

**Beckfoot School**

**Knowledgeable  
And Expert Learners**

**10 Year**

**Options Subjects Knowledge Organisers**

**2023/24  
Easter-May**

**enjoylearn**succeed

**Name:** .....

**Tutor group:** .....

The knowledge organisers on the following pages are for your options subjects. You should use these to complete your weekly 'Revise like a Beekfooter' activities alongside the core subject knowledge organisers in your main ILBs

## **Contents**

Business  
Computer Science  
Engineering  
Health & Social Care  
Music  
Photography  
R.E.  
Art Textiles  
Hospitality & Catering  
Graphics

## Internal (Organic Growth)

1	<b>Key idea</b>	When a business grows naturally using its own resources
2	<b>Methods</b>	New Markets-targeting a different market segment or expanding overseas New products-R&D to develop brand new products New technology e.g., using internet to expand overseas
3	<b>Key Idea</b>	To help increase market share Leads to lower costs Results in more profit
4	<b>Pros</b>	Cheaper (financed through retained profit) Less risky (No culture clash) Keep control
5	<b>Cons</b>	Pace of growth is slower Might miss out on skills and expertise of other business

## Key Vocabulary

1	<b>Organic Growth</b>	Grows naturally using its own resources
2	<b>Inorganic Growth</b>	Grows by joining another existing business
3	<b>MNC</b>	Multinational where a business with operations in more than one country

## Sources of finance (internal)

1	<b>Sale of assets</b>	Sell assets that it no longer needs e.g. machinery or excess stock. It is a quick way of raising capital but will lose the benefit of owning the asset it sells.
2	<b>Retained Profit</b>	Safest form of finance because there is no risk or debt. However, profit isn't guaranteed and may require an investment than it can make as profit.

## External (Inorganic Growth)

1	<b>Key Idea</b>	When a business grows by joining with or acquiring another existing business
2	<b>Two ways for external growth</b>	Merger- where businesses agree to join and work as one business Takeover-where one business buys another. To takeover a company you have to gain control by buying enough shares
3	<b>Methods</b>	Backward vertical is when a business joins with one at a previous stage Conglomerate-no common business interest join Horizontal-businesses at the same stage join Forward vertical- joins with one at a later stage
4	<b>Pros</b>	Allows businesses to grow quickly Share the skills and knowledge Leads to the business having more power in the market
5	<b>Cons</b>	Can lead to clash of culture Risky-faster growth can lead to more problems require more money than organic growth

## Public Limited Companies (PLCs)

1	<b>Key Idea</b>	Can raise capital through selling shares on a stock exchange. Easier to raise money for growth
2	<b>Pros</b>	-Raise finance through share capital -Limited liability -Considered more reliable greater public awareness of business
3	<b>Cons</b>	-Risk of potential takeovers -increased public and media attention -Less privacy around financial performance -Greater influence on decision making by external shareholders

## Sources of finance (External)

1	<b>Loan Capital</b>	Can be secured against the businesses assets but interest will be charged and the businesses will have to make fixed repayments for the debt.
2	<b>Share Capital</b>	A PLC can raise capital by selling shares. By doing this it is at risk of being taken over and shareholders are entitled to a share of the profit through dividends.

**Internal (Organic Growth)**

1	Key idea	
2	Methods	
3	Key Idea	
4	Pros	
5	Cons	

**Key Vocabulary**

1	Organic Growth	
2	Inorganic Growth	
3	MNC	

**Sources of finance (internal)**

1	Sale of assets	
2	Retained Profit	

**External (Inorganic Growth)**

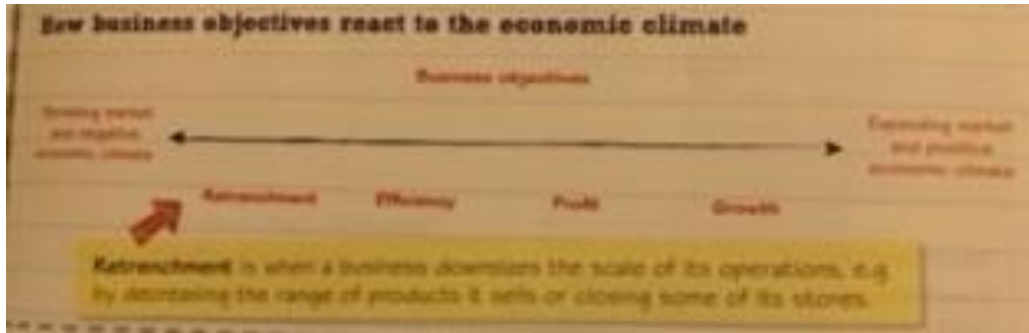
1	Key Idea	
2	Two ways for external growth	
3	Methods	
4	Pros	
5	Cons	

**Public Limited Companies (PLCs)**

1	Key Idea	
2	Pros	
3	Cons	

**Sources of finance (External)**

1	Loan Capital	
2	Share Capital	



## Internal Reasons

1	<b>Key idea</b>	Performance e.g. if it has done well may decide to expand or take on more staff and vice versa Change in leadership
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## External Reasons

1	<b>Key Idea</b>	Market conditions (changes in size of market, competitors, changes in income even changes in interest and tax)
2	<b>Key Idea</b>	Technology (minimize costs using tech or expand into new markets) Legislation e.g. minimum wage law

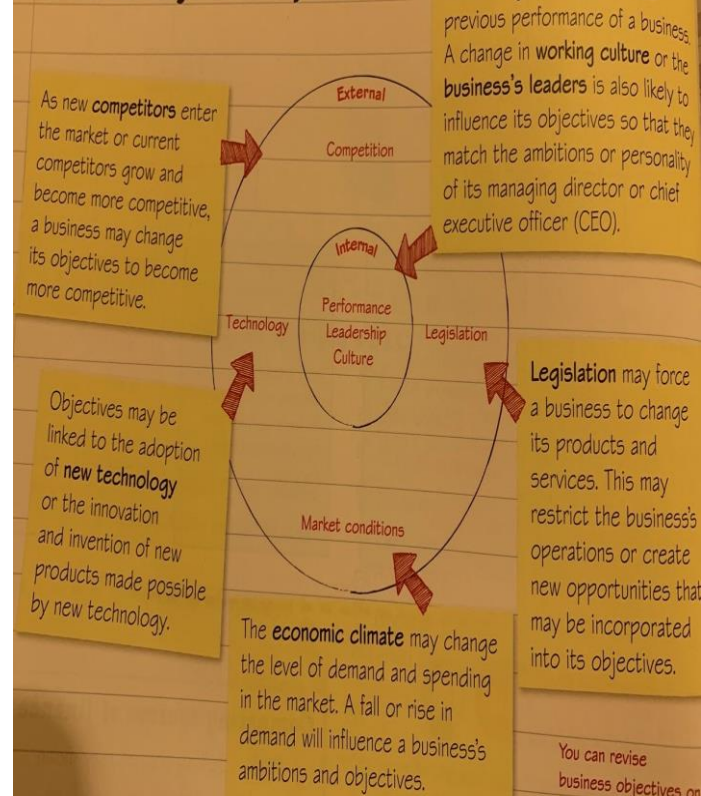
## How businesses aims and objectives change

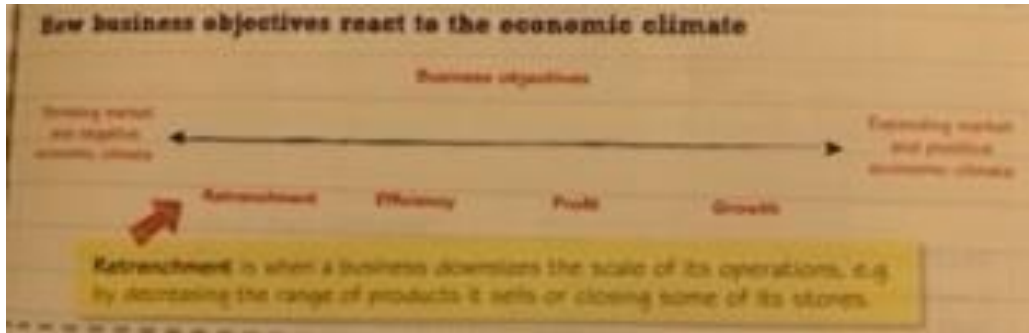
1	<b>Focus on survival or growth</b>	Focus on survival in the first year and then may wish to grow or expand
2	<b>Entering or exiting markets</b>	E.g. Nokia re-entering the mobile market
3	<b>Growing or reducing the workforce</b>	e.g. strawberry farm wants to grow and expand they may take on more pickers
4	<b>Increasing product range</b>	This allows more choice for customers which will make more sales and revenue will increase and so will profit
	<b>Decreasing the product range</b>	May decide to go back to core business to get rid of old products which are out of date, or not selling

## Key Vocabulary

1	<b>External sources of finance</b>	Finance provided by people or institutions outside the business, creates a debt that will require payment
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## Factors affecting business objectives





## Internal Reasons

1	Key idea	
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## External Reasons

1	Key Idea	
2	Key Idea	

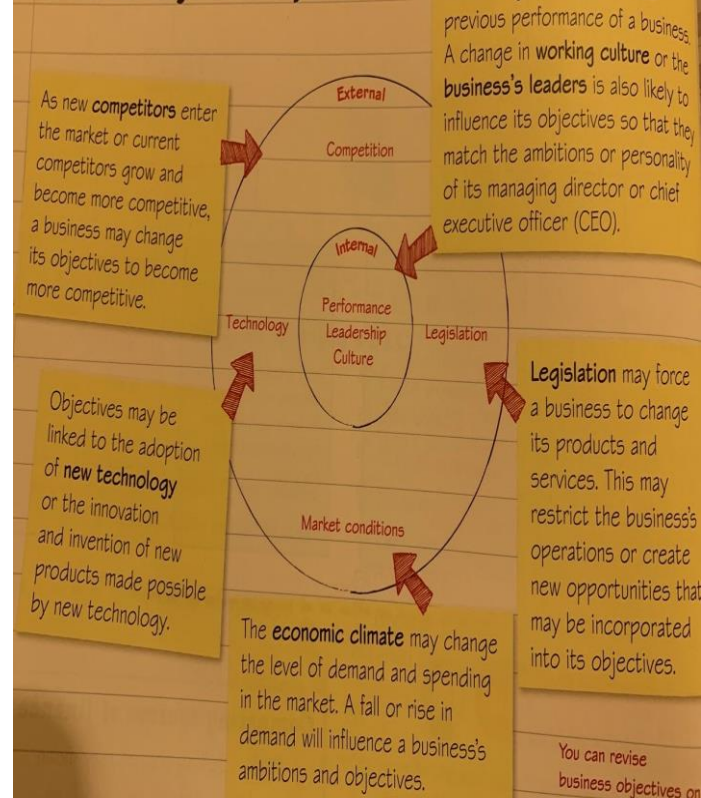
## Key Vocabulary

1	External sources of finance	
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## How businesses aims and objectives change

1	Focus on survival or growth	
2	Entering or exiting markets	
3	Growing or reducing the workforce	
4	Increasing product range  Decreasing the product range	

## Factors affecting business objectives

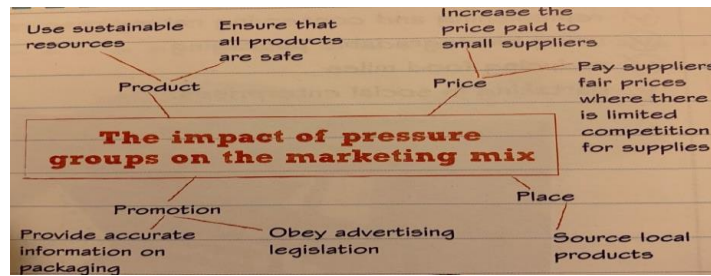


## Globalisation

1	<b>Benefits</b>	Higher number of customers to sell to in new markets Lower costs of production in developing countries (wages lower)
2	<b>Drawbacks</b>	Threat from foreign businesses Challenges of adapting products to meet foreign customer needs
3	<b>Business locations</b>	Offshoring is when the business may decide to move the whole business overseas
4	<b>Multinationals</b>	<b>Advantages</b> -wider target market, can take advantage of cheap labour and utilities abroad, spread risk between operations in different countries and reputation as a market leader <b>Disadvantages</b> - loss of focus on key markets, cultural and language differences between countries, uncertainty regarding profits based on exchange rates and change on a regular basis and damage to the reputation if found operating unethically.

## Key Vocabulary

1	<b>International Trade</b>	Flow of goods and services between countries e.g. Imports and exports
2	<b>Imports</b>	A good brought into the country (Money leaving UK)
3	<b>Exports</b>	A good sold to another country (money coming into the UK)



## Competing internationally

1	<b>Key idea</b>	Use of internet and E-commerce e.g selling online to an international market
2	<b>Key idea</b>	4Ps; Product Price Place Promotion

## Protectionism

1	<b>Tariffs</b>	A tax that raises the price on imported products and decreased its demand. It helps persuade consumers to switch to UK made goods. <b>Advantages</b> ; UK goods will be cheaper, can sell more, protect new businesses from being swamped by competition and raise important tax revenue <b>Disadvantages</b> -wont put many customers off, may just increase prices for consumers and other countries may impose tariffs in response to this
2	<b>Trade Blocs</b>	Group of countries who make a trade agreement to not place tariffs on imports
3	<b>Quotas</b>	A physical limit on imports e.g. last bottle of milk in the shop
4	<b>Export subsidy</b>	When the government or EU give businesses money to cover some of their costs so they will produce more and lower their price

### Imports

Globalisation allows businesses to import products and raw materials at lower prices than they would be able to produce them for in the UK, either for resale or to produce their own goods. However, importing increases competition from foreign businesses that are able to sell directly to UK customers.

### Exports

Exporting opens up new international markets for businesses and gives them the potential to grow. However, operating in international markets can be very different to operating in the UK and businesses may face problems if they lack the necessary expertise or knowledge.

### Location

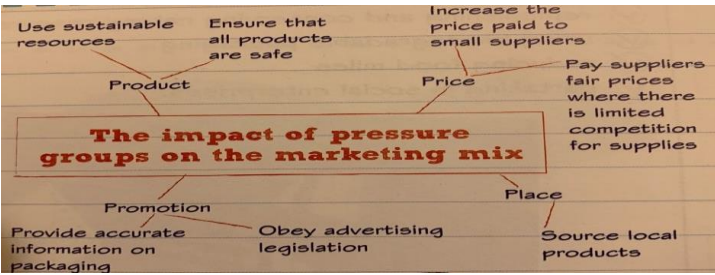
Globalisation brings with it the opportunity for businesses to relocate operations to other countries. This may be to benefit from lower labour costs, to be closer to raw materials or to be closer to the markets to which they sell their products.

Globalisation

1	Benefits	
2	Drawbacks	
3	Business locations	
4	Multinationals	

Key Vocabulary

1	International Trade	
2	Imports	
3	Exports	



Competing internationally

1	Key idea	
2	Key idea	

Protectionism

1	Tariffs	
2	Trade Blocs	
3	Quotas	
4	Export subsidy	

**Imports**

Globalisation allows businesses to import products and raw materials at lower prices than they would be able to produce them for in the UK, either for resale or to produce their own goods. However, importing increases competition from foreign businesses that are able to sell directly to UK customers.

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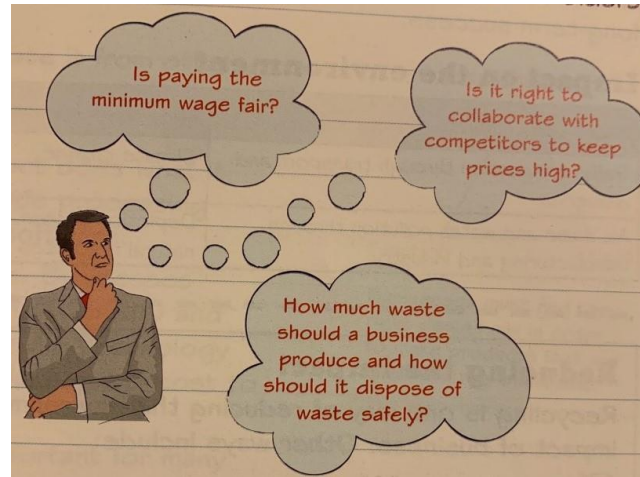
Globalisation brings with it the opportunity for businesses to relocate operations to other countries. This may be to benefit from lower labour costs, to be closer to raw materials or to be closer to the markets to which they sell their products.

## Examples of ethical behavior

1	<b>Key idea</b>	Treating workers and suppliers fairly Ethical sourcing of materials
2	<b>Key Idea</b>	Being honest with customers Meeting government requirements and legislation
3	<b>Key idea</b>	Investing in the community Caring for the environment and operating sustainably

## Pressure groups

1	<b>Key Idea</b>	Organised group that seek to influence business behavior which can show businesses in a negative light by doing protests, boycotts and petitions.
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## Impact of pressure groups on the marketing mix

1	<b>Product</b>	Use sustainable resources and ensure products are safe
2	<b>Price</b>	Increase the price paid to small suppliers
3	<b>Place</b>	Source local products
4	<b>Promotion</b>	Obey advertising legislation and provide accurate information on packaging

## Impact on the environment

Short-term impacts	Long-term impacts
Traffic congestion through transport and deliveries	Climate change
Air, noise and water pollution through manufacturing and industry	Depletion of land, food and natural resources

## Key Vocabulary

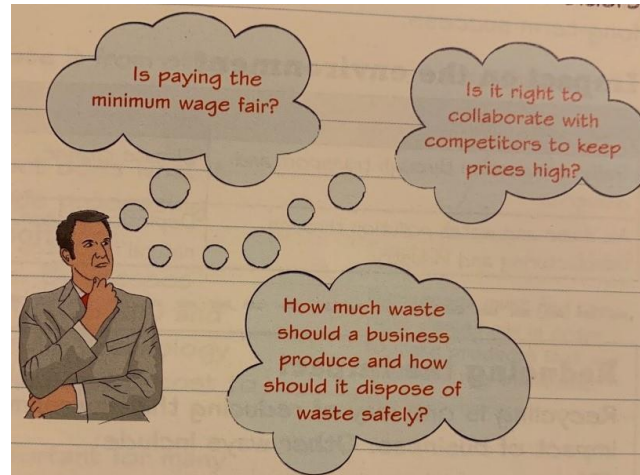
1	<b>Trade off</b>	Finding a balance between achieving two objectives like profit and ethics
2	<b>Ethics</b>	Are moral principles that guide the way a business behaves

## Examples of ethical behavior

1	Key idea	
2	Key Idea	
3	Key idea	

## Pressure groups

1	Key Idea	
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## Impact of pressure groups on the marketing mix

1	Product	
2	Price	
3	Place	
4	Promotion	

## Impact on the environment

Short-term impacts	Long-term impacts
Traffic congestion through transport and deliveries	Climate change
Air, noise and water pollution through manufacturing and industry	Depletion of land, food and natural resources


## Key Vocabulary

1	Trade off	
2	Ethics	

Number Bases and Binary addition	
<ol style="list-style-type: none"> <li>Decimal - Base 10</li> <li>Binary - Base 2</li> <li>Hexadecimal - Base 16</li> </ol> <ul style="list-style-type: none"> <li>Converting from binary to denary.</li> <li>Converting from denary to binary.</li> <li>Converting between hex and denary.</li> <li>Converting between hex and binary.</li> <li>Adding binary numbers.</li> <li>Overflow.</li> </ul>	
<b>Binary Addition</b> <ul style="list-style-type: none"> <li>0 + 0 = 0</li> <li>1 + 0 = 1</li> <li>0 + 1 = 1</li> <li>1 + 1 = 10</li> <li>1 + 1 + 1 = 11</li> </ul>	
Units of Information	
(1000) <ul style="list-style-type: none"> <li>Bit</li> <li>Nibble</li> <li>Byte</li> <li>Kilobyte</li> <li>Megabyte</li> <li>Gigabyte</li> <li>Terabyte</li> </ul>	(1024) <ul style="list-style-type: none"> <li>Bit</li> <li>Nibble</li> <li>Byte</li> <li>Kibibyte</li> <li>Mebibyte</li> <li>Gibibyte</li> <li>Tebibyte</li> </ul>

Data Compression
<ul style="list-style-type: none"> <li>What is data compression?</li> <li>Need for compression</li> <li>Types of compression               <ul style="list-style-type: none"> <li>Lossy (example: image file)</li> <li>Lossless (example: text file)</li> </ul> </li> <li>Huffman Tree Coding</li> <li>Run Length Encoding (RLE)</li> </ul>
Images and Sound
<b>Image:</b> Image files are stored in binary on a computer. <ul style="list-style-type: none"> <li>Metadata</li> <li>Pixel</li> <li>Colour depth</li> <li>Resolution</li> <li>Bitmap images</li> <li>Vector images</li> </ul>
<b>Sound</b> <ul style="list-style-type: none"> <li>Sample rate               <ul style="list-style-type: none"> <li>Quality of sound</li> <li>File size</li> </ul> </li> <li>Sample resolution: is the number of bits per sample</li> <li>Calculate file sizes:               <ul style="list-style-type: none"> <li>File size (bits) = rate x res x secs</li> </ul> </li> </ul>

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														
<table><tr><th>Hex</th><th>Decimal</th></tr><tr><td>A</td><td>10</td></tr><tr><td>B</td><td>11</td></tr><tr><td>C</td><td>12</td></tr><tr><td>D</td><td>13</td></tr><tr><td>E</td><td>14</td></tr><tr><td>F</td><td>15</td></tr></table>			Hex	Decimal	A	10	B	11	C	12	D	13	E	14	F	15
Hex	Decimal															
A	10															
B	11															
C	12															
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E	14															
F	15															





Subject: Computer Science	Topic: Data Representation	Year Group: 10
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### Number Bases and Binary addition

### Units of Information

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### Data Compression

### Images and Sound

### Key Vocabulary

1		
2		
3		
4		




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



## Hardware, Operating Systems and Memory

1.	<p>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

<ul style="list-style-type: none"> <li>Logic Gates</li> </ul>	   <p>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>	

## Secondary Storage and Memory

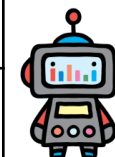
<ul style="list-style-type: none"> <li>Common types of storage <ul style="list-style-type: none"> <li>Optical Media</li> <li>Magnetic Hard Drive</li> <li>Solid State Drives</li> </ul> </li> <li>Suitable storage devices / media for a given application <ul style="list-style-type: none"> <li>Advantages / 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>
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### System Architecture

- The purpose of the CPU
- Von Neumann architecture
- Common CPU components and their functions
- Function of the CPU as fetch decode and execute
- How common characteristics of CPUs affect their performance:
- Embedded systems:

## Key Vocabulary

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



## Hardware, Operating Systems and Memory

1.	What is hardware?
	Operating system functions

## Boolean Logic

	<ul style="list-style-type: none"> <li>Logic Gates</li> <li>Truth tables</li> </ul>
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AND



OR



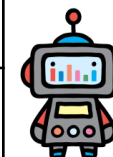
NOT

## Secondary Storage and Memory

	<ul style="list-style-type: none"> <li>Common types of storage</li> <li>Suitable storage devices / media for a given application <ul style="list-style-type: none"> <li>Advantages / Disadvantages using the following characteristics:</li> </ul> </li> <li>Cloud storage</li> </ul>
	<b>Systems Architecture</b> <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>

## Key Vocabulary

1	Bus	
2	Embedded Systems	
3	Hardware	
4	Software	



Scales Of Manufacture		
One-Off	Birthday Cake, F1 Car, Specialist Jewellery, Large Buildings / Towers, Wedding Dress, Prosthetics For Limbs.	Involves producing <b>custom work</b> , such as A one-off product for A <b>specific customer</b> or A small batch of work in quantities usually less than those of mass-market products
Batch	Flat Packed Furniture, Special Edition Cars, Baked Goods, Clothing, Computer Chips, Computer Software, Electrical Goods, Newspapers/Magazines	A method of manufacturing where the products are <b>made to specified amounts</b> , within a time frame.
Mass	Recycling Centers, Paper Production, Canned Goods, Over-the-counter Drugs, Some Household Appliances. The emphasis in mass production is on keeping manufacturing costs low by producing uniform products using repetitive and standardised processes.	Also known as <b>flow production</b> or <b>continuous production</b> , is the production of large amounts of standardized products on assembly lines.

Advantages And Limitations Of Using CAM Machines To Manufacture Parts		
Advantages		Limitations
Enables very high accuracy levels in large-scale production		The software itself is expensive so initial costs are high
Creates products that are identical to each other		Influence On Employment Opportunities
Reduction In Defects		Machinery can be expensive and time consuming to repair
Usually speeds up production of low-volume products		Users need to be trained how to use the software and machinery, which adds to costs
Ability Of Automated Systems To Work In Environments That Would Be Hazardous To Operators		

Level of automation		
Manual Control	<p>A human body (the operator) is physically involved in controlling the process.</p> <p>Manual control system is a <b>open loop</b> control system.</p>	<ul style="list-style-type: none"> <li>❑ Disadvantages e.g. The accuracy and the continuous involvement of operators.</li> <li>❑ Manual control system is less reliable.</li> <li>❑ This type of system is less efficient.</li> <li>❑ Manual control system is less accurate compared to automatic.</li> <li>❑ Skilled members are required to operate the manual type of system.</li> </ul>
CAM Processes	Computer aided manufacturing (CAM) is <b>the use of software and computer-controlled machinery to automate a manufacturing process.</b>	<ul style="list-style-type: none"> <li>❑ Computer numerical controlled (CNC) miller</li> <li>❑ CNC lathe</li> <li>❑ Laser-cutter</li> <li>❑ Vinyl Cutter</li> </ul>
Fully Automated Robotic Control	<p>This type of system is a <b>self-operating</b> system.</p> <p>Automated control system is a type of <b>closed loop</b> control system.</p> <p>This type of system used to adjust and correct the errors without external effort.</p>	<ul style="list-style-type: none"> <li>❑ Automatic control system is more reliable.</li> <li>❑ This type of system is more efficient.</li> <li>❑ Automatic control system is more accurate than manual type system</li> </ul>

Advantages and limitations of jigs, fixtures, templates and moulds
<p>The benefits of jigs and fixtures include:</p> <ul style="list-style-type: none"> <li>❑ Increase in production</li> <li>❑ The consistent quality of manufactured products</li> <li>❑ Cost reduction</li> <li>❑ Inter-changeability and high accuracy of parts</li> <li>❑ The decrease in an accident with improved safety standards</li> <li>❑ Semi-skilled workers can operate these tools, reducing the workforce's cost.</li> <li>❑ Complex, rigid and heavy components can be easily machined</li> </ul>

Scales Of Manufacture		
One-Off		
Batch		
Mass		

Advantages And Limitations Of Using CAM Machines To Manufacture Parts		
Advantages		Limitations

Level of automation		
Manual Control		
CAM Processes		
Fully Automated Robotic Control		

Advantages and limitations of jigs, fixtures, templates and moulds

### Reasons for implementing a quality system in engineering

Early intercept of problems in production	Catching problems early gives you the time to study the problems, tell the factory / manufacturer what is not acceptable (tolerance), look for countermeasures and re-test them avoiding unnecessary additional costs.
Reducing waste and associated costs	Causes of waste in manufacture include time, materials, resources, processes, supply, and space. Waste reduction is often achieved through Design for Manufacturing Assembly (DFMA) ie use of common fixing strategy, standardised components, complexity reduction, make versus buy, handling and processing.
Consistency of finished products	Consistency is important to the overall success of every business. Providing consistent, high quality products allows your customers to know exactly what to expect every time they purchase your products. This increases trust in your brand and can have a significant impact on the number of products you sell.
Conformity to industry standards and regulations	A Standard refers to the specification of making a product, managing a process, delivering a service or supplying materials Conformity should be conducted to recognised standards, preferably International, European or National benchmarks to ensure the products you are making and selling meet any (and all) standards set out by governments.
Reduce issues at customer and returns	23% of returns happen because companies shipped an incorrect item. This is a quality control issue on the part of the warehouse and shipping team. For manufacturers and distributors, returns have often been seen as a nuisance, a cost and an area of potential customer dissatisfaction. As long as products are being sold, there will always be some returns. Product returns can be categorized into two groups: <input type="checkbox"/> <i>Controllable returns</i> , which can be avoided or eliminated by actions taken by the company – high levels of precision and repetition, quality materials making products with durability. <input type="checkbox"/> <i>Uncontrollable returns</i> , which companies can do little or nothing about in the short term.

### Quality Assurance V Quality Control

Quality control (QC) and **quality assurance** (QA) are two terms that are often confused with one another. This is mainly because both of them are inter-related. That being said, there are a number of distinctive differences between the two;  
The product will be “**fit for purpose**” and made “**right the first time**”.

Main objective of quality assurance is to <b>prevent defects and mistakes</b>		Main goal of quality control is to <b>fix defects</b> after first identifying them
Preventive technique and <b>pro-active</b> measure		Corrective technique and <b>reactive</b> measure
<b>Process</b> oriented		<b>Product</b> oriented
Involves managing quality by defining the processes, strategies, and policies, developing checklists, and establishing standards that need to be followed throughout the course of the project		Involves following the set guidelines as the project progresses and <b>products are being made to verify quality</b> , discover defects and correct them
Responsibility of all the individuals involved in developing the product or service		Responsibility of a particular team that tests the product or service to check for bugs and fixes them

## Reasons for implementing a quality system in engineering

Early intercept of problems in production	
Reducing waste and associated costs	
Consistency of finished products	
Conformity to industry standards and regulations	
Reduce issues at customer and returns	

## Quality Assurance V Quality Control

Quality control (QC) and **quality assurance** (QA) are two terms that are often confused with one another. This is mainly because both of them are inter-related. That being said, there are a number of distinctive differences between the two; The product will be "**fit for purpose**" and made "**right the first time**".


## Quality Control As A Reactive Approach; Measuring Parts

**Quality control** is an important issue in manufacturing, and using expert tools and techniques for measuring quality can ensure a product is well-received by customers and passes any necessary government standards

### Inspection

Inspection is a critical part of measuring quality, and for small operations, **random product testing** can be an effective technique.

### Testing

One type of product testing is **failure** testing where the product is tested to its limits and beyond to evaluate where it will stop functioning as intended. These usually include stressing the mechanical properties of the product such as material strength, elasticity and impact resistance. Tests for vibration and temperature might also be conducted.

Destructive Testing	<b>Tensile Testing</b>	Controlled tension(pulling force) is applied to a sample material either as a load for proof testing (make sure it is strong enough)or until it fully fails.
	<b>Hardness Testing</b>	This involves applying a constant load via a rounded or pointed object, under controlled conditions, to create an indentation in a metal surface. The width of the indentation is then measured to determine the hardness of the material
	<b>Compression Testing</b>	Used to establish the compressive force or crush resistance of a material and the ability of the material to recover after a specified compressive force is applied.
	<b>Impact Testing</b>	Performed to determine the impact resistance or toughness of materials by calculating the amount of energy absorbed during fracture when a free falling weight is dropped into the sample material.

## Quality Control As A Reactive Approach; Measuring Parts

Non-Destructive Testing	A testing technique used by engineers to evaluate the properties of a material or product without causing damage to the original product.	
	<b>Conductivity Testing</b>	The measurement of a materials ability to conduct an electric current. When carried out over a weld or a joint it will inform you as to the quality of the weld / joint. Good conductivity indicates a good joint, poor conductivity / high resistivity could be caused by gaps or cracks within the joint or damage to the material by heat.
	<b>X-ray Crack Testing</b>	The tyre industry use x-rays to show up air bubbles between rubber layers.
	<b>Visual Inspection</b>	One NDT method used extensively to evaluate the condition or the quality of a weld or component. It is easily carried out, inexpensive and usually doesn't require special equipment. Visual testing is the primary NDT method of many quality control programmes.
	<b>Ultrasonic Testing</b>	Used on sheet material to precisely locate faults. Aircraft industry employ this method.
	<b>Dye Penetrant</b>	Sprayed onto a surface, and the dye/penetrant will settle in any cracks to highlight them.

### Examination Clarification;

A range of question types will be used in the exam;

3.1	Students may be expected to <b>identify</b> each of the <b>conventions or representations</b> stated
	Students may also be expected to <b>add dimensions</b> using the conventions to provided drawings.
3.2	Students should <b>know</b> at least one example of a product produced at each scale of manufacture and at least <b>one</b> example of a product produced using each different level of automation.

### Quality Control As A Reactive Approach; Measuring Parts

Quality control

Inspection

Testing

Destructive Testing	Tensile Testing	
	Hardness Testing	
	Compression Testing	
	Impact Testing	

### Quality Control As A Reactive Approach; Measuring Parts

A testing technique used by engineers to evaluate the properties of a material or product without causing damage to the original product.

Non-Destructive Testing	Conductivity Testing	
	X-ray Crack Testing	
	Visual Inspection	
	Ultrasonic Testing	
	Dye Penetrant	

**Examination Clarification;**  
A range of question types will be used in the exam;

3.1	Students may be expected to <b>identify</b> each of the <b>conventions or representations</b> stated
	Students may also be expected to <b>add dimensions</b> using the conventions to provided drawings.
3.2	Students should <b>know</b> at least one example of a product produced at each scale of <b>manufacture</b> and at least one example of a product produced using each different level of <b>automation</b> .

### 2.3 Effects on service users' health and wellbeing if person-centred values are not applied

1	What are the physical effects if person-centred values are not applied?	<ul style="list-style-type: none"> <li>• Pain if medication or treatment is not given</li> <li>• Illness may get worse</li> <li>• Malnutrition/illness due to lack of food for special dietary needs</li> <li>• Dehydration due to lack of regular fluids</li> <li>• Injury</li> </ul>
2	What are the intellectual effects if person-centred values are not applied?	<ul style="list-style-type: none"> <li>• Lack of progress or skills development</li> <li>• Failure to achieve potential</li> <li>• Loss of concentration</li> <li>• Lack of mental stimulation</li> </ul>
3	What are the emotional effects if person-centred values are not applied?	<ul style="list-style-type: none"> <li>• Depression</li> <li>• Feeling upset</li> <li>• Low self-esteem/feeling inadequate</li> <li>• Anger/frustration</li> <li>• Stress</li> </ul>
4	What are the social effects if person-centred values are not applied?	<ul style="list-style-type: none"> <li>• Feeling excluded</li> <li>• Feeling lonely</li> <li>• Lack of social interaction/poor social skills</li> <li>• Become withdrawn</li> </ul>



### Give examples of effects when the person centred values are not applied, linking them to a health and social care setting:

If a service user in a nursing home is not given a choice of food to suit their dietary needs, they could become malnourished.

A service user in a residential care home has individual needs which may require specific activities to keep their mind active. If these needs are not met, this could lead to a lack of mental stimulation.

If a service user in a hospital feels that their privacy has not been maintained, they could feel upset, angry and embarrassed.

If a service user's independence is not encouraged in a day care setting, they may become withdrawn or feel excluded.

### Key words:

Obesity	Describes a person who's very overweight, with a lot of body fat.
Coeliac disease	A condition where your immune system attacks your own tissues when you eat gluten. This damages your gut (small intestine) so you are unable to take in nutrients.
Halal	Halal refers to foods or non-food items such as cosmetics or pharmaceuticals permitted by and prepared according to Islamic law.
Kosher	Kosher is a term to describe any food that complies with a strict set of dietary rules in Judaism
Malnutrition	A condition that results from lack of sufficient nutrients in the body. This causes fatigue, dizziness and growth related problems.
Bipolar disorder	A serious mental illness characterised by extreme mood swings. They can include extreme excitement episodes or extreme depressive feelings.

**2.3 Effects on service users' health and wellbeing if person-centred values are not applied**


1 What are the physical effects if person-centred values are not applied?

2 What are the intellectual effects if person-centred values are not applied?

3 What are the emotional effects if person-centred values are not applied?

4 What are the social effects if person-centred values are not applied?

**Give examples of effects when the person centred values are not applied, linking them to a health and social care setting:**

**Key words:**

Obesity

Coeliac disease

Halal

Kosher

Malnutrition

Bipolar disorder

1. Baroque era			2. Classical era			3. Key vocabulary		
1	<b>Baroque period</b>	Era in Western music between 1600 and 1750. Composers included Bach, Vivaldi and Handel.	1	<b>Classical period</b>	Era in Western music between 1750 and 1810. Composers included Haydn, Mozart and Beethoven.	1	Repetition	A musical idea is repeated exactly.
2	<b>Harpsichord</b>	Baroque keyboard instrument, used to play the ground bass, chords and melody.	2	<b>Forte piano</b>	The first piano, was able to play dynamics.	2	Imitation	An idea is copied in another part
3	<b>Terraced dynamics</b>	Dynamics that are loud or quiet, nothing in between	3	<b>String quartet</b>	Small ensemble of two violins, viola and Cello.	3	Sequence	Repetition of an idea in the same part at a higher/lower pitch.
4	<b>Basso continuo</b>	A type of instrumental accompaniment, common in Baroque music, played by organ, harpsichord or cello. Keyboard players often added chordal harmonies.	4	<b>Symphony</b>	A work for Orchestra, normally in four movements.	4	Ostinato	A short, repeated pattern or phrase.
5	<b>Small Orchestra</b>	Ensemble used in the Baroque period of strings and some wind	3	<b>Solo sonata</b>	A work for soloist, often with piano accompaniment.	5	Drone	A long held or constantly repeated note(s).
4	<b>Suite</b>	A group of works for instruments, often dances.	4	<b>Solo concerto</b>	A work for soloist, accompanied by an Orchestra	6	Arpeggio/ broken chord	The notes of a chord played individually
5	<b>Sonata</b>	Work for solo instrument with continuo	5	<b>Balanced, regular phrases</b>	Balanced parts of a melody (like the phrases in a sentence) e.g. four bar phrases.	7	Alberti bass	A broken chord accompaniment (I,V,iii,V) common in the Classical era.
6	<b>Oratorio</b>	Work for instruments and voices based on the bible.				8	Anacrusis	An 'up-beat' or pick-up before the first strong beat
7	<b>Chorales</b>	A hymn for four part voices				9	Dotted rhythms	A rhythm using dotted notes (gives a 'jagged' or 'bouncy' type of effect).
8	<b>Trio sonata</b>	A piece for two soloists and continuo				10	Syncopation	Off beat accents
						11	Conjunct	Notes that move in steps.
						12	Disjunct	Notes that move in leaps/ intervals.

1. Baroque era			2. Classical era			3. Key vocabulary		
1	Baroque period		1	Classical period		1	Repetition	
2	Harpsichord		2	Forte piano		2	Imitation	
3	Terraced dynamics		3	String quartet		3	Sequence	
4	Basso continuo		4	Symphony		4	Ostinato	
5	Small Orchestra		3	Solo sonata		5	Drone	
4	Suite		4	Solo concerto		6	Arpeggio / broken chord	
5	Sonata		5	Balanced, regular phrases		7	Alberti bass	
6	Oratorio					8	Anacrusis	
7	Chorales					9	Dotted rhythms	
8	Trio sonata					10	Syncopation	
						11	Conjunct	
						12	Disjunct	

4. Romantic era			7 Form and Structure			8. Key vocabulary		
1	<b>Romantic era</b>	Era in Western music between 1810 and 1910. Composers included Tchaikovsky, Grieg, Schumann, Dvorak, Brahms, Verdi and Wagner.	1	<b>Binary (AB)</b>	Two sections: A usually ends in a related key (e.g. dominant or relative minor), but B returns to the tonic. B will contain with some change/contrast.	1	<b>Chord</b>	Two or more notes played together.
2	<b>Lyrical, expressive melodies</b>	Instrumental melodies that sound like someone singing, often with large leaps.	2	<b>Ternary (ABA)</b>	Three sections: section B provides a contrast (e.g. new tune key change). A may return exactly or with some slight changes	2	<b>Triad</b>	Three notes played together.
3	<b>Large orchestra</b>	An orchestra with all of the instrumental families, often 80 or more players.	3	<b>Rondo (ABACA)</b>	Keys that share similar sharps and flats. These were common keys to modulate to in the Baroque period. E minor (dominant – bar 14) G major (relative major of E minor b.16) C major (sub dominant of G in b.21) A major (tonic major in b.23) and E minor in bar 27.	3	<b>Chord Sequence</b>	A series of chords.
4	<b>Wide range of dynamics</b>	Dynamics that go below quiet and above loud, large crescendo and diminuendo and sudden changes.	4	<b>Minuet and trio (II: AB: II II:CD :II AB)</b>	The minuet was a type of graceful dance from the 17-18th century, and was often used as the 3rd movement in symphonies in the Classical era. The minuet had two repeated sections, the trio had two new repeated sections, with a return to the minuet at the end (no repeat).	4	<b>Diatonic Harmony</b>	The chords all belong to the key.
5	<b>Chromatic chords</b>	Chords with notes outside the normal key e.g. Neapolitan sixth.	5	<b>Variations</b>	The main theme (tune) is repeated and developed a number of times in a variety of different ways.	5	<b>C Major</b>	Happy sounding key – no sharps or flats.
6	<b>Program me music</b>	Music written to tell a story, often based on other art forms such as poetry or art.	6	<b>Strophic</b>	A simple form where the song uses the same melody over and over.	5	<b>F Major</b>	Happy sounding key – 1 flat (Bb)
7	<b>Opera</b>	A theatrical work that combines text, costume and music.	<b>6. Cadences</b>			5	<b>G Major</b>	Happy sounding key – one sharp (F#)
			1	<b>Perfect</b>	Strong ending – sounds ‘finished’; a musical full stop. V-I	5	<b>Bb Major</b>	Happy sounding key – two flats (Bb and Eb)
			2	<b>Plagal</b>	Sounds finished but softer. Amen. IV-I	9	<b>D major</b>	Happy sounding key – two sharps (F# and C#)
			3	<b>Imperfect</b>	Sounds unfinished. I-V, ii-V, vi-V.			
			4	<b>Interrupted</b>	Moves to an unexpected chord. Surprise. V-vi.			

4. Romantic era			7 Form and Structure			8. Key vocabulary		
1	Romantic era		1	Binary (AB)		1	Chord	
2	Lyrical, expressive melodies		2	Ternary (ABA)		2	Triad	
3	Large orchestra		3	Rondo (ABACA)		3	Chord Sequence	
4	Wide range of dynamics		4	Minuet and trio (II: AB: II II:CD :II AB)		4	Diatonic Harmony	
5	Chromatic chords		5	Variations		5	C Major	
6	Programme music		6	Strophic		5	F Major	
7	Opera		6. Cadences			5	G Major	
			1	Perfect		5	Bb Major	
			2	Plagal		9	D major	
			3	Imperfect				
			4	Interrupted				

**1. Popular music styles**

1	<b>Pop</b>	Popular music that started in the 1950s in the USA and UK.
2	<b>Rock</b>	A genre of popular music that evolved from rock and roll in the 1960s.
3	<b>Rap / Hip hop</b>	A musical style that features rhythmic and rhyming speech chanted to musical accompaniment.
4	<b>Reggae</b>	A popular style of music of Jamaican origin that combines native styles with elements of rock and soul music.
5	<b>Fusion</b>	Music that combines two or more styles.
6	<b>Jazz fusion</b>	Genre that combines elements such as improvisation, syncopation and blue notes with other popular styles.

**2. Song structure**

1	<b>Intro</b>	Short opening section, usually instrumental
2	<b>Verse</b>	same music but different lyrics each time
3	<b>Chorus</b>	The catchy, repeated section of a song that comes between the verses.
4	<b>Middle eight</b>	link section, often eight bars, with different musical ideas
5	<b>Bridge</b>	a link/transition between two sections
5	<b>Outro</b>	an ending to finish the song (coda)
5	<b>12 bar blues</b>	A 12 bar chord progression used in Blues, Jazz and Pop that repeats throughout the song.
5	<b>Strophic songs</b>	A song with one verse that repeats over and over, with different lyrics.

**3. Instrumental roles**

1	<b>Lead guitar</b>	Plays the melody/solos/riffs
2	<b>Rhythm guitar</b>	Plays the chords/accompaniment
3	<b>Bass guitar</b>	Plays the bass line
4	<b>Drum kit</b>	Provides the beat
5	<b>Lead singer</b>	The main vocalist
6	<b>Backing vocals</b>	Singers who provide harmony
7	<b>Acoustic instruments</b>	Pop songs often feature acoustic instruments such as Saxophones, Trumpets and Trombones who play chords, hooks and solo lines.

**1. Popular music styles**

1	Pop	
2	Rock	
3	Rap / Hip hop	
4	Reggae	
5	Fusion	
6	Jazz fusion	

**2. Song structure**

1	Intro	
2	Verse	
3	Chorus	
4	Middle eight	
5	Bridge	
5	Outro	
5	12 bar blues	
5	Strophic songs	

**3. Instrumental roles**

1	Lead guitar	
2	Rhythm guitar	
3	Bass guitar	
4	Drum kit	
5	Lead singer	
6	Backing vocals	
7	Acoustic instruments	

**4. Features and techniques in popular music**

1	<b>Riff</b>	A short, repeated pattern
2	<b>Hammer on</b>	Finger brought sharply down onto the string.
3	<b>Pitch bend</b>	Altering (bending) the pitch slightly
4	<b>Power chords</b>	A guitar chord using the root and 5th note (no 3rd).
5	<b>Distortion</b>	An effect which distorts the sound (creates a 'grungy' sound).
6	<b>Slap bass</b>	A percussive sound on the bass guitar made by bouncing the strings on the fret board.
7	<b>Fill</b>	A short, improvised drum solo.
8	<b>Rim shot</b>	Rim and head of drum hit at same time
9	<b>Belt</b>	A bright, powerful vocal sound, high in the chest voice
10	<b>Falsetto</b>	Male voice in a higher than usual range.
11	<b>Syllabic</b>	One note sung per syllable.
12	<b>Melismatic</b>	Each syllable sung to a number of different notes.
13	<b>A Cappella</b>	Voices singing without instrumental accompaniment.

**5. Technology**

1	<b>Amplified</b>	Made louder (with an amplifier)
2	<b>Synthesized</b>	Sounds created electronically
3	<b>Panning</b>	Moving the sound between left and right speakers
4	<b>Phasing</b>	A delay effect
5	<b>Sample</b>	A short section of music that is reused (e.g. looped, layered)
6	<b>Reverb</b>	An electronic echo effect

**4. Features and techniques in popular music**

1	Riff	
2	Hammer on	
3	Pitch bend	
4	Power chords	
5	Distortion	
6	Slap bass	
7	Fill	
8	Rim shot	
9	Belt	
10	Falsetto	
11	Syllabic	
12	Melismatic	
13	A Cappella	

**5. Technology**

1	Amplified	
2	Synthesized	
3	Panning	
4	Phasing	
5	Sample	
6	Reverb	

### 1. Instrumental families

1	<b>Strings</b>	Violin, Viola, Cello, Double Bass and Harp
2	<b>Brass</b>	Trumpet, Trombone, French Horn and Tuba
3	<b>Wood wind</b>	Flute, Oboe, Clarinet, Bassoon and Saxophone
4	<b>Percussion</b>	Bass drum, snare drum, Triangle, Cymbal, Drum kit, Timpani, Glockenspiel and Xylophone
5	<b>Keyboards</b>	Piano, Electronic keyboard, Harpsichord, Organ and Synthesizer
4	<b>Other</b>	Electric guitar, Bass guitar, Spanish/Classical Guitar, Traditional world instruments.

### 2. Instrumental terms

1	<b>Pizzicato</b>	Plucking the strings
2	<b>Double stopping</b>	Playing two strings at the same time
3	<b>Arco</b>	Using a bow to play a stringed instrument.
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).
5	<b>Tongued</b>	A technique to make the notes sound separated (woodwind/brass).
5	<b>Slurred</b>	Notes are played smoothly
5	<b>Muted</b>	Using a mute to change/dampen the sound (brass/strings).
5	<b>Drum roll</b>	Notes/beats in rapid succession.
9	<b>Glissando</b>	A rapid glide over the notes.
10	<b>Trill</b>	Alternating rapidly between two notes.
11	<b>Vibrato</b>	Making the notes 'wobble' up and down for expression

### 3. Composing techniques

1	<b>Theme</b>	The main tune/melody.
2	<b>Motif</b>	A short musical idea (melodic or rhythmic).
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>Underscoring</b>	Music playing underneath the dialogue
5	<b>Scalic</b>	Melody follows the notes of a scale
6	<b>Triadic</b>	Melody moves around the notes of a triad.
7	<b>Fanfare</b>	Short tune often played by brass instruments, to announce someone/something important; based on the pitches of a chord.
8	<b>Pedal note</b>	A long, sustained note, usually in the bass/lower notes
9	<b>Ostinato/riff</b>	A short, repeated pattern
10	<b>Conjunct</b>	The melody moves by step
11	<b>Disjunct</b>	The melody moves with leaps/intervals
12	<b>Consonant harmony</b>	Sounds 'good' together
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

1. Instrumental families		
1	Strings	
2	Brass	
3	Wood wind	
4	Percussion	
5	Keyboards	
4	Other	

2. Instrumental terms		
1	Pizzicato	
2	Double stopping	
3	Arco	
4	Tremolo	
5	Tongued	
5	Slurred	
5	Muted	
5	Drum roll	
9	Glissando	
10	Trill	
11	Vibrato	

3. Composing techniques		
1	Theme	
2	Motif	
3	Leitmotif	
4	Underscore	
5	Scalic	
6	Triadic	
7	Fanfare	
8	Pedal note	
9	Ostinato/riff	
10	Conjunct	
11	Disjunct	
12	Consonant harmony	
13	Dissonant harmony	
14	Chromatic harmony	
15	Minimalism	

**1. Jazz and Blues**

1	<b>Scat</b>	Vocal improvisation using wordless/nonsense syllables.
2	<b>Improvised</b>	music made up on the spot.
3	<b>Blue notes</b>	flattened 3rd, 5ths, 7ths.
4	<b>Syncopation</b>	off-beat accents.
5	<b>Call and response</b>	A phrase played/sung by a leader and repeated by others.
4	<b>Walking bass</b>	A bass line that 'walks' up and down the notes of a scale/arpeggio.
5	<b>Swing style</b>	'jazzy' rhythm with a triplet/dotted feeling.
6	<b>Rhythm Section</b>	Drums, Bass (guitar or double bass) and piano/guitar that provide the 'drive' of the ensemble.
7	<b>Horn Section</b>	Trumpet, Trombone and Saxophone
8	<b>12 Bar Blues</b>	A repeated 12 bar chord pattern used in the blues. I I I I IV IV I I V IV I I/V

**2. Chamber Music**

1	<b>Chamber Music</b>	Music for a small ensemble, originally played in a small room in someone's home
2	<b>String quartet</b>	Small ensemble of two violins, viola and Cello. They had four movements, the first was in sonata form
3	<b>Basso continuo</b>	A type of instrumental accompaniment, common in Baroque music, played by organ, harpsichord or cello. Keyboard players often added chordal harmonies.
4	<b>Sonata Form</b>	A piece in three sections, Exposition, Development and recapitulation.
5	<b>Romantic Chamber music</b>	Chamber music groups were more varied in the Romantic era, using a wider range of instruments (e.g. piano quintet, horn trio). Performances happened in larger concert halls as well as in small 'chambers'.

**8. Key vocabulary**

1	<b>Chord</b>	Two or more notes played together.
2	<b>Triad</b>	Three notes played together.
3	<b>Chord Sequence</b>	A series of chords.
4	<b>Diatonic Harmony</b>	The chords all belong to the key.
5	<b>C Major</b>	Happy sounding key – no sharps or flats.
5	<b>F Major</b>	Happy sounding key – 1 flat (Bb)
5	<b>G Major</b>	Happy sounding key – one sharp (F#)
5	<b>Bb Major</b>	Happy sounding key – two flats (Bb and Eb)
9	<b>D major</b>	Happy sounding key – two sharps (F# and C#)

1. Jazz and Blues		
1	Scat	
2	Improvised	
3	Blue notes	
4	Syncopation	
5	Call and response	
4	Walking bass	
5	Swing style	
6	Rhythm Section	
7	Horn Section	
8	12 Bar Blues	

2. Chamber Music		
1	Chamber Music	
2	String quartet	
3	Basso continuo	
4	Sonata Form	
5	Romantic Chamber music	

8. Key vocabulary		
1	Chord	
2	Triad	
3	Chord Sequence	
4	Diatonic Harmony	
5	C Major	
5	F Major	
5	G Major	
5	Bb Major	
9	D major	

### 1. Musical theatre

1	<b>Solo</b>	A song for one singer.
2	<b>Duet</b>	A song for two singers.
3	<b>Trio</b>	A song for three singers.
4	<b>Ensemble</b>	A song sung by a small group.
5	<b>Chorus</b>	A large group (usually the full company/cast).
4	<b>Recitative</b>	A vocal style that imitates the rhythms and accents of speech.
5	<b>Overture</b>	An orchestral introduction to the show, which usually uses tunes from the show.

### 2. Voices and instruments

1	<b>Soprano</b>	High female voice
2	<b>Alto</b>	Low female voice
3	<b>Tenor</b>	High male voice
4	<b>Bass</b>	Low male voice
5	<b>Synth</b>	an electronic musical instrument, typically operated by a keyboard, producing a wide variety of sounds by generating and combining signals of different frequencies.
6	<b>Pit orchestra</b>	The band used in musicals, may use strings, woodwind (reeds), brass and percussion.
7	<b>Doubling</b>	A pit band player performing more than one instrument in a show.

### 3. Key vocabulary - Texture

1	<b>Monophonic</b>	A single melody line
2	<b>Homophonic</b>	A chordal style or melody and accompaniment moving together.
3	<b>Polyphonic</b>	A more complex (contrapuntal) texture with a number of different lines.
4	<b>Melody and accompaniment</b>	A tune with accompaniment (e.g. chords)
5	<b>Unison</b>	All parts play/sing the same music at the same time.
6	<b>Chordal</b>	The music moves in chords (e.g. like a hymn/chorale).
7	<b>Descant</b>	A decorative, higher pitched line.
8	<b>Counter melody</b>	A new melody, combined with the theme.
9	<b>Round</b>	A short (vocal) canon.
10	<b>Canon</b>	The melody is repeated exactly in different parts but starting at different times, with parts overlapping.
11	<b>Drone</b>	Long held notes
12	<b>2, 3, 4 part texture</b>	Textures which have 2/3/4 different lines.

1. Musical theatre			2. Voices and instruments			3. Key vocabulary - Texture		
1	Solo		1	Soprano		1	Monophonic	
2	Duet		2	Alto		2	Homophonic	
3	Trio		3	Tenor		3	Polyphonic	
4	Ensemble		4	Bass		4	Melody and accompaniment	
5	Chorus		5	Synth		5	Unison	
4	Recitative		6	Pit orchestra		6	Chordal	
5	Overture		7	Doubling		7	Descant	
						8	Counter melody	
						9	Round	
						10	Canon	
						11	Drone	
						12	2, 3, 4 part texture	

**Knowledge Group 1 Abstract Sculpture**

1	<b>Key features</b>	Visual elements that catch the eye and lead the viewer around a composition. This could be the edge of a building or a feature within, for example a window ledge or structural part of a building.
2	<b>Variety</b>	A wide range of things showing different forms and types. For example size, you can include a range of different sized pieces in your sculpture.
3	<b>Shape and form</b>	It is vital that you create a range of dramatically different shapes in the sculpture, look for angles and edges to help with this.
4	<b>Verticals</b>	Lines that travel up and down in a composition, for example the edge of a building. These can create a sense of height and scale in a picture.
5	<b>Horizontals</b>	Lines that follow side to side within a composition for example the ground, or flat sections on top of structures. These create width in an image.
6	<b>Diagonals</b>	Lines that lead up or down at an angle within a composition. These create a sense of depth within an image.
7	<b>Complexity</b>	Your sculptures need to show a degree of complexity to be really successful. This means that you have combined lots of different shapes and angles to create detailed sections within the sculpture.
8	<b>Negative Space</b>	Gaps left around the edges of objects or between objects placed apart. Often blank space, in the collage this will be the white paper of the background. Use negative space to contrast with crowded areas.
9	<b>Construction</b>	It is important that the glue is not too obvious when looking at your sculpture as this will detract from the simplicity and minimalist look.

**Knowledge Group 2 Photographing Sculptures**

1	<b>Lighting</b>	It is essential that you experiment with lighting your sculptures in creative ways to bring out the best results when photographing them. This might mean turning off the main lights and closing the blinds while using a mobile phone or torch to light the sculpture from different angles.
2	<b>Shadows</b>	The light can be used to create dramatic shadows around your sculptures. Ensure that you have maximised the potential for this by experimenting with different setups.
3	<b>Backgrounds</b>	It is crucial that the backgrounds are taken into consideration when photographing your sculptures. You must remove any unwanted items for the best results. Shadows may only be visible on white backgrounds so try them out.
4	<b>Focus</b>	As always it is very important that the images show areas of sharp focus. Ensure that you check images are clear on the cameras before moving on.
5	<b>Viewpoint</b>	As with the rest of the project, creative approaches will deliver the best results, try taking pictures from as many different angles as humanly possible,

**Key Vocabulary**

1	<b>Foamboard</b>	Strong lightweight sculpting board. Best cut with a craft knife.
2	<b>Complexity</b>	Having a high level of detail and a wide range of distinct and eye-catching elements all combined into one image together.
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>Form</b>	The 3D version of shape, this relates to the shapes in the sculpture once you start building them up.
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>Dynamic</b>	This is the result of a wide range of effects combining together. For example, dark tones, light tones, highly detailed sections, bold dramatic shapes, complex angular sections and geometric patterns all together.
7	<b>Hot glue</b>	The substance that we will use to hold the pieces of the sculptures together with. It can be dangerous so be careful.
8	<b>Craft Knives</b>	These we will use to create the various shapes of the sculptures. Must be used with a cutting mat to protect the blade and the table.

**Knowledge Group 3 Editing Images**

1	<b>Contrast</b>	Dramatic contrast is essential, you must ensure there is a strong sense of dark and light in your images. Use editing techniques to help achieve this.
2	<b>Colour choices</b>	Experiment with colour overlays to try injecting some life into the images. Choose limited colours 2 or 3 maximum.
3	<b>Enhance</b>	All of the edits must enhance and improve the original images. Ask for the opinions of others' to help arrive at the best outcomes. Be experimental.

**Knowledge Group 1 Abstract Sculpture**

1	Key features	
2	Variety	
3	Shape and form	
4	Verticals	
5	Horizontals	
6	Diagonals	
7	Complexity	
8	Negative Space	
9	Construction	

**Knowledge Group 2 Photographing Sculptures**

1	Lighting	
2	Shadows	
3	Backgrounds	
4	Focus	
5	Viewpoint	

**Key Vocabulary**

1	Foamboard	
2	Complexity	
3	Leading Lines	
4	Form	
5	Contrast	
6	Dynamic	
7	Hot glue	
8	Craft Knives	

**Knowledge Group 3 Editing Images**

1	Contrast	
2	Colour choices	
3	Enhance	

Peace and Forgiveness		
1	Why is peace important?	It helps to stop war and violence and spread love
2	What is justice?	Bringing fairness back to a situation
3	What is forgiveness?	Letting go of blame and moving on
4	Religions seek forgiveness...	All religions teach that forgiveness is important for peace and harmony
5	Reconciliation is..	Making up and building relationships after dispute
6	What is pacifism?	The belief that all violence is wrong

Violence and Terrorism		
1	What is violence?	Behaviour physically to hurt, kill or cause damage
2	What is a violent protest?	Protesting against something you believe is wrong in a violent way that causes harm or injury
3	What is terrorism?	Using violence, threats or killing to build fear in society to try bring about government change
4	How do religions respond to terrorism?	They are all against using violence and fear for political or religious aim
5	How do religions respond to the victims of violence?	They support and over help to any victim of violence and try seek reconciliation to stop violence reoccurring

War		
1	How is greed a reason for war?	People want more money, power or land and believe war will achieve this
2	Self-defence in war is...	Protecting yourself or country, aim is to protect not harm
3	Retaliation means...	Paying some back for their harmful actions
4	What are the criteria for just war?	Just cause, declared by the correct authority, the intention is to stop wrongdoing, reasonable chance of success, methods are proportional to the result
5	Holy war is..	Fighting for a religious cause
6	Why do people say a religion causes war?	Terrorist groups say they are doing it for religion. There is a strong history of religious groups fighting one another,

21 <sup>st</sup> Century Conflict		
1	What are nuclear weapons?	Weapons of a nuclear build up to cause severe damage
2	What is nuclear deterrence?	Having nuclear weapons to prevent others from attacking
3	What are WMDs?	Weapons that cause widespread damage
4	What do religions say about WMDs?	All religions are against having and using them
5	Name two religious organisations who are fighting to stop war	Anglican pacifist fellowship 'Peace People' Religious society of friends
6	What are religions doing to help victims of war?	Giving aid Providing medical care Teaching peace
7	Name two religious organisations helping victims of war	Christian Aid Caritas

Key Vocabulary	
Conflict	Dispute between sides, can be between individuals, groups or nations.
Forgiveness	Letting go of blame against a person for wrongs they have done; moving on.
Holy war	War that is believed to be sanctioned by God.
Justice	Bringing fairness back to a situation.
Just War	Set of rules for fighting a war in a way believed to be justified and acceptable to God
Nuclear deterrence	Having nuclear weapons with the aim of deterring/preventing other states attacking for fear of retaliation and nuclear war (possibly leading to Mutually Assured Destruction).
Nuclear weapons/war	A weapon of mass destruction which causes widespread damage and loss of life. Nuclear war would be a war fought using these weapons.
Pacifism	Belief that all violence is wrong, which then affects all behaviours
Peace	The opposite of war; harmony between all in society
Peace-making	Working to bring about peace and reconciliation.
Protest	A statement or action to express disagreement; can be an organised event to demonstrate disagreement with a policy or political action
Reconciliation	Making up and rebuilding relationships between two groups/sides after disagreement.
Retaliation	To pay someone back for their harmful actions.
Terrorism	Use of violence and threats to intimidate others; used for political purposes to build fear in the ordinary population and to secure demands from Government.
Victims of war	Those who are harmed during a war, for example those killed, injured or left homeless
Violence	Behaviour involving physical force which intends to hurt, kill or cause damage
War	Armed conflict between two or more sides.
Weapons of Mass Destruction	Weapons which cause widespread, indiscriminate damage (eg nuclear, chemical, biological)



Students should study religious teachings, and religious, philosophical and ethical arguments, relating to the issues that follow, and their impact and influence in the modern world. They should be aware of contrasting perspectives in contemporary British society on all of these issues.

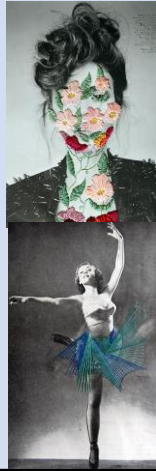
Peace and Forgiveness			War			Key Vocabulary	
1	Why is peace important?		1	How is greed a reason for war?		Conflict	
2	What is justice?		2	What is self-defence in war?		Forgiveness	
3	What is forgiveness?		3	What does retaliation mean?		Holy war	
4	Why do religions seek forgiveness?		4	What are the criteria for just war?		Justice	
5	What is reconciliation?		5	What is a holy war?		Just War	
6	What is pacifism?		6	Why do people say religion causes war?		Nuclear deterrence	
Violence and Terrorism			21 <sup>st</sup> century conflict			Nuclear weapons/ war	
1	What is violence?		1	What are nuclear weapons?		Pacifism	
2	What is a violent protest?		2	What is nuclear deterrence?		Peace	
3	What is terrorism?		3	What are WMDs?		Peace-making	
4	How do religions respond to terrorism?		4	What do religions say about WMDs?		Protest	
5	How do religions respond to the victims of violence?		5	Name two religious organisations who are fighting to stop war		Reconciliation	
			6	What are religions doing to help victims of war?		Retaliation	
			7	Name two religious organisations helping victims of war		Terrorism	
						Victims of war	
						Violence	
						War	
						Weapons of Mass Destruction	






Students should study religious teachings, and religious, philosophical and ethical arguments, relating to the issues that follow, and their impact and influence in the modern world. They should be aware of contrasting perspectives in contemporary British society on all of these issues.

### 1. Contextual Links

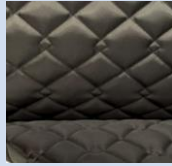
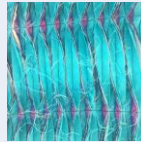
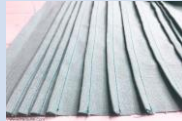


- |   |              |  |
|---|--------------|--|
| 1 | Jose Romussi | Jose Romussi was born in 1979 in Santiago, Chile. His first approach to art was seeing his mother painting. In 2010 when he was in New York he decided that art was what he wanted to do, and then started doing some artworks involving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



### 3. Tools and Equipment

- |   |  |   |
|---|--|---|
| 1 | Heat Gun<br>  | 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<br>  | 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 | Organza<br> | 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><br>        | 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><br>        | 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><br>       | 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><br>       | 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><br> | 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. |

1. Contextual Links			
1	Jose Romussi		
3. Tools and Equipment			
1	Heat Gun		
2	Wadding		
3	Organza		

3. Key Vocabulary		
1	Quilting	
2.	Slashing	
3	Pin Tucks	
4	Pleating	
5	Laser Cutting	

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

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

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

☐ Research the RDI amounts for each target group

☐ Is there an Eat Well Guide for vegans vegetarians?

Age groups – dietary needs		
1	Young Children	
2	Teenagers	
3	Adults	
4	Pregnancy	
5	Elderly	
6	Active	
7	Sedentary (inactive)	

Special Diets – dietary needs		
Religion / Lifestyle		
1	Halal (Muslim)	
2	Hindu	
3	Kosher (Judaism)	
4	Buddhist	
Health – related		
5	Coeliac	
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9	Type 2 Diabetes	
10	Anaemia	
Ethical		
11	Vegetarian	
12	Vegan	
13	Pescatarian	
14	Flexitarian	

Key Vocabulary		
1	Food Allergy	
2	Intolerance	
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☐ Research the RDI amounts for each target group

☐ Is there an Eat Well Guide for vegans vegetarians?

AC2.1 Describe the operation of the back of house			AC2.1 Describe the operation of front of house			AC2.2 Customer requirements		
1	<b>Storage area</b>	For storing ingredients & materials	1	<b>Entrance/reception</b>	To greet customers & guide them to a table	1	<b>Customer needs</b>	Things the customer requires when purchasing a product or service.
2	<b>Preparation &amp; cooking areas</b>	For preparing fish, veg, meat and cold dishes	2	<b>Waiting area</b>	To hold & entertain customers whilst they wait for a table	2	<b>Customers rights / equality</b>	Customers have legal rights to protect them when buying products/services
3	<b>Serving area</b>	Where food is presented and plated for customers	3	<b>Bar area</b>	For customers to have a drink	<b>AC2.3 Explain how hospitality and catering provision meets customer requirements</b>		
4	<b>Dirty area</b>	Where rubbish waste food, and washing up is done.	4	<b>Dining area</b>	To serve customers their meal. Usually divided into sections for waiting staff to attend to.			
5	<b>Staff area</b>	Where employees can change, store belongings and use the toilet	5	<b>Cloakroom / toilers</b>	For customers to use to make them more comfortable	1	<b>Customer trends</b>	Businesses need to keep up date with trends e.g online services
6	<b>Workflow</b>	For kitchen to work efficiently it needs to have a logical layout for good workflow	6	<b>Workflow</b>	The way food passes from the kitchen to the customers.	2	<b>Dietary requirements</b>	Info on: nutrition, food allergies + intolerances & dietary needs
7	<b>Kitchen equipment</b>	Includes: large, mechanical, small hand-help and first aid and safety equipment	7	<b>Equipment</b>	Includes equipment for; table top, food service, waiting at table, customer seating, organisation, first aid/safety and bar area.	3	<b>Leisure requirements</b>	Sports activities, holidays, tourism, outdoor pursuits
8	<b>Materials</b>	For cleaning, food preparation, waste disposal, employee welfare and maintenance	8	<b>Materials</b>	For cleaning, food preparation, waste disposal, employee welfare and maintenance	4	<b>Business requirements</b>	Conferences, meeting, exhibitions, staff training, award ceremonies
9	<b>Stock control</b>	Use a first in, first out policy.	9	<b>Stock control</b>	Use a first in, first out policy.	5	<b>Local residents</b>	Employ local and support economy
10	<b>Documentation / admin</b>	E.g. staff training records, H&S policies, stock, food safety documents	10	<b>Dress code</b>	Creates first impression, uniform must be clean, no heavy make-up/jewellery or perfume, can identify staff	<b>Key Vocabulary</b>		
11	<b>Dress code</b>	Uniform must be clean, professional, protect body and worn in kitchen only	11	<b>Safety and security</b>	Employees need to be aware of risks in front of house area	1	<b>Covers</b>	Customer food orders that are sent to the kitchen
12	<b>Safety and security</b>	Employees need to be aware of risks in kitchen				2	<b>FIFO</b>	First in, first out- using food stocks in rotation
						3	<b>Customer requirement /expectation</b>	Factors that decide whether or not a customer is satisfied with the service they receive
						4	<b>Market research</b>	Ways of finding out customers' needs, requirements and expectations

❑ Define the 3 levels of customer requirements and expectations

AC2.1 Describe the operation of the back of house			AC2.1 Describe the operation of front of house			AC2.2 Customer requirements		
1	Storage area		1	Entrance/ reception		1	Customer needs	
2	Preparation & cooking areas		2	Waiting area		2	Customers rights / equality	
3	Serving area		3	Bar area		AC2.3 Explain how hospitality and catering provision meets customer requirements		
4	Dirty area		4	Dining area				
5	Staff area		5	Cloakroom / toilets		1	Customer trends	
6	Workflow		6	Workflow		2	Dietary requirements	
7	Kitchen equipment		7	Equipment		3	Leisure requirements	
8	Materials		8	Materials		4	Business requirements	
9	Stock control		9	Stock control		5	Local residents	
10	Documentatio n / admin		10	Dress code		Key Vocabulary		
11	Dress code		11	Safety and security		1	Covers	
12	Safety and security					2	FIFO	
						3	Customer requirement /expectation	
						4	Market research	

☐ Define the 3 levels of customer requirements and expectations

### Knowledge Group 1 – Logo Research

1	<b>Template</b>	A pro forma which satisfies minimum requirements that can be used as a pattern for recreating.
2	<b>Contextual Analysis</b> (Analysing the work of artists)	Annotations or keywords from a critical and analytical perspective about the artist's work. This will consist of a <i>Personal Response</i> and reflections on the <i>Aesthetics, Meaning and Context</i> .
3	<b>Critical Reflection</b> (Analysing your work as it develops)	The process of reflecting critically on your work as it develops. Annotations should explain how you have gone from one idea to the next. ( <i>What, How, Why?</i> )

### Knowledge Group 2 – Logo Analysis

1	<b>Typography</b>	Analysing the aesthetics of the lettering including the fonts and layer styles used.
2	<b>Imagery &amp; Symbolism</b>	Analysing the aesthetics of images and evidence of symbolism.
3	<b>Target Audience</b>	Reflecting on the intended target audience informed by the design.
4	<b>Composition</b>	The manner in which the parts of a design are put together.
5	<b>Colour</b>	The manipulation and existence of colour and its integration into a design.

### Key Vocabulary

1	<b>Logo</b>	A symbol or other small design adopted by an organisation or person to define themselves.
2	<b>Vector</b>	A high resolution illustration often black and white and with a flat aesthetic.
3	<b>Experimentation</b>	Using a variety of different tools, effects and approaches to explore ideas and refinement.
4	<b>Pop Culture (theme)</b>	Modern popular culture transmitted via the mass media and aimed particularly at younger people.

### Knowledge Group 3 Design Ideas

1	<b>Sketch</b>	A rough or unfinished drawing, often made to assist in creating a more finished design.
2	<b>Concept</b>	A plan or intention.
3	<b>Elements of Art</b>	Visual components of tone, form and colour blending.
4	<b>Ben-Day Dots</b>	Dots commonly found in comics which were invented by illustrator and printer Benjamin Henry Day, Jr in the late 19 <sup>th</sup> century.
5	<b>Background</b>	The space surrounding your logo, usually a vector.
6	<b>Annotations</b>	A note by way of explanation or comment added to a text or diagram.

### Knowledge Group 4 Logo Development

1	<b>Reference Image</b>	A digital image, photo, sketch, or artwork on which the illustration you are producing is directly based.
2	<b>Screenshot</b>	An image that shows the contents of a computer display.
3	<b>Techniques and approaches</b>	Refers to the way an artist or designer uses their technical skills to achieve a specific goal. <ul style="list-style-type: none"> <li>• Low Poly (Justin Maller)</li> <li>• Pen Tool (Mike Mahle)</li> <li>• Neon Effect (Aniket Jatav)</li> <li>• Collage (Mike Alcantara)</li> <li>• Stylistic Typography (Risa Rodil)</li> </ul>
4	<b>Logo Variation</b>	A developed, refined and rearranged version of your primary logo that evidences new approaches to experimentation and the exploration of ideas. Must not evidence repetition of techniques and approaches.

**Knowledge Group 1 – Logo Research**

1	Template	
2	<b>Contextual Analysis</b> (Analysing the work of artists)	
3	<b>Critical Reflection</b> (Analysing your work as it develops)	

**Knowledge Group 2 – Logo Analysis**

1	Typography	
2	Imagery & Symbolism	
3	Target Audience	
4	Composition	
5	Colour	

**Key Vocabulary**

1	Logo	
2	Vector	
3	Experimentation	
4	Pop Culture (theme)	

**Knowledge Group 3 Design Ideas**

1	Sketch	
2	Concept	
3	Elements of Art	
4	Ben-Day Dots	
5	Background	
6	Annotations	

**Knowledge Group 4 Logo Development**

1	Reference Image	
2	Screenshot	
3	Techniques and approaches	
4	Logo Variation	