

September – October

# *Year 11*

**KNOWLEDGEABLE  
AND EXPERT  
LEARNERS**



Self  
Quizzing

Flash  
Cards

Mind  
Maps

Brain  
Dumps

**enjoylearn**succeed

# INDEPENDENT LEARNING BOOKLET

**NAME:** .....

**TUTOR GROUP:** .....

## CONTENTS

- Using Class Charts
- Accessing Seneca
- Independent Learning Log
- Self Quizzing instructions
- Subject Knowledge Organisers

You will need an A4 application booklet.

### **HOMEWORK:**

- Your teacher will set specific tasks, with a deadline, on Class Charts
- Instructions for your homework and how to access it are in this booklet
- You must complete and hand in the work by the deadline

### **INDEPENDENT LEARNING EXPECTATIONS AND REWARDS:**

- You should complete 1 task per day, 5 days a week.
- The tasks will be set on Class Charts to help you keep track of what you need to do.
- You must bring your ILB and application book to school every day.
- You can choose the subject/topic you want to work on.
- Your tutor will check your ILB regularly to see how you are getting on.
- You will be rewarded for going above and beyond expectations.

# USING CLASS CHARTS



All of your homework will be set by your teachers using the Class Charts System. You should check Class Charts every day to make sure you are up to date, and that you meet all your deadlines. Below, shows you how to log on and track your homework.

## Logging in to Class Charts

1. Enter your email address and password into the fields provided

Access code \*  
Your access code

Please enter the access code supplied by your teacher.

☒ Remember me

2. Click on the Log in button

LOG IN

3. Enter your date of birth if prompted and click on the OK button

Date of birth

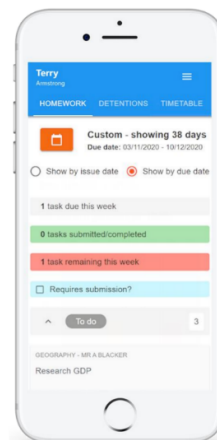
Please enter your date of birth below.

Date of Birth  
12/06/2009

OK CANCEL

## Homework

- Select the homework tab on our account.
- This will display a list of the homework tasks which you have been given.
- To change the date range for displayed homework tasks, click on the orange Date button.
- To display tasks in the order they are expected to be handed in, click on the Due date button.
- To mark a homework task as completed, view the homework task of your choice in more detail and tick the Completed checkbox.



To view a homework task in more detail, click on the expand icon in the bottom right hand corner of the homework tile. A popup will appear that contains the a description of the homework task, the estimated completion time and any links or attachments that may have been included.



To do

Research GDP  
GEOGRAPHY - MR A BLACKER

Type: Blended Learning  
Issue date: Monday 09/11/2020  
Due date: Wednesday 11/11/2020  
Estimated completion time: 1 hours

Please write a short paragraph on what GDP is and how it is used.

## Keeping track of homework

To track your homework use the three banners above the homework status. This shows the the number of homework tasks that are due that week, how many of those tasks you have completed and how many tasks you still need to complete.

1 task due this week

0 tasks submitted/completed

1 task remaining this week

To only see homework tasks that require an attachment submission, tick the checkbox labelled Requires submission.

☐ Requires submission?

If you are viewing the Homework tab via a desktop or laptop, expanding a homework status category will display a table overview of each homework task for the selected date range.

To do							
Homework	Teacher	Lesson	Issued	Due	Estimated time	Type	Feedback
<input checked="" type="checkbox"/> Research GDP	Mr A Blacker	8F/Gg	Monday 09/11/2020	Wednesday 11/11/2020	1 hours	Blended Learning	
<input checked="" type="checkbox"/> Write a soliloquy	Mr J Kato	8y/En2	Tuesday 10/11/2020	Tuesday 17/11/2020	30 minutes	Homework	
<input checked="" type="checkbox"/> Create a poster on French food	Mrs A Abell	7YEL/Fr	Friday 06/11/2020	Thursday 19/11/2020	45 minutes	Homework	Feedback

## Homework attachment submissions

For certain homework tasks, you may be asked by your teacher to upload your work as an attachment. When viewing a homework task in more detail, you will see the Upload attachment button if your teacher is expecting your work to be uploaded. To submit a homework attachment, click on the Upload attachment button and select the files of your choice. Successfully uploaded files will then appear above the button

If your teacher leaves feedback on one of your homework attachments, you will see a Feedback icon appear on the associated homework task.

To view the feedback, click on the expand icon in the bottom right hand corner of the homework tile. Your teacher's feedback will appear directly below your homework attachment

To do

Write a book review  
RECREATION - CBR/RC5 - MRS A ABELL

Type: Homework  
Issue date: Friday 20/03/2020  
Due date: Friday 27/03/2020  
Estimated completion time: 10

☐ Completed?

Write a 500 word review on the book of your choice.

My attachments

☒ My book review.doc

+ UPLOAD ATTACHMENT

You can upload a maximum of 5 attachments, each up to 250mb in size.

Supported file formats: doc, docx, pdf, xls, xlsx, ppt, pptx, pub, txt, png, jpeg, jpg, gif, rtf, mp3, odt, odp, csv, mp4, mov, m4a, sb3

RECREATION - MRS A ABELL

Write a book review

Issued: Friday 20/03/2020  
Due: Friday 27/03/2020

Feedback

To do

To-Do: These are homework tasks that you need to complete. Once you have completed them, tick the checkbox

Completed

Completed: These are homework tasks that you have ticked as completed but have not been marked by your teacher

Submitted late

Late: These are homework tasks that have been handed in past the deadline.

Not submitted

Not submitted: These are homework tasks that were not handed in on time.

Submitted

Submitted: These are homework tasks that have been handed in on time.

# HOW TO ACCESS SENECA



Seneca learning is a free online platform that will help you revise for all your subjects.

1.

Go to  
<https://senecalearning.com/en-GB/>

2.

Click 'Log In' at the top right hand corner.



Login

Sign up

3.

Select 'Continue with Microsoft'.



Continue with Microsoft

4.

Enter your school email and password.

5.

Select the course(s) you want to work on

If you need any help accessing SENECA please speak to your class teacher, or Miss Holmes.

You can also scan this QR code for a video walkthrough of how to log in as a student

SCAN HERE



# INDEPENDENT LEARNING LOG

## SELF-QUIZZING



### Expectation this ½ term: Self-Quizzing

1. Use/Create 6 questions
2. Answer 6 questions


- This should be done once a day, for approximately 20 minutes.
- All quizzing should be evidenced in your application booklet.
- Use this log to track how what subjects you have done (see example)

Week Beginning	Monday	Tuesday	Wednesday	Thursday	Friday
<b>EXAMPLE:</b> 01/09/2025	English: KG1 & 2	Science: KG2 & 4	History: KG4 & 5	PSHCE: KG 1 & 2	Drama: KG 1 & 3
8/09/2025					
15/09/2025					
22/09/2025					
29/09/2025					
06/10/2025					
13/10/2025					
20/10/2025					



# SELF QUIZZING – INSTRUCTIONS

1.




Identify knowledge

Identify the subject and knowledge groups you are going to cover.  
Look at one knowledge group at a time.

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2.




Review

Spend around 5 minutes reviewing the knowledge group you have chosen.  
Use this time to create questions if you need too.  
Read it to yourself  
Highlight keywords

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3.




Cover and answer

Cover up your knowledge and answer the questions from memory.  
Take your time and where possible answer in full sentences.

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4.




Revisit

Go back to the content and self-mark your answers in **green** pen.

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5.



Review

Review the areas where there were gaps in knowledge, and self-quiz this area again.

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
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## SELF-QUIZZING QUESTIONS

These are taken straight from a knowledge organiser. These are examples of questions in your KO that can help you with self quizzing.

- What is happiness?
- What is gratitude?
- What is vulnerability?
- What is courage?

OR

A. Structure of the Earth and Plate Tectonics		
1		<p><b>Crust</b> – The outer layer of the Earth. It is a very thin layer (think of an apple skin on an apple) and ranges between a thickness of 6 and 70 km. Broken in pieces called tectonic plates.</p> <p><b>Mantle</b> – Due to the high temperatures of this thick layer, the mantle has the consistency of jam! Temperatures within the mantle range from 5000°C near the core to 1300°C just below the crust.</p> <p><b>Outer Core</b> – This layer is liquid and made up largely of iron.</p> <p><b>Inner Core</b> - This layer is solid and is also made of iron. Temperatures within this dense core can be 5500°C.</p>
Structure of the earth		

Using your KO, you can create your own questions, such as:

- Structure of the Earth**
1. What is the Crust?
  - 2.What is the Mantle?
  - 3.What is the Outer Core?
  - 4.What is the Inner Core?

You can directly answer these questions in your application book.

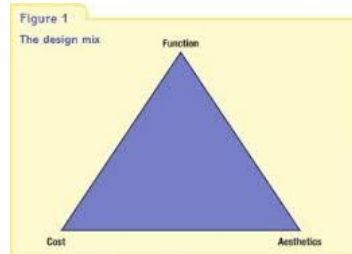
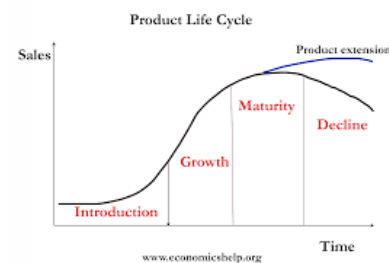
Key Ideas	
<b>Product</b>	What the business is selling
<b>Product Life Cycle</b>	This is a concept about the number of sales a business makes over a period of time
<b>Design Mix</b>	This is a tool for improving the Product. It includes Aesthetics, Function and Cost
<b>Price</b>	The amount charged by a business for the sale of a product
<b>Pricing Strategies</b>	Competitive Penetration Psychological Price Skimming Cost Plus pricing Premium Predatory
<b>Place</b>	Where the product or service is sold Online V high street
<b>Promotion</b>	Making customers aware of the product Informing customers about the product Reminding customers about the product
<b>Promotional Mix</b>	A combination of promotional methods
<b>E-commerce</b>	Shopping online

Place	
<b>Key Idea</b>	Where the business sells its products Online V High street
<b>Online</b>	Using the Internet, social media or Apps
<b>Methods of Distribution</b>	Retails E-tailers (Ecommerce) Wholesalers Warehouse

Price	
<b>Strategy</b>	Choosing the right price to make most sales
<b>Strategies</b>	Competitive Penetration Psychological Price Skimming Cost Plus pricing Premium Predatory
<b>Influences on Strategy</b>	Technology Competition Market Segment Product Life Cycle

### 2.2.5 Using the marketing mix to make Business Decisions

<b>Key Idea</b>	How each element of the marketing mix can influence other elements
<b>EG - good</b>	Premium Pricing Strategy, placed in a Luxury Brand shop
<b>EG - bad</b>	Price Skimming with low quality product function
<b>Key Idea</b>	Using the marketing mix to build a competitive advantage
<b>Key Idea</b>	In integrated marketing mix can influence competitive advantage



Promotion	
<b>Promotion</b>	Making customers aware of the product Informing customers about the product Reminding customers about the product
<b>Method of Promotion</b>	Advertising Branding Sponsorship Special Offers Product Trials
<b>Branding Methods</b>	Jingles Slogans Celebrity Endorsements Logos Mascot
<b>Promotional Mix</b>	A combination of the methods of promotional to increase the success of the promotion campaign
<b>Technology in Promotion</b>	Targeted advertising online – ads/pop ups Viral Advertising via Social Media E-Newsletters

Product	
<b>Product</b>	What the business sells. Products are tangible goods.
<b>Design Mix</b>	Used to innovate or improve the product
<b>PLC</b>	Used to measure sales over time. There are 5 stages: R&D Introduction Growth Maturity Decline
<b>Extension Strategy</b>	When the business launches an improved version of an existing product
<b>Methods of Extension Strategy</b>	New packaging New flavours New size Rebrand Promotional campaign Reduce the price for a period of time
<b>USP</b>	Unique Selling Point – give the business differentiation from their competitors
<b>Differentiation</b>	The importance to a Business to making a product/service different from competitors

## Wired and Wireless Networks

- 1**
- What is a network?
  - Types of network
    - Local Area Network [LAN]
    - Wide Area Network [WAN]
    - Personal Area Network [PAN]
  - Wired Vs Wireless
- Hardware Needed for a Network**
- Network Interface Card (NIC)
  - Switches
  - Router
  - Wireless Access Points
  - Cables
    - Fibre Optic Cable
    - CAT5 CAT6 Ethernet Cable
    - Coaxial Cables

## IP and MAC Addressing

- 2**
- Network Protocols:
    - ❖ Transmission Control Protocol / Internet Protocol [TCP/IP]
    - ❖ Hyper Text Transfer Protocol Secure [HTTPS]
    - ❖ File Transfer Protocol [FTP]
    - ❖ Internet Message Access Protocol [IMAP]
    - ❖ Simple Mail Transfer Protocol [SMTP]
  - The concept of layers
  - TCP/IP stack
  - Packet Switching
  - Describe network
  - Network Security

## Topologies

- 1**
- Topologies
    - Star
    - Mesh
    - Bus
    - Ring

TCP/IP model	Protocols and services	OSI model
Application	HTTP, FTP, Telnet, NTP, DHCP, PING	Application
Transport	TCP, UDP	Presentation
Network	IP, ARP, ICMP, IGMP	Session
Network Interface	Ethernet	Transport
		Network
		Data Link
		Physical

## Key Vocabulary

- |          |                    |   |
|----------|--------------------|---|
| <b>1</b> | <b>Bandwidth</b>   | This is the amount of data that can be sent across a network                    |
| <b>2</b> | <b>Latency</b>     | Is the delay of a bit leaving one device and arriving at another.               |
| <b>3</b> | <b>MAC Address</b> | The physical address embedded within the device.                                |
| <b>4</b> | <b>TCP/IP</b>      | A set of rules that governs the connection of computer systems to the Internet. |

## Searching Algorithms

- 1**
- The internet: The ultimate and biggest WAN in the world based around TCP/IP
  - Domain Name Server [DNS]
  - Web hosting
    - Benefits / Drawbacks
  - The cloud
    - Benefits / Drawbacks
  - Virtual networks
    - Benefits / Drawbacks



## Cyber Security and Threats

- 1** Cyber Security is the processes, practices and technologies designed to protect networks, computers, programs and data from attack, damage or unauthorized access.
- Cyber Security Threats:
- Social engineering techniques
  - Malicious code
  - Weak and default passwords
  - Misconfigured access rights
  - Removable media
  - Unpatched and or outdated software

## Prevention and Detection of Threats

- 2**
- Understand and be able to explain the following security measures:
    - Antivirus Software
    - Firewall
    - Biometric measures (particularly for mobile devices)
    - Password systems
    - CAPTCHA (or similar)
    - Using email confirmations to confirm a user's identity
    - Automatic software updates.

## Key Vocabulary

- |          |                           |  |
|----------|---------------------------|--|
| <b>1</b> | <b>Malware</b>            | Is an umbrella term used to refer to a variety of forms of hostile or intrusive software         |
| <b>2</b> | <b>Cyber Security</b>     | is protecting networks, computers, programs and data from attack, damage or unauthorized access. |
| <b>3</b> | <b>Social Engineering</b> | Using people as a weak point in a system   |
| <b>4</b> | <b>Virus</b>              | In computing terms it is something that maliciously affects computer software and code.          |

## Testing Systems

- 1**
- Penetration Testing is the process of attempting to gain access to resources without knowledge
  - White Box Testing is to simulate a malicious insider who has knowledge of and possibly basic credentials for the target system
  - Black Box Testing is to simulate an external hacking or cyber warfare attack

## Social Engineering Techniques

- 1**
- Understand and be able to explain the following security measures:
    - Antivirus Software
    - Firewall
    - Biometric measures (particularly for mobile devices)
    - Password systems
    - CAPTCHA (or similar)
    - Using email confirmations to confirm a user's identity
    - Automatic software updates.

Principal (main) government objectives	Other government objectives
Ensuring price stability	Reducing inequality
Achieving economic growth	Managing environmental change
Maintaining full employment	
Balance of payments balance	

Objective	Example 1	Example 2
<b>Economic Growth</b>	The UK economy grew by 1.6% in 2022.	Government investing in infrastructure projects like HS2 to boost growth.
<b>Low Unemployment</b>	Job support schemes like Kickstart during the COVID-19 pandemic.	UK unemployment fell to 3.8% in 2022.
<b>Low and Stable Inflation</b>	The Bank of England targets a 2% inflation rate.	Raising interest rates to control high inflation.
<b>Balanced Current Account</b>	Encouraging exports to reduce trade deficit.	Using tariffs to protect domestic industries.

Conflict between objectives	
<b>Key knowledge: when the government tries to achieve one objective it might come at the expense of the other. See examples below:</b>	
<b>Economic growth and price stability</b>	Pursuing higher economic growth could lead to inflation
<b>Economic growth and balance of payments</b>	Higher economic growth could lead to increased demand for imports which worsens the balance of payments
<b>Full employment and price stability</b>	If more people have jobs (full employment) then demand will be high which means higher inflation
<b>Economic growth and inequality</b>	Higher economic growth means some peoples incomes will rise whilst others will not resulting in income inequality
<b>Economic growth and environmental change.</b>	Growing economies often lead to higher economic growth but this can come at the expense of increased pollution and environmental damage

Keyword	Definition
<b>GDP</b>	The total value of goods and services produced in an economy over a period of time e.g. 12 months
<b>GDP per capita</b>	The total GDP divided by the population
<b>Nominal GDP</b>	The GDP figure without taking inflation into account
<b>Real GDP</b>	The GDP figure whilst taking into account inflation
<b>Economic growth</b>	A growth in GDP over a period of time

Keyword	Formula
<b>Real GDP</b>	$GDP / (1 + \text{Inflation rate as a decimal})$
<b>GDP per capita</b>	Total GDP / Population

What is economic growth?	Economic growth is an increase in the production of economic goods/services in one period of time compared to another	
<b>Benefits of economic growth</b>		<b>Costs of economic growth</b>
Rising consumer income		Increased inequality
Better living standards		Demand pull inflation
Higher consumer confidence		Growth may be unsustainable
Higher tax revenue for the government		Imports may increase
Higher employment/lower unemployment		Increased environmental damage
Producers make higher profits		Workers may feel over worked leading to mental health issues increased
Less poverty		
<b>What can the government do to promote economic growth?</b>		
Supply side policies		
Government grants		
Reducing benefits		
Education and training		
Fiscal policy		
Monetary policy		

Concept	Example 1	Example 2
<b>Economic Growth</b>	UK's real GDP increased by 2.3% in 2021.	India experienced 8% economic growth in 2022.
<b>GDP</b>	Germany's GDP was €3.8 trillion in 2020.	USA's GDP reached \$25 trillion in 2023.
<b>Real GDP</b>	UK's GDP rose from £2.0 trillion to £2.1 trillion, but with 2% inflation, real GDP grew by only 3%.	If nominal GDP grows by 5% and inflation is 2%, real GDP growth is 3%.
<b>GDP per capita</b>	Norway has a high GDP per capita due to a small population and strong economy.	China's GDP is large overall, but its GDP per capita is lower due to its large population.

**What is inflation?** A rise in the average price level over time normally represented as a %

**Benefits of economic growth****Costs of economic growth**

Rising consumer income

Increased inequality

Better living standards

Demand pull inflation

Higher consumer confidence

Growth may be unsustainable

Higher tax revenue for the government

Imports may increase

Higher employment/lower unemployment

Increased environmental damage

Producers make higher profits

Workers may feel over worked leading to mental health issues increased

Less poverty

**Causes of inflation**

Demand pull inflation – when demand in the economy is high it tends to push prices up (normally in a boom)

Cost push inflation – increases in costs of production can push up average prices e.g. higher oil prices, weaker exchange rate, rising wages, etc...

**Consequences of inflation**

Interest rates likely to be higher as the Bank of England will increase them to fight inflation which means people with loans and mortgages will likely face higher repayments

Workers often demand higher wages when inflation is high, trade union activity, strikes tend to increase in the public sector

Inflation reduces real wages as people have to spend more money to buy the same things as before so they may cut spending in other non-essential areas.

Savers lose out because their money is worth less when inflation is rising

Business confidence will fall as they won't know what their costs will be in the future, so investments may be delayed or cancelled

**Policies to fight inflation**

Fiscal policy – taxes can be raised to discourage consumer spending

Monetary policy – Interest rates can be raised to discourage borrowing and spending

Supply side policies – Reduce power of trade unions, privatisation and deregulation which may encourage competition and reduce costs

What are the balance of payments?

The BOP refers to a record of all financial transactions made between the UK and the rest of the world. Includes transactions made between consumers, producers and the government.  
The BOP consists of the current account which records the exchange of goods and services between the UK and the rest of the world

What are the balance of payments **deficit** (current account)?

The value of the UK's exports of goods and services is **less than** the value of imported goods and services. i.e. Exports < Imports

What are the balance of payments **surplus** (current account)?

The value of the UK's exports of goods and services is **more than** the value of imported goods and services. i.e. Exports > Imports

What is the balance of trade?

This part of the current account records the sales and purchase of physical goods between the UK and the rest of the world.

Component	Example 1	Example 2
<b>Trade in Goods</b>	UK exports cars to Germany	UK imports smartphones from China
<b>Trade in Services</b>	UK firms provide financial services to overseas clients	UK residents book holidays with foreign travel agents
<b>Income</b>	UK investor receives dividends from US shares	Foreign company earns profits from UK operations
<b>Current Transfers</b>	UK sends foreign aid to a developing country	EU budget contributions from the UK
<b>Deficit/Surplus</b>	UK current account deficit due to high imports	Germany current account surplus from strong exports

**Causes of a BOP deficit or surplus**

Status of the currency – stronger currency will make imports cheaper and exports dearer causing a current account deficit

Higher economic growth – leads to higher disposable income, UK citizens tend to buy more imports e.g. iPhone, German cars, French wine etc...

Competitiveness of the economy – if an economy is competitive e.g. labour is productive, costs of production are lower, innovation is high then exports should rise

Inflation – High inflation compared to other countries will make UK's exports less competitive causing their demand to fall

Attractiveness to foreign investors – increased international investment could reduce a deficit as money flows into the UK economy

<b>What is income inequality?</b>	When there is an unequal distribution of income in a country. Some people's incomes might be much smaller than other peoples.
<b>Wealth inequality</b>	When there is an unequal distribution of wealth in a country. Wealth includes things like savings, shares, property. Some people don't own very much whilst others have many assets
What are the balance of payments <b>surplus</b> (current account)?	The value of the UK's exports of goods and services is <u>more than than</u> the value of imported goods and services. i.e. Exports > Imports
<b>What is the balance of trade?</b>	This part of the current account records the sales and purchase of physical goods between the UK and the rest of the world.

Causes of income inequality	Causes of wealth inequality
Age – Experience workers are usually older, meaning they get paid higher than younger workers	Inheritance status – Some families have more assets to pass down to the next generation
Labour market – uses demand and supply to determine wages. If the job is in high demand then workers will earn higher wages. If there is a large supply of workers willing to do the job then wages will be low	Savings – people with a high income will save more, savings then earn interest and may lead to an increase in wealth over time
Reliance on benefits – Families on benefits will receive a lower income than those that are not	Investments – people who have high incomes may invest in assets like properties and shares thus increasing their wealth further
Gender – Male and female workers might get paid different amounts, whether legally or illegally depending on the location.	Taxes – taxes on wealth tend to be lower than taxes on income
Tax status – Regressive taxes will take a larger proportion of income from those on low incomes, than those on high incomes.	
Wealth – wealth status may influence income, people who already own a house won't need to pay rent or mortgages so they will have a higher disposable income.	

Consequences of income and wealth inequality	
<b>Poverty</b>	People that have low income and wealth may struggle to survive and are likely to be in poverty
<b>Housing</b>	Those on low incomes and those who have little wealth might struggle to obtain basic and necessary shelter
<b>Education</b>	People on lower incomes and with little wealth may struggle to afford transport and uniforms for their children resulting in poor educational outcomes which in turn leads to lower paid jobs
<b>Health</b>	People on lower incomes may struggle to afford healthcare or medications or health food. Leading to a lower quality of life and a lower life expectancy.
<b>Social problems</b>	All of the above could lead to a lower quality of life and social problems such as family breakdowns, truancy, crime and vandalism
<b>Lower economic growth</b>	If more people are less educated, less healthy and less happy then productivity in the economy could fall leading to a fall in supply and a general decline in economic growth

## CAD, CAM &amp; CNC

## CAD

**Computer Aided Design**

The use of computers to aid with the design of components and products.  
Software such as 2D Design and Autodesk Fusion is used.

## CAM

**Computer Aided Manufacture**

The use of computers to aid with the manufacture of components and products.  
Machines such as Laser Cutters, 3D Printers, CNC Lathes, CNC Routers, CNC Milling Machines and Water Jet Cutters are used

## CNC

**Computer Numerical Control**

Closely linked with CAM, Most CAM machines are CNC machines, the machines do not recognize

## Advantages And Limitations Of Using CAM Machines

## Advantages

Enables very high accuracy levels in large-scale production

Creates products that are identical to each other

Reduction In Defects

Usually speeds up production of low-volume products

Ability Of Automated Systems To Work In Environments That Would Be Hazardous To Operators

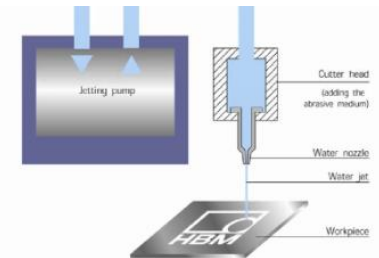
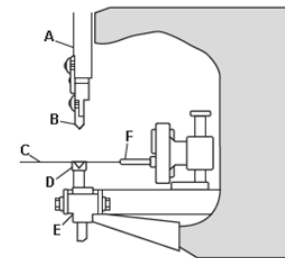
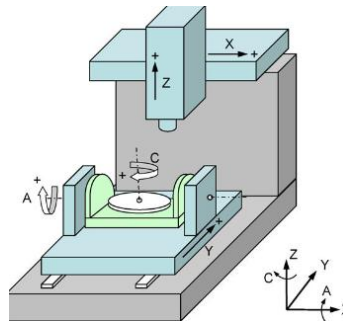
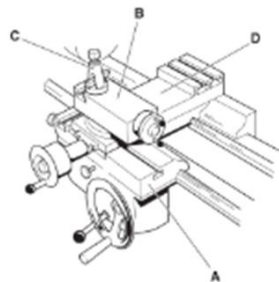
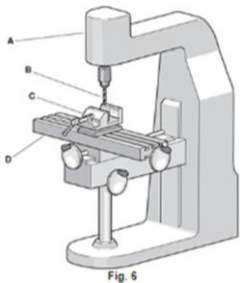
## Limitations

The software itself is expensive so initial costs are high

Influence On Employment Opportunities

Machinery can be expensive and time consuming to repair

Users need to be trained how to use the software and machinery, which adds to costs



CNC Milling Machine

CNC Lathe

CNC Multi Axis Machine

Press Brake Machine

Water Jet Cutter

With all of the machines above the axis a movement is essential. They range from 3 axis of movement up to many.

The exciting thing about CNC Machines and CAM is they are forever improving....

## Plot

1	<b>Act 1</b>	The Birlings are celebrating Sheila and Gerald's engagement, Birling makes a speech to the men, the Inspector arrives, Birling confesses he fired Eva, Sheila confesses that she was responsible for Eva's dismissal from Milwards.
2	<b>Act 2</b>	Gerald admits to 'rescuing' Eva and then leaves to clear his head, Mrs Birling admits to refusing Eva aid, Mrs Birling argues that the father should be brought to justice (Eric is the father), Eric enters the room.
3	<b>Act 3</b>	Eric admits to drinking and forceful sex with Eva, Eric admits he stole £50 from Birling, the Inspector delivers a polemic speech to the Birlings and exits. Gerald returns, Sheila and Eric feel guilty, Mr and Mrs Birling refuse to take responsibility, the Birlings and Gerald convince themselves the inspection was a hoax. The telephone rings, the Birlings are informed that a young girl has committed suicide and an inspector is on his way.







## Context

1	<b>Priestley</b>	Fought in WW1. Socialist and member of the Labour Party. Concerned about social inequalities. Influential in developing the idea of the welfare state.
2	<b>Historical</b>	Set in 1912 at the end of the Edwardian era. Titanic sank in 1912. WW1: 1914-1918. WW2: 1939-45. First performed 1945 in Soviet Union. First performed 1946 in Britain.
3	<b>Political</b>	Liberal party in power in 1912. Labour party in power in 1945. Formation of the 'Welfare State' 1945-1951. In 1912 only men over 21 with property could vote. 1903-1914 saw the rise of the Suffragette movement. 1918 all men over 21 and women over 30 who met a property qualification could vote. 1928: All people over 21 could vote.
4	<b>Social</b>	1912: 10% of the population owned 90% of the wealth. No government assistance available. Charities were the only source of help for the poor.
5	<b>Literary</b>	Fits three possible genres: Morality play, Well-made-play, Crime thriller (see Bitesize)

## Characters

1	<b>Inspector</b>	Authoritarian, omniscient, influential, socialist, moralist.
2	<b>Mr Birling</b>	Haughty, greedy, ignorant, obstinate, egotistical.
3	<b>Mrs Birling</b>	Conceited, prejudiced, callous, obstinate, arrogant.
4	<b>Gerald</b>	Charming, deceitful, manipulative, ingratiating, static.
5	<b>Sheila</b>	Envious, petulant, impressionable, repentant.
6	<b>Eric</b>	Reckless, dishonest, culpable, repentant.
7	<b>Eva</b>	Vulnerable, impoverished, exploited, symbolic, victim.

## Themes

1		<b>Social responsibility</b>	"If I could help her now, I would." (Sheila) "We did her in all right" (Eric) "We are responsible for each other." Inspector Goole
2		<b>Age</b>	"The famous younger generation who know it all." (Birling) "Why, you hysterical young fool - get back - or I'll -" (Birling) "We often do on the young ones. They're more impressionable" (Inspector)
3		<b>Class</b>	"As if a girl of that sort would ever refuse money!" (Mrs B) "If you don't come down sharply on some of these people, they'd soon be asking for the earth." (Birling) "He's a notorious womaniser as well as being one of the worst sots and rogues in Brumley." (Gerald)
4		<b>Gender</b>	"I hate those hard-eyed dough-faced women." (Gerald) "...not only something to make 'em look prettier - but - well, a sort of sign or token of their self-respect." (Birling) "And you think young women ought to be protected against unpleasant and disturbing things?" (Inspector)
5		<b>Socialism</b>	"The money's not the important thing." (Eric) "We are members of one body." (Inspector) "Why shouldn't they try for higher wages? We try for the highest possible prices." (Eric) Key images: Beehive, chain
6		<b>Capitalism</b>	"It's my duty to keep labour costs down." (Birling) "A man has to make his own way - has to look after himself" (Birling) "Probably a socialist or some sort of crank" (Birling) Key image: Titanic

## Dramatic Devices

1	<b>Dramatic Irony</b>	The audience knows more than characters.
2	<b>Sounds</b>	Doorbell, telephone interrupt the Birlings comfort and complacency.
3	<b>Lighting</b>	"pink and intimate" to "brighter and harder" when the Inspector arrives. Interrogating morals, cutting through the lies and pretence.
4	<b>Entrances/ Exits</b>	Increase tension e.g. Eric walks in just as the audience realise that he is the father. Gerald's 'exit' in Act 2 prevents his remorse developing.
5	<b>Props</b>	Photograph: All Eva? Symbolic of the faceless poor that the wealthy pretend not to see. Sheila's ring as a symbolic of patriarchal control.
6	<b>Stage directions</b>	Indicate character attitudes, development, relationships setting and mood.

## Key Vocabulary

1	<b>Socialism (Political theory)</b>	Collective ownership of resources.
2	<b>Capitalist</b>	Private ownership of resources.
3	<b>Didactic</b>	Direct moral instruction.
4	<b>Polemic</b>	Verbal or written attack.
5	<b>Patriarchal</b>	Society controlled by men.
6	<b>Fourth wall</b>	The space between the actors and the audience.
8	<b>Morality</b>	Principles of right and wrong.
9	<b>Caricature</b>	Exaggeration of characteristics usually to ridicule.



## The Poems:

1	'Ozymandias' Percy Shelley	Narrator meets a traveller who tells him about a statue of Pharaoh Rameses II that has been destroyed by nature over time. Highlights the temporary nature of power.
2	'London' William Blake	Narrator walks round London and describes the misery he sees brought about by the corrupt power of institutions (church, monarchy) over their subjects.
3	'The Prelude' William Wordsworth	Narrator takes a boat out on the lake. Sees a mountain appear and is overwhelmed by the power of nature compared to humans.
4	'My Last Duchess' Robert Browning	Duke shows portrait of his former wife who is now dead. The Duchess was flirtatious and displeased the Duke. We realise he probably had the Duchess killed. The Duke is planning his next marriage.
5	'The Charge of the Light Brigade' Alfred Lord Tennyson	Tribute to British cavalry who died during Crimean War. An incorrect order meant the cavalry charged into battle with swords, to be met by the Russians who were armed with guns.
6	'Exposure' Wilfred Owen	Winter on the front line in WW1. Nature personified as the main enemy and the men can only wait to die. Poem stresses insignificance of humans compared to nature.
7	'Storm on the Island' Seamus Heaney	A community are waiting to be hit by a storm. The power of the storm creates feelings of fear and trepidation.
8	'Bayonet Charge' Ted Hughes	Single soldier's experience of a charge towards enemy lines. The soldier fears for his life & the patriotic ideals that encouraged him to fight have gone.

## The Poems:

9	'Remains' Simon Armitage	A group of soldiers shoot a man who's running away from a bank raid. The narrator doesn't know if the man was armed or not and can't get the man's death off his mind. When back at home, the soldier suffers PTSD.
10	'Poppies' Jane Weir	A mother describes her son leaving home to join the army. She fears for his safety and visits a familiar place that reminds her of him.
11	'War Photographer' Carol Ann Duffy	In his dark room, a war photographer develops pictures taken in different warzones. He contrasts his experiences to rural England and people who seem oblivious to war torn places.
12	'Tissue' Imtiaz Dharker	Tissue is an extended metaphor for the fragility of life. Literal uses of paper are also discussed, such as recording names in the Koran, as well as the fact we are made from tissue, emphasising we are fragile.
13	'The Emigree' Carol Rumens	Speaker recalls a city she left as a child. The city has changed and perhaps was a scene of conflict but she protects the memory of her city. It might not be a real place but represents a time/emotion/speaker's childhood.
14	'Checking Out Me History' John Agard	In school the narrator was taught British history & not about his Caribbean roots. He contrasts nonsense topics he was taught with admirable figures excluded from history.
15	'Kamikaze' Beatrice Garland	A Japanese kamikaze pilot aborts his mission and when he returns home is shunned. His daughter imagines her father was reminded of his childhood and beauty of nature & life whilst on the mission.

## Key Vocabulary:

1	<b>Monologue</b>	A monologue poem features a single speaker who is a fictional character
2	<b>Caesura</b>	Punctuation marks indicate a break in the line of poetry. Usually occurs in the middle of a line.
3	<b>Enjambment</b>	The continuation of a sentence without a pause beyond the end of a line/stanza
4	<b>Free Verse</b>	A poem without consistent metre patterns or rhyme scheme.
5	<b>Rhyme</b>	Correspondence of sound between words or ending of words.
6	<b>Volta</b>	In a sonnet, the volta is the turn of thought or argument.
7	<b>Couplet</b>	Pair of successive lines, typically rhyming and of the same length.
8	<b>Sonnet</b>	One stanza, 14-line poem written in iambic pentameter.
9	<b>Refrain</b>	A line or set of lines that repeatedly occurs in a poem.
10	<b>Stanza</b>	A group of lines in a poem.

## Comparisons:

1	<b>Power of Nature</b>	Ozymandias, The Prelude, Exposure, Storm on the Island, Tissue & Kamikaze.	6	<b>Identity</b>	My Last Duchess, The Charge of the Light Brigade, Poppies, Tissue, The Emigree, Kamikaze, Checking Out Me History.
2	<b>Power of Humans</b>	Ozymandias, London, My Last Duchess, Tissue, Checking Out Me History.	7	<b>Place</b>	London, The Prelude, The Emigree, Kamikaze.
3	<b>Effects of Conflict</b>	The Charge of the Light Brigade, Exposure, Bayonet Charge, Remains, Poppies, War Photographer, Kamikaze.	8	<b>Powerful Individuals</b>	Ozymandias, My Last Duchess
4	<b>Reality of Conflict</b>	The Charge of the Light Brigade, Exposure, Bayonet Charge, Remains, War Photographer.	9	<b>Political Power</b>	Storm on the Island, London, The Charge of the Light Brigade
5	<b>Individual Experiences</b>	London, The Prelude, Bayonet Charge, Remains, Poppies, War Photographer, The Emigree, Kamikaze.	10	<b>Memory</b>	The Prelude, My Last Duchess, Remains, Poppies, War Photographer, The Emigree, Kamikaze.

**Assessment Criteria**

1	AO1	Assessed on unseen poem analysis only. Read, understand and respond to texts. Use textual references, including quotations, to support and illustrate interpretations.
2	AO2	Assessed on unseen poem analysis and unseen poem comparison question. Analyse the language, form and structure used by a writer to create meanings and effects, using relevant subject terminology where appropriate.

**Poetic Language**

1	Simile	A comparison made using the words "like" or "as."
2	Metaphor	A comparison – made directly or indirectly – without using "like" or "as."
3	Personification	Giving human characteristics to something which is not human.
4	Onomatopoeia	Words which attempt to imitate sounds.
5	Alliteration	A repetition of consonant sounds.
6	Assonance	A repetition of vowel sounds
7	Juxtaposition	Two things being placed close together for contrasting effect.
8	Semantic field	A set of words relating to the same topic. "Foul" and "Shot" would appear in the semantic field of sports.
9	Persona/narrative voice	The voice/speaker of the poem who is different from the writer.
10	Oxymoron	A figure of speech in which two contradictory things are placed together in a way which makes peculiar sense. For example, "friendly fire."

**Poetic Structures and Forms**

1	Stanza	A group of lines separated from others in a poem.
2	Rhyme	The repetition of syllable sounds – usually at the ends of lines, but sometimes in the middle of a line (called internal rhyme).
3	Couplet	A pair of rhyming lines which follow on from one another.
4	Enjambment	The running over of a sentence from one line to the next without a piece of punctuation at the end of the line.
5	Caesura	A stop or a pause in a line of poetry – usually caused by punctuation.
6	Blank verse	Poetry written in non-rhyming, ten syllable lines.
7	Dramatic monologue	A poem in which an imagined speaker address the reader.
8	Lyric	An emotional, rhyming poem, most often describing the emotions caused by a specific event.
9	Sonnet	A fourteen line poem, with variable rhyme scheme, usually on the topic of love for a person, object or situation.
10	Free verse	Non-rhyming, non-rhythmical poetry which follows the rhythms of natural speech.

**How to approach an unseen poem**

1	What	What is the poem about? What happens? What is the topic/theme?
2	How	How is this communicated? What language/structural techniques does the poet use to present this?
3	Effect	What is the effect on the reader? What response do they have to the poem? What do they learn/understand?

**Key Vocabulary**

1	Poet	The author of the poem.
2	Speaker	The voice of the poem – this may or may not be the poet themselves.
3	Reader	Who the poem is written for. Some poems are written with a specific reader in mind.
4	Form	The type of poem, i.e. lyric or sonnet.
5	Structure	How the poem has been put together – couplet, rhyme scheme, stanzas etc.
6	Language	Techniques such as metaphor, personification etc. used by the poet to present the subject matter
7	Interpretation	A reader's understanding of and response to a poem.
8	Comparison	Comparing the methods two poets use to present their ideas in their poems.

Present Tense		
1	Je suis	I am
2	J'ai	I have
3	Je fais	I do/make
4	Je vais	I go
5	J'aime	I like
6	Je déteste	I hate
7	Je joue	I play
8	Je mange	I eat
9	Je bois	I drink
10	Je lis	I read
11	J'achète	I buy
12	Je trouve	I find
13	Je travaille	I work
14	Je pense	I think
15	c'est	it's

Perfect Tense		
1	Je suis allé(e)	I went
2	Je suis parti(e)	I left
3	J'ai fait	I did/made
4	J'ai aimé	I liked
5	J'ai détesté	I hated
6	J'ai joué	I played
7	J'ai mangé	I ate
8	J'ai acheté	I bought
9	J'ai trouvé	I found
10	J'ai travaillé	I worked
11	J'ai regardé	I watched
12	J'ai vu	I saw
13	J'ai bu	I drank
14	J'ai lu	I read

Near Future Tense – I am going to...		
1	Je vais être	be
2	Je vais avoir	have
3	Je vais aller	go
4	Je vais faire	do
5	Je vais jouer	play
6	Je vais regarder	watch
7	Je vais manger	eat
8	Je vais acheter	buy
9	Je vais travailler	work
10	Je vais voir	see
11	Je vais boire	drink
12	Je vais devenir	become
13	Je vais voyager	travel
14	ce sera	it will be

Conditional Tense – I would like to...		
1	Je voudrais être	be
2	Je voudrais avoir	have
3	Je voudrais aller	go
4	Je voudrais faire	do
5	Je voudrais jouer	play
6	Je voudrais regarder	watch
7	Je voudrais manger	eat
8	Je voudrais acheter	buy
9	Je voudrais travailler	work
10	Je voudrais voir	see
11	Je voudrais boire	drink
12	Je voudrais devenir	become
13	Je voudrais voyager	travel
14	ce serait	it would be

Il y a		
1	Il y a	There is/are
2	Il y avait	There was/were
3	Il y aura	There will be
4	Il y aurait	There would be

Structures with infinitives		
1	J'aime aller/faire	I like going/doing
2	Je n'aime pas aller/faire	I don't like going/doing
3	il faut aller/jouer	you have to go/play
4	on peut/doit aller	you can/must go

Imperfect Tense		
1	J'étais	I was/I used to be
2	J'avais	I had/I used to have
3	C'était	It was
4	il y avait	there was/were

## Sentence Starters

1	je pense que	I think that
2	je crois que	I believe that
3	à mon avis	in my opinion
4	selon moi	in my opinion
5	je dirais que	I would say that

## Connectives

1	et	and
2	ou	or
3	où	where
4	parce que	because
5	car	as
6	mais	but
7	pourtant	however
8	aussi	also

## Intensifiers

1	un peu	a bit
2	assez	quite
3	très	very
4	vraiment	really
5	beaucoup	much/ a lot
6	trop	too

## Adjectives

1	amusant	fun
2	intéressant	interesting
3	passionnant	exciting
4	utile	useful
5	beau	beautiful
6	fantastique	fantastic
7	incroyable	incredible
8	ennuyeux/ barbant	boring
9	fatigant	tiring
10	difficile	difficult
11	cher	expensive

## Signposting Time Frames

1	l'année dernière	last year
2	la semaine dernière	last week
3	hier	yesterday
4	normalement	normally
5	d'habitude	usually
6	ce soir	this evening
7	la semaine prochaine	next week
8	l'année prochaine	next year
9	dans l'avenir	in the future

## Frequency

1	tous les jours	every day
2	de temps en temps	from time to time
3	une fois par semaine	once a week
4	deux fois par mois	twice a month
5	ne...jamais	never
6	toujours	always
7	souvent	often
8	quelquefois	sometimes

## Exclamations!!!

1	Quel dommage!	What a shame!
2	Quel plaisir!	What a pleasure!

## Perfect Phrases For Any Essay

1	Hier je suis allé au cinema/au stade/au restaurant/au parc/au café/à la piscine et c'était...	Yesterday I went to the cinema/stadium/restaurant/park/café/swimming pool and it was...
2	J'ai mangé une pizza/des frites/un hamburger/du jambon/du poisson/une glace et c'était...	I ate a pizza/fries/a hamburger/some ham/fish/an ice-cream and it was...
3	J'ai joué au foot/au tennis/au rugby/au golf et c'était...	I played football/tennis/rugby/golf and it was...
4	J'ai bu un coca/un jus d'orange et c'était...	I drank a coke/an orange juice and it was...

## Fancy Phrases

1	je l'ai trouvé génial	I found it great
2	je me suis bien amusé(e)	I really enjoyed myself
3	j'ai tellement hâte	I'm really looking forward to it

Present Tense - I		
1	Je suis	I am
2	J'ai	I have
3	Je fais	I do/make
4	Je vais	I go
5	Je bois	I drink
6	Je lis	I read
7	Je vois	I see
8	J'achète	I buy
9	Je trouve	I find
10	Je travaille	I work
11	Je pense	I think
12	Je crois	I believe
13	Je dois	I have to
14	Je peux	I can
15	Je veux	I want to

Perfect Tense (past)- I		
1	Je suis allé(e)	I went
2	Je suis parti(e)	I left
3	J'ai fait	I did/made
4	J'ai aimé	I liked
5	J'ai détesté	I hated
6	J'ai joué	I played
7	J'ai mangé	I ate
8	J'ai acheté	I bought
9	J'ai trouvé	I found
10	J'ai travaillé	I worked
11	J'ai regardé	I watched
12	J'ai vu	I saw
13	J'ai bu	I drank
14	J'ai lu	I read

Imperfect Tense - I used to		
1	J'étais	... be
2	J'allais	... go
3	J'avais	... have
4	Je faisais	... do
5	Je jouais	... play
6	Je regardais	... watch
7	J'écoutais	... listen
8	Je mangeais	... eat
9	Je buvais	... drink
10	J'achetais	... buy
11	J'aimais	... like
12	Je lisais	... read
13	Je travaillais	... work
14	Je détestais	... hate

Future Tense – I will		
1	Je serai	...be
2	J'aurai	...have
3	J'irai	...go
4	Je ferai	...do
5	Je jouerai	...play
6	Je regarderai	...watch
7	Je mangerai	...eat
8	J'achèterai	...buy
9	Je travaillerai	... work
10	Je verrai	...see
11	Je boirai	...drink
12	Je lirai	...read
13	Je partagerai	... share
14	J'écouterai	... listen

Conditional – I would		
1	Je serais	...be
2	J'aurais	...have
3	J'irais	...go
4	Je ferais	...do
5	Je jouerais	...play
6	Je regarderais	...watch
7	Je mangerais	...eat
8	J'achèterais	...buy
9	Je travaillerais	...work
10	Je verrais	...see
11	Je boirais	...drink
12	Je lirais	...read
13	Je partagerais	...share
14	J'écouterais	...listen

Present Tense – We/they		
1	On va	We go
2	On joue	We play
3	On peut	We/you can
4	On fait	We do
5	Ils sont	They are

Past Tense – We/they		
1	On a vu	We saw
2	On a fait	We did
3	On a joué	We played
4	On est allés	We went
5	On est partis	We left

Imperfect – We /they		
1	On était	We used to be
2	On avait	We used to have
3	On allait	We used to go
4	Ils étaient	They were
5	Ils avaient	They had

Future – We /they		
1	On sera	We will be
2	On aura	We will have
3	On ira	We will go
4	Ils seront	They will be
5	Ils auront	They will have

Conditional – We/they		
1	On serait	We would be
2	On aurait	We would have
3	On irait	We would go
4	Ils seraient	They would be

## Sentence Starters

1	je pense que	I think that
2	je crois que	I believe that
3	à mon avis/selon moi	in my opinion
5	je dirais que	I would say that
6	il me semble que	it seems to me that
7	d'un point de vue personnel	from a personal point of view
8	bien que je sache que	although I know that
9	à cause du fait que	due to the fact that
10	Je considérerais que	I would consider that
11	il faut que je dise que	I have to say that

## Frequency

1	tous les jours	every day
2	de temps en temps	from time to time
3	une fois par semaine	once a week
4	deux fois par mois	twice a month
5	ne...jamais	never
6	toujours	always
7	souvent	often
8	quelquefois/ parfois	sometimes

## Connectives

1	mais	but
2	pourtant	however
3	en revanche	however
4	néanmoins	nevertheless
5	certes	admittedly
6	aussi	also
7	donc	therefore
8	d'ailleurs	besides

## Exclamations!!

1	Quel dommage!	What a shame!
2	Quel plaisir!	What a pleasure!

## Signposting Time Frames

1	l'année dernière	last year
2	la semaine dernière	last week
3	hier	yesterday
4	normalement	normally
5	d'habitude	usually
6	ce soir	this evening
7	la semaine prochaine	next week
8	l'année prochaine	next year
9	dans l'avenir	in the future

## Intensifiers

1	un peu	a bit
2	assez	quite
3	très	very
4	vraiment	really
5	beaucoup de	Lots of
6	trop	too
7	tellement	so
8	extrêmement	extremely

## Pronouns

1	Mon/ma/me s	My
2	Son/sa/ses	His/her
3	Notre/nos	Our
4	Leur/leurs	Their
5	Lui/Elle/eux	Him/her/the m

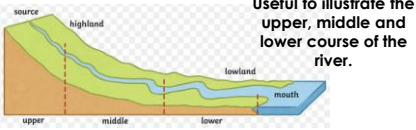
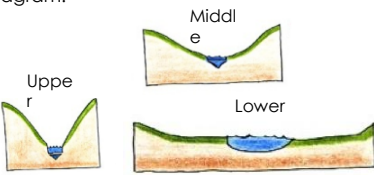
## Avoir/Etre/Faire

1	C'est	It is
2	Ce sera	It will be
3	C'était	It was
4	Ce serait	It would be
5	Il y a	There is
6	Il y aura	There will be
7	Il y avait	There was
8	Il y aurait	There would be
9	Il fait beau	It's nice
10	Il fera froid	It will be cold
11	Il faisait chaud	It was hot
12	Il ferait orageux	It would be stormy

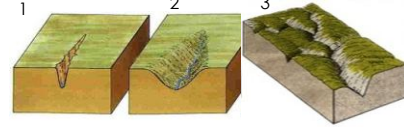
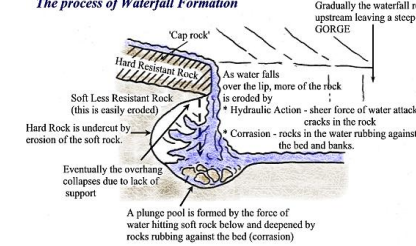
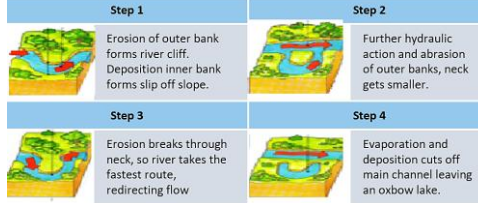
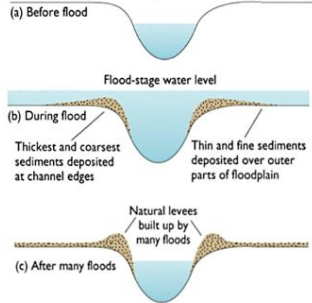
## Fancy Phrases

1	après avoir mangé	after having eaten
2	je l'ai trouvé génial	I found it great
3	je me suis bien amusé(e)	I really enjoyed myself
4	ça m'a vraiment plu	I really enjoyed it
5	ça en valait la peine	It was worth it
6	je n'aurais jamais pensé	I would never have thought
7	j'ai tellement hâte	I'm really looking forward to it
8	le jeu en vaudra la chandelle	it will be worth it

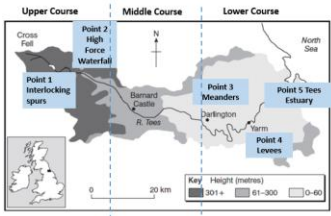


A. The shape of river valleys changes as rivers flow downstream: The long profile and changing cross profile of a river and its valley		
1	Long profile	Shows the height and gradient of a river from its source to mouth. Often depicted as a diagram: 
2	Upper course	The upper section of a river and its valley. Includes the source. Usually located on high land where rainfall is plentiful. Dominant process is erosion as the river tries to 'cut down' to sea level (also known as base level). Most erosional landforms are found here, such as waterfalls and V shaped valleys. Has a steep gradient and a narrow valley.
3	Middle course	The middle section of the river and its valley. Found on lower land. Processes of both erosion <u>and</u> deposition are active here. Landforms such as meanders and ox-bow lakes are commonly found. Here the river channel and valley are wider and the gradient is more moderate.
4	Lower course	The final stage in the long profile. Located towards the mouth of the river on low-lying, flat land. Deposition is the dominant process creating landforms such as levees, floodplains and estuaries. As the river reaches its end the gradient becomes gentle and the river and its valley much wider.
5	Cross profile	Shows the shape of the river channel and/or valley from one side (bank) to the other. This changes drastically with distance downstream. Again, often shown as a diagram: 
6	Fluvial processes	Processes of erosion, transportation and deposition that occur within a river system. They shape the river and its valley.

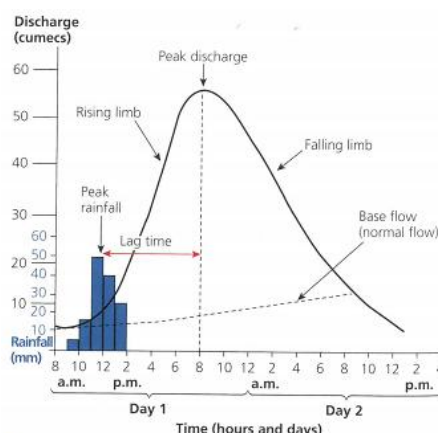
A. The shape of river valleys changes as rivers flow downstream: Fluvial Processes		
1	Erosion	<p><b>Hydraulic Action:</b> This is the force of the water in the channel hitting against the bed and banks, gradually wears them away – particularly occurs at high-velocity flows.</p> <p><b>Abrasion:</b> This is the scraping away of the river bed and banks by stones picked up and carried in the rivers flow. Like a sandpaper effect.</p> <p><b>Attrition:</b> Rocks bang against each other, gradually breaking down (rocks become smaller, smoother and less angular as attrition occurs)</p> <p><b>Solution:</b> The dissolving of minerals in the rocks of the bed and banks which are carried away in solution in the water. Rocks such as limestone are easily dissolved.</p> <p><b>Vertical erosion:</b> Occurs mostly in the upper course where the river is cutting down to base/sea level. Deepens the river valley and creates a 'V' shape.</p> <p><b>Lateral erosion:</b> Occurs mainly in the middle and lower course. Here the river cuts sideways widening the channel and the valley.</p>
2		<p><b>Traction:</b> Large particles rolled along the river bed by the force of the water.</p> <p><b>Salutation:</b> A bouncing or hopping motion by pebbles too heavy to be suspended.</p> <p><b>Suspension:</b> Particles suspended within the water.</p> <p><b>Solution:</b> Chemicals dissolved in the water.</p>
3	Deposition	Involves the dropping of sediment that has been transported by the river. River sediment is deposited in low flow conditions when the river loses energy and the velocity is so slow that the river can no longer carry the sediment load. Usually happens on the inside bend of a meander, at the estuary and mouth where tidal influences slow the river flow or anywhere along the river's course at times of low discharge.

B. Distinctive fluvial landforms result from different physical processes		
1	Characteristics and formation of landforms resulting from erosion.	<p>Interlocking spurs, waterfalls and gorges</p>  <p><b>The process of Waterfall Formation</b></p> 
2	Characteristics and formation of landforms resulting from erosion and deposition.	<p>Meanders and ox-bow lakes</p> 
3	Characteristics and formation of landforms resulting from deposition.	<p>Levees, flood plains and estuaries.</p> 

B. B. Distinctive fluvial landforms result from different physical processes: Example: River Tees

1	An example of a river valley in the UK to identify its major landforms or erosion and deposition.	
2	Location and Background	Located in the North of England and flows 137km from the Pennines to the North Sea (Tees estuary) at Red Car.
2	Upper course	The source is located at Tees Head, close to Cross Fell-altitude 893m ASL. Features include V-shaped valley, interlocking spurs, rapids and waterfalls. Highforce Waterfall-located close to Forest-in-Teesdale-drops 22m and consists of harder Whinstone cap rock with underlying softer limestone. An impressive 700m gorge has formed in front of the falls.
3	Middle course	Here the gradient becomes more moderate and the valley widens. Features include meanders and ox-bow lakes created by lateral erosion and deposition. The meander near Yarm encloses the town.
4	Lower course	Greater deposition creates features such as floodplains & levees near Darlington. Mudflats form due to deposition at the river's estuary. Some areas of the estuary are designated SSSI's but there is also plenty of industry at the mouth of the river.

C. Different management strategies can be used to protect river landscapes from the effects of flooding.

1	How physical and human factors affect the flood risk: Precipitation, geology, relief and land use	<p><b>Physical: Prolong &amp; heavy rainfall</b> Long periods of rain causes soil to become saturated leading to runoff and increased flood risk.</p> <p><b>Physical: Geology</b> Impermeable rocks cause surface runoff to increase river discharge. Permeable rocks allow water to pass through them and porous rocks absorb/hold water so reduce river discharge.</p> <p><b>Physical: Relief</b> Steep-sided valleys channel water to flow quickly into rivers thus increasing discharge and flood risk.</p> <p><b>Human: Land Use</b> Tarmac and concrete are impermeable. This prevents infiltration &amp; causes surface runoff. Deforestation reduces interception and increases soil erosion. This causes surface runoff and increases flood risk.</p>
2	The use of Hydrographs to show the relationship between precipitation and discharge	 <p>▲ Figure 11.42 A typical flashy response hydrograph</p>

C. Different management strategies can be used to protect river landscapes from the effects of flooding.

1	The costs and benefits of the following management strategies: Soft Engineering	<p><b>Floodplain zoning</b>-restrict land use to certain locations. Place low risk uses such as sports fields in high risk areas.</p> <p><b>River restoration</b> – return river to original course e.g. River Quaggy. Work to understand natural processes.</p> <p><b>Flood warnings and preparation</b>-Environment Agency warns those in high risk areas which allows people/councils etc. to prepare for flood events.</p> <p><b>Planting trees</b>-Tree planting within the catchment increases interception and absorption of water by trees. This reduces the speed/amount of runoff.</p>
2	The costs and benefits of the following management strategies: Hard Engineering	<p><b>Dams and reservoirs</b> – regulate river flow and allow water to be held back during times of high flow.</p> <p><b>Straightening Channel</b> – increases velocity to remove flood water; can create flooding issues downstream.</p> <p><b>Embankments (Artificial Levees)</b> – heightens river banks so flood water is contained.</p> <p><b>Flood relief channel</b> – man made channel to by-pass an urban area e.g. Jubilee River.</p>
C. Different management strategies can be used to protect river landscapes from the effects of flooding.		
1	An example of a flood management scheme in the UK to show: Why the scheme was required.	The Jubilee River is a relief channel for the River Thames in south-east England. The area is part of the Thames flood plain and prone to flooding. It contains the royal settlement of Windsor, as well as Eton, home of a prestigious public school. Given the high-value property in this area, the EA decided to increase the level of flood protection.
2	Management Strategy - 2002	Funded by the Environment Agency (cost £10 million.) It is the UK's largest artificial channel (12km long and 50 m wide). The channel was designed to look like a natural river, so it has meanders and shallow reed beds and a nature reserve with bird hides has been created in the area. It has five weirs (large dams) along its course. The Jubilee River effectively diverts water from the River Thames and prevents the Thames from overflowing its banks.
3	Social, Economic and Environmental Issues	<p><b>Social</b> -Is it ethical to protect some properties at the expense of others?</p> <p><b>Economic</b> – cost £10 million, continual repair costs. Homes and businesses flooded downstream.</p> <p><b>Environmental</b> – Flooding downstream. Natural ecosystems disrupted. Algae collecting behind the weirs. Concrete weirs are unattractive.</p>

Subject: Geography	Topic: River Landscapes in the UK	Year Group: 11	
<p><b>1) Abrasion</b> Rocks carried along by the river wear down the river bed and banks.</p>	<p><b>9) Flood plain</b> The relatively flat area forming the valley floor on either side of a river channel, which is sometimes flooded.</p>	<p><b>17) Hydraulic action</b> The force of the river against the banks can cause air to be trapped in cracks and crevices. The pressure weakens the banks and gradually wears it away. .</p>	<p><b>25) Ox-bow lake</b> An arc-shaped lake which has been cut off from a meandering river.</p>
<p><b>2) Attrition</b> Rocks being carried by the river smash together and break into smaller, smoother and rounder particles.</p>	<p><b>10) Flood plain zoning</b> This attempts to organise the flood defences in such a way that land that is near the river and often floods is not built on. This could be used for pastoral farming, playing fields etc. The areas that rarely get flooded would therefore be used for houses, transport and industry .</p>	<p><b>18) Hydrograph</b> A graph which shows the discharge of a river, related to rainfall, over a period of time.</p>	<p><b>26) Precipitation</b> Moisture falling from the atmosphere - as rain, hail, sleet or snow.</p>
<p><b>3) Cross profile</b> The side to side cross-section of a river channel and/or valley. .</p>	<p><b>11) Flood relief channels</b> Building new artificial channels which are used when a river is close to maximum discharge. They take the pressure off the main channels when floods are likely, therefore reducing flood risk.</p>	<p><b>19) Interlocking spurs</b> A series of ridges projecting out on alternate sides of a valley and around which a river winds its course.</p>	<p><b>27) Saltation</b> Particles bouncing down the river bed.</p> <p><b>28) Soft engineering</b> Involves the use of the natural environment surrounding a river, using schemes that work with the river's natural processes. Soft engineering is usually much cheaper and offers a more sustainable option as it does not interfere directly with the river's flow.</p>
<p><b>4) Dam and reservoir</b> A barrier (made on earth, concrete or stone) built across a valley to interrupt river flow and create a man-made lake (reservoir) which stores water and controls the discharge of the river.</p>	<p><b>12) Flood risk</b> The predicted frequency of floods in an area.</p>	<p><b>20) Landscape</b> An extensive area of land regarded as being visually and physically distinct.</p>	<p><b>29) Solution</b> Soluble particles are dissolved into the river.</p>
<p><b>5) Discharge</b> The quantity of water that passes a given point on a stream or river-bank within a given period of time. .</p>	<p><b>13) Flood warning</b> Providing reliable advance information about possible flooding. Flood warning systems give people time to remove possessions and evacuate areas.</p>	<p><b>21) Lateral erosion</b> Sideways erosion by a river on the outside of a meander channel. It eventually leads to the widening of the valley and contributes to the formation of the flood plain.</p>	<p><b>30) (Channel) straightening</b> Removing meanders from a river to make the river straighter. Straightening the river (also called channelising) allows it to carry more water quickly downstream, so it doesn't build up and is less likely to flood</p>
<p><b>6) Embankments</b> Raised banks constructed along the river; they effectively make the river deeper so it can hold more water. They are expensive and do not look natural but they do protect the land around them. .</p>	<p><b>14) Fluvial processes</b> Processes relating to erosion, transport and deposition by a river.</p>	<p><b>22) Levees</b> Embankment of sediment along the bank of a river. It may be formed naturally by regular flooding or be built up by people to protect the area against flooding.</p>	<p><b>31) Suspension</b> Fine solid material held in the water while the water is moving</p>
<p><b>7) Estuary</b> The tidal mouth of a river where it meets the sea; wide banks of deposited mud are exposed at low tide.</p>	<p><b>15) Gorge</b> A narrow, steep sided valley, often formed as a waterfall retreats upstream.</p>	<p><b>23) Long profile</b> The gradient of a river, from its source to its mouth.</p>	<p><b>32) Traction</b> The rolling of boulders and pebbles along the river bed.</p>
<p><b>8) Flood</b> Occurs when river discharge exceeds river channel capacity and water spills out of the channel onto the floodplain and other areas.</p>	<p><b>16) Hard engineering</b> Involves the building of entirely artificial structures using various materials such as rock, concrete and steel to reduce, disrupt or stop the impact of river processes.</p>	<p><b>24) Meander</b> A pronounced bend in a river</p> <p><b>25) Ox-bow lake</b> An arc-shaped lake which has been cut off from a meandering river.</p>	<p><b>33) Vertical erosion</b> Downward erosion of a river bed.</p> <p><b>34) Waterfall</b> Sudden descent of a river or stream over a vertical or very steep slope in its bed. It often forms where the river meets a band of softer rock after flowing over an area of more resistant material.</p>
		<p><b>26) Precipitation</b> Moisture falling from the atmosphere - as rain, hail, sleet or snow.</p>	

Present Tense		
1	Ich bin	I am
2	Ich habe	I have
3	Ich mache	I do/make
4	Ich gehe	I go
5	Ich fahre	I travel
6	Ich mag	I like
7	Ich hasse	I hate
8	Ich spiele	I play
9	Ich esse	I eat
10	Ich trinke	I drink
11	Ich lese	I read
12	Ich sehe	I see
13	Ich kaufe	I buy
14	Ich finde	I find
15	Ich arbeite	I work
16	Ich denke	I think
17	Ich muss	I have to
18	Ich kann	I can
19	Ich will	I want to
20	Es ist	it's

Perfect Tense		
1	Ich bin gegangen	I went
2	Ich bin gefahren	I travelled
3	Ich bin geflogen	I flew
4	Ich bin geblieben	I stayed
5	Ich habe gemacht	I did/made
6	Ich habe gespielt	I played
7	Ich habe gegessen	I ate
8	Ich habe getrunken	I drank
9	Ich habe gekauft	I bought
10	Ich habe gearbeitet	I worked
11	Ich habe gesehen	I watched
12	Ich habe gelesen	I read
13	Ich habe gefunden	I found
14	Ich habe besucht	I visited

Using Geben		
1	Es gibt	There is/are
2	Es gab	There was/were
3	Es wird...geben	There will be
4	Es würde...geben	There would be

Simple Past		
1	Ich war	I was
2	Es war	It was
3	Sie waren	They were
4	Ich hatte	I had
5	Es gab	There was/were

Conditional Fancy		
1	Ich wäre	I would be
2	Es wäre	It would be
3	Sie wären	They would be
4	Ich hätte	I would have
5	Es gäbe	There would be

Structures With Infinitives		
1	Ich muss...machen	I have to do
2	Ich darf...machen	I am allowed to do
3	Ich kann...machen	I can do
4	Ich soll...machen	I should do
5	Ich will...machen	I want to do
6	Man muss/kann/soll...machen	You must/can/should do

Future/Conditional Tense		
Ich werde/möchte... = I will/would like to		
1	...sein	be
2	...werden	become
3	...gehen	go
4	...fahren	travel
5	...spielen	play
6	...essen	eat
7	...trinken	drink
8	...sehen	see
9	...arbeiten	work
10	...lesen	read
11	...machen	make/do
12	...besuchen	visit

## Sentence Starters

1	Meiner Meinung nach	In my opinion
2	Meines Erachtens	In my opinion
3	Im Großen und Ganzen	All in all
4	Ich denke, dass...	I think that
5	Ich würde sagen, dass	I would say that
6	Ich muss sagen, dass	I have to say that

## Connectives

1	und	and
2	aber	but
3	denn	because
4	oder	or
5	jedoch	however
6	außerdem	furthermore
7	weil/da	because
8	dass	that

## Intensifiers

1	ein bisschen	a bit
2	ziemlich	quite
3	sehr	very
4	wirklich	really
5	echt	genuinely
6	zu	too
7	so	so
8	ganz	totally

## Adjectives

1	lustig	funny
2	interessant	interesting
3	spannend	exciting
4	nützlich	useful
5	schön	beautiful
6	toll	great
7	unglaublich	incredible
8	langweilig	boring
9	anstrengend	tiring
10	schwierig	difficult
11	teuer	expensive
12	billig	cheap

## Signposting Time Frames

1	letztes Jahr	last year
2	letzte Woche	last week
3	gestern	yesterday
4	normalerweise	normally
5	gewöhnlich	usually
6	heute Abend	this evening
7	nächste Woche	next week
8	nächstes Jahr	next year
9	in der Zukunft	in the future
10	am Wochenende	at the weekend

## Frequency

1	jeden Tag	every day
2	ab und zu	from time to time
3	einmal pro Woche	once a week
4	zweimal pro Monat	twice a month
5	nie	never
6	immer	always
7	oft	often
8	manchmal	sometimes

## Exclamations!!!

1	Wie Schade!	What a shame!
2	Wahnsinn!	Wow!

## Fancy Phrases

1	Es hat eine Menge Spaß gemacht	It was loads of fun
2	Es hat sich wirklich gelohnt	It was really worth it
3	Das hat mir gefallen	I liked it
4	Ich freue mich schon darauf	I am already looking forward to it
5	Ich werde mich amüsieren	I will enjoy myself

## Perfect Past Examples

1	Letztes Wochenende bin ich ins Kino/Café/Restaurant/Stadion/Museum gegangen und es hat eine Menge Spaß gemacht.	Last weekend I went to the cinema/café/restaurant/stadium/museum and it was loads of fun.
2	Ich habe Hähnchen, Pommes und Salat gegessen und ich habe Cola getrunken. Das Essen war sehr lecker und es hat sich wirklich gelohnt. Wahnsinn!	I ate chicken, chips and salad and I drank cola. The food was very tasty and it was really worth it. Wow!

## Fantastic Future Examples

1	Nächstes Jahr werde ich mit meinen Freunden nach Berlin fahren und ich freue mich schon darauf.	Next year I will travel with my friends to Berlin. I am already looking forward to it.
2	Ich möchte ins Café gehen und ich möchte Pizza essen. Ich werde mich amüsieren, weil ich Pizza liebe.	I would like to go to café and I would like to eat pizza. I will enjoy myself I love pizza.



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9	Ich esse	I eat
10	Ich trinke	I drink
11	Ich lese	I read
12	Ich sehe	I see
13	Ich kaufe	I buy
14	Ich arbeite	I work

Present tense other subjects		
1	Er/sie fährt Wir fahren	He/she travels We travel
2	Er/sie sieht Wir sehen	He/she sees We see
3	Er/sie isst Sie essen	He/she eats They eat
4	Er/sie liest Sie lesen	He/she reads They read

Perfect Tense		
1	Ich bin gegangen	I went
2	Ich bin gefahren	I travelled
3	Ich bin geflogen	I flew
4	Ich bin geblieben	I stayed
5	Ich habe gemacht	I did/made
6	Ich habe gespielt	I played
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9	Ich habe gekauft	I bought
10	Ich habe gearbeitet	I worked
11	Ich habe gesehen	I watched
12	Ich habe gelesen	I read
13	Ich habe gefunden	I found
14	ich habe besucht	I visited

Past tense other subjects		
1	Er/sie hat...gespielt	He/she played
2	Sie/er ist...gegangen	She/he went
3	Wir haben...gemacht	We did/made
4	Sie sind...gefahren	They travelled

Simple Past		
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6	...essen	eat
7	...trinken	drink
8	...sehen	see
9	...arbeiten	work
10	...lesen	read



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1	Meiner Meinung nach	In my opinion
2	Meines Erachtens	In my opinion
3	Im Großen und Ganzen	All in all
4	Auf der einen Seite	On the one hand
5	Aber auf der anderen Seite	But on the other hand
6	Es scheint mir, dass	It seems to me that
7	Ich denke, dass...	I think that
8	Ich würde sagen, dass	I would say that
9	Obwohl ich weiß, dass	Although I know that
10	Ich glaube, dass...	I believe that
11	Ich muss sagen, dass	I have to say that

## Connectives

1	und	and
2	aber	but
3	denn	because
4	sondern (neg)	but
5	jedoch	however
6	deshalb	therefore
7	trotzdem	nevertheless
8	außerdem	furthermore
9	weil/da	because
10	dass	that
11	obwohl	although
12	wenn	if/when

## Intensifiers

1	ein bisschen	a bit
2	ziemlich	quite
3	sehr	very
4	wirklich	really
5	echt	genuinely
6	zu	too
7	so	so
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## Fancy Phrases

1	es hat eine Menge Spaß gemacht	it was loads of fun
2	ich habe mich wirklich amüsiert	I really enjoyed myself
3	es hat sich wirklich gelohnt	it was really worth it
4	das hat mir gefallen	I liked it
5	ich hätte nie gedacht	I would have never thought
6	je (heißer), desto besser	the (hotter) the better
7	ich freue mich schon darauf	I am already looking forward to it
8	es wird bestimmt viel Spaß machen	it will definitely be lots of fun

**Knowledge Group 1 Sketching (Design Ideas)**

1	<b>Sketch</b>	A rough drawing in which a designer notes down his preliminary ideas for a work that will eventually be realized with greater precision and detail.
2	<b>Symbolism</b>	The use of symbols to represent ideas or qualities.
3	<b>Colour scheme (linked to theme)</b>	The choice of colours used in various artistic and design contexts.
4	<b>Typography</b>	Art and technique of arranging type to make written language legible, readable and appealing when displayed.
5	<b>Target Audience</b>	A particular group at which a product such as a film or advertisement is aimed.
6	<b>Composition</b>	Term given to a complete work of art and, more specifically, to the way in which all its elements work together to produce an overall effect.

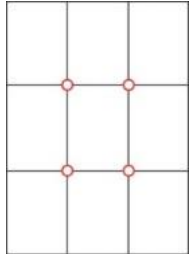
**Knowledge Group 2 Design Ideas Refinement**

1	<b>Annotations</b>	A note added by way of comment or explanation
2	<b>Tone</b>	Smooth shading which fades gradually from dark to light.
3	<b>Form</b>	Curved shading around the outline of an object using tone.
4	<b>Colour Blending</b>	The process of applying gradual tone using a dark colour and layering a similar (lighter) colour.
5	<b>Complementary colours</b>	Colours that are opposite on the colour wheel which create the strongest contrast when placed together.

**Knowledge Group 3 Tools & Techniques**

1	<b>Hue</b>	The name of a colour.
2	<b>Saturation</b>	The intensity or purity of a hue.
3	<b>Layer styles</b>	Layer effects and blending options applied to a layer.
4	<b>Overlap</b>	Extend over so as to cover partly.
5	<b>Underlap</b>	To extend partly under.
6	<b>Filters</b>	Digital effects used to modify images and selections to create effects, repair images, and move pixels.
7	<b>Liquify (tool/filter)</b>	Used for retouching and artistic effects. With it you can push, pull, rotate, reflect, pucker, and bloat the pixels of an image.
8	<b>Blend modes</b>	Eight blend mode groups used to determine how two layers are blended with each other. These are normal, darken, lighten, contrast, inversion, cancelation and component.
9	<b>Brush tool</b>	Used for drawing lines and shapes in any colour on a layer in your document using strokes. Can be customisable.

**Key Vocabulary**

1	<b>VIP Pass</b>	A higher-priced ticket that offers attendees something extra and exclusive.
2	<b>Poster</b>	A poster is a large sheet that is placed either on a public space to promote something or on a wall as decoration.
3	<b>Rule of thirds</b> 	A guideline that places the subject in the left or right third of a composition, leaving the other two thirds more open. It divides a composition into nine equal parts, split by two equally spaced horizontal and vertical lines.
4	<b>Compositional flow</b>	Flow is about movement and direction, and leading the eye from one part of a composition to another in the direction you want it to move.
5	<b>Balanced composition</b>	A compositional choice in art in which the work feels balanced. Different compositional aspects carry "weight," for example the placement of objects.

## 1.1 Types of Care

<b>Health care settings</b>	Dental practice, GP surgery, Health centre, Hospital, Nursing home, Optician, Pharmacy, Walk-in centre
<b>Health Care Examples</b>	<ul style="list-style-type: none"> <li>• Visiting the dentist twice a year for a check-up.</li> <li>• Pregnant woman visiting the hospital for an ultrasound scan on her unborn baby.</li> <li>• Visiting Accident and Emergency A and E) at hospital for a sports is.</li> </ul>
<b>Social care settings</b>	Residential home, Retirement home, social services department, support group, community centre, day centre, food bank, homeless shelter.
<b>Social Care Examples</b>	<ul style="list-style-type: none"> <li>• An individual staying at a homeless shelter.</li> <li>• Dementia resident cannot care for themselves in their own home, now living in a residential care home.</li> <li>• A family struggling to cope with the demands of caring for their physically disabled child.</li> </ul>

## 1.2 The Rights of service users

<b>Choice</b>	<ul style="list-style-type: none"> <li>• Choosing which activities they participate in</li> <li>• Choosing what to eat</li> <li>• Choosing the type of treatment</li> </ul>
<b>Confidentiality</b>	<ul style="list-style-type: none"> <li>• Service users have a duty of care to protect service users' personal information</li> <li>• (verbal and written)</li> <li>• Service providers cannot discuss service users care with their family and friends not directly involved in their care.</li> <li>• Conversations should be in a private room (cannot overhear)</li> <li>• Keep personal information secure in a locked cupboard or filing cabinet. Computers should be password protected</li> <li>• Providers would need a log in with a secure email and password to access data and wear a security badge</li> </ul>
<b>Consultation</b>	<ul style="list-style-type: none"> <li>• Service users should be involved in all decisions that are made about them.</li> <li>• Service providers must find out and respect the service users' opinions, beliefs and concerns to build trust.</li> <li>• Service users involved in decision-making will feel more in control reducing fears or worries they have.</li> </ul>
<b>Equal and Fair treatment</b>	<ul style="list-style-type: none"> <li>• Every service user can access health and social care services, regardless of who they are (not unfairly because of their colour, age, gender, money available or ability to care for themselves.</li> <li>• Misconception - we should treat everyone in the same way, but this means some will be disadvantaged. E.g., providing information in large print, different language, braille.</li> </ul>
<b>Protection from abuse and Harm</b>	<ul style="list-style-type: none"> <li>• Includes health and safety, safe working practices and knowledge of what to do if you have concerns.</li> <li>• Service providers have a duty to prevent harm and abuse - have a clear complaints procedure.</li> <li>• Staff should monitor behaviour, be vigilant and receive the correct training to be able to recognise signs of abuse and how to report them.</li> </ul>
<b>Harm</b>	Can occur in unsafe or inaccessible to service users (inadequate lighting, slippery floors, missing handrails equipment not checked regularly, procedures not followed)
<b>Abuse</b>	Can occur deliberately or accidentally (racism, lack of training, sexual orientation) it could be cruel comments, physical action or isolation.

## Key Terms

<b>Consultation</b>	Service providers share information with service users and vice versa, so care decisions can be made together.
<b>Physical Harm</b>	Includes smacking, hitting, kicking, shaking and biting. This type of harm can lead to physical injuries such as bruises, burns, bite marks or broken bones.
<b>Emotional Harm</b>	Includes shouting or swearing at a service user, insulting them or ignoring them completely.
<b>Empowerment</b>	Relates to the control or 'power' a service user feels they have over their life
<b>Holistic approach</b>	Consider the emotional and psychological needs as well as the physical health

## 1.3 The benefits to service users' health and wellbeing when their rights are maintained

## Empowerment - Control or 'power' will support the resident to feel stronger and more confident therefore more independent and self-reliant.

<b>Independence and self-reliance</b>	Encourage service users to remain independent for as long as possible and self-reliance promoting self-worth and self-confidence. Provide physical and intellectual stimulation so the service users life remains interesting and has value. Maintain a service user right to choose leading to self-reliance (involved in all decisions about their care and contributing to self-esteem).
<b>Feelings of Control</b>	Empower service users by ensuring their rights are met giving them a sense of control e.g., Am I okay to listen to your chest?
<b>Choice</b>	Involved in their own care to increase their understanding and increase their self-esteem. A sense of control results in them being likely to agree to care.

## High self-esteem - if rights are maintained they will feel valued and respected increasing their self-esteem

<b>Feeling valued</b>	The right of choice will help service users feel valued and worthy of care. More likely to ask for additional support in the future.
<b>Feeling respected</b>	Gain respect by introducing themselves, asking their preferred name and listening to them properly. Will develop a partnership and an understanding based on honesty and trust. Health and wellbeing will improve because of the high standards of care. E.g. correct manual handling techniques used.
<b>Positive mental Health</b>	This contributes to a person's self-esteem and self-worth. Good mental health allows people to cope with change better and identify the benefits of care. Take a holistic approach considering how the person feels about their care.

## Service users' needs are not met - care should be specific and well planned to the service user.

<b>Appropriate care or treatment</b>	Service users receive care that is appropriate to their needs showing they are respected and worthy of support. They are more likely to use the service again. Settings should be accessible e.g. lifts, wide doorways and ramps.
<b>Improvements in physical or mental health</b>	If services are appropriate to their needs their health and wellbeing will benefit for example, hunger leads to tiredness and dizziness, lack of focus at school.

## Trust - service users will feel safe and confident with the care provided.

<b>Safety from harm</b>	Trusting relationships will allow confidence to develop because they feel safe. Settings should be secure (locks and keypads working, intruders cannot enter) Staff should wear identification to keep service users safe.
<b>Best interests</b>	Care should have their best interest at heart. Gives reassurance and confidence in their care. Staff training makes service users safe
<b>Confidence in the care received</b>	Trust gives service users confidence in their care and to ask questions. They will feel worthy, valued, respected and safe. Trust is linked to confidentiality where conversations are not overheard. This creates confidence.

### 1. How was Tudor society structured?

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| <b>1. What was the Great Chain of Being?</b> | <ol style="list-style-type: none"> <li>1. Tudor people imagined society as the Great Chain of Being.</li> <li>2. God was at the top, followed by angels and others in heaven.</li> <li>3. Humans were beneath, followed by animals and plants.</li> <li>4. Humans were subdivided with the monarch at the top, followed by the nobility, the gentry, and the peasants. This hierarchy was fixed and moving between the groups was almost impossible.</li> </ol>   |
| <b>2. Who were the nobility?</b>             | <ol style="list-style-type: none"> <li>1. The nobility were the richest, most respected members of society.</li> <li>2. The highest title was duke, followed by earl and baron. These titles were passed on and only rarely awarded by the monarch.</li> <li>3. Nobles were protected from torture and public humiliation, and even if found guilty of treason would be beheaded rather than hanged.</li> <li>4. Most nobles were landowners and passed land and money from father to son. They made up 1% of the population but had about 14% of its income.</li> <li>5. However, nobles were dependent on the monarch for influence.</li> </ol> |
| <b>3. Who were the gentry?</b>               | <ol style="list-style-type: none"> <li>1. The gentry were landlords of the countryside. They lived by the labour of their tenants rather than working themselves.</li> <li>2. They had incomes between £10 and £2000 a year and some were richer than the poorer nobles.</li> <li>3. They had power in the form of important posts, so were often JPs or members of parliament.</li> <li>4. The gentry grew as people made money in trade.</li> </ol>   |
| <b>4. Who were the peasants?</b>             | <ol style="list-style-type: none"> <li>1. Peasants were the poorest in society and worked on the land.</li> <li>2. They often struggled for regular work and poverty was common.</li> <li>3. Luckier peasants with reliable lords could support families.</li> <li>4. Other peasants who fell out with their lords faced difficulties.</li> <li>5. Some were dependent on charity and were known as paupers. They begged or went to the local church for help.</li> </ol>   |

### 2. How did the wealthy live?

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| <b>1. How did people show their wealth?</b> | <ol style="list-style-type: none"> <li>1. While the country was secure and stable, the rich were able to show off their wealth and status.</li> <li>2. They built impressive country houses and many hosted huge banquets featuring dishes of meat and expensive wines.</li> <li>3. Fashion was important and women wore fine clothes with white, lead-based make-up, to show they did not need to work outside.</li> <li>4. Men and women wore elaborate ruffs around their necks.</li> </ol>                           |
| <b>2. What were country houses like?</b>    | <ol style="list-style-type: none"> <li>1. These were private residences not communal buildings.</li> <li>2. They were designed to show wealth rather than for security.</li> <li>3. Renaissance designs were often based on Greek or Roman architecture with a symmetrical appearance, oak panels, colourful tapestries, expensive glass windows, and stacked chimneys.</li> <li>4. The centre of the house was the great chamber surrounded by as many rooms as possible. Servants had their own 'quarters'.</li> </ol> |

### 3. How did the poor live?

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| <b>1. What problems did Elizabeth inherit?</b>             | <ol style="list-style-type: none"> <li>1. Henry VIII's policies made life for the poor harder. Closing the monasteries removed a source of support and 'debasement' the coinage damaged trade and jobs.</li> <li>2. During Edward IV's reign, the cloth trade collapsed.</li> <li>3. Peasants were dependent on lords for security and could be cast out, so their lives were very insecure.</li> </ol>  |
| <b>2. What problems emerged in agriculture?</b>            | <ol style="list-style-type: none"> <li>1. Bad harvests between 1594 and 1598 caused food shortages and starvation in some areas.</li> <li>2. The new system of land enclosure required fewer workers and left many people jobless and homeless.</li> <li>3. Many headed to the towns and cities for work but although these grew, there were still not enough jobs to go around.</li> </ol>  |
| <b>3. What problems were created by population growth?</b> | <ol style="list-style-type: none"> <li>1. During Elizabeth's reign the population grew from 2.8m to 4m people.</li> <li>2. The birth rate increased and the death rate decreased.</li> <li>3. As there were fewer available homes landlords increased rents (rack-renting).</li> <li>4. Bad harvests meant less food which caused food prices to increase (inflation).</li> <li>5. A flu outbreak in 1556 killed 200,000 people, mostly poorer farm labourers, so less food was produced.</li> </ol> |

### 4. What was society's attitude to the poor?

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| <b>1. Sympathetic attitude</b>                   | <ol style="list-style-type: none"> <li>1. The Great Chain of Being obliged higher people to look after those below them. This usually meant charitable donations rather than anything more significant.</li> <li>2. Attitudes changed in Elizabeth's reign because of growing poverty.</li> <li>3. More effort was made to help the 'deserving poor' find jobs or get charity. Almshouses were built to provide food and shelter.</li> </ol>  |
| <b>2. Harsh attitude</b>                         | <ol style="list-style-type: none"> <li>1. The 'undeserving poor' were beggars who didn't want honest work.</li> <li>2. In 1567 Thomas Harman produced a guide to beggars and the tricks they used to con honest people out of money.</li> <li>3. Many wealthy people became hostile to beggars. They were seen as the 'idle poor': lazy and deserving of punishment.</li> </ol>   |
| <b>3. What types of beggars were identified?</b> | <ol style="list-style-type: none"> <li>1. The Counterfeit Crank bit soap to pretend to froth at the mouth.</li> <li>2. The Baretop Trickster was a woman who lured men in by removing clothes, who were then beaten and robbed by her accomplices.</li> <li>3. The Clapper Dudgeon put on dirty bandages or wounded themselves to gain sympathy, claiming they had been wounded fighting for England.</li> <li>4. Tom O'Bedlam would pretend to be mad and follow people, so they would give him money to go away.</li> </ol> |

Key Word	Definition
<b>Beggar</b>	A person who had no work and begged for money or charity
<b>Deserving poor</b>	Honest people who were poor through no fault of their own (unfortunate poor). Sometimes split into 'helpless poor' to be cared for and 'able-bodied poor' to be given work.
<b>Duke</b>	The highest rank of the nobility
<b>Land enclosure</b>	A new style of farming that limited the area needing to be worked upon
<b>Great Chain of Being</b>	The hierarchy that Tudor society was based on
<b>Inflation</b>	A rise in the cost of a product e.g. food
<b>Landlord</b>	A landowner who rented his land to tenants
<b>Pauper</b>	The poorest peasants who were dependent on charity
<b>Peasant</b>	The lowest members of society who were mostly farm labourers
<b>Rack renting</b>	Deliberately putting rents up to exploit the level of need and make more money
<b>Ruff</b>	A type of frilly garment worn round the neck
<b>Tenant</b>	A person who rented land either for cash or providing labour
<b>Treason</b>	The act of betraying the monarch, punishable by death
<b>Undeserving poor</b>	People who chose to beg rather than work (idle poor)

### 5. How did the government deal with poverty?

<b>1. Punishment</b>	<ol style="list-style-type: none"> <li>Under Tudor kings beggars were generally punished harshly.</li> <li>They could be put in the stocks, whipped or mutilated.</li> <li>In 1576 an Act was passed so localities could find work for the poor.</li> </ol>
<b>2. How did towns and cities deal with poverty?</b>	<ol style="list-style-type: none"> <li>Poverty was especially bad in urban areas.</li> <li>In London, Bridewell Palace was used as a shelter for the homeless.</li> <li>Bedlam was established as a hospital for the mentally ill.</li> <li>Hospitals were opened for orphans and the sick.</li> <li>Conditions were still poor and poverty continued to grow, so crime grew as a result. Local authorities often struggled to cope with this.</li> </ol>
<b>Poverty case studies</b>	<ol style="list-style-type: none"> <li>York: 1515 introduced beggar licences, 1528 appointed a Master Beggar to keep control of beggars. 'House of Correction' set up to offer work in weaving and spinning. Those who refused were sent back to their villages.</li> <li>Ipswich: 1569 introduced beggar licences, opened a hospital for the elderly and poor, trained young people to find a trade, had a House of Correction.</li> <li>Norwich: Offered the 'idle poor' work and gave food and care to the 'unfortunate poor'. Taxed rich citizens to pay for 'poor relief'.</li> </ol>

### 6. Elizabeth and the Poor Laws

<b>1. What were the Poor Laws?</b>	<ol style="list-style-type: none"> <li>In 1601 Elizabeth introduced the Poor Laws after seeing successes in dealing with poverty in some towns and cities such as York.</li> <li>In each area of the country, the wealthy would be taxed to provide relief for the poor, old and sick.</li> <li>The idle poor would still be treated harshly.</li> <li>These kinds of taxes had never existed on this scale.</li> </ol>
<b>2. Successes of the Poor Laws</b>	<ol style="list-style-type: none"> <li>Helped distinguish between authentic beggars and vagrants.</li> <li>Helped those who were genuinely poor while punishing those who were lazy or dishonest.</li> <li>The numbers of beggars decreased.</li> </ol>
<b>3. Failures of the Poor Laws</b>	<ol style="list-style-type: none"> <li>Inconsistently applied across the country</li> <li>Decrease in begging may have been due to fears of House of Correction rather than helping them</li> <li>Areas argued over which paupers they had to help and sometimes just sent them elsewhere</li> </ol>

### Key Question: Was Elizabethan England a Golden Age?

<b>1. Arguments in favour</b>	<ol style="list-style-type: none"> <li>Growth of culture: art, theatre, literature, education (even for some girls!)</li> <li>Incredible accomplishments in science, architecture, exploration</li> <li>England became a hugely wealthy trading empire</li> <li>Military power grew and territory expanded hugely</li> <li>England was largely peaceful and national pride grew enormously with Elizabeth seen as 'Gloriana'</li> </ol>
<b>2. Arguments against</b>	<ol style="list-style-type: none"> <li>Cruel torture and punishments</li> <li>Huge divisions of wealth and class</li> <li>Low life expectancy and widespread disease</li> <li>Some superstitious beliefs (eg alchemy, astrology)</li> <li>Brutal culture eg blood sports, attitude to beggars</li> </ol>

### 3. What was the role of the theatre in society?

<b>1. What was Tudor theatre like?</b>	<ol style="list-style-type: none"> <li>Public theatres were popular with rich and poor.</li> <li>Playwrights and acting companies became successful.</li> <li>All actors were male with boys playing the female roles.</li> <li>Theatre developed during Elizabeth's reign from plays put on at an inn to a fully developed, purpose-built attraction.</li> <li>Performances were chaotic with audiences pushing and heckling.</li> <li>The nobility had expensive seats and often chose to be patrons of a theatre company to show how cultured they were.</li> <li>The poor stood nearer the stage to watch the performance.</li> </ol>
<b>2. What opposition to theatre existed?</b>	<ol style="list-style-type: none"> <li>Some people felt theatre was sinful and wanted it banned.</li> <li>Theatres were associated with drunkenness, crime and disease.</li> <li>People feared large gatherings would spread disease.</li> <li>Puritans believed people should spend their free time praying and studying the Bible rather than watching plays.</li> <li>The theatre remained popular, and Elizabeth herself enjoyed plays.</li> </ol>
<b>3. Who was involved in theatre?</b>	<ol style="list-style-type: none"> <li>William Shakespeare (1564-1616) was the head writer for the Lord Chamberlain's Men.</li> <li>He wrote 38 plays – tragedies, comedies and history plays.</li> <li>Richard Burbage (1568-1619) was a leading actor in the Lord Chamberlain's Men and played many famous roles. He also owned a theatre.</li> </ol>

### 8. The Age of Exploration

<b>1. What changes helped to enable exploration?</b>	<ol style="list-style-type: none"> <li>Technology in shipbuilding enabled long voyages.</li> <li>New 'lateen' sails made them faster and easier to steer.</li> <li>Better defences and weapons improved fighting abilities.</li> <li>The astrolabe and better compasses improved navigation.</li> <li>Voyages were still dangerous – Drake's big voyage returned with only one ship of the five that left.</li> </ol>
<b>2. How did voyages help trade?</b>	<ol style="list-style-type: none"> <li>Most voyages were structured around buying and selling goods.</li> <li>People began to look beyond Europe to the Far East to acquire new and exciting products such as spices.</li> <li>Middlemen bought products directly and sold them on to English buyers, but this was expensive so the English wanted to extend their own trade.</li> <li>Many attempts to reach the Far East failed but the Americas were discovered in the process.</li> <li>Companies were founded to become experts in particular areas, for example the Muscovy Company (1555) traded in Russia.</li> <li>The East India Company was founded in 1600 and obtained products like silks, spices and porcelain.</li> </ol>
<b>3. How did the slave trade develop?</b>	<ol style="list-style-type: none"> <li>Drake and his cousin John Hawkins (1532-95) led the first voyage to kidnap West Africans and sell them in Mexico in 1564.</li> <li>Hawkins was a spy who became an important naval commander and trader, introducing tobacco to England after discovering it in America.</li> <li>The slave trade grew as there was a huge demand for agricultural labour in the Americas, to enable products to be sent back to Britain.</li> </ol>
<b>4. How were colonies established in the New World?</b>	<ol style="list-style-type: none"> <li>In 1584 Elizabeth gave Walter Raleigh permission to conquer and rule any land not ruled by Christians.</li> <li>In return he would give her 1/5<sup>th</sup> of the gold and silver he found.</li> <li>Raleigh went on voyages and sent others to colonise North America.</li> <li>A colony was eventually established at Roanoke in 1587 but the settlers mysteriously disappeared. England never fully set up a colony in North America until after Elizabeth had died.</li> </ol>

Key Word	Definition
<b>Alchemy</b>	A type of science combined with magic that sought to e.g. turn lead into gold
<b>Almshouses</b>	Institutions offering food and shelter to the poor. First set up by Archbishop Whitgift in London.
<b>Astrolabe</b>	A navigational tool that calculated a position using the stars
<b>Circumnavigate</b>	To travel around the globe back to a starting point
<b>Gloriana</b>	A nickname for Elizabeth showing her as a glorious figure
<b>Playwright</b>	A professional writer of plays
<b>Poor Laws</b>	The laws introduced in 1601 to help deal with the poor
<b>Poor relief</b>	Charity given to the poor funded by tax payers
<b>Slave trade</b>	The growing trade in African slaves sold to work in North America
<b>Spanish Armada</b>	The Spanish invasion fleet of 1588
<b>Trading companies</b>	Firms that were responsible for trading in certain areas
<b>Vagrants</b>	Another term for travelling beggars, the idle or undeserving poor



## Age groups – dietary needs

1	<b>Young Children</b>	5 a day / Eat Well Guide recommendations Starchy carbs – energy Protein growth Calcium/vit D Full fat options – limit salt/sugar
2	<b>Teenagers</b>	Same as young children Extra iron for menstruation / muscle growth
3	<b>Adults</b>	No change between age 19-50. 5 a day / eat well guide recommendations Lower fat – increase fibre
4	<b>Pregnancy</b>	Calcium, iron, B12 (folic acid) No need to increase calories. Avoid too much vit A
5	<b>Elderly</b>	Protein to repair body cells Calcium & vit D to maintain bones / teeth More fat to keep warm in winter Soft foods – to help with chewing Fibre to prevent constipation
6	<b>Active</b>	More calories will be required Carbohydrates for energy Protein for muscle repair Water for hydration
7	<b>Sedentary (inactive)</b>	Less calories will be required Cautious of fat intake (if not used as energy it will be stored)

## Special Diets – dietary needs

Religion / Lifestyle		
1	<b>Halal (Muslim)</b>	All food must adhere to Islamic Law. No Pork
2	<b>Hindu</b>	No not eat beef – sacred animal
3	<b>Kosher (Judaism)</b>	No pork. Do not mix dairy and meat in the same meal.
4	<b>Buddhist</b>	Usually vegetarian. Do not eat meat or fish
Health – related		
5	<b>Coeliac</b>	Sufferers react to gluten - must avoid it
6	<b>Lactose Intolerant</b>	Sufferers cannot digest lactose. They will experience cramps wind and diarrhoea if consumed.
7	<b>Nut/ other allergies</b>	Must avoid food they are allergic to. Can results in anaphylaxis and even death if eaten
8	<b>Coronary Heart Disease</b>	Advised to follow a low sugar, low saturated fat, high fibre , Mediterranean style diet
9	<b>Type 2 Diabetes</b>	Avoid processed meat, low salt, wholegrains and lots of fruit and veg
10	<b>Anaemia</b>	Caused by iron deficiency
Ethical		
11	<b>Vegetarian</b>	Do not eat meat or fish but do eat dairy.
12	<b>Vegan</b>	Avoid eating ALL animal products – meat, fish, dairy, honey
13	<b>Pescatarian</b>	Do not eat meat but will eat fish
14	<b>Flexitarian</b>	Choose to eat vegetarian/ vegan some days of the week,

## Key Vocabulary

1	<b>Food Allergy</b>	A damaging immune response to a food
2	<b>Intolerance</b>	An inability to eat a food without negative effects
3	<b>Gluten</b>	A protein found in wheat.
4	<b>Lactose</b>	A sugar found in milk
5	<b>Haram</b>	Food that is forbidden under Islamic law
6	<b>Mediterranean diet</b>	A diet high in vegetables, olive oil and moderate protein intake
7	<b>Anaphylaxis</b>	A serious life threatening response to an allergic reaction. Happens in seconds.
8	<b>Comparison</b>	Looking at the similarities and differences between two things
9	<b>BMR</b>	Basal metabolic rate
10	<b>PAL</b>	Physical activity level

☐ Research the RDI amounts for each target group

☐ Is there an Eat Well Guide for vegans vegetarians?

Cooking methods definition		
1	<b>Boiling</b>	Cooking in water at 100°C e.g. eggs, rice, pasta potatoes, carrots and lentils.
2	<b>Steaming</b>	Steaming cooks food in a fast way with little contact to water e.g. vegetables, dumplings, fish
3	<b>Poaching</b>	Cooking food in a shallow pan of water or wine, below boiling point with only the occasional bubble visible. It is kept just under 82°C e.g., eggs, fish
4	<b>Baking</b>	Baking used dry heat without direct contact to a flame, typically in oven. e.g. bread, cakes, pastry
5	<b>Grilling</b>	Uses dry heat applied to surface of food e.g. meat, vegetables
6	<b>Stir-frying</b>	Food cooking in a small amount of oil on a very high heat e.g. meat, vegetables
7	<b>Roasting</b>	Same as baking but a higher heat – dry heat. E.g. meat, vegetables
8	<b>Frying</b>	Food submerged in hot fat e.g. chips, meats, spring rolls

How they impact nutrients		
1	<b>Boiling</b>	Vit C loss (up to 50%), B1, B2 and B3 are destroyed by prolonged heat. Some calcium and sodium will dissolve. Water soluble vitamins will dissolve into cooking water. Over cooking meat will make protein less digestible. Some starch can be released making it easier to digest.
2	<b>Steaming</b>	Vitamin C (up to 15%) and vitamin B are lost but in fewer amounts. Steaming also retains lots of antioxidants.
3	<b>Poaching</b>	Vitamins C, B and folate will leach into the cooking liquid but vitamins A, D, E and K are fat soluble and heat tolerant so will survive
4	<b>Baking</b>	The high heat can easily over cook proteins which will damage vitamins B and C.
5	<b>Grilling</b>	Little nutrient loss but if fat melts vitamins A, D, E and K as it will melt off. Grilled vegetables should retain all the nutrients.
6	<b>Stir-frying</b>	The fat used will increase the amount of vitamin A and beta carotene. Heat may cause some damage to vitamins C and B but not a lot as it is a short cooking time.
7	<b>Roasting</b>	High heat decrease vitamins C and B (up to 40%) and it may increase the fat content as it is cooked in oil.
8	<b>Deep fat Frying</b>	Increase in fat and a loss of fat-soluble vitamins (A, D, E and K).

Tips to avoid nutrient loss		
1	<b>Boiling, steaming, poaching</b>	Use as little water as possible and consume any liquid left in the pan for a sauce or gravy.
2	<b>Roasting</b>	Add the juices that drip into the pan back onto the meat.
3	<b>All cooking methods</b>	Don't peel the vegetables and if you do, do it after cooking to maximise nutrients.
4	<b>All cooking methods</b>	Cook vegetables in smaller amounts of water to reduce loss.
5	<b>All cooking methods</b>	Try to finish cooked vegetables within a day or two as the vitamin C content will continue to decline.
6	<b>All cooking methods</b>	Cut food after rather than before cooking if possible.
7	<b>All cooking methods</b>	Cook vegetables for the minimal time possible.
8	<b>All cooking methods</b>	When cooking meat, poultry and fish you should use the shortest time.

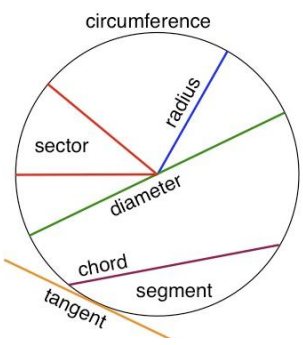
**Plan a dish that includes 3 cooking methods.**

**Discuss how you can modify a recipe to make the cooking method healthier?**

## Ratio and Proportion: Ratio

1	<b>Relationship between fractions and ratio</b>	5 blue sweets 2 red Ratio 5:2 Fraction of blue $\frac{5}{7}$
2	<b>Direct proportion</b>	$y \propto x$ $y = kx$ for a constant $k$

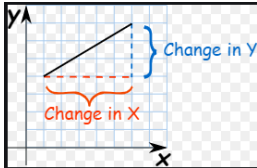
## Geometry: Area and Perimeter

1	<b>Circumference Perimeter</b>	$\pi \times \text{Diameter}$
2	<b>Parallelogram Area</b>	Base $\times$ perpendicular height
3	<b>Trapezium Area</b>	$(a+b) \times \text{perpendicular height} / 2$
4	<b>Triangle Area</b>	Base $\times$ perpendicular height / 2
5	<b>Parts of a circle</b>	
6	<b>Circle Area</b>	$\pi \times \text{Radius}^2$

## Number: Percentages

1	<b>One quantity as a % of another</b>	Find 30 as a % of 78. $30/78 \times 100 = 38.5\%$
2	<b>% increase and decrease</b>	Increase 30 by 25% $30 \times 1.25 = 37.5$ Decrease 40 by 35% $40 \times 0.65 = 26$
3	<b>Find a %</b>	$\frac{\text{Change}}{\text{Original}} \times 100$
4	<b>Compound interest</b>	$A = P(1+i)^n$ <p> <math>A</math> = final amount including principal  <math>P</math> = principal amount  <math>i</math> = interest rate per year  <math>n</math> = number of years invested         </p>

## Algebra: Linear graphs

1	<b>Draw the graph</b> $y=3x+4$	<table><tr><td>X</td><td>-2</td><td>-1</td><td>0</td><td>1</td></tr><tr><td>y</td><td>-2</td><td>1</td><td>4</td><td>7</td></tr></table>	X	-2	-1	0	1	y	-2	1	4	7
X	-2	-1	0	1								
y	-2	1	4	7								
	$y = mx + c$	$m$ = gradient ie. How steep the curve is $c$ = y intercept ie. Where the graph crosses the y axis										
2	<b>Gradient of a line</b>	$y=mx+c$ ( $m$ is the gradient)  To calculate the gradient: $m=y/x$										
3	<b>Parallel lines</b>	If $m$ is the same. The lines are parallel										

## Statistics: Averages

1	<b>Mode</b>	Most common number in a data set
2	<b>Median</b>	The middle number when all numbers are in order
3	<b>Mean</b>	Add all the data up and divide by how many there are
4	<b>Range</b>	Highest value – lowest value
5	<b>Mean from a frequency table</b>	Create a $fx$ column and multiply $x$ by the frequency Add the answers together then divide by the total frequency

## Key Vocabulary

1	<b>Rhombus</b>	A rhombus looks like a square that has fallen over.. All sides have equal length. Opposite sides are parallel, and opposite angles are equal (it is a Parallelogram).
2	<b>Quadrilateral</b>	The name given to any 4 sided 2D shape.
3	<b>Interior</b>	Inside Interior angle: angle inside the shape.
4	<b>Polygon</b>	Any 2D shape with straight lines
5	<b>Sum</b>	Another word for add
6	<b>Expression</b>	Combination of different terms with no equal sign
7	<b>Quadratic</b>	Contains the term $x^2$
8	<b>Proportion</b>	Part of a whole.

Algebra Iteration / Linear Graphs

1 Growth/decay & compound interest

Emily invests £8000 in the bank for 4 years.  
It earns compound interest of 3% per year.  $\times 1.03$   
Calculate the total amount of money that Emily has in the bank after 4 years.

$8000 \times 1.03^4$  initial  $\times$  multiplier  $\times$  time

$8000 \times 1.03^4 = 9004.0748$

2 Approx. solution using iteration: using the previous answer to find the next answer.

Starting with  $x_0 = 0$ , use the iteration formula  $x_{n+1} = \frac{1}{3} - \frac{x_n^2}{3}$  three times to find  $x_1, x_2$  and  $x_3$

$x_1 = \frac{1}{3} - \frac{0^2}{3} = \frac{1}{3}$

$x_1 = 0$   
 $x_2 = 1/3$   
 $x_3 = 8/27$

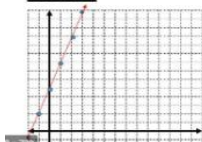
3 Linear graphs

Equation:  $Y = 3x + 5$

Table:

X	-1	0	1	2
Y	2	5	8	11

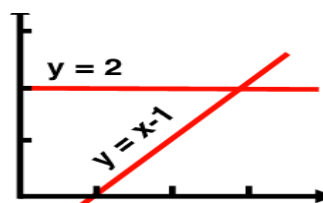
Graph:



When the function is linear, then there is a common difference between each of the y values

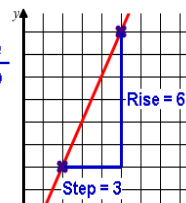
4 Solve where 2 lines intersect

Solution (3,1)



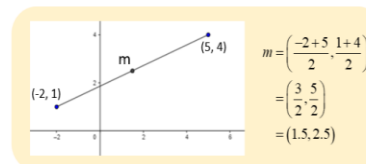
5 Gradient of a straight line

Gradient =  $\frac{\text{Rise}}{\text{Step}}$   
 $= \frac{6}{3}$   
 $= 2$



6 Midpoint of a straight line

Midpoint =  $\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$



7 Linear equation from 2 points

$(x_1, y_1) \wedge (x_2, y_2)$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - (-4)}{3 - 2} = \frac{10}{1}$

$y - y_1 = m(x - x_1)$

$y - (-4) = 10(x - 2)$

$y + 4 = 10x - 20$

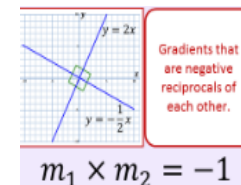
$y = 10x - 24$

8 Equation of parallel line through a given point

Eg. A straight line has the equation  $y = -2x - 3$ . Find the equation of the parallel line passing through the point (1,3)

$y - y_1 = m(x - x_1)$   
 $y - 3 = -2(x - 1)$   
 $y - 3 = -2x + 2$   
 $+3$   
 $y = -2x + 5$

9 Use  $y = mx + c$  to identify perpendicular lines



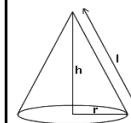
Key Vocabulary

1 Surface area sphere

$s/a = 4\pi r^2$

2 Surface area cone

Full surface area  
 $= \pi r l + \pi r^2$



Curved surface area only  
 $= \pi r l$

REMEMBER: sometimes you may need to calculate the slant of the cone (l) using Pythag



3 Volume Pyramid

$\frac{1}{3} \times (\text{base area}) \times \text{height}$

## Number Surds / Percentages

1 Rationalise: x top & bottom by the surd

$$\frac{3}{\sqrt{5}} = \frac{3}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} \quad (\sqrt{5} \times \sqrt{5} = \sqrt{25} = 5)$$

$$= \frac{3\sqrt{5}}{5}$$

2 Expand brackets

$$2(5 + \sqrt{3}) \quad 10 + 2\sqrt{3}$$

3 Geometric sequences with surds

$$\sqrt{2}, 2, 2\sqrt{2}, 4, \dots$$

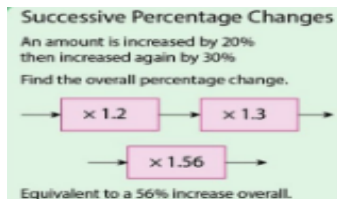
$$\begin{aligned} n=1 &\rightarrow (\sqrt{2})^1 = \sqrt{2} \checkmark \\ n=2 &\rightarrow (\sqrt{2})^2 = \sqrt{2} \times \sqrt{2} = 2 \checkmark \\ n=3 &\rightarrow (\sqrt{2})^3 = \sqrt{2} \times \sqrt{2} \times \sqrt{2} = 2\sqrt{2} \checkmark \\ n=4 &\rightarrow (\sqrt{2})^4 = \sqrt{2} \times \sqrt{2} \times \sqrt{2} \times \sqrt{2} = 4 \checkmark \\ n=5 &\rightarrow (\sqrt{2})^5 = \sqrt{2} \times \sqrt{2} \times \sqrt{2} \times \sqrt{2} \times \sqrt{2} = 4\sqrt{2} \checkmark \end{aligned}$$

4 % increase / decrease

$$\text{Percent Increase} = \frac{[\text{new value}] - [\text{old value}]}{[\text{old value}]}$$

$$\text{Percent Decrease} = \frac{[\text{new value}] - [\text{old value}]}{[\text{old value}]}$$

5 Multiplier in successive percentages



## Ratio &amp; Proportion

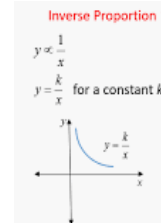
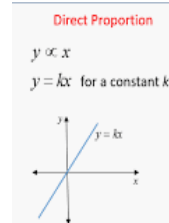
1 Set up & solve growth/decay problems

$W$  is directly proportional to  $F$  and when  $W = 24$ ,  $F = 6$ . Find the value of  $W$  when  $F = 10$ .

$$\begin{aligned} W &= kF \\ \text{Substitute} \\ W &= 24, F = 6 \\ 24 &= 6k \\ 4 &= k \\ W &= 4F \end{aligned}$$

$$\begin{aligned} W &= 4F \\ \text{When } F &= 10, \\ W &= 4 \times 10 \\ W &= 40 \end{aligned}$$

2 Direct and Indirect Proportion graphs



3 Fraction - ratio

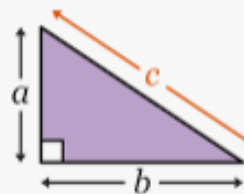
In a class there are 5 boys and 8 girls. Express this as a ratio and fraction.

boys girls

$$5 : 8$$

$\frac{5}{13}$  are boys  $\frac{8}{13}$  are girls

## Pythagoras' Theorem



$$a^2 + b^2 = c^2$$

## Geometry Area &amp; Volume

1 Convert area units

$$\begin{aligned} &\times 1000^2 && \times 100^2 && \times 10^2 \\ \text{Km}^2 &\rightarrow &\text{m}^2 &\rightarrow &\text{cm}^2 &\rightarrow &\text{mm}^2 \\ &\div 1000^2 && \div 100^2 && \div 10^2 \end{aligned}$$

$$5\text{km}^2 = ? \text{m}^2 \quad \text{Need to } \times 1000^2 \quad 5 \times 1000 \times 1000 = 5\,000\,000 \text{m}^2 \checkmark$$

2 Convert volume units

$$\begin{aligned} &\times 1000^3 && \times 100^3 && \times 10^3 \\ \text{Km}^3 &\rightarrow &\text{m}^3 &\rightarrow &\text{cm}^3 &\rightarrow &\text{mm}^3 \\ &\div 1000^3 && \div 100^3 && \div 10^3 \end{aligned}$$

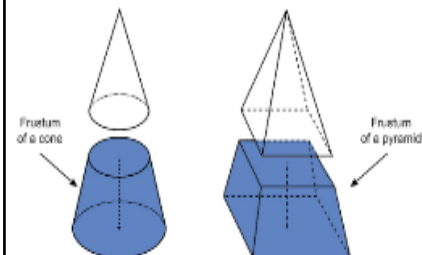
$$1200\text{cm}^2 = ? \text{m}^2 \quad \text{Need to } \div 100^2 \quad 1200 \div 100 \div 100 = 0.12 \text{m}^2 \checkmark$$

$$3\text{m}^3 = ? \text{cm}^3 \quad \text{Need to } \times 100^3 \quad 3 \times 100 \times 100 \times 100 = 3\,000\,000 \text{cm}^3 \checkmark$$

3 Surface area of prisms

Find the area of all the faces & add them up!

4 Frustum volume or surface area





## 1. Context and structure

1	<b>David Paich and Jeff Porcaro</b>	Toto band members who wrote Africa.
2	<b>Toto IV</b>	Fourth studio album that the track is from.
3	<b>1981</b>	When the piece was recorded.
4	<b>Soft rock</b>	A style developed in the late 1960s that relied on simple melodic songs with big, lush productions.

## 2. Form and Structure

1	<b>Verse Chorus form</b>	A structure with verse and chorus sections, often called strophic.
2	<b>Intro</b>	Short opening section, usually instrumental (4 bars)
3	<b>Verse</b>	same music but different lyrics each time
4	<b>Chorus</b>	The catchy, repeated section of a song that comes between the verses.
5	<b>Link</b>	A section that bridges the verse and chorus.
6	<b>Instrumental</b>	Section of the music for the instruments to play.
7	<b>Outro</b>	The final section of the piece.

## 3. Harmony and tonality

1	<b>Diatonic</b>	Chords that belong to the key of the piece.
2	<b>Root position</b>	Chords with the bottom note of the chord as the lowest note. E.g. C, E, G.
3	<b>First inversion</b>	Chords with the middle note of the chord as the lowest note. E.g. E, G, C.
4	<b>Chorus chord pattern</b>	The chorus uses a vi (F#m) – IV (D) – I (A) – V (E) progression.
5	<b>Riff a</b>	A repeating musical pattern, can be heard in the intro, verse, link, instrumental and outro. Uses the chords A – G#m – C#m.
6	<b>Harmonic rhythm</b>	The speed the chords change e.g. once per bar.
7	<b>B Major</b>	The majority of the key is in B Major.
8	<b>A Major</b>	The choruses are all in A major

## 4. Musical Features

1	<b>Moderately fast</b>	The tempo is moderately fast.
2	<b>Simple duple time</b>	A metre with two minim beats per bar (2/2)
3	<b>Ostinato rhythms</b>	Rhythms that repeat regularly, this piece features quavers and syncopation.
4	<b>Syncopation</b>	Rhythms that are off the beat.
5	<b>Vocal rhythm</b>	Follows the natural rhythms of speech and the lyrics.
6	<b>Mezzo-forte</b>	Moderately loud for most of the song.
7	<b>Forte</b>	Loud in the choruses
8	<b>Homophonic</b>	Tune with accompaniment.
9	<b>Rock Band</b>	A typical rock band line up of drum kit with additional percussion, lead and bass guitars, synthesisers, male lead vocals and male backing vocals.
10	<b>Conjunct movement</b>	The music moves by step.
11	<b>Wide vocal range</b>	Uses a lot of notes, with both low and high notes used.
12	<b>Pentatonic scale.</b>	Five note scale is used in Riff b.
13	<b>Vocal improvisation</b>	Vocalist makes it up, based on certain scales.



Listening to other pieces by Toto such as Hold the line and Rosanna and pieces by other bands such as Journey, Asia, Foreigner and Chicago.



**KG1 – Characteristics of skilful movement**

	Motor skill definition		
1	Motor skill	A learned action or task that involves body or limb movements	
	Characteristics of skillful movement:		
	Characteristic	Description	Sporting examples
2	Predetermined	The result is intended. The performer knows exactly what they want to do, and they do it.	<ul style="list-style-type: none"><li>A tennis player knows where to place the serve in tennis and serves it into the area</li><li>A dancer knows their routine and performs the correct moves in the correct order</li></ul>
3	Fluent / fluid	The movement is smooth and flowing	<ul style="list-style-type: none"><li>A batsman in cricket hits a shot with correct timing and technique to make the action smooth</li><li>A footballer strikes the ball smoothly on a penalty with no jerky actions.</li></ul>
4	Aesthetic	The movement looks good and is pleasing to the eye.	<ul style="list-style-type: none"><li>A gymnast performing a routine that looks good</li><li>A rugby player making a tackle that looks well timed</li></ul>
5	Coordinated movement	The performer uses different body parts together effectively.	<ul style="list-style-type: none"><li>A badminton serve using hand-eye coordination to hit the shuttle</li><li>A basketballer coordinates his arms, legs and eyes to perform a run up and shot in a lay up</li></ul>
6	Efficient	There is little wasted effort or energy. The skill is made to look easy.	<ul style="list-style-type: none"><li>A gymnast performs a somersault and lands neatly so there is no wasted time or effort.</li><li>A tackle in rugby is well timed to avoid wasted energy.</li></ul>

**KG2 – Classification of skills**

	Classification	Description	Examples
7	Simple skill	A skill that has few sub-routines, requiring few decisions to be made or little information to process.	400m Sprint
8	Complex Skill	A skill with lots of sub routines and a lot of decision making / information to process	Somersault
9	Closed Skill	A skill that is predictable and is not affected by the environment.	A javelin throw
10	Open Skill	A skill affected by an unpredictable and changeable environment e.g. conditions of play/ teammates/ opponents	A rugby tackle
	Continuums of skills		
11	Skills continuum	A method of categorising skills by placing them on a continuum between two extremes	
	Continuum	Classifications	Sporting examples
12	Difficulty continuum	Simple to complex skills	
13	Environmental continuum	Open to closed skills	

**KG3 – Goal Setting**

1 4	Goal setting	The process of setting targets that a performer will work towards achieving.	
	Reasons to use goal setting		
	Reason	Description	
15	Exercise / training adherence	Goal setting helps a performer to stick to their training by having a purpose to their exercise.	
16	Motivate performers	Goals can help to increase effort and increase enjoyment by meeting goals.	
17	Optimise performance	Setting and working towards goals increases the chance of a person improving and being increasingly successful over time	
	SMART Targets		
	Principle	Description	Example
18	Specific	Goals should target a specific aspect of performance to develop.	To improve a serve in tennis.
19	Measurable	The goal needs to be measurable to see how much they need to improve towards their target or to keep them focused	To serve at least 70% of first serves in service box.
20	Achievable	Goals should be within the reach of the performer.	Currently serving 60% of first serves in service box.
21	Recorded	Goals and progress should be written down, so they are not forgotten and make them more meaningful.	Write down the number of first serves that are in.
22	Timed	Goals should have time limits to keep a performer on track.	To meet the goal by the end of a two-week training programme.

**KG4 – Mental Preparation**

	Mental preparation technique	Description	Effect
23	<b>P</b> ositive thinking	Before an event, a performer thinks positive thoughts about their performance and shuts out negative thoughts of failure.	<ul style="list-style-type: none"> <li>Improves confidence</li> <li>Increases or controls arousal</li> <li>Increases motivation</li> </ul>
24	<b>I</b> magery	A performer creates pictures in their mind and can help them relax	<ul style="list-style-type: none"> <li>Helps a performer relax</li> <li>Helps control arousal</li> <li>Gets them 'in the zone'</li> </ul>
25	<b>M</b> ental rehearsal	A performer rehearses a technique / tactic / performance in their mind before physically performing it.	<ul style="list-style-type: none"> <li>Allows effective decision making</li> <li>Increases speed of reactions</li> </ul>
26	<b>S</b> elective attention	A performer focuses on only the important aspects of their performance and blocks out distractions	<ul style="list-style-type: none"> <li>Increases concentration</li> </ul>

## THE PURPOSE OF SET DESIGN

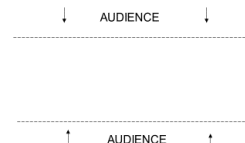
1	<b>LOCATION</b>	<ul style="list-style-type: none"> <li>Productions often need multiple settings or time periods.</li> <li>To avoid slowing the pace, use flown scenery, trucks, or actors moving props.</li> <li>A composite set can show different places without full changes.</li> </ul>
2	<b>TIME PERIOD</b>	<ul style="list-style-type: none"> <li>The setting may reflect the play's era or one chosen by the director.</li> <li>Designs don't have to stick to one period; mixing eras (anachronism) can create specific effects.</li> </ul>
3	<b>THEMES AND SYMBOLS</b>	<ul style="list-style-type: none"> <li>A design could include significant objects, for example a large, dead tree to suggest the themes of death and decay.</li> </ul>
4	<b>ATMOSPHERE</b>	<ul style="list-style-type: none"> <li>Stages and sets help create mood.</li> <li>For example, a cramped space can make the audience feel claustrophobic.</li> </ul>
5	<b>LOGISTICS</b>	<ul style="list-style-type: none"> <li>Design must suit cast size, entrances/exits, performer needs, and special effects.</li> <li>For plays with many quick scene changes, a minimal set can keep transitions smooth.</li> </ul>

## STYLE OF STAGE DESIGN

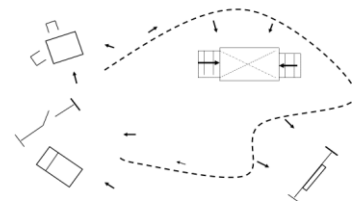
1.	<b>REALISM</b>	<ul style="list-style-type: none"> <li>Uses lifelike elements, fully or partly.</li> <li>Total realism recreates real settings with accurate scenery, furniture, and props for the period.</li> <li>Partial realism mixes realistic details with abstract or non-literal structures.</li> </ul>
2.	<b>SYMBOLISM</b>	<ul style="list-style-type: none"> <li>Focuses on expressing ideas, not real life.</li> <li>Designers use images that represent the play's key themes and interpret them in the set.</li> </ul>
3.	<b>MINIMALISM</b>	<ul style="list-style-type: none"> <li>Uses simple props or furniture to suggest a location.</li> <li>For example, a table and chairs can imply different spaces.</li> <li>The actors' behaviour defines the setting (minimal signification).</li> <li>Suits small venues like black box theatres.</li> </ul>
4.	<b>FANTASY / EXPRESSIONISM</b>	<ul style="list-style-type: none"> <li>Creates an abstract, imaginary world without real-world limits.</li> <li>The design must keep an internal logic so the audience can follow and believe in it.</li> </ul>

## STAGE DESIGN TEMPLATE

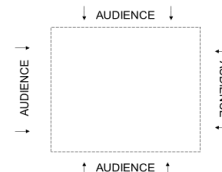
Traverse/Avenue



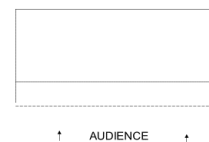
Promenade



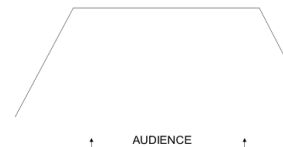
Theatre in the Round



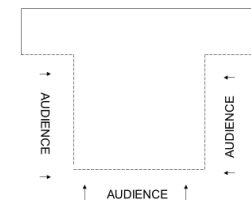
Proscenium Arch



End On

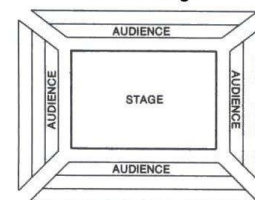


Thrust



Arena

Arena Stage



## Set and Props Design

1.	I	<b>INTERACTION</b>	How the set lines up with the other design elements, e.g., costume design and lighting design, to create an overall effect. The textures of surfaces on the stage (the floor or the walls), as well as the texture of the stage furniture can interact differently with other elements.
2.	M	<b>MATERIALS</b>	Materials (wood, metal, fabric etc...) create texture. Texture can be created using paint effects (for example a painted woodgrain effect). Different textures can give the audience information about the setting of the play.
3.	P	<b>POSITION AND LEVELS</b>	Where you set is placed on the stage and the angle it is positioned at. The use of rostra, ramps, treads, blocks, staging units, scaffolding and planks can be used to create levels and can be joined together to create steps or other shapes.
4.	A	<b>AUDIENCE POSITIONING</b>	The position of the audience can create different experiences. Sightlines to mean what the audience can and cannot see. As a set designer, you will want to make sure that your set does not block the audience's sightlines and prevent them from seeing the actors and following the action. You might also deliberately want to block some things from the audience.
5.	C	<b>COLOURS</b>	The colours used on the stage floor, pieces of scenery, stage furniture and backdrop. Colours on stage have many functions: they can be used to reflect colours in real life, create an atmosphere or tell an audience about the mood of a place or the personality of a character.
6.	T	<b>TYPE OF STAGE AND SIZE</b>	For example: Thrust, In the Round, Traverse, End on, Proscenium Arch, Promenade etc... The size and the shape of the stage floor, any platforms, levels, or pieces of scenery and any stage furniture can have a different effect on the audience or create a different atmosphere.
7.	S	<b>STYLE AND PERIOD</b>	For example, a play in a naturalistic style would aim to create the impression of reality through realistic-looking props and set items. A play performed in a minimalistic style would use just a few, simple props to represent a setting.

<b>Subject: Drama GCSE</b>	<b>Topic: Component 3 - Set and Props Design</b>	<b>Year Group: 10</b>
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TYPES OF STAGE		
1.	In the Round	When the audience are placed all around the outside of the performers' playing space. The stage area may be circular or square, with entrances and exits through the audience.
2.	Thrust	When the audience surround the stage on three sides, and the other side connects to the backstage area.
3.	Proscenium Arch	End-on staging on only one side of the stage, but in an older style theatre with a decorative arch framing the whole stage (called proscenium arch)
4.	Traverse	When the audience is placed on either side of the actors' playing space or stage, facing each other. This staging form is also called corridor.
5.	End on	When the audience sit on one side of the stage only, facing it in the same direction.
6.	Promenade	When the audience can move around and follow the action during a performance.
7.	Arena	A form of theatre 'in the round' where the audience surrounds the stage. Ancient Greek theatres were arena stages and the term suggests performances on a large scale.



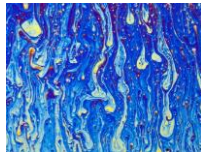
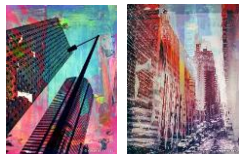
DRAPERY		
1.	<b>Backdrops</b>	A piece of cloth hung behind the stage in a theatre as part of the scenery that can be painted or have coloured light or projections shone onto it.
2.	<b>Cyclorama</b>	Located at the very back of the stage (farthest upstage), and is usually used to give the appearance of "sky". Cycloramas are created with white or natural muslin (flat panels), and are front lit to help achieve the desired look.
3.	<b>Gauze</b>	A thin curtain that can be lit either from the front to make it opaque, or from behind to make it transparent.
4.	<b>Tabs</b>	The name for stage curtains that can open horizontally or fly vertically.
5.	<b>Ground row</b>	A long, low piece of stage scenery, built to simulate part of a landscape. It is sometimes used to conceal lanterns from the audience.
6.	<b>Flat</b>	A <b>flat</b> is a piece of scenery used to represent a wall or to conceal a backstage area. A series of flats can be joined together to make a <b>run</b> , where each flat is supported by a <b>brace</b> with a heavy weight attached.

CREATING EFFECTS WITH SET DESIGN		
1.	<b>Projections</b>	Projections are becoming more common within set design and can be used to add detail and texture on stage. In some venues scenery can be projected, which can be very effective but can have limitations. For example, unless it can be projected from behind the set, actors will cast shadows onto it.
2.	<b>Hydraulics</b>	Machinery used in large-scale productions to move set, usually up and down.
3.	<b>Smoke</b>	Used to create dramatic effects and created with a fogger or a hazer (using dry ice).
4.	<b>Truck</b>	A moving platform on wheels (called 'casters'). on which a piece of scenery is built to facilitate scene changing.
5.	<b>Revolve</b>	A turntable built into the stage floor on which scenery can be set and then turned.
6.	<b>Flying</b>	Involves a manual or electric system that lifts performers off the stage, allowing for stunts and aerial sequences.
7.	<b>Trap doors</b>	An entrance/exit from underneath the stage (often involves a scissor lift).
8.	<b>Set dressing</b>	Smaller items that add details to a set, such as stage furniture, to help establish setting and era
9.	<b>Pyrotechnics</b>	The use of fireworks within theatre to create effects, e.g., explosions

## Knowledge Group 1 – Experimentation

1	<b>Development</b>	Taking something seen in life and translating it into a series of shapes, patterns, colours and tones, in an attempt to convey its essence or true meaning.
2	<b>Simplification</b>	Removing excess detail from an image while keeping the most important characteristics or elements. For example, in an image of an architectural form taking only the main structures, shapes or patterns.
3	<b>Aesthetically pleasing</b>	An arrangement of shapes, forms, lines, tones, and colours that is visually interesting or successful. A piece of visual work that is enjoyable to look at and investigate.

## Knowledge Group 2 – Key Techniques

1	<b>Collage</b>	A technique and the resulting work of art in which pieces of paper, are arranged and stuck down onto a supporting surface. 
2	<b>Embroidery</b>	The craft of decorating fabric or other materials using a needle to apply thread or yarn. 
3	<b>Marbling</b>	Colouring or marking that resembles marble, especially as a decorative finish. 
4	<b>Mixed Media</b>	A term used to describe artworks composed from a combination of different media or materials. 

## Key Vocabulary

1	<b>Abstract</b>	Something that does not show directly the visual representation of a given object. Instead, it represents the idea of it through shape line, tone and colour.
2	<b>Form</b>	The visible shape of an object or thing.
3	<b>Geometric</b>	Characterized by or decorated with regular lines and shapes.
4	<b>Layout</b>	The way in which visual elements are arranged in a picture. From strikingly simple to highly complex, these are important choices each photographer must make while taking pictures.
5	<b>Focus</b>	The act of focusing the camera involves ensuring the image or part of the image can be seen clearly including detail and texture.
6	<b>Contrast</b>	The way in which different elements in a picture interact and look, for example: light & dark, sharp & soft, focused & blurry, crowded & empty.
7	<b>Leading lines</b>	Lines found in the picture that help direct the attention of the viewer around the image. These are an important compositional tool.
8	<b>Architectural</b>	Relating to buildings and the built environment, including all man-made structures.

## Knowledge Group 3 Reflection and analysis

1	<b>Lighting</b>	The style or method used to illuminate a sculpture. For example, directional light from a torch that gives strong shadows and additional interest to a sculpture, or diffuse lighting from a window that gives softer tonal values and allows detail to be seen more clearly.
2	<b>Depth of field</b>	The amount to which a photograph is focused on an image. For example, shallow depth of field where only a small part of an object is in sharp focus where the rest is blurred, versus large depth of field where most, or all, of the image is focused. Depth of field can be used to highlight a certain feature or aspect within an image, it can also be used to emphasise depth in an image.
3	<b>Background</b>	The object or scene behind the main focus of the picture. Your choice of black or white background will affect significantly the tonality of the end photograph. Ensure that you experiment with both types of background for the best outcomes.



### Worship and Prayer

1	<b>What is Church?</b>	<ul style="list-style-type: none"> <li>•The People of God/Body of Christ, among whom Christ is present and active.</li> <li>•Members of a particular Christian denomination/tradition</li> <li>•A building in which Christians worship.</li> </ul>
2	<b>Types of worship?</b>	Liturgical, non-liturgical and informal. Worship can also be done in private.
3	<b>Purpose of Prayer?</b>	To communicate with God, seek revelation, reflect on life, follow biblical teaching.
4	<b>What is the Lord's Prayer?</b>	The prayer taught to the disciples by Jesus; also known as the 'Our Father' and widely said by Christians in both church services and privately.
5	<b>What are set prayers?</b>	These are prayers written throughout the centuries which many Christians worldwide use (eg The Lord's Prayer).

### Pilgrimage and Celebrations

1	<b>Why go on pilgrimage?</b>	Healing, miracles, education, reflection
2	<b>Why do Christians go to Lourdes?</b>	Place of pilgrimage where the Virgin Mary appeared to St Bernadette in a series of visions and it is claimed that miraculous healings have taken place.
3	<b>Why do Christians go to Iona?</b>	Place of pilgrimage founded by St Columba in the fourth century.
4	<b>Importance of Christmas?</b>	Remembers Jesus' incarnation and God's gift to humanity of his son.
5	<b>Importance of Easter?</b>	Remembers Jesus' crucifixion and resurrection to atone for sin

### Sacraments

1	<b>What is a sacrament?</b>	The RCC recognises 7 sacraments and the CoE recognise 2. Baptism and Holy Communion are key sacraments.
2	<b>What is believer's baptism?</b>	Initiation into the Church, by immersion in water, of people old enough to understand the ceremony/rite and who have made the decision to live a Christian life.
3	<b>What is infant baptism?</b>	Sacrament of initiation of babies and young children into the Church
4	<b>RCC Eucharist?</b>	RCCs believe that the bread and wine become Jesus' body and blood. This is transubstantiation.
5	<b>Non-conformist Eucharist?</b>	They have an 'open table' where anyone may take holy communion. The wine is often non-alcoholic

### Role of the Church

1	<b>What does the Church do in local communities?</b>	They run food banks to tackle poverty and offer street pastors at night time
2	<b>What is the aim of mission?</b>	Jesus told his disciples to 'make disciples of nations. The Gospel is 'good news' to be shared with others. This will increase church membership and increase the Christian community. The Alpha Course is an online course for young people to explore faith.
3	<b>What does the worldwide Church do?</b>	<ul style="list-style-type: none"> <li>• Works for reconciliation between war-torn countries. E.g. CAFOD work in disaster zones to bring food and shelter to victims</li> <li>• Tackle persecution, including religious persecution. E.g. Open Doors tries to save Christians from persecution in their countries.</li> </ul>

Key Word	Definition
<b>Baptism</b>	The sacrament through which people become members of the Church. It involves the use of water as a symbol of the washing away of sin.
<b>Catholic</b>	The tradition within the Christian Church which is led by the Pope; also called the Roman Catholic Church. (Note: The term 'catholic' refers to the communion of all Christians, the universal Church, although it is not a term included on this specification).
<b>CAFOD</b>	A Christian charity that provides emergency and long-term aid to the developing world.
<b>Christian Aid</b>	A Christian charity that provides emergency and long-term aid to the developing world.
<b>Christmas</b>	The festival/celebration to remember the birth of Jesus.
<b>Easter</b>	Festival/celebration of the resurrection of Jesus; the Easter season ends with Pentecost (50 days after Easter Sunday) which remembers the coming of the Holy Spirit to earth following the ascension.
<b>Eucharist/holy communion</b>	Literally 'thanksgiving'; a sacrament in which the death and resurrection of Jesus are celebrated, using bread and wine.
<b>Food banks</b>	Places in local communities where people in need can go to collect food; often run/supported by local churches and religious charities.
<b>Informal prayer</b>	Spontaneous prayers spoken from the heart which are personal and unique to the person/people at the time
<b>Liturgical worship</b>	A church service which follows a set structure or ritual.
<b>Law</b>	Rules or commands which must be followed; the law of God is revealed in the Bible.
<b>Mission</b>	Literally 'sent out'; the duty of Christians to spread the gospel (the good news about Jesus).
<b>Non-liturgical worship/informal worship</b>	A service which does not follow a set text or ritual; sometimes spontaneous or charismatic.
<b>Orthodox</b>	A denomination/tradition of the Church popular in some parts of Eastern Europe. There are two main Orthodox Churches – Greek and Russian.
<b>Persecution</b>	Facing hostility and ill-treatment; some Christians face punishment and death for practising their faith.
<b>Pilgrimage</b>	A religious journey to a holy site/sacred place, it is an act of worship and devotion.
<b>Prayer</b>	Communicating with God through words of praise, thanksgiving or confession, or requests for his help or guidance; listening to and speaking to God.
<b>Private Worship</b>	A believer giving God praise and worship on their own.
<b>Protestant</b>	Christian denominations in which authority is generally based on the Bible, rather than Church tradition/teaching. (eg Anglican, Methodist, Baptist).
<b>Sacrament</b>	The outward and visible sign of an invisible and spiritual grace.
<b>Street Pastors</b>	A Christian organisation involving people working, mainly at night, on city streets giving care to those who need it.
<b>Tearfund</b>	A Christian charity that provides emergency and long-term aid to the developing world.
<b>Worship</b>	Showing adoration and reverence; offering praise to God.

### Key Quotes: Christian Practices

'forgive our sins as we forgive those who sin against us'  
**Lords prayer**  
**Bible**

'This is my body that I have given for you'  
**Bible**

Jesus is the light of the world'  
**Bible**

'Therefore go and make disciples of all nations'  
**Bible NT**

'I was naked and you clothed me'  
**Bible NT**

'set their minds on a pilgrimage'  
**Bible**

'A voice came from heaven, you are my son whom I love, with you I am well pleased'  
**Bible NT**

'your father who sees what you have done in secret and will reward you'  
**Bible**

'Do this in remembrance of me'  
**Bible NT**

'I baptise you in the name of the father, son and the holy spirit'  
**Bible NT**

A students should be aware that the religious traditions of Great Britain are, in the main, Christian, and that religious traditions in Great Britain are diverse. They include Christianity, Buddhism, Hinduism, Islam, Judaism and Sikhism, and non-religious beliefs such as atheism and humanism.

**Knowledge: Abiotic and Biotic Factors**

**Abiotic:** Non-living factors of an environment e.g. moisture, light, temperature, CO<sub>2</sub>, wind, O<sub>2</sub> or PH

**Biotic:** Living factors of an environment e.g. predators, competition, pathogens

**Knowledge : Adaptations**

- |   |  |
|---|--|
| 1 | Structural adaptations are features of the organism's body e.g. colour for camouflage  |
| 2 | Behavioural adaptations are how the organism behaves e.g. migration to a warmer climate  |
| 3 | Functional Adaptations are the ways the physiological processes work in the organism e.g. lower metabolism during hibernation to preserve energy |

**Knowledge: Food Chains**

- |   |   |
|---|---|
| 1 | The source of all energy in a food chain is the sun's radiation. It is made useful by plants and algae  |
| 2 | 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. |

**Key Vocabulary**

1	<b>Biodiversity</b>	The variety of living organisms
2	<b>Carrion</b>	Decaying flesh and tissue of dead animals
3	<b>Community</b>	Made up of the populations of different species living in a habitat
4	<b>Competition</b>	The negative interaction between two or more organisms which require the same limited resource
5	<b>Consumers</b>	Feed on other organisms for their energy
6	<b>Decomposers</b>	Organisms which feed on dead and decaying organisms
7	<b>Deforestation</b>	The removal and destruction of trees

**Key Vocabulary**

8	<b>Ecosystem</b>	The interaction between the living organisms and the different factors of the environment
9	<b>Global warming</b>	The increase of the average global temperature
10	<b>Habitat</b>	Where a living organisms live
11	<b>Interdependence</b>	The interaction between two or more organisms- where it is mutually beneficial
12	<b>Population</b>	The number of individual organisms of a single species living in habitat
13	<b>Predators</b>	Organisms which kill for food
14	<b>Prey</b>	The animals which are eaten by the predators

**Knowledge: Water Cycle**

Convection is the movement caused within a fluid as the hotter, less dense material rises and colder dense material sinks

- |   |  |
|---|--|
| 1 | Evaporation occurs when heat energy is transferred to water particles as kinetic energy – particles turn from liquid to a gas                              |
| 2 | Condensation occurs when moving particles transfer kinetic energy to surroundings – gas turn into a liquid   |
| 3 | Precipitation occurs when rain, snow, sleet, or hail falls to the ground   |
| 4 | Transpiration is the process by which water is carried through plants from roots to the stoma on the underside of leaves and it evaporates to surroundings |

**Knowledge: Carbon Cycle**

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|---|--|
| 1 | Carbon is continuously transferred to and from atmosphere  |
| 2 | Carbon in the atmosphere combines with oxygen to make CO <sub>2</sub>  |
| 3 | Processes involved in the carbon cycle are photosynthesis, respiration, dissolving, combustion and decomposition |

**Knowledge: Field Technique (RP)**

The distribution of an organism is affected by the environment and abiotic factors

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|---|--|
| 1 | Quadrats can be used to measure the frequency of an organism in a given area e.g. school field |
| 2 | Quadrats should be placed randomly and collect data from two different areas to compare        |
| 3 | Mean = $\frac{\text{total number of organisms}}{\text{number of quadrats}}$                    |

**Knowledge: Decomposition (Triple)**

Decomposition is the process of rotting (decay) of a material

- |   |  |
|---|--|
| 1 | The optimum conditions for decay to occur are warm, moist and plenty of O <sub>2</sub>   |
| 2 | Foods can be preserved by cooling, canning, freezing, drying, pickling or adding salt or sugar   |
| 3 | Microorganism ferment waste materials. Producing biogas, which can be used as a fuel source. Biogas is produced in a generator using microorganism |

**Knowledge: Decay – RP – (Triple)**

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|---|---|
| 1 | Investigating the effect of temperature on the rate of Decay of Milk by measuring pH change   |
| 2 | IV : temperature<br>DV: time taken for indicator to change colour                             |
| 3 | Mean = $\frac{\text{total time taken for pink colour to disappear}}{\text{number of trials}}$ |

**Knowledge : Food Security (Triple)**

- |   |  |
|---|--|
| 1 | Food security means a whole population have access to enough nutritious food to sustain a healthy lifestyle  |
| 2 | This is achieved using methods which the planet can continue to sustain for further generations of the populations   |
| 3 | Several biological factors which can threaten food security are<br>Increasing birth rate, changing diets, new pests and pathogens, widespread famine, drought, increasing costs, war and conflicts |

Additional info: Trophic levels describe the position of an organism within food chain  
 Level 1 : Producers  
 Level 2: Primary consumers  
 Level 3: Secondary consumers  
 Level 4: Tertiary consumers

## Calculation Types I

1	Relative atomic mass ( $A_r$ )	$A_r = \frac{\text{sum of (isotope abundance x isotope mass no.)}}{\text{sum of abundances of all the isotopes}}$ <b>Example:</b> $^{35}\text{Cl}$ 75% abundance & $^{37}\text{Cl}$ 25% abundance $(35 \times 75) + (37 \times 25) \div 100 = \mathbf{35.5 A_r \text{ of Chlorine}}$
2	Relative formula or molecular mass ( $M_r$ )	Sum of the relative atomic masses of all the atoms shown in the formula <b>Example</b> $\text{MgSO}_4$ contains: $1 \times \text{Mg}: 1 \times 24 = 24$ $1 \times \text{S}: 1 \times 32 = 32$ $4 \times \text{O}: 4 \times 16 = 64$ So the relative formula mass = $24 + 32 + 64 = \mathbf{120}$
3	% mass of an element in a compound	$A_r \times \frac{\text{No. of atoms of that element}}{M_r \text{ of the compound}} \times 100$ <b>Example:</b> Find the % mass of O in $\text{Na}_2\text{O}$ $A_r$ of Na is 23; $A_r$ of O is 16 $1 \times \text{O atom so } 1 \times 16 = 16$ $M_r \text{ of } \text{Na}_2\text{O so } (2 \times 23) + (1 \times 16) = 62$ $\% \text{ mass} = A_r \div M_r \times 100 \text{ so } 16 \div 62 \times 100 = \mathbf{26\%}$
4	The mole & $A_r / M_r$	The mass of one mole of a substance in grams is equal to its relative atomic mass or relative formula mass. So 32 g of sulphur is one mole of Sulphur  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <math display="block">\text{Number of moles} = \frac{\text{mass in g (of an element or compound)}}{M_r \text{ (of the element or compound)}}</math> </div> <b>Example:</b> how many moles is 48 g of sulfur? $A_r$ of S is 32 So mass in g divided by $A_r$ is $48 \div 32 = \mathbf{1.5 \text{ moles}}$

## Calculations Types II

5	<b>HT Only:</b> The mole & Avogadro's Constant	A mole of a substance <b>ALWAYS</b> contains the same number of molecules/ions/particles/atoms – this is called Avogadro's Constant: 1 mole = $6.02 \times 10^{23}$  $\text{number of moles} = \frac{\text{number of particles}}{6.02 \times 10^{23}}$ <ul style="list-style-type: none"> <li>Calculate number of moles first = <math>11.5 \div 23 = 0.5 \text{ moles}</math></li> <li>No. of moles <math>(0.5) \times 6.02 \times 10^{23} = \mathbf{3.01 \times 10^{23} \text{ atoms}}</math></li> </ul>
6	Concentration	Concentration is the amount of substance in a specific volume of a solvent. It can be expressed as mass (in g) per unit volume, $\text{g/dm}^3$ or $\text{g dm}^{-3}$ or moles in a specific volume of solvent, $\text{mol/dm}^3$ or $\text{mol dm}^{-3}$ ( <b>Chemistry only</b> ). <i>You can increase the concentration of a solution by adding more solute/solid or reducing the volume of solvent.</i>  $\text{Concentration (g/dm}^3\text{)} = \frac{\text{mass (g)}}{\text{volume (dm}^3\text{)}}$ <b>Examples:</b> What volume of water do I need to add to 25 g of common salt to get a concentration $0.65 \text{ g / dm}^3$ ?  $\text{Volume} = \text{mass} \div \text{concentration so } 25 \div 0.65 = \mathbf{38.5 \text{ dm}^3}$ <b>Chemistry Only:</b> $\text{Concentration} = \frac{\text{number of moles}}{\text{volume (dm}^3\text{)}}$ $\text{Calculate the number of moles in a } 0.55 \text{ dm}^3 \text{ solution with a concentration of } 0.35 \text{ mol/dm}^3$ $\text{No. of moles} = \text{concentration} \times \text{volume}$ $0.35 \times 0.55 = \mathbf{0.19 \text{ moles}}$

## Key Vocabulary

1	Law of Conservation of Mass	No atoms can be created or destroyed in a chemical reaction so the total mass of reactants must equal the total mass of the products
2	Relative atomic mass ( $A_r$ )	Average mass of an element taking into account the mass & amount of each isotope it contains on a scale where the mass of a $^{12}\text{C}$ atom is 12
3	Relative formula (or molecular) mass ( $M_r$ )	The sum of the relative atomic masses of all the atoms shown in the formula
4	<b>HT only:</b> Mole	Measurement of the amount of substance / mass of a substance that contains $6.02 \times 10^{23}$ particles
5	<b>HT only:</b> Avogadro's constant	The number of atoms, molecules or ions in one mole of a given substance ( $6.02 \times 10^{23}$ ). <i>One mole of any substance contains the same number of particles as the number of atoms in one mole of carbon 12.</i>
6	Uncertainty	The range of values within which the true value is expected to lie. So, for example, a volume of gas collected would be $10\text{cm}^3$ plus or minus $1\text{cm}^3$ so expressed as $10\text{cm}^3 \pm 1\text{cm}^3$ so true value is anywhere between $9\text{--}11\text{cm}^3$

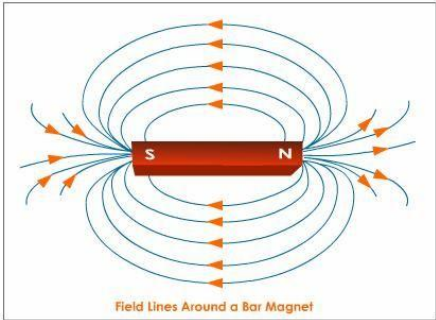
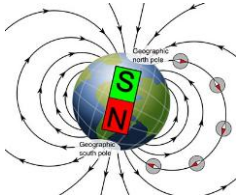




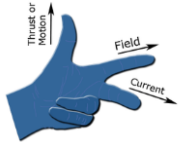
## Magnets

1	Permanent magnets produce their own field
2	Induced magnets become magnets when placed into another field, but lose this quickly when removed
3	Materials that are magnetic: <ul style="list-style-type: none"> <li>i) Iron</li> <li>ii) Steel</li> <li>iii) Nickel</li> <li>iv) Cobalt</li> </ul> They are always attracted to a magnet
4	A compass contains a small bar magnet that lines up with the Earth's magnetic field
5	To show a magnetic field pattern around a bar magnet: <ul style="list-style-type: none"> <li>i) Scatter iron filings on a piece of paper and they will line up with the field.</li> <li>ii) Use a compass to plot the direction of the field in different positions around the magnet</li> </ul>

## Fields

1	Field lines always point away from a North pole and towards a South Pole
2	 <p>Field Lines Around a Bar Magnet</p>
3	Where the field lines are closer together, the field is strongest i.e. at the poles
4	
5	Earth's magnetic field looks like a bar magnet

## Electromagnets

1	Current flowing in a wire produces a magnetic field
2	Strength of an electromagnet is affected by: <ul style="list-style-type: none"> <li>i) Current</li> <li>ii) No. of turns of wire</li> <li>iii) Iron core</li> </ul>
3	Fleming's Left hand rule: <ul style="list-style-type: none"> <li>• First Finger = Field</li> <li>• Second Finger = Current</li> <li>• Thumb = Thrust</li> </ul> 
4	Force = Magnetic Flux Density x Current x Length of wire $F = BIL$
5	A coil of wire in a magnetic field will start to rotate. This is how a motor works.

## Key Vocabulary

1	Magnetic field	A region where a magnetic material experiences a force
2	Solenoid	A wire coiled around an iron core
3	Magnetic Flux Density	How strong a magnetic field is
4	Motor effect	The electromagnetic force on a wire
5	Induced	Produced/made a magnetic field or current

### Titration Method (Chemistry only)

A student investigated the volume of hydrochloric acid that reacted with 25 cm<sup>3</sup> potassium hydroxide. Describe a titration method the student could use in this investigation.

- Measure 25 cm<sup>3</sup> potassium hydroxide using a pipette
- Place the potassium hydroxide into a conical flask
- Fill the burette with hydrochloric acid and record the starting volume
- Add a suitable indicator to the conical flask, e.g., Phenolphthalein
- Place a white tile under flask
- Add the hydrochloric acid until the indicator changes colour
- Add acid slowly and dropwise whilst at the same time swirling the flask
- Phenolphthalein will change from pink to colourless permanently at the endpoint
- Record the volume of hydrochloric acid added
- The titre value is the difference between the initial and final burette reading
- Repeat until you get 2 concordant titres/within 0.1 cm<sup>3</sup> of each other

### Titration Calculation – the steps (Chemistry only)

In a different titration, a student used 25.00 cm<sup>3</sup> of potassium hydroxide, KOH. This volume reacted with exactly 26.00 cm<sup>3</sup> of 0.100 mol dm<sup>-3</sup> sulfuric acid. The equation for the reaction is:  $2\text{KOH} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + 2\text{H}_2\text{O}$ . What is the concentration of the potassium hydroxide solution in mol dm<sup>-3</sup>?

- |   |   |
|---|---|
| 1 | Calculate the moles of the reactant that you have the volume and concentration for (in this case it is the sulfuric acid). Remember, moles = volume (dm <sup>3</sup> ) x concentration (mol dm <sup>-3</sup> )<br>$(26.00 / 1000) \times 0.100 = 0.00260 \text{ mol}$ |
| 2 | Now determine the moles of potassium hydroxide you have. Look at the equation. You can see you have a 2:1 ratio. This means you have double the moles of KOH.<br>$2 \times 0.00260 = 0.0052 \text{ mol}$  |
| 3 | Now you can work out the concentration of KOH using concentration (mol dm <sup>-3</sup> ) = moles / volume (dm <sup>3</sup> )<br>$0.0052 \times (25/1000) = 0.208 \text{ mol dm}^{-3}$  |