

March–April

# Year 10

**KNOWLEDGEABLE  
AND EXPERT  
LEARNERS**



Self  
Quizzing

Flash  
Cards

Mind  
Maps

Brain  
Dumps

enjoylearn**succeed**

# INDEPENDENT LEARNING BOOKLET

**NAME:** .....

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

## CONTENTS

- Using Class Charts Instructions
- Accessing SENECA
- Independent Learning log
- Mind Map 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.

# SUBJECT KNOWLEDGE ORGANISERS CONTENTS

<b>Business</b>	<b>8-9</b>
<b>Computer science</b>	<b>10-11</b>
<b>Economics</b>	<b>12-13</b>
<b>Engineering</b>	<b>14-16</b>
<b>English</b>	<b>17</b>
<b>French</b>	<b>18-21</b>
<b>Fine Art</b>	<b>22</b>
<b>Geography</b>	<b>23-26</b>
<b>German</b>	<b>27-30</b>
<b>Graphics</b>	<b>31</b>
<b>Health and Social</b>	<b>32-33</b>
<b>History</b>	<b>34-36</b>
<b>Maths</b>	<b>37-38</b>
<b>Music</b>	<b>39</b>
<b>GCSE PE</b>	<b>40-43</b>
<b>Performing Arts</b>	<b>44</b>
<b>Photography</b>	<b>45</b>
<b>RE</b>	<b>46</b>
<b>Science</b>	<b>47-50</b>
<b>Textiles</b>	<b>51</b>
<b>PSHCE</b>	<b>52</b>

# 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



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

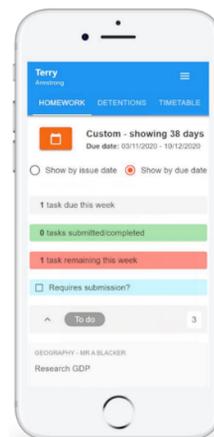
Date of birth

Please enter your date of birth below.

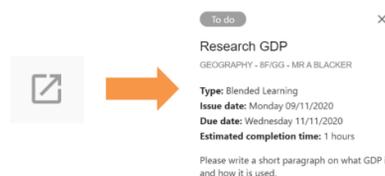
Date of Birth  
12/06/2009

## 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.



## 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.

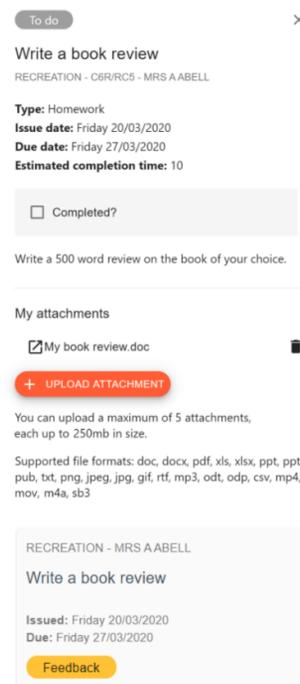
Requires submission?

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 3								
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

Completed

Submitted late

Not submitted

Submitted

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

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

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

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

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



## MIND MAPS

### Expectation this ½ term: Mind maps

1. Create 1 Mind Map a Day

- This should be done once a day , for approximately 20 minutes.
- All your Mind Maps 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>	English: KG1 & 2	Science: KG2 & 4	History: KG4 & 5	PSHCE: KG 1 & 2	Drama: KG 1 & 3
23/02/2026					
ILB CHECK (10 Mind Maps) 02/03/2026					
9/03/2026					
ILB CHECK (20 Mind Maps) 16/03/2026					
23/03/2026					

# MIND MAPS – INSTRUCTIONS

1.



## Identify knowledge

Select a topic you wish to cover.

Decide which type of mind map you are creating

- **Retrieval:** No material
- **Concept:** Material needed

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2.



## Topics & Subtopics

Place the main topic in the centre of your page and identify subtopics that will branch off.

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3.



## Branch off

Branch of your subtopics with further detail.

E.g. Key terms, definitions, examples or descriptions.

Try not to fill the page with too much writing.

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4.



## Review

Is the information on your mind map accurate?

**Green pen:** Do you need to add anything?

**Green pen:** Do you need to correct anything?

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5.



## Revisit it

Use it to help you prioritise your revision; you can **RAG** rate it.

Use it to help you summarise the topic, or use your mind map to teach someone else a topic.

## Stakeholders

1	<b>Key Idea</b>	A stakeholder is any person, group of people or other organisation that has an interest in the activities of a business. Businesses need to be aware of their stakeholders, as many of them will be affected by its activities. Stakeholders can also influence the decisions that a business makes.
2	<b>Key Idea</b>	Internal stakeholders work within a business, either making decisions or carrying them out. External stakeholders do not work within a business but are affected by its activities.
3	<b>Key Idea</b>	Businesses need to be aware of their stakeholders. The activities of a business will affect many of their stakeholders. The stakeholders can also influence the decisions that a business makes. All <b>stakeholder</b> groups have an impact on a business, but some will have more impact than others, giving them more power and influence on the activities of the business.
4	<b>Key Idea</b>	Stakeholder Conflict. Different <b>stakeholders</b> will expect different things from a business. Given their different interests in the business, sometimes their expectations can cause <b>conflict</b> . The business has to balance these various interests.

## Advantages of e-commerce

Attract customers across the globe

Sell at any time of the day or night

Receive payments immediately

Reduced overhead costs compared to running a physical shop

## Disadvantages of e-commerce

More competitors from across the globe, making it harder for the business to get noticed

Employees may need new skills, eg website maintenance

Procedures required for how products and services will be delivered and processing returns

A need to maintain and update technologies, including security software, which may be expensive

## Technology &amp; Business

1	<b>Key Idea</b>	The speed at which technology advances is getting faster. Businesses need to be aware of the technology that is available to them, and how it might influence their sales, costs and marketing.
2	<b>E-commerce</b>	<p><b>E-commerce</b>, or electronic commerce, refers to the buying and selling of products and services using devices connected to an electronic <b>network</b>, such as the internet. Three things are required for e-commerce to take place:</p> <ul style="list-style-type: none"> <li>• a seller who has products and services that are displayed electronically</li> <li>• a buyer who has the equipment required to view the seller's products and services, and a means of paying for them</li> <li>• a network that enables information and payment to be exchanged by the buyer and seller</li> </ul>
3	<b>Social Media</b>	<p><b>Social media</b> has grown to become an important part of business, particularly in relation to marketing activities. Any form of electronic communication that enables users to share ideas, content, information and messages can be described as social media.</p> <p><b>How businesses use social media</b></p> <p>Most business activity on social media involves:</p> <ul style="list-style-type: none"> <li>• sales and <b>marketing</b></li> <li>• interacting with customers</li> <li>• communicating with <b>stakeholders</b></li> </ul>
4	<b>Digital Communication Tools</b>	<p>There are a number of digital tools that are commonly used in business to communicate, both internally and externally, including:</p> <p><b>Email</b> – Electronic mail enables written messages to be sent instantly to others, and files can be shared as attachments.</p> <p><b>Mobile phones</b> – Mobile phones enable verbal conversations to be conducted anywhere. They also allow short written messages to be sent (see instant messaging).</p> <p><b>Mobile applications</b> – Applications (apps) are designed to run on smart phones and tablets. They can be used to create documents, capture images and enable banking transactions.</p> <p><b>Websites</b> – A page or group of pages containing written and visual information using various media.</p> <p><b>Social media</b> – A variety of web platforms that enable users to share ideas, content, information and messages.</p> <p><b>Web conferencing</b> – A meeting that uses communications software to stream images and/or voices over the internet between participants in different locations.</p> <p><b>Cloud services</b> – Software, such as online document editing and data storage, that is run from a remote location but that can be accessed from anywhere as long as a connection to the internet is maintained.</p> <p><b>Instant messaging</b> – Software that enables users to send instant messages, usually in the form of text, to each other.</p>
	<b>Payment Method</b>	Advances in payment technology have led to the introduction of new payment methods that are designed to make it easier to complete secure payments without using cash. Examples include: Chip & Pin and Contactless Payments
	<b>Sales</b>	Technology provides businesses with opportunities to attract new customers and increase their sales. However, with those opportunities come threats. A business may find itself struggling to maintain sales when technology means that it is competing against more businesses. The easier it is to contact a business – whether by phone, by email, through a website or using a mobile app – the more likely a customer is to trust that business and make a purchase. Using digital communication effectively can therefore help a business to increase its sales.
	<b>Costs</b>	Investing in new technology costs money, but businesses often undertake such <b>investment</b> because of the reduced costs that implementing new technology can bring in the long term. Selling online is a lot cheaper than having to open many traditional branches, such as high-street shops.

Legislation & Business

1	<b>Key Idea</b>	The government uses legislation to regulate businesses' behaviour and prevent them from exploiting people. There are laws to protect consumers who buy from businesses and worker employed by businesses
2	<b>Key Idea</b>	<b>Principles of consumer law – quality and consumer rights</b> The term 'consumer law' refers to any piece of <b>government legislation</b> designed to protect consumers from poor-quality products and poor business practices. In the UK there are two pieces of legislation that form the basis of consumer rights: the Consumer Rights Act (2015) and the Consumer Protection Act (1987).
3	<b>The Consumer Rights Act (2015)</b>	It deals with <b>transactions</b> between a seller and a buyer, and is designed to protect consumers from unfair and dishonest business practices.
4	<b>The Consumer Protection Act (1987)</b>	This Act is designed to ensure that products are safe. It makes businesses that produce, rather than just sell, liable for any damage caused by poor quality or defective products.
7	<b>Principles of employment law</b>	In the UK, there are four areas of employment legislation that form the basis of employee rights in the workplace: <b>Recruitment, pay, discrimination and health and safety</b>
8	<b>Costs</b>	Businesses must <b>comply</b> with <b>government legislation</b> , but this means that they incur a range of additional costs in terms of time and money. Some of these costs are incurred because of the time required to produce documents, follow procedures and make sure legal obligations are met.
9	<b>Consequences of not meeting legal obligations</b>	Businesses that choose not to comply with the law are likely to face a number of issues, such as employers could find themselves in court or an <b>employment tribunal</b> .

The Economy & Business

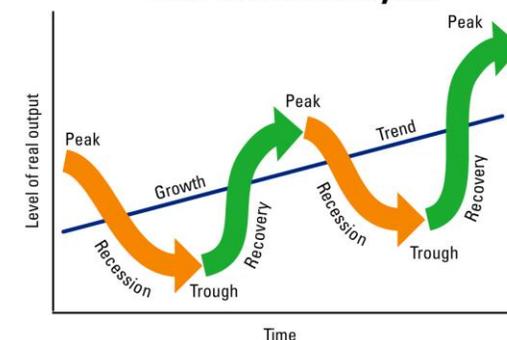
1	<b>Key Idea</b>	The <b>economy</b> includes all activities in a country concerned with the manufacturing, distribution, and use of goods and services. The <b>economic climate</b> has a big impact on businesses. The level of <b>consumer</b> spending affects prices, investment decisions and the number of workers that businesses employ.
2	<b>Key Idea</b>	The economic climate affects businesses in six main ways: <ul style="list-style-type: none"> <li>• unemployment</li> <li>• changing levels of consumer income</li> <li>• changes in <b>interest rates</b></li> <li>• <b>inflation</b></li> <li>• government taxation including national insurance contributions (NICs) and value added tax (VAT)</li> <li>• changes in <b>exchange rates</b></li> </ul>
3	<b>Interest Rates</b>	Interest rates are the % return on money borrowed or investments made. If interest rates are high, people save not borrow. If interest rates are low, people borrow not save
4	<b>External Environment</b>	The world is an ever-changing place. While businesses may not be able to control changes in technology, laws or the economic climate, they do need to be aware that any such changes will affect them.

Key Vocabulary

1	Contactless Payment	A secure way for customers to purchase products or services using a debit, credit or smart card.
2	Network	<b>A</b> group of interconnected computers/devices
3	Social Network Sites	Internet websites that allow people to communicate, eg Facebook.
4	Social Media	an interactive computer based technology that allows the user to create and to share information and ideas through virtual communities and networks.
5	Stakeholder	Anyone who has an interest in a business or is affected by business activity.
6	Shareholder	Anyone who buys shares in the business, then owns a part of the business
7	<b>economic climate</b>	The general level of wealth, consumption and activity within a particular area or region.
8	Video Conference	live video is streamed over the internet so that people can communicate face-to-face without being in the same room.
9	Target Market	A group of consumers at which a product or service is aimed.
10	Employment Law	The term 'employment law' refers to any piece of <b>government legislation</b> designed to protect employees from <b>exploitation</b> .
11	<b>government legislation</b>	Laws made by the government.
12	<b>interest rate</b>	The price at which you can borrow money, or the return on how much money you can save.
13	<b>exchange rate</b>	The value of one currency against another.
14	<b>export</b>	Transportation and sale of goods or services to other countries.
15	<b>globalisation</b>	The way in which the world has become more interconnected. It refers to how people communicate as well as world trade, international investment and the sharing of ideas.

SPICED	WPIDEC
Strong	Weak
Pound	Pound
Imports	Imports
Cheaper	Dearer
Exports	Exports
Dearer	Cheaper

The Economic Cycle



## Hardware, Operating Systems and Memory

1	<p>1. What is hardware?</p> <ul style="list-style-type: none"> <li>▪ Input Devices</li> <li>▪ Output Devices</li> <li>▪ Specialist Devices</li> <li>▪ Assistive Technology</li> </ul> <p>Operating system functions</p> <ul style="list-style-type: none"> <li>- Processor, memory, IO devices, applications and security</li> <li>- Random Access Memory [RAM]</li> <li>- Read Only Memory [ROM]</li> <li>- The difference between RAM &amp; ROM.</li> <li>- Virtual Memory                         <ul style="list-style-type: none"> <li>- Preventing the need for VM</li> <li>- Disk thrashing</li> </ul> </li> <li>- Flash memory</li> </ul>
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## Boolean Logic

1	<ul style="list-style-type: none"> <li>- Logic Gates</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <p style="text-align: center;">AND                  OR                  NOT</p> <ul style="list-style-type: none"> <li>- Truth tables</li> </ul> <p>Truth tables show all possible input combinations of 1s and 0s, and the corresponding outputs.</p> <ul style="list-style-type: none"> <li>- Logic statements</li> </ul> <p>Circuits can be written as logical statements. Operations in brackets should be completed first, just like in Math's.</p>
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## Secondary Storage and Memory

1	<ul style="list-style-type: none"> <li>- Common types of storage                         <ul style="list-style-type: none"> <li>- Optical Media</li> <li>- Magnetic Hard Drive</li> <li>- Solid State Drives</li> </ul> </li> <li>- Suitable storage devices / media for a given application                         <ul style="list-style-type: none"> <li>- Advantages / Disadvantages using the following characteristics:                                 <ul style="list-style-type: none"> <li>- Capacity</li> <li>- Speed</li> <li>- Portability</li> <li>- Durability</li> <li>- Reliability</li> <li>- Cost</li> </ul> </li> </ul> </li> <li>- Cloud storage</li> </ul> <p><b>Systems Architecture</b></p> <ul style="list-style-type: none"> <li>- The purpose of the CPU</li> <li>- Von Neumann architecture</li> <li>- Common CPU components and their functions</li> <li>- Function of the CPU as fetch decode and execute</li> <li>- How common characteristics of CPUs affect their performance:</li> <li>- Embedded systems:</li> </ul>
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## Key Vocabulary

1	<b>Bus</b>	A collection of wires that carry data, instructions and addresses between components of the CPU.
2	<b>Embedded Systems</b>	A computer built into another device e.g. Smart TV, dishwashers and microwaves.
3	<b>Hardware</b>	The physical components that make up a computer
4	<b>Software</b>	The program that runs on a computer system

**Number Bases and Binary addition**

1. Decimal - Base 10
  2. Binary - Base 2
  3. Hexadecimal - Base 16
- Converting from binary to denary.
  - Converting from denary to binary.
  - Converting between hex and denary.
  - Converting between hex and binary.
  - Adding binary numbers.
  - Overflow.

**Binary Addition**

- $0 + 0 = 0$
- $1 + 0 = 1$
- $0 + 1 = 1$
- $1 + 1 = 10$
- $1 + 1 + 1 = 11$

**Units of Information**

(1000)	(1024)
- Bit	- Bit
- Nibble	- Nibble
- Byte	- Byte
- Kilobyte	- Kibibyte
- Megabyte	- Mebibyte
- Gigabyte	- Gibibyte
- Terabyte	- Tebibyte

**Data Compression**

- What is data compression?
- Need for compression
- Types of compression
  - Lossy (example: image file)
  - Lossless (example: text file)
- Huffman Tree Coding
- Run Length Encoding (RLE)

**Images and Sound**

**Images**

- Image files are stored in binary on a computer.
- Metadata
  - Pixel
  - Colour depth
  - Resolution
  - Bitmap images
  - Vector images

**Sound**

- Sample rate
  - Quality of sound
  - File size
- Sample resolution: is the number of bits per sample
- Calculate file sizes:
  - File size (bits) = rate x res x secs

**Key Vocabulary**

1	Binary	The computers language. A counting system which uses 1s and 0s, also known as machine code.
2	Character Set	A group of characters that a computer recognizes from their binary representation.
3	Decimal	A digit represented in base ten
4	Hexadecimal	A digit represented in base 16

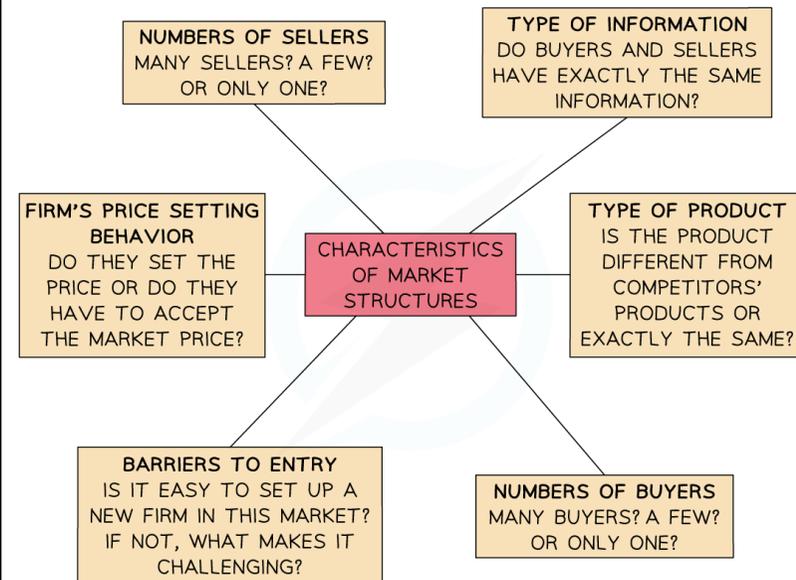
Hex	Decimal
A	10
B	11
C	12
D	13
E	14
F	15

**What are market structures?**

Each firm operates in a specific market  
 The conditions in different markets can vary significantly & are determined by the market structure in which the firm operates  
 There are a range of market structures, however your syllabus only requires you to know the characteristics of two - competitive markets & monopolies  
**Competitive markets are those with an extremely high degree of competition**  
**A monopoly is a market structure in which one firm dominates the market & has significant market power**

**Characteristics of competitive markets**

- There are many buyers and sellers: due to the number of market participants sellers are price takers
- There are no barriers to entry & exit from the industry: firms can start-up or leave the industry with relative ease which increases the level of competition
- Buyers & sellers possess perfect knowledge of prices: this assumption presupposes perfect information e.g if one seller lowers their price then all buyers will know about it
- The products are homogenous: this means firms are unable to build brand loyalty as perfect substitutes exist & any price changes will result in losing customers



**Types of market structures**

<b>Perfect competition</b>	This is the 'ideal' market structure. Many buyers and sellers selling identical products ( <i>see characteristics of competitive markets above</i> )
<b>Monopolistic competition</b>	Many small sellers and buyers selling slightly differentiated products
<b>Oligopoly</b>	A handful of big businesses dominate the market
<b>Monopoly</b>	A single seller in a market

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• <b>Lower prices:</b> competition causes firms to lower prices for consumers in an attempt to gain market share</li> <li>• <b>Better quality:</b> firms innovate &amp; continuously seek to improve their quality of their goods/services in order to become recognised in a crowded market</li> <li>• <b>More choice:</b> more sellers equals more choice for consumers</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Worse quality:</b> in a bid to lower prices, product quality may actually deteriorate over time</li> <li>• <b>Too much choice:</b> consumers may be overwhelmed &amp; not explore the full range of market offerings, instead sticking to what they know</li> <li>• <b>Worker welfare:</b> the greater the competition the greater the need to cut costs, often resulting in low wages &amp; poor working environments</li> </ul>

Monopolies and oligopolies are examples of non-competitive markets

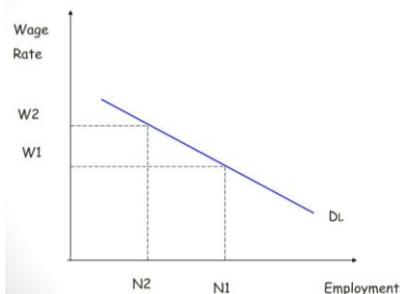
In non-competitive markets:

- Product differentiation is high
- There are either very few sellers or a single seller that dominate the market
- Barriers to entry are very high making it difficult for new businesses to enter
- Businesses in these markets tend to be price makers rather than price takers
- Firms (oligopoly) may be interdependent
- The monopoly may engage in price discrimination
- Oligopolies or monopolies will make very high profits

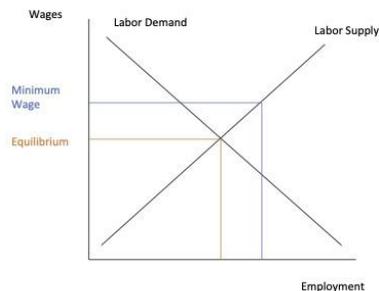
**The labour market – This is a factor market, where labour (the factor) is bought and sold. Through the demand and supply of labour, wages are determined.**

The demand for labour	Employers demand labour (i.e. hire labour) in order to produce goods/services
The supply of labour	Workers supply labour so they can earn money to have a decent standard of living

**Demand for Labour**

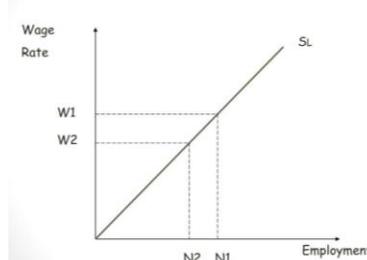


The demand for labour comes from firms. It shows an inverse relationship between the wage rate and the amount of labour demanded. i.e. the higher the wage the lower the demand for labour



When the demand for labour is equal to the supply of labour (intersection of the two lines) we have equilibrium and this determines the wage rate for that labour market

**Supply of labour**



The supply of labour comes from workers. It shows a direct relationship between the wage rate and the amount of labour supplied. i.e. the higher the wage the higher the supply of labour

**Gross pay** The pay given to an employee before taxes and national insurance are deducted

**Net pay** The pay given to an employee after taxes and national insurance are deducted

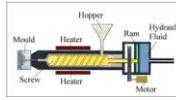
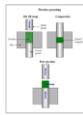
## 1.2.1 Wasting Processes

The process of taking something away from a material is called wasting. This is because the material which has been removed such as the shaving and dust are generally thrown away as waste. Shaping by wasting can be done by using machinery or hand tools

1	<b>Sawing</b> 	Fine toothed - power saw, <b>hacksaw</b> , junior hacksaw, circular abrasive disc.
2	<b>Shearing</b> 	<b>This is the process of cutting sheet metal to size out of a larger roll or flat stock.</b> Cutting blades come together in order to cut the material into shape. Like scissors when cutting paper. Tools used include <b>tin snips</b> or a <b>guillotine</b> .
3	<b>Drilling</b> 	A cutting process that uses a drill bit to cut a hole of circular cross-section in solid materials. The bit is pressed against the work-piece and rotated. This forces the cutting edge against the workpiece, cutting off chips ( <b>swarf</b> ) from the hole as it is drilled.
4	<b>Filing</b> 	Hardened steel in the form of a bar or rod with many small cutting edges raised on its surfaces; used <b>for smoothing or shaping objects</b> .
5	<b>Threading</b> 	Tapping (internal thread) uses a <b>tap &amp; wrench</b> & threading (external thread) uses a <b>die &amp; die holder</b> .
6	<b>Routing</b> 	<b>The process of shaping wood, metal, plastic, and a variety of other materials</b> using a high speed spinning cutting tool (similar to milling, usually limited to wood and soft metals - <b>Aluminium</b> )
7	<b>Laser-cutting</b>	A process that uses a laser <b>to cut or etch</b> into different materials
8	<b>Turning</b>	A material removal <b>process</b> , which is used to create rotational parts by cutting away unwanted material
9	<b>Milling</b>	The process of machining using <b>rotary cutters</b> to remove material by advancing a cutter into a work piece.

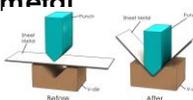
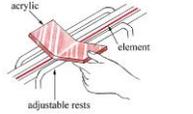
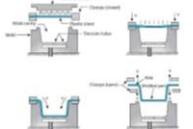
## 1.2.2 Shaping processes:

Involves **the remoulding of a material**. For example, in casting technology, the molten metal is needed to be poured on the moulds and it needs to cool down.

1	<b>Sand casting</b> 	An object made by <b>pouring</b> molten metal or other material into a sand <b>mould</b> . The sand mould (void) is made by pressing sand around a mould, then removing the mould. This is a single use void and will need forming again after use.
2	<b>Die casting</b> 	<b>A casting process that involves feeding molten metal into moulds (dies) under high pressure create moulded products.</b> The die is usually a high quality steel mould made by CNC machining.
3	<b>Injection moulding</b> 	The <b>process</b> of melting plastic pellets (thermosetting/ thermoplastic polymers) that once malleable enough, are <b>injected</b> at pressure into a <b>mould</b> cavity, which fills and solidifies to produce the final product
4	<b>Powder metallurgy for ceramic product</b> 	This is the process of <b>blending fine powdered materials, pressing them into a desired shape and then heating the compressed material in a controlled atmosphere to bond the material (sintering)</b> . <b>Bearings, carbon brushes and various gear parts</b> are examples of Powder Metallurgy applications.

## 1.2.3 Forming processes

A mechanical process used in manufacturing where metals undergo permanent deformations to the required shapes and sizes by application of suitable stresses such as compression, shear and tension

1	<p><b>Forging</b></p> 	Make or shape a metal object by heating it in a fire or furnace and <b>hammering</b> it.
2	<p><b>Press forming metal</b></p> 	<b>A process</b> in which a metal sheet is placed between two matching moulds then is forced to take the shape of the mould as the mould closes.
3	<p><b>Strip heating of polymers</b></p> 	Plastics such as <i>acrylic</i> can be formed (shaped) by folding (bending) it on a 'strip heater', to different angles by heating a just the area to be folded of the sheet plastic.
4	<p><b>Vacuum forming</b></p> 	A sheet of plastic is <b>heated</b> to a forming temperature, stretched onto a single-surface mould, and <b>forced</b> against the mould by a <b>vacuum</b> . Used to form thermoplastics into permanent objects such as yoghurt pots, chocolate sweet trays, bath tubs.
5	<p><b>Moulding of composite materials</b></p> 	Layup technique - <b>using a liquid resin system to a reinforcement material like fibreglass, then applying the saturated material to a prepared surface, such as a boat or mould, using a steel roller to drive out excess resin and ensuring it is saturated.</b>

## 1.2.5 Joining processes

Can be a mechanical fixing or a process that **uses heat to melt the metal.**

1	<p><b>Brazing</b></p> 	A metal-joining process in which two or more metal items are joined together by melting and flowing a filler metal (alloy of copper & zinc) into the joint.
2	<p><b>MIG/MAG Welding</b></p> 	An electric arc forms between a consumable MIG wire electrode and the workpiece metal, which heats the workpiece metal, causing them to melt and join.
3	<p><b>Riveting – Hammered Rivets</b></p> 	A metal bolt that is <b>hammered</b> to secure pieces together. It is a mechanical fastener composed of a head on one end and a cylindrical stem on another (called the <b>tail</b> ) which has the appearance of a metal pin.
4	<p><b>Riveting – Pop Rivets</b></p> 	<b>Pop rivets</b> , also known as <b>blind rivets</b> , are <b>a type of rivet</b> . They are used in applications where there is limited - or no - access to the rear side (blind side) of the parts to be joined.
5	<p><b>Mechanical Fastening – Nuts And Bolts</b></p> 	Nuts are almost always used in conjunction with a mating bolt to fasten multiple parts together. A <b>carriage bolt</b> , <b>coach bolt</b> or <b>round head square neck bolt</b> is a form of bolt used to fasten metal to wood.
6	<p><b>Mechanical Fastening – Self-tapping Screws</b></p> 	A screw that can <b>tap</b> its own hole as it is driven / screwed into the material.

## 1.2.4 Additive manufacturing

Additive manufacturing is **the process of creating an object by building it one layer at a time**. It is the opposite of waste manufacturing, in which an object is created by cutting away at a solid block of material until the final product is complete.

1	<b>3D Printing (fused deposition modelling)</b>	There are several different methods of 3D printing, but <b>the most widely used is a process known as Fused Deposition Modeling (FDM)</b> . FDM printers use a thermoplastic filament, which is heated to its melting point and then extruded, layer by layer, to create a three dimensional object
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## 1.2.6 Finishing processes

1	<b>Painting - brush</b>	Use of a brush, roller or pad to apply the paint evenly. Allow to dry between coats and give a light rubbing down to ensure a perfect finish!
2	<b>Painting - spray</b>	spray paint is paint that comes in a sealed, pressurized container and is released in an aerosol spray when a valve button is depressed. Aerosol painting is one form of spray painting; <b>it leaves a smooth, even coat, unlike many traditional rolled and brushed paints.</b>
3	<b>Powder coating</b>	Powder Coating is a dry finishing process created by an electric charge that <b>causes a dry powder to fuse to the surface of the metal</b> . This is then <b>baked in a curing oven</b> to achieve a smooth coating. It is usually used to create a hard finish that is tougher than conventional paint

### Painting

Painting metal is different than painting other surfaces, and the material is challenging to work with. Paint **doesn't stick** as well to a metal surface as it does to wood or plaster. Also, metal is prone to oxidation and **rust**

**Why** is metal difficult to paint?

When painting on metal, it's essential to use a paint for metal, especially if you want to control rust. Metal paints come in **oil-based** and water-based brush-on or spray-can versions. Oil-based paint is trickier to work with, but the results are **longer lasting**

**What** type of paint should you use on metals?

**Primer** is a must for painting metal. If the metal surface has been painted before, you'll need to remove old paint, rust, debris, grease, dirt using sandpaper, scuffing pad, or wire-brush tool. If the metal is smooth and has nothing on it, you'll still need to scuff up the surface of the metal so the primer can stick to the surface by sanding. The **scuffing pads** or **sandpaper** will also help smooth away some metal imperfections.

**What** must you apply to the metal before applying the finishing paint.

**Why** would we use this paint first?

Make sure to protect yourself. Use a **dust mask** or respirator, **protective goggles**, and gloves. Also, work in a well-ventilated area. When grinding away rust with a wire rotary tool, use **earplugs** for ear protection.

**Name** 2 items of PPE you may need to use when painting or preparing to paint?

Process	Description
1	Remove Old Paint and Rust Use a wire brush to remove any loose or flaking paint and as much surface rust as possible.
2	Scuff Up the Metal If the metal doesn't have paint on it or it's smooth, take a scuffing pad and rub it along the metal. These pads will lightly etch the surface of the metal, which will allow the primer to stick more effectively.
3	Prime the Metal Coat the metal with a zinc chromate primer that's for coating rust.
4	Apply Paint Oil-based paint tends to dry smooth, so you won't need to worry about brush strokes if you apply a thin layer with a natural bristle brush
5	Allow the Paint to Cure The metal needs to cure for 36 to 48 hours before moving it. Ensure the object is in an area that won't be affected by extreme temperatures, direct sunlight or dust when drying / curing

**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 war zones. 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 to pics 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.

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 cinéma/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			Perfect Tense (past)- I			Imperfect Tense - I used to			Future Tense – I will			Conditional – I would		
1	Je suis	I am	1	Je suis allé(e)	I went	1	J'étais	... be	1	Je serai	...be	1	Je serais	...be
2	J'ai	I have	2	Je suis parti(e)	I left	2	J'allais	... go	2	J'aurai	...have	2	J'aurais	...have
3	Je fais	I do/make	3	J'ai fait	I did/made	3	J'avais	... have	3	J'irai	...go	3	J'irais	...go
4	Je vais	I go	4	J'ai aimé	I liked	4	Je faisais	... do	4	Je ferai	...do	4	Je ferais	...do
5	Je bois	I drink	5	J'ai détesté	I hated	5	Je jouais	... play	5	Je jouerai	...play	5	Je jouerais	...play
6	Je lis	I read	6	J'ai joué	I played	6	Je regardais	... watch	6	Je regarderai	...watch	6	Je regarderais	...watch
7	Je vois	I see	7	J'ai mangé	I ate	7	J'écoutais	... listen	7	Je mangerai	...eat	7	Je mangerais	...eat
8	J'achète	I buy	8	J'ai acheté	I bought	8	Je mangeais	... eat	8	J'achèterai	...buy	8	J'achèterais	...buy
9	Je trouve	I find	9	J'ai trouvé	I found	9	Je buvais	... drink	9	Je travaillerai	... work	9	Je travaillerais	...work
10	Je travaille	I work	10	J'ai travaillé	I worked	10	J'achetais	... buy	10	Je verrai	...see	10	Je verrais	...see
11	Je pense	I think	11	J'ai regardé	I watched	11	J'aimais	... like	11	Je boirai	...drink	11	Je boirais	...drink
12	Je crois	I believe	12	J'ai vu	I saw	12	Je lissais	... read	12	Je lirai	...read	12	Je lirais	...read
13	Je dois	I have to	13	J'ai bu	I drank	13	Je travaillais	... work	13	Je partagerai	... share	13	Je partagerais	...share
14	Je peux	I can	14	J'ai lu	I read	14	Je détestais	... hate	14	J'écouterai	... listen	14	J'écouterais	...listen
15	Je veux	I want to												

Present Tense – We/they			Past Tense – We/they			Imperfect – We /they			Future – We /they			Conditional – We/they		
1	On va	We go	1	On a vu	We saw	1	On était	We used to be	1	On sera	We will be	1	On serait	We would be
2	On joue	We play	2	On a fait	We did	2	On avait	We used to have	2	On aura	We will have	2	On aurait	We would have
3	On peut	We/you can	3	On a joué	We played	3	On allait	We used to go	3	On ira	We will go	3	On irait	We would go
4	On fait	We do	4	On est allés	We went	4	Ils étaient	They were	4	Ils seront	They will be	4	Ils seraient	They would be
5	Ils sont	They are	5	On est partis	We left	5	Ils avaient	They had	5	Ils auront	They will have			

**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

**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

**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

**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

**Exclamations!!**

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

**Pronouns**

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

**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

**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

**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

### Knowledge Group 1: Preliminary Grid

1	<b>Grid</b>	A structure made up of a series of intersecting straight or curved lines used to structure content.
2	<b>Parallel lines (borders)</b>	Appearing along the edge of images when positioned side by side and having the same distance continuously between them.
3	<b>Continuity of lines</b>	When the lines and shapes of an image which are located along the edges appear to flow into another.
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>Elongated lines</b>	Lines which have had their length extended.
6	<b>Underlap</b>	To extend partly under.
7	<b>Overlap</b>	To cover something partly by going over its edge

### Knowledge Group 2: Painting

1	<b>Gouache</b>	An <b>opaque</b> water-medium paint consisting of natural pigment, water, and a binding agent.
2	<b>Tint</b>	A hue produced by adding white.
3	<b>Shade</b>	A hue produced by adding black.
4	<b>Saturation</b>	The intensity or purity of a hue.
5	<b>Highlights</b>	The areas on an object where light is hitting.
6	<b>Shadows</b>	The darker areas on an object where light is not hitting.
7	<b>Detail</b>	A distinctive feature on a piece of art which can be seen most clearly close up.
8	<b>Complementary Colours</b>	Colours located opposite one another on the colour wheel.

### Key Vocabulary

1	<b>Development (of ideas)</b>	Selecting ideas, visual elements, compositions and techniques from initial work and using them in new ways.
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### Knowledge Group 3: Artists/Periods

1	<b>Jane Fielder</b>	Painter and founder of the Bingley Gallery. Jane enjoys finding order out of chaos and works with acrylic paint and pens to produce layered and intricate mixed media compositions.
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A. UK physical landscape		
1	The UK has a range of diverse landscapes.	Major Upland areas in the UK: The Northwest Highlands, the Cairngorm Mountains, the Grampian Mountains and the Southern Uplands. Ben Nevis is the UK's highest peak and is found in the Grampian Mountains. Major lowland areas in the UK: The Fens in East Angular are the lowest areas of the UK.

B. The coast is shaped by a number of physical processes.

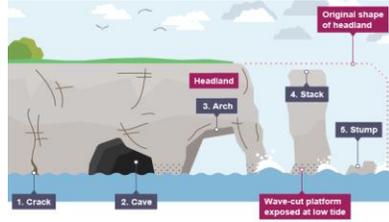
1	Wave types and characteristics.	<p><b>Constructive Wave</b> Long wave length so low frequency (8-10 waves per minute) Water spreads a long way up the gently sloping beach. Low wave height (under 1 metre) Wave front is gently sloping Wave trough Gains a little height, breaks and spills on the beach Orbit becomes elliptical due to shore friction slowing the base of the wave waves have a circular orbit Strong swash Weak backwash</p> <p><b>Destructive Wave</b> Short wave length so high frequency (10-14 waves per minute) Wave plunges onto steep beach, energy directed downwards so does not travel far up the beach Wave trough Steep wave front Wave height over 1 metre Breaking wave gains much height Offshore bar where sand is deposited Orbit becomes elliptical due to shore friction slowing the base of the wave Waves have a circular orbit Weak swash Very strong backwash erodes sand www.internetgeography.net</p>
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2	Coastal processes.	weathering processes – mechanical, chemical mass movement – sliding, slumping and rock falls erosion – hydraulic power, abrasion and attrition transportation – longshore drift deposition – why sediment is deposited in coastal areas.
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C. Distinctive coastal landforms are the result of rock type, structure and physical processes. EROSION

1	headlands and bays	Bands of alternating hard and soft rock that are perpendicular to the coast- soft rock erodes faster forming bays and hard rock erodes slower leaving headlands jutting out into the sea.
2	Cliffs and wave cut platforms	Cliffs are steep areas of rock that fall to the sea below from this a wave cut platform maybe produced- a flat area in front of a cliff, just below the low tide mark. These were formed when the waves eroded the cliff, but left a flat platform behind.

3	Cave, arch, stack and stump	<ol style="list-style-type: none"> <li><b>Cracks</b> are widened in the headland through the erosional processes of hydraulic action and abrasion.</li> <li>As the waves continue to grind away at the crack, it begins to open up to form a <b>cave</b>.</li> <li>The cave becomes larger and eventually breaks through the headland to form an <b>arch</b>.</li> <li>The base of the arch continually becomes wider through further erosion, until its roof becomes too heavy and collapses into the sea. This leaves a <b>stack</b> (an isolated column of rock).</li> <li>The stack is undercut at the base until it collapses to form a <b>stump</b>.</li> </ol>
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D. Distinctive coastal landforms are the result of rock type, structure and physical processes. DEPOSITION

1	Beaches	Beaches are made up from eroded material that has been transported from elsewhere and then deposited by the sea.
2	Sand dunes	Onshore winds depositing sand along the coast.
3	Spits and bars	Spits are formed by: 1. Sediment is carried by <b>longshore drift</b> . 2. When there is a change in the shape of the coastline, <b>deposition</b> occurs. A long thin ridge of material is deposited. This is the spit. 3. A hooked end can form if there is a change in wind direction. 4. Waves cannot get past a spit, therefore the water behind a spit is very sheltered. <b>Silts</b> are deposited here to form salt marshes or mud flats

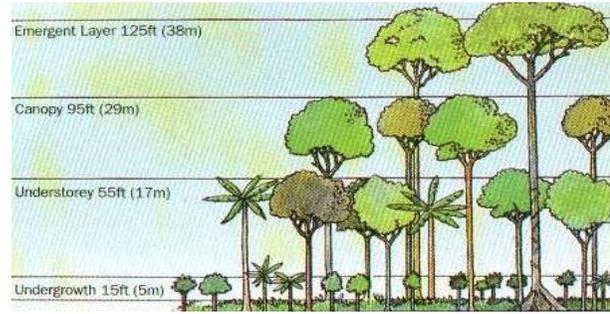
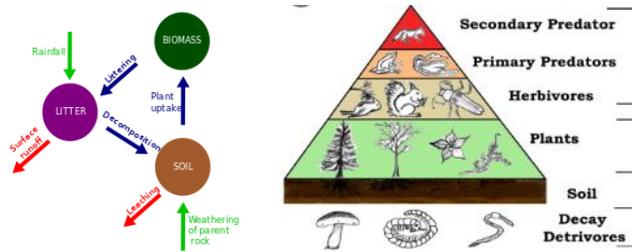
E. Different management strategies can be used to protect coastlines from the effects of physical processes.

1	hard engineering – sea walls, rock armour, gabions and groynes	<p><b>Sea Wall:</b> Placed at the base of a cliff to reflect the waves energy. <b>Gabions:</b> Cages of wire filled with rocks to absorb the waves energy. <b>Groynes:</b> Can be made of wood or rock and are long vertical structures placed at right angles to the beach to trap sediment. This builds up the beach and protects the cliffs from erosion. <b>Rock armour:</b> Large rocks placed at the bottom of the cliff to absorb the wave energy.</p>
2	soft engineering – beach nourishment and dune regeneration	Less environmentally way of managing the coastline: <b>Beach Nourishment:</b> Large amounts of sand are added to beaches to build them up and help absorb wave energy. This protects tourism as well as the coast and is easy to carry out and fairly cheap. But it does not last very long as sand will continue to be transported along the coast by longshore drift.

<b>1) Headlands and bays</b>	A rocky coastal promontory made of rock that is resistant to erosion; headlands lie between bays of less resistant rock where the land has been eroded back by the sea.	<b>6) Mechanical weathering</b>	Weathering processes that cause physical disintegration or break up of exposed rock without any change in the chemical composition of the rock, for instance freeze thaw.	<b>16) spit</b>	A depositional landform formed when a finger of sediment extends from the shore out to sea, often at a river mouth. It usually has a curved end because of opposing winds and currents.
<b>2) Hydraulic power</b>	The process by which breaking waves compress pockets of air in cracks in a cliff. The pressure may cause the crack to widen, breaking off rock.	<b>7) Rock armor</b>	Large boulders dumped on the beach as part of the coastal defences.	<b>17) stack</b>	An isolated pillar of rock left when the top of an arch has collapsed. Over time further erosion reduces the stack to a smaller, lower stump.
<b>3) Longshore drift</b>	The zigzag movement of sediment along a shore caused by waves going up the beach at an oblique angle(wash) and returning at right angles(backwash). This results in the gradual movement of beach materials along the coast.	<b>8) Sand dune</b>	Coastal sand hill above the high tide mark, shaped by wind action, covered with grasses and shrubs	<b>18) transportation</b>	The movement of eroded material.
<b>4) Managed retreat</b>	Allowing cliff erosion to occur as nature taking its course: erosion in some areas, deposition in others. Benefits include less money spent and the creation of natural environments. It may involve setting back or realigning the shoreline and allowing the sea to flood areas that were previously protected by embankments and seawalls.	<b>9) Sea wall</b>	A concrete wall which aims to prevent erosion of the coast by providing a barrier which reflects wave energy.	<b>19) Wave cut platform</b>	A rocky, level shelf at or around sea level representing the base of old, retreated cliffs.
<b>5) Mass movement</b>	The downhill movement of weathered material under the force of gravity. The speed can vary considerably.	<b>10) sliding</b>	Occurs after periods of heavy rain when loose surface material becomes saturated and the extra weight causes the material to become unstable and move rapidly downhill, sometimes in an almost fluid state.	<b>20) waves</b>	Ripples in the sea caused by the transfer of energy from the wind blowing over the surface of the sea. The largest waves are formed when winds are very strong, blow for lengthy periods and cross large expanses of water.
		<b>11) slumping</b>	Rapid mass movement which involves a whole segment of the cliff moving down-slope along a saturated shear-plane or line of weakness.		
		<b>15) Soft engineering</b>	Managing erosion by working with natural processes to help restore beaches and coastal ecosystems.		

A. Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components.

1	<b>Biotic and Abiotic. Food chains and webs.</b>	The balance between components. The impact on the ecosystem of changing one component.
2	<b>Global ecosystems and Biomes</b>	Distribution and characteristics of large scale natural global ecosystems.
3	<b>Epping forest</b>	An example of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling.



C. Deforestation has economic and environmental impacts.

1	<b>Tropical Rainforest-named example</b>	The Amazon rainforest, Brazil
2	<b>Cause of deforestation</b>	economic development, soil erosion, contribution to climate change.
3	<b>Impacts of deforestation</b>	economic development, soil erosion, contribution to climate change.

D. Tropical rainforests need to be managed to be sustainable.

1	<b>Value of tropical rainforests to people and the environment.</b>	Climate regulator, medicine, wood, cultural heritage, habitat, research, precious minerals.
2	<b>Strategies to manage tropical rainforests</b>	Selective logging and replanting, conservation and education, ecotourism and international agreements about the use of tropical hardwoods, debt reduction.

E. Cold environments (polar and tundra) have a range of distinctive characteristics.

1	<b>Polar and tundra environments</b>	The physical characteristics of a cold environment.
2	<b>Relationships in a cold environment ecosystem</b>	The interdependence of climate, permafrost, soils, plants, animals and people.
3	<b>Adaptation in cold environments</b>	How plants and animals adapt to the physical conditions.



F. Development of cold environments creates opportunities and challenges.

1	<b>Named example</b>	Alaska USA
2	<b>Opportunities in Alaska</b>	Mineral extraction, energy, fishing and tourism
3	<b>Challenges in Alaska</b>	Extreme temperature, inaccessibility, provision of buildings and infrastructure.

G. Cold environments are at risk from economic development.

1	<b>Wilderness areas</b>	The value of cold environments as wilderness areas and why these fragile environments should be protected.
2	<b>Management of cold environments</b>	Balancing the needs of economic development and conservation in cold environments – use of technology, role of governments, international agreements and conservation groups

<b>1) Consumer</b>	Creature that eats animals and/or plant matter.
<b>2) Decomposer</b>	An organism such as a bacterium or fungus, that breaks down dead tissue, which is then recycled to the environment.
<b>3) Ecosystem</b>	A community of plants and animals that interact with each other and their physical environment.
<b>4) Food chain</b>	The connections between different organisms (plants and animals) that rely on one another as their source of food.
<b>5) Food web</b>	A complex hierarchy of plants and animals relying on each other for food.
<b>6) Nutrient cycling</b>	A set of processes whereby organisms extract minerals necessary for growth from soil or water, before passing them on through the food chain - and ultimately back to the soil and water.
<b>7) Global ecosystem</b>	Very large ecological areas on the earth's surface (or biomes), with fauna and flora (animals and plants) adapting to their environment. Examples include tropical rainforest and hot desert.
<b>8) Producer</b>	An organism or plant that is able to absorb energy from the sun through photosynthesis.

<b>9) Biodiversity</b>	The variety of life in the world or a particular habitat
<b>10) Commercial farming</b>	Farming to sell produce for a profit to retailers or food processing companies.
<b>11) Debt reduction</b>	Countries are relieved of some of their debt in return for protecting their rainforests.
<b>12) Deforestation</b>	The chopping down and removal of trees to clear an area of forest.
<b>13) Ecotourism</b>	Responsible travel to natural areas that conserves the environment, sustains the wellbeing of the local people, and may involve education. It is usually carried out in small groups and has minimal impact on the local ecosystem.
<b>14) Logging</b>	The business of cutting down trees and transporting the logs to sawmills.
<b>15) Mineral extraction</b>	The removal of solid mineral resources from the earth. These resources include ores, which contain commercially valuable amounts of metals, such as iron and aluminum; precious stones, such as diamonds; building stones, such as granite; and solid fuels, such as coal and oil shale.
<b>16) Selective logging</b>	The cutting out of trees which are mature or inferior, to encourage the growth of the remaining trees in a forest or wood.

<b>17) Soil erosion</b>	Removal of topsoil faster than it can be replaced, due to natural (water and wind action), animal, and human activity. Topsoil is the top layer of soil and is the most fertile because it contains the most organic, nutrient-rich materials.
<b>18) Subsistence farming</b>	A type of agriculture producing food and materials for the benefit only of the farmer and his family.
<b>19) Sustainability</b>	Actions and forms of progress that meet the needs of the present without reducing the ability of future generations to meet their needs.
<b>20) Appropriate technology</b>	(Also called Intermediate technology) Technology that is suited to the needs, skills, knowledge and wealth of local people in the environment in which they live. It usually combines simple ideas with cheap and readily available materials, especially for use in poorer countries, and is environmentally friendly.
<b>21) Biodiversity</b>	The variety of life in the world or a particular habitat
<b>22) Fragile environment</b>	An environment that is both easily disturbed and difficult to restore if disturbed. Plant communities in fragile areas have evolved in highly specialized ways to deal with challenging conditions. As a result, they cannot tolerate environmental changes.
<b>23) Polar</b>	The regions of Earth surrounding the North and South Poles. These regions are dominated by Earth's polar ice caps, the northern resting on the Arctic Ocean and the southern on the continent of Antarctica.
<b>24) Tundra</b>	The flat, treeless Arctic regions of Europe, Asia and North America, where the ground is permanently frozen. Lichen, moss, grasses and dwarf shrubs can grow here.
<b>25) Wilderness area</b>	The flat, treeless Arctic regions of Europe, Asia and North America, where the ground is permanently frozen. Lichen, moss, grasses and dwarf shrubs can grow here.

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

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

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

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.

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 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
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

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		
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

Future/Conditional Tense		
ich werde/möchte/will = I will/would like to/want to		
Er/sie wird = he/she will Wir werden = we will		
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

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

Sentence Starters		
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
8	ganz	totally

Adjectives		
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4	nützlich	useful
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6	toll	great
7	unglaublich	incredible
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8	manchmal	sometimes

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 Key Vocabulary**

1	<b>Target Audience</b>	A particular group at which a product such as a film or advertisement is aimed. For example: Peppa Pig young target audience. Horror films older target audience.
2	<b>Pop Culture</b>	Modern popular culture transmitted via the mass media and aimed particularly at younger people.
3	<b>Conventions</b>	A convention, in the sense of a meeting, is a gathering of individuals who meet at an arranged place and time in order to discuss or engage in some common interest. The most common conventions are based upon industry and profession.
4	<b>Research Sheet</b>	Using imagery and annotations to get a better understanding of a subject areas and recording this visually.
5	<b>Stylistic Typography</b>	A collection of related typefaces which share common design traits used to create a themed design.
6	<b>Symbolism</b>	The use of symbols/images to represent ideas or qualities.

**Knowledge Group 3 Key Techniques**

1	<b>Gaussian Blur</b>	Will blur the high resolution pixels created in photoshop make an image become unclear or less distinct.
2	<b>Collage</b>	A piece of art that is made by attaching and layering up pieces of different materials or layering up different images – overlapping and underlapping.
3	<b>Pressure Sensitive Pen Tool</b>	Controlling the thickness of lines and stroke. Shape Dynamics allow us to dynamically control the size, angle and roundness of the brush stroke. This is done after a path is formed using the pen tool
		
4	<b>Layer Styles</b>	Stylistic qualities that can be added to a layer to transform its appearance. E.g Colour overlay, drop shadow, outer glow, bevel & Emboss
5	<b>New Techniques</b>	A skill or ability in a particular field.

**Knowledge Group 4 Artist**

1	<b>Aniket Jatav</b>	
	<b>Alessandro Pautasso</b>	
	<b>Risa Rodil</b>	

**2.1 Person centred values**



**Examples of person centred values in health and social care settings**

<b>1</b>	<b>What is individuality?</b>	<ol style="list-style-type: none"> <li>1. Individuality recognises that a person is unique.</li> <li>2. Each service user has their own needs, wishes, beliefs and values, so their care and support should be tailored to suit them.</li> <li>3. Recognising a service user's individuality shows them respect.</li> </ol>
<b>2</b>	<b>What is choice?</b>	<ol style="list-style-type: none"> <li>1. Each service user has the right to choose, and should be supported to make their own choices about treatment, care or support.</li> <li>2. Applying choice as a value of care involves providing information to a service user so they can make an informed choice.</li> </ol>
<b>3</b>	<b>What are rights?</b>	<ol style="list-style-type: none"> <li>1. This value of care recognises that all service users have rights.</li> <li>2. A service provider may have to make changes to treatment, care and support to take into account a service user's rights.</li> </ol>
<b>4</b>	<b>What is independence?</b>	<ol style="list-style-type: none"> <li>1. Applying this value of care involves empowering service users to do as much as possible for themselves by agreeing with them the support that they need and want.</li> </ol>
<b>5</b>	<b>What is privacy?</b>	<ol style="list-style-type: none"> <li>1. Applying the value of privacy recognises that all service users have the right to have their privacy maintained.</li> </ol>
<b>6</b>	<b>What is dignity?</b>	<ol style="list-style-type: none"> <li>1. Applying the value of dignity involves treating a service user with respect, and valuing them and their beliefs or wishes</li> </ol>
<b>7</b>	<b>What is respect?</b>	<ol style="list-style-type: none"> <li>1. Respecting a service user involves showing them you recognise their importance as a unique individual and that you respect their opinions and feelings, even if you do not agree with them.</li> </ol>
<b>8</b>	<b>What is partnership?</b>	<ol style="list-style-type: none"> <li>1. Partnership involves working with the service user, their family and other professionals.</li> </ol>
<b>9</b>	<b>What is encouraging decision making of service users?</b>	<ol style="list-style-type: none"> <li>1. Service users are experts on themselves, their values and preferences. Encouraging them to make decisions about their care and treatment can help to ensure they get services and support appropriate for their needs. This can lead to better outcomes.</li> </ol>

<b>Example of providing individuality in a health care setting</b>	Ramps for wheelchair access at a GP surgery for service users using a wheelchair.	<b>Example of providing individuality in a social care setting</b>	Hearing loop systems in a day care centre for adults with hearing impairments.
<b>Example of providing choice in a health care setting</b>	A midwife provides different delivery options to someone who is pregnant.	<b>Example of providing choice in a social care setting</b>	A community centre gives service users a choice of activities to join.
<b>Example of providing rights in a health care setting</b>	A nurse monitors and checks medication given to a service user to prevent harm.	<b>Example of providing rights in a social care setting</b>	A social worker takes the time to understand an elderly service user's wishes when arranging a support plan.
<b>Example of providing independence in a health care setting</b>	A nursing home nurse allows a service user to wash themselves, but provides them with support to get to the bathroom.	<b>Example of providing independence in a social care setting</b>	A care worker allows a service user to cook their own food, but supports them in carrying the meal to the table.
<b>Example of providing privacy in a health care setting</b>	A receptionist at a GP surgery does not repeat personal information out loud during a phone conversation.	<b>Example of providing privacy in a social care setting</b>	A food bank volunteer does not discuss a service user's personal circumstances with others.
<b>Example of providing dignity in a health care setting</b>	A doctor respects a service user's wishes to stop treatment.	<b>Example of providing dignity in a social care setting</b>	A residential care home allows residents to attend a place of worship.
<b>Example of providing respect in a health care setting</b>	Respecting a service user's views on treatment which is against their religious beliefs.	<b>Example of providing respect in a social care setting</b>	A homeless shelter respecting the decision of a homeless individual who is refusing support.
<b>Example of providing partnership in a health care setting</b>	A surgeon discusses surgery options with the patient and their family.	<b>Example of providing partnership in a social care setting</b>	A social worker liaises with a day care centre when planning a support package for a service user.
<b>Example of encouraging decision making in a health care setting</b>	A nurse asks a service user how they feel about their condition to establish their needs.	<b>Example of encouraging decision making in a social care setting</b>	A prison consults prisoners about their care plans and daily needs.

**2.2 Benefits of applying the person centred values.**

**Benefits for service providers of applying person centred values**

1	<b>What are the benefits of providing clear guidelines of the standards of care?</b>	1. Service practitioners will know how to deliver care effectively.
2	<b>How will it improve job satisfaction?</b>	1. Service practitioners will feel pride in their work and feel that they are making a difference.
3	<b>How will it improve the quality of life?</b>	1. Ensures service users are looked after with care and compassion.
4	<b>How will it support rights to choice and consolation?</b>	1. The service provider knows that the service user will feel satisfied with the care and treatment they are receiving.
5	<b>How will it support service practitioners to develop their skills?</b>	1. Service providers will develop skills to support service users needs and their individuality.
6	<b>How will it enable the sharing of good practice?</b>	1. Service providers will have a better understanding of best practice in care.

**Benefits for service users of applying person centred values**

1	<b>How will it ensure standardisation of care is being given?</b>	1. Care will meet the needs of the service user.
2	<b>How will it improve the quality of care being given to the service user?</b>	1. There will be a positive experience and best possible outcome for service users.
3	<b>How will it maintains or improve the quality of life for the service user?</b>	1. Service users can remain active, connected and independent for as long as they are able.
4	<b>How will it support service users to develop their strengths?</b>	1. Service users will be empowered and their self esteem will be improved.

**Qualities of a service practitioner**

**There are 6 qualities that every service provider should have. These are referred to as the 6 Cs.**

<b>What is care?</b>	The care that is offered must be right for the service user and must reflect their life stage.
<b>What is compassion?</b>	Compassion is based on empathy, respect and dignity. This allows the development of positive and trusting relationships.
<b>What is competence?</b>	It is the practitioner's responsibility to ensure they have the most up to date knowledge about care and treatment.
<b>What is communication?</b>	Communication is central to successful relationships between service providers and service users.
<b>What is courage?</b>	Courage helps a practitioner to speak up if they have any concerns.
<b>What is commitment?</b>	A service provider who is committed to the service users will deliver a person-centred approach to care.

**Key words:**

<b>Person centered values</b>	Essentially, person-centred values are values that have the individual at the core.
<b>Rights</b>	Rights are needed by each individual to pursue their lives
<b>Dignity</b>	the quality or state of being worthy of honor and respect
<b>Quality of care</b>	Quality in care means providing the care the patient needs when the patient needs it, in an affordable, safe, effective manner.
<b>Quality of life</b>	The standard of health, comfort, and happiness experienced by an individual or group
<b>The 6 Cs</b>	The 6Cs are the values which underpin the culture and practice of health and social care service providers who deliver care and support.

1. Nixon's War		2. Nixon's Strategies		Key word	Definition
1	<b>Who was Nixon?</b>	1.	Johnson decided not to re-run for election in 1968	<b>Khmer Rouge</b>	A Communist organization in Cambodia
		2.	The Republican candidate, Nixon, became president of the USA in 1969		
2	<b>What were his views on the Vietnam War?</b>	1.	Nixon promised an 'honourable peace' to end the war in Vietnam	<b>Vietnamisation</b>	Vietnamese Communist resistance forces, based in northern Vietnam and led by Ho Chi Minh
		2.	He also claimed to have a 'secret plan' to end fighting		
3	<b>What problems did Nixon face?</b>	1.	He could not win the Vietnam War using normal tactics		
		2.	It was too much of a risk to use nuclear weapons with North Vietnam being backed by China and the USSR	<b>3 Negotiation</b> 1. Nixon visited the USSR in 1970 to discuss reduction of nuclear weapons and ask them to pressure North Vietnam to end the war 2. Nixon visited China in February 1972 and asked them to persuade North Vietnam to end the war 3. Nixon's adviser, Henry Kissinger, negotiated with North Vietnam to bring about a ceasefire	
		3.	If troops were withdrawn straight away communism would spread		
		4.	There was a growing anti-war movement in the USA	<b>4 Renewed Bombing</b> 1. Nixon ordered the increased bombing of North Vietnam 2. He also authorized the bombing of Laos and Cambodia 3. This was aimed to disrupt the Ho Chi Minh Trail and force the communists to look for peace	
<b>3. Why and how did the US attack Laos and Cambodia?</b>					
1	<b>Laos</b>	1.	February 1971, the ARVE attacked North Vietnamese troops in Laos, supported by US helicopters and bombers	<b>4. How effective was Nixon?</b> 1. By end of 1969, 85,000 US soldiers had returned home (16%) 2. By early 1972, it was clear that Vietnamisation was not working 3. Vietnamisation was seen as a failure because of increased bombings 1. In June 1972, the ARVN dropped a napalm bomb, which killed and injured innocent children – nothing had changed 2. The fighting continued until 1975 – a further 20,500 US soldiers died 1. Nixon authorized 2 new bombing campaigns on North Vietnam – Operation Linebacker I in 1971 and Linebacker II in 1972 2. They did little to alter the eventual military outcome. 3. However, they did have some impact in pushing North Vietnam to the negotiating table 4. It also convinced President Thieu's South Vietnamese government that US support would continue after withdrawal of ground troops.	
		2.	The attack failed and communists in Laos gained more support		
2	<b>Cambodia</b>	1.	In March 1969, Nixon authorised the secret bombing of Cambodia		
		2.	In April 1970, Nixon ordered the invasion of Cambodia with troops		
		3.	The Khmer Rouge gained more support because of US tactics		
1	Was Vietnamisation successful?	1.	By end of 1969, 85,000 US soldiers had returned home (16%)		
2	Did the war de-escalate?	1.	In June 1972, the ARVN dropped a napalm bomb, which killed and injured innocent children – nothing had changed		
3	Was renewed bombing successful?	1.	Nixon authorized 2 new bombing campaigns on North Vietnam – Operation Linebacker I in 1971 and Linebacker II in 1972		
		2.	They did little to alter the eventual military outcome.		
		3.	However, they did have some impact in pushing North Vietnam to the negotiating table		
		4.	It also convinced President Thieu's South Vietnamese government that US support would continue after withdrawal of ground troops.		

**5. Opposition to the War**

1	The USA wasn't winning	<ol style="list-style-type: none"> <li>The Vietcong and North Vietnamese army were still strong</li> <li>The USA was not close to winning the war despite all the lives lost and money spent -</li> <li>Events like the Tet Offensive proved this</li> </ol>
2	US politicians	<ol style="list-style-type: none"> <li>Some politicians started arguing that the money should be spent on domestic issues such as education, housing and healthcare</li> </ol>
3	Lack of support for S. Vietnam	<ol style="list-style-type: none"> <li>Many Americans felt that the government of South Vietnam was corrupt and brutal</li> <li>Photographs of ARVN tactics (like the Tet photograph) showed their brutality</li> </ol>
4	The Draft System	<ol style="list-style-type: none"> <li>The US army gained new recruits through the draft system. This was a lottery based on birthday and fitness for service</li> <li>Nearly 2 million men were drafted into the US army between 1964 and 1972</li> <li>There was intense hatred of this system as it unfairly recruited men from poorer backgrounds</li> <li>Some people began to refuse or run away from the draft when their name was called. Many burned their draft cards</li> </ol>
5	The Civil Rights Movement	<ol style="list-style-type: none"> <li>Civil rights leaders like Martin Luther King spoke out against the war's cost</li> <li>They also objected to how the draft system disproportionately called black Americans into the army</li> <li>Mohammed Ali was famously arrested for refusing the draft when he was called</li> </ol>
6	Casualties	<ol style="list-style-type: none"> <li>There was shock at the number of dead and injured US soldiers</li> <li>Around 300 US soldiers died each week</li> <li>The average age of a US soldier killed was just 23</li> </ol>
7	Student protest	<ol style="list-style-type: none"> <li>Opposition to the war was particularly strong among college and university students</li> <li>To them the war symbolised the control and authority of the government</li> <li>Hippie culture was popular at this time and its key themes were peace and love</li> </ol>

**6. Anti-war protests**

1	How did people protest?	<ol style="list-style-type: none"> <li>In 1968 and 1969 there were many anti-war demonstrations</li> <li>The largest anti-war protest in US history took place in Washington on 15<sup>th</sup> November 1969 – 500,000 people</li> <li>Sometimes the protests ended in violence, when police and the students clashed</li> </ol>
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**7. The Kent State Shootings**

1	What happened at Kent State?	<ol style="list-style-type: none"> <li>Students at Kent State University arranged a protest for 4<sup>th</sup> May 1970 after the US invasion of Cambodia</li> <li>Around 3000 people gathered at the university (1500 demonstrators and 1500 bystanders)</li> <li>The Demonstration turned violent – rocks thrown by students and tear gas fired by the National Guard</li> <li>The National Guard opened fire on the crowd – 4 students killed and 9 more injured</li> </ol>
2	What was the impact of the shooting s?	<ol style="list-style-type: none"> <li>News of the shootings shocked the nation</li> <li>Across the USA, colleges and universities closed as 2 million students refused to attend classes</li> <li>A similar incident happened on 1<sup>st</sup> May at Jackson State College, killing 2 students and injuring 12.</li> </ol>

Key word	Definition
<b>Draft</b>	A system of recruiting soldiers for the army involuntarily
<b>Draft Dodging</b>	When men would refuse to report for duty after being drafted

**8. Impact of the Media**

1	How did new technology impact how the war was reported?	<ol style="list-style-type: none"> <li>By 1961, 93% of American homes had a TV and it became the main way people were getting their news</li> <li>New technology such as lightweight video cameras and voice recorders made news reporting easier</li> <li>The full-colour horror of war could be seen on American TV</li> </ol>
2	How did the government try to control the media?	<ol style="list-style-type: none"> <li>At first media coverage was positive, focusing on the brave US troops</li> <li>Independent reporters were flown into the war zone by helicopter and could report what they wanted</li> <li>Every day, the US army met with the journalists to update them on the progress of war</li> <li>As the war progressed, journalists joked that the army officials were covering up details.</li> <li>They started to call the briefings 5 O'clock follies</li> </ol>
3	Impact of the media following the Tet Offensive	<ol style="list-style-type: none"> <li>This shocked Americans who didn't realise how brutal the fighting was</li> <li>The trusted newsreader Walter Cronkite said that the only way out of the war was to negotiate peace</li> </ol>
4	How did the media influence people's opinions?	<ol style="list-style-type: none"> <li>Coverage of events like the My Lai massacre showed the poor behaviour of the troops</li> <li>The New York Times published leaked secret reports about the war in June 1971</li> <li>Life magazine published the names and faces of 242 US troops killed in one week in June 1969</li> </ol>
5	What was the Watergate scandal?	<ol style="list-style-type: none"> <li>President Nixon was linked to a US government burglary at the Democrat offices</li> <li>When his role was discovered he was forced to resign</li> <li>It let many to question the government further</li> </ol>

**9. The Paris Peace Agreement**

1	<b>When did peace talks begin?</b>	<ol style="list-style-type: none"> <li>1. January 1969 – as soon as Nixon became president</li> <li>2. By December 1969 public peace talks broke down over disagreements</li> <li>3. In February 1970 secret peace talks resumed</li> </ol>
2	<b>Who was involved in the talks?</b>	<ol style="list-style-type: none"> <li>1. Nixon's key advisor Henry Kissinger</li> <li>2. North Vietnam negotiator Le Duc Tho</li> </ol>
3	<b>When was it signed?</b>	<ol style="list-style-type: none"> <li>1. 27<sup>th</sup> January 1973</li> </ol>
4	<b>What was agreed?</b>	<ol style="list-style-type: none"> <li>1. Immediate ceasefire</li> <li>2. All captured prisoners would be released within 60 days</li> <li>3. All US troops withdrawn within 60 days</li> <li>4. Free elections would be held in South Vietnam</li> </ol>

**10. The Fall of Saigon**

1	<b>What happened after peace was signed?</b>	<ol style="list-style-type: none"> <li>1. Nixon promised to support South Vietnam with money and weapons after the troops left</li> <li>2. The US government refused to support Nixon's plans</li> </ol>
2	<b>How did the ARVN cope without the US funding?</b>	<ol style="list-style-type: none"> <li>1. The Communist forces from North Vietnam attacked in December 1974</li> <li>2. A wave of South Vietnamese refugees called the Convoy of Tears travelled to Saigon</li> <li>3. By April 1975, Saigon had fallen to the Communists</li> <li>4. It was renamed Ho Chi Minh City and Vietnam was unified country under communist control</li> </ol>
3	<b>What was the impact of the Fall of Saigon?</b>	<ol style="list-style-type: none"> <li>1. The fall of Saigon signaled the end of the US involvement in Vietnam - remaining officials fled in helicopters</li> <li>2. It was a dramatic and embarrassing way for the Vietnam War to end</li> </ol>

**11. Impact of War for the US**

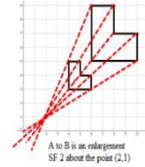
1	<b>How much did the war cost?</b>	<ol style="list-style-type: none"> <li>1. The US government reported they spent \$170 billion on the war</li> <li>2. There was an added cost of benefits and pensions paid to veterans and the widows of soldiers</li> <li>3. Johnson had to divert money away from his Great Society Project, which hindered their effectiveness</li> </ol>
2	<b>How many US deaths?</b>	<ol style="list-style-type: none"> <li>1. Around 58,000 US soldiers were killed in the war</li> <li>2. 300,000 soldiers were wounded</li> </ol>
3	<b>What happened to soldiers returning home?</b>	<ol style="list-style-type: none"> <li>1. Many soldiers faced negative reactions from anti-war public and those Americans who saw them as having lost</li> <li>2. Many soldiers were affected psychologically by the horrors they'd seen</li> <li>3. Around 30% of soldiers used heroine in the war and many returned with drug addictions</li> </ol>
4	<b>How did it affect the USA's reputation?</b>	<ol style="list-style-type: none"> <li>1. At home, the war caused a split in US society with many Americans forming a deep suspicion and distrust of the government</li> <li>2. The US reputation as a superpower was damaged</li> <li>3. The US reputation as a leader of freedom and peace was damaged</li> <li>4. The war proved that the US could not contain communism – it failed to stop Vietnam. Laos and Cambodia also had communist takeovers</li> <li>5. Domino Theory proved wrong when Thailand didn't become communist</li> </ol>

**12. Impact of War for Vietnam**

1	<b>How many Vietnamese deaths and casualties were there?</b>	<ol style="list-style-type: none"> <li>1. It is hard to give accurate figures because neither government kept good records</li> <li>2. It is estimated around 1 million Vietnamese soldiers (North and South) were killed and 2 million wounded</li> <li>3. Estimated 2 million Vietnamese civilians killed and 5 million injured</li> </ol>
2	<b>What were the social effects of the war?</b>	<ol style="list-style-type: none"> <li>1. About 11 million people became refugees after their homes were destroyed</li> <li>2. Refugees set up camp near US bases but poverty, drug abuse and prostitution were common here</li> <li>3. Around 100,000 children are believed to have been born from relationships between Vietnamese women and US soldiers</li> <li>4. In 1975, around 3000 of these infants adopted around the world</li> <li>5. The remaining children faced difficult lives and some were sold as cheap labour</li> <li>6. Over a million Vietnamese civilians moved away from the country in 1975 to escape communist rule</li> </ol>
3	<b>What was the environmental cost of the war?</b>	<ol style="list-style-type: none"> <li>1. In 1969 alone, Agent Orange was used to kill over 1 million hectares of forest</li> <li>2. Between 1962 and 1969 300,000 hectares of farmland was sprayed with Agent Blue, leaving it useless</li> <li>3. A large number of soldiers developed cancer and other conditions from being in contact with the chemical weapons.</li> <li>4. There are still children in Vietnam growing up with diseases and disabilities caused by the chemicals in the soil</li> <li>5. Between 1964 and 1973m over 7 million tonnes of bombs were dropped – this destroyed roads, bridges and irrigation systems that watered farms</li> <li>6. There are a large number of unexploded bombs that still cause injuries today</li> </ol>
4	<b>How did it affect Vietnam politically?</b>	<ol style="list-style-type: none"> <li>1. Vietnam continued to face hostility from the USA</li> <li>2. President Ford (after Nixon) opposed Vietnam joining the UN, isolating them from the world community</li> <li>3. Although Vietnam was unified, many who lived in the south resented the communist rule that was imposed on them</li> </ol>

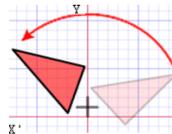
**Geometry and Measures - Transformations**

1 Finding the centre of **Enlargement** - Draw **straight lines** through **corresponding corners** of the two shapes. The centre of enlargement is the point **where all the lines cross over**.



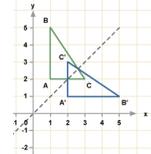
2 **Rotation** - The size does not change, but the **shape is turned around a point**.

Rotate Shape A 90° anti-clockwise about (0,1)

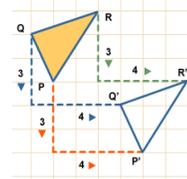


3 **Reflection** - The size does not change, but the shape is **'flipped'** like in a **mirror**.

Reflect shape C in the line  $y = x$

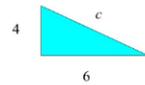


4 **Translate** means to **move a shape**. The shape does not change **size** or **orientation**



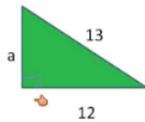
**Geometry - Pythagoras**

1 Find the hypotenuse



Find  $c$ .  
 $a^2 + b^2 = c^2$   
 $4^2 + 6^2 = c^2$   
 $c^2 = 52$   
 $c = \sqrt{52}$   
 $c = 7.21$

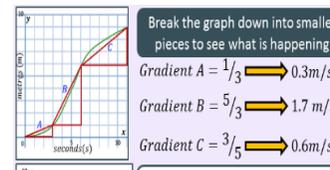
2 Find the shorter side



$c^2 = a^2 + b^2$   
 $a^2 = c^2 - b^2$   
 $a = \sqrt{c^2 - b^2}$   
 $a = \sqrt{13^2 - 12^2}$   
 $a = \sqrt{169 - 144}$   
 $a = \sqrt{25}$   
 $a = 5$

**Ratio Proportion Rates of Change - Real Life Graphs**

1 Calculate fastest average speed.



**Key Vocabulary**

1	<b>Ratio</b>	Ratio compares the size of <b>one part</b> to <b>another part</b> .
2	<b>Right angle</b>	Angles that are exactly 90°.
3	<b>Estimate</b>	To find something <b>close to the correct answer</b> .
4	<b>Standard Form</b>	$A \times 10^b$ where $1 \leq A < 10$ , $b = \text{integer}$
5	<b>Similar</b>	Shapes are similar if they are the <b>same shape but different sizes</b> .

**Geometry - Measures**

1	<b>Pressure = Force ÷ Area</b>	
2	<b>Speed = Distance ÷ Time</b>	
3	<b>Density = Mass ÷ Volume</b>	

**Algebra - Quadratics**

1	Quadratic	A quadratic expression is of the form where $a$ , $b$ and $c$ are numbers
2	Factorising Quadratics	When a quadratic expression is in the form $x^2 + bx + c$ find the two numbers that add to give $b$ and multiply to give $c$ .
3	Difference of Two Squares	An expression of the form $a^2 - b^2$ can be factorised to give $(a + b)(a - b)$
4	Solving Quadratics by Factorising	<b>Factorise</b> the quadratic in the usual way. <b>Solve = 0</b>

**Algebra – Quadratic Equations**

1	<p>The quadratic graph is a “U-shaped” curve called a <b>parabola</b>. If <math>a &lt; 0</math>, the parabola is upside down.</p> <p>A <b>root</b> is a solution to a quadratic equation. A quadratic equation may have no, one, or two solutions</p>	
2	<p>Solve a quadratic by factorising:</p>	<p>Make sure the equation = 0  <math>ax^2 + bx + c = 0</math>                  Use the products of <math>ac</math> that sum to <math>b</math></p>
3	<p>Solving a quadratic using the quadratic formula:  <math display="block">x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}</math></p>	<p>Use this method when an equation does not easily factorise</p>
4	<p>Solving a quadratic by completing the square:  <math>(x + p)^2 + q = 0</math></p>	<p>Use this method when you want to find the <b>vertex</b>. It's co-ordinates are <math>(-p, q)</math></p>

**Ratio, Proportion and rates of change- Similarity**

1	Scale Factor	To find the scale factor, divide a length on one shape by the corresponding length on a similar shape
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**Algebra – Simultaneous Equations**

1	Solving graphically	The points of intersection are the solution
2	Solving by elimination	Usually used for linear equations – same signs subtract, different signs add.
3	Solving by substitution	Usually used for quadratic equations – Rearrange and Substitute

**Geometry and Measures - Vectors**

1	Vector Notation	A vector can be written in 3 ways: $\mathbf{a}$ or $\overrightarrow{AB}$ or $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$
2	<b>Parallel</b> vectors are <b>multiples</b> of each other.	$2\mathbf{a} + \mathbf{b}$ and $4\mathbf{a} + 2\mathbf{b}$ are parallel as $4\mathbf{a} + 2\mathbf{b} = 2(2\mathbf{a} + \mathbf{b})$
3	<b>Collinear</b> vectors are vectors that are on the <b>same line</b> .	To show this you must show that they are parallel and that they share a point.
4	<b>Resultant</b> vectors	The resultant vector is the vector that results from adding two or more vectors together.
5	<b>Scalar</b> of a vector	A scalar is the number we multiply the vector by

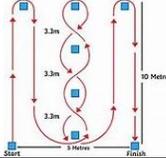
**Key Vocabulary**

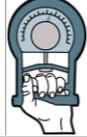
1	<b>Quadratic</b>	A quadratic expression is of the form: $ax^2 + bx + c$
2	<b>Coefficient</b>	A number used to multiply a variable.
3	<b>Vector</b>	A vector is a quantity with both direction and magnitude.
4	<b>Magnitude</b>	The length of a vector
6	<b>Similar Shapes</b>	The same shape but different sizes
7	<b>Correlation</b>	The connection between 2 data sets

1. Instrumental families			2. Instrumental terms			3. Composing techniques		
1	<b>Strings</b>	Violin, Viola, Cello, Double Bass and Harp	1	<b>Pizzicato</b>	Plucking the strings	1	<b>Theme</b>	The main tune/melody.
2	<b>Brass</b>	Trumpet, Trombone, French Horn and Tuba	2	<b>Double stopping</b>	Playing two strings at the same time	2	<b>Motif</b>	A short musical idea (melodic or rhythmic).
3	<b>Woodwind</b>	Flute, Oboe, Clarinet, Bassoon and Saxophone	3	<b>Arco</b>	Using a bow to play a stringed instrument.	3	<b>Leitmotif</b>	A recurring musical idea linked to a character/object or place (e.g. Darth Vader's motif in Star Wars).
4	<b>Percussion</b>	Bass drum, snare drum, Triangle, Cymbal, Drum kit, Timpani, Glockenspiel and Xylophone	4	<b>Tremolo</b>	A 'trembling' effect, moving rapidly on the same note or between two chords (e.g. using the bow rapidly back and forth).	4	<b>Underscoring</b>	Music playing underneath the dialogue
						5	<b>Scalic</b>	Melody follows the notes of a scale
			5	<b>Tongued</b>	A technique to make the notes sound separated (woodwind/brass).	6	<b>Triadic</b>	Melody moves around the notes of a triad.
			5	<b>Slurred</b>	Notes are played smoothly	7	<b>Fanfare</b>	Short tune often played by brass instruments, to announce someone/something important; based on the pitches of a chord.
5	<b>Keyboards</b>	Piano, Electronic keyboard, Harpsichord, Organ and Synthesizer	5	<b>Muted</b>	Using a mute to change/dampen the sound (brass/strings).	8	<b>Pedal note</b>	A long, sustained note, usually in the bass/lower notes
						9	<b>Ostinato/riff</b>	A short, repeated pattern
			5	<b>Drum roll</b>	Notes/beats in rapid succession.	10	<b>Conjunct</b>	The melody moves by step
4	<b>Other</b>	Electric guitar, Bass guitar, Spanish/Classical Guitar, Traditional world instruments.	9	<b>Glissando</b>	A rapid glide over the notes.	11	<b>Disjunct</b>	The melody moves with leaps/intervals
			10	<b>Trill</b>	Alternating rapidly between two notes.	12	<b>Consonant harmony</b>	Sounds 'good' together
			11	<b>Vibrato</b>	Making the notes 'wobble' up and down for expression	13	<b>Dissonant harmony</b>	Sounds 'clashy'
						14	<b>Chromatic harmony</b>	Uses lots of semitones/accidentals that's not in the home key
						15	<b>Minimalism</b>	A style of music using repetition of short phrases which change gradually over time

Listen to Film music by John Williams, Ennio Morricone, Thomas Newman, Hans Zimmer and Howard Shore for a range of different film music soundtracks.

## 1.2.a. Components of Fitness

KG1 – Components of Fitness					
	Principle	Description	Sporting Example	Fitness test	Protocol (Main Points)
1	 Balance	The ability to maintain your center of mass over a base of support	A gymnast doing an arabesque on the beam A rugby player in a scrum to avoid falling over	Stork stand test	 <ol style="list-style-type: none"> <li>Hands on hips</li> <li>One foot against knee of standing leg</li> <li>Raise the heel of standing leg</li> <li>Time until heel drops or moves from knee</li> </ol>
2	 Coordination	The ability to move different body parts together effectively	A tennis player serving, coordinating the racket with the ball A cricketer batting, coordinating the bat with the ball	Wall throw test	 <ol style="list-style-type: none"> <li>Stand 2m from wall</li> <li>Throw underarm against wall with left hand</li> <li>Catch with right hand</li> <li>Throw with right hand</li> <li>Catch with left</li> <li>Time for 30s</li> <li>Count number of completed catches</li> </ol>
3	 Reaction Time	The time taken to respond to a stimulus	A sprinter reacting to a gun at the start of the race A goal-keeper reacting to the ball from a shot	Reaction time ruler test	 <ol style="list-style-type: none"> <li>Partner holds ruler between outstretched index finger and thumb of dominant hand</li> <li>Top of thumb level with 0cm line</li> <li>Partner randomly drops ruler</li> <li>Catch as soon as possible</li> <li>Record distance from 0cm line to top of thumb in cm</li> </ol>
4	 Agility	The ability to change direction at speed	A rugby player weaving through defenders A boxer dodging a punch	Illinois Agility Test	 <ol style="list-style-type: none"> <li>Lie on front with head facing start line</li> <li>On 'go' start timing</li> <li>Runner runs around course in direction shown</li> <li>Record time taken to reach finish line (in secs)</li> </ol>
5	 Power	The product of strength and speed	A basketballer to jump to block a shot A high jumper to jump as high as possible	Vertical / Sargent Jump Test	 <ol style="list-style-type: none"> <li>Stand side on to wall</li> <li>Reach up with hand closest to wall</li> <li>Measure point where top of fingers touch</li> <li>With chalk on fingers, jump and touch wall at highest point of jump</li> <li>Repeat 3 times</li> <li>Measure distance between standing reach and jump reach of best attempt ( in cm)</li> </ol>
				Standing Broad Jump Test	 <ol style="list-style-type: none"> <li>Stand with feet facing forward</li> <li>From standing, jump as far as you can</li> <li>Measure from start to closest landing point (usually back of heels)</li> </ol>

KG1 – Components of fitness					
	Principle	Description	Sporting Example	Fitness test	Protocol (Main Points)
6	 Speed	The ability of the body to move quickly	A 100m Sprinter finishing as fast as they can A boxer throwing punches as fast as they can	30m Sprint Test	 <ol style="list-style-type: none"> <li>1. Mark 30m with two cones</li> <li>2. Accelerate towards first cone</li> <li>3. Start timing as you pass first cone</li> <li>4. Sprint as fast as you can to second cone</li> <li>5. Stop timer as you pass second cone</li> </ol>
7	 Muscular endurance	The ability of a muscle(s) to repeatedly contract without fatigue	A rower to repeatedly row for the whole race A cyclist in Tour de France to keep pedalling for the whole race	Sit-up Test	 <ol style="list-style-type: none"> <li>1. Complete as many sit-ups or press-ups (or modified press-ups) as you can in one minute</li> </ol>
				Press-up Test	
8	 Strength	The maximum force a muscle(s) can apply against resistance	A weightlifter to lift weight over the head A rock climber to pull themselves over an overhang	Grip Strength Dynamometer Test	 <ol style="list-style-type: none"> <li>1. Use grip dynamometer</li> <li>2. Use dominant hand to squeeze as hard as possible</li> <li>3. Repeat 3 times with 1 minute rest between</li> <li>4. Record best result in KG</li> </ol>
				1 Repetition Maximum (1RM)	 <ol style="list-style-type: none"> <li>1. Select appropriate exercise for target muscle group</li> <li>2. Select a realistic, achievable weight and lift once</li> <li>3. Rest for 2-3 minutes</li> <li>4. Increase weight and lift again</li> <li>5. Continue until can no longer lift weight</li> <li>6. Record highest repetition (1RM)</li> </ol>
9	 Flexibility	The range of movement possible at a joint	A gymnast to perform splits A high jumper to bend their back when going over the bar	Sit and Reach Test	 <ol style="list-style-type: none"> <li>1. Sit on floor, placing soles of feet against sit and reach box, making sure knees are flat against the floor</li> <li>2. Gently reach forwards as far as possible</li> <li>3. Practice 3 times and then hold the fourth for at least 2s</li> <li>4. Record the distance in cm to the end of fingers</li> </ol>
10	 Cardiovascular endurance	The ability to release energy aerobically over a long period of time	A marathon runner to be able to get O <sub>2</sub> to leg muscles for whole race A long-distance swimmer to be able to get O <sub>2</sub> to arm and leg muscles for whole race	12 minute Cooper run	 <ol style="list-style-type: none"> <li>1. Mark out a running area (e.g. 25m x 25m)</li> <li>2. Run for 12 minutes</li> <li>3. Count the number of laps completed</li> <li>4. Measure the distance covered in m</li> </ol>
				Multi-Stage Fitness Test	 <ol style="list-style-type: none"> <li>1. Set out cones 20m apart</li> <li>2. Follow multi-stage fitness test recording to run 20m shuttles.</li> <li>3. Arriving at the cone before or as the recording bleeps</li> <li>4. If you fail to meet cones in time, two times in a row, stop.</li> <li>5. Record level you last successfully completed</li> </ol>

## 1.2.b. Applying the principles of training

KG1 – Principles of Training				KG2 – Optimising Training - FITT	
	Principle	Description	Example	Acronym	Description
1	 Specificity	Training must be matched to the needs of the sporting activity and individual.	Training matched to <ul style="list-style-type: none"> <li>- components of fitness most needed or</li> <li>- the muscle groups required for the activity.</li> </ul>	5  Frequency	The <b>number</b> of times training takes place.
2	 Progression	Gradually increasing the frequency, intensity or time of exercise, or changing the type of exercise, in order for the body to continue to adapt through overload.	<ul style="list-style-type: none"> <li>- Training 3 times a week rather than twice.</li> <li>- Running two miles rather than 1 in a single training run.</li> </ul>	6  Intensity	How <b>hard</b> the training is.
3	 Overload	A greater than normal stress that is applied to the body.	Working at challenging intensities e.g. challenging weights or heart rates.	7  Time	How <b>long</b> you train for.
4	 Reversibility	Any adaptation that takes place as a result of training will be lost if you stop training.	<ul style="list-style-type: none"> <li>- When sports people cannot train because of injury,</li> <li>- When people don't train regularly enough,</li> <li>- During the off season.</li> </ul>	8  Type	The <b>method</b> of training being used.

KG3 – Methods of Training			
	Method	Description	Components targeted
9	 Continuous	Working at a steady intensity within the aerobic training zone with no rest.	CV endurance and Muscular endurance
10	 Fartlek	Training that varies in intensity consisting of different length bursts of highly intense work alternating with activity of lower intensity.	CV endurance and Muscular endurance
11	 Interval	Training that incorporates periods of exercise and periods of rest.	CV endurance and muscular endurance <b>OR</b> speed and power depending on length of intervals.
12	 HIIT	High Intensity interval training involves alternating between very intense periods of work, in the anaerobic zone, and periods of active recovery, in the aerobic zone.	CV endurance and muscular endurance <b>OR</b> speed and power depending on length of intervals.
13	 Weight Training	Training that uses free weights or resistance machines.	Strength, power or muscular endurance depending on weight, reps and sets.
14	 Circuit Training	Series of exercises performed one after the other in stations, which focus on different muscle groups.	Can improve all components depending on stations.
15	 Plyometrics	Training that involves jumping, bounding, hopping exercises.	Power

## 1.2.b. Applying the principles of training

## KG4 – Components of a Warm Up

	Component	Benefit	Example
16	 Pulse raising	<ul style="list-style-type: none"> <li>- Increases HR,</li> <li>- kick starts vascular shunt mechanism therefore increasing O<sub>2</sub> to working muscles,</li> <li>- raises body temp,</li> <li>- improves blood flow by reducing viscosity of blood.</li> </ul>	Jogging
17	 Mobility	- Ligaments and tendons warmed – the increased pliability reduces risk of injury.	Shoulder circles, arm swing, lunge
18	 Stretching	<ul style="list-style-type: none"> <li>- Stretched muscles less prone to tears</li> <li>- Speed and strength of muscle contractions increased.</li> </ul>	Triceps stretch, hamstring stretch etc
19	 Dynamic movement	- Pliability of muscles and range of movement at joints is increased.	High knees, heel flicks, high skips.
20	 Skill rehearsal	- Time to 'get in the zone' and psychologically prepare.	Shooting drill, passing drill, ball handling skill

## KG5 – Components of a Cool Down

	Component	Benefit	Example
21	 Low intensity exercise	<ul style="list-style-type: none"> <li>- HR, BR and body temp drop gradually therefore...</li> <li>- Maintains circulation of blood and o<sub>2</sub> and</li> <li>- Encourages removal of lactic acid.</li> </ul>	VERY slow jogging, swimming or cycling.
22	 Stretching	<ul style="list-style-type: none"> <li>- Reduces muscle soreness,</li> <li>- Aids recovery.</li> </ul>	Similar to warm up BUT held longer.

**BACKGROUND INFORMATION**

<b>FOUNDED</b>	2003 by 6 women who rained together at Bretton Hall University, Leeds
<b>ARTISTIC DIRECTORS</b>	Jemma McDonnell & Kylie Perry
<b>AIM OF WORK</b>	Explore social issues happening in the world today, often political.
<b>STYLE</b>	They use real <b>interviews</b> from everyday people to inform their work and place real testimonies directly into their pieces, often using <b>movement</b> and visual <b>imagery</b> .
<b>QUOTES</b>	<b>'Changing the world, one encounter at a time'</b>  <b>'We are quiet rebels, amplifying the voices of everyday people. We provoke and inspire change through the theatre we create'</b>

**5 KEY INGREDIENTS**

<b>1</b>	<b>Verbatim</b>	<ul style="list-style-type: none"> <li>• Uses real people's actual words to create the script.</li> <li>• Theatre-makers collect these words in different ways, such as: One-to-one interviews, group workshops or seminars, questionnaires, asking people to complete tasks (e.g., writing a letter or leaving a voicemail)</li> </ul>
<b>2</b>	<b>Exposing the Method</b>	<ul style="list-style-type: none"> <li>• Showing the making of the play during the performance -They highlight decisions, edits, and creative choices made while creating the show.</li> <li>• This style links to Brechtian techniques: Reminding the audience they are watching a piece of theatre, encouraging them to think about real social issues, not just watch passively</li> <li>• They often "break" the smooth action on stage to make the audience think.</li> <li>• Examples of techniques they use:             <ul style="list-style-type: none"> <li>➢ Performers interrupting or disagreeing with each other</li> <li>➢ Stopping the action suddenly</li> <li>➢ Breaking the fourth wall (speaking directly to the audience)</li> <li>➢ Commenting on the scene, staging, or costume</li> <li>➢ Purposeful "non-acting"</li> <li>➢ Multi-rolling or swapping characters in front of the audience</li> </ul> </li> </ul>
<b>3</b>	<b>Character &amp; Narrative</b>	<ul style="list-style-type: none"> <li>• Sometimes both the characters and narratives that feature in their productions are real – they might be people they've met throughout the research phase, or they might be stories that they've collected.</li> <li>• However, they often need to fill in the gaps to create interesting and relevant characters that will feature in the story.</li> </ul>
<b>4</b>	<b>Movement</b>	<ul style="list-style-type: none"> <li>• Movement is used to create a non-naturalistic setting for naturalistic dialogue and verbatim.</li> <li>• They use movement as a mode of conveying parts of the story to heighten or accentuate the spoken word.</li> <li>• For example, in <i>Thirsty</i>, repetitious movement depicts the characters becoming more drunk; or in <i>Broke</i> (2014), the performers fast forward and rewind through scenes to depict the verbatim editing process.</li> </ul>
<b>5</b>	<b>Motif</b>	<ul style="list-style-type: none"> <li>• A repeating idea throughout a production. The motifs they incorporate can take the form of text or language references, physical or movement, sound or musical, or symbolic or visual recurring motifs.</li> <li>• In each production they choose a selection of motifs that suit the content and the style of the piece.</li> <li>• For example, in <i>'Broke'</i>, they incorporated several versions of motif:             <ul style="list-style-type: none"> <li>➢ Textual – found text from Roald Dahl's <i>Charlie and the Chocolate Factory</i> which depicted a fairytale take on poverty.</li> <li>➢ Visual – imagery of 'golden tickets'.</li> <li>➢ Movement – fast forwarding and rewinding through scenes.</li> <li>➢ Sound and music – childlike music created on toy xylophone and rubber piano.</li> </ul> </li> </ul>

**KEY WORDS**

<b>1</b>	<b>Umbrella Theme</b>	Used to describe the chosen topic or theme of the piece.
<b>2</b>	<b>Function</b>	Every scene serves a function. If the scene has no function – it doesn't make the cut. Everything placed on stage is there for a reason. Functions may include obvious things like 'introduce main character' or 'get that block to stage right in time for the next scene'.
<b>3</b>	<b>Frame</b>	Used to describe how all the scenes sit together. What does the material 'hang on to?' In <i>'Broke'</i> , the frame is fast forwarding and rewinding through research to find the crux of the story.
<b>4</b>	<b>Strand</b>	There are always several strands that layer together to create a complex exploration of the theme. Each performer has a different strand that relates to their individual intentions and journey throughout the piece. There can be 4 or 5 strands that all contribute to the overall theme.
<b>5</b>	<b>KEY WORKS</b>	40 Feathered Winks (2007), In a Thousand Pieces (2008), Others (2010), Thirsty (2011), On the One Hand (2013), Broke (2014), Ask Me Anything (2020)

**Knowledge Group 1 Photographic techniques**

1	<b>Leading Lines</b>	Identifiable lines within a composition that guide the viewer around the image.
2	<b>Composition</b>	The arrangement of the shapes, tones & objects in a photograph. This is key in every photograph you take.
3	<b>Bugs-eye-view</b>	An image of an object taken in a way to emphasise its size and shape. Typically taken looking in an upward direction.
4	<b>Symmetrical</b>	An image with that has identical halves or sections.
5	<b>Abstraction</b>	To photograph a part of an object or item without its usual background or surroundings to make the image seem strange or new.
7	<b>Geometric</b>	An image characterized by or decorated with regular lines and shapes.

**Knowledge Group 2 Annotation**

1	<b>Contact Sheet Analysis</b>	Brief comments on your contact sheet that help to identify the strengths and weaknesses of the photographs gathered. Make use of key words and technical vocabulary where possible.
2	<b>Reviewing images</b>	The process of evaluating and selecting images for their successes and suitability for use in Artist studies.
3	<b>Presentation of unedited images</b>	Slides that contain one or two of your most successful images with more detailed evaluation of the successes and strengths in the image. Make use of technical language and key vocabulary.

**Knowledge Group 3 Artist studies**

1	<b>Artist study</b>	A piece of work edited to match the style of a chosen artist or photographer. Made using similar photographic and editing techniques and approaches. This is done to gain skills and insights into more varied ways of working.
2	<b>Suitable imagery</b>	For your artist study you will need to select suitable imagery to work with to produce the study. This will need to be a photograph that you have taken that shows the same characteristics as the photographer you are emulating.
3	<b>Review and selection</b>	You will need to look through your contact sheets and assess the images for their suitability for the study.
4	<b>Links to Artists</b>	When creating your study it is important to create something that makes strong stylistic links to the work of the chosen photographer.

**Knowledge Group 4 – Photographers' Styles**

1	<b>Aaron Yeoman</b>	Symmetrical and abstract looking images showing sections of modern architecture. Typically black and white or reduced/selected colours displayed.
2	<b>Helder Santos</b>	Abstract images showing duplicated and flipped architectural features. Resembling a kaleidoscope in their appearance, and making the familiar seem unfamiliar.
3	<b>Wyndham Lewis</b>	Colourful abstract images depicting futuristic architectural forms combined in creative ways. Comprising of diagonal lines, layered planes and complex arrangements of geometric forms.
4	<b>Christopher Hope-Fitch</b>	Brightly coloured edited photos of 'Brutalist' architecture and architectural features.

**Key Vocabulary**

1	<b>Contact sheet</b>	A sheet containing 35 thumbnail images (small sized versions) of your photographs. Used for quick inspection and analysis of large numbers of photographs.
2	<b>Primary Photographs</b>	A photograph taken by you since the start of the project. Photos that you've taken before the start date are not valid.
3	<b>Leading Lines</b>	Lines in an image that direct the eye of the viewer through the composition to the focal point.
4	<b>Focal Point</b>	The main focus, or centre of an image. The section that the photographer wants to bring to the attention of the viewer.
5	<b>Contrast</b>	Where two visual elements have striking difference or character. For example light and dark, smooth and textured, detail and plain. Often used to create impact.
6	<b>Cropping</b>	To trim an image to a new size of shape discarding the old pieces.
7	<b>Duplicating</b>	Making a copy of a section or sections to create a repetitive pattern or mirror image.
8	<b>Flip</b>	To reverse a duplicate so that it shows an exact mirror image.
9	<b>Emulate/Emulation</b>	To match or imitate a chosen style or approach. This is done in photography to gain experience and skills with a broad range of technical methods.
10	<b>Abstract</b>	When an image no longer clearly resembles the object from which it was photographed.
11	<b>Architecture Architectural</b>	Relating to the design and construction of buildings and the build environment.
12	<b>Modern</b>	Relating to art and design, work that shows technological innovation and a departure from classical form.
13	<b>Brutalist</b>	Brutalist buildings are characterised by a blocky appearance with a rigid geometric style and poured concrete.

Nature of Allah (God)		
1	What are the Six Articles of Faith (Sunni)	Tawhid (the Oneness of God), Angels, Holy Books, Prophethood, Akhirah, Predestination
2	What are the 5 roots of Usul ad-Din (Shia)	Tawhid (the Oneness of God), Adalat (justice), prophethood, imamate, resurrection
3	What are some of the 99 names?	omnipotence, beneficence, mercy, fairness and justice, immanence, transcendence
4	Why are there 99 names?	99 shows the list is incomplete. Allah is beyond our knowledge
5	Does God control us?	God's will is supreme and our futures are predestined, but we have freewill.
6	Tawhid?	God is one and only. Islam is monotheistic.

Life after Death		
1	What is Judgement ?	The day when Allah will decide about individual deeds and on reward or punishment.
2	Who is Jibril?	Angel who dictated the Qur'an to Muhammad; on Judgement Day he will assist with the weighing of a person's deeds.
3	Who is Mika'il?	Angel who gives spiritual and material help to humans; on Judgement Day he will assist with the weighing of a person's deeds.
4	How will judgement happen?	The dead will be resurrected and God will judge them based on their good and bad deeds
5	What is Akhirah?	Life after Death: for some, this will be in Heaven, others, Hell.

*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.*

Important People		
1	Who was Adam?	One of the prophets of Allah. The father of humankind; built the Ka'aba.
2	Who was Ibrahim?	A Prophet. The father of Isaac and remembered at Id ul-Adha
3	Who was Muhammad?	Seal of the prophets. God revealed the Qur'an to him
4	Who is a Caliph?	A Sunni leader. The first Caliph was Abu Bakr
5	Who is an Imam?	A Shia leader. This first Imam was Ali
6	What are the Caliphate and Imamate?	Sunnis are led by the Caliph and Shia are led by the Imam.

Revelation		
1	What is a prophet?	A person to whom God revealed truth. They are not a god
2	What are the Hadith?	An account of Muhammad's life. Muslims read it for how to act in their own lives.
3	Which other holy books are recognised?	The Torah (Jewish), The Psalms and the Gospel (Bibles) are sources of authority in Islam. They contain partial truths.
4	What is the role of angels?	Angels communicate God's message to the prophets

Key Word	Definition
<b>Adalat/ justice</b>	Part of the nature of God in Shi'a Islam; the belief that God is fair
<b>Akhirah</b>	Belief in a new stage of life after death.
<b>Angels</b>	They are spiritual beings created from elements of light. They gave God's messages to the prophets and watch over humans.
<b>Beneficence</b>	Literally 'doing good'. One of the 99 Names of Allah and belief about his nature, the generosity that Allah shows to humans.
<b>Fairness</b>	Belief about the nature of God; refers to Allah's justice. He treats all humans equally and as they deserve.
<b>The Gospel</b>	Holy book; literally 'good news' and it is the good news about Isa (Jesus), who was a prophet of Islam.
<b>Heaven</b>	Allah's reward after death to those who have been faithful to him and who have repented of their sins.
<b>Hell</b>	It is a place of great suffering after death for those who have rejected the Qur'an's teachings and have led a wicked life.
<b>Imamate</b>	One of the Five Roots of Usul-ad-Din, 'Leadership.' Shia belief in the twelve imams who succeeded Muhammad.
<b>Jihad</b>	'To struggle'. The personal or collective struggle against evil. Jihad can be greater or lesser.
<b>Mercy</b>	Belief about the nature of God and one of Allah's 99 Names; God's willingness to forgive the sins of those who repent.
<b>Muhammad</b>	The last and greatest of the prophets. He received the Qur'an and his Sunnah and Hadiths are sources of authority
<b>Omnipotence</b>	All-powerful; belief about the nature of God and one of the 99 Names of Allah.
<b>Predestination</b>	An Article of Faith in Sunni Islam; the belief that everything that happens has been decided already by Allah.
<b>The Psalms</b>	Holy book; sacred prayers and poems written by King Dawud (David), a prophet of Allah.
<b>The Qur'an</b>	It was revealed to the Prophet Muhammad and is the final revelation of God to humankind.
<b>Resurrection</b>	An article of Faith and a Root of Usul ad-Din; belief that after death, all people will be raised from the dead to face judgement
<b>Revelation</b>	When God is revealed to humans
<b>Risalah</b>	An article of Faith and a Root of Usul ad-Din; belief in the prophets as messengers sent by God to communicate to people.
<b>Scrolls of Abraham</b>	Holy book/source of authority; individual revelations to Ibrahim that were written on parchment but have perished
<b>Shi'a and Sunni Islam</b>	Muslims who believe in the Imamate, successorship of Ali. / Muslims who believe in the successorship of Abu Bakr, Umar, Uthman and Ali.
<b>Tawhid</b>	One of the Six Articles of Faith and Five Roots of Usul ad-Din; the oneness and unity of Allah

**Equations in this topic**

1	<b>Mass, weight and gravity</b>	<p><b>Weight = mass x gravitational field</b></p> <p>Units: Weight in Newtons (N) Mass in kilograms (kg) Gravitational field in Newtons per kg (N/kg)</p>
2	<b>Work done</b>	<p><b>Work done = force x distance</b></p> <p>Units: Work done in Joules (J) Force in Newtons (N) Distance in metres (m)</p>
3	<b>Spring constant</b>	<p><b>Force = spring constant x extension</b></p> <p>Units: Force in Newtons (N) Spring constant in Newtons per metre (N/m) Extension in metres (m)</p>
4	<b>Moments (PHYSICS ONLY)</b>	<p><b>Moment = force x distance</b></p> <p>Units: Moment in Newton metres (Nm) Force in Newtons (N) Distance in metres (m)</p>
5	<b>Pressure (PHYSICS ONLY)</b>	<p><b>Pressure = force / area</b></p> <p>Units: Pressure in pascals (pa) Force in Newtons (N) Area in metres<sup>2</sup> (m<sup>2</sup>)</p>

**Resultant forces - examples**

Two forces, 3 newtons (N) and 2 N, act to the right. Calculate the resultant force.

$3\text{ N} + 2\text{ N} = 5\text{ N}$  to the right

Two forces acting in the same direction

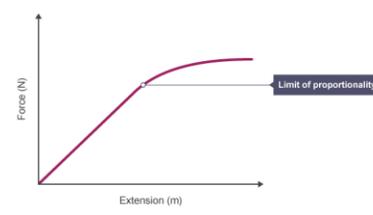
A force of 5 N acts to the right, and a force of 3 N act to the left. Calculate the resultant force.

$5\text{ N} - 3\text{ N} = 2\text{ N}$  to the right

Two forces acting in opposite directions

**Required practical – Hooke's law**

**Extension happens when an object increases in length. The extension of an elastic object, such as a spring, is described by Hooke's law:**  
**force = spring constant x extension**



**Key Vocabulary**

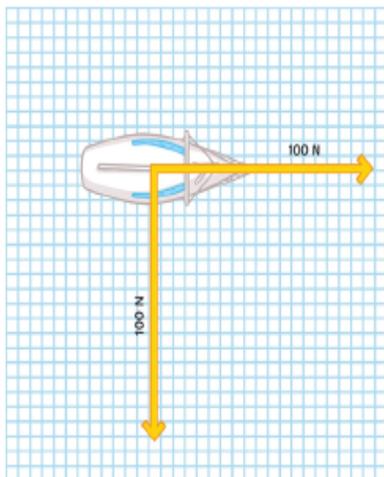
1	<b>Resultant Force</b>	The resultant force is a single force that has the same effect as two or more forces acting together
2	<b>Scalar</b>	A quantity that has magnitude only
3	<b>Vector</b>	A quantity that has both magnitude and direction
4	<b>Weight</b>	A result of mass and the gravitational field you are in
5	<b>Mass</b>	The number of particles in an object. Stays the same wherever you are in the universe
6	<b>Work done</b>	Whenever a force is used to move an object through a distance work is done on that object.
7	<b>Inelastic deformation</b>	An object will not return to its original shape and size when the force is removed.
8	<b>Elastic deformation</b>	An object will not return to its original shape and size when the force is removed.
9	<b>Spring constant</b>	Spring constant is a measure of the stiffness of a spring up to its elastic limit.

## Resultant forces – Vector diagrams

A scale vector diagram can be used to calculate resultant forces that are not acting directly opposite of one another, on a straight line.

### Worked example 1:

A boat is being pulled toward the harbour by two winch motors. Each motor is pulling with a force of 100N and they are working at right angles to one another.



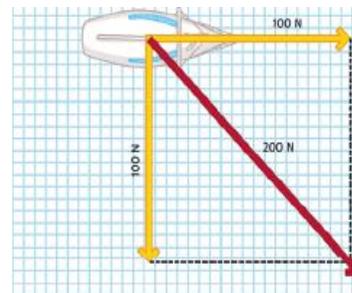
To find the resultant force, you would first draw construction lines from the end of each arrow parallel to the other force arrow.



Remember that the size of the arrow is representative of the size of the force being exerted.

Where the construction lines intercept indicates the direction of the resultant force: from the centre of mass through the intercept.

The resultant force is the sum of the forces acting so in this example, that is 200N.



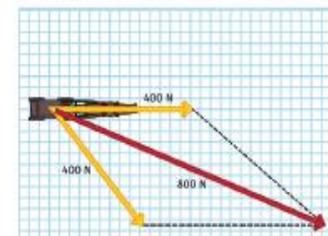
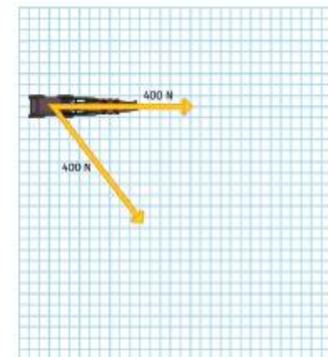
## Key Vocabulary

1	<b>Contact Forces</b>	The objects are touching e.g. friction, air resistance, tension and contact force
2	<b>Non-contact Forces</b>	The objects are not touching e.g. gravitational, electrostatic and magnetic forces

### Worked example 2:

A horse-drawn carriage is pulled by two horses at 400N each. One of the horses is pulling in a different direction to the other horse. Show the resultant force and direction of the horse-drawn carriage.

As before, you will need to draw construction lines from the end of each force arrow and parallel to the other one. The intercept represents the direction of the resultant force. The resultant force is the sum of the individual forces so in this example, it is 800N.



### Equations

1	Rate of reaction = quantity of reactant used / time taken
2	Rate of reaction = quantity of product formed / time taken

### Required Practical

From this practical you should be able to describe 2 ways in which the rate of reaction can be measured.

1. Measuring the production of gas
2. Measuring the changes in the colour

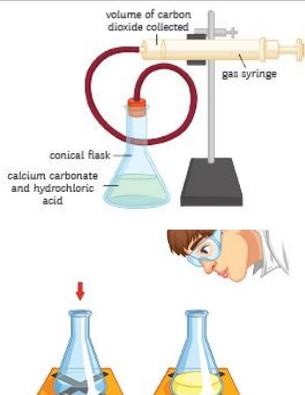
### Factors affecting the rate of reaction

The rate of chemical change will be increased if there are more frequent successful collisions between reactant particles

1	Temperature	When the temperature of the reaction mixture is increased, the reactant particles gain kinetic energy and move much more quickly. This results in more frequent successful collisions increasing the rate of reaction.
2	Concentration and pressure	If the number of reactant particles in a given space is doubled, there will be more frequent successful collisions between reactant particles, therefore increasing the rate of reaction.
3	Surface area	Only reactant particles on the surface of a solid are able to collide and react. The greater the surface area the more reactant particles are exposed, leading to more frequent collisions.
4	Catalyst	When a catalyst is used in a chemical reaction the frequency of collisions is unchanged. More particles are able to react. The particles have energy greater than that of the activation energy. Consequently there is an increase in the rate of reaction.

### Key Vocabulary

1	Reversible reaction	A reversible reaction is one in which the reactants form products. The products are then able to react together to reform the reactants. The symbol for a reversible reaction is $\rightleftharpoons$ .
2	Catalyst	A substance that speeds up a chemical reaction without getting used up. A catalyst lowers the activation energy. Biological catalysts are called enzymes.
3	Dynamic equilibrium	A point where the forward and reverse reactions are occurring at the same rate.



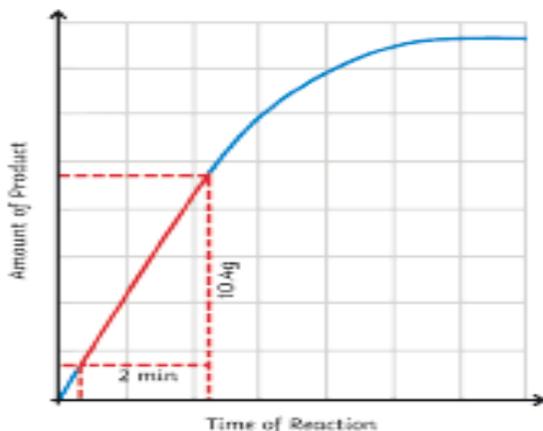
### Measuring a reaction mixture

1	Measuring the change in mass	The reaction mixture is placed on a mass balance. As the reaction proceeds and the gaseous product is given off the mass of the flask will decrease. The rate for the reaction is: $\text{Rate (g/s)} = \text{change in mass (g)} / \text{time taken (s)}$
2	Measuring the volume of gas produced	The reaction mixture is connected to a gas syringe. As the reaction proceeds the gas is collected. The rate for the reaction is: $\text{Rate (cm}^3\text{/s)} = \text{volume of gas produced (cm}^3\text{)} / \text{time taken (s)}$ .

## Calculating gradient (Higher Tier)

$$\text{Gradient} = y/x$$

On the graph, draw construction lines on the part of the graph that has straight lines. Measure the values of x and y.



Changing conditions and the effect on the position of equilibrium (Higher Tier)  
 At equilibrium the amounts of reactants and products are the same. In order to change the amount of reactants and products at equilibrium the conditions of the reaction must be changed. This is known as Le Chatelier's Principle

Change	Effect	Explanation
Decrease concentration of product	Favours the forward reaction	Opposes the change by making less reactant and more product
Increase concentration of product	Favours the reverse reaction	Opposes the change by making more reactant and less product
Decrease concentration of reactant	Favours the reverse reaction	Opposes the change by making more reactant and less product
Increase concentration of reactant	Favours the forward reaction	Opposes the change by making less reactant and more product
Increasing temperature of surroundings	Favours the endothermic reaction	Opposes the change by decreasing the temperature of the surroundings
Decreasing the temperature of surroundings	Favours the exothermic reaction	Opposes the change by increasing the surroundings
Increase the pressure	Favours the reaction that results in fewer molecules	Decreasing the number of molecules within the vessel opposes the change because it decreases the pressure
Decrease the pressure	Favours the direction that results in more molecules	Increasing the number of molecules within the vessel opposes the change because it increases the pressure

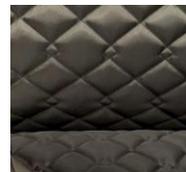
**1. Contextual Links**

1	Jose Romussi	Jose Romussi was born in 1979 in Santiago, Chile. His first approach to art was seeing his mother painting. In 2010 when he was in New York he decided that art was what he wanted to do, and then started doing some artworks involving embroidery and painting. From 2010 to 2014 he worked with different subjects such as ballerinas, portraits with embroidered flowers and skulls, and landscapes.	
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**3. Tools and Equipment**

1	Heat Gun 	A heat gun emits a stream of hot air at a high temperature. This is used in textiles to heat and melt synthetic fabrics to create interesting effects.
2	Wadding 	Wadding, also known as batting or padding, is one of the most essential parts of the quilting process. It affects the durability of the finished product and can provide the warmth, shape and structure of the finished product.
3  51	Organza 	Organza is a thin plain weave sheer fabric that is traditionally made from silk or synthetic fibres such as polyester or nylon. Typically used for evening or bridal wear. Within art textiles we use this synthetic fabric with the heat gun to create interesting textures.

**3. Key Vocabulary**

1	<b>Quilting</b> 	A quilted fabric is made up of three layers - an outer lining material holds the middle layer of cotton or polyester wadding and a base layer. Quilting is decorative and can be done in various shapes and functional providing a insulated fabric good for outdoor clothing.
2.	<b>Slashing</b> 	Slashing is a process that involves layering up fabric, stitching usually in parallel channels and then cutting through to the base layer. This can then be brushed to fray it, exposing the layers below and producing velvet like texture.
3	<b>Pin Tucks</b> 	A pintuck is a very narrow tuck made at regular intervals, mostly parallel to each other. It creates a beautiful texture on fabric and is regularly used to embellish clothes and linen.
4	<b>Pleating</b> 	Pleats are folds of fabric that can be made in different ways to add fullness. They are often used for fabric to be full in one area but fitted in another and can add shape and movement.
5	<b>Laser Cutting</b> 	Laser cutting uses a computerised machine to cut and engrave onto fabrics. With laser cutting, the laser beam melts the fabric in a controlled manner and prevents fraying. Denim fabric gets a "stonewash" effect without being treated with chemicals. The denim is bleached by the heat of the laser.

**The impact of pornography on relationships**

1	<b>What is revenge porn?</b>	This is when an explicit or sexual image or video of a person is shared without their consent. It normally takes place when there is a relationship break down and ex-partner is seeking revenge. It is a crime to carry out and carries a sentence to up to two years in prison.
2	<b>What is extreme pornography?</b>	These are types of pornography that are illegal – even for adults to have, and include acts that threaten a person's life, could result in serious injury, is degrading or violent pornography and anything that involves those under 18.
3	<b>Indecent images law</b>	Looking at indecent images of under 18s is illegal even if they look older.
4	<b>Risks associated with pornography</b>	Unrealistic attitudes about sex and consent An increase in risky sexual behaviours Casual attitudes about sex and sexual relationships Negative attitudes about roles and identities in relationships

**Managing relationships: Ending of relationships**

1	<b>Positive ways to end a relationship</b>	In person, not text. Mature discussions. On good terms.
<b>Types of relationships: Online relationships</b>		
1	<b>Issues with too much time on social media</b>	Stress, anxiety, blurred vision, moodiness, difficulty sleeping, headaches, obsessive thoughts, being over tired, addiction, neck ache,
2	<b>Strategies to manage time online</b>	Review when and how screen time is used with tools and set screen time limits Use other people's posts as inspiration rather than comparison. Prioritise healthy sleep patterns Prioritise his mental health Get regular exercise or join a club. Make an effort to spend more time with friends and family
3	<b>Pro's and cons of online friends</b>	Pros: Can help with shyness, can talk to any time from all over the world, saves time and can be easier to open up to. Cons: can be fake, not fully trusted, disappear overnight, might misunderstand what you say, can't be relied on.
4	<b>Pro's and cons of real friends</b>	Pros: consistent, add to your life, support you, inspire and motivate you, care about you, generally honest. Cons: may not be available when you need them, might argue more or limit other friendship opportunities.

**Misogyny and Misandry**

1	<b>What is sexism</b>	When a person is treated unfairly or judged based on their sex
2	<b>How to challenge sexism</b>	Be critical of the media, report it
3	<b>How to protect yourself from sexism</b>	Have high self-worth and develop this, have high expectations of yourself and others

**Family planning: Intimacy and pregnancy**

1	<b>Intimacy without sex</b>	Touching Holding hands Explore new or existing interests or hobbies together Keep talking - share thoughts, ideas, hopes etc.
2	<b>What is abstinence?</b>	When people choose not to have sex.
3	<b>What is consent?</b>	Permission for something to happen or agreement to do something.
4	<b>What is healthy communication?</b>	Taking time to listen. Respectful manners. Honesty. Not interrupting. No pressure. Putting each other at ease
5	<b>Options for an unwanted pregnancy</b>	Raise the baby Choose adoption Have an abortion







