Co-op Academy
Walkden

Knowledge Organisers

Year 11 Term 2

What are Knowledge Organisers?

Knowledge organisers are a summary of the key knowledge and skills that pupils need for a unit of work or a curriculum subject. They are overview sheets with information broken down into bite size chunks so pupils can revise and use them within their homework or studies.

How do I use my Knowledge Organiser?

There will be several strategies to use when using Knowledge Organisers (KOs) which will include:

- Read, say, cover, write and check (RSCWC). When revising knowledge for your subjects we have discussed the importance of doing it from memory and not copying from one piece of paper to another.
- A knowledge or skill highlighting a tricky area (gaps underlined).
- Demonstrate spaced practice through revising with the knowledge organiser a little between each lesson, rather than a lot each week or fortnight.

Read	Read your Knowledge organiser and select one area to focus on at a time.
Say	Select a section and read out aloud to yourself or to a family member or friend.
Cover	Cover your knowledge organiser so you can find out which areas you need to work on.
Write	Write down all the knowledge and skills you remember in you knowledge organiser fr that section.
Check	Look back and check to see if you were correct and got it right. Correct any mistakes or missing information in red pen.

Contents

Drama

GCSE Live Theatre Knowledge Organiser – Term 3

Set Design

1. What are your first impressions?
2. What do you expect from the performance?
3. What can you see? List 10 words that describe the set. What elements of the set stand out and why?
4. What colours and textures are used in the set design?
5. What does the set design tell the audience about
the play and the characters that are using it?
6. What parts of the set and its uses impressed you
and why?
7. Who is the set designer? What do you know about the set designer?
8. What type of staging was used? *It is always a good idea to sketch the set too, so that you don't forget what it looked like!

Lighting Design

- How was lighting used to aid scene changes?
- What does the lighting tell the audience about the play? How and why are parts of the set lit?
- What colours were used and for what effect?
- How was lighting used to create atmosphere?
- What parts of the lighting and its uses impressed you and why? What could have been improved?
- List 10 words that could describe the lighting
- Who is the lighting designer? What do you know
about the lighting designer?

Direction

□□ Did the director succeed in communicating characters and context to the audience?

□□ What techniques did the director use that you could recognise?

Exam questions from previous GCSE papers

Describe how one or more actors used their vocal and physical skills in a particular scene or section to show their character's emotions. Analyse and evaluate how successful they were in communicating their character's emotions to the audience. You could make reference to:

- vocal skills, for example pitch, pace and tone of voice
- physical skills, for example body language and facial expression
- a scene or section and/or the production as a whole. [32 marks]

Describe how the set was used to create a memorable experience for the audience. Analyse and evaluate how successful the set was in creating a memorable experience for the audience.

You could make reference to:

- materials and equipment
- use of space, levels, scale, colour
- a scene or section and/or the production as a whole. [32 marks]

Describe how the costumes were used to create a sense of period and/or location in the production. Analyse and evaluate how successful the costumes were in communicating the period and/or location of the production to the audience. You could make reference to:

- fabric, texture, fit and shape
- colour and style
- a scene or section and/or the production as a whole. [32 marks]

Sound

1. How and why are music and sound used in this production? Consider live, personal and recorded sound.
2. Genre/style/soundscape?
3. How was sound used to aid scene changes?
4. What does the music and sound effects tell the audience about the play?
5. What types of music were used and for what affect?
6. How was sound used to create atmosphere? List 10 words that could describe the sound
7. Who is the sound designer? What do you know about the sound designer?

Costume Design

- What styles/ time period do the costumes represent?
- What do the costumes tell the audience about the play?
- How and when do costume changes occur?
- What colours and textures were used and for what effect?
- What part of the costumes and its uses impressed you and why?
- How was lighting used to help light the costumes effectively?
- Who is the costume designer? What do you know about the sound designer?

Acting Methods

- How many characters did the actor play? What were they? What types of characters are they?
- What techniques did the actor employ to donate a change in character?
- How did the actor use body language/ movement to communicate to the audience?
- How did the actor use their voice (pitch, pace, tone, volume) to communicate to the audience?
- How did the actor use the space to communicate to the audience?
- What did they wear and what did it say about them?
- How did they use the set to help tell their story?
- What parts of the actors performance impressed you and why?/ what improvements could have been made?
- How did performers engage with the audience?
- What parts of the set are used by the actors and how are they used?

Audience reaction to the performance

- How did the audience respond to the production?
- How did performers engage with the audience?

<u>YOUR reaction to the performance</u>

- Right down your initial reaction to the performance
before talking to anybody else
- How was the performance different to what you have expected?
- Note down any particularly memorable moments/ images etc
- Focus on both the positive and the negative
- What could have been improved?

Top Tip

When on a trip to the theatre, make notes that evening after the performance whilst everything you have seen is still fresh in your mind!

Extension and Support…

What to watch and read…

https://www.filmedlivemusicals.com/everybodys-talking-about-jamie.html

Everybody's talking about Jamie

https://www.youtube.com/watch?v=kybbBPGtq60

It means Beautiful

https://www.youtube.com/watch?v=jg9VoDxHZo0

He's my boy

https://www.youtube.com/watch?v=q5pASnIjlP8

Prom Night

https://www.youtube.com/watch?v=ehU5upuKVCQ

Read about Jamie Campbell - the inspiration for the musical

https://www.bbc.co.uk/bbcthree/article/e3ebeab8-a351-4289-8b44-7be088b365d4

An interview with the original London Cast and the Real Jamie

https://www.youtube.com/watch?v=f0RASnuaks8

The documentary that inspired the show

https://www.bbc.co.uk/iplayer/episode/b012p4kc/jamie-drag-queen-at-16

Section C Revision with Mr Coles

https://www.youtube.com/watch?v=_YQkSHqfTd0

Construction

Construction

UK Health & Safety Legislation

1. Health & Safety at Work Act 1974
2. COSHH Control of Substances Hazardous to Health 2002
3. RIDDOR Reporting of Injuries, Diseases and Dangerous Occurrences Regulation 1995
4. PUWER Provision and Use of Work Equipment Regulations 1998
5. Manual Handling Operations Regulations 1992
6. Personal Protective Equipment at Work Regulations 1992
7. Working at Height Regulations 2005
8. The Control of Asbestos Regulations 2012

Reminder - It is against the law to obstruct or disregard Health and Safety Legislation in the UK. You could have your site/workplace closed down, receive a fine or even end up in prison.

HASAWA 1974

The Health and Safety at Work Act 1974 is the main piece of legislation in the UK that governs all workplace health, safety and welfare. The HASAWA is intended to promote health and safety awareness, and effective standards of health and safety management are in place to promote, stimulate and encourage good standards of health and safety in the workplace.

HASAWA 1974

This comprehensive act is intended to involve everyone in matters of health and safety. The groups can be summarised as:

1) **Management**
2) **Employee' Representatives**
3) **Employees**
4) **Controllers of Premises**
5) **Self-Employed**
6) **Manufacturers**

HSE

The Health and Safety Executive is a UK government agency responsible for the regulation, encouragement, and enforcement of workplace health, safety and welfare.

Key Terms

Employee - Someone who works under an employment contract.

Employer - A person or organisation who employs people under a contract.

Compliant - An acceptable level of pre-agreed standards.

HAZARD - A hazard is something dangerous that could hurt you

RISK - the likelihood that the hazard will cause harm to someone

Employer Responsibilities

1. Decide what could harm you in your job and the precautions to stop it.
2. Explain risks to their employees and how to control the risk.
3. Talk and discuss with their employees about health and safety.
4. Provide FREE Health and Safety Training.
5. Provide FREE Personal Protective Equipment.
6. Provide toilets and somewhere to wash your hands.
7. Provide drinking water and somewhere to eat during your breaks.
8. Provide First Aid Facilities in the case of an accident.
9. REPORT major accidents to the HSE.
10. Have insurance to protect everyone's Health and Safety.

Employee Responsibilities

1. Never damage PPE and ensure it is reported if something breaks.
2. Tell someone if any dangerous or risky situations are spotted.
3. Co-operate with your boss and do as they ask.
4. Follow Health and Safety Training when provided.
5. Wear the correct PPE

HEALTH & SAFETY

SIGNS

PROHIBITION

Do Not

Red circle with a crossbar on a white background.

MANDATORY

You Must

Blue circle with white symbols and lettering.

WARNING

Be Aware

Yellow triangle with black border and lettering.

SAFE CONDITION

Follow Me

Green square or rectangle with white symbol and lettering.

HAZARD IDENTIFICATION

Spot the hazards in your workplace that could cause harm to someone!

ASSESS THE RISK

Understand how the hazard could hurt someone and how likely it is!

CONTROL MEASURE

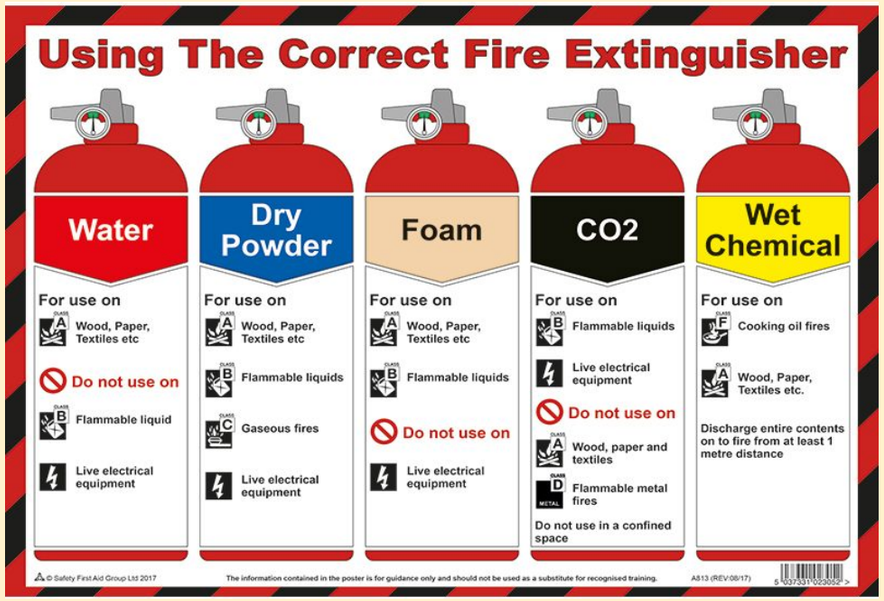
What can you do to control the risk? Can you get rid of it all together?

REVIEW THE RISK

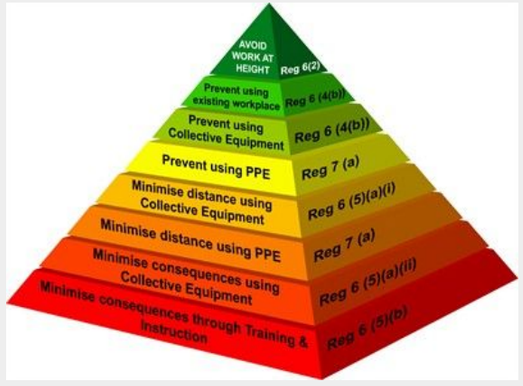
Make sure the review the hazard and risk to adapt to any changes.

Construction - Unit 1

Warning
Site security on site



HSE Health and Safety Executive



Security Risks/ Effects
Theft of tools
Theft of plant /machinery
Vandalism
Theft of personal information (name, addresses, DOB, bank details, etc…)
Injury of unauthorised person (claim)
Assault on employees
Closure of site due to theft/damage of site.
Control Measures
Strong Perimeter Fence, warning signs
CCTV
Security Guards
Strong passwords, firewall, locks on Computers /Laptops
Tools / Equipment locked away in strong material storage units, no windows
Tracking devices on plant /machinery
All tools /equipment registered on National Equipment Register
All vehicles are locked/ secured overnight

HAZARD

RISK

CONTROL MEASURE

What is a hazard?
A hazard is an activity or an object that will cause harm or injury to someone. This will be a simple answer **(usually worth 1 mark)**

What is a risk?
This is describing the harm/injury that could happen because of the hazard. You must describe why/how this is likely to happen. You should be explicit in the detail of the harm likely to happen. **(usually work 2-3 marks)**

What is a control measure?
A control measure is what you can do to prevent the hazard from hurting anyone (not just the people present in the picture). You must explain how the control measure will work. How will it be successful. **(usually worth 3-4 marks)**.

Construction - Unit 1

- Look at the marks available, work out how much explanation/detail is required.
- Look at the question - is it asking you to describe, explain?
- Look at the question - is there any clues in the text?
- Keep it simple - go for the obvious answers. Don't over complicate it and try to see hidden hazards.
- Write as much as you can. DO NOT assume the examiner will know what you mean. Explain WHY you think there is a risk. Explain what the risk would be… what type of injury, impact would there be. Explain why the Control Measure would work - the purpose of it.

EFFECTS

REMEMBER - there are 4 types of EFFECTS from a hazard.

You should REFERENCE these in your answers when explaining the RISKS!

PHYSICAL	PSYCHOLOGICAL	FINANCIAL	ENVIRONMENTAL
Bodily harm (broken leg)	Harm to your mind (stress, PTSD)	Money Damage (fine, bankruptcy)	Damage to the natural environment (trees, animals)

QUESTION STYLE

IMAGE 1

What are the risks to security? (3)

Remember to explain in as much detail as possible!

Write you answer here….

What control measures could be put in place to tighten security on this site? (4)

Remember to explain in as much detail as possible!

Write you answer here….

Job Roles

Learning Outcome 1 – Know job roles involved in realizing construction and built environment projects.

Activities
The physical intricate tasks undertaken by the job role.

Responsibilities
The expected duties of the job role.

Outputs
The physical completed activities undertaken by the job role.

EXAMPLE - *ELECTRICIAN*

Activities
Cuts cables/wires, measures cables/wires, connects electrical appliances, buys electrical materials.

Responsibilities
To follow instructions as directed by the employer for all electrical work. To complete work to the client's requests. Work as part of a team. Follow all health and safety rules, demonstrate a competent level of health and safety.

Outputs
Connect the building electrics to the main power supply, connect all plug sockets to the wall, connect all lighting appliances, check all electrics are connected safely.

Learning Outcome 2

Understand how built environment development projects are realised.

Design Planning

Controlled by the design team, they work together to create design ideas for the client, taking time and cost considerations!

Project Planning

The pre- construction period, construction phase and maintenance period will be planned in detailed schedules and programmes of work at an early stage.

Procurement Planning

The process of obtaining materials, labour, finance and plant so that the project can run efficiently and effectively.

Construction Unit 1

RIBA Plan of Work

Royal Institute of British Architects

Nationally recognised professional timetable of how a construction project can be managed and delivered.

Tradespersons

- Bricklayer
- Plumber
- Electrician
- Plasterer
- Roofer
- Carpenter/ Joiner
- Floor Layer/ Carpet Fitter
- Insulation Installer
- Labourer
- Dry Liner
- Heating System Installer (Gas)
- Window Fitter
- Bathroom/Kitchen Installer
- Landscaper
- Painter/ Decorator
- Scaffolder
- Tiler

Specialist Sub-Contractor

- Lift/ Escalator installation
- Cladding Systems
- Air Conditioning Systems

Client's Team

- Client
- Architect
- Structural Engineer
- Building Services Engineer
- Quantity Surveyor
- Project Manager
- Designer
- Civil Engineer

Statutory Personnel

- Building Inspector
- Town Planner
- Health & Safety Officer
- Public Health Inspector

General

- Administrator
- Finance Officer
- Public Liaison Officer
- Purchasing / Procurement Officer
- Catering
- Security Officer

Construction

1. Prepare site including principal roads and drainage
2. Excavate / pour foundations
3. Build substructure to ground floor level
4. Pour sub-floor concrete
5. Build wall construction to first floor level
6. Place floor joist or slabs
7. Build wall construction to second floor or roof level
8. Install internal walls
9. Put on roof
10. Install external components
11. First fix building shell in preparation for plastering
12. Plastering all internal and external walls
13. Install second fix components (doors, skirting, radiators, light switches)
14. Install kitchen and bathroom
15. Decorate / finish
16. Clean, test and final inspections
17. Handover completed.

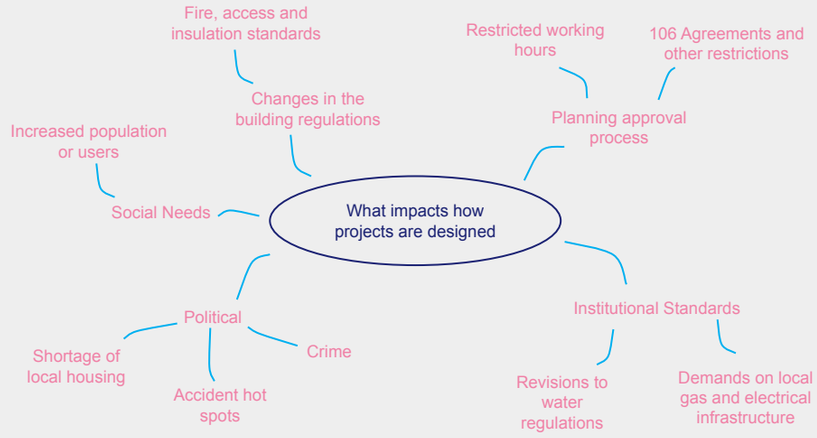
Reminder - Site setup includes installation of health and safety signs, a site fence/boundary and making sure everyone has completed a site H&S induction.

Key Term
106 agreements: Conditions imposed by the local authority planning department such as: for every 300 houses constructed the developer must provide a nursery school; or contribute to an adjacent road widening project; or maybe provide a pedestrian bridge over a local busy highway that the occupants of the new housing are likely to use. This ensures that any new development is safe and sustainable for people to live, work or play in and not subsidised by the taxpayer.

Key Term
Bill of Quantities: A bill of quantities is a document containing a tabulated list of all the materials contained within a building, including a specification of the total quantity of materials required. This document is prepared for the Quantity Surveyor is can be known as BoQ or BQ.

Key Term
Planning permission refers to the approval needed for construction or expansion of a building, and sometimes for demolition. Planning permission in the United Kingdom is the planning permission required in order to be allowed to build on land, or change the use of land or buildings.

Key Term
Building Control: Building regulations are the minimum standards for design, construction and alterations to virtually every building. The regulations are developed by the UK government and approved by Parliament. You can apply to any local authority building control department.



RIBA – Plan of Work STAGES

Strategic Definition
Client decides to build a project, chooses an architect, completes a brief.
Preparation and Brief
Client chooses the management/design team, sets out communication system!
Concept Design
Architect creates initial/basic designs, works with client to ensure key concerns are met.
Developed Design
A more developed design is created, room requirements, sizes are discussed and met.
Technical Design
Full working plans are created, building contractor is chosen, planning permission is achieved, contracts are agreed.
Construction
Full construction of building takes place.
Handover and Close Out
Building is inspected and a final certificate of completion is issued, building is handed over to client.
In Use
Client uses building, process is evaluated.

Learning Outcome

Be able to plan built environment development projects

1) Sequence processes to be followed
2) Apportion time to processes
3) Set project tolerances

Activity	Day Number								
	1	2	3	4	5	6	7	8	9

Scale	Use
2:1 (Twice full size)	A small item e.g. An earing
1:1 (Actual size)	A handheld object e.g. Mobile phone
1:2 (Half size)	A small electrical device e.g. Laptop
1:10	A piece of furniture
1:100	A house or garden
1:500	A very large building e.g. sports stadium

Sources of Information

- Drawings
- Catalogues
- Spreadsheets
- Material Lists
- Specifications

Calculate

- Area
- Volume
- Percentages
- Scaling
- Best value
- Tolerances
- VAT
- Tender price

Resources

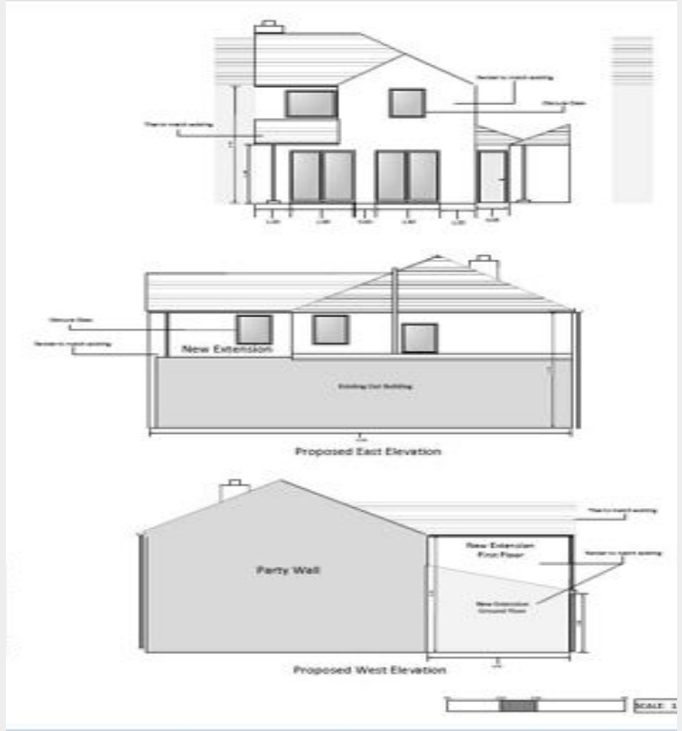
- Plant
- Machinery
- Labour

Factors Affecting Success

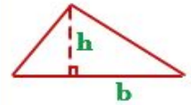
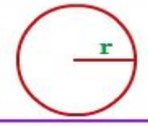
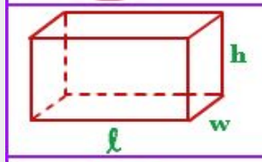
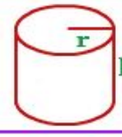
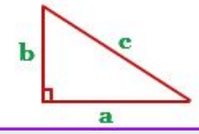
- Weather
- Budget
- Penalties
- Legislation
- H&S
- Time

Sources of Information

FULL ARCHITECTURAL TECHNICAL DRAWING



Geometry Formulas

	Area = ℓw Perimeter = 2ℓ + 2w
	Area = ½ bh
	Area = πr^2 Circumference = $2\pi r^2$
	Volume = ℓwh
	Volume = $\pi r^2 h$
	$C^2 = a^2 + b^2$

Design Technology

Briefs, Specifications, Ideas and Development

Design Briefs

A Design Brief is the statement of how you will solve the Design Problem
It will often include:

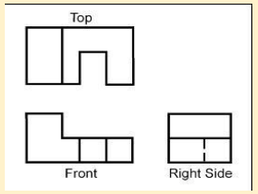
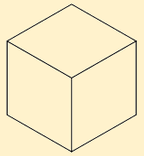
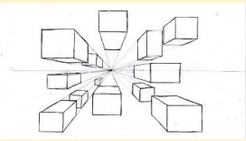
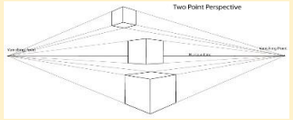
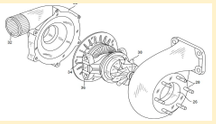
- Constraints/ limitations
- What the product is
- Materials/processes
- Any key information you know

Design Specifications

A Design Specification is a list of requirements your product has to meet in order to be successful

It is also useful for evaluation. If your product hasn't met the Spec then it gives you a starting point for improvements.

Aesthetics	What the product looks like? Style? Colour Scheme? Design Movement?
Customer	Who would buy it? (Age, gender, socio-economic, personality) How does the design appeal to them?
Cost	How much will it cost? (min-max) Why?
Environment	Where will it be used? Why? How will you make it suitable?
Safety	How is it safe? How will it be checked? Why must it be safe?
Size	What is the maximum or minimum size? Why?
Function	What does the product do? What features make it do that function well? How is it unique from similar products?
Materials	What is it made from? Why?
Manufacture	How might it be made? Why? What scale of production? Why?

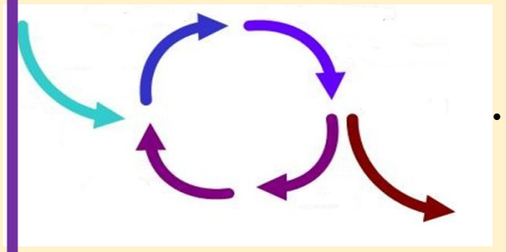
Technique	Description/ notes	Diagram
Orthographic Projection/ Working Drawings	• Includes "Front", "Plan" and "End" 2D Views, and often an Isometric 3D View • Standardised method for scale, dimensions and line types • Great for manufacturing	
Isometric	• Common 3D sketching method • Can be drawn free-hand or using isometric paper and ruler • Angles are at 30 degrees • Great for seeing most of the products	
1-Point Perspective	• A 3D drawing method • Often used by interior designers and architects • Gives drawings depth • Only uses 1 vanishing point	
2-Point Perspective	• Used for 3D designs • Exaggerates the 3D effect • Objects can be drawn above of below the horizon line but must go to the 2 vanishing points	
Annotated Drawings/ Free and Sketches	• Quick and easy way of getting ideas down • Range of ideas can be seen • Annotation helps explain designs further	
Exploded View	• Helps see a final design of a product and all it's parts • Can see where all the parts fit • Great for manufacturers	

Modelling and Development

Modelling and development are key to testing and improving products
This can be done physically using materials like; card, foam, clay, man-made boards or virtually in **CAD**
Modelling helps the designer get feedback from the customer, check aesthetics, function, sizes and even materials and production methods and change them if needed

Design Strategies

Design Strategies are used to solve **Design Fixation**, and help develop creative design ideas.



Iterative Design

- A Proposal is made
- It is then planned and developed to meet the brief
- It is analysed and refined
- It is then tested and modelled
- Then evaluated against the brief – many versions fail but that then informs development to make the idea better
- The cycle then repeats and if the product is successful it is then made and sold on the market

Iterative Design	
Advantages	**Disadvantages**
• Consistent testing helps solve problems earlier • Constant feedback • Easy evidence of progress	• Designers can loose sight of "the big picture" • Time consuming

User-Centred Design

- This is when designs are based on fulfilling the needs and wants of the Users/ Clients at every stage of the design process
- Questioning and testing is ongoing and is often found through interviews, questionnaires, surveys, etc

User-Centred	
Advantages	**Disadvantages**
• User feels listened to • Makes sure the product meets their needs	• Requires extra time to get customer feedback • If focused on just one person it can limit appeal to others

Systems Approach

- Usually used for electronic products
- Often uses diagrams to show systems in a visual way
- Planning the layout for the correct sequences e.g. inputs, outputs, timings, etc
- Electronics and mechanical systems need an ordered and logical approach

Systems Approach	
Advantages	**Disadvantages**
• Does not need specialist knowledge • Easy to communicate stages • Easy to find errors	• Sometimes over-simplifies stages • Can lead to unnecessary stages

Collaborative Approach

- Working with others to share data and solving problems and coming up with design proposals can help with creativity
- Numerous companies work in teams, and has been shown to improve the range and quality of ideas produced

Collaborative Approach	
Advantages	**Disadvantages**
• Gets multiple opinions and a range of views • Working in groups can produce more ideas	• Can be difficult to design ideas with opposing views • Can be difficult to find time to communicate with multiple people

Energy Generation and Storage

Non-Renewable Energy Sources	This is when certain sources of energy will run out eventually
Fossil Fuels	• Coal, Oil and Gas • Burned to create steam, turned in turbines to create electricity. • Burning creates C02 which adds to **Global Warming**
Nuclear Power	• Nuclear Fission controls the reactor (that creates the electricity). This requires **Uranium** which is non-renewable • Accidents and waste can severely damage the environment and cause radiation poisoning • **Radiation poisoning** can be fatal and cause physical deformations • Nuclear waste has to be disposed of properly and is hazardous for thousands of years.

Storing Energy

Pneumatics: This is the production of energy using compressed gas or air. E.g. Pistons in an engine

Hydraulics: Like a Pneumatic system, but uses water or oil under pressure. E.g. Wheelchair lifts

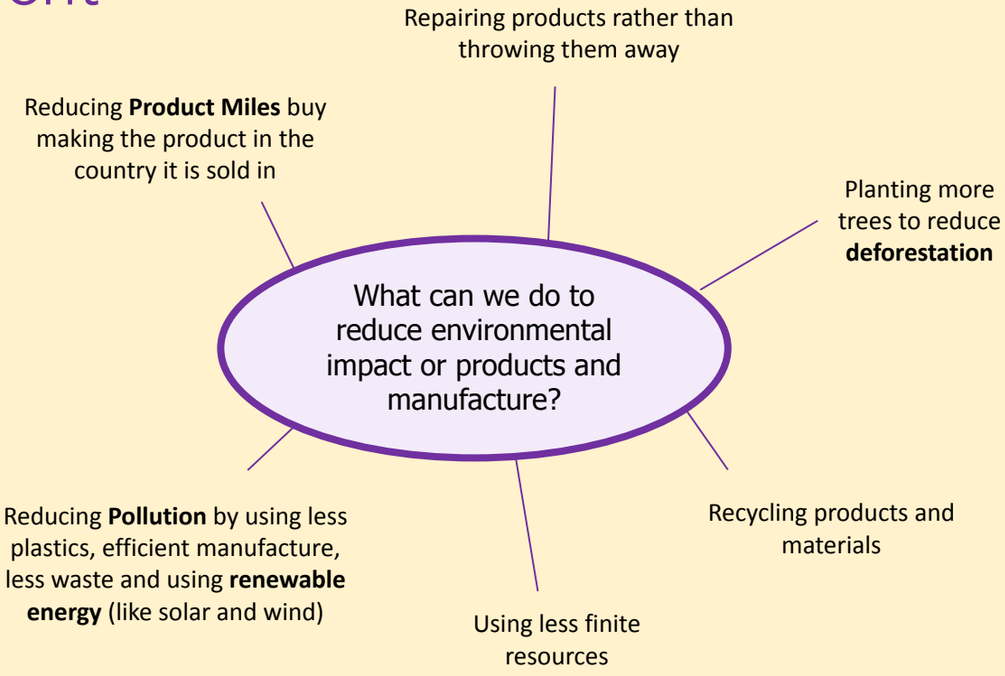
Kinetic: Energy that is generated by movement. This is stored by items like springs in a "clickable" pen or balloons,

Batteries: Electrical power can be stored in batteries. Rechargeable batteries are becoming increasingly popular.

Renewable Energy Sources	This is when certain sources of energy will not run out.
Solar	• **Solar panels** are used to collect light and convert it into electricity • There is no waste and a consistent supply • However, the panels are not effective at night or in countries where there isn't a lot of sunlight
Wind	• **Turbines** harness wind energy • Not effective on non-windy days • Some people don't like turbines as they are noisy, and not attractive to look at
Hydro-Electrical	• This harnesses energy from water held behind a **dam** • Has to be created by flooding land – damaging wildlife habitats • **Tidal** energy comes from using energy from waves
Biomass	• This is fuel from natural sources e.g. crops, scrap woods and animal waste • Growing biomass crops produces oxygen and uses up C02 • However, is a very expensive method

Environment

The 6Rs	Meaning
Reuse	To use a product again either for the same purpose or a different one
Reduce	To have less of material/packaging/pollution when making products by making them more efficient
Recycle	Breaking down and forming the material into another product
Refuse	Customers not buying or supporting products that make an environmental impact
Rethink	Designers and customer rethinking their decisions when making and buying products.
Repair	Fixing a product rather than throwing it away. Extending its life rather than using more resources to make another Often products are **Designed for Maintenance** so can easily be repaired. E.g. Using screws so even non-specialists can take a product apart, or using components that can easily be replaced like fuses or batteries



Life Cycle Assessment

This is when a designer looks at the environmental impact a product makes over its life time and how it could be reduced. Including:

- Impact of materials
- Impact of processes
- Product Miles (how far a product has to travel to get from factory to consumer)
- Impact while in use
- Impact when disposed of (6Rs)

Sustainability is maintaining our planet and its resources and making a minimal negative impact

Finite Resources *Will run out of eventually*	**Non-finite Resources** *Can be re-grown and re-bread. Will not run out of*
Plastics	Paper
Metals	Boards
Polymers (Textiles)	Natural Timbers
Coal, Gas and Oil	Cotton
	Leather

Planned Obsolescence	This is where products "die" after a certain amount of time. E.g. Disposable cups, Phones, Lightbulbs, Printer Ink, etc This can have a big environmental impact as customers are throwing away lots of products, and resources are being used to create new ones.

Finishes, Standard Components, Accuracy and Process Orders

Finishes

Finishes are used to improve the **aesthetics** and **durability** of products

Material Type	Finishes Used
Papers and Boards	• Paints • Varnishes • Laminating • Plastic coating • Wax coating
Timbers and Boards	• Paints • Varnishes • Wax and Polish • Staining • Oil
Metals and Alloys	• Painting • Lacquering • Electroplating • Galvanzing • Polishing • Plastic Coating • Powder Coating
Plastics	• Polishing • Painting • Decals (stickers)

Standard Components

Standard components are parts or components manufactured in the 1000s+
They are readily available, don't require specialist knowledge or tools to replace them and are universally recognised

Material Type	Components used
Papers and Boards	• Staples • Clips • Split pins
Timbers and Boards	• Nails • Screws • Panel Pins • Hinges
Metals and Alloys	• Nuts and bolts • Screw • Rivet • Washer
Plastics	• Plastic hinges

Tolerances

- The total amount a specific dimension or property is permitted to vary
This can apply to hole depth, length, angle, thickness, weight and elasticity
A gauge can be inserted into a gap or hole to check if the sizes fall within tolerance
If parts do not fit within the specified tolerances they are discarded or recycled

Quality Control and Quality Assurance

- QC is ***product*** oriented
Quality control is where products are regularly tested (during and after manufacture) to ensure they meet the defined set of quality criteria

- QA is ***process*** oriented
Quality assurance is ensuring that the processes used to test the product have been done correctly and consistently
You can test a product all you like, but if the tests are wrong/ inconsistent with each other than the results are invalid

- Below are examples of Quality Assurance symbols:

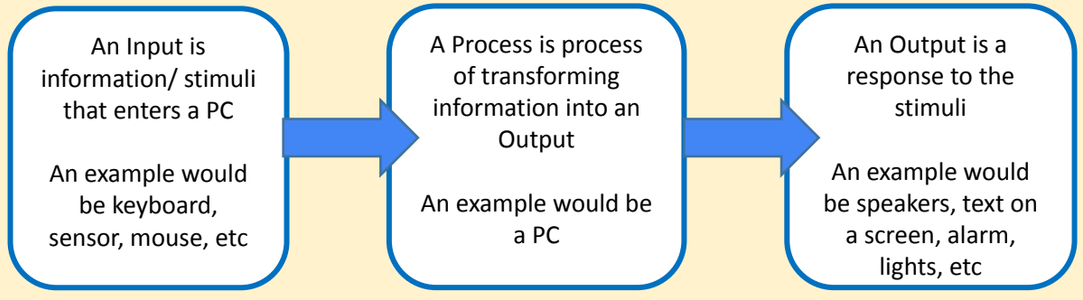
European Conformity

BSI Kitemark

Lion Mark

Registration Mark

Process Orders



Industry and Enterprise

Automation

This is when machines and robotics help make products or make them for you.

Often this is done by **CAD (Computer Aided Design)** and **CAM (Computer Aided Manufacture)** and **Computer Numerical Control (CNC)**

This helps products be made quicker, with more accuracy. Reducing errors humans make to products.

However, these machines are expensive to buy, need specialist training to use and need constant maintenance to keep them working properly

Virtual Marketing

This is when websites, social media and email are used to promote and sell products. This has become very popular in recent years, with big social media apps being funded by advertisers

Companies can also pay search engines to push their company further to the top of the results page, so customers are more likely to click it.

Cooperatives

A Cooperative is an Enterprise that is run by members that are part of the workforce or customers.

This means the organisation is democratic and often supports the local community. They are set-up to protect the rights of their members and ensure the same rules apply to everyone.

Your school is part of the Co-op, the world's largest Cooperative.

Enterprise

This is when an idea is developed into a business and produces a viable product.

Often, one of the biggest enterprises in in apps for smartphones

To make sure ideas are protected from being copied, a **Patent** can be applied for. This legally protects your idea on invention from being stolen.

Crowdfunding

This is where ideas are funded by large groups of ordinary people.

www.Kickstarter.com is a good example of this.

Fair Trade

This is an organisation that promotes fair pay, working conditions and better trade with farmers in developing countries

You can tell when something is Fairtrade as it will often have the symbol on the product or packaging. Common Fairtrade items include; bananas, cotton and chocolate.

Modern and Smart Materials

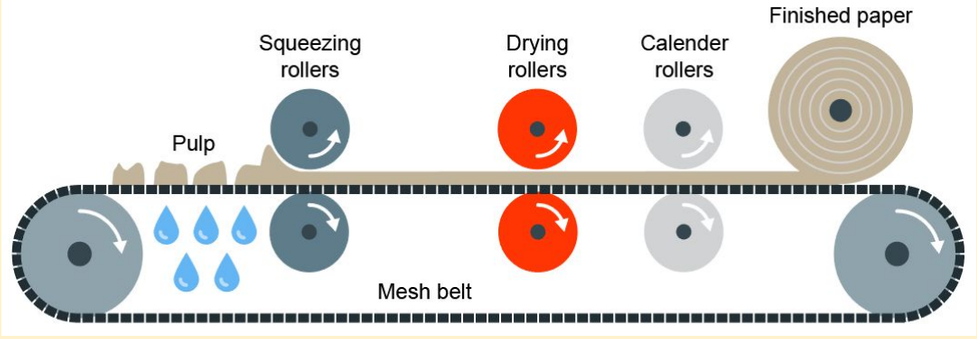
Modern Materials are materials that have been developed recently		
Material	**Key info**	**Examples**
Corn-starch Polymers	These are plant-based polymers that are a replacement for plastics that are **biodegradable** but cannot be recycled.	Plastic bottles, tubs, food containers, etc
Flexible MDF	Made in the same way as normal MDF but with grooves cut into the surface so it is flexible. **Flexiply** is the same but for Plywood. These can easily be shaped into curves	Modern furniture, interior walls and room dividers
Titanium	High strength to weight ratio. Doesn't corrode or rust. Suitable for medical use as its hypo-allergneic	Prosthetics, medical applications, sports cars, etc
Kevlar	A woven polymer with a high strength to weight ratio.	Bullet-proof vests, tyres, helmets, etc

Smart Materials are materials that change and react to the stimuli		
Material	**Key info**	**Examples**
Thermochromic Pigments	Change colour in reaction to heat	Kettles, baby bottles, etc
Photochromic Pigments	Change colour in reaction to light	Colour changing glasses, windows, etc
Shape Memory Alloy	Returns to its original shape, in reaction to heat	Braces and glasses
Polymorph	Granules that once exposed to hot water, become a modelling material (like a dough or clay)	Modelling and repairs

Papers and Boards

Papers and Boards come from trees. **The Stock forms** for papers are: rolls, sheets, A4, A3, etc		
Material	**Key info**	**Uses/ Examples**
Cartridge Paper	Thick white paper, completely opaque and more expensive than photocopy paper	Sketching, ink drawings
Layout Paper	Light, semi-translucent, good for blending inks and artist markers	Sketching, drawing and some tracing
Corrugated Cardboard	Strong but light. Rigid triangles of card sandwiched between a top and bottom layer.	Outer packaging, food packaging
Duplex Board	Light card with white outside layers. Waxy coating can be added	Cheap packaging. If waxy coating is applied, can be used for food
Foil-lined Board	White card coated with a thin aluminium layer. Foil is great for insulation and water resistance	Takeaway containers
Solid White Board	High-quality white card with a smooth finish. Stiff and holds colours well	Greetings cards, packaging and advertising

Primary Processing of Papers and Boards



Paper is made by first making pulp. Pulp is a mix of tree fibres and water. This is cooked and bleached white, and adding any other additives.
The pulp is then drained and goes through **Calendering** where the pulp is drained and goes through rollers to convert it to its stock forms

Timbers and Boards

Natural Timbers

Softwoods are generally cheaper than hardwoods as they are more available, since they grow quicker.
But because man-made boards are manufactured they are cheaper than timbers.
Man-made boards also come in a better variety of sizes since they don't depend on tree growth.

Stock forms for both include; sheets, dowel, planks, etc

Hardwoods come from **Deciduous Trees.** These trees loose leaves in winter and grow fruit and flowers in spring		
Material	**Key info**	**Examples**
Ash	Flexible, tough and shock resistant	Sports equipment Tool Handles
Beech	Fine finish, tough and durable	Toys, furniture and veneers
Mahogany	Easily worked, durable, high quality finish	High-end furniture
Balsa	Very soft and spongy. Light	Modelling
Oak	Tough, durable and hard	Flooring, furniture and veneers

Softwoods come from **Coniferous Trees.** These have thin, needle-like leaves and grow all year round. Often have pine cones and sometimes nuts and seeds		
Material	**Key info**	**Examples**
Larch	Durable, tough, good water resistance and finishes well	Furniture, flooring and used outdoors
Pine	Light, easy to work with but can split	Cheap furniture, construction and decking
Spruce	Easy to work with, high stiffness but can decay quickly	Furniture, musical instruments and construction

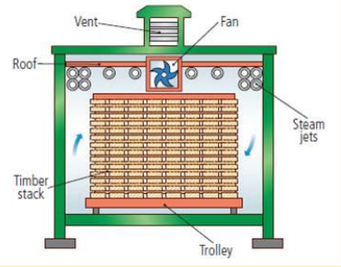
Man-Made Boards

Manufactured boards are made from wood chips/dust/ layers and glue.		
Material	**Key info**	**Examples**
Chipboard	Prone to chipping but good compressive strength. Not-water resistant	Flooring, low-end furniture, flat-pack
MDF	Rigid and stable. Easy to finish. Absorbs liquid easily	Flat-pack furniture and kitchen unites
Plywood	Very stable. Exterior veneer can be used from more expensive woods	Shelving, furniture, toys

Primary Processing of Papers and Boards

Trees are cut then converted into planks by cut using saws
It is then seasoned to reduce the moisture in the wood. This is done by either:

Air-drying – Planks are stacked and air allowed to circulate; causing evaporation
Kiln-drying – Where planks are put into a kiln and dried rapidly. This process is more costly than air-drying



Manufactured boards can be either be made by lamination or compression

Lamination – Layers of woods and adhesive are layered and compressed together. Usually with a more expensive wooden veneer on the top

Compression – Wood is shredded, heated and compressed with adhesive under extreme pressure

Metals, Alloys and Plastics

Metals

Metals come from ores in the ground. **Stock forms** are sheets, bars and rods

Ferrous Metals contain iron and are magnetic and rust		
Material	**Key info**	**Examples**
Low Carbon Steel	Tough and ductile and easily machined and welded	Construction, screws, cars
High Carbon Steel	Hard and wears well	Tools, blades and knives
Cast Iron	Hard but brittle. Easily cast but hard to machine	Pots, pans, vices

Non-Ferrous Metals do not contain iron, aren't magnetic and don't rust		
Material	**Key info**	**Examples**
Aluminium	Light, high strength to weight ratio and ductile	Pots, pans, cars, cans
Copper	Ductile, malleable and good conductor	Plumbing supplies and cables
Tin	Soft, malleable and good conductor	Used as a protective coating

Alloys are mixtures of 2 or more metals to get the best of their properties		
Material	**Key info**	**Examples**
Brass	Malleable and easy to cast	Musical instruments, plumbing
Stainless Steel	Doesn't rust, hard and smooth	Cutlery, medical tools, etc

Plastics

Plastics come from crude oil. **Stock forms** are sheets, powders, granules and rods

Thermoplastics can be reheated and reshaped and infinite amount of times		
Material	**Key info**	**Examples**
PET	Easily **blow moulded,** food safe and easily recycled	Bottles, packaging, etc
PVC	Flexible, tough, easily **extruded**	Pipes, tape, hard hats
HIPS	Flexible, lightweight, food safe and easily **vacuum formed**	Containers and yoghurt pots
Acrylic	Tough, brittle, easily scratched	Car lights, baths, displays/ signs

Thermosets once heated and set **cannot** be reshaped		
Material	**Key info**	**Examples**
Melamine Formaldehyde	Food safe, hygienic, hard and brittle	Kitchenware and work surfaces
Urea Formalehyde	Good insulator, hard and brittle	Electrical casings, buttons and handles
Polyester Resin	Strong, heat resistant, can be transparent	Coatings, casings

Primary Processing of Metals and Alloys

Metals are mined from the earth and then go through an extraction process
Extraction happens by putting the ore in a blast furnace
The metal is then separated from the waste material

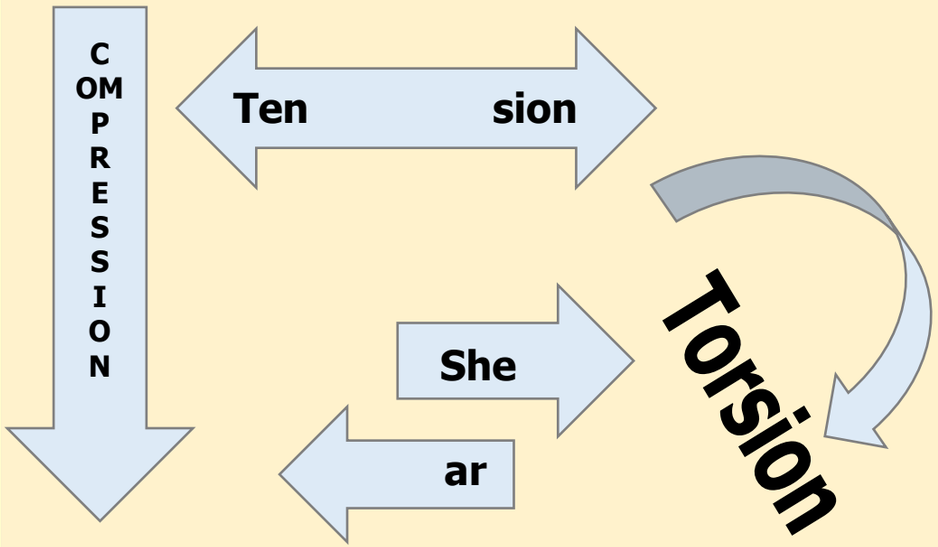
Primary Processing of Plastics

Crude oil is extracted from the earth and then processes into different types of fuels, etc. This is called **Fractional Distillation**

A process called **Cracking** then converts the large hydrocarbon molecules into plastics

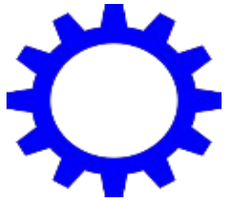
Mechanical Systems

Forces

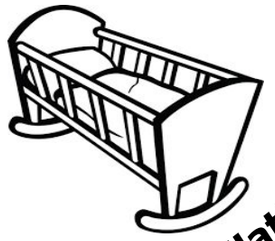


Motion

Linear



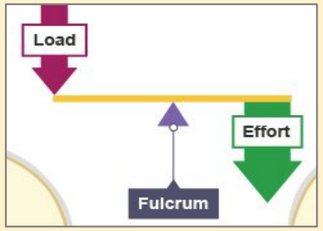
Rotation



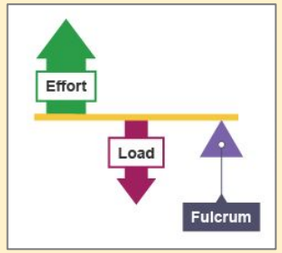
Oscillating

Reciprocating

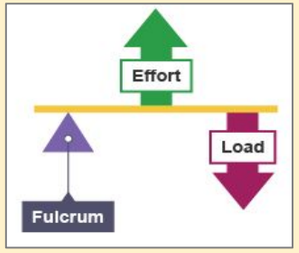
Levers



1st Class Lever: Fulcrum in the centre
E.g. Scissors



2nd Class Lever: Load in the centre
E.g. wheelbarrow



3rd Class Lever: Force in the centre
E.g. Lifting a dumbbell

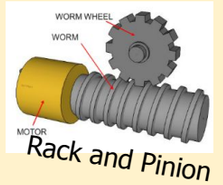
Gears and Pulleys

A Pulley is a grooved wheel, that has a belt running through it

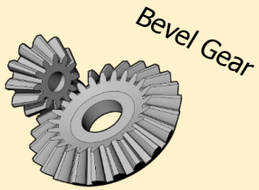
This uses rotary motion and is often used to help with heavy loads, and transfer force from a motor to a tool in machines like drills, etc

Gears have teeth that mesh together with each other (like teeth on a zip)

They mainly focus on rotary motion on tools and machinery e.g. car steering and pillar drills



Rack and Pinion



Bevel Gear

Spur Gear

Worm and Wheel

People. Society and Culture

Market Pull and Technology Push

Technology Push is the development of new technology, materials and manufacturing methods to create new products or improve old ones.

Examples include; Smart Phones, Electricity, Mass Production, etc

Market pull is the demand from consumers for new products and improvements in old ones; this is often found via reviews, polls, surveys, etc

Examples include; Product **Aesthetics,** making products easier to use, etc

Cultures, Faith and Belief

Different groups of people have different interests and have to be catered for.

Different countries and cultures also react to products differently.

E.g. In India McDonalds don't sell beef burgers as it has a large Hindu population, and cows are seen as sacred – in contrast the UK sells its most amount of fish and chips on a Friday as it is a Christian tradition to not eat meat on that day.

Case Study: £5 note

Hindu, Sikh and some other faith-based communities may choose to follow a vegetarian diet, and this is part of their culture. In addition to not eating meat, many followers of these faiths, as well as vegans and vegetarians, take every opportunity to avoid using animal products in their day-to-day lives.

The revelation in 2016 that the new polymer Bank of England £5 note contained tallow, an animal fat-based substance, upset a number of communities. There was a prompt call for the Bank of England to find an alternative way to produce the note and in the first two days of an official petition well over 100,000 signatures were received.

Shortly after the Bank of England admitted that the new polymer £5 note contained the animal by-product, some establishments refused to take the notes as a method of payment. One café owner was repulsed by the idea that the note contained tallow and believed that her customers supported her view. They received no complaints.

The Bank of England say they currently have no plans to change the manufacturing process.

Fashion and Trends

Fashion and Trends will change quickly, and you can see major differences in fashions over decades.

Designers have to make sure their products meet the fashion and trends of the area they are designing and selling the product to.

The change of products over time is called **Product Evolution**. This is caused by Market Pull, Technology Push and Fashion and Trends.

Some products are seen as **timeless.** These products are called **Iconic Designs.** These products are timeless because they were innovative, set a bench mark for following products, changed their industry and are often copied.
Examples include; iPod, iPhone, Angle-Poise Lamp, Swiss Army Knife, Converse Shoes, Levi's Jeans, Classic Mini Cooper

Inclusive vs. Exclusive Design

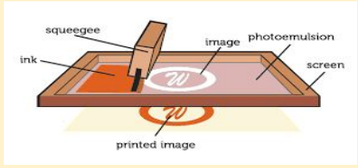
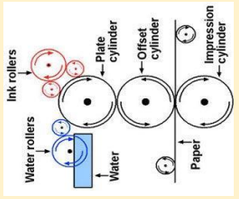
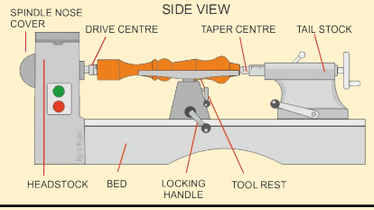
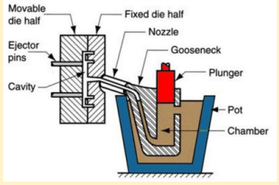
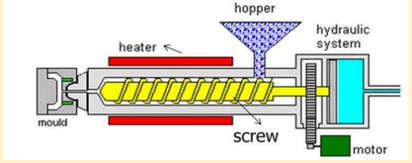
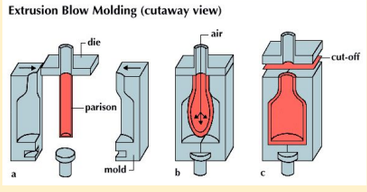
Inclusive Design: The aim to create a product that as many people as possible can use

Examples include; Cars, Doorframes, Adjustable Products, etc

Exclusive Design: The aim to create a product for a particular group and their needs

Examples include; Car seats for babies, Wheelchairs, Stair Lifts

Production Processes

Name of Process	Diagram	Material	Products Made	Key info
Screen -printing		Papers and Textiles	Posters, signs and t-shirts	Screen printing places paint on top of a screen. The screen has a stencil embedded in it, so when the paint is passed across it the desired shape is printed underneath. Good process in one-off and batch production as often done by hand
Offset Lithography		Papers and card (thin, flexible plastics)	Posters, newspapers, plastics bags	Rollers containing the colours and water go onto the plate cylinder. The water stops the colours sticking to certain places, creating the shape. The shape is transferred between rollers and onto the material. Can be used at batch and mass production
Lathe Turning		Wood and metal	Chair legs, baseball bats (cylindrical items)	Material is placed between the tail stock and the headstock and spun at high speed. The material is then cut using specialist tools (either by hand or my automated machinery) to the desired shape. Can be used in one-off and batch production
Die Casting		Metal	Car parts, engine components, etc	Molten metal is poured into a chamber and a plunger forces the metal through the nozzle into the mould. Unlike sand casting, the mould is reusable. Good process for both one-of and batch production
Injection Moulding		Plastics	Chairs, toys, etc	Plastic granules are poured into the hopper and onto the screw. The screw moves the material towards the heater where it turns into a liquid. The liquid is then forced into the mould, cooled and released. Great process for mass production as it makes 100s+ of products at once, to a identical standard.
Blow Moulding		Plastics	Plastic bottles	A Plastic parison is heated and put into the mould. The parison is then filled with air (like blowing up a balloon) and is forced to fit the mould shape. It is then cooled and then released. This is a great process for mass producing bottles.

Production Techniques and Systems

CAD Computer Aided Design

Examples; 2D Design, Autodesk Inventor, Fusion 360, Photoshop, etc

Advantages	Disadvantages
• Easy to change designs • Designs are easily saved and sent • Can be worked on by multiple people simultaneously • Can be used for virtual testing • Can produce high-quality designs	• Complex and time-consuming to learn • Expensive to buy • PCs can crash or be hacked – causing work to be lost • Takes up PC memory

CAM Computer Aided Manufacture

Examples; 3D Printing, Laser Cutting, CNC Router, Automated Machines and Robotics, etc

Advantages	Disadvantages
• Faster and more accurate than traditional tools • Repetitive accuracy/ consistent outcomes • Machines can run 24/7	• Expensive to buy the equipment, etc • Training takes cost and time • Need specialists to maintain and repair the machines • Dependence on CAM can cause unemployment

Flexible Manufacturing Systems

This is where **automated machines** are adaptable and can produce different products if needed.

If a manufacture is making a product with machines that are just dedicated to specific tasks they have to be reprogrammed and re-tooled before changing to a new task. This is time consuming and expensive.

Examples include; CNC Machines, 3D Printers, Laser Cutters, Robotic arms, etc

Lean Manufacturing

This is where waste and energy is kept to a minimum.
This helps manufacturers save money and resources in production, as well as helping minimise the **environmental impact** of producing products.

Just-in-Time (JIT) Manufacture

This is where manufacturers only order materials, parts, etc when needed. The customer's order triggers the production process and the resources needed for that order are the only ones bought.

This can be used in any **scale of production** but is particularly useful for one-off production.

Advantages	Disadvantages
• Saves on warehouse and storage costs • Money is not tied-up in stock • Little/minimal waste • Customer often pays in advance so money is secure before production	• All production stops if a part/ material is missing • Needs to have a fast, reliable and good quality supply chain to work properly • Can be time-consuming

Scales of Production

Name/ Type	How many it makes	Key Info	Examples of Products
One-off Production	1	• Also known as Bespoke or Prototype manufacture • Custom-made products • Specialist workers/ skills • Specialist machines and materials • High Quality but expensive	• Towers / Bridges • One-off Houses • Custom made clothes
Batch	10s-1000s	• Uses a mix of workers and machinery • Uses jigs, moulds and templates to help make identical products • Stations of workers e.g. cutting station, painting station, etc • Can have some variation e.g. colour, finish, flavour	• Baked foods • Limited edition car • Socks • Chairs
Mass	10,000s - 100,000s	• Big assembly lines (and sub-assembly lines) • Heavily automated • Standard and identical products • Little worker input	• Cars • Bottles • Microchips • Plain shirts
Continuous	100,00s +	• 24/7 production • Heavily automated • Standard and identical products • Little worker input	• Energy • Water • Paper • Plastic

One-off Production	
Advantages	**Disadvantages**
• Custom made • High Quality Materials • High Quality Craftsmanship	• Time consuming • Specialist training for workers • Expensive to buy

Batch Production	
Advantages	**Disadvantages**
• Lower cost than one-off • Jigs, moulds and templates help products look identical • Can have some variety	• High storage costs • Jugs, moulds and templates have to be checked • Workers can become bored on their station

Mass Production	
Advantages	**Disadvantages**
• Large amounts made at once • All products are identical and to same standard • Using automation reduced human error	• Initial starting costs are high • If production line stops, the product can't be made • Workers become bored monitoring machines and repetitive tasks

Continuous Production	
Advantages	**Disadvantages**
• Large amounts made at once • All products are identical and to same standard • Using automation reduced human error	• Initial starting costs are high • If production line stops, the product can't be made • Workers become bored monitoring machines and repetitive tasks

Work of others and Customer Research

Work of Others

Image/ Example	Designer	Design Movement	Key info
	William Morris	Arts and Crafts	• British designer in 1880s • Simple natural crafts • Useful and beautiful products (wallpapers, cushions, etc)
	Charles Rennie Mackintosh	Art Nouveau	• Scottish designer in 1860s – 1920s • Known for light and shadow • Created stained glass and furniture • Inspired by nature and geometric lines
	Ettore Stottas	Memphis	• Italian designer in the 1950s/60s • Enjoyed making everyday objects wacky and bold • Used lots of bold colours and black lines

Image/ Example	Brand	Key info
	Alessi	• Italian Design Company • Homeware and kitchen utensils • "Post-modern" style • Phillipe Starke is a major designer
	Apple	• USA-based tech company • Famous for **iconic designs** of iPod and iPhone • Steve Jobs and Jonathan Ive are major designers • Known for innovative and modern design
	Dyson	• British engineering company • Famous for vacuum cleaners and innovative technology • James Dyson is a major designer

Research

Research can be divided into 2 categories; **Primary Research** and **Secondary Research**.
Primary is research you complete yourself.
Secondary is research from resources others can gathered e.g. books, magazines and internet

Primary research is generally more reliable as it is done by the person using it and can double-check the data

Another key piece of research, is **Anthropometrics and Ergonomics.** This helps develop the sizes of products, etc to make sure it fits the User	
Anthropometrics	The study of measurements of the human body. E.g. Knowing the grip width of a palm, if designing a new travel coffee cup
Ergonomics	The application of anthropometrics to ensure products are safe and comfortable to use. This can also include; size, material, appearance, brightness, sound and texture. E.g. making sure the travel cup is the correct size, and an insulating smooth material to make it comfortable to hold for long periods

Hospitality & Catering

Coming soon

English

Co-op Academy Walkden English Knowledge Organiser

Year 11 Autumn: English Language Paper 2 and English Literature Paper 2

English Language Paper 2

Question 1: Select the four true statements.
Question 2: Write a summary of the differences (or similarities) in the two sources. You will be asked to focus on something specific in the texts.
Question 3: Analyse the writer's language choices in presenting a thing or concept in one of the sources.
Question 4: Compare writer's perspectives and viewpoints. Explore the methods writers use to present these.
Question 5: Produce a piece of writing for a specified form in which you give a creative, engaging viewpoint on a given topic.

English Literature: An Inspector Calls

An Inspector Calls is a play written by J.B. Priestley. Set in 1912, it revolves around the wealthy Birling family who are celebrating their daughter's engagement. Their festivities are interrupted by the arrival of Inspector Goole, who informs them of a young working-class woman's suicide. As the investigation unfolds, it becomes clear that each family member has played a part in the woman's downfall. The play explores themes of social responsibility, guilt, and the consequences of one's actions. Through the inspector's relentless questioning, the family's facades crumble, exposing the interconnectedness of their actions and the need for societal change.

Structuring a literature essay

Craft a thesis statement.

- Respond to the question in one sentence.
- Develop your response: where and how do we see this?
- Link to the writer's intentions/the purpose of the play.

Craft the main body of your essay – discuss three big ideas that build on and unpick your thesis statement.

- Topic sentence
- Supporting references/quotes
- Methods identified: language, structure, form, motifs, symbols, characterisation
- Inferences to develop the central idea
- Close analysis – where appropriate
- Links to writer's intentions and relevant contextual links.

Co-op Academy Walkden English Knowledge Organiser

Year 11 Autumn: English Language Paper 2 and English Literature Paper 2

English Literature: Power and Conflict Poetry

***Ozymandias*:** Narrator meets a traveller who tells him about a statue in the middle of the desert. The statue is of an ancient & cruel ruler from a past civilization – Pharaoh Ramesses II. The poem is about the temporary nature of power. Ultimately, power will fade, art cannot immortalise power & nature will be long-lasting.

***London*:** Narrator describes a walk around London & comments on the despair & misery that he sees. Blake was influenced by the French Revolution & wanted social & political equality. He wanted the people to rise up against the powerful (church, monarchy) & in turn free themselves.

***Extract from the Prelude*:** This is only an extract of the poem & is autobiographical. It is about an over confident narrator who finds a boat & takes it out on the lake. Although confident to begin with & enjoying the scenery, the narrator sees the mountain appear on the horizon & is overwhelmed with its size & power. It causes the narrator to retreat & change his view of nature, he now realises its power.

***My Last Duchess*:** A Duke is showing a visitor a portrait of his Duchess (former wife) who is now dead. Whilst observing the painting he tells the visitor that the Duchess was flirtatious & displeased him. As he speaks we realise that the Duke is insanely jealous & probably had the Duchess killed. We learn at the end of the poem that the visitor has come to arrange the Duke's next marriage & is representing the woman he is set to marry

***The Charge of the Light Brigade*:** A tribute to the British cavalry (soldiers on horseback) who died during the Crimean War. The men were given an incorrect order to charge into battle with swords, & meet the Russian enemy, who were armed with guns. The cavalry were defenceless- yet still fought bravely. Tennyson honours the soldiers and the way they selflessly faced the Russian army despite knowing their chances of survival were slim.

***Exposure*:** An authentic poem based on Owen's own experience on the front line. It was a horrendous winter & the men are subject not to enemy attacks but to the brutality of nature. Nature is personified as the main enemy & the men can only wait to die. It is an anti-war poem & stresses the insignificance of man compared to nature.

***Storm on the Island*:** The narrator describes how a community are waiting to be hit by a storm. It is obvious that they have been hit before because of the landscape of the island (houses squat). The narrator starts off confident but as the storm hits the power of the storm creates feelings of fear & trepidation.

Bayonet Charge: The poem focuses on a single solder's experience of a charge towards enemy lines. It describes his thoughts & actions as he tries to stay alive. It is clear that the solder is not ready for the charge & could have been sleeping. The soldier fears for his life & the patriotic ideals that encouraged him to fight have gone.

Remains: . A group of soldiers shoot a man who's running away from a bank raid. His death is described in graphic detail & the soldier who is telling the story can't get the death of the man out of his head. He didn't know if the man was armed or not & the reader gets the impression that it was not an isolated incident. Armitage explores the impact of conflict on soldiers.

Co-op Academy Walkden English Knowledge Organiser

Year 11 Autumn: English Language Paper 2 and English Literature Paper 2

English Literature: Power and Conflict Poetry

***Poppies*:** A mother describes her son leaving home, seemingly to join the army. The poem is about the mother's emotional reaction losing her son to the war. She fears for his safety & after he leaves her she goes to a familiar place that reminds her of him.
War Photographer: A war photographer is in his darkroom, developing pictures that he has taken in different warzones. As the pictures develop he recalls the death of one man & remembers the cries of his wife. The photographer contrasts his experiences to rural England & focuses on people who do not seem to care about war torn places.
***Tissue*:** The poem uses tissue/paper as an extended metaphor for life. She describes how life, like tissue is fragile. However, she also discusses some of the literal uses of paper that are intertwined with our lives, such as recording names in the Koran- She then goes onto to discuss how we are made from tissue (living tissue which is our skin) emphasising that life is fragile.
***The Emigrée*:** The speaker speaks about a city that she left as a child. The speaker has a purely positive view of the city. The city she recalls has since changed, perhaps it was a scene of conflict, however, she still protects the memory of her city. The city may not be a real place but represent a time, emotion - perhaps the speaker's childhood.
***Kamikaze*:** Kamikaze is the unofficial name given to Japanese pilots who were sent on a suicide mission. The mission was considered one of honour but this poem is about a pilot who aborted the mission. Hi daughter imagines that her father was reminded of his childhood & the beauty of nature & life whilst on the mission. When he returned home he was shunned by his family.
***Checking Out Me History*:** The narrator discusses his identity & emphasises how identity is closely linked to history & understanding your own history. In school he was taught British history & not about his Caribbean roots to which he feels resentful. He mocks some of the pointless things he was taught & contrasts the nonsense topics with admirable black figures.

Power and Conflict Poetry Themes

Conflict	Memories	Place
War	Nature	Loss
Identity	Power	Regret

Geography

Unit 2b
The Changing Economic World

What is development?

Development is an improvement in living standards through better use of resources.

Economic	This is progress in economic growth through levels of industrialisation and use of technology.
Social	This is an improvement in people's standard of living. For example, clean water and electricity.
Environmental	This involves advances in the management and protection of the environment.

Measuring development

These are used to compare and understand a country's level of development.

Economic indicators examples	
Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income per capita	An average of gross national income per person, per year in US dollars.
Social indicators examples	
Infant mortality	The number of children who die before reaching 1 per 1000 babies born.
Literacy rate	The percentage of population over the age of 15 who can read and write.
Life expectancy	The average lifespan of someone born in that country.
Mixed indicators	
Human Development Index (HDI)	A number that uses life expectancy, education level and income per person.

Variations in the level of development

LICs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living. Stage 2 DTM
NEEs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages. Stage 2-4 DTM
HICs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services. Stage 5 DTM

Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.

Physical factors affecting uneven development

Natural Resources

- **Fuel sources** such as oil.
- Minerals and metals for fuel.
- **Availability for timber.**
- Access to **safe water.**

Natural Hazards

- Risk of tectonic hazards.
- Benefits from **volcanic material** and **floodwater.**
- Frequent hazards **undermines redevelopment.**

Climate

- **Reliability** of rainfall to benefit farming.
- **Extreme climates** limit industry and affects health.
- Climate can **attract tourists.**

Location/Terrain

- **Landlocked countries** may find trade difficulties.
- Mountainous terrain makes farming difficult.
- **Scenery attracts tourists.**

Human factors affecting uneven development

Aid

- Aid can help some countries develop **key projects** for infrastructure faster.
- **Aid** can improve services such as schools, hospitals and roads.
- Too much **reliance on aid** might stop other trade links becoming established.

Trade

- Countries that export more than they import have a **trade surplus.** This can improve the national economy.
- Having **good trade relationships.**
- **Trading goods** and services is more profitable than raw materials.

Education

- Education creates a **skilled workforce** meaning more goods and services are produced.
- **Educated people earn more money**, meaning they also pay more taxes. This money can help develop the country in the future.

Health

- **Lack of clean water** and poor healthcare means a large number of people suffer from **diseases.**
- People who are ill cannot work so there is little contribution to the economy.
- More money on healthcare means less spent on development.

Politics

- **Corruption** in local and national governments.
- The **stability of the government** can effect the country's ability to trade.
- Ability of the country to **invest into services and infrastructure.**

History

- **Colonialism** has helped Europe develop, but slowed down development in many other countries.
- Countries that went through industrialisation a while ago, have now develop further.

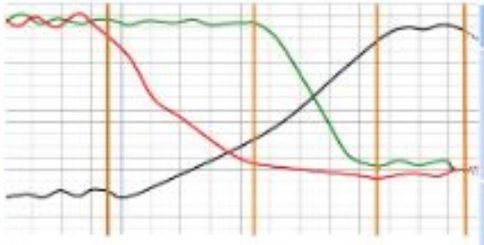
Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

Wealth	People in more developed countries have higher incomes than less developed countries.
Health	Better healthcare means that people in more developed countries live longer than those in less developed countries.
Migration	If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

The Demographic Transition Model

The demographic transition model (DTM) shows population change over time. It studies how birth rate and death rate affect the total population of a country.



STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
High DR *High BR* *Steady*	*BR Low* *Declining DR* *Very High*	*Rapidly falling DR* *Low BR* *High*	*Low DR* *Low BR* *Zero*	*Slowly Falling DR* *Low BR* *Negative*
e.g. Tribes	e.g. Kenya	e.g. India	e.g. UK	e.g. Japan

Reducing the Global Development Gap

Microfinance Loans
This involves people in LICs receiving smalls loans from traditional banks.
+ Loans enable people to begin their own businesses
- Its not clear they can reduce poverty at a large scale.

Foreign-direct investment
This is when one country buys property or infrastructure in another country.
+ Leads to better access to finance, technology & expertise.
- Investment can come with strings attached that country's will need to comply with.

Aid
This is given by one country to another as money or resources.
+ Improve literacy rates, building dams, improving agriculture.
- Can be wasted by corrupt governments or they can become too reliant on aid.

Debt Relief
This is when a country's debt is cancelled or interest rates are lowered.
+ Means more money can be spent on development.
- Locals might not always get a say. Some aid can be tied under condition from donor country.

Fair trade
This is a movement where farmers get a fair price for the goods produced.
+ Paid fairly so they can develop schools & health centres.
-Only a tiny proportion of the extra money reaches producers.

Technology
Includes tools, machines and affordable equipment that improve quality of life.
+ Renewable energy is less expensive and polluting.
- Requires initial investment and skills in operating technology

Case Study: Reducing the Development Gap In Tunisia

Location and Background

Located in Northern Africa with a Mediterranean coastline
The climate is mild in the summer temperatures can reach 40 dgreee

Tourist economy

In 2009 the industry provided 370,000 jobs.
Tunisia is now one of the wealthiest countries in Africa
The agricultural industry has benefitted as they supply hotels with food.

Multiplier effect

Tunisia's government invests 4% of its **GDP** in health
.**Literacy rates** have increased from 66% to 79% since 1995.
Equality as schooling is now compulsory for girls

Development Problems

- Pollution - beaches have been polluted with untreated rubbish from hotel
- 'Leakage' as profits go to overseas holiday companies which slows development
- Two terrorist attacks on holiday makers as groups disagreed with how development was promoting equality

Case Study: Economic Development in Nigeria

Location & Importance

Nigeria is a NEE in West Africa.
Nigeria is just north of the Equator and experiences a range of environments.
Nigeria is the most populous and economically powerful country in Africa. Economic growth has been base on oil exports.

Influences upon Nigeria's development

Political

Suffered **instability** with a **civil war** between 1967-1970.
From 1999, the country became **stable** with **free and fair elections**.
Stability has **encouraged global investment** from China and USA.

Social

Nigeria is a **multi-cultural, multi-faith society**.
Although mostly a strength, diversity has caused **regional conflicts** from groups such as the Boko Haram terrorists.

Cultural

Nigeria's **diversity** has created rich and varied **artistic culture**.
The country has a **rich music, literacy and film industry** (i.e. Nollywood).
A successful national football side.

Industrial Structures

Once mainly based on agriculture, **50% of its economy is now manufacturing and services**.
A thriving manufacturing industry is **increasing foreign investment** and **employment opportunities**.

The role of TNCs

TNCs such as **Shell** have played an important role in its economy.
+ Investment has increased employment and income.
- Profits move to HICs.
- Many oil spills have damaged fragile environments.

Changing Relationships

Nigeria plays a leading role with the **African Union** and **UN**.
Growing links with **China** with huge **investment in infrastructure**.
Main import includes petrol from the EU, cars from Brazil and phones from China.

Environmental Impacts

The 2008/09 **oil spills devastated swamps** and its **ecosystems**.
Industry has caused **toxic chemicals** to be discharged in open sewers - risking **human health**.
80% of forest have been **cut down**.
This also increases **CO^2 emissions**.

Aid & Debt relief

+ Receives $5billion per year in aid.
+ Aid groups (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV.
- Some aid fails to reach the people who need it due to corruption.

Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

Case Study: Economic Change in the UK

UK in the Wider World

The UK has one of the largest economies in the world.
The UK has huge political, economic and cultural influences.
The UK is highly regarded for its fairness and tolerance.
The UK has global transport links i.e. Heathrow and the Eurostar.

Causes of Economic Change

De-industrialisation and the **decline** of the UK's industrial base.
Globalisation has meant many industries have moved overseas, where labour costs are lower.
Government investing in supporting vital businesses.

Towards Post-Industrial

The **quaternary industry** has **increased**, whilst **secondary** has **decreased**.
Numbers in **primary** and **tertiary industry** has **stayed the steady**.
Big increase in **professional** and **technical jobs**.

Developments of Science Parks

Science Parks are groups of scientific and technical knowledge based businesses on a single site.

- Access to **transport routes**.
- **Highly educated workers**.
- Staff benefit from **attractive working conditions**.
- Attracts **clusters** of related **high-tech businesses**.

CS: UK Car Industry

Every year the UK makes 1.5 million cars. These factories are owned by large TNCs. i.e. Nissan.

- 7% of energy used there factories is from **wind energy**.
- New cars are more energy **efficient and lighter**.
- Nissan produces **electric and hybrid cars**.

Change to a Rural Landscape

Social

Rising house prices have caused tensions in villages.
Villages are **unpopulated** during the day causing **loss of identity**.
Resentment towards **poor migrant communities**.

Economic

Lack of affordable housing for local first time buyers.
Sales of farmland **has increased rural unemployment**.
Influx of poor migrants puts **pressures** on local services.

Improvements to Transport

A **£15 billion 'Road Improvement Strategy'**. This will involve 10 new roads and 1,600 extra lanes.
£50 billion HS2 railway to improve connections between key UK cities.
£18 billion on Heathrow's controversial **third runway**.
UK has many large ports for importing and exporting goods.

UK North/South Divide

- Wages are **lower** in the North.
- Health is **better** in the South.
- Education is **worse** in the North.
+ The government is aiming to support a **Northern Powerhouse** project to resolve regional differences.
+ More **devolving of powers** to disadvantaged regions.

The Challenge of Resource Management

Key words

- Resource Management:The control and monitoring of resources so that they do not become depleted or exhausted.
- Energy mix: The range of energy sources of a region or country, both renewable and non- renewable.
- Local food sourcing: A method of food production and distribution that is local, rather than national and/or international. Food is grown close to consumers' homes.
- Organic produce: Food which is produced using environmentally and animal friendly farming methods on organic farms. Artificial fertilisers are banned and farmers develop fertile soil by rotating crops and using compost, manure and clover. It must be free of synthetic additives like pesticides and dyes.
- Agribusiness: Application of business skills to agriculture.
- Carbon footprint: A measurement of all the greenhouse gases we individually produce, through burning fossil fuels for electricity, transport etc, expressed as tonnes (or kg) of carbon-dioxide equivalent.
- Over-abstraction: When water is being used more quickly that it is being replaced.
- Irrigation: Applying water to land in order to supply crops and other plants with necessary water.
- Famine: Widespread lack of food often causing malnutrition, starvation and death
- Malnutrition: Deficiencies or imbalances in a person's intake of energy and/or nutrients
- Cultivation: The act of preparing land and growing crops on it, or the act of growing a particular crop
- Genetically modified (GM) crops: Development of crops plants which have had their DNA changed by scientists to create desired traits, often by adding just one gene from a close wild relative

Growing Demand	Impact of Demand
UK imports 40% of its food. Increasing **carbon footprint**. There is growing demand for greater choice of **exotic foods** needed all year round. Foods from abroad are more affordable. Many food types are unsuitable to be grown in the UK.	+ Supports workers with an income + Supports families in LICs. Taxes from farmers' incomes contribute to local services. - Less land for locals to grow their own food. Farmers exposed to chemicals.
Agribusiness	**Sustainable Foods**
+ Intensive farming maximises the amount of food produced. Using machinery which increases the farms efficiency. - Only employs a small number of workers. Chemicals used on farms damages the habitats and wildlife.	**Reduces emissions** by only eating food from the UK. **Buying locally sourced** food supports local shops and farms. A third of people **grow their own food**.

Energy in the UK
Energy Mix
The majority of UK's energy mix comes from **fossil fuels**. By 2020, the UK aims for 15% of its energy to come from **renewable sources**. These renewable sources do not contribute to **climate change**.
Growing Demand
The UK **consumes less energy** than compared to the 1970s despite a smaller population. This is due to the **decline of industry**.
Changes in Energy Mix
75% of the UK's oil and gas has been used up. Coal consumption has declined. UK has become too dependent on imported energy.

Geography Homework

1: Knowledge Organisers
These provide the basic knowledge for each topic which needs to be known off by heart. This may include, key words, key concepts, costs and benefits..

2: Meanwhile, elsewhere
What we learn in our lessons only offers a glimpse of the world. To widen our understanding, one page research sheets will be used to explore what else was going on around the world at the same time as the topic we are studying. These need to be researched using the links and resources provided and completed.

3: Revision
Preparing for Geography assessments is an essential part of each topic, as these assessments allow teachers and pupils the chance to check their progress in Geography. Revising gives you the chance to show off what you know.

Read:
Factfulness - Hans Rosling

Prisoners of Geography - Tim Marshall

When the rivers run dry - Fred Pearce

Watch:
7 Billion - Documentary outlining the impacts of population growth on the availability of resources.

Listen:

RGS - Ask the Geographer

Climate Change - How much can individuals do?

‘Free’ water and electricity for the world

Option - Food

Food security is when people have good access to enough safe, affordable, nutritious food to maintain a healthy and active life. Food insecurity is when areas are without sufficient food supplies. It is recommended that 2000-2400 calories should be consumed daily.

Factors affecting Food Insecurity

Human	Physical
• **Conflicts** lead to destruction of crops and livestock, food insecurity and possibly famine and death • **Poverty** Poorest people cannot afford any form of technology, irrigation or fertilisers • **No technology** unskilled use of irrigation can lead to waterlogging and salinisation	• **Climate** Regions experiencing extreme temperatures and rainfall struggle to produce food • **Climate change** affects global farming patterns and productivity • **Rising global temperatures** cause pests and diseases to spread • **Water stress** lack of water means areas become drier and more desertified

Impact of Food Insecurity

Famine	Soil erosion
The widespread lack of access to food causing malnutrition, starvation and death.	Removal of fertile top soil layers by wind and water.
Undernutrition	**Rising Prices and Social Unrest**
Undernutrition: Lack of balanced diet and deficiency in minerals and vitamins.	Food prices rising across the world due to increased prices of fertilisers, animal feed, food storage, processing and transportation. Social unrest: High rises in in the price of food, incidents-sometimes called 'food riots' can occur.

Increasing Food Supply

Irrigation: Artificial watering of land. Involve the extraction of water from rivers or underground aquifers
Aeroponics: Plants sprayed with fine water mist containing plant nutrients.
Hydroponics: Plants grow in gravel or mineral-rich water
The 'new' Green Revolution: Modern farming techniques such as the use of machines chemicals and new strains of plants.Focuses on sustainability and community
Biotechnology: Uses living organisms to make or modify products or processes e.g. genetically modified (GM) crops.
Appropriate Technology: Using skills or materials that are cheap and easily available

Indus Basin Irrigation System (IBIS)

Advantages	Disadvantages
-Improves water security for Pakistan -Increased crop yields -Diets have improved -HEP generated -Fish farming provides protein -Agriculture based industries developed	-Some farmers take unfair share of water -High summer temperatures mean high water loss -Poor irrigation means water is wasted -Population growth will increase demand for water -High costs to maintain -Areas have become waterlogged

Makueni Food and Water Security Programme

Programme includes	Successes
-Improve access to clean and safe water supply -Rainwater harvesting on school roof -Provide reliable source of water for crops and livestock -Training programme to support local farmers -Growing trees to rescue erosion, increase biodiversity and provide medicinal products	-Crop yields and food security has increased -Water-borne diseases have been reduced -less time is wasted for fetching water- more time is available for work or education -School now has a safe and clean water supply

Sustainable Food Supply

Organic farming - Growing crops or rearing livestock without the use of chemicals
Permaculture - System of food production that follows the patterns and features of natural ecosystems
Urban farming - Cultivation, processing and distribution of food in and around settlements.
Fish and meat from sustainable sources - Quotas for fishing and monitoring breeding and fishing practices. Small-scale livestock farms using free-range or organic method for meat production
Seasonal food consumption - Farmers' markets making fresh locally produced seasonal foods more readily available
Reducing waste and losses - Seal plastic to make fresh food last longer, more sensible approach to 'sell by' date, improved food storage and distribution.

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History

GCSE Knowledge Organiser: Elizabethan England 1568-1603

Key Events

1	1559	**Elizabeth's Religious Settlement** is decided in 1559 which re-establishes the break with Rome and an independent Church of England. The Church created is Protestant and Elizabeth becomes the Supreme Governor.
2	1569-1586	**Catholic Plots 1569-1586**: various plots are attempted to overthrow Elizabeth and establish Mary Queen of Scots on the English throne eg Northern Rebellion 1569, Ridolfi Plot 1571, Throckmorton Plot 1583, Babington Plot 1586. These are justified by the signing of the Papal Bull in 1570 by the Pope, excommunicating Elizabeth from the Catholic Church and calling on Catholics to end her rule.
3		The idea of 'Gloriana' is developed, Elizabeth's reign is seen as a golden age where new ideas and advancements are made through plays, festivals, the printing of special pamphlets. Theatres are built, **visual and literary propaganda** creates a **cult of personality** around Elizabeth, her image is promoted through portraits and circulated widely.
4	1601	A more stable time exists in England, the gentry experience a growing prosperity, their country houses are built to reflect this. However, the problem of the poor remains in society. The Elizabethan Poor Law of 1601 is passed to deal with this, charging a poor rate to the wealthy to deal with the deserving and undeserving poor.
5		**Voyages of Exploration** take place and new lands are discovered. Sir Francis Drake circumnavigated the world between 1577-1580, Sir Walter Raleigh is given permission by Elizabeth in 1584 to 'explore, colonise and rule any land not ruled by a Christian'. Increased trade creates more wealth and power for Elizabeth.
6	1568-1587	**Mary Queen of Scots** arrives in England in 1568 and Elizabeth imprisons her for 19 years amidst rumours of plots by Catholics to assassinate Elizabeth and replace her with Mary as the new Catholic queen. Following the Babington Plot in 1586, Mary is executed in 1587.
7	1580s	**Threats from abroad increase in the 1580s:** 1585 Act calls for Jesuits to be driven out of England and many are executed. Eg Edmund Campion sends a mission to England and he is executed for it. Jesuit missionaries are supported by the Catholic Kings of France and Spain.
8	1588	**The Spanish Armada is sent to England in 1588 to overthrow Elizabeth and establish Philip II of Spain on the English throne. The superiority of the English navy defeats the Spanish and the victory greatly enhances Elizabeth's reputation as a great leader both at home and abroad.**
9	1601	**Essex' Rebellion 1601: Robert Devereux, the Earl of Essex takes** 4 of the queen's privy councillors hostage and with 200 followers marches to his London house to remove Robert Cecil from power following his fall from favour with Elizabeth. He is arrested and executed in February 1601, showing that, even though Elizabeth experiences threats up to the end of her reign, she deals swiftly and harshly with them.

Key Words/Key People

1.	**Parliament**	Made up of the **House of Lords** (lords, bishops and nobility) and the **House of Commons**('common' people who were still wealthy and educated). Had influence over **tax** and responsible for **passing laws**. It was not Parliament's role to govern, but to simply turn Elizabeth's policies into **laws.**
2.	**Privy Council**	Elizabeth's main advisors, involved in the day-to-day running of the country. Led by the Secretary of State, it was rarely united over any issues so Elizabeth could retain dominance over it.
3.	**Succession Crisis**	Mary Queen of Scots was Elizabeth's heir. For many, marriage and to give birth to a son was a way to avoid this Catholic becoming queen. In 1568 Mary arrived in England. Catholics now had an alternative to Elizabeth's rule which created a succession crisis.
4.	**Gentry**	The landlords of the countryside, living off the rents of their tenants. Many were Justices of the Peace and served in Parliament. Many became wealthy in Elizabethan England and showed their wealth by building fine country houses,
5.	**Monopolies**	Royal licences giving individuals sole right to sell or make a product, leading to their profit and often leading to high prices
6.	**Patronage**	This involved giving titles, power or other rewards to ensure individual's support. It caused intense competition and rivalries between people which suited Elizabeth well as it made everyone totally loyal to her.
7.	**Puritans**	Strict Protestants. They were unhappy with Elizabeth's Religious Settlement and wanted the removal of all Catholic elements from worship eg vestments.
8.	**William Cecil(Lord Burghley)**	Elizabeth's **most trusted advisor**, served as Secretary of State twice and as an MP. She relied on him heavily.
9.	**Francis Walsingham**	Secretary of State and one of **queen's closest advisors from 1573 until his death.** Known as Elizabeth's '**spymaster'** having '**eyes and ears'** everywhere.
10.	**Robert Dudley (Earl of Leicester)**	A radical and a Puritan, frequently argued with Cecil about succession, religion. A childhood friend of Elizabeth, were many rumours of a romance with her. Highly ambitious, Privy Councillor in 1562

Homework for Elizabethan England

There are three types of homework set for the Elizabethan England unit:

1. Knowledge Organisers

These provide the basic knowledge for each topic. This may include a timeline, key words, key concepts and summaries. These are tested in weekly quizzes.

2. Read Watch Listen

A selection of clips, podcasts and websites about the content of the unit are available to supplement and enhance your learning. One should be accessed a fortnight to increase your understanding of topics studied.

3. Revision

Preparing for history assessments is an essential part of each topic as each assessment allows teachers and students to see their progress in history. It is crucial this revision is done so that our students can show what they know.

•**Read**

Helen Castor, Elizabeth I: A study Insecurity
Ian Mortimer, The Time Traveller's Guide to Elizabethan England

Watch

**Elizabeth - From The Prison To The Palace - Part 1 of 4 [David Starkey] (Youtube)
**Elizabeth - The Virgin Queen - Part 2 of 4 [David Starkey] (Youtube)
**Elizabeth - Heart Of A King part 3 of 4 [David Starkey] (Youtube)
**Elizabeth – Gloriana part 4 of 4 [David Starkey] (Youtube)
**Elizabeth I's Secret Agents: BBC documentary. Google it.
A History of Britain, episode 7 (Google it)
*Her Majesty's Spymaster: Sir Francis Walsingham (Youtube) – Walsingham and MQS
Battlefield Britain, Spanish Armada (Youtube) – Spanish Armada
**Dan Snow 12 Days to Save England, Armada, YouTube
Elizabeth I Secret Agents (Youtube) – Walsingham and the plots against Elizabeth
Bloody Queens: Elizabeth and Mary (Youtube) – Relationship between MQS and Elizabeth
Mary Queen of Scots (released in 2019)
BBC - A History of Christianity episode 4: Reformation watch – context on Henry VIII and the Reformation for context of Elizabeth's religious settlement
Episode 4: The Spanish Armada, Battlefield Britain (youtube)

Listen

Podcasts
** 'Rex Factor' is a laid back podcast, chatting about English monarchs. The Elizabeth episode is a good introduction to her reign. https://rexfactor.podbean.com/e/40-elizabeth-i
For good prior knowledge, it would be good for you to listen to the episodes on Henry VIII, Edward VI and Mary I too.
Historyextra.com: Inside the mind of Elizabeth I. Helen Castor explores the psychology of the Virgin Queen.
BBC In Our Time: The Spanish Armada. In-depth look at one of the key moments of Elizabeth's reign https://www.bbc.co.uk/programmes/b00v1qyb
BBC In Our Time: The death of Elizabeth I. In-depth look at the end of Elizabeth's reign https://www.bbc.co.uk/programmes/b00n5nqr

Business Studies

Business Studies Knowledge Organiser here

Computer Science

Computer Science Knowledge Organiser here

Creative iMedia

RO95: Characters and Comics

Types of characters	Character conventions
Cartoon	Appeal to young people. Bold colours, outlines
Doodles	Quickly drawn, simple but well thought out
Photorealistic	Tend to be 3D realistic. Human characters
Minimalistic	Simplified shapes, less expression and detail
Protagonist	Main character, often the hero
Antagonist	Main character, often the villain
Proportions	Scale of body parts, creates style e.g. oversized heads
Tropes	Similar to stereotypes used in comics e.g superhero cape
Anthropomorphism	Applying human characteristics to nonhuman objects/animals
Manga	Large eyes to convey emotions, small mouth and nose, distinctive hairstyles and childlike appearance

Narrative Terms	Definitions
Story Flow	The path of the story from beginning, middle and end
Panel	A container used to hold one scene
Focal Point	The place in the panel to draw audience's attention
Onomatopoeia	A word that sounds like the thing it is describing
Narration Captions	Captions to share information with the audience
Speech Bubbles	Convey the character's dialogue
Todorov	Linear narrative theorist
Exposition	The beginning of the story. Setting the scene
Climax	Peak of the action the story has been leading to

SCRIPT	**Slugline** (INT / EXT Location Time) **Direction** (what happens in scene) **Character names** (centred) **Dialogue** between characters (centred) **Transition** (fade in/out, fade to black, wipe etc)
STORYBOARD	**Camera shots** (close up, mid, long) **Camera movement** (pan, tilt, zoom) **Camera angles** (over the shoulder, low / high angle) **Timings / durations. Location. Sound. Scene numbers.** **3 of the above in each box under the sketch.**

Media

Coming soon

Maths

Maths

Proportion - Click here

Angles - Click here

Vectors - Click here

Trigonometry - Click here

Circle Theorems - Click here

Simultaneous Equations - Click here

Sequences - Click here

Transformations - Click here

French

GCSE French Knowledge Organiser – Module 1 *Qui suis-je?* Theme: Identity and Culture

le père – father
la mère – mother
le frère – brother
la soeur - sister
l'oncle – uncle
la tante – aunt
le grandpère – grandfather
la grandmère - grandmother
le beau-père – stepfather/father-in-law
la belle-mère – stepmother/mother-in-law
le beau-frère – brother-in-law
la belle soeur – sister-in-law
le demi-frère – half-brother/stepbrother
la demi-soeur – half-sister/stepsister
la fille – daughter
le fils – son
l'enfant/ le petit-enfant – (grand)child
le petit-fils – grandson
la petite-fille – grandaughter
le cousin/la cousine – cousin

Ma description physique
J'ai les cheveux …
courts/longs/mi-longs - short/long/mid-length
raides/bouclés/frises - straight/curly
noirs/bruns/chatains -black/brown/chestnut
blonds/roux/gris/blancs - blond/red/grey/white
J'ai des boutons – I have spots
Je suis petit(e)/grand(e) - I am short/tall
Je suis de taille moyenne/mince/gros(se) - I am of average height/ slim/fat
Je suis beau/belle - I am handsome/ beautiful

Les adjectifs de personnalité
Il/elle est …
agaçant(e) - annoying
aimable – likeable
amusant(e) - amusing/funny
arrogant(e) - arrogant
bavard - talkative/chatty
charmant(e) charming
drôle – funny
égoiste – selfish
fidèle – loyal
fort(e) - strong
généreux/-euse – generous
gentil(le) - kind
impatient(e) - impatient
jaloux/-ouse – jealous
méchant(e) - nasty/mean
paresseux/-euse – lazy
poli(e) - polite
sage – well-behaved/wise
sensible - sensitive
sérieux/-euse – serious
sympa(thique) - nice
têtu(e) - stubborn/pig-headed
travailleur/-euse – hard-working
triste – sad

Quand?
aujourd'hui – today
demain – tomorrow
après-demain – the day after tomorrow
ce matin – this morning
cet après-midi
ce soir – this evening
hier - yesterday

En ville
la boite de nuit – night club
le bowling – bowling alley
le café - café
le centre commerical – shopping centre
le cinéma – cinema
les magasins – shops
la patinoire – ice rink
la piscine – swimming pool
la plage – beach
le théâtre – theatre

à - at, to
dans – in
derrière – behind
devant – in front of
entre – between
en face de – opposite
à côté de – next to
près de – near
à partir de – from
au bord de – at the side/edge of
au fond – in the background/at the back

L'amitié
Un(e) bon(ne) ami(e) est … - a good friend is
de bonne humeur – in a good mood
compréhensif/-ive – understanding
équilibré(e) - balanced/level-headed
honnête – honest
indépendant(e) - independent
modeste – modest
patient(e) - patient
sur(e) de lui/d'elle – self-confident
Un(e) bon(ne) ami(e) n'est pas …
de mauvaise humeur – in a bad mood
deprimé(e) - depressed
pessimiste – pessimistic
prétentieux/-euse – pretentious
vaniteux/-euse – conceited
Il/Elle - he/she
croit en moi – believes in me
dit toujours la verité – always tells the truth
me fait rire – makes me laugh
prend soin de moi – takes care of me
voit le bon côté des choses – sees the positive side of things

Les traits
le sens de l'humour – a sense of humour
la patience – patience
la générosité – generosity
la gentillesse – kindness
la fidelité – loyalty
la modestie – modesty
l'honnêteté – honesty
l'optimisme - optimism

GCSE French Knowledge Organiser – Module 1 *Qui suis-je?* Theme: Identity and Culture

On decrit un(e) ami(e)
Il/elle mesure 1,68 mètre - He/she is 1m 68cm tall
semble timide – seems shy
porte un appareil dentaire – has a brace
a l'air cool – looks cool
a des yeux qui inspirent confiance
On a les mêmes centres d'intéret – We have the same interests

Les rapports en famille
se confier à – to confide in
se disputer avec – to argue with
s'entendre bien avec – to get on well with
se fâcher contre – to get angry with
s'intéresser à – to be interested in
s'occuper de – to look after
s'aimer – to like each other
se chamailler – to bicker with each other
divorcé(e)(s) - divorced
séparé(e)(s) - separated

Parler de son enfance
Quand j'etais plus jeune - When I was younger
j'habitais avec mon papa/ma maman – I lived with my mum and dad
j'allais à l'école primaire – I went to primary school
j'avais (les cheveux blonds) - I had blond hair
j'étais mignon(ne) - I was cute
je jouais à cache-cache – I played hide and seek
j'aimais les bonbons – I liked sweets
je détestais les épinards – I hated spinach
je portais - I wore

On va sortir
Je vais/Tu vas/On va … I'm going/you're going/we're going …
aller au match – to go to the match
faire les magasins – to go shopping
faire du patin à glace/du patinage – to go ice skating
manger au fastfood – to eat in a fast food restaurant
aller au cinéma – to go to the cinema
faire du skate – to go skateboarding
voir un spectacle – to see a show
jouer à des jeux video – to play video games
venir chez moi - to come to my house
Tu veux venir? Do you want to come?
Tu peux venir? - Can you come?
On se retrouve quand? - When will we meet?
… où? - Where …?
…. à quelle heure? - At what time...?
Tu y vas avec qui? - Who are you going there with?
...comment? - How...?
D'accord – OK
À plus!/À plus tard! - See you later!

Est-ce que tu admires?
Mon modèle s'appelle – My role model is called …
Moi, j'admire … - Personally I admire
J'aimerais bien être comme lui/elle - I would like to be like him/her
Il/Elle m'impressionne énormément - He/She impresses me a lot
Il/Elle a travaillé dur pour devenir - He/She worked very hard to become
Il/Elle est devenu(e) … He/She became
a /avait du courage/de la determination - has/has courage/determination
lutte/a lutté pour … - fights/fought for …
a sauvé la vie de … - saved the life of …
c'est un enfant adopté, comme moi - He/She is adopted like me

On decrit une sortie
hier soir – last night
à 20 heures – at 8pm
d'abord – first of all
après – afterwards
puis/ensuite - then
J'ai.../Il/Elle a .../Nous avons … - I .../He/She.../We …
visité le musée – visited the museum
vu un match/une exposition – saw a match/an exhibition
mangé dans un restaurant – ate in a restaurant
refusé de manger – refused to eat
bu un coca – drank a cola
Je suis .../Il/Elle est.../Nous sommes … I/He/She/We …
allé(e)(s) à un pub – went to a pub
resté(e)(s) dehors sur la terrasse – stayed outside on the terrace
entré(e)(s) dans un restaurant
sorti(e)(s) - went out
parti(e)(s) - left
monté(e)(s) dans le bus – got on the bus
rentré(e)(s) - went home
tombé(e)(s) amoureux/-euses(s)

On decrit sa famille
adorable – adorable
débrouillard(e) - resourceful
dynamique – lively
énergique/plein(e) d'énergie – energetic
extravert(e) - outgoing
fragile – fragile
instable – unstable
introverti(e) - introverted

Spanish

Year 11 Spanish - El Medio Ambiente

¿Cuál es el problema global más serio?	What is the most serious global problem?		
El mayor problema global es…	*The greatest global problem is…*	la salud	*health*
el paro / desempleo	*unemployment*	la crisis económica	*the economic crisis*
el medio ambiente	*the environment*	la contaminación…	*the pollution…*
el hambre	*hunger*	de los ríos / mares	*of the rivers / seas*
los sin hogar / techo	*the homeless*	la pobreza	*poverty*
los animales en peligro de extinción	*the animals in danger of extinction*	la drogadicción	*drug addiction*
la desigualdad social	*social inequality*	los drogadictos	*drug addicts*
		los obesos	*obese people*
		los animales amenazados	*endangered animals*
		la tasa de desempleo	*the unemployment rate*

¿Cómo se debería cuidar el medio ambiente en casa?	How should you look after the environment at home?		
Para cuidar el medio ambiente se debería…	*To care for the environment you / one should…*	desenchufar los aparatos eléctricos	*unplug electric appliances*
apagar la luz	*turn off the light*	ahorrar energía	*save energy*
ducharse en vez de bañarse	*have a shower instead of taking a bath*	cerrar el grifo	*turn off the tap*
separar la basura	*separate the rubbish*	hacer todo lo posible	*do everything possible*
reciclar el plástico y el vidrio	*recycle plastic and glass*	no se debería…	*you / one should not…*
		malgastar el agua	*waste water*
		usar bolsas de plástico	*use plastic bags*

¿Cuáles son los problemas globales más serios hoy en día?	What are the most serious global issues today?		
Me preocupa(n)…	*I am worried about…*	creemos oportunidades de trabajo	*create job opportunities*
el paro / desempleo	*unemployment*	ayudemos a evitar el consumo de sustancias perjudiciales	*help to avoid the consumption of harmful substances*
el hambre / la pobreza	*hunger / poverty*	ahorremos agua	*save water*
la deforestación	*deforestation*	construyamos más casas	*build more houses*
la diferencia entre ricos y pobres	*the difference between rich and poor*	cambiemos la ley	*change the law*
la drogadicción / la salud / la obesidad	*drug addiction / health / obesity*	consumamos menos	*consume less*
la crisis económica	*the economic crisis*	hagamos campañas publicitarias	*carry out publicity campaigns*
los problemas del medio ambiente	*environmental problems*	recaudemos dinero para organizaciones de caridad en el tercer mundo	*raise money for charities in the third world*
los sin hogar / techo	*the homeless*		
los animales en peligro de extinción	*animals in danger of extinction*	No es justo / Es terrible que haya…	*It's not fair / terrible that there is…*
Es necesario / esencial que…	*It's necessary / essential that (we)…*	tanta desigualdad social / contaminación	*so much social inequality / pollution*
cuidemos el planeta	*look after the planet*	tanta gente sin trabajo y sin techo	*so many people out of work and homeless*
hagamos proyectos de conservación	*do conservation projects*	tanta gente obesa y tantos drogadictos	*so many obese people and so many drug addicts*
compremos / usemos productos verdes / de comercio justo	*buy / use green / fairtrade products*		
apoyemos proyectos de ayuda	*support aid projects*		

Se debería…
- **a** ahorrar agua.
- **b** plantar más árboles.
- **c** usar productos ecológicos.
- **d** ahorrar energía en casa.
- **e** usar el transporte público.
- **f** reciclar todo lo posible.

Role play tasks often require you to say or ask if you **have to** do something. Remember to use the infinitive after the following:

Tengo que…
Es obligatorio…
Hay que…
} + infinitive

G Se debería

Use ***se debería*** followed an **infinitive** to mean 'you/one should'. It is the conditional form of ***se debe*** (you/one must).

Se debería ahorrar *energía.*	You/One should save energy.
No se debería tirar *basura al suelo.*	You/One should not throw litter on the ground.

answers it.

B – Picture-based task

Topic: Environmental issues

Mira la foto y prepara las respuestas a los siguientes puntos:
- la descripción de la foto
- tu opinión sobre el reciclaje
- qué hiciste recientemente para ser más verde
- lo que el gobierno debería hacer para proteger el medio ambiente
- (!)

Physical Education

Y11 NEA Coursework - Performance Analysis

Analyse x 2 strengths in yours or someone else's performance.

One strength should be a fitness component (relevant to their chosen activity).

Components of fitness include:

- agility
- balance
- cardiovascular endurance (aerobic power)
- coordination
- flexibility
- muscular endurance
- power/explosive strength (anaerobic power)
- reaction time
- strength (maximal, static, dynamic and explosive)
- speed.

One strength should be a specific skill/technique (from those listed in the activity criteria) or tactic/ strategy/aspect of choreography (as appropriate).

Success criteria:

- Identify the strength.
- Describe what is being performed well.
- Reference to recent competitive performances.
- Explain the impact this has had a positive affect on overall performance.

Analyse x2 weaknesses in yours or someone else's performance.

One weakness should be a fitness component (relevant to their chosen activity).

Components of fitness include:

- agility
- balance
- cardiovascular endurance (aerobic power)
- coordination
- flexibility
- muscular endurance
- power/explosive strength (anaerobic power)
- reaction time
- strength (maximal, static, dynamic and explosive)
- speed.

One weakness should be a specific skill/technique (from those listed in the activity criteria) or tactic/ strategy/aspect of choreography (as appropriate).

Success criteria:

- Identify the weakness.
- Describe what is not being performed well.
- Reference to recent competitive performances.
- Explain how recent performances have been negatively affected.

Y11 NEA Coursework - Performance Analysis

Task: produce an overall plan of action that suggests ways to improve upon the weaknesses that they have identified as part of their analysis.

Success Criteria:

- an identification of an appropriate training type to improve the fitness weakness
- a full description of one training session that provides an example of what could be used for the performer
- an explanation of how prolonged use of the identified training type could improve the fitness weakness
- an identification of one other relevant part of the specification (not another training type) which, when applied, could bring about improvement in the skill/tactic/strategy/aspect of choreography weakness
- an explanation of how the additional specification content selected could lead to improvement of the identified weakness.

Methods of training include:

Circuit training – consider space available, equipment available, number of circuit stations, work:rest ratio, the content/demand of the circuit can be altered in order to improve different components of fitness.

Continuous training – sustained exercise at a constant rate (steady state) without rests, involving aerobic demand for a minimum of 20 minutes, eg running, swimming, rowing, cycling.

Fartlek training – varying speed, terrain and work:recovery ratios.

Interval training/high intensity interval training – periods of exercising hard, interspersed with periods of rest or low intensity exercise.

Static stretching – a way to stretch to increase flexibility, held (isometric) for up to 30 seconds, using correct technique, advisable to avoid over stretching.

Weight training – choice of weight/exercise depends on fitness aim, eg strength/power training or muscular endurance, the importance of safe practice/lifting technique, the need for spotters.

Plyometric training – use of plyometric exercises, eg bounding, depth jumping, to increase power. Basic physiological understanding (eccentric contraction followed by larger concentric contraction).

Suggested reading:

- AQA GCSE PE Student Text Book.

BBC Bitesize: https://www.bbc.co.uk/bitesize/guides/zchxnbk/revision/2

Sport plan: https://www.sportplan.net/

Brian Mac Sports Coach: https://www.brianmac.co.uk/

Homework:

Research a method of training that will improve your weakness..
Research sporting drills that will improve your weakness.
All coursework must be completed under control conditions so any other homework set would be exam questions in preparation for the summer exam.

Sports Studies

Y11 R184 Exam Unit

Different user groups	Possible barriers which affect participation
• Ethnic minorities • Retired people/people over 50 • Families with young children • Single parents • Children • Teenagers • Disabled • Unemployed/economically disadvantaged • Working singles/couples	• Employment/time • Working restrictions and family commitments • Disposable income • Accessibility of facilities/equipment • Lack of role models • Provision of activities • Awareness of activity provision • Portrayal of gender issues by the media

Provision	Promotion	Access
• Programming sessions for use by different user groups • Providing appropriate activity options or the demands of specific user groups • Planning of times to suit different user groups	• Targeted promotion • Using role models to encourage participation among different user groups • Initiatives aimed at promoting participation and inclusion	• Access to facilities • Access to equipment • Sensible pricing/concessions

Factors which can impact upon the popularity of sport in the UK

- Participation
- Provision
- Environment/climate
- Spectatorship
- Media coverage
- Success for both teams and individuals
- Role models
- Acceptability

How factors which can impact upon the popularity of sport in the UK relate to specific sporting examples

Current trends in the popularity of different sports in the UK

Growth of new/emerging sports and activities in the UK (e.g. Ultimate Frisbee now increasingly popular in the UK)

Y11 R187 Exam Unit - Know about the role of sport in promoting values

Values which can be promoted through sport

- Team spirit
- Fair play
- Citizenship
- Tolerance and respect
- Inclusion
- National pride
- Excellence

The Olympic and Paralympic movement

- The symbol meaning
- Olympic and Paralympic values- Respect, Excellence, Friendship, Courage, Determination, Inspiration and Equality

The creed: *" The most important thing is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered, but to have fought well"*
Pierre De Coubertin

Importance of etiquette and sporting behaviour of performers and spectators

- Reasons for observing etiquette and sporting behaviour
- Sportsmanship
- Gamesmanship
- Spectator etiquette

Use of performance enhancing drugs in sport

- Reasons why they are used
- Reasons against use
- World Anti-Doping Agency (WADA)
- Whereabouts rule
- Testing methods
- Current initiatives (sanctions)
- Drug offences by elite performers
- Impact of drug taking on sport
- Ethical issues related to drug taking

Initiatives and events that promote values through sport

- FIFA's 'Football for Hope' campaign
- ECB's Chance to Shine programme
- Sport Relief
- Premier League's 'Creating Chances' initiative
- £10 million Sport England scheme to increase participation of sport by women

Y11 R187 Exam Unit - Understand the importance of hosting major sporting events

Features of major sporting events:

- "One off" event: e.g. hosting the Olympic and Paralympic Games will only happen in any given country/ city once in a generation.
- "Regular" events: e.g. UEFA Champions League final is an annual event which a city could host more than once in a relatively short period of time but it is shared around as a rule.
- "Regular and recurring": e.g. hosting a Formula 1 Grand Prix would be annual and is normally contracted for a period of years to the host country/city
- International element, i.e. involves competitors, and therefore supporters/interest, from more than one country (e.g. the Olympic and Paralympic Games; FIFA World Cup; Rugby Union Six Nations)

Potential Legacy of Hosting a Major Sporting Event

Sporting	Social	Economic
Local residents access and use redeveloped or new facilities	Peace building - brings countries together.	Increasing sporting participation levels
Improved health and well being of the public due to use of the new facilities.	Olympic values used in schools to educate students.	Increased tourism.
Business development within the city and around the country.	Promotes inclusion and gender equality - men and women receive the same "air time".	Long term investments into facilities/buildings and transport.

Benefits for of cities/countries hosting major sporting events:

- investment in developing/improving transport system
- increased direct and indirect tourism
- commercial benefits (e.g. money from sponsors, external investment which would not otherwise have been attracted)
- participation may increase in some sports
- infrastructure/social facilities built can be used by people who live in the area where the events have been held
- sports facilities will be improved or new facilities built
- raise the status of the country/'shop window effect'
- morale of the country is raised

Drawbacks for of cities/countries hosting major sporting events:

- bidding to host can be expensive and you may not be awarded the event
- event can cost hosts more than it raises in revenue
- facilities can end up not being used after the event if not planned properly
- can have negative impact on the status of the country if event runs poorly/is disorganised - while hosting the event will help to promote one area of sport, others may suffer as a consequence
- can cause divisions in the country if the specific area which hosted (e.g. one city) is perceived to have been the only beneficiary

Links between potential benefits and drawbacks and legacy

Many of the benefits and drawbacks are relevant to more than one of the legacy areas (sporting, social, economic) (e.g. sports facilities could have both sporting and social legacy).

Y11 R187 Exam Unit - Know about the role of national governing bodies in sport

National Governing Bodies are responsible for the following 6 areas:

Promotion	Development	Infrastructure
• Promoting participation (e.g. equal opportunities policies) • Increasing the popularity of the sport (e.g. schemes for schools) • Exposure in the media (e.g. press releases, public relations)	• Elite training and development (e.g. national performance squads and national teams in many sports) • Coaching awards (e.g. England Netball UK Coaching Certificate coaching awards from Level 1 upwards) • Training of officials (e.g. the Rugby Football Union has a young officials award which can be used as a starting point to becoming an official)	• Competitions and tournaments (e.g. England Basketball organise national competitions for over 500 teams from senior to under-13 level) • Rule-making and disciplinary procedures (e.g. the Football Association has a disciplinary procedure for any individual or team connected with the sport) • Providing a national directive and vision - providing guidelines, support and insurance to members • Assist with facility developments

Policies and Initiatives	Funding	Infrastructure
• Anti-doping policies (e.g. the England and Wales Cricket Board has an anti-doping policy and has a list of all substances which are permitted and those that are banned) - promoting etiquette and fair play (e.g. The Football Association's 'Respect' campaign) • Community programmes (e.g. Amateur Swimming Association's 'Swimfit') • Information and guidance on safeguarding	• Lobby for, and receive, funding - distribution of funds, i.e. □ grants □ government, non-government □ membership □ subscriptions/match fees □ lottery funding □ income from media/ sponsorship/advertising □ private investment and donations □ merchandising □ admission charges □ fundraising events • Provide members with advice about funding	• Providing technical advice (e.g. England Hockey provide information about playing surfaces) • Providing location and contact details for local clubs, how to get started in the sport etc.

Suggested reading:

- Cambridge National Level 1/2 Sport Studies Student Textbook (2019)

National Governing Bodies:

RFU: https://www.englandrugby.com/home
FA: https://www.thefa.com/
LTA: https://www.lta.org.uk/
England Netball: https://www.englandnetball.co.uk/
ECB: https://www.ecb.co.uk/

The legacy of the London 2012 Olympics: https://www.olympic.org/olympic-legacy/london-2012

Drawbacks from hosting the Olympics: https://fortune.com/2016/08/10/olympics-financial-disasters/

Homework:

Exam questions
Research National Governing Bodies and their current policies and initiatives.
Research a variety of major events and categories them as one off, regular or regular and recurring.

Religious Studies

Coming soon

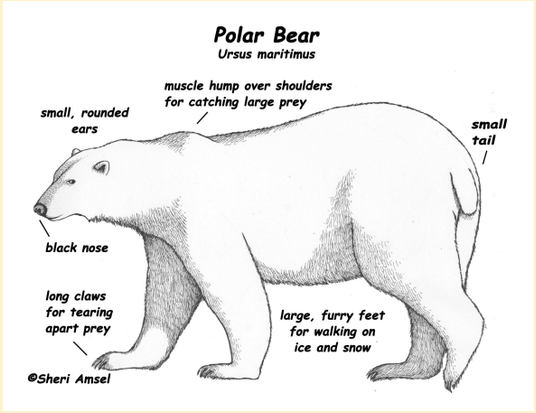
Biology

B7 Ecology

ALL organisms, now matter how simple they might seem, are adapted to their natural environment. Their features, or adaptations, enable survival in the particular conditions where they live. Adaptations can be:

- **Structural**: adaptations in terms of body form and shape. This would include examples like: streamlined shape for speed; long stem to maximise light exposure
- **Behavioural**: adaptations of behaviour – for instance, hunting behaviours, using tools, plants growing in the direction of a source of light.
- **Functional**: adaptations in terms of how the body works. For instance: being able to digest a certain food, maintaining a constant body temperature and so on.

Some organisms are adapted to live in what we would consider to be extreme environments – for instance, very high temperatures, high pressures, high salt concentration. The organisms that can survive in these kinds of conditions are called **extremophiles**. A great place to find extreme conditions and extremophiles is around and inside deep sea hydrothermal vents.



Biotic	Abiotic
Availability of **food**	**Light intensity**
New **predators** arriving	**Temperature**
New **pathogens**	**Moisture** levels
One species **outcompeting** another	**Oxygen** levels for aquatic animals
	Wind intensity and direction
	Carbon dioxide levels for plants
	Soil pH and **mineral** content

Biotic and abiotic factors affecting organisms

Communities of organisms are obviously affected by the environmental factors of their habitat. Factors that are non-living are called **abiotic** factors; those that are living are called **biotic** factors. These may affect the distribution of organisms (i.e. how they are spread out in the environment), their population size, their growth, behaviour or anything else really.

Examples of abiotic factors: light intensity; temperature; moisture levels; soil pH and mineral content; wind intensity and direction; carbon dioxide level for plants; oxygen levels dissolved in water for **aquatic** animals.

Examples of biotic factors: food availability; new predators arriving; new pathogens; competition between species. Competition can actually lead to extinction of a species – if another species outcompetes it, the first one may end up without sufficient numbers to breed.

Ecology and Interdependence

Ecology is the study of everything from individual organisms to the whole biosphere (everywhere that life is found on Earth). An ecosystem is an interconnecting network of living organisms and their environment.

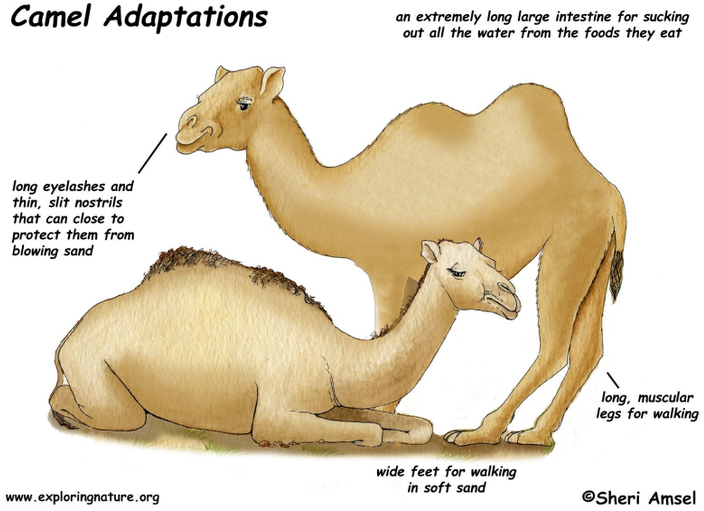
The feeding relationships are one way in which organisms depend on each other. To begin with, almost all organisms rely on the Sun as the original source of energy for their ecosystem. **Plants** and **algae** can make use of the Sun's energy to produce food molecules, in the process of photosynthesis. This is why they are called **producers**. Other types of organism can't do this, so they rely on the plants and algae. **Consumers** eat the producers, so the energy from the sun flows through the ecosystem. Molecules (which are stores of energy) also flow through, and get recycled when organisms produce waste (poo and wee!) and after they die and decay. The diagram helps to show this.

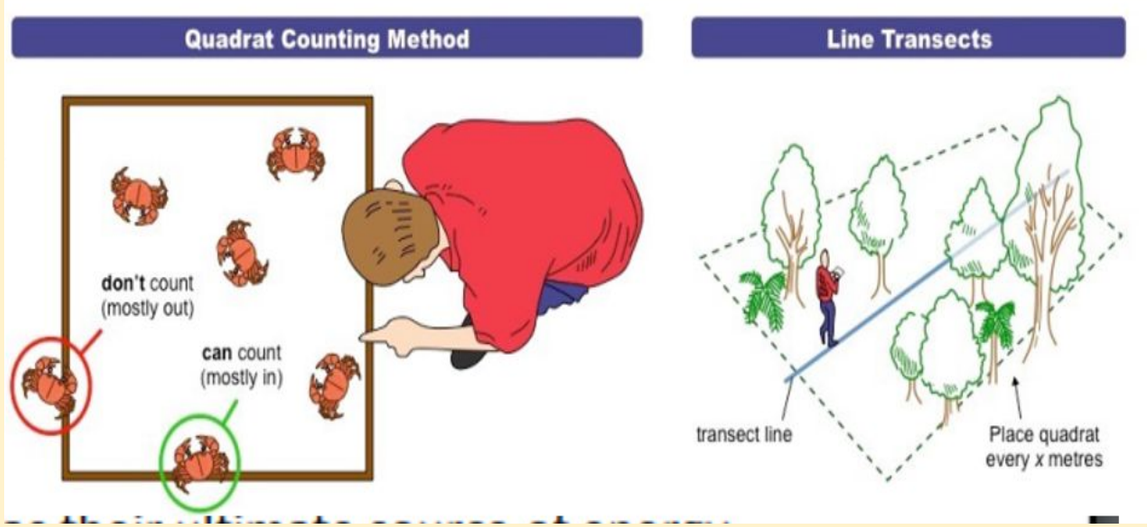
You can see that all the organisms in the ecosystem depend on each other. This is called **interdependence**. The consumers wouldn't survive without the producers capturing energy from the sun, the producers wouldn't survive without the decomposers recycling molecules for them to use (e.g. nutrients from the soil), and the decomposers need the waste from other organisms, and their bodies once they die. A stable community is one where all the species' populations and the abiotic factors are in balance; as a result, population sizes don't change much in stable communities.

B7 Ecology

Key terms

Ecosystem	A complex network of communities of organisms, which all depend on each other and which are adapted to the biotic and abiotic conditions they live in.
Community	A group of interdependent organisms. Communities interact with each other and with the physical environment – ecosystem refers to the interaction of living communities with the non-living environment.
Habitat	A specific set of conditions, usually a specific location, where an organism (or organisms) is adapted to live.
Population	A whole group of organisms – for instance, all the buffalo on the savannah, or all the greenfly on one rose bush.
Interdependence	All organisms in a community rely on one another – for food, shelter, pollination, seed dispersal, nutrient recycling and so on.
Abiotic	Non-living factors affecting a community (e.g. light intensity, temperature, soil pH).
Biotic	Living factors affecting a community.
Competition	Plants often compete for light, space, water and mineral ions. Animals often compete for food, mates and territory Interdependence
Adaptations	A feature that an organism has that allows it to survive in its ecosystem.
Biodiversity	The variety of all the different species of organisms on Earth, or within an ecosystem





Required Practical : Quadrat sampling

- Quantitative sampling to compare the distribution of the same organism in different habitats / to compare the variety of organisms in several different habitats. Must be random assignment of grids
- The bigger the sample the better the validity of your results

Transect sampling

- Sample organisms at regular intervals along the line
- Shows how the distribution of organism changes along that line / how a physical factor e.g. light levels affects growth

B7 Ecology

KEYWORDS

Carrion - decaying flesh and tissue of dead animals.

Community - made up of the populations of different species living in a habitat.

Competition - the negative interaction between two or more organisms which require the same limited resource.

Consumers - feed on other organisms for their energy. Can be primary, secondary or tertiary.

Decomposers - organisms which feed on dead and decaying organisms. They break down the biomass and release nutrients into the soil.

Deforestation - the removal and destruction of trees in forest and woodland.

Ecosystem - the interaction between the living organisms and the different factors of the environment.

Global warming - the increase of the average global temperature.

Habitat - where a living organism lives.

Interdependence - the interaction between two or more organisms, where it is mutually beneficial.

Population - the number of individual organisms of a single species living in a habitat.

Predators - organisms which kill for food.

Prey - the animals which are eaten by the predators.

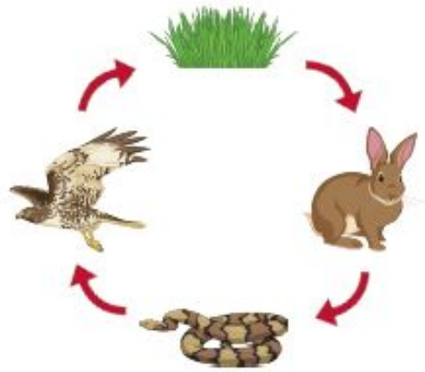
Producers - convert the sun's energy into useful compounds through photosynthesis. They are green plants or algae.

Scavengers - organisms which feed on dead animals (carrion).

Species - organisms of similar morphology which can interbreed to produce fertile offspring.

FOOD CHAINS

The source of all energy in a food chain is the sun's radiation. It is made useful by plants and algae which produce organic compounds through photosynthesis.

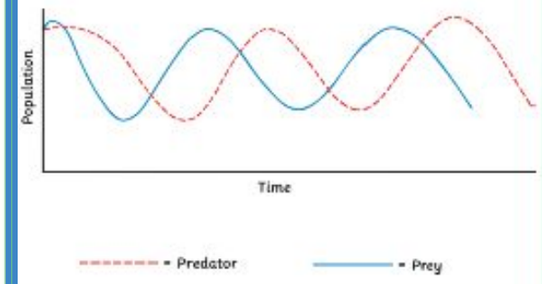


The living organisms use the energy to produce biomass and grow.

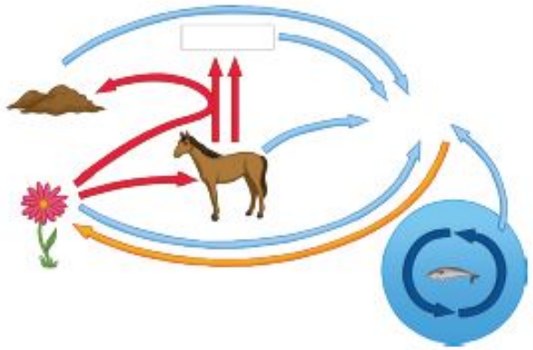
When a living organism is consumed, some of the biomass and energy is transferred. Some of the energy is lost.

Remember: the arrow in a food chain indicates the direction of the flow of energy.

Populations of predators and prey increase and decrease in cycles. The size of the predator population depends on the size of the prey population and vice versa. Overall, there is a stable community.



CARBON CYCLE



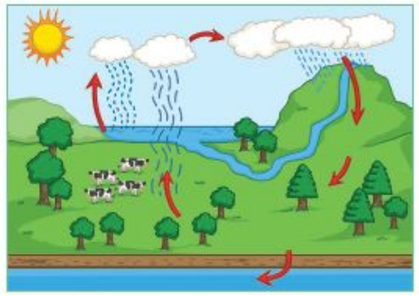
The main focus on the carbon cycle is its transfer to and from the atmosphere. When carbon is in the atmosphere, it combines with oxygen to form carbon dioxide, a greenhouse gas.

Carbon is transferred from the atmosphere when plants absorb carbon dioxide for photosynthesis and when the gas is dissolved into oceans.

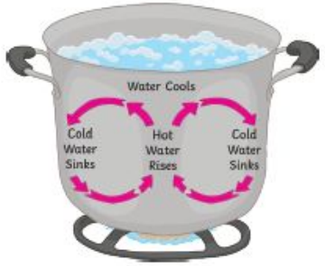
Carbon is transferred to the atmosphere through respiration by animals, plants and bacteria and by combustion of fossil fuels (coal, oil and natural gas).

Dead animals and plants are decomposed and their matter is broken down by microbes and fungi. These organisms are collectively called decomposers. When the organisms are broken down, the microbes and fungi release carbon dioxide into the atmosphere through respiration.

WATER CYCLE



Convection is the movement caused within a fluid as the hotter, less dense material rises and colder, denser material sinks under the influence of gravity. This results in the transfer of heat.



Evaporation occurs when heat energy from the surroundings (or a heat source) is transferred to water particles as kinetic energy. The particles begin to move more rapidly and can turn from a liquid into a gas.

When moving particles transfer kinetic energy to the surroundings, the particles begin to move more slowly and can turn from a gas into a liquid. This is **condensation**.

Precipitation occurs when rain, snow, sleet, or hail falls to (or **condenses** on) the ground.

Transpiration is the process by which water is carried through plants from roots to the stomata on the underside of leaves and it evaporates into the surroundings.

ABIOTIC AND BIOTIC

Abiotic factors are the non-living factors of an environment. E.g. moisture, light, temperature, CO_2, wind, O_2 or pH.

Biotic factors are the living factors of an environment. E.g. predators, competition, pathogens, availability of food.

B7 Ecology

TRIPLE ONLY - Decay Investigation

Triple onlyDECAY REQUIRED PRACTICAL: Investigating the Effect of Temperature on the Rate of Decay of Milk by Measuring pH Change

- Phenolphthalein (an indicator) is pink in solutions with a pH of 10 or above.
- If the pH drops to about 8, the solution will become colourless.
- Lipase is an enzyme that will break down the fat in milk.
- As lipase breaks down fat to fatty acids, the pH of the solution lowers.

Independent variable – temperature (controlled by water baths and measured using a thermometer).
Dependent variable – time taken for indicator to change colour (measured using a timer).

To calculate the mean:

$$\frac{\text{total time taken for pink colour to disappear (s)}}{\text{number of trials}}$$

Remember to check for any anomalies. If there is an anomaly, discard it and do not add it to your total. Collecting repeated results and calculating an average allows you to identify any anomalous results and improves the reliability of your data.

Related careers

Scientists who study this area of Ecology might go on to a career into becoming Research Scientists, Research Assistants, Park Naturalist., Restoration Ecologists and Natural Resource Manage

Recommended videos

Organisation of an ecosystem - combined and triple
https://www.bbc.co.uk/bitesize/guides/z9nwtv4/revision/1
Decomposition - triple
https://www.bbc.co.uk/bitesize/guides/zy7gw6f/revision/1
Required Practical: Decay
https://www.youtube.com/watch?v=zSx83-D-LYE

Subject Links

This unit builds on what you have already studied in KS4 B3 Bioenergetics and KS2/KS3 Biology work on food chains and ecosystems.

TRIPLE ONLY - Decomposition and Decay

DECOMPOSITION AND DECAY

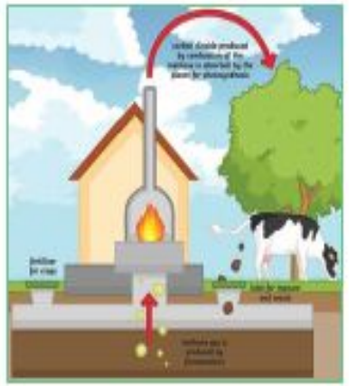
Decomposition is the process of rotting (decay) of a material. The optimum conditions for decay to occur are warm, moist conditions with a plentiful supply of oxygen available. This is because it is microorganisms which are breaking down the larger material into smaller pieces. The microorganisms can digest the material more efficiently and quickly when the conditions are warm, moist and there is a high level of oxygen.

Food can be preserved by many methods to prevent or reduce the rate of decay. These include cooling, canning, freezing, drying, pickling (adding vinegar) or adding salt or sugar.

Some microorganisms ferment waste materials, producing biogas, which can be used as a fuel source. Biogas is produced in a generator (or a digester) using many different microorganisms to ferment the carbohydrates in plant and animal waste. Waste from factories or sewage treatment plants can also be used in a biogas generator. By-products of the fermentation process can be used to fertilise crops and gardens.

There are two main types of generators: batch and continuous.

- A batch generator is manually loaded with the waste and emptied by hand afterwards. It only runs for a short while each time.
- A continuous generator is more automated and the waste is continually fed in. The products made are removed at a steady, continuous rate. It is used for more large-scale projects.



B7 Ecology

DEFORESTATION AND LAND USE

Humans use land for buildings, quarrying, mining, agriculture and landfill. As the human population increases and we take more land, there is less space for other organisms to live.

Deforestation (to use wood as a fuel/material or to clear space for other uses) destroys habitats where other organisms live.

Peat bogs are produced when decomposition occurs over a very long time. Peat stores a lot of carbon and can be extracted for use by gardeners or as an energy source. Burning peat releases a lot of carbon dioxide into the atmosphere which contributes to the greenhouse effect.

Trees absorb carbon dioxide for photosynthesis, so as they are cut down and removed, less carbon dioxide is taken from the atmosphere. Furthermore, when the trees are burned, they release carbon dioxide back into the atmosphere. The excess carbon dioxide can lead to global warming and the changes to the ecosystem cause reduced biodiversity.

TRIPLE AND COMBINED TOPICS

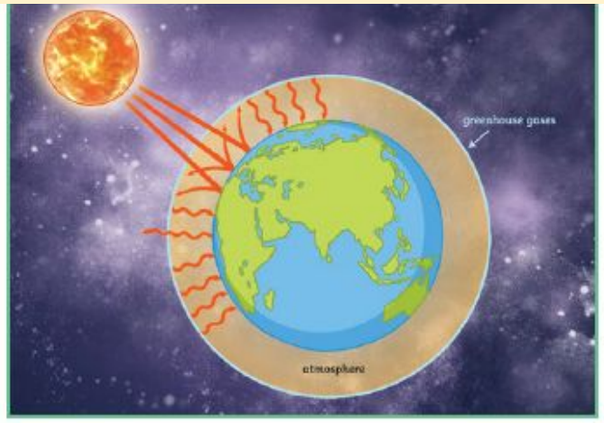
BIODIVERSITY AND WASTE MANAGEMENT

Biodiversity is the variety of living organisms on the earth or in an ecosystem. It is important in helping to maintain stable ecosystems. Organisms are often interdependent, relying on others as food sources, or to create suitable environmental conditions to survive. Human survival is also dependent on this biodiversity.

The global human population has exceeded 7 billion.
Human population has increased due to modern medicine and farming methods, reducing famine and death from disease.
This means a greater demand for food, resources and water.
It also means more waste and emissions are created.

Sewage, toxic chemicals, household waste and gas emissions pollute the water, land and air, killing plants and animals and reducing biodiversity.

GLOBAL WARMING



The **greenhouse effect** is the natural process where some of the Sun's radiation is trapped within the insulating layer of the atmosphere. This maintains a temperature suitable to support life on Earth.

Most of the radiation from the Sun is absorbed by the Earth when it reaches the surface. The rest of the infrared radiation is reflected from the surface and absorbed by the greenhouse gases and clouds in the atmosphere. This is then re-emitted in all directions.

However, due to many contributing factors, the global temperature is gradually increasing. Several gases, called greenhouse gases, trap the heat around the Earth; the most concerning is carbon dioxide. Human activities contribute to the excess amount of carbon dioxide in the atmosphere and so are a cause of global warming.

Global warming leads to the melting of ice caps, rising sea levels, flooding, changes to climate, changes in migration patterns, changes in species distribution and reduction in biodiversity.

B7 Ecology

KEYWORDS

Biodiversity - the variety of living organisms.

Carrion - decaying flesh and tissue of dead animals.

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Competition - the negative interaction between two or more organisms which require the same limited resource.

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Scavengers - organisms which feed on dead animals (carrion).

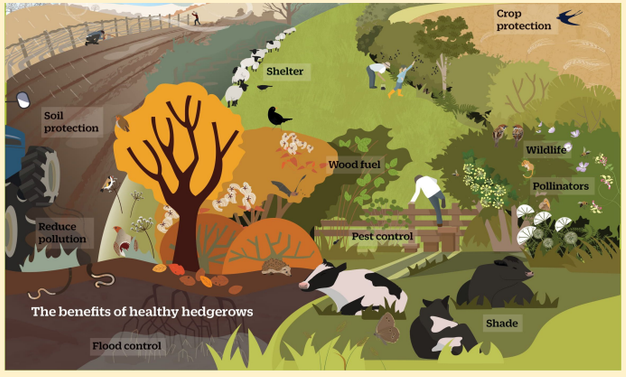
Species - organisms of similar morphology which can interbreed to produce fertile offspring.

MAINTAINING ECOSYSTEMS AND BIODIVERSITY

There are many ways that biodiversity and ecosystems are maintained:

- Breeding programmes can help to protect endangered species from extinction.
- Conservation programmes can help to protect and preserve specialised ecosystems and habitats such as peat bogs and coral reefs.
- Reintroduction of hedgerows and field margins on agricultural land can help improve biodiversity by breaking up the monoculture crops.
- Sustainable forestry programmes help to manage the woodlands and reduce the deforestation to a sustainable rate.
- Societies actively encourage recycling and reusing of products and packaging to reduce the household waste going to landfill sites.

Unfortunately these programmes can be difficult to manage. They are often expensive and are difficult to regulate. People who are employed in certain areas, e.g. tree felling, cannot always transfer their skills to an environmentally friendly role and so become unemployed. It is difficult to maintain biodiversity whilst preventing crops being overrun with pests and weeds, which would affect food security for the human population.



TRIPLE AND COMBINED TOPIC - Maintaining ecosystems and Biodiversity

Chemistry

Chemistry Topic 9: Chemistry of the atmosphere

1. Composition of the earths atmosphere now	
79%	Nitrogen
20%	Oxygen
1%	Other gases including CO_2

2. Evolution of the atmosphere		
Time	Atmosphere	reason
4 billion years a go	Nitrogen, Carbon dioxide and water vapour (like mars)	Volcanic erruptions
	Nitrogen, Carbon dioxide decreases	Earth cools and water vapour condenses. Carbon dioxide dissolves into the oceans
2.7 billion years ago	Increasing oxygen decreasing carbon dioxide	Photosynthesising organisms evolved
	Reducing oxygen to modern levels	Animals evolved and began respiring the oxygen

3. Climate change	
Greenhouse gases	Gases which increase the temperature of the atmosphere Eg Carbon dioxide, methane, water vapour
Greenhouse effect	When excess greenhouse gases absorb and radiate IR radiation back to the earth warming it
Man-made climate change	The leading theory that human activities are causing an increase in global temperature
Carbon footprint	Total amount of carbon dioxide emitted over the life of a product, service or event
Global dimming	Particulates block the light from the sun slightly, reducing global temperature
Acid rain	Gases dissolve in rain causing damage to buildings, statues, lakes and trees

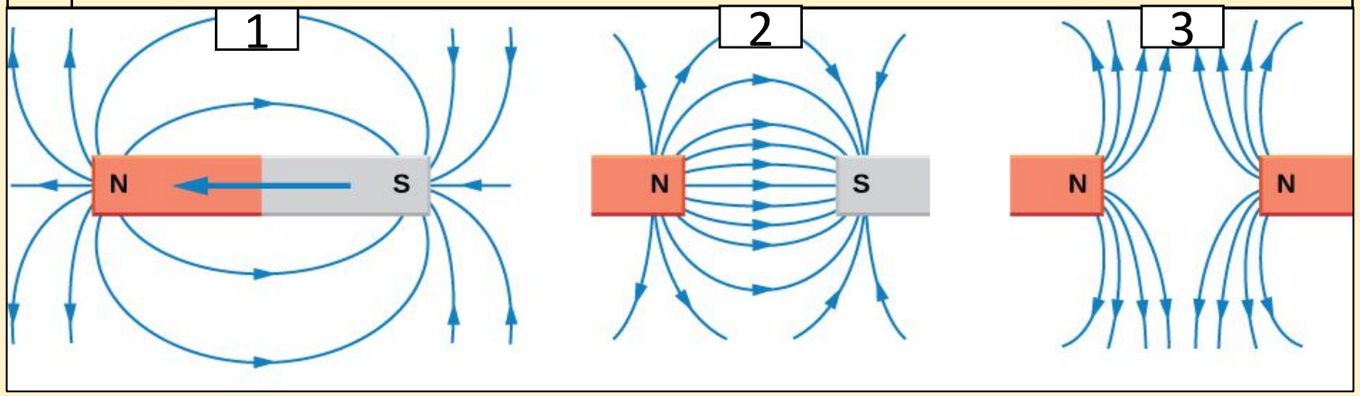
4. Atmospheric pollutants from combustion		
Pollutant	Source	Effect
Carbon dioxide	All combustion	Global warming
Carbon monoxide	Incomplete combustion	Toxic, breathing problems
Carbon particle (Soot)	Incomplete combustion	Breathing problems, global dimming
Sulfur dioxide	Burning sulphur, impurities in fossil fuels	Acid rain
Oxides of nitrogen	Vehicle engines	Acid rain

Physics

Physics topic 7 Magnetism and electromagnetism

1. Keywords	
Permanent magnet	A material which is always magnetic
poles	the place where the magnetic force is strongest north and south (many field lines)
Magnetic field lines	The lines that show the direction of magnetic force. The closer the stronger the force is. Arrows go from north to south poles
Induced magnet	A material that becomes a magnet when placed in a magnetic field
Magnetic material	A material that can be attracted to a magnet (iron, steel, cobalt and nickel)
Electromagnet	A magnet which works when an electric current flows. A solenoid with an iron core
Solenoid	A coil of wire that can become an electromagnet
Compass	Shows the direction of a magnetic field. Used to plot a magnetic field
Current	The conventional current runs from + to - .
Magnetic flux density (B)	The strength of the magnet lines per m^2 (measured in T (tesla))

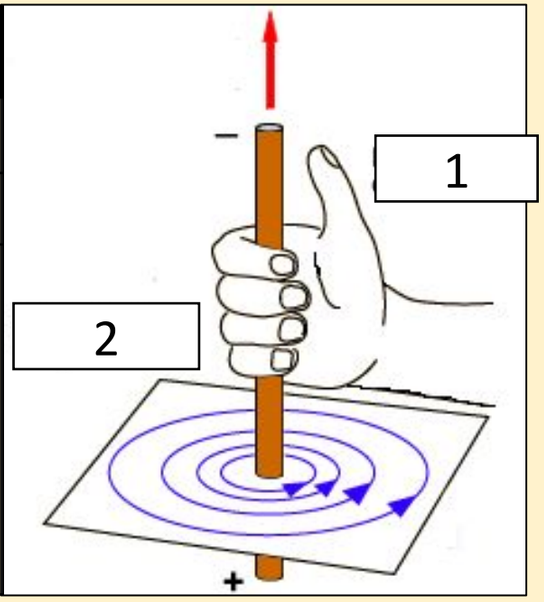
2. Magnetic field lines and force	
1	Magnetic field lines on a magnet
2	Magnetic field lines of attraction between opposite poles
3	Magnetic field lines of repulsion between like poles



3. Electromagnetic field on a wire	
1	Direction of current
2	Direction of magnetic field

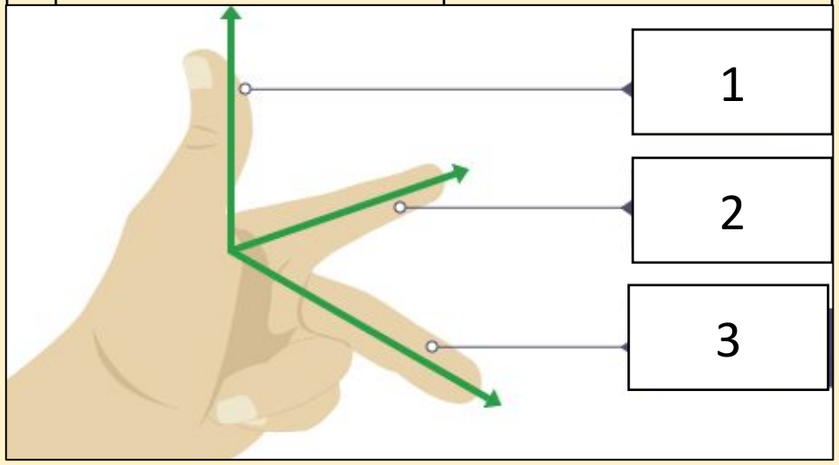
The strength of the magnetic field depends on:
A: The current
B: The distance from the wire.

Shaping the wire into a solenoid makes the field stronger



4. Fleming's left-hand rule (HT ONLY)

	Which finger	What it means
1	Thumb	Movement/Force
2	First finger	Field (north to south)
3	Second finger	Current (+ to -)



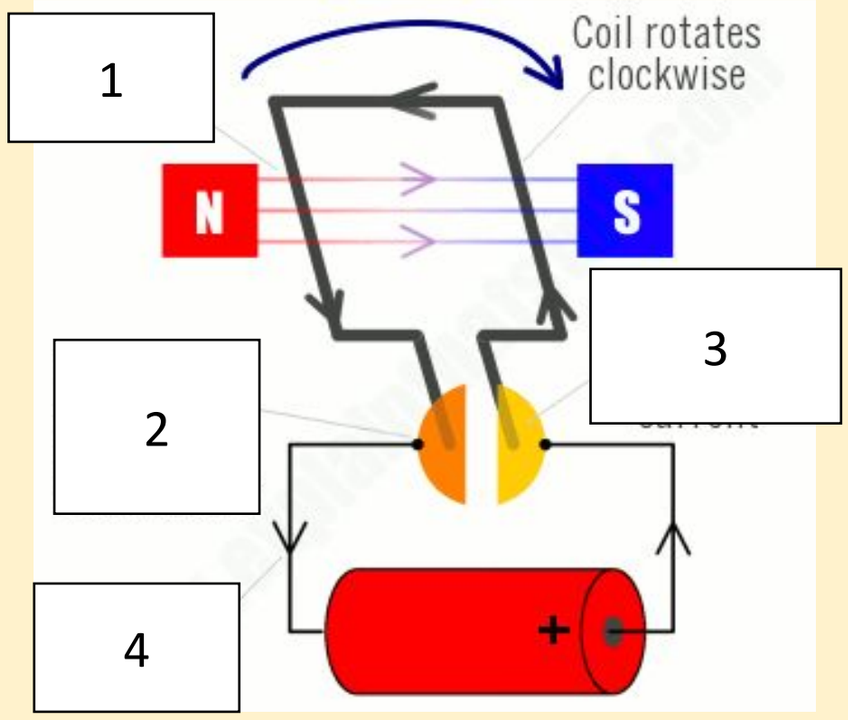
5. Factors that affect the size of the force on the conductor (HT ONLY)

$$F = B\,I\,l$$

F	Force (N)
B	Magnetic flux density (Tesla, T)
I	Current (A)
l	Length (m)

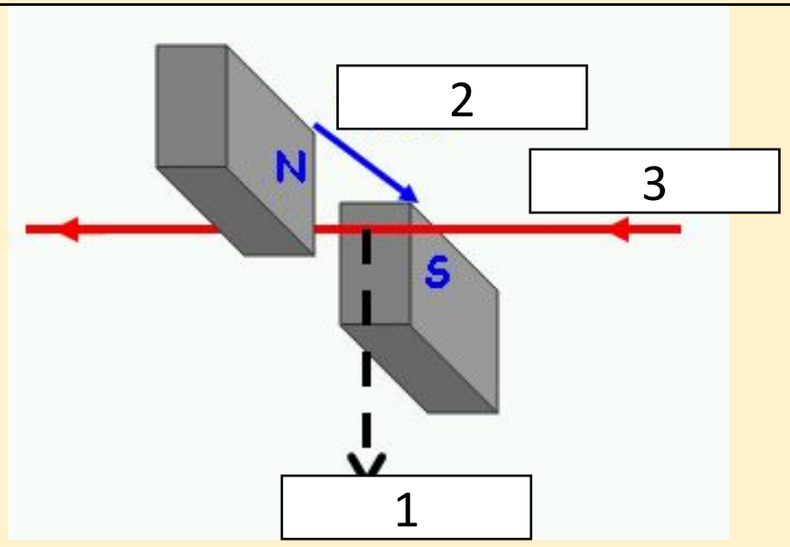
6. Electric motors (HT ONLY)

1	Magnetic field
2	Brushes carry current to commutator
3	Commutator reverses current
4	Electric current



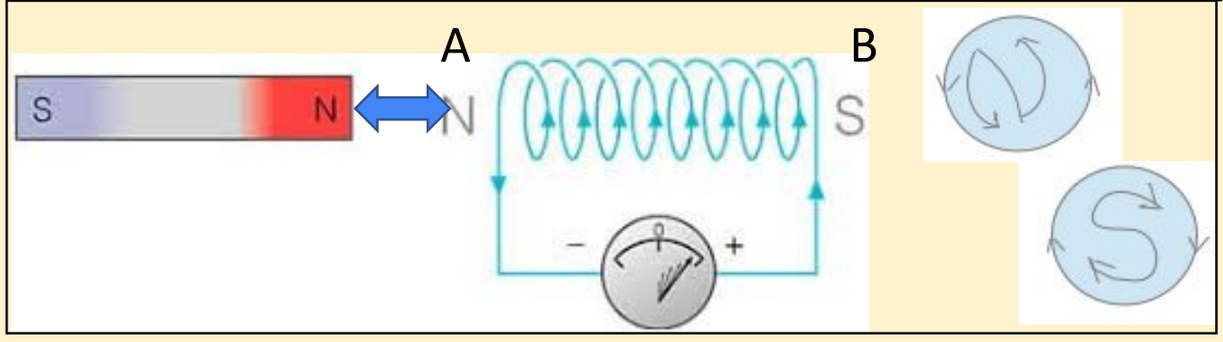
7. The generator effect (PHYSICS HT ONLY)

1	Force moves wire
2	Wire cuts magnetic field
3	Current is induced in wire



8. Factors that affect the size and direction of induced current/potential difference (PHYSICS HT ONLY)

Magnetic pole	Pushed in or pulled out	Direction of current	Induced polarity of A	Magnet and coil
North	In	Anticlockwise	North	Repel
North	Out	Clockwise	South	Attract
South	In	Anticlockwise	South	Repel
South	Out	Clockwise	North	Attract



9. Using the generator effect (PHYSICS HT ONLY)

Alternator	Generates alternating current
Dynamo	Generates direct current
Microphones	Convert pressure variations in sound into electric current

10. Transformers (PHYSICS HT ONLY)

Vp	Potential difference across primary coil (Volts)
n_p	Number of turns in primary coil
Ip	Current in primary coil (Amps)
Vs	Potential difference across secondary coil (Volts)
n_s	Number of turns in secondary coil
Is	Current in secondary coil (Amps)

Work out voltage change:

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

Work out power output:

$$V_p I_p = V_s I_s$$

Sociology

Y11 Exam Unit - Social inequality

KEY TERM	DEFINITION
Social inequality	Differences between the members of society in terms of wealth, class, status and power
stratification	**The** allocation of individuals and groups according to various **social** hierarchies of differing power, status, or prestige
hierarchy	The organisation of society into a rank order of importance
Elite	A minority group who have power and influence over other members of society
bourgeoisie	Capitalists and members of the middle class who have an interest in preserving capitalism
proletariat	A term used by Marx to describe the working class
lumpenproletariat	The lowest level of the working class in 19th C society
Polarisation of social classes	Increasing differences between the lives of different socioeconomic classes
Life chances	The opportunities that an individual has to share in the cultural and material rewards that a society has to offer, e.g. access to education and employment
Social class	A form of social stratification based on economic factors such as occupation and income

Social stratification key studies

Study	Findings
Davis and Moore (1945) theory of stratification Functionalists	• Societies must allocate people to different roles – some roles are functionally important (essential for society eg doctors) – this is meritocratic • These roles have high status and rewards to attract the best people to them • Stratification is necessary to ensure the most talented people get the best jobs
Marx's theory of social class	• Argues there are two main social classes: bourgeoisie and proletariat • Bourgeoisie have more power because they own the means of production e.g. factories • Proletariat are exploited and experience alienation – class conflict exists • Bourgeoisie impose their ideology on working class and create false class consciousness
Weber's theory of social class	• Classes are formed in the labour market – a class is a group who have similar life chances • 4 main classes: property owners, professionals, petty bourgeoisie, working class • Classes based both on economic factors and status and power too
Weber's theory of power and authority	• Power is based on coercion (use of threat/ violence) or authority (when someone obeys you as they think they should). 3 types of authority: 1. Charismatic authority (inspiring qualities) 2. Traditional authority (based on tradition) 3. Rational legal authority (based on a set of rules and laws which are accepted)
Devine's (1992) Affluent Workers revisited	• Revisited Luton to see how far WC life had changed – compared to Goldthorpe's • Found WC lifestyles had not changed as much as Goldthorpe suggested • Home life not purely home-centred and privatised, interviewees did not have a purely instrumental attitude to work, plenty of evidence of solidarity
Townsend's (1979) relative deprivation theory	• Developed a deprivation index to measure relative deprivation • Found almost 23% of population were in poverty • Much higher than 6% (state measure of poverty)
Murray's (1984) New Right perspective on poverty New Right	• Argues welfare benefits create dependency – discouraging people to find work, and actually creating more poverty • The underclass are a threat to society – a group who drain resources and do not work – associates it with rising crime and single-parent families
Walby's (1990) theory on patriarchy Feminist	• Patriarchy = a system of structures in which en dominate and exploit women - 6 Patriarchal structures • Paid employment, household, culture, sexuality, male violence against women and the state

Homework

1: Knowledge Organisers
These provide the basic knowledge for each topic which needs to be known off by heart. This may include key concepts, key theories and the named sociologists and their research findings for each topic.

2: Meanwhile, elsewhere
What we learn in our lessons only offers a glimpse of the world. To widen our understanding, one page research sheets will be used to explore what else is going on around the world in contemporary society to match the topics we are studying. These need to be researched using the links and resources provided and completed.

3: Revision
Preparing for Sociology assessments is an essential part of each topic, as these assessments allow teachers and pupils the chance to check their progress in Sociology. Revising gives you the chance to show off what you know.

Read:

Classic Texts: Sylvia Walby "Theorising Patriarchy" 1990
https://www.tutor2u.net/sociology/reference/classic-texts-sylvia-walby-theorising-patriarchy-1990
Classic Texts: Peter Townsend "Poverty in the United Kingdom" 1979
https://www.tutor2u.net/sociology/reference/classic-texts-peter-townsend-poverty-in-the-united-kingdom-1979
Classic Texts: Charles Murray "Losing Ground" 1984
https://www.tutor2u.net/sociology/reference/classic-texts-charles-murray-losing-ground-1984
Classic Texts: Fiona Devine "Affluent Workers Revisited" 1992
https://www.tutor2u.net/sociology/reference/classic-texts-fiona-devine-affluent-workers-revisited-1992
Classic Texts: Davis & Moore "Some Principles of Stratification" 1945
https://www.tutor2u.net/sociology/reference/classic-texts-davis-moore-some-principles-of-stratification-1945

Watch:

Netflix: Explained: Why Women are paid less
https://www.youtube.com/watch?v=hP8dLUxBfsU

Health Inequalities: The Glasgow Effect
https://www.youtube.com/watch?v=r0cJ7CX1ICA&t=3s

40 years after Thatcher: Inequality in the UK - BBC Newsnight
https://www.youtube.com/watch?v=OVG9Qmd6BWc

Listen:
BBC Sounds: The Class Ceiling
https://www.bbc.co.uk/programmes/b013qz77

BBC Sounds: The briefing Room: Inequalities of Lockdown
https://www.bbc.co.uk/programmes/m000h0w0

Key Terms	Definition
Social mobility	Movement up or down between layers of society
embourgeoisement	The adoption of middle class value and behaviours by prosperous members of the working class
meritocracy	A social system that rewards merit rather than inherited wealth
Poverty trap	Poor families in receipt of means test welfare benefits become ‘trapped’ in poverty if their earnings marginally increase, resulting in the loss of benefits and,as a consequence, no improvement in their economic situation
Culture of poverty	An acceptance repeated across generations that if you are poor you will always be poor
Interest (or pressure groups)	Formally organised groups created to represent the interests of sections of society
Absolute poverty	Is when people have incomes that are insufficient to obtain the minimum needed to survive (i.e. shelter, food, water, clothing)
Relative poverty	Is when people cannot afford to meet the general standard of living of most other people in their society
Affluence	Having a lot of money and material possessions