**	to feel

Urbanisation is….. More specifically….. By 2050…..	The increase in people living in towns and cities In 1950 33% of the world's population lived in urban areas, whereas in 2015 55% of the world's population lived in urban areas. It is predicted 70% will be living in urban areas.
Urban growth	The increase in land covered by cities
Urban growth is caused by…..	Natural increase and rural to urban migration.
Urbanisation results in the creation of….	Megacities
A megacity is…	An urban area with over 10 million people living in it. For example Mumbai, Tokyo and Mexico City.
Natural increase is…..	If a country has a higher birth rate than death rate, the population will naturally increase. This type of population is often found in stages 2 and 3 of the DTM where there is a high number of young adults (18-35 years) who are having lots of children and few older people who are dying due to improved healthcare. Therefore urban growth is common in NEEs.
Rural to urban migration is…	The movement of people from the countryside to cities. It is caused by push factors (pushing people out of rural areas) and pull factors (pulling people to cities).
Push factors are….	Factors that push people out of an area. Negative factors that make people want to leave an area.
Pull factors are….	Factors that pull people out of an area. Negative factors that make people want to leave an area.
Rural to urban migration push factors make people want to leave rural areas. Examples include…..	• Farming is hard and poorly paid • Increased use of machinery in farming = less people needed to word = unemployment • Dry land in rural areas caused by desertification = land cannot be farmed • Fewer doctors, hospitals, schools and transportation routes
Rural to urban migration pull factors make people want to move to urban areas. Examples include…..	• More highly skilled, better paid jobs • Range of entertainment opportunities • More and better doctors and hospitals • More schools and better education • Better transportation routes/public transport

Three are currently 34 megacities in the world.

Most megacities are located… More specifically……	In LICs and NEEs 65% of all megacities are located in LICs and NEEs.
Urban growth is happening more in LICs/NEEs due to…. More specifically…..	Industrialisation As a country develops their economy changes from agriculture (primary) to manufacturing (secondary) and services (tertiary). This occurs during the industrial revolution. Most of the secondary and tertiary jobs are in towns and cities. When this occurs, lots of people move from rural to urban areas = rapid urbanisation. • The UK and other HICs had their industrial revolution in the 18th & 19th centuries. • LICs and NEEs are going through their industrial revolution now. For example China's industrial revolution started in 1980. As a result more people in LICs and NEEs are currently moving to urban areas.
Urban growth is happening more in LICs/NEEs due to…. More specifically…..	Natural increase LICs and NEEs are in stages 2 and 3 of the demographic transition model. In these stages there is a high birth rate and lower death rate = more people are born than are dye = the population naturally increases. In HICs there is a low death rate and even lower birth rate = the population is declining.
Urban growth is happening more slowly in HICS due to… More specifically……	Counter-urbanisation. In HICS, people are deciding to leave cities and live in the surrounding countryside to get a better quality of life (less pollution, quieter, more space). They can commute to work due to improved transportation.
Case study of an urban area in an LIC or NEE:	Rio de Janeiro
Case study of an urban area in the UK	London

EXAMPLE OF AN URBAN AREA IN AN LIC OR NEE: RIO DE JANEIRO is located in Guanabara Bay, on the south-east coast of Brazil. It lies next to the Atlantic Ocean. It is the cultural capital of Brazil and 2nd largest city, with a population of 12.5 million.

Rio is important at *a range of levels:*

- *At the **REGIONAL*** level it provides schools, hospitals, universities, employment, leisure and recreation. It is important due to its art and culture scene. It also is an important transport hub with airports and docks.
- At the **NATIONAL** (country) level it is home to many of Brazil's largest company headquarters, including mining, oil and telecommunications. Rio is a major centre specialising in clothing, processed food, chemicals and pharmaceuticals.
- At the INTERNATIONAL level, it hosts international events such as the 2014 World Cup and 2016 Olympics, as well as many of its companies trading internationally.

These factors have attracted a multicultural population, with people from all over the world moving to Rio to live: *South Korea, China, UK, USA, Portugal, Argentina and Bolivia.*

Urban growth in Rio de Janeiro has created many social and economic opportunities:

Opportunity	Evidence in Rio
JOBS	• Rio provides >6% of all jobs in Brazil. • Rio is home to many manufacturing industries, (pharmaceuticals, clothing, furniture and processed foods) and service industries (banking, insurance). • As Rio grows there are many jobs in construction
BUSINESS OPPORTUNITIES	• The growth of urban industrial areas can increase economic development. It will attract businesses to the area. • Rio produces 5% of Brazil's GDP.
EDUCATION	• Rio provide grants to poor families to encourage children to attend school. • Rio have many volunteers who help in schools. • There are adult classes to help adults gain skills = better jobs
SERVICES	• Rio has a new nuclear generator and hydro-electric power station = more energy produced. • 60km of new electricity lines = better access to energy • By 2014, 95% of Rio had access to a mains water supply. This was due to 7 new water treatment plants and 300km of new water pipes being laid. • 12 new sewage works have been built and 5km of sewage pipes installed in badly polluted areas.
HEALTHCARE	• Some areas in Brazil (Barra de Tijuna) have a life expectancy of 80 years old. Brazil (as a country) has an average life expectancy of 63 years. • Medical staff go into favelas and offer emergency medication to people's homes.
ENTERTAINMENT	• One of the world's top tourist destinations - The Statue of Christ the Redeemer, stunning natural surroundings and entertainment.
TRANSPORT	• It has two major airports and five shipping ports • Public transport, toll roads and one way systems to control traffic

Urban growth in Rio has also created many social, economic & environmental challenges

Challenge	Evidence in Rio
Lack of healthcare	In 2013 only 55% of the city had a local family health clinic.
Lack of education	Only 50% of children continue education past 14 years old. Lack of schools, teachers and funding.
Lack of water supply	37% of water is lost due to leaky pipes and illegal access = people do not have access.
Lack of energy	Due to rapid population growth and illegal tapping onto electricity lines there are frequent blackouts.
Unemployment	Many people are unemployed in Rio,
Air pollution Solution:	Cars & growth of factories = 5000 deaths per year. Very little flat land in Rio means all roads are concentrated in small areas of flat land = congestion. In the past 10 years the number of cars has increased by 40%. Expanding metro (public transport) and creating toll roads that you pay to use = less cars on roads.
Water pollution Solution:	200 tonnes of raw sewage & 50 tonnes of industrial waste pour into Guanabara Bay each day. Also oil from oil spills (e.g. Petrobas oil refinery) and fuel from ships goes into the water. 12 new sewage works and 5km of sewage pipes installed and ships are fined for discharging fuel in bay.
Waste pollution Solution:	A lack of waste disposal = rubbish on streets. New biogas power plant makes energy from rubbish. It consumes 30 tonnes of rubbish each day.
Creation of squatter settlements (favelas)	These are illegal settlements on the outskirts of cities. Characteristics: • Poorly built homes using basic materials • Houses built on steep slopes = landslides (e.g. 2010: 224 killed and 13,000 lost their homes) • 30% no electricity, 50% no sewage system and 12% no running water. • 20% are unemployed. Those who are, are often employed in informal sector (e.g. street vendor), which are poorly paid (<£60/month), no contract, no taxes paid. • Drug gangs are common & police is rare (murder rate is 20 per 1000people) • High population densities (37,000 per km²) + a lack of waste disposal = spread of diseases. This is made worse by a lack of healthcare. As a result there are high death rates and a very high infant mortality rate of 50 per 1000 people.

URBAN PLANNING: improving quality of life in favelas. The Favela Bairro Project is an example of an URBAN PLANNING scheme that improves the quality of life for the urban poor. It works on developing Complexo do Alemão, a favela in northern Rio de Janeiro.

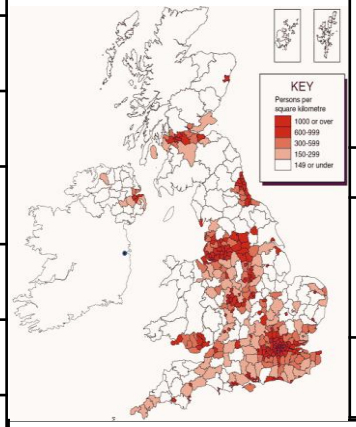
- Roads have been improved and paved
- Improved access to water pipes and sanitation
- Hillsides strengthened to prevent landslides
- New healthcare, leisure and education facilities
- New cable car was built, connecting the favela to Bonsucesso Station, where trains go to city centre, however it closed in 2016 due to a lack of government funding.
- 100% mortgages provided for locals to buy homes
- A Pacifying Police Unit (UPP) was set up = less crime

Successful because: access/mobility is better = access to jobs in city centre, improved healthcare, education, access to services, 100% mortgages = more people can buy homes, less crime, fewer landslides.

Unsuccessful because: new infrastructure not maintained and residents did not have skills to fix it, area improved = increase in demand to live there = increase in rent = poorest had to move, budget of US$1 billion could not help all favelas.

Population Distribution	The way something is spread out over an area.
Industrialisation	Growth of secondary manufacturing
De-industrialisation	Decline of secondary manufacturing
Post industrial economy	Economy is mainly tertiary and quaternary industries
Brownfield site	Land that has previously been built on
Greenfield site	Land that has never previously been built on
International Migration	The movement of people across countries.
Urban Growth	The increase in land covered by urban areas.
Urban Sprawl	Unplanned growth of urban areas into the surrounding rural area
Urban Greening	Increasing the amount of green space in a city.
Social Inequalities	Some areas have more opportunities than others.
Rural-urban Fringe	The area on the edge of a city, where it meets the countryside.
Green Belt	Protected land at the rural-urban fringe where building is restricted.
Dereliction	Areas that are abandoned and become run down
Urban Regeneration	The reversal of urban decline through redevelopment, aiming to improve the local economy
Social Deprivation	When a person or area is deprived of services and amenities.

Choropleth map showing the UK's population distribution:



There is a dense population…. **There is a sparse population……** **This is because….**	In the south east. More specifically 32% live in the south east. In the north of England, Scotland and Wales. It is warmer, *less rainfall, flatter land in the SE. In central Scotland and Wales its is colder, more rainfall and mountainous.*
How many people live in urban areas?	82%
People live in urban areas because of job opportunities. More specifically…… **This is because…..**	Most secondary, tertiary and quaternary jobs are located in urban areas. ➢ Industrialisation in 18th and 19th centuries = factories opened in urban areas = urbanisation. ➢ 1950s: de-industrialisation = growth of tertiary and quaternary jobs which are located in urban areas.
People live in urban areas due to social opportunities. More specifically……	➢ More entertainment options (restaurants, theatre, cinemas, shopping), better healthcare, education, housing…etc.

CASE STUDY OF AN URBAN AREA IN THE UK: LONDON

Population in 2015 **Predicted population in 2030**	*8.6 million* 10 million
Demographic of population	Young people in their 20s & 30s. Many immigrants travel to London to work and live creating a multicultural population.
Positive impacts of immigration	*Culture (food (Brixton village), music (BBC Asian radio), festivals (Brixton Splash, Notting Hill carnival), religious sites, large workforce*
Negative impacts of immigration	*Language barrier, segregation of groups of people (e.g. Brixton = Caribbean, Elephant & Castle = Latino), lack of housing, schools, healthcare and services.*

EXAMPLE OF URBAN REGENERATION: LOWER LEA VALLEY – OLYMPIC PARK

Location	*East London, along the River Lea (a tributary of the River Thames*
Why did the area go into decline?	It grew as an industrial area in the 18th and 19th century. The closing of the ports, increase in manufacturing abroad and growth of tertiary and quaternary industries = many factories closed and people moved away. The area became rundown, abandoned and derelict.
What happened in 2007	In 2007 London won the bid for the 2012 Olympics and choose the Lower Lea Valley as the site for the Olympic Park. Therefore the area became an example of an urban regeneration project.
BENEFITS OF THE DEVELOPMENT ➢ Social ➢ Economic ➢ Environmental:	• New homes (2800 new homes with 8000 more planned by 2030 in East Village) • A new school in the East Village for 1800 students • New shopping centre (Westfield Stratford) and new sport venues (velopark (cycling), aquatics centre (swimming), Olympic stadium. • New transport links • New businesses and jobs: East Village (35 businesses - shops, cafes, bars, gym), Here East (creative and media businesses with 5000 jobs), International Quarter (offices employing 25,000 people) and Westfield (10,000 jobs) • New parks: Queen Elizabeth Park (>100 hectares of open space) and 10 hectares of parks and open space in the East Village.
NEGATIVES OF THE DEVELOPMENT	• It cost £9.3 billion. Could the money have been spent to help more people rather than make one area perfect for the Olympics? • People were relocated from their homes. • The area improved so much that it became too expensive for the existing residents to continue living there.

LONDON is located in the south-east of England. It was created during the Roman era due to the River Thames providing ports for trade. It grew during the industrial revolution (18th and 19th centuries) as factories opened up in the city = more people moved to London for jobs.

- **National importance:** *London is the UK's capital, the UK's largest city and the UK's wealthiest city. It is home to many jobs, tourism, world class universities (Kings College London, UCL, LSE), iconic buildings and architecture.*
- **International importance**: *it is one of the two most important financial centres in the world (with New York), many large international companies have their headquarters in London and tourism.*

URBAN GROWTH AND CHANGE IN LONDON HAS CREATED A NUMBER OF OPPORTUNITIES

SOCIAL OPPORTUNITIES

- Culture: museums (*The Natural History Museum, The National Gallery),* Buckingham Palace, Houses of Parliament
- Entertainment: theatres (*The National at South Bank, West End),* cinemas (*vue/odeon Leicester Square)*
- Music: 02 Arena, Hammersmith Apollo
- Sport: football (*Wembley)*, tennis (*Wimbledon)*, rugby (*Twickenham)*
- Restaurants: lots of cuisines.
- Festivals: Notting Hill Carnival, Brixton Splash
- Integrated transport system: different forms of public transport are linked to make it easier for people to get around London more quickly. (Waterloo station connects trains, tube, buses and cycle routes)

ECONOMIC OPPORTUNITIES

JOBS:

- in 2012, there were 5 million jobs in London.
- In 2010, London's share of the UK's GPD was £274 billion.
- Average wage: £34,473/year (£12,000 more than the UK average)
- Tertiary: *finance, real estate, law, accountancy, advertising, market research, management consultancy*. London is responsible for 46% of the UK's total GPD from the financial and insurance industries.
- Quaternary: Old street has been nicknamed *'Silicon Roundabout'*.

ENVIRONMENTAL OPPORTUNITIES

LONDON HAS AN INTEGRATED TRANSPORT SYSTEM. This makes it easier to use public transport = less cars = less pollution.

- London has created an integrated transport system that links difference forms of public transport = makes it easier to use (Waterloo station connects trains, tube, buses and cycle routes).
- Creation of the cycle superhighways – new cycle lanes (not on roads = safer)

URBAN GREENING: LONDON HAS INCREASED AND PRESERVED OPEN GREEN SPACES.

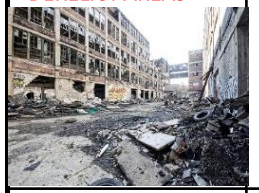
- 47% of London is green space.
- There are 700 roof gardens in London
- Central London parks: *Regents Park, Hyde Park, Green Park*
- Local parks*: Brockwell Park, Archbishops Park*

Benefits of green spaces: *trees produce oxygen, reduce the risk of flooding, provide habitats for wildlife and provide spaces for recreational use (healthy).*

Strategies to protect our green space: connecting green areas to make them more accessible, creating new green spaces (e.g. Garden Bridge)

URBAN GROWTH AND CHANGE IN LONDON HAS CREATED A NUMBER OF CHALLENGES

DERELICT AREAS



During the industrial revolution (industrialisation), many factories opened in urban areas = people moved to urban areas for new jobs = urban growth. However, in the 1950s de-industrialisation occurred because:

- The boats got too big for the docks. The boats were needed to bring primary goods to manufacture into secondary goods in factories (e.g. tabacco into cigarettes, cotton into clothes). As a result, docks closed down.
- Factories moved abroad due to cheap labour and less strict environmental laws.

As a result many factories closed down and people moved away from the area. As a result, many inner city areas, such as the London Docklands, became abandoned, run-down and deprived.

SOCIAL INEQUALITY

Some areas in London are more deprived than others. This is know as ***social inequality.*** It is due to a lack of investment from the government. It can have a number of knock on effects, affecting exam results, employment, income, health…etc.

Measure of deprivation	Kensington & Chelsea	Newham
Male life expectancy	83.7	75.7
Female life expectancy	87.8	79.8
Unemployment	3.9%	9.4%
Pupils achieving five + good GCSE grades	80%	62%
Households with joint income < £15,000	9%	26%
Households with joint income > £60,000	26%	7%

URBAN SPRAWL

Many people want to live in urban areas due to better jobs, higher incomes, more entertainment options, better education…etc. Unfortunately, there are not enough houses for the demand. London's population is growing by 100,000 people per year, however only 20,000 new homes are being built

There are two options of where to build new homes:

1. Building on **brownfield sites**: redeveloping derelict land in city centres.
   - *Reduces urban sprawl and habitat loss, more public transport = less cars = less pollution*
   - *More expensive*
2. Building on **greenfield sites**: building new homes on land that has never been built on before. Usually on the outskirts of urban areas (**rural-urban fringe**). This results in urban sprawl. Urban sprawl is the unplanned growth of urban areas into the surrounding rural areas.
   - *Cheaper, more space, cleaner air, larger houses*
   - *Green land and habitats are lost and more cars are used due to less public transport = pollution*

To protect greenfield sites on the edges of urban areas, London has created a **green belt**, on which there are very strict planning controls to prevent further urban sprawl.

POLLUTION

Air pollution

London suffers from significant air pollution. The main cause is cars and heating systems in homes. Long term exposure to air pollution causes 4000 premature deaths a year in London.

- *Solution: improvements to public transport (creation of cycle superhighway, integrated transport system, Boris bikes, oyster card.*

Waste pollution

¼ of London's waste goes to landfills = environmental problems (production of methane and water and ground pollution).

- *Solution: increase or recycling and using waste to produce energy (biogas)*

SUSTAINABLE URBAN PLANNING

Sustainable cities are cities that meet the needs of the people who live in them today, without meaning that future generations do not have their needs met. Basically it means behaving in a way that does not irreversibly damage the environment or use up resources faster than they can be replaced. There are many things that cities can do to be more sustainable.

Sustainable cities focus on:

1. Preventing the overuse of water
2. Preventing the overuse of electricity and generating energy from renewable energies.
3. Urban greening – creating and protecting green spaces within the city. Green spaces provide clean air, habitats and prevent flooding during intense rainfall. They also create a relaxing space for people and encourage exercise.

In 1970 Freiburg set itself the goal to become a sustainable city. It is located in south-west Germany.

	EXAMPLES IN FREIBURG	EXAMPLES IN LONDON
SUSTAINABLE WATER SUPPLY AND USE	**Collecting and recycling water:** • Water harvesting systems collect rainwater to reuse. • Water from the River Dreisam is used in Frieburg. **Prevent overuse of water:** • Dual flush toilets are used that use less water to flush. • Water meters remind residents how much water they are using = people use less water.	Many homes in London use: ➢ Water meters ➢ Dual flush systems ➢ Eco friendly appliances that use less water (e.g. washing machines, dishwashers)
SUSTAINABLE ENERGY SUPPLY AND USE	Freiburg plans to be 100% powered by renewable energy by 2050. This will require many residents to half their current use of energy. **Renewable energies** • It is one of the sunniest cities in Germany so solar power is used. There are approximately 400 solar panels installations in the city, including at the railway station and football stadium. These produce 10 million kilowatts of electricity per year. *Freiburg's solar valley employs 1000 people in solar technology, in the production of solar panels, developing solar technology, such as solar cooling technology.* • Other renewable energies that Freiburg uses include biomass and biogas. **Prevent overuse of energy**: • The government provide incentives to encourage people to become more energy efficient, by allowing homeowners to sell any excess energy to the national grid.	Many energy companies provide energy from only renewable sources (e.g. ecotricity). Many homes and businesses have solar panels on their roofs. Many homes use energy meters to monitor their energy use.
URBAN GREENING	• Afforestation – 75% of the deforested trees are re-grown every year. • River Dreisam provides natural habitats for animals and vegetation. • 44,000 trees have been planted in the city = 40% of the city is	47% of London is green space. There are 700 roof gardens in London Central London parks: *Regents Park,*

TRAFFIC MANAGEMENT STRATEGIES

Traffic congestion can lead to a number of problems: ***air pollution, health problems (e.g. asthma), accidents, increased journey times, noise and visual pollution, loss of habitats, cost of fuel…etc.***

Therefore traffic management strategies are used to **reduce the risk of traffic congestion.**

Cycle routes	Lanes along main roads where people cycle, with some new cycle paths that exclude cars (cycle superhighways). There are many benefits of cycling. • *Increase exercise, improve health, reduce air pollution, reduce stress, reduce congestion*. The number of people cycling in London has increased from 1% to 15% in the past 50 years. To encourage more people to cycle London has: *made 20mph speed limits, created cycle superhighways (separate lanes for cyclists so they don't need to cycle on main roads), Boris bikes (cycle hire scheme).*
Bus	Buses have been improved to make journeys shorter & more enjoyable = more people to use public transport. ➢ *2600 hybrid buses are used in London (reduce emissions by 30-40%)* ➢ *Information boards used at >2500 bus stops that tell customers when the next bus is due – makes it easier for passengers.* ➢ *New bus routes and more buses used at peak hours.* ➢ *Buses have priority = quicker journey times.*
Park & ride	People park their car in free car parks on the outskirts of the city and then take the bus into the city centre. One bus with 40 passengers causes less congestion than 20 cars with 2 people in each They have social, economic and environmental impacts: *Less cars in the city = less congestion = less pollution (air, visual, noise), less time wasted in traffic, less accidents, less space needed in the city centre for car parks.* London has 55 park and ride car parks on the outskirts of the city (e.g. Stanmore (450 spaces) and High Barnett (155 spaces).
Integrated transport system	A system that links different forms of public transport to make journeys easier = more people use public transport = less cars = less congestion and pollution. Passengers are able to use oyster cards and bank cards to pay for journeys on all forms of pubic transport = easy to use = more people use it. *e.g. Waterloo station connects trains, tube, buses, cycle routes to each other.*

YEAR: 10 SUBJECT: History

1558- Elizabeth becomes Queen

1559 – Elizabeth's Religious Settlement

1560 – Requiem Mass reintroduced

1562 – French civil war begins

1562 – Dudley becomes Privy Councillor

1567 - Mary, Queen of Scots' husband dies

1568 - Mary, Queen of Scots arrives in England

1669 – Revolt of the Northern Earls

1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569

William Cecil – Secretary of State

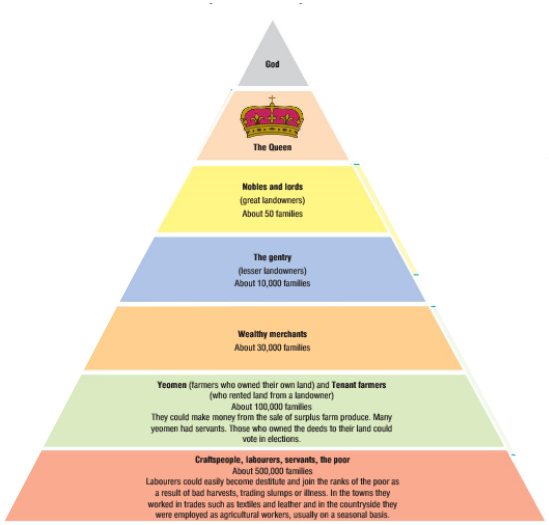
Context

Henry VIII 1509-1547 	Henry made himself Head of the English Church so that he could divorce Catherine of Aragon. He had wars with France and poverty increased. There was widespread rebellion.
Edward VI 1547-1553 	Decoration was removed from churches and the English Prayer Book was introduced. Catholics were killed. Harvests were bad and there were many rebellions.
Mary I 1553-1558 	Married Philip II and made England Catholic. There was rebellion and many Protestants were burned alive. People died of starvation. She began an expensive war with Spain.

Religious Division

Protestants	The monarch was Head of the Church. Most decoration was removed from the Church. Clergy wore simple robes and taught from an English Bible.
Catholics	Pope was Head of the Church. Churches were highly decorated and clergy's robes were too. Services were held in Latin. Mass was important.
Puritans	Committees were elected by the congregation, Churches & robes were plain. English Bible with Communion representing Jesus spiritually.

Society



Government

Elizabeth ruled and took advice from her Privy Council and Court. She had Archbishops and Bishops to assist in the running of the Church and Lords Lieutenant and Justices of the Peace to assist in enforcing laws.

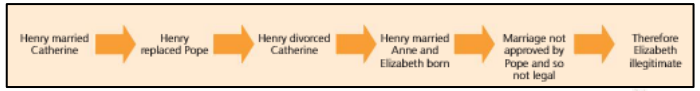
Elizabeth's Problems

1. What to do about religion?
2. What to do about marriage or an heir?
3. How to tackle issues of poverty?
4. How to tackle foreign relations with France and Spain?
5. How to tackle people's doubts about her gender?
6. How to tackle people's doubts about her legitimacy?

Challenges from Abroad

Scotland: Had been ruled by Mary, Queen of Scots (although she moved to France as she had married the heir to the French throne. There were French soldiers in Scotland so the danger of attack was always present.
France: In 1558 France was at war with England and Spain. They also wanted Mary, Queen of Scots to be Queen of England.
Spain: Was the most powerful country in Europe with a huge empire. They were devoutly Catholic. However, they had been friendly with England for most of the Tudor reign due to Mary I's marriage to Phillip II.

Elizabeth's Legitimacy



Poverty & Harvest

The quality of the harvest was what determined the success of a Tudor reign. In the 1550s, people had become desperately poor and starvation was common. In Mary's reign, over 200,000 died from starvation. The harvest in Elizabeth's accession year was strong and this made people think she was in for a good reign.

Mary, Queen of Scots

Mary Stuart arrived in England in 1568. In doing so, she gave Catholics hope that there could be a Catholic monarch on the throne. Elizabeth imprisoned her, over suspicions around her husband's murder but Mary had strong links in France and Scotland. Elizabeth had to tread carefully.

Religious Settlement

Elizabeth tried to create a **Middle Way** which united Catholics and Protestants.
Her **Act of Uniformity** said that everyone needed to attend a Protestant church on a Sunday, or pay a **recusancy** fine of 1 shilling a week (most rich Catholics did this). The **Act of Supremacy** named Elizabeth as **Supreme Governor** instead of Head of the Church, so that she didn't challenge the authority of the Pope.

Opposition

Puritans felt that the Religious Settlement was too Catholic. They wanted her to get rid of Bishops and decoration in churches. Many poor **Catholics** accepted it straight away in order to avoid paying the fine however the rich were angry that she hadn't included **Mass**. English Catholics had lots of support from Spain, particularly once Mary, Queen of Scots had arrived in England.

Subject: Year 10 Maths – PATHWAY
Autumn 1 - HIGHER

Unit 1 – Powers and Roots		
1.1	Square number	The product when an integer is multiplied by itself
1.2	Cube number	The product when an integer is multiplied by itself twice
1.3	The first 15 square numbers are	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225
1.4	The first 5 cube numbers are	1, 8, 27, 64, 125

Unit 2 – surds and irrational numbers		
No.	**Question**	**Answer**
2.1	A surd is	An irrational root
2.2	$\sqrt{a} \times \sqrt{b}$	$\sqrt{ab}$
2.3	$\sqrt{\frac{a}{b}}$	$\frac{\sqrt{a}}{\sqrt{b}}$
2.4	$\sqrt{a} + \sqrt{a}$	$2\sqrt{a}$
2.5	$\sqrt{a} - \sqrt{a}$	0
2.6	$\sqrt{a} \times \sqrt{a}$	a
2.7	$(\sqrt{a} + b)(\sqrt{a} - b)$	$a - b^2$

Unit 3- Indices		
3.1	$a \times a$	a^2 ("a squared")
3.2	$a \times a \times a$	a^3 ("a cubed")
3.3	$a \times a \times a \times a$	a^4 ("a to the power of 4")
3.4	$\sqrt{25}$	"The square root of 25 is 5 or -5"
3.5	$\sqrt[3]{64}$	"The cube root of 64 is 4"
3.6	Index	The power
3.7	$a^b \times a^c$	a^{b+c}
3.8	When multiplying the same bases with coefficients….	Add the powers and multiply the coefficients
3.9	$\frac{a^b}{a^c}$	a^{b-c}
3.10	$(a^b)^c$	a^{bc}
3.11	a^0	1
3.12	a^{-b}	$\frac{1}{a^b}$
3.13	$a^{\frac{b}{c}}$	$\sqrt[c]{a^b}$

Unit 4 – Standard Form		
4.1	Standard form	A way of writing very big or very small numbers using powers of 10
4.2	10^{-2}	0.01
4.3	10^{-1}	0.1
4.4	10^0	1
4.5	10^1	10
4.6	10^2	100
4.7	10^3	1000
4.8	0.0004	4×10^{-4} (the number must be between 1 and 10)
4.9	40000	4×10^4 (the number must be between 1 and 10)

Unit 5 - Sequences		
No.	**Question**	**Answer**
5.1	A sequence or series is	A list of numbers that follow a pattern
5.2	Term	A value in a sequence
5.3	The term-to-term rule	Is how you find the next term in the sequence
5.4	The nth term rule	Is a formula that can be used to generate any term in the sequence, this is sometimes called the position to term rule
5.5	**n**	The position of a term in the sequence
5.6	In a linear or arithmetic sequence	The difference between the terms is always the same
5.7	In a geometric sequence	Multiply by a common ratio to get to the next term
5.8	In a Fibonacci sequence	Add the two previous terms to get the next term
5.9	The triangular numbers sequences	A sequence of numbers generated by adding one more than was added to find the previous term. For example, 1, 3, 6, 10, 15, 21, ...
5.11	In a quadratic sequences	There is a common second difference
5.12	The nth term rule for geometric sequence is always in the form	axb^{n-1}
5.13	a	First term in a geometric sequence
5.14	b	Common ration
5.15	Common ratio	The ratio between two consecutive terms in a sequence
5.16	The nth terms of quadratic sequences are written in the form	$ax^2 + bx + c$

Year 10: Maths – Autumn 1 - FOUNDATION PATHWAY

Unit 1 – Factors, multiples and primes		
1.1	Factor	A number that divides another number exactly
1.2	Multiple	A number which is part of another number's times table
1.3	Prime Number	A number that is only divisible by 1 and itself. Prime number only ever have 2 factors
1.4	Prime factor decomposition	Expressing a number as a product of its prime factors
1.5	HCF	Highest common factor
1.6	LCM	Lowest common multiple
Unit 2 – Powers and Roots		
2.1	Square number	The product when an integer is multiplied by itself
2.2	Cube number	The product when an integer is multiplied by itself twice
2.3	The first 15 square numbers are	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225
2.4	The first 5 cube numbers are	1, 8, 27, 64, 125
Unit 3- Indices		
3.1	$a \times a$	a^2 ("a squared")
3.2	$a \times a \times a$	a^3 ("a cubed")
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5.13	b	Common ration
5.14	Common ratio	The ratio between two consecutive terms in a sequence
5.15	The nth terms of quadratic sequences are written in the form	$ax^2 + bx + c$

GCSE Physical Education

1.1a – The Structure and Function of the Skeletal System

Component	% of overall GCSE (9-1) in Physical Education (J587)			
	AO1	AO2	AO3	AO4
1: Physical factors affecting performance	12.5	10	7.5	0

Assessment Objectives	
AO1	Demonstrate knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport.
AO2	Apply knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport.
AO3	Analyse and evaluate the factors that underpin performance and involvement in physical education and sport.

The Skeletal Structure

IDENTIFY the 19 major bones of the skeletal system.

The Skeletal Functions

IDENTIFY the six functions of the skeletal system

DESCRIBE the six functions of the skeletal system using a sporting example.

1. ⇨
2. ⇨
3. ⇨
4. ⇨
5. ⇨
6. ⇨

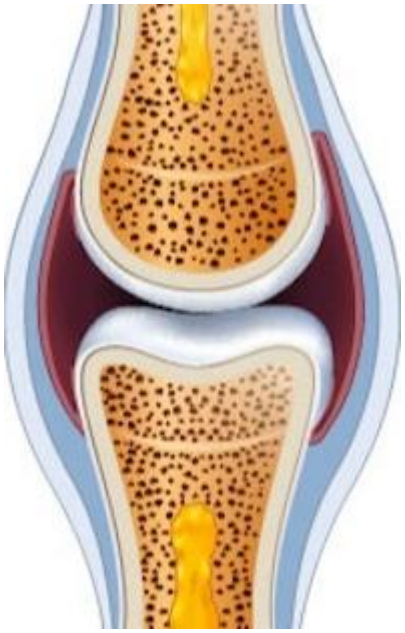
EXPLAIN how two of the six functions of the skeletal system are linked.

GCSE Physical Education

1.1a – The Structure and Function of the Skeletal System

Synovial Joint Structure (Freely Moveable Joints)

IDENTIFY the following components of a synovial joint.
Bone, Cartilage, Ligament, Synovial Membrane, Synovial Fluid.



DEFINE the term synovial joint.

EXPLAIN the importance of synovial joints.

DEFINE the term ligament:

DEFINE the term tendon:

DEFINE the term cartilage:

Movement

IDENTIFY the six types of movement and provide a sporting example for each.

Movement	**Sporting Example**

IDENTIFY two hinge joints:

1.

2.

IDENTIFY two ball and socket joints:

1.

2.

GCSE Physical Education

1.1a – The Structure and Function of the Skeletal System

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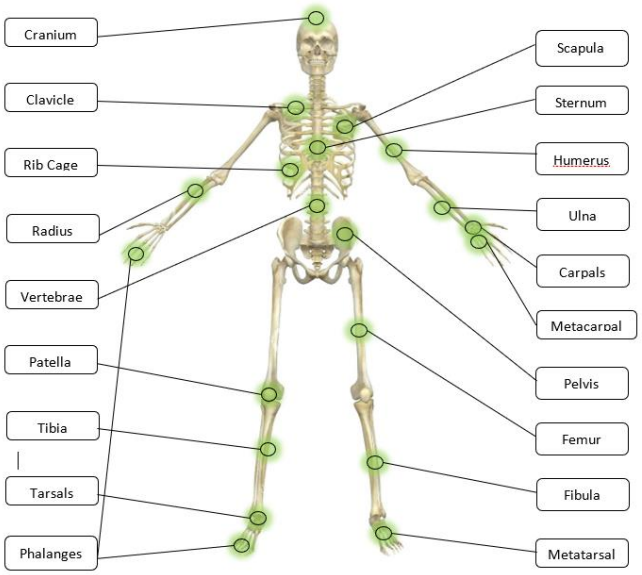
The Skeletal Structure



The Skeletal Functions

1. **Support** – the skeleton keeps the body upright and provides a framework for muscle and tissue attachment.
2. **Posture** – the skeleton gives the correct shape to our body.
3. **Protection** – the bones of the skeleton protect the internal organs and reduce the risk of injury on impact. For example, the cranium protects the brain, the ribs offer protection to the heart and lungs, the vertebrae protect the spinal cord and the pelvis offers protection to the sensitive reproductive organs.
4. **Movement** – the skeleton allows movement of the body as a whole and its individual parts. The bones form joints and act as levers, allowing muscles to pull on them to produce movement. The bones of the skeleton provide surfaces for the attachment of muscles.
5. **Blood cell production** – certain bones in the skeleton contain bone marrow which produces red blood cells, white blood cells and platelets. Examples of bones that contain marrow are the pelvis, sternum, humerus and femur.
6. **Storage of minerals** - the bones store minerals such as calcium, iron, potassium and phosphorous and release them into the blood when the body needs to use them.

Synovial Joint Structure (Freely Moveable Joints)

Synovial joints (freely movable joints):

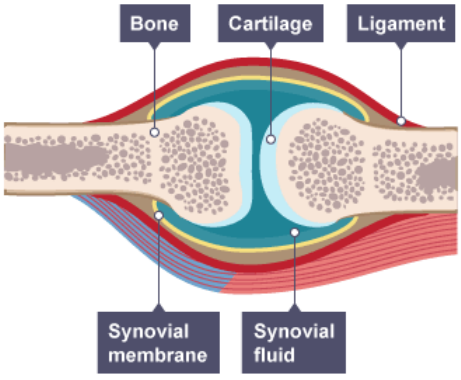
- Enable the free movement to perform skills and techniques during physical activity.
- Have synovial fluid in the joint cavity that lubricates or 'oils' the joint, so it moves smoothly. Synovial fluid is made by the synovial membrane.
- The ends of the bones are covered with **cartilage** which cushions the joint and prevents friction and wear and tear between the bone ends. Cartilage is a soft, spongy connective tissue.

Ligaments:

- Connect bone to bone to keep the joint together.
- A connective tissue and are tough, fibrous and slightly elastic.
- Stabilise the joints during movement and prevent dislocation by restricting actions outside the normal joint range.
- Absorb shock because of their elasticity, which protects the joint.
- Help maintain correct posture and movement.

Tendons:

- Connect muscle to bone.
- Are very strong, inelastic connective tissues.
- Allow movement at a synovial joint by attaching the muscles across the joint to pull a bone.



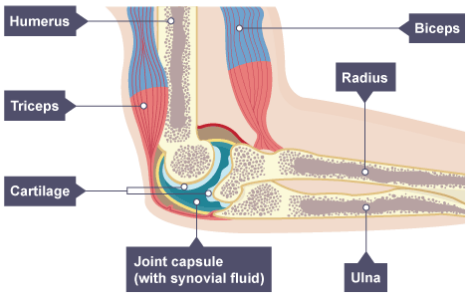
GCSE Physical Education

1.1a – The Structure and Function of the Skeletal System

Four Synovial Joint

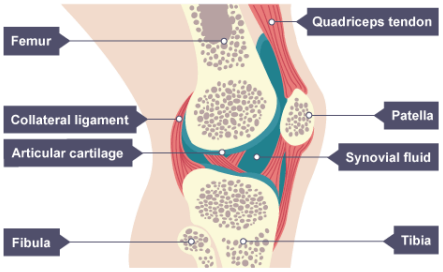
Elbow joint

- Hinge joint.
- Articulating bones are humerus, radius and ulna.
- Allows bending (flexion) and straightening (extension).
- Muscles which move the elbow are biceps and triceps.



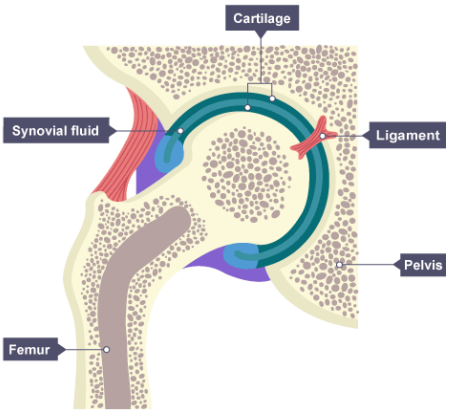
Knee joint

- Hinge joint.
- Articulating bones are femur and tibia (the patella is not classed as part of the joint, nor is the fibula).
- Allows bending (flexion) and straightening (extension).
- Muscles which move the knee are quadriceps and hamstrings.



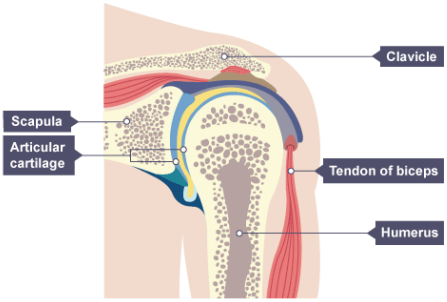
Hip joint

- Ball and socket joint
- Articulating bones are pelvis and femur (head of femur is 'ball' and cup in pelvis is 'socket')
- Allows a large range of movement in all directions
- Many muscles are used to move the hip joint, including the gluteals



Shoulder joint

- Ball and socket joint.
- Articulating bones are humerus and scapula (the clavicle is not part of the shoulder joint).
- Allows a great range of movement in all directions.
- Many muscles are used to move the shoulder joint, including the deltoid, trapezius and latissimus dorsi.



Types of Joint Movement

Flexion: The decrease in the angle around a joint.
Extension: The increase in the angle around a joint.
Abduction: The movement of a limb away from the midline of the body.
Adduction: The movement of a limb towards the midline of the body.
Rotation: The turning of a bone about its longitudinal axis within a joint. (Rotation towards the midline of the body is called medial rotation, while the rotation away from the midline of the body is called lateral rotation).
Circumduction: The combination of flexion, extension, abduction, adduction and rotation – a circular movement of a limb at a joint.

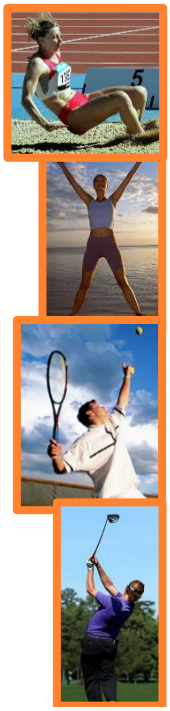
Hinge Joint

Flexion: The elbow flexes when performing a biceps curl. The knee flexes in preparation for kicking a ball.

Extension: The elbow when throwing a shot put.

Ball and Socket Joint

Flexion: The hip joint occurs when the femur (upper leg) moves forwards, which happens when long jumpers land or at the end of kick in football.
Extension: The shoulder occurs when the humerus moves backwards from the rest of the body,
which happens at the end of the pull stroke in front crawl.
Abduction: The hip and shoulder joints during a jumping jack movement.
Adduction: The hip and shoulder, returning the arms and legs back to their original position from a jumping jack movement.
Circumduction: The shoulder joint during an overarm tennis serve.
Rotation: The hip joint in golf while performing a drive shot.



GCSE Physical Education

1.1a – The Structure and Function of the Skeletal System

GCSE Physical Education

1.1b – The Structure and Function of the Muscular System

Component	% of overall GCSE (9-1) in Physical Education (J587)			
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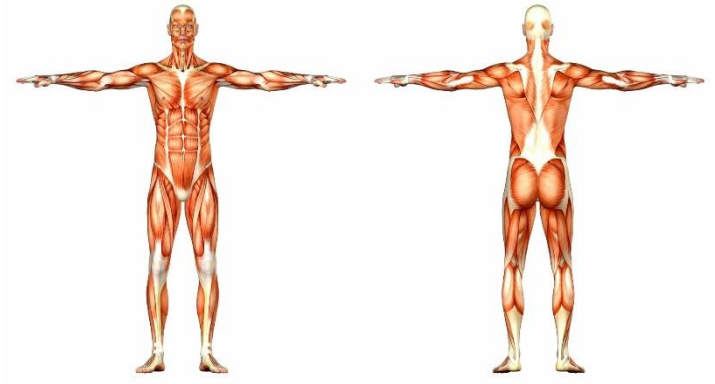
Involuntary, Voluntary and Skeletal Muscles

Involuntary/ Voluntary	IDENTIFY the three types of muscle	IDENTIFTY an example
Involuntary		
Involuntary		
Voluntary		

The Muscular Structure

IDENTIFY the 11 major muscle groups.



DESCRIBE the term agonistic pair:

IDENTIFY three antagonistic pairs and their movements produced.

Antagonistic Pair	Movements Produced

Muscular Function

Muscle	Movement	Sporting Example

GCSE Physical Education

1.1b – The Structure and Function of the Muscular System

Exam Practice Questions

DESCRIBE the movement that occurs at a hinge joint. [2]

DESCRIBE the movement that occurs at a ball and socket joint. [3]

DESCRIBE the role of the triceps during the downwards and upwards phase of a press up. [4]

DESCRIBE how the antagonistic pair work together at the knee during the preparation, execution and follow through phase of a shot in football. [6]

GCSE Physical Education

1.1b – The Structure and Function of the Muscular System

GCSE Physical Education

1.1b – The Structure and Function of the Muscular System

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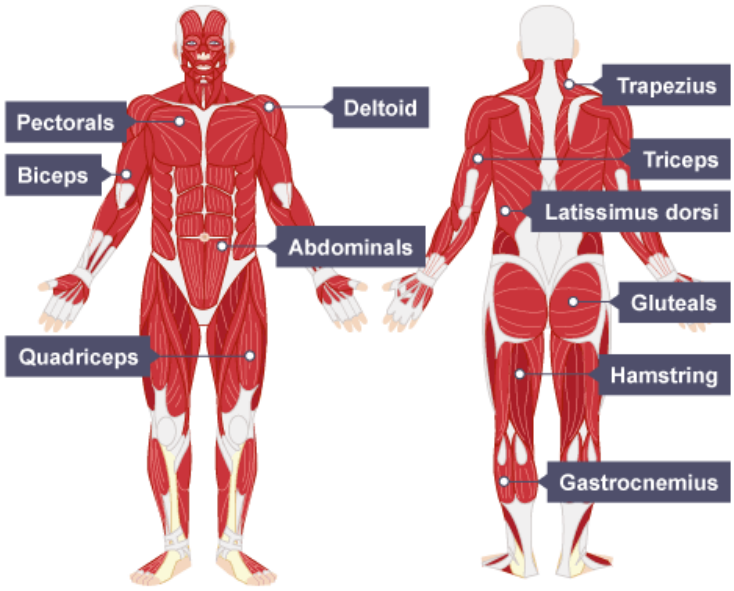
The Muscular Structure



Involuntary, Voluntary and Skeletal Muscles

Involuntary muscles are not under our conscious control which means we can't make them contract when we think about it.

Voluntary muscles are under our conscious control so we can move these muscles when we want to. These are the muscle we use to make all the movements needed in physical activity and sport.

1. Smooth muscle: found in the internal organs and blood vessels (involuntary).
2. Cardiac muscle: found only in the heart (involuntary).
3. Skeletal muscle: attached to the skeleton (voluntary).

Muscle	Function	Example in Sport
Deltoid	Lifting the arm at the shoulder (the deltoid muscle has different parts which flex, extend and abduct the shoulder joint)	Lifting the arms to block in volleyball; upward arm swing when trampolining
Trapezius	Shoulder horizontal extension (moving the arms backwards at shoulder level)	Preparation phase of an overarm throw or badminton smash
Pectorals	Adduction of the shoulder (moving the arm towards the body); Shoulder horizontal flexion (moving the arms forwards in front of the body)	Upwards phase of a press up; rugby player making a tackle
Triceps	Extension of the elbow (straightening the arm)	Shooting and chest passing in netball (execution phase)
Biceps	Flexion of the elbow (bending the arm)	Drawing a bow in archery; 'backscratch' position during tennis serve
Abdominals	Flexion of the spine (sitting upwards)	Performing a sit up or a forward roll
Latissimus dorsi	Adduction of the shoulder (moving the arm down towards the mid-line of the body)	Hitting in hockey – left shoulder during preparation, right shoulder during execution and recovery
Gluteals	Hip extension (moving the femur backwards)	Pulling leg back at the hip before kicking a ball
Quadriceps	Extension of the knee (straightening the leg)	Kicking a ball (execution and recovery phase)
Hamstrings	Flexion of the knee (bending the leg)	Performing a hamstring curl on a weights machine; preparation phase of a rebound jump in basketball
Gastrocnemius	Plantar flexion of the ankle (pointing the toes downwards)	Standing on tiptoe to mark a shot in netball or pointing the toes during a gymnastic or dance move

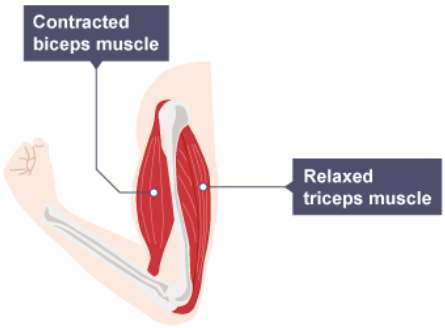
GCSE Physical Education

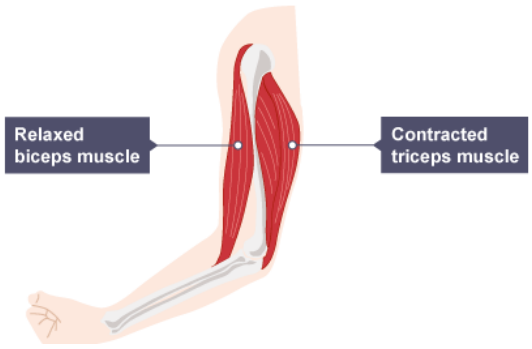
1.1b – The Structure and Function of the Muscular System

Antagonistic Muscle Pairs

Agonist: Contracting muscle that shortens and bulges, pulling on a bone to create movement.

Antagonist: Relaxing muscle that lengthens and thins, controlling the movement through resistance.





Joint	Antagonistic pair	Movements produced	Sport example	Fixator
Elbow	Biceps; triceps	Flexion; extension	Chest pass in netball; badminton smash	Deltoid; Trapezius
Knee	Hamstrings; quadriceps	Flexion; extension	Jumping to block in volleyball; tuck jump in trampolining	Gluteals; Abdominals
Shoulder	Latissimus dorsi; deltoid	Adduction; abduction	Golf swing; breaststroke arms	Trapezius; abdominals
Hip	Gluteals; Hip flexor	Extension; Flexion	Shot in football; Sprinting in athletics	Abdominals

Fixators: Support and stabilise

The trapezius muscle can act as a **fixator** when the biceps is flexing the elbow joint.

The abdominals can act as **fixators** to stabilise the body for hip and knee movements.

Exam Question: Describe how the antagonistic muscle pairs are working at the elbow during the downwards and upwards phase of a press up.

During the downwards phase, flexion occurs at the elbow. The biceps are the agonist, and they contract, and the triceps are the antagonist relaxing and lengthening to stabilise the movement by adding resistance so the body is lowered under control down towards the floor. During the upwards phase, the triceps are the agonist and contract, shortening and bulging to pull the ulna creating extension at the elbow. The biceps are the antagonist, relaxing and lengthening stabilising the movement.

Antagonistic Muscles Pairs in Action

Preparation and execution and recovery phase in football

In the preparation phase, when a footballer prepares to kick a football, their hamstrings **contract** to **flex** the knee while the quadriceps lengthens to allow the movement. The hamstrings are the agonist and the quadriceps are the antagonist.

In the contact and recovery phase, the quadriceps **contract** to **extend** the knee while the hamstrings lengthen to allow the movement. The quadriceps are the agonist and the hamstrings are now the antagonist.

The abdominals would be acting as fixators.

GCSE Physical Education

1.1c – Movement Analysis

Component	% of overall GCSE (9-1) in Physical Education (J587)			
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2. Using the Key: Draw a First Class, Second Class and Third-Class lever.

1st Class Lever 2nd Class Lever 3rd Class Lever

F =

L =

E = ↓ or ↑

3. Identify a joint where the use of a First Class, Second Class and Third-Class lever can be used.

A first-class lever can be found at the…

…joint.

A second-class lever can be found at the…

…joint.

A third-class lever can be found at the…

…joint.

5. **State the use of first-, second- and third-class lever, using a relevant sporting example.**

E.g., Extension at the elbow when performing a serve in tennis.

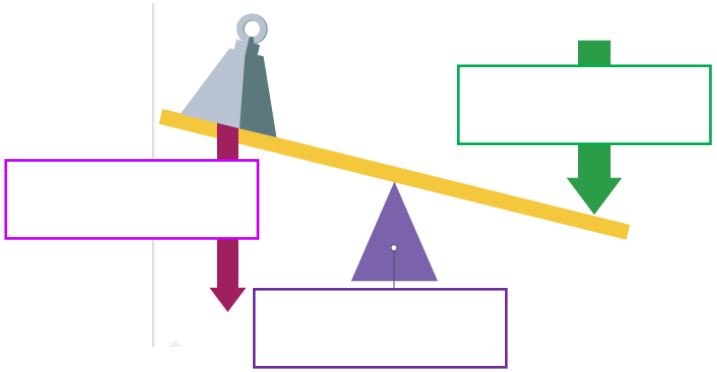
1st Class Lever

2nd Class Lever

3rd Class Lever

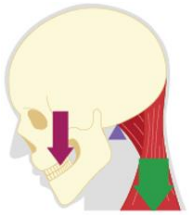
Levers

1. Fill in the Labels: Fulcrum, Load, Effort.



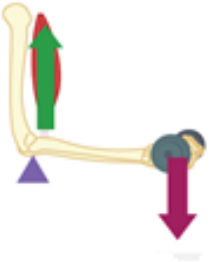
4. Identify the fulcrum, load, and effort in the first class, second class and third-class lever pictured.

1st Class



2nd Class

3rd Class



Fulcrum:			
Load:			
Effort:			

GCSE Physical Education

1.1c – Movement Analysis

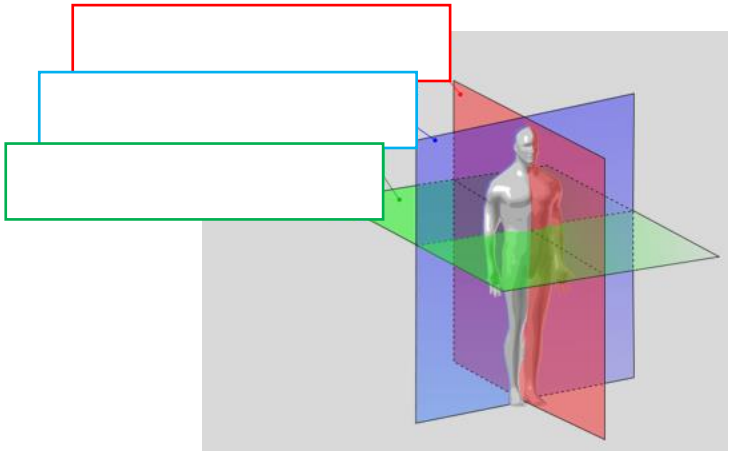
6. Define the term mechanical advantage.

7. Explain which lever has the most mechanical advantage.

8. Using a relevant sporting example, explain how the use of mechanical advantage enables performance.

Planes of Movement

9. Label the planes of movement.



10. Identify the movement that occur in each plane of movement.

Sagittal	Frontal	Transverse

11. Give a sporting example of an action taking place in each plane of movement.

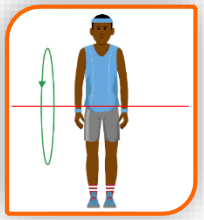
Sagittal	Frontal	Transverse

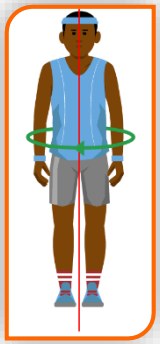
GCSE Physical Education

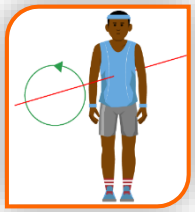
1.1c – Movement Analysis

Axes

12. Identify the Axes of Rotation in each diagram.







_____ _____ _____

13. Identify the axes of rotation for each group of sporting examples.

_____ _____ _____

Forwards Roll	Full twist	Cartwheel
Backward Somersault	Pirouette	Diving Save
Sprinting	Pivot	

14. List three sporting examples of movements rotating around each Axes.

Frontal	Transverse	Longitudinal

Planes of Movement and Axes of Rotation

15. Identify the Plane of Movement and Axes of Rotation in the following examples.

Plane:

Axes:

Plane:

Axes:

Plane:

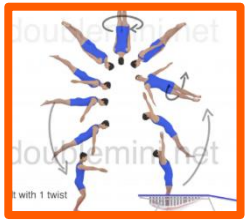
Axes:

Plane:

Axes:

Plane:

Axes:



Plane:

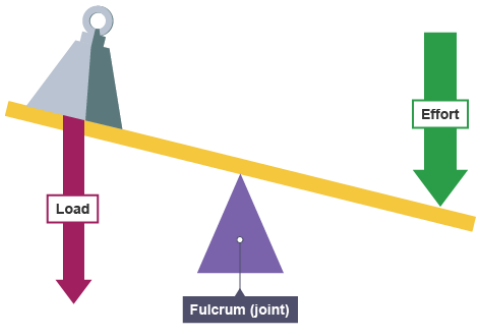
Axes:

GCSE Physical Education

1.1c – Movement Analysis

Component		% of overall GCSE (9-1) in Physical Education (J587)			
		AO1	AO2	AO3	AO4
1: Physical factors affecting performance		12.5	10	7.5	0
Assessment Objectives					
AO1	Demonstrate knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport.				
AO2	Apply knowledge and understanding of the factors that underpin performance and involvement in physical activity and sport.				
AO3	Analyse and evaluate the factors that underpin performance and involvement in physical education and sport.				

Movement Analysis

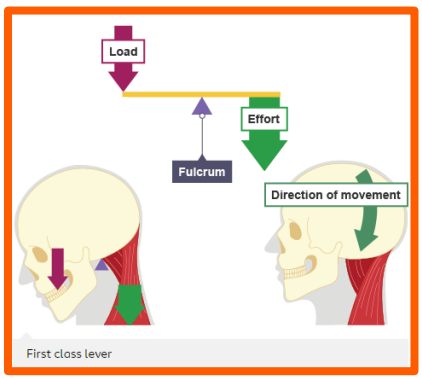


Levers

A lever consists of:

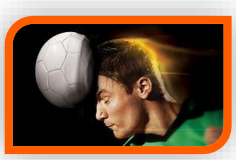
- A rigid structure (Bone)
- A Force acting upon it (agonist muscle) to produce a turn movement (angular motion)
- A fulcrum which is a fixed point (joint)
- A load or resistance that is placed on the rigid structure (weight or body part being moved and anything it is carrying)

First-Class Lever
The fulcrum is in the **middle** of the effort and the load.



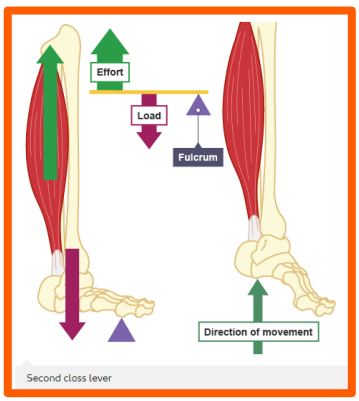
Example: This type of lever is found in the neck when raising your head to head a football.

Neck muscle provides the effort, the neck joint is the fulcrum and the weight of the head is the load.



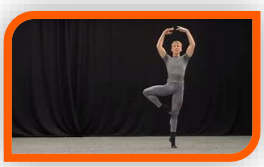
F → 1

Second-Class Lever
The load is in the **middle** of the effort and the fulcrum.



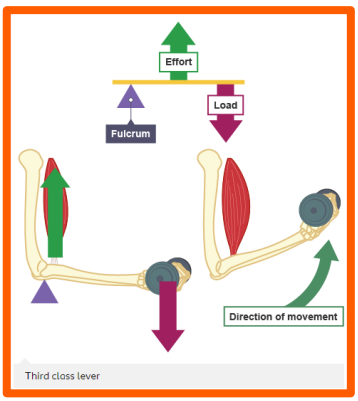
Example: This type of lever is found in the ankle when standing on your tiptoes during the take-off of a jump in a jump shot in basketball.

The gastrocnemius provides the effort, the big toe joint is the fulcrum and the weight of the body is the load.



L → 2

Third-Class Lever
The effort is in the **middle** of the load and the fulcrum.



Examples: This type of lever is found in the elbow when performing a bicep curl in weightlifting.

The bicep provides the effort, the elbow joint is the fulcrum and the weight forearm, hand and dumbbells and the load.

E → 3

GCSE Physical Education

1.1c – Movement Analysis

Levers are used to multiply force. This means that they allow you to move a large output load with a smaller effort. Load and effort are forces measured in Newtons (N).
In a lever, if the distance from the effort to the fulcrum is longer than the distance from the load to the fulcrum, this gives a greater mechanical advantage. First-class and second-class levers have mechanical advantage.

Second class levers have the best mechanical advantage, so they can move a large load with a relatively small effort.

Mechanical Advantage

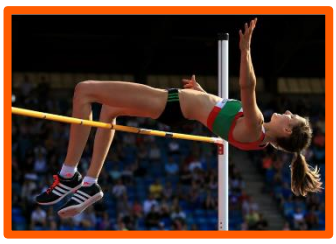
Exam Question: Explain why a second-class lever has the best mechanical advantage.

The further away the effort is from the fulcrum, the easier it is to lift the load. This requires a long lever arm.
In a second-class lever, the effort is further away from the fulcrum that the load therefore less effort is required.

Example:

Load = 500N Effort = 100N

500N ÷ 100N = 5

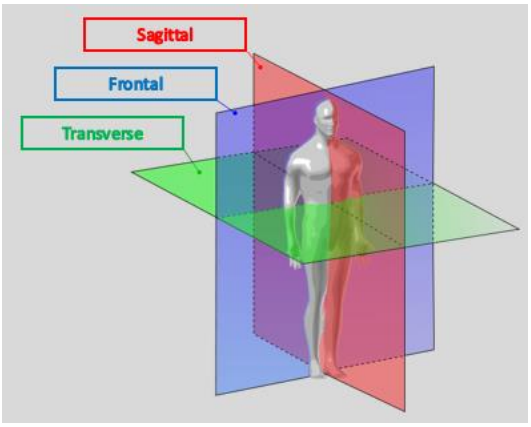


At take-off, the high jumper applies large forces to the ground through their ankle. The ankle operates with mechanical advantage in order to resist these forces and enable the jumper to achieve flight

Mechanical Advantage = Load ÷ Effort

Planes of Movement

All body movements occur in different planes and around different axes. A plane is an imaginary flat surface running through the body.



Sagittal Plane

The sagittal plane divides the body vertically into left and right. Movements in this plane are flexion and extension.

Example: Somersault in trampolining – Sprinting in athletics

Frontal Plane

The frontal plane divides the body in anterior and posterior (front and back). Movements in this plane are abduction and adduction.

Example: Star Jump in gymnastics – Diving save in football

Transverse Plan

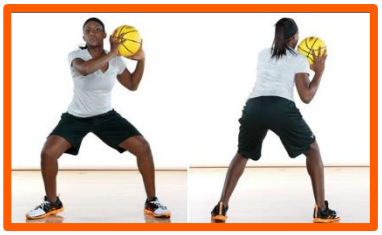
The transverse plane divides the body horizontally into superior and inferior (upper and lower). Movements in this plane are rotational.

Example: Pivoting in netball – full twist in trampolining.

Sagittal – Side to side

Frontal – Front and back

Transverse – Top and bottom



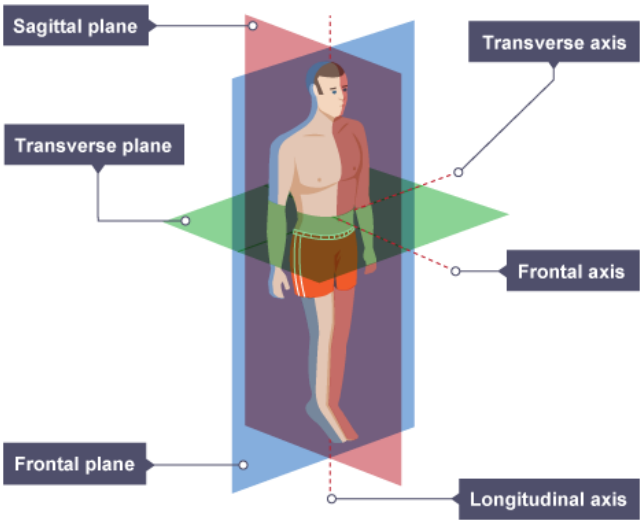
GCSE Physical Education

1.1c – Movement Analysis

Axes of Rotation

All body movements occur in different planes and around different axes.

An axis is an imaginary line at right angles to the plane, about which the body rotates or spins.



Transverse Axes

The transverse axis runs from left to right through the centre of the body.

Example: Summersault in trampolining – Sprinting in athletics

Frontal Axes

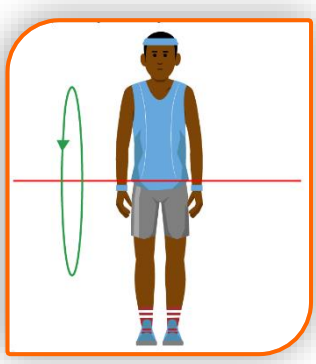
The frontal axis runs from front to back through the centre of the body.

Example: Star Jump in gymnastics – Diving save in football

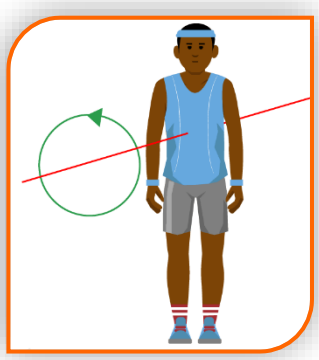
Longitudinal Axes

The longitudinal axis runs from top to bottom through the centre of the body.

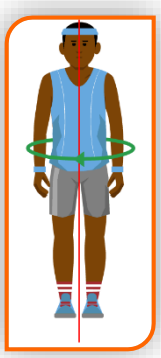
Example: Pivoting in netball – full twist in trampolining.

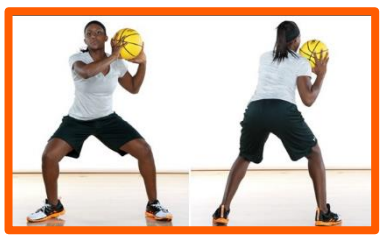


Sagittal Plane → Transverse Axes



Frontal Plane → Frontal Axes





Transverse Plane → Longitudinal Axes

Exam Question: Using examples of movement explain how a netball player uses all three planes of movement during a match [4]

During a netball match a netball will use the sagittal plane of movement when flexing and extending their knees when running. A netball will use the frontal plane of movement when performing abduction at the shoulder when blocking their opponent from passing. A netballer will use the transverse plane of movement when performing pivot to turn when in possession of the netball.

Biology Topic 4: Bioenergetics

1. Photosynthesis

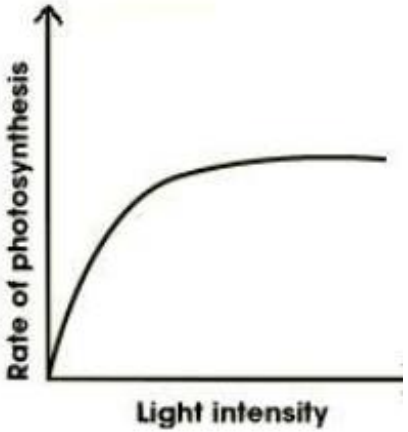
$$6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6O_2$$

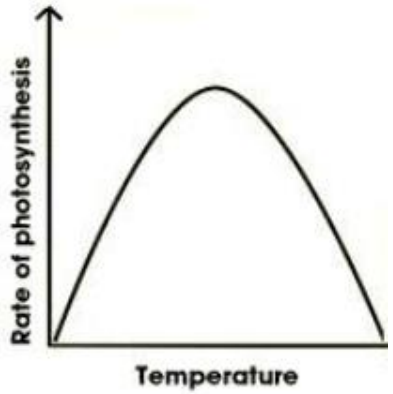
$$\text{Carbon Dioxide} + \text{Water} \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} \text{Glucose} + \text{Oxygen}$$

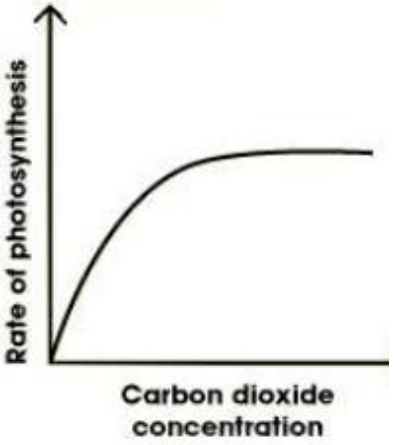
Photosynthesis	An endothermic reaction where sunlight is absorbed and used to convert carbon dioxide and water into glucose and oxygen
Uses of glucose	• Respiration • Converted into starch • Produce fat or oil • Produce cellulose cell walls • Produce amino acids

2. Rate of photosynthesis

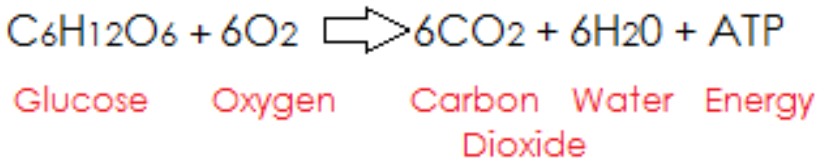
Factor	Affect on photosynthesis	Reason
Light	Increases	More energy for the reaction
Carbon dioxide	Increases	More reactants (provided there is no limiting reactant)
Amount of chlorophyll	Increases	More energy for the reaction
Temperature	Increases then decreases	Initially more energy but then enzyme denatures
Limiting factor	The factor that can limit the rate of a reaction	







3. Aerobic respiration	
Respiration	An exothermic reaction which continuously happens in living cells
Purpose	Transfer energy for: • Chemical reactions • Movement • Warmth
Aerobic	With oxygen



Anaerobic	Without oxygen
Anaerobic respiration in muscle cells	glucose → lactic acid
Anaerobic respiration in yeast cells (fermentation)	glucose → ethanol + carbon dioxide
Lactic acid	A chemical that when built up in muscles causes fatigue
Oxygen debt HT ONLY	The amount of oxygen the body needs after exercise to remove the lactic acid

4. Response to exercise	
Change	Reason
Heart pumps faster	Supply more oxygenated blood to the muscles
Breathing rate increases	
Deeper breaths	

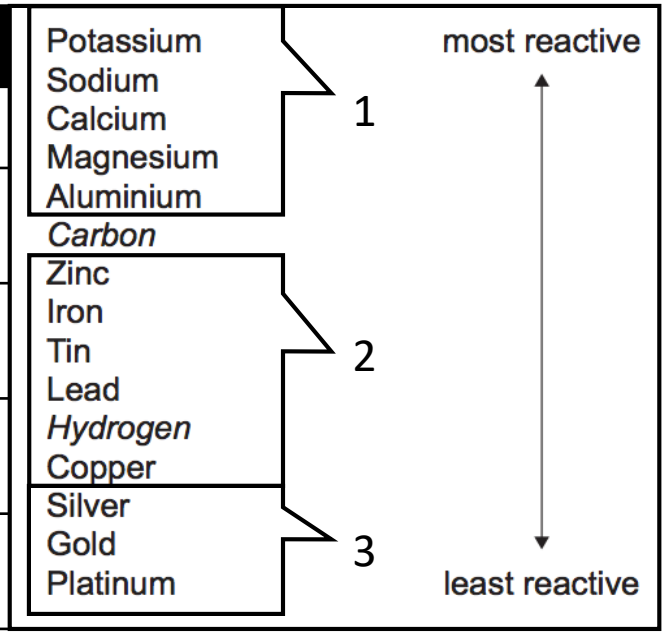
5. Metabolism	
Metabolism	The sum of all the reactions in a cell or the body
Includes:	• Conversion of glucose to starch, glycogen and cellulose • Formation of lipids from glycerol and 3 fatty acids • Use of glucose and nitrates to make proteins (PLANTS) • Respiration • Breakdown of protein to from urea.

Chemistry Topic 4: Chemical changes

1.Keywords	
Metal oxide	A compound formed when a metal ionically bonds to oxygen
Reactivity series	The order of elements in terms of their reactivity
Acid	A substance that releases H^+ ions and has a pH below 7
Base	A substance that neutralises an Acid and has a pH above 7
Alkali	A type of soluble base. A metal hydroxide. Releases OH^- ions
Neutralisation	When an acid reacts with a base to produce a salt and water
Carbonates	Ionic compounds containing Carbon and oxygen
Salt	Ionic compound formed when acid and base react
Soluble	A substance that dissolves
Insoluble	A substance that does not dissolve
Indicator	A substance that changes colour when pH changes
Electrolysis	Splitting up an ionic substance using electricity
Molten	Turned to a liquid
Solution	Dissolved in water

2. REDOX			
Change	**In terms of oxygen**	**In terms of hydrogen**	**In terms of electrons (HT ONLY)**
Oxidation	Gaining oxygen	Losing hydrogen	Loss of electrons (OIL)
Reduction	Losing oxygen	Gaining hydrogen	Gain of electrons (RIG)

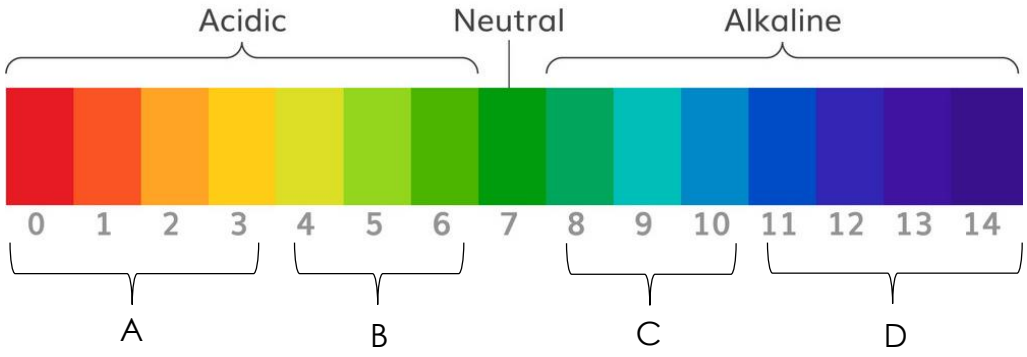
3. The reactivity series		
	Category	Extracted by
1	Highly reactive metals	Electrolysis
2	Base metals	Smelting: heating with carbon
3	Native metals	Found as nuggets of pure metal
NOTE: Hydrogen is not a metal and used to extract some other metals not on this list		



4. Naming salts

Acid used	Second part of salt's name
Hydrochloric acid	chloride
Sulfuric acid	sulfate
Nitric acid	nitrate

5. pH scale



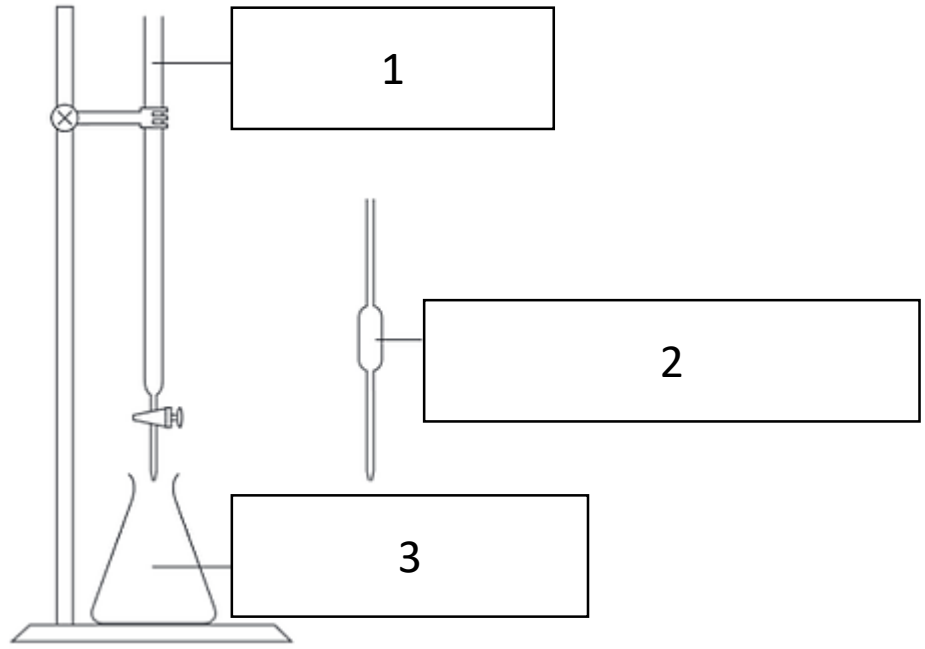
	Name	Level of ionisation in water
A	Strong acid	Fully
B	Weak acid	Partially
C	Weak base	Partially
D	Strong base	Fully

6. Equation for all neutralisations

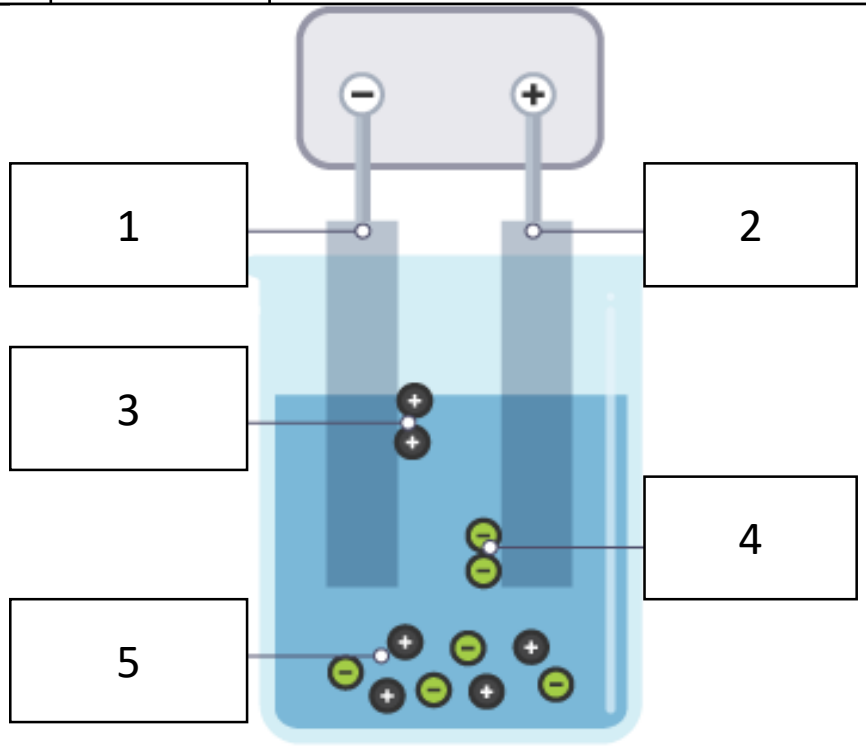
$$H^+_{(aq)} + OH^-_{(aq)} \rightarrow H_2O_{(l)}$$

7. Titrations (TRIPLE ONLY)

No.	Name	Function
1	Burette	Measures amount of acid or base delivered to conical flask
2	Pipette	Accurately measures the acid or base into the conical flask
3	Conical flask	Holds the acid or base to be titrated and an indicator



7. Electrolysis		
1	Cathode	The negative electrode
2	Anode	The positive electrode
3	Positive ion	Move to cathode
4	Negative ion	Move to anode
5	Electrolyte	The ions that are being electrolysed



Don't **PANIC** - **P**ositive is **A**node, **N**egative **I**s **C**athode.

8. Electrolysis of aqueous solutions	
Place in reactivity series	**Product of electrolysis**
Metal more reactive than hydrogen	Hydrogen is produced at the cathode
If the negative ion is not a halide ion (group 7)	Oxygen is produced at the anode

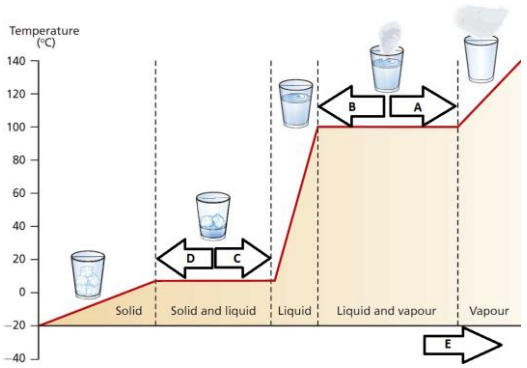
Physics Topic 3: Particle model

1. Density

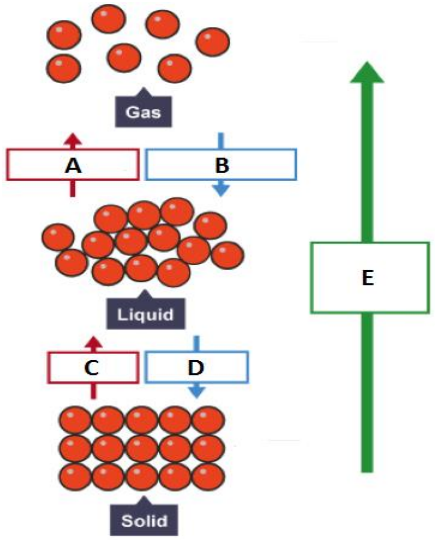
$$\rho = \frac{m}{V}$$

Symbol	Meaning	Unit
ρ	density	kg/m^3
m	mass	kg
V	volume	m^3

2. Changes of state



A. Evaporation/ Vaporisation
B. Condensation
C. Melting/ Fusion
D. Freezing
E. Increasing internal energy



3. The specific heat capacity

Energy transferred, ΔE (joules, J) = **mass, m** (kilograms, kg) x **Specific heat capacity, c** (joule per kilogram per degree Celsius, J/kg°C) x **Temperature change, Δθ** (degree Celsius, °C)

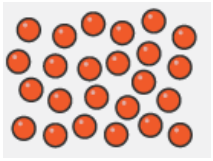
To find the specific heat capacity of a substance the equation can be rearranged to: $c = \frac{\Delta E}{m\Delta\theta}$

4. The specific latent heat

Energy transferred, ΔE (joules, J) = **mass, m** (kilograms, kg) x **Latent heat, L** (joule per kilogram J/kg)

To find the specific latent heat of a substance the equation can be rearranged to: $L = \frac{\Delta E}{m}$

5. Gas properties

Diagram	
Arrangement of particles	Randomly arranged Far apart
Movement of particles	Brownian motion
Energy of particles	Very high energy
Density of substance	Very low density

6. Pressure in gases (TRIPLE ONLY)

change	effect	reason
Increase Pressure	Increase volume	More particles so more collisions Increase the force stretching the balloon until the forces balance
Decrease pressure	Decrease volume	Less particles so less collision. Decrease the force causing the balloon to contract until the forces balance
Formula	**pV=constant**	**If fixed mass and constant temperature**

Social Problems					
1	Tomar	To take (food/drink)	18	Los pobres	The poor
2	Evitar	To avoid	19	La obsesidad	Obesity
3	Dormir	To sleep	20	Contribuir	To contribute
4	Beber	To drink	21	El desempleo	Unemployment
5	Comer	To eat	22	El paro	Unemployment
6	Protestar	To protest	23	Las obras benéficas	Charity work
7	Luchar (contra)	To fight (against)	24	Sin techo/ sin hogar	Homeless
8	Se debe	One must	25	Proteger	to protect
9	Se necesita	It is necessary (to)	26	Una residencia de ancianos	An old people's home
10	Hay que	You have to	27	Un voluntario	Volunteer
11	Es importante	It is important (to)	28	Donar	To donate
12	Las manifestaciones/ protestas	Protests	29	La drogadicción	Drug addiction
13	El racismo	Racism	30	Ser adicto	To be addicted
14	La desigualdad	Inequality	31	Ganar	To earn/win
15	La pobreza	Poverty	32	Gastar	To spend (money)
16	Las drogas	Drugs	33	El medio ambiente	The environment
17	Los derechos humanos	Human rights	34	La pobreza	Poverty

Subject: Spanish - Autumn 1

Spanish Social Problems					
35	El machismo/sexismo	Sexism	52	Mantenerse en forma	To keep fit
36	El sida	Aids	53	Preocuparse	To worry
37	Temer/tener miedo	To be afraid	54	Probar	To try
38	Los recursos	The resources	55	Me preocupa	I am worried about
39	Amarillar	To go yellow	56	Sentirse	To feel
40	Apetecer	To feel like	57	Superar	To overcome
41	Probar	to try	58	Aguantar	To stand/put up with
42	El cigarillo	The cigarette	59	Asqueroso	Disgusting
43	Con moderación	With moderation	60	Ataque cardíaco	Heart attack
44	Conseguir	To get	61	Aumentar	To increase
45	El consejo	Advice	62	El botellón	Street drinking
46	Drogarse	To take drugs	63	Cada vez más	More and more
47	El ejercicio	Exercise	64	El cerebro	Brain
48	Estar a dieta	To be on a diet	65	El consumo	The consumption
49	El estrés	The stress	66	El corazón	Heart
50	Una organización benéfica/caridad	A charity	67	La edad	Age
51	Fumar	To smoke	68	Grave	Serious

Social Problems					
1	Evsız ınsanlar	homeless people	18	İğrenç	disgusting
2	Sıgara ıcmek	smoking	19	Staj	training
3	Kanser	Cancer	20	Ağırlık çalışması	weight training
4	Cıger kanserı	lung cancer	21	Gülük	daily
5	Kalp krızı	heart attack	22	Tren	to train
6	AIDS	AIDS	23	Anareksik	anorexia
7	Acı	pain	24	Girişim	to attempt
8	Depresyon	depressed	25	Sorusudur	it's a question of
9	Protesto	to protest (against)	26	Daha iyisi tercih edilen	to be better/preferable
10	Irıkcılık	racism	27	Izlemek	to watch
11	Dogru	right	28	Fikir	advice
12	Hukkuk	law	29	Soruşturma	enquiry
13	Gerv	protest/strike	30	Borç	debt
14	Bancard	placard	31	Öncülük etmek	to lead
15	Sarı yelek	yellow vests	32	Saklamak	to hide
16	Adalet	injustice	33	Ses	voice
17	Esıtsızlık	inequality	34	Suçluluk hisetmek	guilty

Subject: Year 10 Turkish - Autumn 1

Social Problems					
35	Alkol	alcohol	52	Obest	obesity
36	Uyuşturucu	drug	53	Yağ	fats
37	Uyuşturucu almak	to take drugs	54	Çikolata	chocolate
38	Kusmak	to be sick	55	şeker	sweet
39	Tütün	tobacco	56	Şişmanlatıcı	fatty
40	Koku	smell	57	Şekerli	sugary
41	Alışkanlık	habit	58	Korunmak	to avoid
42	Durmak	to stop	59	Hasta	ill ; sick
43	Sigara içmek	to smoke	60	Hastalık	illness
44	Öldürmek	to kill	61	Doktor	doctor
45	Yiyecek	food	62	Ilaç	medicine
46	Yemek	meal	63	Daha iyi olmak	to be better
47	Kahvaltı	breakfast	64	Savaşmak	to combat
48	Öğle yemeği	lunch	65	Kendine bakmak	to look after
49	Akşam yemeği	evening meal	66	Formda olamak	fitness
50	Dengeli	balanced	67	Sağlık	health
51	Diet yapmak	to be on a diet	68	Hissetmek	to feel