

**Y11 A Christmas Carol by Charles Dickens, Knowledge Organiser**

**Exam Paper Overview:**

Literature Paper 2: A Christmas Carol is on the Literature Paper 2 exam. This part of the exam is usually 1 hour, however, this year you will have 1 hour 20 minutes to respond to the novel question.

**Dickens' Intentions and Ideas**

Dickens' writing criticised economic, social, and moral issues in the Victorian era. He showed compassion and empathy towards the vulnerable and disadvantaged people in English society, and help to bring about several important social reforms. Dickens' deep social commitment and awareness of social issues come from his traumatic childhood, where his father was imprisoned for debt, and he was forced to work in a shoe-blackening factory at 12 years old. In his adult life, Dickens developed a strong social conscience and empathised with the victims of social and economic injustice. Dickens' intention in A Christmas Carol is to draw readers' attention to the plight of the poor and to highlight the hypocrisy of Victorian society. He juxtaposes the wealth and greed of capitalists with the poorer classes and draws attention to the way in which the greed and selfishness of some impacts on the quality of the lives of others. His moral message appears to be that we should care for our fellow man. The transformation of Scrooge suggests that Dickens feels it is never too late for change and redemption. Dickens emphasises the importance of family, friendship and charity in bringing about this change.

**Stave Summaries**

<b>Stave 1</b>	<b>Stave 2</b>	<b>Stave 3</b>	<b>Stave 4</b>	<b>Stave 5</b>
<p>1. Introduced to Ebenezer Scrooge on Christmas Eve. He is a lonely miser obsessed with money. He won't pay to heat the office properly – meaning Bob Cratchit is very cold.</p> <p>2. We learn Jacob Marley, Scrooge's business partner, died exactly 7 years earlier.</p> <p>3. Scrooge is irritated that Christmas Day seems to be interrupting his business.</p> <p>4. Scrooge is visited by his nephew Fred, who invites his uncle to Christmas dinner. Scrooge refuses.</p> <p>5. Scrooge is visited by two charity workers, asking for donations. Scrooge refuses and exclaims he wants to be left alone.</p> <p>6. Scrooge allows Bob to have Christmas Day off.</p> <p>7. Scrooge, when he is home, is visited by the Ghost of Jacob Marley – warning him he will be visited by three more ghosts to help him change his ways.</p>	<p>1. Scrooge is visited by the Ghost of Christmas Past who takes him to witness his past.</p> <p>2. Scrooge is taken first to his schoolboy years and he is reminded how his friends would go home from Christmas while he was left at school.</p> <p>3. We see him with his sister, who one year took him home for the holidays.</p> <p>4. Next we are shown Scrooge as a young apprentice, working for Fezziwig. Dickens describes the Christmas ball Fezziwig organised for his employees.</p> <p>5. Finally, Scrooge is taken to see his ex-fiancée, Belle. We see the scene when they break up, as money has taken over Scrooge's life.</p> <p>6. Scrooge cannot bear to see any more and struggles with the spirit.</p>	<p>1. Scrooge is then visited by the Ghost of Christmas Present.</p> <p>2. The spirit shows Scrooge how the Cratchit family celebrate Christmas. Scrooge asked if Tiny Tim will live. The spirit explains unless there are changes, he will die. The spirit reminds Scrooge of his earlier words: 'If he is to die, he had better do it, and decrease the surplus population'</p> <p>3. Scrooge is then taken to see how others celebrate Christmas: miners, lighthouse workers, sailors on a ship.</p> <p>4. He is then taken to Fred's house at Christmas, where they are playing games.</p> <p>5. The spirit then begins to age, and see under the spirit's robes two children: Want and Ignorance.</p> <p>6. The Ghost of Christmas Future then appears</p>	<p>1. The Ghost of Christmas Future is described.</p> <p>2. The spirit takes Scrooge to see a group of businessmen discussing someone who has died.</p> <p>3. Scrooge is then taken to see Old Joe, where he is in the process of buying property of the dead man – which have been stolen.</p> <p>4. Scrooge then returns to Bob Cratchit's house, where it is revealed Tiny Tim has died.</p> <p>5. Scrooge is then taken to the graveyard and is shown a grave stone and realises this is for him.</p> <p>6. Scrooge falls to his knees and begs that he will change his ways.</p>	<p>1. Scrooge wakes up in his own bed.</p> <p>2. Scrooge wonders how much time has passed and calls to a boy. He then sends the boy to the poulterer for the prize turkey to give to Bob Cratchit,</p> <p>3. Scrooge meets one of the charity collectors from earlier and whispers to him that he will give a large donation.</p> <p>4. Scrooge then goes to Fred's house and is welcomed in. He enjoys the dinner and party.</p> <p>5. On Boxing Day, Scrooge arrives early to work, and plays a trick on Bob. Scrooge then tells him he is going to raise his salary and promises to help Bob's struggling family.</p> <p>6. Scrooge is described to have completely changed and becomes a 'second father' to Tiny Tim – 'who did not die.'</p>

Assessment Overview: Part A and Part B: 1 hour	Language	Structure and Form	Characters	Themes
<p><b>Part A:</b> You are given an extract from the novella. You need to analyse how Dickens presents a character or relationship.</p> <p><b>Criteria:</b> 3 paragraphs Clear point Embed evidence Include language, structure and form Explain what the quote shows Analyse the techniques Refer to reader</p> <p><b>Part B:</b> After the extract, you are given a theme shown in the novella.</p> <p>You need to refer to events elsewhere in the novella which relate to that theme.</p> <p><b>Criteria:</b> 3-4 paragraphs Clear point Event description Explain what the event shows Explain how it shows the theme Explain why it is significant Reader effect</p>	<p><b>Alliteration</b> <b>Triple Emphasis</b> <b>Satire</b>- use of humour or ridicule to criticise <b>Simile</b>- comparing using 'like' or 'as' <b>Metaphor</b>- saying one thing is another <b>Personification</b>- make object human <b>Pathetic fallacy</b>- weather to create mood <b>Pathos</b>- language to evoke pity <b>Allusion</b>- reference to another literary work <b>Hyperbole</b>- exaggerated statement <b>Connotation</b>- associated meaning of word <b>Characterisation</b>- built up description of character in text <b>Semantic field</b>- words related in meaning <b>Imagery</b>- visually descriptive language. <b>Noun</b>: Name of person, place, thing <b>Adjective</b>: Describes noun <b>Determiner</b>: Gives information about the noun: <i>the/a/every/some</i> <b>Abstract Noun</b>: An idea/concept <i>love/anger</i> <b>Concrete Noun</b>: Something you can touch/hold <b>Verb</b>: Doing word <b>Adverb</b>: Describes verb <b>Modal Verb</b>: Gives information about the verb: <i>should/could/might</i> <b>Imperative Verb</b>: A command <b>Pronoun</b>: In place of noun <i>I/he/it/they</i> <b>Preposition</b>: Tells you where something is <i>on/over/under</i> <b>Conjunction</b>: A connective <i>and/or/but/although</i> <b>Superlative</b>: The most extreme version <i>tallest/smallest</i></p>	<p><b>Order of ideas</b>: Thinking about what the writer started/finished with; why they saved something until last or shared it early on. <b>Paragraph length</b>: Is it particularly long/short? <b>Sentence length</b>: As above. <b>Simple sentence</b>: A sentence with only one subject and one verb: <i>The cat sat on the chair.</i> <b>Compound sentence</b>: Two main clauses joined with a connective that both make sense independently: <i>The cat sat on the chair and the man sat on the floor.</i> <b>Complex sentence</b>: A sentence with a main clause and a subordinate clause: <i>The cat, who was spoilt, sat on the chair whilst the man sat on the floor.</i> <b>Punctuation</b>: Consider how these devices have been used <b>Juxtaposition</b>: Two opposite ideas used close by one another <b>Repetition</b>: Using the same words, phrase or ideas more than once <b>Main Clause</b>: The main part of a sentence; makes sense on its own. <b>Subordinate Clause</b>: A clause which does not make sense on its own. <b>Conflict</b>- problem faced by characters <b>Resolution</b>- point where conflict is resolved <b>Foreshadowing</b>- clue about something later <b>Foreboding</b>- sense that something will occur <b>Backstory</b>- insight into character's past <b>Exposition</b>- revelation of something <b>Poetic justice</b>- good rewarded bad punished <b>Melodrama</b>- exaggerated characters/events <b>Motif</b>- repeated image or symbol <b>Antithesis</b>- contrast of ideas in same grammatical structure <b>Authorial intrusion</b>- where author pauses to speak directly to reader <b>Allegory</b>- characters/events represent ideas about religion, morals or politics <b>Asyndeton</b>- list without conjunctions <b>Polysyndeton</b>- list with conjunctions (and)</p>	<p><b>1. Ebenezer Scrooge</b>: Miserly, mean, bitter, materialistic, unsympathetic, indifferent, cold, selfish, isolated, cynical, charitable, value driven, generous, happy, sociable, transformed. <b>2. Marley's Ghost</b>: Materialistic, self-centred, terrifying, haunting, exhausted, direct, reformed, regretful, hopeful, selfless, wise <b>3. Bob Cratchit</b>: Uncomplaining, tolerant, courteous, deferential, patient, civil, eager, pleasurable, good-humoured, playful, caring, tender, cheerful, loving, forgiving. <b>4. Fred</b>: Warm-hearted, empathetic, cheerful, optimistic, even-tempered, insightful, determined, generous, forgiving, jovial, enthusiastic, caring <b>5. Ghost of Christmas Past</b>: Contradictory, strong, gentle, quiet, forceful, questioning, mysterious <b>6. Ghost of Christmas Present</b>: Compassionate, abundant, generous, cheerful, jolly, friendly, severe, sympathetic <b>7. Ghost of Christmas Future</b>: Mysterious, silent, ominous, intimidating, frightening, resolute. <b>8. Tiny Tim</b>: Frail, ill, good, religious</p>	<p>-Family -Loneliness and isolation -Time -Education -Christmas Spirit -Redemption -Poverty -Social responsibility -Supernatural -Poverty -Fate -Charity -Transformation -Capitalism -Greed -Money -Friendship -Religion -Morality - Isolation/Loneliness, -Choices -Memory and the past -Compassion -Forgiveness -Guilt and blame -Time -Rationality</p>

# Year 10 Mathematics Knowledge Organiser (Term 1)

## Two-Way Tables (MW - 61)

Probabilities for two events can be shown in a two-way table.

### Example.

Two dice were rolled, a red dice and a blue dice, and their scores were added up. Find the probability the total score is higher than 8.

Outcomes for the red dice.

Outcomes for the Blue dice.

Outcomes for when they are added together.

	Red Dice					
	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

We can see the probability of getting a score higher than 8 is  $10/36 = 5/18$  (because 10 out of the 36 outcomes are above 8)

## Significant Figure. (MW - 90)

The significant figures of a number are the digits which carry meaning (ie. are significant) to the size of the number.

The first significant figure of a number cannot be zero.

In the number 0.00821, the first significant figure is the 8.

In the number 2.740, the 0 is not a significant figure.

In a number with a decimal, trailing zeros are not significant. 0.00821 rounded to 2 significant figures is 0.0082.

### Example

19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns.

## Rounding (MW - 31)

To make a number simpler but keep its value close to what it was. If the digit to the right of the rounding digit is less than 5, round down. If the digit to the right of the rounding digit is 5 or more, round up.

### Example.

74 rounded to the nearest ten is 70, because 74 is closer to 70 than 80.

## Decimal Place (MW - 32)

The position of a digit to the right of a decimal point.

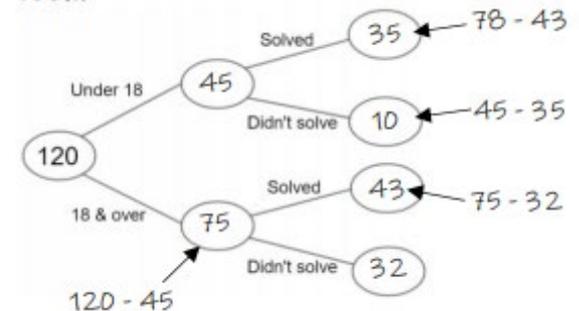
### Example

In the number 0.372, the 7 is in the second decimal place. 0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down. Careful with money - don't write £27.4, instead write £27.40

## Frequency trees (MW - 57)

### Example.

120 people were given 3 minutes to solve a puzzle. 45 of the people who tried to solve the puzzle were under 18 years old. 78 of the people solved the puzzle. 32 of the people aged 18 and over did not solve the puzzle. Complete the frequency tree below.)



The information given in the question determines the order of working. Here, we need to find the 75 first.

## Error Interval (MW - 155 / 206)

A range of values that a number could have taken before being rounded or truncated.

An error interval is written using inequalities, with a lower bound and an upper bound. Note that the lower bound inequality can be 'equal to', but the upper bound cannot be 'equal to'.

### Example

0.6 has been rounded to 1 decimal place. The error interval is:  $0.55 \leq x < 0.65$   
The lower bound is 0.55  
The upper bound is 0.65

# Year 10 Mathematics Knowledge Organiser (Term 1)

## Estimate and Approximation (MW – 91)

We estimate to find something **close to the correct answer**

Example.

An estimate for the height of a man is 1.8 metres.

When using approximations to estimate the solution to a calculation, **round each number in the calculation to 1 significant figure.**  $\approx$  means 'approximately equal to'

Example.

$$\frac{348 + 692}{0.526} \approx \frac{300 + 700}{0.5} = 2000$$

'Note that dividing by 0.5 is the same as multiplying by 2'

## Use of calculator (MW 77)

Use a calculator efficiently for powers, roots and more complex calculations.

Example.

$$\text{Calculate : } \frac{\sqrt[3]{2.3 \times 4.5^2}}{12.45}$$

$$\text{Calculate : } (\sqrt[3]{2.3 \times 4.5})^2$$

Know your keys

$x^2$	Square key
$x^3$	Cube key
$x^{\blacksquare}$	Power key
$\sqrt{\phantom{x}}$	Square root key
$\sqrt[3]{\phantom{x}}$	Cube root key
(-)	Negative key
$\frac{\blacksquare}{\blacksquare}$	Fraction key

## Product of Primes (MW – 78)

Prime Number:

A number with exactly two factors. A number that can only be divided by itself and one.

The number **1 is not prime**, as it only has one factor, not two

Example. The first eight prime numbers are: 2, 3, 5, 7, 11, 13, 17, 19

Prime Factor.

A factor which is a prime number.

Example. The prime factors of 18 are: 2, 3

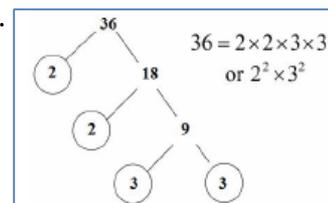
Product of Prime Factors ('Prime factorisation')

Finding out which prime numbers multiply together to make the original number.

Use a prime factor tree.

Example.

Find the product of prime factors of 36.



## Highest Common Factor HCF (MW - 79)

The **biggest** number that **divides exactly** into two or more numbers.

Example.

Here are the factors of 16 and 20.

16	20
1 x 16	1 x 20
2 x 8	2 x 10
4 x 4	4 x 5

The highest number that appears in both lists is 4. So the Highest Common Factor of 16 and 20 is 4

## Lowest Common Multiple LCFM (MW – 80)

The smallest number that is in the times tables of each of the numbers given.

Example.

Here are the multiples of 6 and 8

6 12 18 24 30 36 42 .....

8 16 24 32 40 48 .....

The lowest number in both lists is 24. So the lowest common multiple of 6 and 8 is 24

## Real life Multiples

List multiples of numbers systematically;

- Find common multiples of two numbers;
- Solve problems using LCM in context (time, number of laps, number of items)

Example.

List the first 5 multiples of a given number.

Calculate the LCM of 6 and 20.

Mel wants to equal numbers of pens, pencils and rulers. Pens can be bought in packs of 8, pencils in packs of 12 and rulers in packs of 20. What is the smallest number of pens, pencils and rulers she should purchase?

# Year 10 Mathematics Knowledge Organiser (Term 1)

## **Fraction (MW - 24)**

A mathematical expression representing the division of one integer by another. Fractions are written as two numbers separated by a horizontal line.

### Example

$\frac{2}{7}$  is a 'proper' fraction.

$\frac{9}{4}$  is an 'improper' or 'top-heavy' fraction.

## **Reciprocal**

The reciprocal of a number is 1 divided by the number.

The reciprocal of  $x$  is  $\frac{1}{x}$

### Example

The reciprocal of 5 is  $\frac{1}{5}$

The reciprocal of  $\frac{2}{3}$  is  $\frac{3}{2}$ ,

because  $\frac{2}{3} \times \frac{3}{2} = 1$

When we multiply a number by its reciprocal we get 1.

This is called the 'multiplicative inverse'.

## **Dividing Fractions**

Multiply by the reciprocal of the second fraction.

### Example

$$\frac{3}{4} \div \frac{5}{6} = \frac{3}{4} \times \frac{6}{5} = \frac{18}{20} = \frac{9}{10}$$

## **Numerator**

The top number of a fraction.

### Example

In the fraction  $\frac{3}{5}$ , 3 is the numerator.

## **Denominator**

The bottom number of a fraction.

### Example

In the fraction  $\frac{3}{5}$ , 5 is the denominator

## **Mixed Number**

A number formed of both an integer part and a fraction part.

### Example

$3\frac{2}{5}$  is an example of a mixed number.

## **Fraction of an Amount**

Divide by the bottom, times by the top

### Example

$$\begin{aligned} \text{Find } \frac{2}{5} \text{ of } \pounds 60 \\ 60 \div 5 &= 12 \\ 12 \times 2 &= 24 \end{aligned}$$

## **Unit Fraction**

A fraction where the numerator is one and the denominator is a positive integer.

### Example

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$  etc. are examples of unit fractions.

## **Simplifying Fractions (MW - 26)**

Divide the numerator and denominator by the highest common factor.

### Example

$$\frac{20}{45} = \frac{4}{9}$$

## **Equivalent Fractions (MW - 25)**

Fractions which represent the same value.

### Example

$$\frac{2}{5} = \frac{4}{10} = \frac{20}{50} = \frac{60}{150} \text{ etc}$$

## **Multiplying Fractions (MW - 73)**

Multiply the numerators together and multiply the denominators together.

### Example

$$\frac{3}{8} \times \frac{2}{9} = \frac{6}{72} = \frac{1}{12}$$

## **Comparing Fractions (MW - 70)**

To compare fractions, they each need to be rewritten so that they have a common denominator. Ascending means smallest to biggest. Descending means biggest to smallest.

### Example

Put in to ascending order :  $\frac{3}{4}, \frac{2}{3}, \frac{5}{6}, \frac{1}{2}$ .

Equivalent:  $\frac{9}{12}, \frac{8}{12}, \frac{10}{12}, \frac{6}{12}$

Correct order:  $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

## **Adding or Subtracting Fractions (MW - 71)**

Find the LCM of the denominators to find a common denominator. Use equivalent fractions to change each fraction to the common denominator.

Then just add or subtract the numerators and keep the denominator the same.

### Example

$\frac{2}{3} + \frac{4}{5}$   
Multiples of 3: 3, 6, 9, 12, 15..  
Multiples of 5: 5, 10, 15..  
LCM of 3 and 5 = 15

$$\begin{aligned} \frac{2}{3} &= \frac{10}{15} \\ \frac{4}{5} &= \frac{12}{15} \\ \frac{10}{15} + \frac{12}{15} &= \frac{22}{15} = 1\frac{7}{15} \end{aligned}$$

# Year 10 Mathematics Knowledge Organiser (Term 1)

## Ratio (MW – 38)

Ratio compares the size of one part to another part. Written using the ':' symbol.

Example

3 : 1



## Simplifying Ratios

Divide all parts of the ratio by a common factor.

Example

5 : 10 = 1 : 2 (divide both by 5)

14 : 21 = 2 : 3 (divide both by 7)

## Unitary Method (MW – 39)

Finding the value of a single unit and then finding the necessary value by multiplying the single unit value.

Example

3 cakes require 450g of sugar to make.

Find how much sugar is needed to make 5 cakes.

3 cakes = 450g

So 1 cake = 150g (÷ by 3)

So 5 cakes = 750 g (x by 5)

## Ratios in the form 1 : n or n : 1

Divide both parts of the ratio by one of the numbers to make one part equal 1.

Example

5 : 7 = 1 :  $\frac{7}{5}$  in the form 1 : n

5 : 7 =  $\frac{5}{5}$  : 1 in the form n : 1

## Sharing in a Ratio (MW – 106)

1. Add the total parts of the ratio.
2. Divide the amount to be shared by this value to find the value of one part.
3. Multiply this value by each part of the ratio.

Use only if you know the total.

Example

Share £60 in the ratio 3 : 2 : 1.

$3 + 2 + 1 = 6$

$60 \div 6 = 10$

$3 \times 10 = 30$ ,  $2 \times 10 = 20$ ,  $1 \times 10 = 10$

£30 : £20 : £10

## Ratio already shared

Find what one part of the ratio is worth using the unitary method.

Example

Money was shared in the ratio 3:2:5 between Ann, Bob and Cat. Given that Bob had £16, found out the total amount of money shared.

£16 = 2 parts So £8 = 1 part

$3 + 2 + 5 = 10$  parts, so  $8 \times 10 = \text{£}80$

## Best Buys

Find the unit cost by dividing the price by the quantity.

The lowest number is the best value.

Example

8 cakes for £1.28 → 16p each (÷ by 8)

13 cakes for £2.05 → 15.8p each (÷ by 13)

Pack of 13 cakes is best value.

## Proportion (MW – 42)

Proportion compares the size of one part to the size of the whole. Usually written as a fraction.

Example

In a class with 13 boys and 9 girls, the proportion of boys is  $\frac{13}{22}$  and the

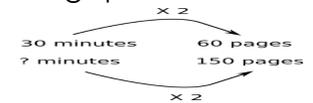
proportion of girls is  $\frac{9}{22}$

## Proportional Reasoning

Comparing two things using multiplicative reasoning and applying this to a new situation.

Identify one multiplicative link and use this to find missing quantities.

Example



## Direct Proportion (MW – 199)

If two quantities are in direct proportion, as one increases, the other increases by the same percentage.  $k$  is the ratio between  $x$  and  $y$

Example

$Y$  is directly proportional to  $x$

When  $x = 500$   $y = 10$

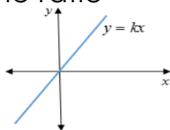
Calculate the value of  $y$  when  $x = 150$   $Y = kx$

$10 = 500k$  therefore  $k = 1 / 50$

$Y = 1 / 50 x$

$y = 1 / 50 \times 150$

$y = 3$



# Year 10 Mathematics Knowledge Organiser (Term 1)

## Indirect proportion

If two quantities are in indirect proportion, as one increases, the other decreases by the same percentage.  $1/k$  is the ratio between  $x$  and  $y$

### Example

$P$  is inversely proportional to  $V$

When  $P = 6$   $V = 8$

Calculate the value of  $P$  when  $V = 2$

$P = k/v$   $6 = k/8$  therefore  $k = 48$

$P = 48/2$   $P = 24$

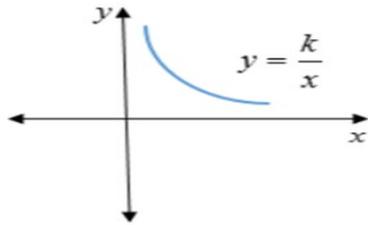
## Inverse proportion (MW – 199)

If two quantities are inversely proportional, as one increases, the other decreases by the same percentage.

If  $y$  is inversely proportional to  $x$ , this can be written as  $y \propto \frac{1}{x}$

An equation of the form  $y = \frac{k}{x}$  represents inverse proportion.

### Example



## Percentages to Fractions

Percentage is just a fraction out of 100.

**Write the percentage over 100** and simplify.

### Example

$$14\% = \frac{14}{100} = \frac{7}{50}$$

## Percentage (MW 40)

**Number of parts per 100.**

### Example

31% means  $\frac{31}{100}$

## Finding 10% (MW – 86/87)

To find **10%**, **divide by 10**

### Example

10% of £36 =  $36 \div 10 = \text{£}3.60$

## Finding 1% (MW – 86/87)

To find **1%**, **divide by 100**

### Example

1% of £8 =  $8 \div 100 = \text{£}0.08$

## Percentage Change (MW – 109)

$$\frac{\text{Difference}}{\text{Original}} \times 100\%$$

### Example

A games console is bought for £200 and sold for £250.

$$\% \text{ change} = \frac{50}{200} \times 100 = 25\%$$

## Fractions to Percentages (MW – 85)

Percentage is just a fraction out of 100.

**Make the denominator 100 using equivalent fractions.**

When the denominator doesn't go in to 100, use a calculator and **multiply the fraction by 100.**

### Example

$$\frac{9}{17} \times 100 = 52.9\%$$

## Fractions to Decimals (MW – 85)

**Divide the numerator by the denominator** using the bus stop method.

### Example

$$\frac{3}{8} = 3 \div 8 = 0.375$$

## Decimals to Fractions (MW – 85)

**Write as a fraction** over 10, 100 or 1000 and simplify.

### Example

$$0.36 = \frac{36}{100} = \frac{9}{25}$$

## Percentages to Decimals (MW – 85)

**Divide by 100**

### Example

$$8\% = 8 \div 100 = 0.08$$

## Decimals to Percentages (MW – 85)

**Multiply by 100**

### Example

$$0.4 = 0.4 \times 100\% = 40\%$$

## Percentage Increase/decrease Non calculator method (MW – 109)

### Example

Increase/decrease £150 by 11%

10% of £150 = £15.00

1% of £150 = £1.50

11% of £150 = £16.50

Increase = £150 + £16.50  
Decrease = £150 - £16.50

# Year 10 Mathematics Knowledge Organiser (Term 1)

## Repeated percentage change/increase

### Example

John invests £3000 in a bank that pays 1.5% compound interest. How much will he have after 4 years?

Investment + interest

$$100\% + 1.5\% = 101.5\% = 1.015$$

$$3000 \times 1.015^4 = 3184.09$$

Answer £3184.09

## Reverse percentage (MW – 110)

### Example

Jane buys a pair of trousers in a sale for £68 after they were reduced by 15%. What was the original cost of the trousers?

Trousers now worth 85% of original price

$$85\% = 68$$

$$1\% = 68 \div 85 = 0.8$$

$$100\% = 0.8 \times 100 = 80$$

Original cost = £80

## Repeated percentage change/decrease (MW – 164)

### Example

John buys a car for £17000. It depreciates in value every year by 8%. What will it be worth after 5 years?

Cost - interest

$$100\% - 8\% = 92\% = 0.92$$

$$17000 \times 0.92^5 = 11204.39$$

Answer £11204.39

## Square Number (MW – 81)

The number you get when you **multiply a number by itself**.

### Example

$$1, 4, 9, 16, 25, 36, 49, 64, 81, \\ 100, 121, 144, 169, 196, 225... \\ 9^2 = 9 \times 9 = 81$$

## Square Root (MW – 81)

The **number you multiply by itself** to get another number. The reverse process of squaring a number.

### Example

$$\sqrt{36} = 6$$

**because**  $6 \times 6 = 36$

## Solutions to $x^2 = \dots$ (MW – 81)

**Equations involving squares** have **two solutions**, one **positive** and one **negative**.

### Example

$$\text{Solve } x^2 = 25 \quad x = 5 \text{ or } x = -5$$

This can also be written as  $x = \pm 5$

## Cube Number (MW – 81)

The **number you multiply by itself and itself again** to get another number.

The reverse process of cubing a number.

### Example

$$1, 8, 27, 64, 125...$$

$$2^3 = 2 \times 2 \times 2 = 8$$

## Powers of... (MW – 29 / 131)

The powers of a number are that **number raised to various powers**.

### Example

The powers of 3 are:

$$3^1 = 3, \quad 3^2 = 9, \quad 3^3 = 27, \quad 3^4 = 81 \text{ etc.}$$

## Multiplication Index Law (MW – 82 / 131)

When **multiplying** with the same base (number or letter), **add the powers**.  $a^m \times a^n = a^{m+n}$

### Example

$$7^5 \times 7^3 = 7^8$$

$$a^{12} \times a = a^{13}$$

$$4x^5 \times 2x^8 = 8x^{13}$$

## Division Index Law (MW – 82 / 131)

When **dividing** with the same base (number or letter), **subtract the powers**.  $a^m \div a^n = a^{m-n}$

### Example

$$15^7 \div 15^4 = 15^3$$

$$x^9 \div x^2 = x^7$$

$$20a^{11} \div 5a^3 = 4a^8$$

## Brackets Index Laws (MW – 82 / 131)

When raising a power to another power, multiply the powers together.  $(a^m)^n = a^{mn}$

### Example

$$(y^2)^5 = y^{10}$$

$$(6^3)^4 = 6^{12}$$

$$(5x^6)^3 = 125x^{18}$$

## Notable Powers (MW – 29)

$$p = p^1$$

$$p^0 = 1$$

### Example

$$99999^0 = 1$$

# Year 10 Mathematics Knowledge Organiser (Term 1)

## **Negative Powers (MW – 29)**

A negative power performs the reciprocal.

$$a^{-m} = \frac{1}{a^m}$$

### **Example**

$$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$$

## **Fractional Powers (MW – 188)**

The denominator of a fractional power acts as a 'root'. The numerator of a fractional power acts as a normal power.

$$a^{\frac{m}{n}} = (\sqrt[n]{a})^m$$

### **Example**

$$27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$$

$$\left(\frac{25}{16}\right)^{\frac{3}{2}} = \left(\frac{\sqrt{25}}{\sqrt{16}}\right)^3 = \left(\frac{5}{4}\right)^3 = \frac{125}{64}$$

## **Simplifying Expressions**

Collect 'like terms'.

Be careful with negatives.

$x^2$  and  $x$  are not like terms.

### **Example**

$$2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$$

$$3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$$

## **x times x**

The answer is  $x^2$  not  $2x$ .

### **Example**

Squaring is multiplying by itself, not by 2.

## **p × p × p**

The answer is  $p^3$  not  $3p$

### **Example**

If  $p=2$ , then  $p^3=2 \times 2 \times 2=8$ , not  $2 \times 3=6$

## **Expression**

A mathematical statement written using **symbols, numbers** or **letters**,

### **Example**

$$3x + 2 \text{ or } 5y^2$$

## **Equation**

A statement showing that **two expressions are equal**

### **Example**

$$2y - 17 = 15$$

## **Identity**

An equation that is **true for all values** of the variables

An identity uses the symbol:  $\equiv$

### **Example**

$$2x \equiv x+x$$

## **Formula**

Shows the **relationship** between **two or more variables**

### **Example**

Area of a rectangle = length x width or  $A = L \times W$

## **Expand (MW – 93)**

To expand a bracket, **multiply** each term **in the bracket** by the expression **outside** the bracket.

### **Example**

$$3(m + 7) = 3m + 21$$

## **p + p + p**

The answer is  $3p$  not  $p^3$

### **Example**

If  $p=2$ , then  $2+2+2=6$ , not  $2^3 = 8$

## **Factorise (MW – 94)**

The **reverse** of **expanding**.

Factorising is writing an expression as a product of terms by '**taking out**' a **common factor**.

### **Example**

$$6x - 15 = 3(2x - 5),$$

where 3 is the common factor.

## **Linear Sequence**

A number pattern with a **common difference**.

### **Example**

2, 5, 8, 11... is a linear sequence

## **Term**

**Each value** in a sequence is called a term.

### **Example**

In the sequence 2, 5, 8, 11...  
8 is the third term of the sequence.

## **Term-to-term rule (MW – 37)**

A rule which allows you to **find the next term** in a sequence if you **know the previous term**.

### **Example**

First term is 2. Term-to-term rule is 'add 3'  
Sequence is: 2, 5, 8, 11...

## **nth term (MW – 102/103)**

A rule which allows you to **calculate the term** that is in the **nth position** of the sequence. Also known as the 'position-to-term' rule. **n** refers to the **position** of a term in a sequence

### **Example**

nth term is  $3n - 1$

The 100<sup>th</sup> term is  $3 \times 100 - 1 = 299$

# Year 10 Mathematics Knowledge Organiser (Term 1)

## Finding the nth term of a linear sequence

(MW – 102/103)

1. Find the **difference**.
2. **Multiply that by  $n$** .
3. Substitute  $n = 1$  to **find out what number you need to add or subtract to get the first number in the sequence**.

### Example

Find the nth term of: 3, 7, 11, 15...

1. Difference is +4
2. Start with  $4n$
3.  $4 \times 1 = 4$ , so we need to subtract 1 to get 3.  
nth term =  $4n - 1$

## Geometric Sequence (MW – 163)

A sequence of numbers where each term is found by **multiplying the previous one** by a number called the **common ratio,  $r$** .

### Example

An example of a geometric sequence is:

2, 10, 50, 250 ...

The common ratio is 5

Another example of a geometric sequence is:

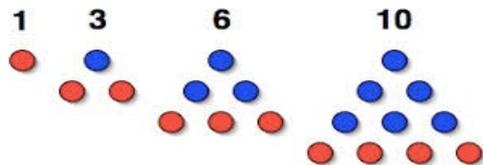
81, -27, 9, -3, 1 ...

The common ratio is  $-\frac{1}{3}$

## Triangular numbers

The sequence which comes from a pattern of dots that form a triangle.

### Example



## nth term of a quadratic sequence

(MW – 213)

1. Find the first and second differences.
2. Halve the second difference and multiply this by  $n^2$ .
3. Substitute  $n = 1, 2, 3, 4 \dots$  into your expression so far.
4. Subtract this set of numbers from the corresponding terms in the sequence from the question.
5. Find the nth term of this set of numbers.
6. Combine the nth terms to find the overall nth term of the quadratic sequence.

Substitute values in to check your nth term works for the sequence.

### Example

Find the nth term of: 4, 7, 14, 25, 40..

Answer:

Second difference = +4  $\rightarrow$  nth term =  $2n^2$

Sequence: 4, 7, 14, 25, 40

$2n^2$       2, 8, 18, 32, 50

Difference: 2, -1, -4, -7, -10

Nth term of this set of numbers is  $-3n + 5$

Overall nth term:  $2n^2 - 3n + 5$

## nth term of a geometric sequence

(MW – 163)

$$r^{n-1}$$

where  $a$  is the first term and  $r$  is the common ratio

### Example

The nth term of 2, 10, 50, 250 ... is

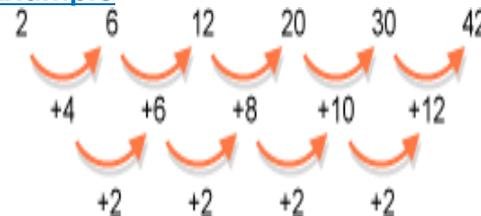
$$2 \times 5^{n-1}$$

## Quadratic Sequence (MW – 213)

A sequence of numbers where the **second difference is constant**.

A quadratic sequence will have a  $n^2$  term.

### Example



## Fibonacci type sequences

(MW – 141)

A sequence where the next number is found by **adding up the previous two terms**

### Example

The Fibonacci sequence is:

1, 1, 2, 3, 5, 8, 13, 21, 34 ...

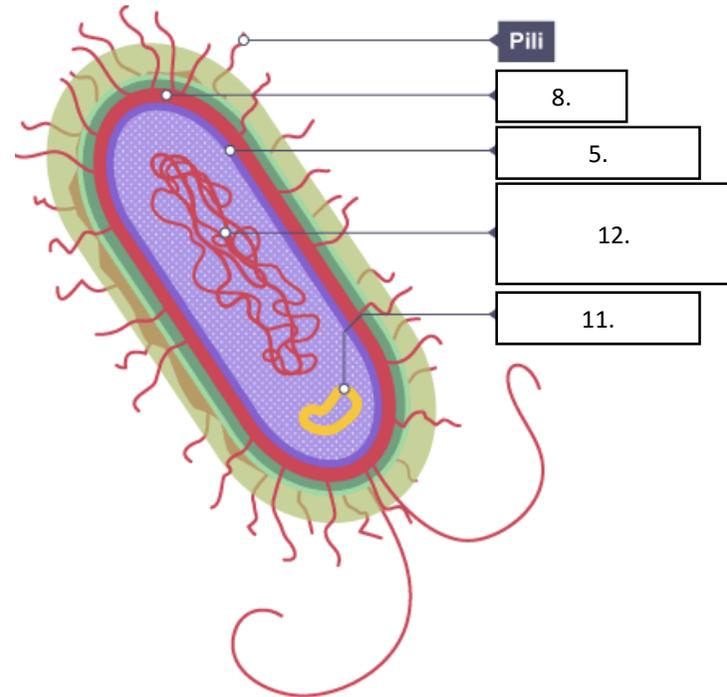
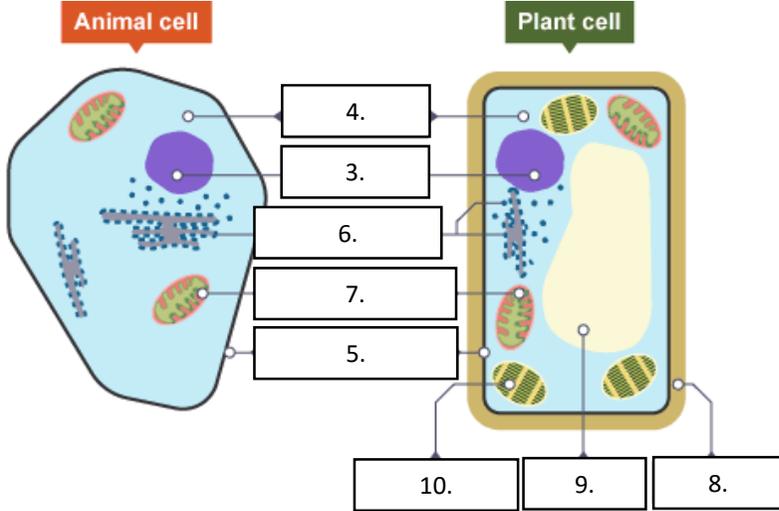
An example of a Fibonacci-type sequence is:

4, 7, 11, 18, 29 ...



# Biology Topic 1: Cell Biology

## 1. Cell structure



### Keywords

<b>1. Eukaryotic</b>	A complex cell with a nucleus (e.g. animal or plant cells).
<b>2. Prokaryotic</b>	A smaller cell without a nucleus (e.g. bacterial cell).
<b>3. Nucleus</b>	Contains genetic material.
<b>4. Cytoplasm</b>	Where a cells chemical reactions happen.
<b>5. Cell membrane</b>	Controls what goes into and out of a cell.
<b>6. Ribosome</b>	Part of a cell where proteins are made.
<b>7. Mitochondria</b>	Where aerobic respiration takes place.
<b>8. Cell wall</b>	Only found in plant cells. Made of cellulose and supports the cell.
<b>9. Vacuole</b>	Only found in plant cells. Contains cell sap.
<b>10. Chloroplasts</b>	Only found in plant cells. Where photosynthesis takes place.
<b>11. Plasmid</b>	Only found in bacterial cells. A small loop of DNA.
<b>12. Genetic material</b>	Long strands of genes not tightly pack in a nucleus.

## 2. Specialised cells

### Keywords

<b>Differentiation</b>	A stem cell turning into a specialised cell
<b>Stem cell</b>	A special type of cell which can turn into other specialised cells
<b>Adult stem cells</b>	Can only produce certain types of cell -found in bone marrow
<b>Embryonic stem cells</b>	Can produce all types of cells - controversial
<b>Meristems</b>	Where plant stem cells are found
<b>Sperm cells</b>	Take male DNA to the egg <ul style="list-style-type: none"> <li>• Tail to help it swim</li> <li>• Lots of mitochondria for energy</li> </ul>
<b>Nerve cells</b>	Carry electrical signals around the body <ul style="list-style-type: none"> <li>• Long to cover long distances</li> <li>• Branches to connect to other cells</li> </ul>
<b>Muscle Cells</b>	Muscle cells contract <ul style="list-style-type: none"> <li>• Long so have space to contract</li> <li>• Lots of mitochondria for energy</li> </ul>
<b>Root hair cells</b>	Root hair cells absorb water and minerals <ul style="list-style-type: none"> <li>• Long hairs</li> <li>• Big surface area for absorption</li> </ul>
<b>Phloem Cells</b>	Phloem cells transport sugars (plants) <ul style="list-style-type: none"> <li>• Long tube joined end to end</li> </ul>
<b>Xylem cells</b>	Xylem cells transport water (plants) <ul style="list-style-type: none"> <li>• Long tubes joined end to end</li> <li>• Hollow so water can flow through</li> </ul>

### 3. Comparing types of microscope

Type of microscope	Advantages	Disadvantages
Light microscope	<ol style="list-style-type: none"> <li>Cheaper</li> <li>Can see colours</li> <li>Can see live specimen</li> </ol>	<ol style="list-style-type: none"> <li>Lower magnification</li> </ol>
Electron microscope	<ol style="list-style-type: none"> <li>Expensive</li> <li>Higher magnification (x1000 more)</li> </ol>	<ol style="list-style-type: none"> <li>Can only see dead specimen</li> <li>No colour</li> </ol>

### 4. Calculating magnification

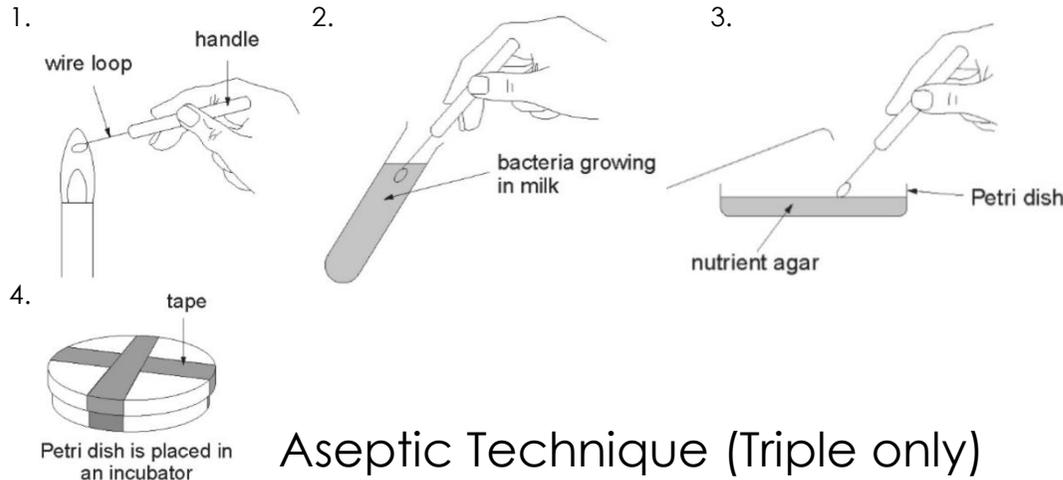
$$\text{magnification} = \frac{\text{size of image}}{\text{actual size of object}}$$

$$\text{actual size of object} = \frac{\text{size of image}}{\text{magnification}}$$



	(mm)	( $\mu\text{m}$ )	(nm)
2mm	2	2000 ( $2 \times 10^3$ )	2000000 ( $2 \times 10^6$ )
130 $\mu\text{m}$	0.13	130	130000 ( $1.3 \times 10^5$ )
0.032m	32	32000 ( $3.2 \times 10^4$ )	32000000 ( $3.2 \times 10^7$ )
7.25 $\mu\text{m}$	0.00725	7.25	7250 ( $7.25 \times 10^3$ )

$\xrightarrow{\times 1000}$        $\xrightarrow{\times 1000}$   
 $\xleftarrow{+ 1000}$        $\xleftarrow{+ 1000}$



### 5. Culturing micro-organisms TRIPLE ONLY

Keywords	
Binary fission	"Splitting in two" how bacteria divide every 20 mins
Agar gel	A gel of nutrients bacteria can grow on
Nutrient broth	A liquid bacteria grow well in
Colony	A group of bacteria making a small circular shape
Inoculating loop	A metal loop use to transfer microorganisms
Petri dish	A small plastic dish used for growing microorganisms
Aseptic	Free from bacteria and viruses
Incubator	Device kept at constant temperature to help the microorganisms grow

Aseptic technique	
prep	All agar plates and broth must be sterilised before use
1.	The inoculating loop must be sterilised by passing through a flame
2.	Sample to be cultured is taken using the loop
3.	Sample spread on agar in petri dish
4.	Dish sealed shut with tape and incubated at 25° C

## 6. Cell division

### Keywords

Chromosomes	Long strands of DNA containing genes. Found in 23 pairs in a human
Cell cycle	The process the cell goes through to divide
Mitosis	A type of cell division that creates 2 identical daughter cells
Therapeutic cloning	Using an embryo create to have the same genes as the patient. Controversial

## 8. Transport in cells

### Keywords

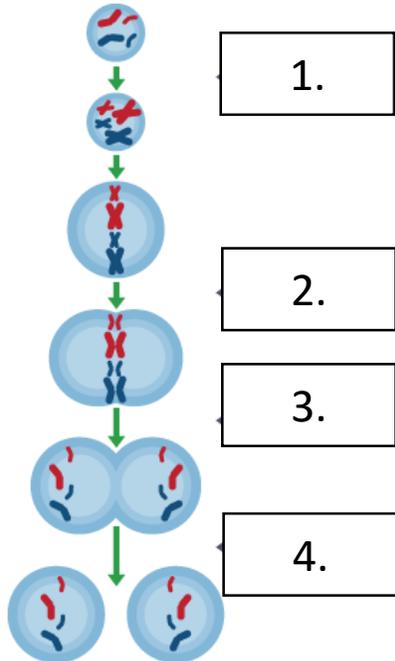
### Definition

### Examples

Diffusion	The passive movement of a substance from an areas of high concentration to an area of low concentration	<ul style="list-style-type: none"> <li>Oxygen and carbon dioxide in the lungs</li> <li>Perfume in a room</li> </ul>
Osmosis	The movement of <b>water</b> molecules across a partially permeable membrane from a less concentrated solution to a more concentrated solution.	<ul style="list-style-type: none"> <li>Water uptake in plants</li> <li>Water absorption in the intestine</li> </ul>
Active transport	Movement of a substance from a lower concentration to a higher concentration, against the concentration gradient. <b>Uses energy.</b>	<ul style="list-style-type: none"> <li>Mineral absorption by roots</li> <li>Glucose absorption by the intestine</li> </ul>
Surface area to volume ratio	The surface area divided by the volume expressed as a ratio	All high <ul style="list-style-type: none"> <li>Unicellular organisms</li> <li>Alveoli in the lungs</li> <li>Villi in the intestines</li> </ul>

## 7. Stages of mitosis

1.	The cell grows and copies all its DNA, mitochondria and ribosomes
2.	The nucleus dissolves and the copied chromosomes pair up
3.	The chromosomes are pulled to opposite sides of the cell
4.	The cytoplasm and cell membrane divides making two identical cells



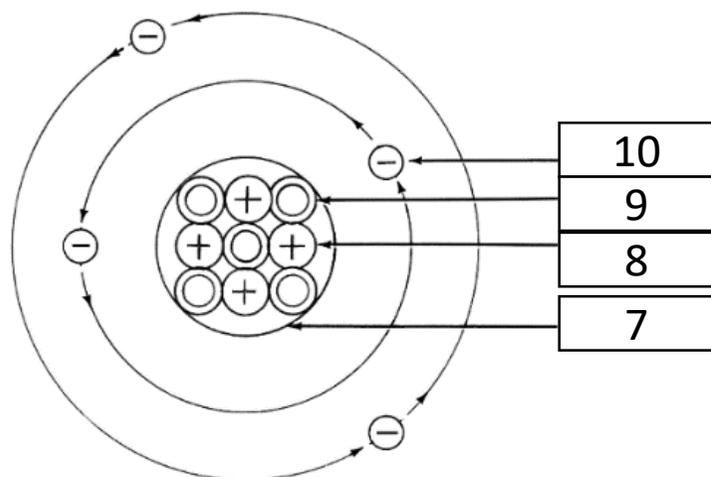
## 9. Factors that effect the rate of diffusion/osmosis

Speed up	Slow down
High concentration gradient	Low concentration gradient
High temperature	Low temperature
High surface area of membrane	Low surface area of membrane

# Chemistry topic 1: Atomic structure

## 1. Keywords

<b>1. Atom</b>	The smallest possible piece of an element. Has a radius of 0.1nm (or $1 \times 10^{-10} \text{m}$ )
<b>2. Element</b>	A substance in which all the atoms have the same atomic number
<b>3. Isotope</b>	Atoms with the same number of protons but different numbers of neutrons
<b>4. Molecule</b>	Two or more atoms bonded together
<b>5. Compound</b>	Two or more <u>different</u> atoms bonded together
<b>6. Mixture</b>	At least two different elements or compounds together. Can be separated easily
<b>7. Nucleus</b>	The centre of an atom. Contains protons and neutrons
<b>8. Proton</b>	A positively charged particle found in the nucleus
<b>9. Neutron</b>	A neutral particle found in the nucleus. Has no charge
<b>10. Electron</b>	A negatively charged particle found in energy levels (shells) around the nucleus



## 2. Properties of sub-atomic particles

Particle	Relative mass	Relative charge	Location
Proton	1	+1	Nucleus
Neutron	1	0	Nucleus
Electron	0	-1	Shells

### Key

relative atomic mass  
**atomic symbol**  
name  
 atomic (proton) number

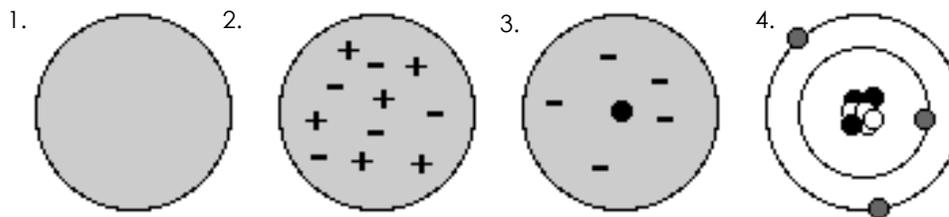
1  
**H**  
 hydrogen  
 1

## 3. Using the periodic table

Number of..	Is the...	Found by..
Protons	Atomic (proton) number	Smaller number on periodic table
Electrons	Atomic (proton) number	Smaller number on periodic table
Neutrons	Difference between the atomic mass and atomic number	Big number - small number

## 4. History of the atom

Discovery	By	Model	Diagram
Solid particle called atom	John Dalton	Particle: solid spheres	1
The electron	JJ Thompson	Plum pudding: positive 'cake' with negative 'plums'	2
Nucleus	Rutherford	Nuclear: Positive nucleus surrounded by electrons	3
Neutron	James Chadwick	Nuclear: Now with protons and neutrons in nucleus	3
Energy levels (shells)	Niels Bohr	Planetary: Electrons now 'orbit' in different shells	4



### 5. Electron arrangement rules

1.	Always fill from the inside to the outside
2.	The first shell can only hold 2 electrons
3.	The second and third can hold 8

### 6. History of the Periodic Table

Invented by	Dmitri <b>Mendeleev</b> , a Russian scientist.
Arranged	In order of <b>atomic mass</b> , and by their <b>chemical properties</b>
What was special about it?	<b>Predicted</b> the existence of <b>other elements</b> not discovered, and <b>left gaps</b> for them in his table
Why was it used?	<b>New elements</b> were <b>discovered</b> that <b>matched these gaps</b>

### 7. Properties – metals and non-metals

Property	Metals	Non-metals
Density	High (they feel heavy for their size)	Low (they feel light for their size)
Strength	Strong	Weak
Malleable or brittle	Malleable (they bend without breaking)	Brittle (they break or shatter when hammered)
Conduction of heat	Good	Poor (they are insulators)
Conduction of electricity	Good	Poor (they are insulators) apart from graphite

### Period No. of shells

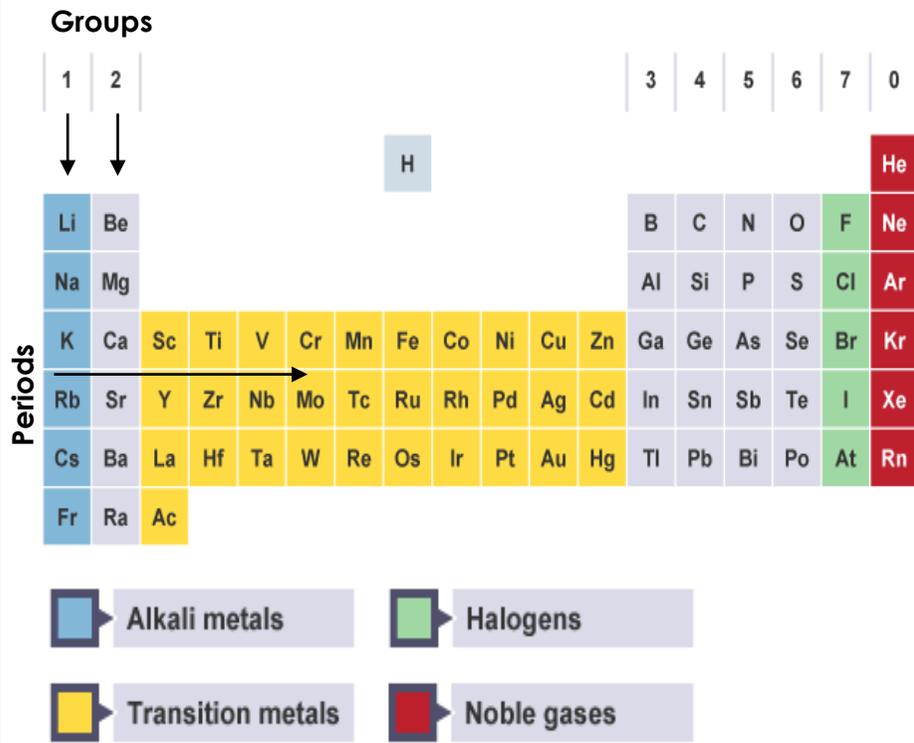
1	1
2	2
3	3
4	4
5	5
6	6
7	7

### TL/DR:

**Group number**  
Tells you're the number of outer electrons

**Period number**  
Tells you how many shells

### 8. Layout of the periodic table



Group	1	2	3	4	5	6	7	8
Electrons in outer shell	1	2	3	4	5	6	7	8
Charge of ion	+1	+2	+3	N/A	-3	-2	-1	N/A
Number of covalent bonds	N/A	N/A	N/A	4	3	2	1	N/A

N/A = not applicable (does not do it)

## 9. Properties – Groups 1 and 7

Group 1 (I)	Melting point	Density	Reactivity	Group 7 (VII)	Melting point	Density	Reactivity	Group 0 (VIII)	Melting point	Density	Reactivity
Lithium (Li)	<b>Decreases</b> down the group	<b>Increases</b> down the group	<b>Increases</b> down the group	Fluorine (F)	<b>Increases</b> down the group	<b>Increases</b> down the group	<b>Decreases</b> down the group	Helium (He)	<b>Increases</b> down the group	<b>Increases</b> down the group	<b>INERT</b> <b>(DO NOT REACT)</b>
Sodium (Na)				Chlorine (Cl)				Neon (Ne)			
Potassium (K)				Bromine (Br)				Argon (Ar)			
Rubidium (Rb)				Iodine (I)				Xenon (Xe)			

## 10. Transition metals (TRIPLE ONLY)

Properties compared to group 1 elements	Other useful properties
More dense	Ions can have different charges
Harder	Form coloured compounds
Stronger	Good catalysts
Higher melting points	
Less reactive	

## 11. Common separation techniques

### 1. Chromatography

Used to separate a mixture of dyes in ink.

### 2. Filtration

Used to separate insoluble solids from liquids (e.g. sand from water).

### 3. Evaporation

Used to separate a soluble salt from solution. The solution is heated strongly in an evaporating basin until dry crystals are left.

### 4. Crystallisation

Used to separate a soluble salt from solution. The solution is heated gently in an evaporating basin until crystals form; the remaining liquid is filtered out.

### 5. Simple distillation

Is used to separate a liquid from a solution – e.g. water from ink. A condenser is used to cool hot gas until it forms a liquid.

### 6. Fractional distillation

Used to separate a mixture of liquids with different boiling points.

# Physics topic 1: Energy

1. Key Term	Definition
Kinetic energy (KE)	The energy an object has because it is moving
Gravitational potential energy (GPE)	The energy an object has because of its position
Elastic potential energy	The energy stored in a springy object when you stretch or squash it
Thermal energy	The energy a substance has because of its temperature
Chemical energy	The energy stored in fuels, food, and batteries
Conservation of energy	Energy cannot be created or destroyed only transferred.
Work done	The energy transferred by a force
Dissipation	The process of energy being transferred or lost to the surroundings
Friction	A force that opposes movement
System	An object or group of objects
Closed system	An isolated system where no energy transfers take place into or out of the energy stores in the system.
Useful energy	Energy in the place it is wanted in the form that it is needed in
Wasted energy	Energy that is not usefully transferred, usually as thermal.

## 2. Calculating efficiency

$$1. \text{Efficiency} = \frac{\text{Useful output energy transferred by the device}}{\text{Total input energy supplied to the device}}$$

$$2. \text{Efficiency} = \frac{\text{Useful power out}}{\text{Total power in}}$$

3.No device can be more than 100% efficient.

4.Machines waste energy because of friction between their moving parts, air resistance, electrical resistance, and noise.

## 5. Energy is transferred by:

1. Heating
2. Waves
3. Electric current
4. Force when it moves an object.

## 3. Equations to recall and apply

$$\text{Work done, } W = \text{force applied, } F \times \text{distanced moved, } s$$

(joules, J) (newtons, N) (metres, m)

$$\text{Change in objects gravitational potential energy store, } \Delta E_p = \text{mass, } m \times \text{Gravitational field strength, } g \times \text{Change of height, } \Delta h$$

(joules, J) (kilograms, kg) (newtons per kilogram, N/kg) (metres, m)

$$\text{Elastic potential energy, } E_e = \frac{1}{2} \times \text{spring constant, } k \times \text{extension}^2, e^2$$

(joules, J) (newtons per metre, N/m) (metres, m)

$$\text{Kinetic energy, } E_k = \frac{1}{2} \times \text{mass, } m \times \text{speed}^2, v^2$$

(joules, J) (kilograms, kg) (metres per second, m/s)

## 4. Power

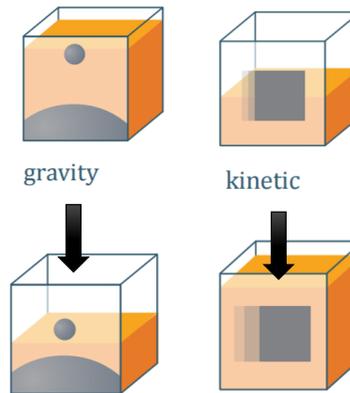
1. The more powerful an appliance, the faster the rate at which it transfers energy

$$2. \text{Power, } P = \frac{\text{Energy transferred to appliance, } E \text{ (joules, J)}}{\text{Time taken for energy to be transferred, } t \text{ (seconds, s)}}$$

(watts, W)

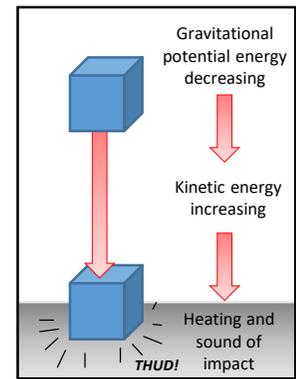
3. The power wasted by an appliance = total power input - useful power output

## 6. Conservation of energy in action



A falling object:

1. Decreases its GPE store
2. Increases its KE store as it falls
3. Waste energy transferred as thermal and sound



## 4. Energy Resources

Energy Resource	Renewable	Advantages	Disadvantages
Fossil Fuels	No	<ul style="list-style-type: none"> <li>• Low cost.</li> <li>• Easily transportable.</li> <li>• Reliable.</li> </ul>	<ul style="list-style-type: none"> <li>• Produces large amounts of Carbon Dioxide.</li> <li>• Produces some Sulfur Dioxide.</li> </ul>
Nuclear	No	<ul style="list-style-type: none"> <li>• Generates a lot of electricity.</li> <li>• Reliable.</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive to construct and run.</li> <li>• Produces dangerous radioactive waste which will last for thousands of years.</li> </ul>
Solar	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• No pollution.</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive to set up.</li> <li>• Doesn't work at night.</li> </ul>
Wave	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• Reliable.</li> </ul>	<ul style="list-style-type: none"> <li>• Can damage marine ecosystems.</li> <li>• Not everywhere is near water.</li> </ul>
Tidal	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• No pollution.</li> <li>• Reliable.</li> </ul>	<ul style="list-style-type: none"> <li>• Can damage marine ecosystems.</li> <li>• Not everywhere is near water.</li> </ul>
Wind	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• No pollution.</li> </ul>	<ul style="list-style-type: none"> <li>• Not always reliable.</li> <li>• Noisy.</li> <li>• Some think they are ugly (eyesore).</li> </ul>
Geothermal	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• No pollution.</li> </ul>	<ul style="list-style-type: none"> <li>• Very few areas where it is accessible.</li> </ul>
Biomass	Yes	<ul style="list-style-type: none"> <li>• Low cost.</li> <li>• Readily available.</li> <li>• Carbon neutral.</li> </ul>	<ul style="list-style-type: none"> <li>• Large scale land use requiring lots of water.</li> <li>• Destruction of habitat to grow crops.</li> </ul>
Hydro-electric	Yes	<ul style="list-style-type: none"> <li>• No fuel costs.</li> <li>• Reliable.</li> <li>• Easily controlled.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires flooding land to build</li> </ul>

Carbon neutral: a process by which no extra carbon is released to the atmosphere.

# Level 1/2 Hospitality and Catering: Unit 2-2.1.1 - Nutrition at different life stages & special dietary needs



## Nutrition at different life-stages

### Adults:

- **Early** – Growth in regard to height of the body continues to develop until 21 years of age. Therefore, all micro-nutrients and macro-nutrients especially carbohydrates, protein, fats, vitamins, calcium and iron are needed for strength, to avoid diseases and to maintain being healthy.
- **Middle** – The metabolic rate starts to slow down at this stage, and it is very easy to gain weight if the energy intake is unbalanced and there isn't enough physical activity.
- **Elderly** – The body's systems start to slow down with age and a risk of blood pressure can increase as well as decrease in appetite, vision and long-term memory. Because of this, it is essential to keep the body strong and free from disease by continuing to eat a healthy, balanced diet.

### Children:

- **Babies** – All nutrients are essential and important in babies, especially protein as growth and development of the body is very quick at this stage. Vitamins and minerals are also important. You should try to limit the amount of salt and free sugars in the diet.
- **Toddlers** – All nutrients remain very important in the diet at this stage as growth remains. A variety of foods are needed for toddlers to have all the micro-nutrients and macro-nutrients the body needs to develop.
- **Teenagers** – The body grows at a fast pace at different times at this stage as the body develops from a child to an adult, therefore all nutrients are essential within proportions. Girls start their menstruation which can sometimes lead to anaemia due to not having enough iron in the body.

## Special Dietary needs

### Different energy requirements based on:

- Lifestyles / Occupation / Age / Activity level  
The amount of energy the body needs is determined with each of the above factors e.g. active lifestyle or physical activity level would need more energy compared to a person being sedentary.

### Medical conditions:

- **Allergens** – Examples of food allergies include milk, eggs, nuts and seafood.
- **Lactose intolerance** – Unable to digest lactose which is mainly found in milk and dairy products.
- **Gluten intolerance** – Follows a gluten free diet and eats alternatives to food containing wheat, barley and rye.
- **Diabetes (Type 2)** – High level of glucose in the blood, therefore changes include reducing the amount of fat, salt and sugar in the diet.
- **Cardiovascular disorder** – Needing a balanced, healthy diet with low levels of salt, sugar and fat.
- **Iron deficiency** – Needing to eat more dark green leafy vegetables, fortified cereals and dried fruit.

### Dietary requirements:

- **Religious beliefs** – Different religions have different dietary requirements.
- **Vegetarian** – Avoids eating meats and fish but does eat dairy products and protein alternatives such as quorn and tofu.
- **Vegan** – Avoids all animal foods and products but can eat all plant-based foods and protein alternatives such as tofu and tempeh.
- **Pescatarian** – Follows a vegetarian diet but does eat fish products and seafood.

# Level 1/2 Hospitality and Catering: Unit 2-2.1.1 - Understanding the importance of nutrition



## The importance of nutrition

Listed below are the macro-nutrients and micro-nutrients. You need to know their function in the body and know examples of food items for each. You need to know why they are needed in the diet and why there is a need for a balanced/varied diet.

### Macro-nutrients

**Carbohydrates** - Carbohydrates are mainly used in the body for energy. There are two types of carbohydrates which are:

- **Starch** - Examples include bread, pasta, rice, potatoes and cereals.
- **Sugar** - Examples include sweets, cakes, biscuits & fizzy drinks.

**Fat** - This is needed to insulate the body, for energy, to protect bones and arteries from physical damage and provides fat soluble vitamins. There are two main types of fat which are:

- **Saturated fat** - Examples include butter, lard, meat and cheese.
- **Unsaturated fat** - Examples include avocados, plant oils such as sunflower oil, seeds and oily fish.

**Protein** - Protein is mainly used for growth and repair in the body and cell maintenance. There are two types of protein which are:

- **High biological value (HBV) protein** - Includes meat, fish, poultry, eggs, milk, cheese, yogurt, soya and quinoa.
- **Low biological value (LBV) protein** - Includes cereals, nuts, seeds and pulses.

### Micro-nutrients

#### Vitamins

- **Fat soluble vitamin A** - Main functions include keeping the skin healthy, helps vision in weak light and helps children grow. Examples include leafy vegetables, eggs, oily fish and orange/yellow fruits.
- **Fat soluble vitamin D** - The main function of this micro-nutrient is to help the body absorb calcium during digestion. Examples include eggs, oily fish, fortified cereals and margarine.
- **Water soluble vitamin B group** - Helps absorb minerals in the body, release energy from nutrients and helps to create red blood cells. Examples include wholegrain foods, milk and eggs.
- **Water soluble vitamin C** - Helps absorb iron in the body during digestion, supports the immune system and helps support connective tissue in the body which bind cells in the body together. Examples include citrus fruits, kiwi fruit, cabbage, broccoli, potatoes and liver.

#### Minerals

- **Calcium** - Needed for strengthening teeth and bones. Examples include dairy products, soya and green leafy vegetables.
- **Iron** - To make haemoglobin in red blood cells to carry oxygen around the body. Examples include nuts, beans, red meat and green leafy vegetables.
- **Sodium** - Controls how much water is in the body and helps with the function of nerves and muscles. Examples include salt, processed foods and cured meats.
- **Potassium** - Helps the heart muscle to work correctly and regulates the balance of fluid in the body. Examples include bananas, broccoli, parsnips, beans, nuts and fish.
- **Magnesium** - Helps convert food into energy. Examples include wholemeal bread, nuts and spinach.
- **Dietary fibre (NSP)** - Helps digestion and prevents constipation. Examples include wholegrain foods (wholemeal pasta, bread and cereals), brown rice, lentils, beans and pulses.
- **Water** - Helps control temperature of the body, helps get rid of waste products from the body and prevents dehydration. Foods that contain water naturally include fruits and vegetables, milk and eggs.

# Level 1/2 Hospitality and Catering: Unit 2-2.1.2 - How cooking methods can impact on nutritional value



## Boiling

- Up to 50% of vitamin C is lost when boiling green vegetables in water.
- The vitamin B group is damaged and lost in heat.

## Poaching

- The vitamin B group are damaged in heat and dissolve in water.

## Roasting

- Roasting is a method of cooking in high temperatures and so this will destroy most of the group C vitamins and some of the group B vitamins.

## Frying

- Using fat whilst frying increases the amount of vitamin A the body can absorb from some vegetables
- Cooking in fat will increase the calorie count of food e.g deep fat frying foods.

## Stir-frying

- The small amount of fat used whilst stir-frying increases the amount of vitamin A the body can absorb from some vegetables.
- Some vitamin C and B are lost due to cooking in heat for a short amount of time.

## Steaming

- Steaming is the best cooking method for keeping vitamin C in foods.
- Only up to 15% of vitamin C is lost as the foods do not come into contact with water.

## Grilling

- Using this cooking method can result in losing up to 40% of group B vitamins.
- It is easy to overcook protein due to the high temperature used in grilling foods.

## Baking

- Due to high temperatures in the oven, it is easy to overcook protein and damage the vitamin C and B group vitamins.



## Sustainability

Many diners are interested in hospitality and catering provisions that provide sustainable dining.

The aim of the three Rs of sustainability is to conserve natural resources and prevent excess waste. By following the rules of reduce, reuse, and recycle, hospitality and catering provisions can save money at the same time as attracting more diners and bringing in more profit.

Sustainability also means buying local produce, using organic ingredients, buying meat and poultry from farm assured producers who guarantee better welfare for the animals, using Marine Stewardship Council sustainable fish and offering meat-free versions of favourite dishes.

## Reduce

**Food waste:** If food and waste were its own country, it would be the third largest producer of greenhouse gas in the world! If it cannot be used to make new dishes or given away, then as much food waste as possible should be composted.

**Energy use:** Hospitality and catering provisions can save energy in many ways including using low-energy lighting, maintaining and upgrading equipment, putting lids on saucepans, batch baking and cooking.

**Food miles:** Using local suppliers means that the food does not have to travel as far from 'field to fork'.

**Water usage:** Use less in cooking by only just submerging vegetables or using a steamer. Use an energy and water efficient dishwasher.

## Reuse

Food that is past its best, for example a brown banana, or scraps such as bones can be used to create new dishes which in turn will decrease food waste. [www.lovefoodhatewaste.com](http://www.lovefoodhatewaste.com) has a vast range of recipe ideas for using surplus food.

- Bread: breadcrumbs, bread and butter pudding, bread sauce and croutons.
- Meat and poultry: bones can be used to make stocks.
- Fruit: banana muffins, apple crumble, fruit coulis, smoothies.
- Vegetables: bubble and squeak, vegetable stock, vegetable bakes, omelettes.
- Eggs: whites can be used to make meringue; yolks can be used to make mayonnaise.

## Recycle

Many hospitality and catering provisions have separate bins for recyclable materials. Professional kitchens should also have areas to separate waste into recyclable, non-recyclable and compostable materials. All staff should be trained to know how to dispose waste correctly.

Coffee grounds can be composted. Compost can be used to grow fruit, vegetables and herbs for use in the kitchen.

Jars and plastic containers can be used for storage in the kitchen. Glass bottles can be used to hold flowers or candles as table decorations.

*Too Good To Go*, *Karma* and *Olio* are apps used by restaurants and supermarkets. Customers can buy discounted food which would otherwise go into landfill.

You need to be able to plan dishes for a menu as well as know, understand and include the following:

### Commodity list with quantities

This means naming all the ingredients needed to make all dishes and how much of each one e.g. grams (g), ounces (oz), millilitres (ml), etc.

### Contingencies

This means stating, in the plan, what you would do to deal with a problem if something were to go wrong.

### Equipment list

Naming all pieces of equipment you would need to cook the dishes, which also includes specialist equipment such as pasta machines and ice cream makers as well as saucepans, chopping boards, knives, etc.

### Health, safety and hygiene

Stating in the plan, points regarding the health, safety and hygiene. The use of temperature probes to ensure foods are cooked, correctly using colour coded chopping boards or washing hands after handling raw meat are a few examples.

### Quality points

These include naming any quality points to consider in the preparation, cooking and serving stage of the plan. Examples could include checking foods are in use by/best before dates, dishes are cooked to minimum temperatures, ingredients stored in correct places and correct temperature, etc.

### Sequencing or dovetailing

This means you fit together the different steps and activities in logical order when planning to cook more than one dish.

### Timing

You need to state realistic timings of how long each step is likely to take throughout your plan to give accurate information of how long your dishes take to complete.

### Mise en place

This is all the preparation you undertake before cooking. Examples of this include weighing out ingredients, collecting equipment and washing hands.

### Cooking

Throughout your plan, you will need to state how you ensure food is cooked correctly, e.g. chicken is white in the middle, using a temperature probe, etc.

### Cooling and hot holding

Cooling dishes correctly within 1.5hrs to 8 degrees and keeping hot dishes for service at 63 degrees should be mentioned in your plan for relevant dishes, as well as how you would ensure these temperatures are met, e.g. by using temperature probes.

### Serving

Once you have finished cooking your dish or dishes, you need to state how you would present your dish/dishes, e.g. on plate, bowl, etc., as well as what decoration, garnishes and sauces you include before serving.

### Storage

In your plan, you should state where different kinds of ingredients need to be stored, e.g. raw chicken in the fridge or frozen fruit in the freezer and at what temperatures these pieces of equipment need to be (fridge needs to be 0–5 degrees and freezer needs to be -18 degrees).



## Creativity

It is said that 'we eat with our eyes'. Creativity in plating dishes enhances the diner's experience – diners want to be 'wowed' when their meal appears!

**Serving dishes:** Start with the plate – varied sizes, shapes and colours can add immediate impact to your dish. Dishes served in bowls or dessert glasses should be placed on a plate to aid serving.

**Elements:** Each dish will consist of several elements – the main protein, accompaniments, garnish and decoration.

**Volume:** Do not overcrowd the plate – leave some space so that the diner can see each element of the dish. The rule of thumb is that only two-thirds of the plate should be full.

**Height:** Food can be stacked to add height to the overall dish, but each element should be visible.

**Colour:** Accompaniments, garnishes and decoration can add colour to dishes where the main elements are similar in colour. An example is fish and chips: bright green peas and a slice of yellow lemon will enhance the overall appearance of the meal.

**Functionality:** The dish should be beautiful to look at, but easy for the diner to eat.

**Temperature:** Hot food should be served on hot plates. Cold food should be served on chilled plates.

## Accompaniments

Accompaniments should be chosen to complement the main part of the dish. Examples include:

### Carbohydrate accompaniments:

- Savoury: bread, dauphinoise potatoes, pilau rice.
- Sweet: shortbread, brandy snaps, macaron.

### Fruit and vegetable accompaniments:

- Savoury: pea purée, roasted root vegetables, griddled asparagus.
- Sweet: berry compote, fruit kebabs, grilled peaches.

### Sauces:

- Savoury: gravy, red wine jus, parsley sauce.
- Sweet: custard, salted caramel sauce, chocolate sauce.

## Portion control

It is important that the customer is satisfied with their portion without the plate being overcrowded. Keeping portion control accurate allows hospitality and catering provisions to order adequate supplies of ingredients. Accurate portion control will also help prevent food waste.

## Garnish

Garnishes are additions to a dish which both add to the overall taste and enhance the overall appearance.

**Savoury:** parmesan crisps, crispy onions, caviar, watercress, lemon wedges, fresh herbs, salsa, edible flowers.

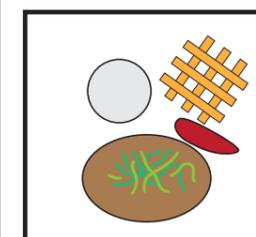
**Sweet:** chocolate dipped strawberries, tuile biscuits, chopped nuts, tempered chocolate work, spun sugar work, edible flowers.

## Decoration

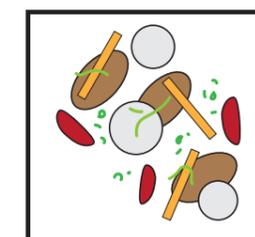
Decoration adds drama to the finished dish but it is not meant to be eaten or add to the overall flavour of the dish. Examples include:

- whole spices added to pilau rice
- gold leaf
- hollow eggshell as serving dish.

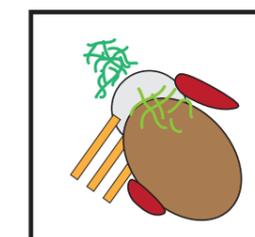
## Plating styles



Classic



Freeform



Landscape



## Food safety practices

During your practical session, you must demonstrate that you can work safely and hygienically. Your plan should show that you have thought about food safety and hygiene during all parts of your practical session. Your personal safety and hygiene practices will be observed during your practical session.

### Personal safety and hygiene practices

#### Hands:

- Wash before, during and after preparing food especially after touching raw meat, dirty vegetables and fridge handles.
- Wash after going to the toilet.
- Wash after sneezing or blowing your nose.
- Wash after disposing of waste.

#### Clothing and hair:

- Clean apron and/or chef's whites.
- Non-slip closed-toe shoes.
- Tie hair back.
- Wear a bandana or hair net.

#### Cuts:

- Cover with a blue, waterproof plaster.

#### Equipment:

- Handle knives safely.
- Use oven gloves when carrying hot items.
- Keep electrical equipment away from water.
- Clean spills immediately.

### Food safety and hygiene practices

#### Ingredients:

- Check use-by and best before dates.
- Check ingredients for freshness; no bruises on fruit, fish should not smell.
- Store correctly until needed.

#### Cleaning:

- Clean worktops before preparation.
- Clean workstation and equipment after preparing high-risk foods.
- Wash up throughout the session – do not leave it all until the end!

#### Temperatures:

- Keep high-risk foods in the fridge (0°C – 5°C) until needed.
- Use a temperature probe to check core temperature of high-risk foods.

#### Waste management:

- Keep waste separate from ingredients during preparation, cooking and serving.
- Recycle and compost waste if possible.

### Management of accidents

- Ensure that you know the location of the First Aid box.
- Ensure that you know how to use a fire blanket or fire extinguisher.



## Dish production

- Were you able to keep to your time plan?
- Did you have any problems during the practical? How did you resolve them?

## Dish selection

- Did your dishes contain the right nutrients for your two groups?
- Were they expensive or cheap to produce?
- Did they contain seasonal or local produce?

## Organoleptic

How did your dishes:

- Look (appearance)?
- Taste (flavour and texture)?
- Smell (aroma)?

## Hygiene

- Did you follow all hygiene guidelines?
- Did you wear correct PPE?
- Did you wash up between jobs?

## Reviewing of dishes

### PEE: Point, Evidence, Explain

You need to write a self-reflection of how you performed during your practical session. There are 8 areas to consider when you write your review of your dishes.

## Presentation

- Were the portions the right size for your two groups?
- How did you add colour to your dishes?
- Were your garnishes and decorations appropriate?

## Health and safety

- Were you able to use equipment safely?
- Did you store ingredients correctly?

## Waste

- Did you separate your waste into categories? (Food waste, recyclable materials, general waste.)
- Did you buy the right amount of ingredients?

## Improvements

- If you made your dishes again, what would you do differently?
- If you had to do the task again, would you change your choice of dishes?
- Would you add additional accompaniments?



### Decision making

- What were your strengths in completing the written tasks?
- What were your strengths in choosing dishes?
- How could you improve weak decisions?
- Were the dishes easy to make together?
- What were the disadvantages of the chosen dishes?
- Did your dishes meet the needs of the provision?
- Did your dishes meet the needs of your two groups (nutrition and cost)?

### Planning

Was the practical session plan in a logical order?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

Were you able to keep to the plan during the practical session?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

### Organisation

How did you organise your written tasks?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

How did you organise your workstation during the practical session?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

### Time management

How did you manage your time when completing the written tasks?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

How did you manage your time during the practical session?

- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.



### Factors affecting menu planning

You need to be aware of the following factors when planning menus:

- **cost** (ingredients as well as business costs)
- **portion control** (value for money without waste)
- **balanced diets/current national advice**
- **time of day** (breakfast, lunch, and dinner menus as well as small plates and snacks)
- **clients/customers** (a menu with prices that will suit the people who visit your establishment).

### Equipment available

You need to know and understand the type of equipment needed to produce a menu. The choice of dishes will be influenced by the equipment available to the chef.

This includes kitchen equipment such as:

- hobs, ovens, and microwaves
- fridge, freezer and/or blast chiller
- specialist equipment, for example a *sous vide* or pizza oven
- hand-held equipment, for example electric whisks or hand-blenders
- other electric equipment, for example food processors.

### Skills of the chef

The skills of the chef must be suited to the type of provision and the menu offered.

A Michelin starred restaurant will require a chef who has complex skills in preparation, cooking and presentation of dishes.

A café will require a chef who has a range of medium and complex skills to produce a suitable menu.

A large restaurant will normally have a full kitchen brigade while a smaller establishment may only have a single chef with one or two assistants.

### Time available

The type of provision will influence the amount of time a customer may be willing to wait for their dish to be prepared. Can the chef prepare, cook, and present more than one dish at the same time? Can some items be made in advance?

### Time of year

The time of year can affect menu choices. Light and cold dishes such as salads are better suited to the summer months. Hearty dishes such as stews are more suited to the winter. Special dishes linked to holidays such as Christmas and Valentine's Day may also be included. The availability of **seasonal** produce can also affect menu choices as certain commodities, for example strawberries, are less expensive when in season.

### Environmental issues

The chef will need to think about environmental issues when planning a menu. Can the chef **reduce** the amount of ingredients bought as well as reducing food waste? Can the chef **reuse** ingredients to create new dishes for example stale bread made into bread-and-butter pudding? Can the kitchen **recycle** waste wherever possible? Running the kitchen sustainably will save money.

### Organoleptic properties

Organoleptic properties are the sensory features of a dish (**appearance, aroma, flavour, and texture**).

The chef will need to think about how the dish will look and taste. Is there a range of colours? Do the flavours go well together? Are there a variety of textures?



### Skills and techniques

You need to be able to identify the different types of skills you need to produce your selected dishes. Some dishes will require the use of more complex skills. You will need to demonstrate a range of skills when producing your chosen dishes.

Preparation and cooking skills are categorised as follows: **basic**, **medium**, and **complex**.

### Presentation

You should know and understand the importance of using the following appropriate presentation techniques during the production of dishes:

- creativity
- garnish and decoration
- portion control
- accompaniments.

### Basic preparation skills and techniques

Blending, beating, chopping, grating, hydrating, juicing, marinading, mashing, melting, peeling, proving, sieving, tenderising, trimming, and zesting.

### Medium preparation skills and techniques

*Baton*, *chiffonade*, creaming, dehydrating, deseeding, dicing, folding, kneading, measuring, mixing, puréeing, rub-in, rolling, skinning, slicing, spatchcocking, toasting (nuts/seeds) and weighing.

### Complex preparation skills and techniques

*Brunoise*, crimping, de-boning, filleting, *julienne*, laminating (pastry), melting using *bain-marie*, mincing, piping, and segmenting, shaping, unmoulding and whisking (aeration).

### Basic cooking skills and techniques

Basting, boiling, chilling, cooling, dehydrating, freezing, grilling, skimming, and toasting.

### Medium cooking skills and techniques

Baking, blanching, braising, deglazing, frying, griddling, pickling, reduction, roasting, sautéing, steaming, stir-frying, and using a *sous vide* (water bath).

### Complex cooking skills and techniques

Baking blind, caramelising, deep fat frying, emulsifying, poaching, and tempering.

# Level 1/2 Hospitality and Catering: Unit 1: Contributing factors to the success of hospitality and catering provision (AC1.4)



## Contributing factors

The hospitality and catering sector is very competitive, and many businesses fail in the first year of operation. There are many factors that must be managed carefully for hospitality and catering businesses to make a profit and continue to operate in the long term.

### Basic costs

**Labour:** These costs include employee wages, National Insurance contributions and pension contributions.

**Material:** These costs include decoration, furnishings, kitchen and dining equipment, ingredients, printing and health and safety equipment.

**Overheads:** These costs include rent, rates, gas and electricity, insurance, licensing, training and maintenance.

### Economy

The value of the pound (£) can affect the hospitality and catering sector. If the economy is good, people will be willing to spend more. If the economy is weak (recession), people may decide that eating out or going on holiday is a luxury and will spend less.

**VAT (Value Added Tax)** is added to the final cost of goods and services offered in the hospitality and catering sector. The money from VAT goes to the government to pay for services everyone uses for example the NHS.

### Environmental impact

Running a hospitality or catering provision uses a lot of resources. Businesses are encouraged to **reduce**, **reuse**, and **recycle**. Energy efficient equipment such as low energy light bulbs can save a business money. Using local and seasonal ingredients reduces the amount of CO<sub>2</sub> released into the atmosphere during transport. All waste should be separated and recycled or composted when possible.

### Profit

**Gross Profit:** The difference between how much a menu item costs to make and how much it sells for. Ingredient costs should not be more than 30% of the gross profit. If the ingredient cost for a chocolate brownie dessert is £1.50 and the menu price is £4.50, the gross profit is £3.00.

**Gross Profit %** =  $(3.00 \div 4.50) \times 100 = 66.6\%$

**Net Profit** = What is left from the gross profit once all costs (as listed above) are covered.

### New technology

New technologies have benefitted the sector in positive ways. These include:

- **cashless systems** such as contactless cards and mobile payment apps
- **digital systems** such as online booking/ordering and key cards
- **office software** such as stock ordering systems.

### Media

The hospitality and catering sector is very competitive, so most businesses try to make good use of the media to advertise. Most businesses will have their own **website**, which customers can use to view menus and make bookings.

- **Print Media:** Ads in magazines and newspapers, flyers and money-off vouchers.
- **Broadcast media:** Television, radio and online ads.
- **Social media:** Customer feedback and reviews.

Consumers are increasingly using smartphones to book, order, pay and review.



**Standards and ratings:** You will need to be able to know the importance of standards and ratings within the hospitality and catering industry, they are hotel and guest house standards, and restaurant standards.

## Hotel and guest house standards

Hotels and guest houses standards are awarded and given star ratings. You should know what criteria is needed to be met for an establishment to receive each star rating.

Star rating 1 = Basic and acceptable accommodation and facilities. Simple rooms with no room service offered.

Star rating 2 = Average accommodation and facilities, a small establishment, and would not offer room service or have a restaurant.

Star rating 3 = Good accommodation and facilities. One restaurant in the establishment, room service available between certain hours, and Wi-Fi in selected areas are provided. The establishment could have a pool and gym.

Star rating 4 = Very good accommodation and facilities. Large hotel & reception area of a very good standard. Certain hours of room service, with a swimming pool and valet parking offered.

Star rating 5 = Excellent standard of accommodation, facilities, and cuisine. Offer valet parking, 24 hr room service, spa, swimming pool, gym, and concierge service.

## Restaurant standards

Restaurant standards have three main possible awards or ratings that you should know. They are listed below:

### AA Rosette award

Ratings between one and five rosettes could be awarded based on the following:

- different types and variety of foods offered
- quality of the ingredients used
- where the ingredients are sourced
- how the food is cooked, presented and tastes
- skill level and techniques used as well as the creativity of the chef.



<https://www.stirkhouse.co.uk/about-us/awards/attachment/award-rosette>

## Michelin star

A rating between one and three Michelin stars could be awarded based on the following:

- quality of ingredients used
- cooking and presentation techniques
- taste of the dishes
- standard of the cuisine
- value for money.



<https://guide.michelin.com/us/en/california/to-the-stars-and-beyond>

## Good food guide

A rating between one and 10 could be awarded based on the following:

- cooking skills
- quality of ingredients
- techniques and cooking skills shown.



## Hospitality and catering providers

You must understand, be able to name, and explain the two different provisions in hospitality and catering.

**Commercial:** the business aims to **make profit** from the hospitality and catering provision that they provide.

**Non-commercial:** the service provider **doesn't aim** to make a profit from the service they provide.



### Commercial (residential)

**Commercial (residential):** meaning the hospitality and catering provision aims to create a profit from the service they provide, but also offers accommodation.

For example:

- hotels, motels & hostels
- B&B, guest houses and Airbnb
- holiday parks, lodges, pods, and cabins
- campsites and caravan parks.

### Non-commercial (residential)

**Non-commercial (residential):** the hospitality and catering provision offers accommodation but does not aim to make a profit from the service they provide.

For example:

- hospitals, hospices, and care homes
- armed forces
- prisons
- boarding schools, colleges, and university residences.

### Commercial (non-residential)

**Commercial (non-residential):** catering establishments that aim to make a profit from their service, but no accommodation is provided.

For example:

- restaurants and bistros
- cafes, tea rooms and coffee shops
- takeaways
- fast food outlets
- public houses and bars
- airlines, cruise ships, long distance trains
- pop up restaurants
- food and drink provided by stadiums, concert halls and tourist attractions
- mobile food vans and street food trucks
- vending machines.

### Non-commercial (non-residential)

**Non-commercial (non-residential):** catering establishments with no accommodation provided and don't aim to make a profit from their service.

For example:

- schools, colleges, and universities
- meals on wheels
- canteen in working establishments (subsidised)
- charity run food providers.





### Types of service in commercial and non-commercial provision

You need to be able to understand and know the different types of service within commercial and non-commercial provision. They are split into two main categories of food service and residential service.



#### Food service

The different types of food services in the catering sector are listed below. You should know the meaning of each one and be able to provide examples. For instance;

##### Table service

- Plate: the food is put on plates in the kitchen and served by waiting staff. Good portion control and food presentation consistent.
- Silver: a waiter will transfer food from a serving dish to the customer's plate using a silver spoon and fork at their table.
- Banquet: a range of foods suitable for large catered events such as weddings, parties, or award ceremonies.
- Family style: the food is placed on serving bowls on the customer's table for customers to share between them.
- Gueridon: is served from a trolley to the customer's table, the food is then cooked and/or finished and presented in front of the customer. Creates an atmosphere of sophistication and entertainment.

##### Counter service

- Cafeteria: all types of food and drink are shown on a long counter for customers to move along with a tray for them to choose what they want to eat.
- Fast food: the food and drink is displayed on a menu behind the counter, often with pictures. Quick, simple, and usually served with disposable packaging.
- Buffet: a range of foods served on a big serving table where customers walk up to collect their plate and help themselves to food and drink. The food can be hot or cold, and some items could be served by waiting staff.

##### Personal service

- Tray or trolley: the meals are served on trays from a trolley and customers sometimes order items in advance.
- Home delivery: the customer's order is made over the phone or online, and is then delivered by the business to their address.
- Takeaway: food that's cooked by the business onsite and then eaten elsewhere.

#### Residential service

Listed below are the different types of residential types of service in the hospitality and catering sector. You should know the different types of service offered in various hospitality provisions.

##### Rooms:

- single/ double/ king/ family
- suite (en-suite bath/ shower room, shared facilities).

##### Refreshments:

- breakfast/ lunch/ evening meal
- 24-hour room service/ restaurant available.

##### Leisure facilities:

- spa
- gym
- swimming pool.

##### Conference and function facilities:

- large rooms
- overhead projector and computer
- pens and paper provided
- refreshments available.



# Level 1/2 Hospitality and Catering - Unit 1-1.1.2: Personal attributes, qualifications and experience

You need to be able to know and understand the different personal attributes, qualifications and experience that an employer would look for to fulfil different job roles in the hospitality and catering industry.

## Personal attributes

The list below names the different personal attributes that employees could need to fulfil different jobs in the industry:

- Team player
- Organised
- Flexible
- Good communicator
- Friendly
- Calm under pressure
- Willingness to learn and develop
- Pleasant
- Hygienic
- Punctual
- Hardworking
- Reliable
- Approachable
- Good listener
- Leadership qualities
- Sense of humour
- Ability to be proactive
- Good attention to detail
- High standard of personal appearance.



## Qualifications

Apprenticeships and experience in the role or sector are two ways to fulfil certain job roles. Named below are some of the qualifications that could be required to fulfil certain jobs within the hospitality and catering sector.

### Hospitality sector

- Level 1 Certificate in Business and Administration (office administration).
- Level 2 Certificate in Front of House Reception (hospitality and catering).
- Level 2 Diploma in Reception Operation and Services (hospitality and catering).
- GCSE English / Maths / Hospitality and Catering / Business / IT.

### Catering sector

- Diploma in Catering.
- NVQ Food preparation and cooking.
- Bachelor's degree/catering management.
- City & Guilds diplomas in professional cookery.
- BTEC HND in professional cookery.
- A foundation degree in culinary arts.
- Health and safety and food hygiene certificates/food hygiene.
- Level 1/2 hospitality and catering.
- GCSE Food and Nutrition.
- Level 3 Food Science and Nutrition.
- First aid.





### Types of employment roles and responsibilities within the industry

There are four main areas within the industry that you should know the roles and responsibilities within. They are listed below:



#### Front of house

- Front of house manager: oversees all staff at the restaurant, provides training, hiring of staff, and ensures good customer service.
- Head waiter: oversees the waiting staff of the restaurant in high-end eating establishments.
- Waiting staff: greets customers, shows them their table, takes food and drink orders from customers, and serves them their order. Makes sure customers' needs are met, and that the food order is made correctly.
- Concierge: advises and helps customers with trips and tourist attractions. Books taxis for customers and parks customer cars.
- Receptionist: takes bookings, deals with questions and complaints from customers, checks-in customers, takes payment, and provides room keys.
- Maître d'hôte: oversees the service of food and drinks to customers. They greet customers, check bookings, reservations, and supervise waiting staff.

#### Kitchen brigade

- Executive chef: in charge of the whole kitchen, developing menus and overlooking the rest of the staff.
- Sous-Chef: the deputy in the kitchen and is in charge when the executive chef isn't available.
- Chef de partie: in charge of a specific area in the kitchen.
- Commis chef: learning different skills in all areas of the kitchen. Helps every chef in the kitchen.
- Pastry chef: prepares all desserts, pastry dishes and bakes.
- Kitchen assistant: helps with the peeling, chopping, washing, cutting of ingredients, and helps washing dishes and stored correctly.
- Apprentice: an individual in training in the kitchen and helps a chef prepare and cook dishes.
- Kitchen porter/ plongeur: washes the dishes and other cleaning duties.

#### Housekeeping

- Chambermaid: cleans guests' rooms when they leave, and restocks products that have been used, they also provide new bedding and towels.
- Cleaner: cleans hallways and the public areas of the establishment.
- Maintenance: repairs and maintains the establishment's machines and equipment, such as heating and air conditioning. These responsibilities could also include painting, flooring repair or electrical repair.
- Caretaker: carries out the day to day maintenance of the establishment.



#### Management

- Food and beverage: responsible for the provision of food and drink in the establishment which will include breakfast, lunch, dinner, and conferences.
- Housekeeping: ensuring laundering of bed linen & towels, ordering of cleaning products and overseeing housekeeping staff duties.
- Marketing: promotes events and offers to increase custom at the establishment, and is responsible for the revenue of the business.

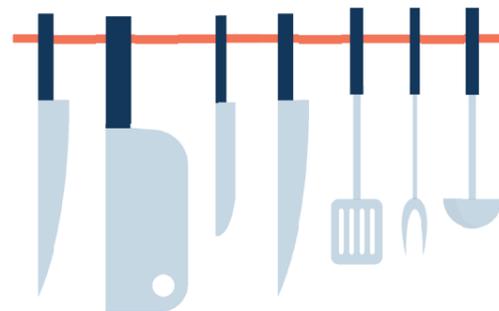




## Types of employment contracts and working hours

You need to know the following types of employment contracts and working hours.

- **Casual:** this type of contract could be provided through an agency and used to cover employees that are absent from work due to illness. There is no sick pay or holiday entitlement with this type of employment.
- **Full time (permanent):** working hours including start and finishing times are fixed and stated in this type of contract. A contract of this nature allows the employee to have sick pay and holiday entitlement.
- **Part-time (permanent):** working hours mean that the employee works on certain days of the week. Work times are stated in the contract, including the starting and finishing times that are fixed in this type of contract. The employee has sick pay and holiday entitlement in this type of contract.
- **Seasonal:** this type of contract is used when a business needs more staff due to busy times throughout the year, such as the Christmas period. The contract will state for the employee to work for a specific time frame only. Also, the contract would not expect further or regular work after the contract is complete.
- **Zero hours contract:** this type of contract is chosen between the employer and the employee. This means that the employee can sign an agreement to be available for work when the employer needs staff. No number of days or hours is stated in the contract and the employer doesn't require to ask the employee to work, and neither does the employee have to accept the work offered. No sick pay or holiday entitlement is offered for this type of contract.



## Pay and benefits in the industry

The following pay and benefits are what you should be aware of in the industry.

- **A salary:** this type of pay is a fixed amount of money paid by the employer monthly, but is often shown as an annual sum on the contract.
- **Holiday entitlement:** employees are entitled to 28 days paid a year. Part-time contracts are entitled less depending to their contract hours.
- **Pension:** on retirement age, an employee qualifies for a pension contribution by the employer and the government.
- **Sickness pay:** money paid to the employee with certain contracts when they are unable to go to work due to illness.
- **Rates of pay:** national minimum wage should lawfully be offered to all employees over 18 years of age. This rate is per hour and is reviewed each year by the government.
- **Tips:** money given to an employee as a 'thank you' reward for good service from the customer.
- **Bonus and rewards:** given from an employer to the employee as a way of rewarding all the hard work shown from the employee throughout the year, and helping make the business a success. Also known as remuneration.

## Working hours

The working hours directive in the UK states that employees on average cannot work more than 48 hours which is worked out over a period of 17 weeks. Employees can choose not to follow this and work more hours if they want to.

People under the age of 18 cannot work more than eight hours a day and 40 hours a week.

Employees that work six hours or more a day must have a break of 20 minutes, and have the right to have at least one day off every week.

# Level 1/2 Hospitality and Catering - Unit 1-1.1.4:

## Positive and negative uses of media

You need to be able to know and understand the different types of media, as well as the positive and negative impacts they can have on the hospitality and catering industry.

### Different types of media

The list below names the different types of media that can be used to promote the hospitality and catering industry.

- **Printed media:** Different types of printed media can include:
  - ◇ magazines
  - ◇ newspapers
  - ◇ billboards
  - ◇ business cards
  - ◇ posters.
- **Broadcast:** Different types of broadcasting media include:
  - ◇ television
  - ◇ radio.
- **Internet:** Ways of promoting through the internet include:
  - ◇ social media, e.g. Facebook, Instagram, Twitter, etc.
  - ◇ Websites, e.g. TripAdvisor
  - ◇ ads on podcasts
  - ◇ blogs
  - ◇ email.
- **Competitive:** This could include being competitive with other establishments to attract and retain customers through competitions, deals, special offers and themed events.

### Positive and negative uses of media

Named below are some of the positives and negative impacts the media can have on the hospitality and catering sector.

#### Positive impacts:

- Social media is free and isn't an extra cost for the business.
- Able to contact a larger and wider audience quickly.
- Attracts new customers.
- Builds business awareness.
- Customers can feel more of a personal connection with the business.
- Creates and builds customer loyalty.
- Media can target specific groups easily.

#### Negative impacts:

- Advertising in media is expensive, e.g. printed media and broadcasting.
- Having a bad or negative review/comment on social media can rapidly decrease the reputation of a business, e.g. through a comment retweet or share.
- Rapid spread of negative reviews, comments and/or feedback can be detrimental to the success of a business, leading the business potentially having to close.
- Having a bad reputation would decrease customer loyalty and less likely to attract new customers.





## Customer needs

Customers can be divided into three groups:

- Business customers
- Leisure customers
- Local residents

Customer needs may include catering, equipment and/or accommodation.

## Customer needs: Local residents

Local residents may use the facilities hospitality and catering provisions offer without using overnight accommodation. Examples include restaurants, bars, spas, and golf courses.

Hospitality and catering businesses will want to ensure that noise and parking issues are addressed if the provision is in a residential area.

## Customer needs: Customer rights and inclusion

By law, hospitality and catering provision must provide for customer rights, inclusion and disabilities. No business can discriminate against a person because of:

- Age
- Disability
- Sexual orientation
- Ethnicity
- Gender
- Race and culture
- Pregnancy and maternity

## Customer needs: Business customers

These customers use hospitality and catering provisions for work purposes. Examples include conferences, meetings, and training.

Catering:

- tea, coffee and food facilities for meetings
- early breakfast
- 24-hour room service.

Conference facilities:

- whiteboards, projectors, screens, flip charts, pens and notepaper, free Wi-Fi
- parking.

Accommodation:

- a quiet floor to work
- express check-in and check-out
- iron and ironing board or trouser press
- access to leisure facilities
- discount/loyalty points.

## Customer needs: Leisure customers

These customers use hospitality and catering provisions for holidays, sight-seeing, travelling or when attending sporting and theatrical events.

The needs of leisure customers vary depending on their reason for travel. Some customers will want basic accommodation with value for money and some customers will look for a luxury experience.

Catering:

- drinks facilities in room
- snack/mini bar
- breakfast: included or at extra cost
- room service
- restaurant
- bar
- special dietary needs and children's menu options.

Accommodation:

- different room sizes
- disability access
- en-suite facilities
- free Wi-Fi
- concierge service
- cots
- extra pillows and bedding
- toiletries.



Successful hospitality and catering provisions change to meet their customers' needs and expectations. Customer needs can change depending on their lifestyle, dietary requirements and income. Customers have an expectation that a hospitality and catering provision will keep up with current trends. An example is mobile apps which can be used for everything from booking a room to ordering and paying for food.

### Customer requirements/needs

Understanding customer needs and requirements helps hospitality and catering provisions to attract more customers and make more profit.

**Lifestyle:** Successful hospitality and catering provisions analyse the needs of their customers based on their lifestyles, budgets, eating patterns, and interests such as sports and hobbies.

**Nutritional needs:** Successful hospitality and catering provisions will offer a range of dishes to suit the nutritional needs of their customers. Many menus will include nutritional information available to help their customers make informed choices.

**Dietary needs:** Most menus will offer a range of dishes to suit special dietary needs such as coeliac disease. Most menus will include vegetarian and vegan options as well as children's menus.

**Time available:** Some customers will want fast food, and some will prefer a leisurely meal.

### Customer expectations

Customers will visit a range of hospitality and catering provisions, from fast food to fine dining, with expectations of an enjoyable experience.

**Service:** Customers will expect polite efficient service regardless of the type of provision they are visiting.

**Value for money:** Customers will expect meals that are nutritious, filling and sold at the right price for the type of provision they are visiting.

**Trends:** Customers will expect hospitality and catering provisions to keep up with trends such as mobile ordering apps.

**Awareness of competition from other providers:** Customers will expect hospitality and catering provisions to adapt their menus to attract new customers.

**Media influence/interest:** Customers will expect hospitality and catering provisions to match reviews.

**Environmental concerns:** Customers will expect eco-friendly hospitality and catering provisions.

**Seasonality:** Customers will expect dishes made with seasonal, local ingredients.

### Customer demographics

Successful hospitality and catering provisions conduct marketing research by asking questions to find out the requirements, needs and expectations of potential customers. The information is used by the provision to create a USP (unique selling point).

**Age:** Do potential customers want fast food or a luxury experience? Do they need child-friendly facilities?

**Location:** Is your provision located in a residential area? On a high street? In a business area?

**Accessibility:** Is there parking? Is it accessible to people with mobility issues?

**Money available:** Do potential customers have a large amount of disposable income? Are they on a tight budget?

**Access to establishments/provisions:** Are they competing with similar provisions? Is there limited competition in the area?

# Level 1/2 Hospitality and Catering - Unit 1-1.3.1: Safety documents in hospitality and catering

Different documentation is required to be completed for potential health and safety risks and hazards to be avoided within the hospitality and catering industry. Accident forms and risk assessments are explained below, stating their importance and how to complete each document.

## Accident forms

If an accident happens, it is vital that an accident form is completed correctly to develop control measures for potential risks and to avoid them from happening again. It should be reviewed and used to manage any health and safety risk. It is law to complete an accident form for accidents in the workplace. Below is an example of an accident form and how it should be completed.

Accident form	
Name of person in accident:	Date:
<b>Description of accident &amp; injury:</b>	Description should include as many details as possible about what happened and how, e.g. slipped/fallen on oil spillage and broken arm as a result.
<b>What was the hazard?</b>	Named hazards could be spillage/liquid on floor or broken handrail, etc.
<b>How could this accident have been prevented?</b>	Suggested prevention could include: <ul style="list-style-type: none"> <li>• correct storage</li> <li>• ensuring all staff had health and safety training</li> <li>• relevant health and safety posters visible in the workplace</li> <li>• correct usage of wet floor signs and clear spillages immediately.</li> </ul>
<b>Further action:</b>	Points could include: <ul style="list-style-type: none"> <li>• investigating the accident further</li> <li>• completing/updating risk assessment</li> <li>• reviewing storage of products</li> <li>• first aid that has been given to be logged</li> <li>• correct PPE to be worn, e.g. anti-slip footwear.</li> </ul>
<b>Signed:</b>	

## Risk assessment

A risk assessment should be completed and reviewed frequently for the document to be kept up to date. New risks should have control measures to reduce the risk of happening or not happen at all. Within the document hazards need to be identified, likelihood of the risk happening is stated and the control measure of how to avoid or reduce the risk is noted. Below are definitions of the main key words and an example of a risk assessment document.

**Hazard:** An object or something that can physically harm someone or cause harm to someone's health.

**Level of risk:** The likelihood of the hazard happening and being harmed or causing injury. Level of risks named could be low, medium or high.

**Control measure:** Steps or action taken to avoid or reduce the hazard from happening and causing injury.

Risk assessment			
Assessment carried out by:		Date of assessment:	Date of next review:
What are the hazards?	Level of risk	Control measure	Who needs to carry out action?
Examples could include, slips, trips, falls, burns from oven, electric shocks, etc.	<b>Low / medium / high</b> If it is a low risk, then the hazard is less likely to cause injury or harm compared to a high risk.	Examples could include providing training and PPE for employees, having appropriate safety posters and signs, e.g. wet floor signs.	Named employer and/or employees to reduce the hazard from happening.

**Remember:** Employers are responsible for the health and safety training needs of all staff.

# Level 1/2 Hospitality and Catering: Unit 1-1.3.1 - Health and safety in hospitality and catering provisions



## Control of Substances Hazardous to Health Regulations (COSHH) 2002

What employers need to do by law	What paid employees need to do
Control substances that are dangerous to health.	Attend all training sessions regarding COSHH.
Provide correct storage for those substances and appropriate training for staff.	Follow instructions carefully when using the substances.
Some examples of substances that are dangerous to health include cleaning products, gases, powders & dust, fumes, vapours of cleaning products and biological agents.	Know the different types of symbols used to know different types of substances and how they can harm users and others when used incorrectly.

## Health and Safety at Work Act 1974 (HASAWA)

What employers need to do by law	What paid employees need to do
Protect the health, wellbeing and safety of employees, customers and others.	Take reasonable care of their own health and safety and the health and safety of others.
Review and assess the risks that could cause injuries.	Follow instructions from the employer and inform them of any faulty equipment.
Provide training for workers to deal with the risks.	Attend health and safety training sessions.
Inform staff of the risks in the workplace.	Not to misuse equipment.

## Personal Protective Equipment at Work Regulations (PPER) 1992

What employers need to do by law	What paid employees need to do
Provide PPE e.g. masks, hats, glasses and protective clothes.	Attend training and wear PPE such as chef's jacket, protective footwear and gloves when using cleaning chemicals.
Provide signs to remind employees to wear PPE.	
Provide quality PPE and ensure that it is stored correctly.	

## Report of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013

What employers need to do by law	What paid employees need to do
Inform the Health and Safety Executive (HSE) of any accidents, dangerous events, injuries or diseases that happen in the workplace.	Report any concerns of health and safety matters to the employer immediately. If nothing is resolved, then inform the HSE.
Keep a record of any injuries, dangerous events or diseases that happen in the workplace.	Record any injury in the accident report book.

## Manual Handling Operations Regulations 1992

What employers need to do by law	What paid employees need to do
Provide training for staff.	Ask for help if needed.
Assess and review any lifting and carrying activities that cannot be avoided.	Squat with feet either side of the item. Keep back straight as you start to lift. Keep the item close to your body whilst walking. Make sure you can see where you're going.
Store heavy equipment on the floor or on low shelves.	
Provide lifting and carrying equipment where possible.	

## Risks to health and security including the level of risk (low, medium, high) in relation to employers, employees, suppliers and customers

Review and assess level of risks in the workplace e.g. slips, trips, falls, burns etc by completing a risk assessment to avoid from happening.



## Hazard Analysis and Critical Control Points (HACCP)

Every food business lawfully needs to ensure the health and safety of customers whilst visiting their establishment. To ensure this, they need to take reasonable measures to avoid risks to health. HACCP is a food safety management system which is used in businesses to ensure dangers and risks are noted and how to avoid them.

All food businesses are required to:

- assess and review food safety risks
- identify critical control points to reduce or remove the risk from happening
- ensure that procedures are followed by all members of staff
- keep records as evidence to show that the procedures in place are working.

### Food Hazards

A food hazard is something that makes food unfit or unsafe to eat that could cause harm or illness to the consumer. There are three main types of food safety hazards:

- **Chemical** – from substances or chemical contamination e.g. cleaning products.
- **Physical** – objects in food e.g. metal or plastic.
- **Microbiological** – harmful bacteria e.g. bacterial food poisoning such as Salmonella.

### HACCP table

Here is an example of a HACCP table – it states some risks to food safety and some control points.

Hazard	Analysis	Critical Control Point
Receipt of food	Food items damaged when delivered / perishable food items are at room temperature / frozen food that is thawed on delivery.	Check that the temperature of high-risk foods are between 0°C and 5°C and frozen are between -18°C and -22°C. Refuse any items that are not up to standard.
Food storage (dried/chilled/frozen)	Food poisoning / cross contamination / named food hazards / stored incorrectly or incorrect temperature / out of date foods.	Keep high-risk foods on correct shelf in fridge. Stock rotation – FIFO. Log temperatures regularly.
Food preparation	Growth of food poisoning in food preparation area / cross contamination of ready to eat and high-risk foods / using out of date food.	Use colour coded chopping boards. Wash hands to prevent cross-contamination. Check dates of food regularly. Mark dates on containers.
Cooking foods	Contamination of physical / microbiological and chemical such as hair, bleach, blood etc. High risk foods may not be cooked properly.	Good personal hygiene and wearing no jewellery. Use a food probe to check core temperature is 75°C. Surface area & equipment cleaned properly.
Serving food	Hot foods not being held at correct temperature / foods being held too long and risk of food poisoning. Physical / cross-contamination from servers.	Keep food hot at 63°C for no more than 2 hours. Make sure staff serve with colour coded tongs or different spoons to handle food. Cold food served at 5°C or below. Food covered when needed.

There are several food legislations and laws that you need to be aware of, which are food labelling laws, food safety legislation and food hygiene.

## Food labelling laws

By law, the following must be shown on food packaging and labels:

- name of the food
- list of ingredients
- allergen information noted clearly and in bold on the packaging or label
  - ◇ The 14 possible allergens include: celery, cereals containing gluten (e.g. wheat, oats and barley), crustaceans (e.g. lobster, prawns and crab), eggs, fish, lupin, milk, molluscs (e.g. oysters and mussels), mustard, peanuts, sesame, soybeans, tree nuts (e.g. almonds, hazelnuts, walnuts, Brazil nuts, cashews, pecans, pistachios and macadamia nuts) and sulphur dioxide and sulphites (information from [www.food.gov.uk](http://www.food.gov.uk)).
- storage instructions
- name and address of manufacturer
- nutrition information
- cooking instructions
- weight of ingredients
- use by dates and/or best before dates.

The label must not be misleading and must be clear and easy to understand.



## Food safety legislation

Under the Food Safety Act 1990, any businesses that prepare, cook and sell food must meet the following criteria:

- make sure the food is safe to eat
- the food packaging or label must not be misleading in any way, e.g. if the packaging states the product is suitable for vegetarians it must not contain any meat
- the food product is what the consumer expects it to be.

## Food hygiene

The Food Hygiene Regulations 2006 ensures that food at any time of production, apart from primary production (e.g. catching fish, milking animals, etc.), is handled and sold in a hygienic way.

These regulations also aim to do the following:

1. identify potential food safety hazards
2. enables to identify where exactly in the process that things could go wrong – these are called **critical control points**
3. put controls in place to prevent food safety risks from happening
4. ensure that the control measures that exists are always followed and are reviewed frequently.



# Level 1/2 Hospitality and Catering: Unit 1:

## The operation of front and back of house: Front of house (AC2.2)



### Operational requirements

To run a successful hospitality and catering business, it is important that the front of house is welcoming to all customers. A logical layout and workflow will mean that the customers will be able to enjoy organised, efficient service.

In a catering establishment such as a café, the front of house is where the customers are served.

In a residential establishment such as a hotel, the front of house is where guests are received before checking in to their room.

Catering and residential establishments have common front of house areas, which help to ensure a smooth operation of the business.

### Front of house dress code

The front of house dress creates a first impression. In some establishments a **uniform** may be worn. In other establishments, employees may be required to wear colours such as black and white. In addition:

- clothing must be clean and ironed
- if worn, jewellery, perfume and make-up must be minimal
- personal hygiene must be maintained
- name badges may be required.

### Restaurant workflow

The workflow should be organised so that orders can be filled, and food can be passed from the kitchen as quickly as possible.

**Reception:** Guests are greeted and shown to their seats in the dining area.

**Seating/dining area:** In a large restaurant, this area is divided into **stations**. Each station is managed by a waitperson.

**Counter service:** Food is on display for customers to choose and pay at the end. Some restaurants also offer seated counter service.

**Bar:** An area for socialising or eating in a less formal space.

**Equipment station:** Small items such as cutlery and serviettes and food items such as condiments should be available to wait staff.

**Toilets:** Customer toilets should be clean and welcoming.

**Safety Equipment:** First aid boxes and fire extinguishers must be easily accessed.

### Hotel workflow

The workflow of a hotel should be organised so that guests can be checked in as quickly as possible.

**Reception:** Guests are checked in and receive keys/key cards for their room.

**Lobby/waiting area:** This area should have comfortable seating for the guests. Drinks may be available in the lobby.

**Stairs/Lifts:** These provide access to rooms and other facilities.

**Toilets:** Customer toilets should be clean and welcoming.

### Administration and documents

Businesses may employ an administrator who keeps track of:

- staff employment and training records
- stock orders, delivery records and invoices
- health and safety documents
- financial information
- customer feedback
- advertising.

# Level 1/2 Hospitality and Catering: Unit 1:

## The operation of the kitchen: Equipment (AC2.1)



### Kitchen equipment

It is important that a business invests in good quality kitchen equipment to produce food safely. Even though good quality equipment is expensive, for example stainless steel pots and pans, in the long run they will pay for themselves as they should not need to be replaced often. Good quality electrical equipment will cost less to run, which will also save money and increase profits.

#### Large equipment

<b>Storage:</b>	walk-in fridge, freezer, blast chiller, glass chiller.
<b>Preparation:</b>	floor standing food mixer.
<b>Cooking:</b>	conventional oven, deep fat fryer, hot water urn, standing <i>bain-marie</i> , hot plate/griddle, steamer, grill/salamander.
<b>Cleaning:</b>	pass-through dishwasher, glass washer.

#### Mechanical equipment

<b>Preparation:</b>	weighing scales, electric whisk, food processor, blender, mincer, meat slicer, vegetable peeler, juicer, ice cream maker.
<b>Cooking:</b>	temperature probes.
<b>Specialist equipment:</b>	conveyor toaster, panini maker, coffee maker, pizza oven, <i>sous vide</i> , pasta maker.

#### Small equipment

<b>Preparation:</b>	mixing bowls, measuring jugs and spoons, whisks, spatulas, sieves, knives, chopping boards, zester, juicer, piping bags and tips, graters.
<b>Cooking:</b>	pots and pans, baking dishes, baking trays, tongs, colanders.
<b>Serving:</b>	plates, bowls, glassware.

#### Cleaning and safety materials and equipment

<b>Cleaning:</b>	detergents, cleaning chemicals, scouring pads, cloths, mops, dustpan and brush, buckets, recycling and waste bags and bins.
<b>Preparation:</b>	date labels for food storage, foil, baking paper.
<b>Safety:</b>	fire extinguisher/blanket, smoke/CO <sub>2</sub> alarm, first aid box, oven gloves.

# Level 1/2 Hospitality and Catering: Unit 1:

## The operation of the kitchen (AC2.1)



### Operational requirements

To run a successful hospitality and catering business, it is important that the back of house is well designed to allow safe working conditions for the kitchen staff. A good workflow also allows the safe movement of front of house staff between the kitchen and dining room so that customers enjoy efficient food service.

### Kitchen workflow

<b>Delivery area</b>	Located at the kitchen entrance. Deliveries are checked against the order and temperatures of high-risk foods are recorded.
<b>Storage area</b>	Cool area: contains fridges and freezers for storing high-risk foods, as well as space for storing fresh fruit and vegetables. Dry area: for storing canned and dry goods.
<b>Staffing area</b>	A separate area where employees can change into work clothing. Staff toilets and hand washing facilities are provided. This area may also be used as a breaktime lounge.
<b>Preparation area</b>	A large kitchen will have separate areas for the preparation of meat and poultry, fish, fruits and vegetables and pastries and desserts.
<b>Cooking area</b>	A large kitchen will have separate cooking areas for hot wet foods such as soups, sauces and steamed vegetables and a dry cooking area for roasting, baking, grilling and frying.
<b>Serving area</b>	A large kitchen will have separate areas for plating and presenting hot and cold foods. Waiters will collect orders from “the pass” to deliver to customers in the restaurant.
<b>Cleaning area</b>	This area should be separate from the main kitchen. Dirty crockery and cutlery as well as pots and pans from the kitchen are cleaned and stored in this area.
<b>Waste area</b>	This area should be separate from the main kitchen. Food waste and recyclable and non-recyclable waste is sorted and then disposed in the correct bins, which should be located outside.

### Back of house dress code

The traditional chef's uniform is designed to show authority in the kitchen. Known as “chef's whites”, they come in many colours. Key uniform items are: a long-sleeved, double-breasted jacket, long trousers, head covering, apron, and non-slip, toe-protected shoes. The clothing and shoes protect the wearer from injury while the head covering protects the food from hair and sweat.

# Level 1/2 Hospitality and Catering: Unit 1:

## The operation of the kitchen (AC2.1)



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# Level 1/2 Hospitality and Catering: Unit 1:

## Food related causes of ill health (AC4.1)



### Food related causes of ill health

Ill health could be caused by any of the following:

- **bacteria**
- **allergies**
- **intolerances**
- **chemicals** such as:
  - detergent and bleach
  - pesticides and fertilisers.

### Intolerances

Some people feel unwell when they eat certain foods. Common foods that cause intolerance include:

- milk (lactose)
- cereals (gluten)
- artificial sweeteners (Aspartame)
- flavour enhancers (MSG).

### Food poisoning bacteria

The main causes of food poisoning bacteria are:

- **Bacillus cereus:** found in reheated rice and other starchy foods.
- **Campylobacter:** found in raw and undercooked poultry and meat and unpasteurised milk.
- **Clostridium perfringens:** found in human and animal intestines and raw poultry and meat.
- **E-coli:** found in raw meat, especially mince.
- **Listeria:** found in polluted water and unwashed fruit and vegetables.
- **Salmonella:** found in raw meat, poultry and eggs.
- **Staphylococcus aureus:** found in human nose and mouth.

### Food and the law

Food can cause ill-health if it is stored, prepared and/or cooked incorrectly or if a person unknowingly eats a food that they are allergic or intolerant to. All hospitality and catering provision need to follow laws that ensure food is safe to eat. They are:

- **Food Labelling Regulations (2006):** A label must show all ingredients including allergens, how to store and prepare the food, where it came from, the weight of the food and a use-by or best-before date.
- **Food Safety (General Food Hygiene Regulations) 1995:** This law makes sure that anyone who handles food - from field to plate – does so in a safe and hygienic way. The **HACCP** system is used throughout the hospitality and catering sector.
- **Food Safety Act 1990:** This law makes sure that the food people it is safe to eat, contains ingredients fit for human consumption and is labelled truthfully.

### Food allergies

An allergy is a reaction to something found in food. In the case of a severe allergy, the reaction can lead to death.

Common allergens include:

Cereals	Eggs	Seeds
Soya	Fish and shellfish	Strawberries
Peanuts	Wheat	Milk and dairy
Celery	Tree nuts	Mustard



### Symptoms and signs of food-induced ill-health:

An “upset tummy” is a familiar symptom for someone who thinks they might have food poisoning; this is known as a non-visible symptom. There are many other signs and symptoms that could show that a person might be suffering from ill-health due to the food they have eaten. Some of the symptoms can be seen (visible symptoms) such as a rash. It is important to be able to recognise visible and non-visible symptoms to help someone suffering from food-induced ill-health.

#### Visible symptoms

**Visible** symptoms of food poisoning, chemical poisoning, allergic reaction and food intolerance include:

- **Diarrhoea:** a common symptom of most types of food poisoning bacteria and can also be a symptom of lactose intolerance.
- **Vomiting:** a common symptom of most types of food poisoning bacteria, but may could also be caused by taking in chemicals accidentally added to food.
- **Pale or sweating/chills:** a high temperature is a common symptom of E-coli and Salmonella.
- **Bloating:** a symptom of lactose intolerance.
- **Weight loss:** a symptom of gluten intolerance (coeliac disease).

#### Allergic/anaphylactic reaction

- **Visible symptoms:** red skin, a raised rash, vomiting, swelling of lips and eyes and difficulty breathing.
- **Non-visible symptoms:** swelling of tongue and throat, nausea (feeling sick) and abdominal pain.
- **Anaphylaxis:** a severe reaction to eating an allergen that can lead to death. An injection of adrenaline (for example, an EpiPen) is the treatment for an anaphylactic reaction.

#### Non-visible symptoms

**Non-visible** symptoms of food poisoning, chemical poisoning, allergic reaction and food intolerance include:

- **Nausea (feeling sick):** the most common symptom for all types of food-induced ill-health.
- **Stomach-ache/cramps:** abdominal pain is common symptom of lactose intolerance as well as a sign of an allergic reaction. Cramps may happen at the same time as diarrhoea.
- **Wind/flatulence:** a common symptom of lactose intolerance.
- **Constipation:** a symptom of Listeria food poisoning.
- **Painful joints:** a symptom of E-coli food poisoning.
- **Headache:** a symptom linked to Campylobacter, E-coli and Listeria.
- **Weakness:** non-stop vomiting, and diarrhoea can leave a person feeling weak. Gluten intolerance (coeliac disease) can leave a person feeling tired because their bodies can't absorb the correct amount of nutrients.



### Preventing cross-contamination

Food poisoning bacteria can easily be transferred to high-risk foods. This is called cross-contamination. It can be controlled by:

- washing hands before and after handling raw meat and other high-risk foods.
- using colour-coded chopping boards and knives when preparing high-risk foods.
- washing hands after going to the toilet, sneezing, or blowing your nose and handling rubbish.

### Preventing physical contamination

Physical contamination is when something which is not designed for eating ends up in your food. Physical contaminants include hair, seeds, pips, bone, plastic packaging, plasters, broken glass, flies and other insects, tin foil and baking paper, soil, and fingernails.

Physical contamination can be controlled by:

- food workers following personal hygiene rules
- keeping food preparation and serving areas clean
- checking deliveries for broken packaging
- thoroughly washing fruits and vegetables before preparation
- using tongs or gloves for handling food.

### Temperature control

Delivery	Storage	Preparation	Service
<p>The temperature of high-risk foods must be checked before a delivery is accepted. The food should be refused if the temperatures are above the safe range.</p> <p>Refrigerated foods = <b>0-5°C</b> Frozen foods = <b>-22°C to -18°C</b></p>	<p>High-risk foods must be covered and stored at the correct temperature. Temperatures must be checked daily.</p> <p>Refrigerator = <b>0-5°C</b> Freezer = <b>-22°C to -18°C</b></p> <p>Unwashed fruit and vegetables must be stored away from other foods.</p>	<p>High risk-foods need to be carefully prepared to avoid cross-contamination. A food probe can be used to make sure that high-risk foods have reached a safe core (inside) temperature, which needs to be held for a minimum of two minutes.</p> <p>Core temperature = <b>70°C</b></p>	<p>Food needs to be kept at the correct temperature during serving to make sure it is safe to eat. Hot food needs to stay hot and cold food needs to stay chilled.</p> <p>Hot holding = <b>63°C minimum</b> Cold holding = <b>0-5°C</b></p>



### Role of the Environmental Health Officer (EHO)

The role of the Environmental Health Officer (EHO) is to protect the health and safety of the public. They are appointed by local authorities throughout the UK. In the hospitality and catering industry, they are responsible for enforcing the laws linked to food safety. They inspect all businesses where food is prepared and served to members of the public, advise on safer ways of working and can act as enforcers if food safety laws are broken.

### EHO inspections

The EHO can carry out an inspection of any hospitality and catering premise at any time during business hours – they do not need to make an appointment. During an inspection, the EHO will check to make sure that:

- the premises are clean
- equipment is safe to use
- pest control measures are in place
- waste is disposed properly
- all food handlers have had food hygiene and safety training
- all food is stored and cooked correctly
- all food has best-before and use-by dates
- there is a HACCP plan to control food hazards and risks.

The EHO is allowed to:

- take photographs of the premises
- take food samples for analysis
- check all record books, including fridge and freezer temperatures, cleaning schedules and staff training
- offer advice on improving food hygiene and safety in the business.

### EHO and the law

If the EHO discovers problems with the food safety and hygiene in the premise, they are allowed by law to:

- remove any food that may be hazardous so it can't be sold
- tell the owners to improve hygiene and safety within a set time and then come back and re-inspect
- close the premises if there is a risk to health of the public
- give evidence in a court of law if the owners are prosecuted for breaking food hygiene and safety laws.

### Complaints by the public

The EHO will immediately investigate any complaints of suspected food poisoning linked to a particular premise.

### Hygiene ratings

When an inspection has been carried out, the EHO will give the business a food hygiene rating. The ratings are published on the Food Standards Agency website as well as on stickers displayed at the business. A rating of 5, or very good, represents the highest standard of food hygiene.

# Year 10 History Term 1 Knowledge Organiser: Medieval Medicine 1250-1500

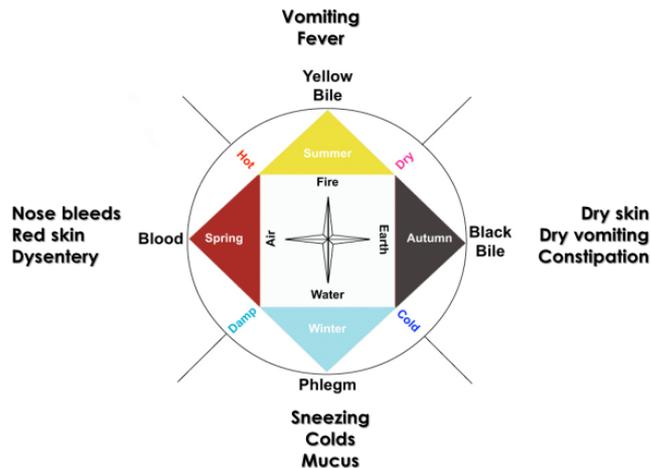
## Key Events

<b>c. 400 BC</b> – <b>Hippocrates</b> wrote his ideas down
<b>c. 130 AD</b> – <b>Galen</b> wrote his ideas down.
<b>1123</b> – Britain's first hospital, St. Bartholomew's was set up in London
<b>1270</b> – <b>Roger Bacon</b> was imprisoned for writing texts that disagreed with Galen.
<b>1348-49</b> – The <b>Black Death</b> affected England, killing 40% of population.
<b>1350</b> – Average life expectancy was 35 years
<b>1388</b> – Parliament passed the first law requiring streets and rivers to be kept clean by the people.
<b>1400</b> – There were 500 hospitals in Britain

## Key Words

<b>Supernatural beliefs</b>	A belief based not on what can be seen, but on spiritual ideas like God, witchcraft or astrology.
<b>Natural beliefs</b>	A belief based on what can be seen or observed in nature.
<b>The Church</b>	A religious organisation, controlled by the Pope in the Middle Ages.
<b>Monastery</b>	A religious building where monks live, eat and pray
<b>Miasma</b>	'Bad air' which was blamed for spreading disease
<b>Astrology</b>	Study of the planets and its affect on humans
<b>Urine Chart</b>	Used human urine to help diagnose an illness
<b>Amulet</b>	A charm that brought 'protection' from disease
<b>Humours</b>	Four fluids in the human body
<b>Purging</b>	A treatment to rid the body by vomiting or diarrhoea
<b>Bleeding</b>	Taking blood from patients to balance their humours by leeches or cupping.
<b>Apothecary</b>	A medieval pharmacists or chemist
<b>Physician</b>	A male medically trained doctor
<b>Barber Surgeon</b>	Untrained surgeon, who practiced basic surgery
<b>Vademecum</b>	A medieval 'medical' book carried by doctors
<b>Rakers</b>	Men hired to clean the streets of muck
<b>Black Death</b>	The bubonic plague outbreak between 1348-1349
<b>Flagellant</b>	People who whipped themselves to show god they repented their sins and wanted mercy.
<b>Pestilence</b>	A fatal epidemic disease, e.g. the Black Death

## The Four Humours



c1250–c1500:  
Medicine in  
medieval England

c1500–c1700: The  
Medical Renaissance  
in England

c1700–c1900:  
Medicine in 18th and  
19th century Britain

c1900–present:  
Medicine in modern  
Britain

# Year 10 History Term 1 Knowledge Organiser: The Renaissance c1500–c1700:

## Key Events

<b>1476</b> – <b>William Caxton</b> introduced the printing press to England.
<b>1517</b> – the <b>Reformation</b> began in Europe.
<b>1543</b> – <b>Vesalius</b> published <i>The Fabric of the Human Body</i> .
<b>1628</b> – <b>William Harvey</b> published his study of the heart and circulation.
<b>1645</b> – The first meeting of the <b>Royal Society</b> .
<b>1665</b> – <b>The Great Plague</b> affected London.
<b>1676</b> – <b>Thomas Sydenham</b> published <i>Observations of Medicine</i> .
<b>1685</b> – the death of Charles II.



**Andreas Vesalius**

**Specialism:**  
Anatomy

**Achievement:**  
Proved Galen was incorrect about the human jaw and heart.

**William Harvey**

**Specialism:**  
Physiology

**Achievement:**  
Proved the heart was a pump and that blood circulated the body.

**Thomas Sydenham**

**Specialism:**  
Observation & diagnosis

**Achievement:**  
Classified diseases & discovered new treatments for malaria & anaemia.

## Key Words

<b>Renaissance</b>	a renewed interest in ideas and learning in 15th-16th Century Europe.
<b>Continuity</b>	when things continue without change.
<b>Progress</b>	when things change for the better.
<b>Anatomy</b>	the study of the body and how it is structured
<b>Physiology</b>	the study of the FUNCTIONS of the body.
<b>Dissection</b>	cutting something, e.g. a body, or taking it apart for examination
<b>Bubonic plague</b>	plague that is spread by the fleas on black rats.
<b>Pneumonic plague</b>	when plague reaches the lungs. Can be caused by bubonic plague or caught from coughing.
<b>Yersinia pestis</b>	the name of the bacteria that causes plague.
<b>Printing Press</b>	a machine that can quickly make many copies of books.
<b>Circulation</b>	the movement of blood through the heart and around the body.
<b>Observation</b>	closely and carefully watching or examining something.
<b>Malaria</b>	a disease that spreads in tropical areas.
<b>Anaemia</b>	a medical condition that affects red blood cells, caused by a lack of iron.
<b>Quinine</b>	a medicine from the bark of the South American cinchona tree.
<b>Microscope</b>	a device that magnifies tiny objects.

c1250–c1500:  
Medicine in  
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c1500–c1700: The  
Medical Renaissance  
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Medicine in 18th and  
19th century Britain

c1900–present:  
Medicine in modern  
Britain

# Year 10 BTEC Dance Subject Term Knowledge Organiser

## Component 1- Exploring the Performing Arts Jazz Dance

Students will gain a **practical appreciation** of practitioners' work in using existing performance material in dance. They will learn how they may respond to or treat a particular theme or issue. How they also use/interpret/modify a pre-existing style and how they communicate ideas to their audience through stylistic qualities.

### Bob Fosse- choreographer

Characteristic of his style is a type of trio dance, with its forward thrust of hips, hunched shoulders, turned-in feet and sharp, jazzy movements enhanced by sound effects. Derbies and animated hands became trademarks of his work

- Fosses show-stopping ability came from the knowledge of how to build a number to a climax, to give it a beginning, middle and end – and his ability to do it with sex and humour.
- Fosse dancers must be able to isolate everything, right down to their eyeballs, elbows and fingers. When a Fosse dancer learns to focus her energy in stillness, she can grab the audience with a simple flutter of her fingers. "It should look like you're not working at all—but you'll come off stage sweating."

### Overview of key features:

- Sound effects (clapping hands, stamping feet, fsss sounds)
- Percussive rhythms
- Derbies and white gloves
- Angular posturing
- Shoulder rolling
- Finger stretching
- Dynamic use of lightening effects
- Percussive sounds which are a key feature of Jazz genre.
- Undercurrent of sensuality



**CHICAGO** focuses on the theme of celebrity and what people will do to achieve it. Neither Roxie nor Velma murder purely for publicity, but once they have they are eager to exploit their newly found fame to the full.

### Historical context

The piece was set in 1924 and Chicago was based on real stories. In particular, the 1926 play by Maurine Dallas about the murders and trials of Belva Gaertner and Beulah Annen. This meant Chicago's press and public became riveted by the subject of homicides committed by women. The time of Vaudeville was a very popular art form in the 1920's consisting of a diverse series of short acts. In the 2000 film version before Velma goes on stage you can hear the director say "on in five" meaning that this was part of a Vaudeville variety show.

### ROXIE HART- main character

As pretty as she is self centred, Roxie Hart's unrelenting search of fame and glory forms the spine of "Chicago". Not very bright and never thinking about the consequences of her actions, Roxie makes bad decisions throughout the show – all in the name of public recognition. Her wannabe vaudeville mind set lasts throughout the entire show.

### Velma Kelly-main character

Tough, sexy, and sarcastic, Velma Kelly is a vaudeville performer who resides in Cook County Jail after she murdered her cheating husband and sister. Used to being the "main attraction", Velma fiercely competes with up and coming rival superstar Roxie for the attention of the press and to preserve her celebrity status. In Brechtian style, Velma often breaks the fourth wall and addresses the audience directly to explain certain events within the show and express herself in the style of Fosse.



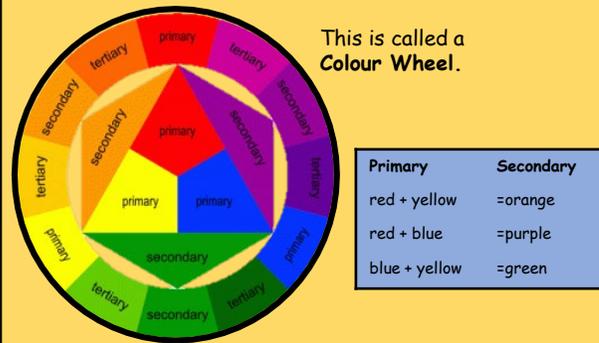
# Year 10 ART Knowledge Organiser

## Year 10 GCSE- Formal Elements

### A. Key Terms

<b>Formal Elements</b>	The parts used to make a piece of artwork.
<b>Line</b>	Line is the path left by a moving point. For example, a pencil or a brush dipped in paint. A line can be horizontal, diagonal or curved and can also change length.
<b>Shape</b>	A shape is an area enclosed by a line. It could be just an outline or it could be shaded in. Shapes can be <b>geometric</b> or <b>irregular</b> .
<b>Form</b>	Form is a <b>three dimensional shape</b> , such as a cube, sphere or cone. Sculpture and 3D design are about creating forms.
<b>Tone</b>	This refers to the lightness or darkness of something. This could be a shade or how dark or light a colour appears. Tones are created by the way light falls on a 3D object. The parts of the object on which the light is strongest are called <b>highlights</b> and the darker areas are called <b>shadows</b> .
<b>Texture</b>	This is to do with the <b>surface quality</b> of something, the way something feels or looks like it feels. There are two types of texture: <b>Actual texture</b> really exists, so you can feel it or touch it; <b>Visual texture</b> is created using marks to represent actual texture.
<b>Pattern</b>	A design that is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a <b>motif</b> . Motifs can be simple shapes or complex arrangements.
<b>Colour</b>	Red, yellow and blue are <b>primary colours</b> , which means they can't be mixed using any other colours. In theory, all other colours can be mixed from these three colours.

### B. Colour Theory



Primary	Secondary
red + yellow	=orange
red + blue	=purple
blue + yellow	=green

- **Tertiary colours** are created by mixing a primary colour and the secondary colour next to it on the colour wheel.
- Colours that are next to each other on the colour wheel are called **harmonious**.
- **Complementary colours** are colours that are **opposite** each other on the colour wheel. When complementary colours are used together they create **contrast**. Adding a colour's complimentary colour will usually make a darker shade. This is often preferable to adding black.
- Warm colours are colours on the red side of the wheel. These are red and include orange, yellow and browns.
- Cool colours are colours on the blue side of the wheel. These are blue and include green, purple and most greys.



**G. Wider Thinking**  
 Youtube - How to Shade Basic Forms  
[www.artcyclopedia.com](http://www.artcyclopedia.com)

### C. Composition

The term composition means 'putting together,' and can apply to any work of art or photography, that is arranged or put together using conscious thought. There are numerous approaches or "compositional techniques" to achieving a sense of unity within an artwork, depending on the goals of the artist.

For example, a work of art is said to be aesthetically pleasing to the eye if the elements within the work are arranged in a balanced compositional way. However, there are artists such as Salvador Dali whose sole aim is to disrupt traditional composition and challenge the viewer to rethink balance and design elements within art works.

#### Rule of thirds

The rule of thirds is a guideline followed by some visual artists. The objective is to stop the subject and areas of interest from bisecting the image, by placing them near one of the lines that would divide the image into three equal columns and rows, ideally near the intersection of those lines.



Painting: Great Wave off Kanagawa, by Hokusai

### F. Expert modelling example

When blending colour with tone layer at least two colours.

Use a light line when sketching.

Use the 'flick' technique to blend smoothly between different tones.

### D. Stretch and Challenge

- Keep it light until it's right - don't press down hard when drawing.
- What formal elements can you see in the painting by Hokusai?

### E. Existing similar examples



What formal elements can you see in these works?



# Year 10 HT1 Drama Knowledge Organiser

## Summary of topic

They must understand the GCSE requirements of the devising plays unit and understand what constitutes successful devised work

## Aims of the topic

To use given stimuli to create and develop a devised piece of theatre

### Devising Rules

- Every actor should have a monologue that is at least 90 seconds long and everyone should have an equal part.
- Divide the work up evenly – script writing (everyone write/plan their own scene), sourcing costume, planning technical theatre (staging, music, lights)
- Help each other out – but only when your own work is done. Even though this is a group project, you still get marked individually.
- Find an idea that every person is happy with and don't rule anything out.
- Try to get it on its feet early – the best ideas come from when you try to act something out, not sit there discussing it.

## **Devising Plays Knowledge Organiser Y10 GCSE**

### Assessment & Rehearsal Tips

- **You will be offered 4 pieces of stimuli given to us by the exam board. 1 song, 1 quote, 1 phrase and 1 picture.**
- **In your given groups, you will generate ideas for each stimuli**
- **You will then decide on a stimuli and an idea. Then you will decide on a practitioner to use for your idea**
- **In your groups you will create a piece of drama around your idea, linked to the stimuli and using practitioner techniques**
- **Try everything – even if something doesn't work, you may discover something useful.**

*'It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair.'*

Charles Dickens, A Tale of Two Cities  
2. 'Best Day of my Life' – American Authors  
3. 'We realise the importance of our voices only when we are silenced' – Malala Yousafzai  
4.  
<https://images.app.goo.gl/Kxp2XA2HGPooKVP H7>



## Skills & Definitions

**Ensemble** – Collaborated group performance.

**Characterisation** – The creating, development and performance of a created character.

**Improvisation** – Spontaneous acting and suggestions that further develop a performance.

**Devised** – Original created performance material, often using a stimulus.

**Stimuli** – The starting point set by exam board e.g. picture, quote, word or song. You chose one.

**Practitioner** – Brecht or Artaud and how they influenced the performance.

**Brecht** – Famous for Political and Epic Theatre. (See practitioner knowledge organiser). Made the audience think and bring real change.

**Artaud** – Famous for Theatre of Cruelty (See practitioner knowledge organiser). Made the audience feel uncomfortable.

**Genre** – Physical theatre is NOT a practitioner, it is a STYLE of drama focused upon storytelling using movement.

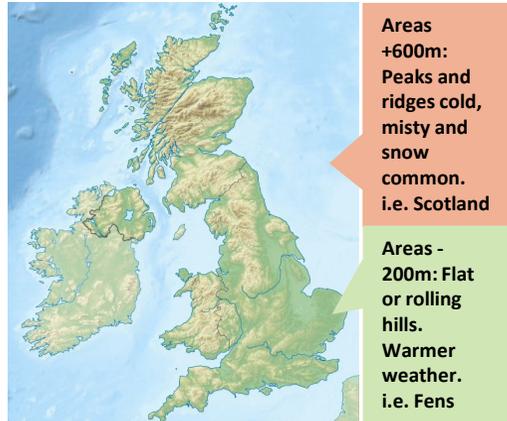
**Techniques** – The key skills which are relevant to the practitioner or genre (see practitioner knowledge organiser).

**Final performance** – The end performance of the piece.

**Rehearsal** – The process of creating and developing your piece of theatre

**Monologue** – A one person speech in character. Often around 2 minutes in length.

What is a landscape?		Relief of the UK	
A landscape has visible features that make up the surface of the land. Landscapes can be broken down into four 'elements'.		Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.	
Landscape Elements			
Physical		Biological	
<ul style="list-style-type: none"> <li>Mountains</li> <li>Coastlines</li> <li>Rivers</li> </ul>	<ul style="list-style-type: none"> <li>Vegetation</li> <li>Habitats</li> <li>Wildlife</li> </ul>		
Human		Variable	
<ul style="list-style-type: none"> <li>Buildings</li> <li>Infrastructure</li> <li>Structures</li> </ul>	<ul style="list-style-type: none"> <li>Weather</li> <li>Smells</li> <li>Sounds/Sights</li> </ul>		

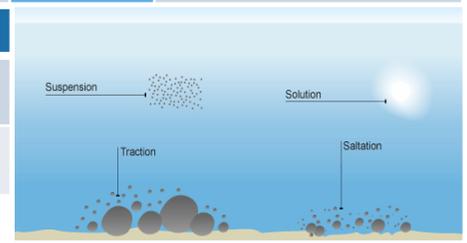


Erosion	
The break down and transport of rocks – smooth, round and sorted.	
<b>Attrition</b>	Rocks that bash together to become smooth/smaller.
<b>Solution</b>	A chemical reaction that dissolved rocks.
<b>Abrasion</b>	Rocks hurled at the base of a cliff to break pieces apart.
<b>Hydraulic Action</b>	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Transportation	
A natural process by which eroded material is carried/transported.	
<b>Solution</b>	Minerals dissolve in water and are carried along.
<b>Suspension</b>	Sediment is carried along in the flow of the water.
<b>Saltation</b>	Pebbles that bounce along the sea/river bed.
<b>Traction</b>	Boulders that roll along a river/sea bed by the force of the flowing water.

Glaciation in the UK	
Over many thousands of years, glaciation has made an impression on the UK's landscape. Today, much of upland Britain is covered in u-shaped valleys and eroded steep mountain peaks.	
<b>During the ice age</b>	
Ice covered areas eroded and weathered landscapes to create dramatic mountain scenery.	
<b>After the ice age</b>	
Deep valleys and deposition of sediment revealed	

Human activity on Landscape		
<b>Farming has changed the vegetation which grows there.</b>	<b>Much of the rural landscape has been replaced by urban sprawls.</b>	<b>Infrastructure such as roads and pylons cover most of the UK.</b>
Over thousands of years, much of the UK's woodlands have gone.	Increasing population of the UK means more houses are needed.	UK's marshes and moorlands are heavily managed by people.



# Distinctive Landscapes

## Geology of the UK

The UK is made from a variation of different rock types. The varied resistance of these rocks influences the landscape above.

### Igneous Rock

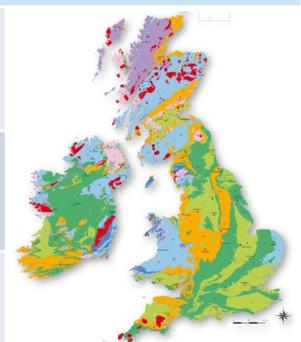
Volcanic/molten rock brought up to the Earth's surface and cooled into solid rock.

### Sedimentary Rock

Made from broken fragments of rock worn down by weathering on Earth's surface.

### Metamorphic Rock

Rock that is folded and distorted by heat and pressure.

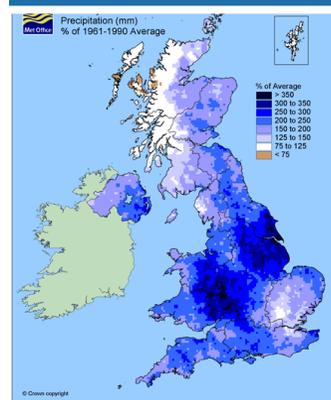


## Climate and Weather in the UK

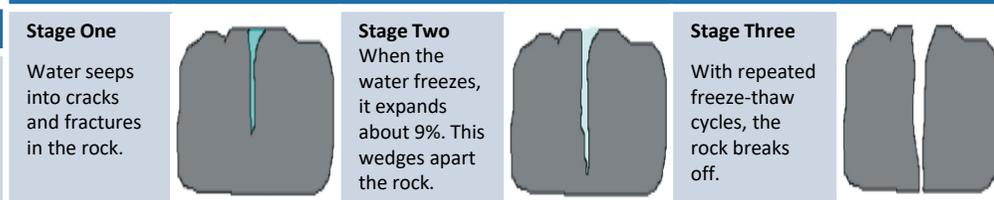
The variations of climate and weather means there are different influences on the UK's landscape.

Climate	Weathering
<p>The rainfall map of the UK shows variations in average rain.</p> <ul style="list-style-type: none"> <li>Less precipitation occurs in low land areas. East England</li> <li>Most precipitation occurs in upland areas. Scotland.</li> </ul> <p><b>These differences mean...</b> Uplands experience more weathering, erosion and mass movement.</p>	<p><b>Mechanical</b> Caused by the physical action of rain, frost and wind.</p> <p><b>Chemical</b> Action of chemicals within rain dissolving the rock.</p> <p><b>Biological</b> Rocks that have been broken down by living organisms.</p>

## Average rainfall in the UK



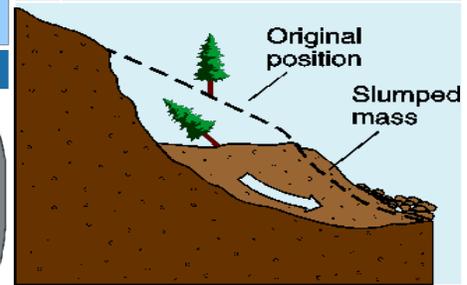
## Freeze-thaw weathering



## Mass Movement

A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.

- Rain saturates the permeable rock above the impermeable rock making it heavy.
- Waves or a river will erode the base of the slope making it unstable.
- Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
- The debris at the base of the cliff is then removed and transported by waves or river.



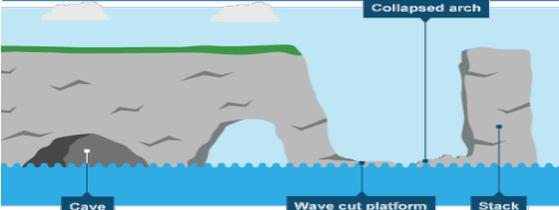
## Soil & Landscape

- Soils are created from weathered rocks, organic material and water. Rock types have influence over fertility of soil.
- Low-laying areas such as the Cambridgeshire Fens have deep soil whereas uplands have thin soil.
- Deep soil is more often associated with deciduous woodland rather than coniferous woodlands.

## Deposition

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

## Formation of Coastal Stack



Example: Old Harry Rocks, Dorset

- 1) Hydraulic action widens cracks in the cliff face over time.
- 2) Abrasion forms a wave cut notch between HT and LT.
- 3) Further abrasion widens the wave cut notch to form a cave.
- 4) Caves from both sides of the headland break through to form an arch.
- 5) Weather above/erosion below –arch collapses leaving stack.
- 6) Further weathering and erosion leaves a stump.

## Coastal Defences

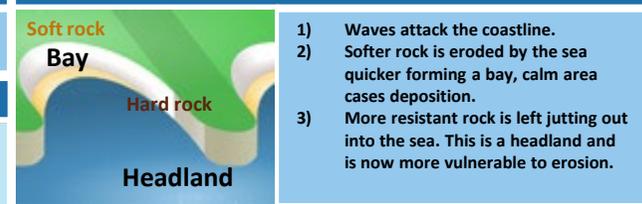
### Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	<ul style="list-style-type: none"> <li>✓ Beach still accessible.</li> <li>✗ No deposition further down coast = erodes faster.</li> </ul>
Sea Walls	Concrete walls break up the energy of the wave. Has a lip to stop waves going over.	<ul style="list-style-type: none"> <li>✓ Long life span</li> <li>✓ Protects from flooding</li> <li>✗ Curved shape encourages erosion of beach deposits.</li> </ul>
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	<ul style="list-style-type: none"> <li>✓ Cheap</li> <li>✓ Local material can be used to look less strange.</li> <li>✗ Will need replacing.</li> </ul>

### Soft Engineering Defences

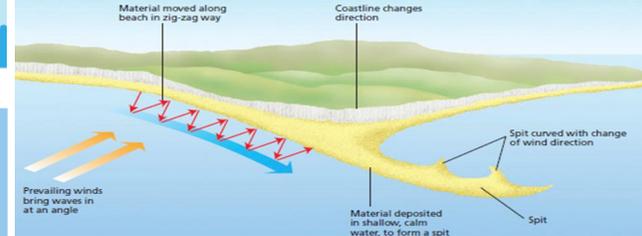
Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	<ul style="list-style-type: none"> <li>✓ Cheap</li> <li>✓ Beach for tourists.</li> <li>✗ Storms = need replacing.</li> <li>✗ Offshore dredging damages seabed.</li> </ul>
Managed Retreat	Low value areas of the coast are left to flood and erode naturally.	<ul style="list-style-type: none"> <li>✓ Reduce flood risk</li> <li>✓ Creates wildlife habitats.</li> <li>✗ Compensation for land.</li> </ul>

## Formation of Bays and Headlands



- 1) Waves attack the coastline.
- 2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
- 3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

## Formation of Coastal Spits - Deposition



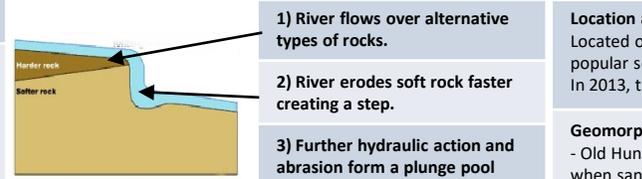
Example: Spurn Head, Holderness Coast

- 1) Swash moves up the beach at the angle of the prevailing wind.
- 2) Backwash moves down the beach at 90° to coastline, due to gravity.
- 3) Zigzag movement (Longshore Drift) transports material along beach.
- 4) Deposition causes beach to extend, until reaching a river estuary.
- 5) Change in prevailing wind direction forms a hook.
- 6) Sheltered area behind spit encourages deposition, salt marsh forms.

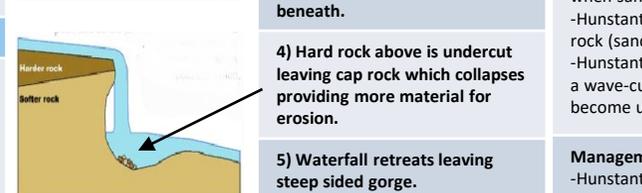
## Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

## Formation of a Waterfall



- 1) River flows over alternative types of rocks.
- 2) River erodes soft rock faster creating a step.
- 3) Further hydraulic action and abrasion form a plunge pool beneath.

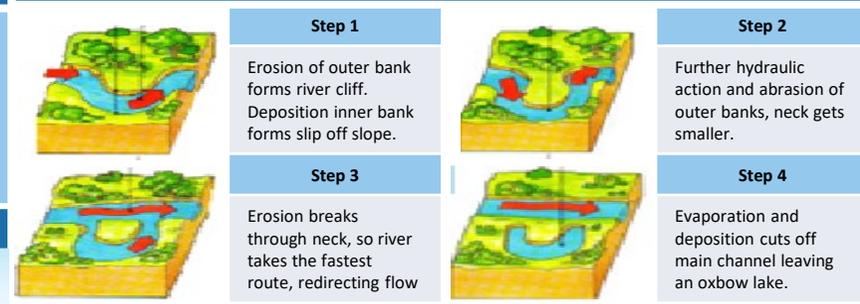


- 4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.
- 5) Waterfall retreats leaving steep sided gorge.

## Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

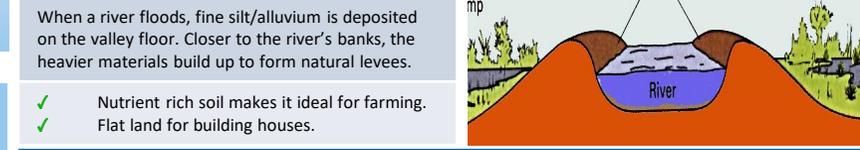
## Formation of Ox-bow Lakes



## Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

## Formation of Floodplains and levees



- ✓ Nutrient rich soil makes it ideal for farming.
- ✓ Flat land for building houses.

## River Management Schemes

<b>Soft Engineering</b> <b>Afforestation</b> – plant trees to soak up rainwater, reduces flood risk. <b>Demountable Flood Barriers</b> put in place when warning raised. <b>Managed Flooding</b> – naturally let areas flood, protect settlements.	<b>Hard Engineering</b> <b>Straightening Channel</b> – increases velocity to remove flood water. <b>Artificial Levees</b> – heightens river so flood water is contained. <b>Deepening or widening river</b> to increase capacity for a flood.
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## Case Study: Hunstanton Coast

**Location and Background**  
Located on the North-West coast of Norfolk. The town is a popular sea resort for tourists to visit all year round. In 2013, the town suffered damage from a storm surge.

**Geomorphic Processes**  
- Old Hunstanton is dominated by dunes that are formed when sand is trapped and built up behind objects.  
- Hunstanton Cliffs are made from three different bands of rock (sandstone, red chalk and white chalk).  
- Hunstanton Cliff are exposed to cliff retreat. This is when a wave-cut notch develops enough for the cliff face to become unstable and eventually collapses.

**Management**  
- Hunstanton is protected by a number of groynes. These trap sand to build up the beach for better protection.  
- The town is also protected by large sea walls to prevent flooding and deflect the waves energy.  
- \$15 million has been spent on beach nourishment to add sediment to beach for increased protection against flooding.

## Case Study: The River Tees

**Location and Background**  
Located in the North of England flows 137km from the Pennines to the North Sea at Red Car.

**Geomorphic Processes**  
**Upper** – Features include V-Shaped valley, rapids and waterfalls. High Force waterfall drops 21m and is made from harder Whinstone and softer limestone rocks. Gradually a gorge has been formed.  
**Middle** – Features include meanders and ox-bow lakes. The meander near Yarm encloses the town.  
**Lower** – Greater lateral erosion creates features such as floodplains & levees. Mudflats at the river's estuary.

**Management**  
- Towns such as Yarm and Middleborough are economically and socially important due to houses and jobs that are located there.  
- Dams and reservoirs in the upper course, controls river's flow during high & low rainfall.  
- Better flood warning systems, more flood zoning and river dredging reduce impact from flooding.

# Year 10 MUSIC GCSE HT1 Knowledge Organiser

## Pop

Rock & Roll of the 1950s and 1960s  
Rock Anthems of the 1970s and 1980s  
Pop ballads of the 1970s, 1980s and 1990s  
Solo artists from 1990 to the present day

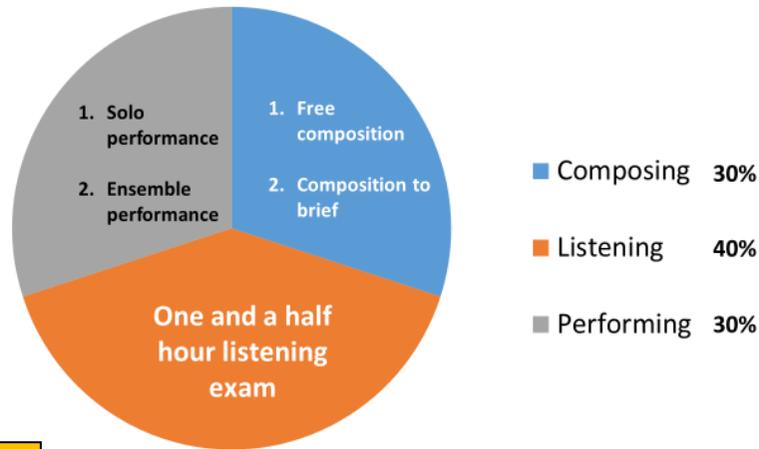


Music from films and computer games  
Music composed especially for films but also classical music used in films  
Need to get good at describing music elements and how they're blended

## Film

## Overview of Listening Exam Topics

### OCR GCSE music



## Rhythms of the World

India & Punjab  
Israel and Palestine  
Africa  
Caribbean & South America

Exam –

There will be questions on all these areas but only some of the selected pieces you have studied.

Some standard listening questions like “what instrument is playing the melody?” and others where it will ask you to fill in the missing notes.



**Music from the Baroque, Classical and Romantic eras**  
**Lots of orchestral music**

**The Concerto Through Time**

**What is an input device?**

A piece of equipment that allows users to enter data into a computer. These devices are used to create a digital product.

## Capturing images

**Scanner:** To digitise documents which means to convert a hard copy (paper) into a digital version stored on a computer. There are two types of scanner: flatbed and handheld.

**Digital camera:** A way of capturing a digital image. Commonly embedded within smart devices now.

**Graphics tablet:** It allows the user to input a drawing to the computer using a type of pen called a stylus.

**Capturing sound**

**Webcam:** Used to communicate with each other using an internet connection. This captures audio and visual elements and is commonly used for online meetings.

**MIDI keyboard:** A way of inputting sounds to a computer through digital signals.

**Microphone:** Used to input data that can be converted digitally or outputted to an output device like speakers.

**Sensors**

**Sensors:** It uses different methods to input data into a computer for a specific purpose. For example, a thermostat will read room temperature and an infrared sensor may detect movement

**Listen**

**Speakers**

This allows the user to hear sound such as: listening to music, watch a video, enhance the sound quality on a computer game.

**Headphones**

This is an alternative way of hearing sound but instead this is used so that one individual can hear the sounds instead of being heard by everyone.

Mouse		
To select, drag and drop items, control tools and scroll through pages.		
Trackball	Gaming	Touchpad
Includes a large ball on the top or side that can be controlled by a thumb.	Designed to play for long periods with a right and left button and a scroll wheel.	A pointing device built into a keyboard on devices like a laptop.
Keyboard		
A standard QWERTY keyboard is a fast method of data input for those who are able to touch-type.		
Braille keyboard	Concept keyboard	
Uses raised patterns on each key to aid users with visual impairment.	Uses symbols/images on each key to allow fast input of data.	

## Readers

**QR code reader**  
This allows you to scan the code normally found on a mobile phone and get information about a product or service.

**Barcode reader**  
This allows data held by a barcode to be transferred to a computer. This could be information about a product in a supermarket.

**Optical mark reader**  
An optical mark reader recognises the position of marks on a document and inputs this information to the computer.

**Magnetic ink character recognition**  
This input device reads magnetic ink characters such as those at the bottom of a cheque.

**Magnetic stripe reader**  
A magnetic stripe reader is needed to input the information held on the black magnetic stripe that you find on the back of cards.

**RFID reader**  
A small chip and an antenna to identify electromagnetic fields using radio waves and can be used from a distance.

Cost	Capacity	Reliability
Expensive, even the cost per MB. Although, the price is beginning to come down.	You can purchase up to 4TB of data, not as much as you can with a HDD.	It has a limited number of read and write cycles which means performance will deteriorate quickly.
Durability	Portability	Speed
Resistant to being dropped because it has no moving parts.	Most devices are small, lightweight and easy to carry around. Easy to transfer files.	It doesn't use a mechanical arm and relies on the processors embedded within.

**What is solid-state storage?**

A solid-state drive (SSD) is a solid-state storage device that uses integrated circuit to store data persistently, typically using flash memory. Examples include Solid-State Drive, USB Flash Drive and SD Card.

- Advantages:**
- No spin up time.
  - Fast access to data
  - Silent
  - More robust, uses less energy and no moving parts.
- Disadvantages:**
- High cost (compared to HDD)
  - Relatively low write speed
  - Limited of read/write cycles.

**Inkjet printer**  
Common household printer which is affordable and prints to a good standard.

**Laser printer**  
A quicker and more expensive form of printing with users toner instead of printer ink.

**Dot matrix printer**  
It has small pins on the print head that hit against an ink soaked ribbon to make a mark on the paper.

**Thermal printer**  
Produces a printed image by passing paper with a special coating over a small electrical print heads.

**Dye-sublimation printer**  
Uses heat to print onto materials other than paper such as plastic, fabric and cards.

**3D printer**  
These use instructions from CAD software to create a 3D design of a product. Useful when creating prototypes.

### What is magnetic storage?

- The most common example of magnetic storage is a Hard Drive.
- The hard drive contains several moving mechanical parts such as a spinning platter with a thin magnetic coating.
- A "head" moves over the platter, writing 0's and 1's on the platter. A magnetic tape device another form of magnetic storage primarily used for data archiving.

#### Advantages:

- Low cost per GB
- It has an unlimited number of read/write cycles.

#### Disadvantages:

- Slow to read and write data because it uses an actuator arm.
- Uses more energy.

### Evaluation against storage characteristics

Cost	Capacity	Reliability
Expensive from the outset but cost per MB represents value for money.	Enough capacity to store different types of files.	Performs well for a long period of time but will eventually deteriorate.
Durability	Portability	Speed
If it's external, then it can become damaged if dropped because it has moving parts.	Would have to be detached from the computer and it's heavy.	Uses a head that moves over a platter to read and write data so it's not instant.

### Evaluation against storage characteristics

Cost	Capacity	Reliability
Cheap to buy and cheaper to buy as a bulk. You can get a blank CD for less than £1.	CD's can only store 700 MB which might not be enough to store larger files. Blu-ray can hold up to 25GB.	If CD's are stored in cases or plastic wallets then they can continue to be used for long periods.
Durability	Portability	Speed
Sensitive to scratches and dust which can make it difficult to read the data.	Most devices are small, lightweight and easy to carry around. Easy to transfer files.	It is slow reading the data because it has to access the optical disk drive.

### What is optical storage?

- Optical storage works when lasers write data to the disc and read from it using a series of pits and lands.
- Examples of magnetic storage include CD, DVD and Blu-ray

#### Advantages:

- Portable as it's small, lightweight and easy to carry around.
- Reliable if it's looked after properly (i.e. in a protective case)

#### Disadvantages:

- Might not be as durable because the disk may get scratched.
- Low capacity in comparison to other portable alternatives (e.g. USB flash drive)

### What is optical storage?

- Cloud storage is a form of online storage that enables data to be stored and backed up over a network.
- Many individuals and organisations will pay cloud service providers to store their data remotely which can be accessed anywhere if there is an internet connection.

#### Cloud storage providers

- Google Drive
- Dropbox
- Microsoft OneDrive.
- iCloud

#### Organisations that use cloud storage/computing:

- E-mail, virtual desktops, software development/testing, databases and big data analytics.

Advantages	Disadvantages
Data is backed up frequently and easy to recover.	Data is held offsite by a company you do not control.
You can extend the amount of available storage by varying how much you pay.	If your Internet connection fails, so does your access to remotely stored data.
Since your data is stored remotely you can access it whether you are in Manchester or Madrid.	Difficult to migrate data to another cloud provider later.

# 1.1.1 Functionality of different hardware devices

## IT6: Internal components

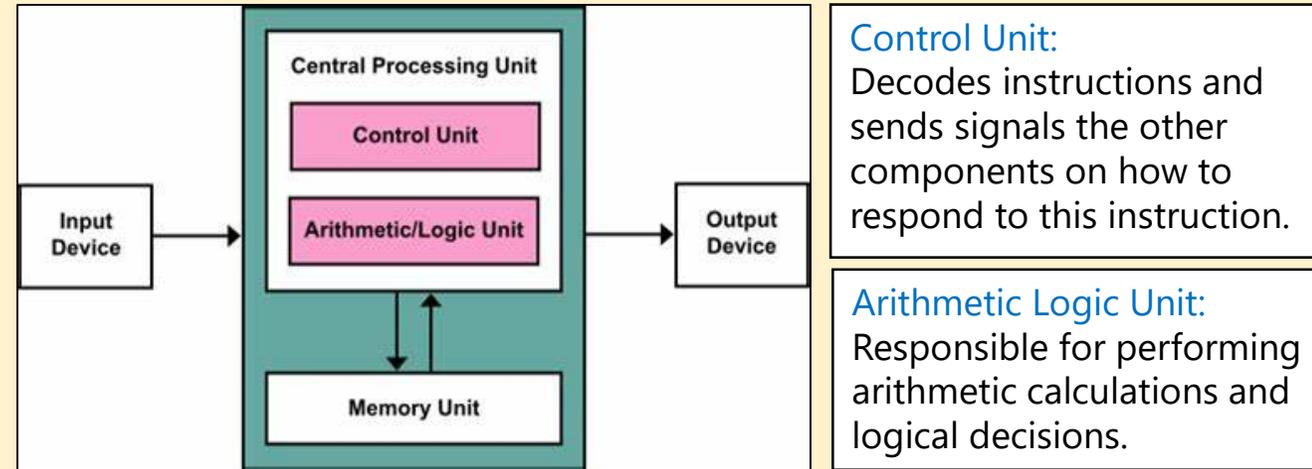
### What is an internal component?

An internal component is a part that is designed to be connected/attached to the inside of a computer system.

### Internal components

- CPU - To fetch, decode and execute instructions
- Graphics card - It outputs images to a display device and controls each pixel on the screen.
- Main memory - To store data/programs currently in use.
- Sound card - Generates sounds that could be recorded and played.
- Motherboard - To connect all the components together.
- Network interface card - Enables users to connect to a network.

### Structure of the processor



### What is a computer port?

Ports are slots on the motherboard into which a cable of external device is plugged in.

### Examples

HDMI	VGA	PS/2	Ethernet	Serial
USB	Parallel	Display	DVI	

# CHRISTIANITY: BELIEFS

## Key terms

- Omnibenevolent:** All-loving.
- Omnipotent:** All-powerful
- Holy Trinity:** God as three parts – the Father, Son and Holy Spirit.
- Nature of...:** what something is like'
- Literal:** Meaning that they believe every word
- Interpretive:** Meaning that they look for important advice within.
- Incarnation:** because they believe that at this time God (as Jesus) became flesh.
- Atonement:** Christians believe that at this time, God (as Jesus) became flesh.

## Crucial Commands:

**Describe:** Say in detail what something or someone is like, and the impact it has. E.g. Describe the meaning of the word Omnibenevolent.

**Explain:** Say why something or someone is important, and the impact it has. E.g. Explain why Jesus' death is important to Christians.

**DISCUSS:** Write about at least two points of view and explain why these points of view are valuable or not. E.g. "The most important Christian belief is Jesus' resurrection" (15 marks)

## How do Christians believe everything began?

(Book of Genesis) Over 7 days God spoke and created different aspects of creation. Everything was planned by God with a purpose.

**Conservative Christians:** Read the bible literally.

**Liberal Christians:** The main point of the story is not the detail of how God made the world, but the fact he did.

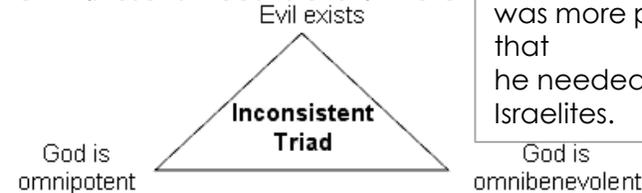
## What is God like?

Omnipotent = God is all powerful

Omnibenevolent = God is all loving

Omniscient = God is all knowing

Omnipresent = God is everywhere



**For example:** The Plagues of Egypt.

God showed his omnipotence by sending 10 plagues to show the Pharaoh that he was more powerful and that he needed to free the Israelites.

## The nature and role of humans

Humans were a special part in creation. God breathed life into Adam and made them 'in his image'. Adam was made from the dust, and Eve from Adam's rib as his 'helper'. Humans were told to be **stewards of the world**. However, Adam and Eve gave into temptation from the devil. Evil had now entered the world - **this is known as the Fall**. In Christian teaching, the sinfulness of Adam and Eve caused a separation from God that could result in humanity's eternal punishment. God has given humanity the opportunity to make this right through the incarnation and sacrifice of God the Son.

## Salvation

Jesus' death on the cross is an act of atonement. The Fall, when Adam and Eve ate the forbidden fruit, destroyed the perfect relationship between humans and God and introduced sin. Jesus's death allowed humans the chance of salvation, but different Christian denominations have different ideas about how they should act to receive that salvation. **Catholics** believe that by taking the sacraments they will achieve salvation and go to heaven. E.g., baptism washes them clean of sin. **Protestants** believe that they must have faith in Jesus and repent their sins to achieve salvation.

## Afterlife

**(Parable) Sheep and Goats** = Those who help vulnerable in society (sick, hungry, prisoners) will have eternal life because it is like helping Jesus himself. Those that don't will not go to heaven.

**Jesus' resurrection** = Christians believe they will also be resurrected "I am the resurrection and the life, those who believe in me will live, even though they die" **Heaven** = Eternity with God. Some believe it is a physical location, others believe it is a symbol for eternity with God.

**Hell** = Separation from God. Some believe it is a physical location with hell fire and torment and others believe it is a symbol for eternity without God.

**Purgatory** = Catholic belief – a place of cleansing that is between heaven and earth. Prayers are said for the souls in purgatory.

## Was Jesus just an ordinary man?

Jesus was God in human form:

"The Word became flesh and made his dwelling among us" (Teachings on the Incarnation)

- He proved this through the resurrection. Jesus' resurrection brought unquantifiable blessings to the Church and the world. His resurrection reminds us that he was raised by the Spirit of the Father, and that same Spirit dwell in us and would give life to our mortal bodies. (Romans 8:11)

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## How do Christians believe everything began?

(Book of Genesis) Over 7 days God spoke and created different aspects of creation. Everything was planned by God with a purpose.

**Conservative Christians:** Read the bible literally.

**Liberal Christians:** The main point of the story is not the detail of how God made the world, but the fact he did.

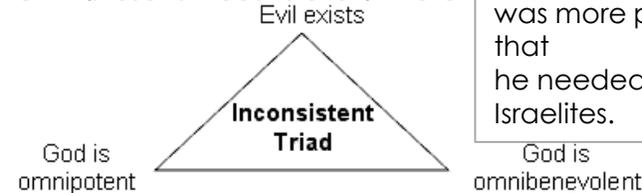
## What is God like?

Omnipotent = God is all powerful

Omnibenevolent = God is all loving

Omniscient = God is all knowing

Omnipresent = God is everywhere



**For example:** The Plagues of Egypt.

God showed his omnipotence by sending 10 plagues to show the Pharaoh that he was more powerful and that he needed to free the Israelites.

## The nature and role of humans

Humans were a special part in creation. God breathed life into Adam and made them 'in his image'. Adam was made from the dust, and Eve from Adam's rib as his 'helper'. Humans were told to be **stewards of the world**. However, Adam and Eve gave into temptation from the devil. Evil had now entered the world - **this is known as the Fall**. In Christian teaching, the sinfulness of Adam and Eve caused a separation from God that could result in humanity's eternal punishment. God has given humanity the opportunity to make this right through the incarnation and sacrifice of God the Son.

## Salvation

Jesus' death on the cross is an act of atonement. The Fall, when Adam and Eve ate the forbidden fruit, destroyed the perfect relationship between humans and God and introduced sin. Jesus's death allowed humans the chance of salvation, but different Christian denominations have different ideas about how they should act to receive that salvation. **Catholics** believe that by taking the sacraments they will achieve salvation and go to heaven. E.g., baptism washes them clean of sin. **Protestants** believe that they must have faith in Jesus and repent their sins to achieve salvation.

## Afterlife

**(Parable) Sheep and Goats** = Those who help vulnerable in society (sick, hungry, prisoners) will have eternal life because it is like helping Jesus himself. Those that don't will not go to heaven.

**Jesus' resurrection** = Christians believe they will also be resurrected "I am the resurrection and the life, those who believe in me will live, even though they die" **Heaven** = Eternity with God. Some believe it is a physical location, others believe it is a symbol for eternity with God.

**Hell** = Separation from God. Some believe it is a physical location with hell fire and torment and others believe it is a symbol for eternity without God.

**Purgatory** = Catholic belief – a place of cleansing that is between heaven and earth. Prayers are said for the souls in purgatory.

## Was Jesus just an ordinary man?

Jesus was God in human form:

"The Word became flesh and made his dwelling among us" (Teachings on the Incarnation)

- He proved this through the resurrection. Jesus' resurrection brought unquantifiable blessings to the Church and the world. His resurrection reminds us that he was raised by the Spirit of the Father, and that same Spirit dwell in us and would give life to our mortal bodies. (Romans 8:11)

# Year 10 3D Design Knowledge Organiser

## Key Vocabulary



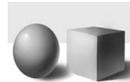
### Line

Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length.



### Shape

A shape is an area enclosed by a line. It could be just an outline or it could be shaded in. Shapes can be geometric or irregular.



### Form

Form is a three dimensional shape, such as a cube, sphere or cone. Sculpture and 3D design are about creating forms.



### Tone

This refers to the lightness or darkness of something. This could be a shade or how dark or light a colour appears. Tones are created by the way light falls on a 3D object. The parts of the object on which the light is strongest are called highlights and the darker areas are called shadows.



### Texture

This is to do with the surface quality of something, the way something feels or looks like it feels. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture.



### Pattern

A design that is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a motif. Motifs can be simple shapes or complex arrangements.



### Colour

Red, yellow and blue are primary colours, which means they can't be mixed using any other colours. In theory, all other colours can be mixed from these three colours.

## Wider Thinking

How to read a sculpture? Get to know the elements of art in sculpture:

<https://www.youtube.com/watch?v=f6JtILFdqns>

## Stretch & Challenge

- Keep it light until it's right – don't press down hard when drawing.
- What formal elements can you see in the painting by Hokusai?

## Colour Theory



This is called a **Colour Wheel**.

### Primary

red + yellow

red + blue

blue + yellow

### Secondary

=orange

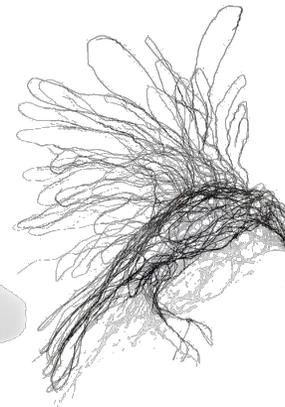
=purple

=green

- **Tertiary colours** are created by mixing a primary colour and the secondary colour next to it on the colour wheel.
- Colours that are next to each other on the colour wheel are called **harmonious**.
- **Complementary** colours are colours that are **opposite** each other on the colour wheel. When complementary colours are used together they create **contrast**. Adding a complementary colour will usually make a darker shade. This is often preferable to adding black.
- **Warm colours** are colours on the red side of the wheel. These are red and include orange, yellow and browns.
- **Cool colours** are colours on the blue side of the wheel. These are blue and include green, purple and most greys.

## Existing Similar Examples

What formal elements can you see in these works?



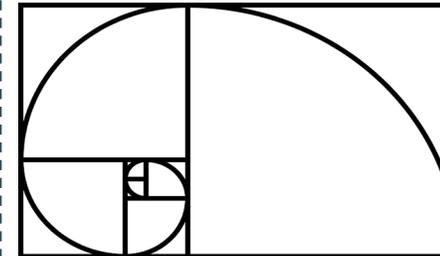
## Composition

The term composition means 'putting together,' and can apply to any work of art or photography, that is arranged or put together using conscious thought. There are numerous approaches or "compositional techniques" to achieving a sense of unity within an artwork, depending on the goals of the artist.

For example, a work of art is said to be aesthetically pleasing to the eye if the elements within the work are arranged in a balanced compositional way. However, there are artists such as Salvador Dali whose sole aim is to disrupt traditional composition and challenge the viewer to rethink balance and design elements within art works.

### Fibonacci Spiral:

Artists recognised that the Fibonacci Spiral is an expression of an aesthetically pleasing principle – the Rule of Thirds. This is used in the composition of a picture; by balancing the features of the image by thirds, rather than strictly centring them, a more pleasing flow to the picture is achieved.

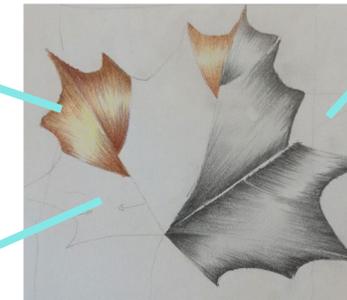


Mary's Shell sculpture by Chris Brammall

## Expert modelling example

When blending colour with tone layer at least two colours.

Use a light line when sketching.



Use the 'flick' technique to blend smoothly between different tones.

# Las vacaciones



Countries + transport



Activities



Past holidays



Disasters

Countries and transport	Voy a - I go to	España - Spain Gales - Wales Japón - Japan Francia - France Escocia - Scotland	y - and	viajo en - I travel by	avión - plane autocar - coach	porque es - because it is	cómodo - comfortable caro - expensive barato - cheap seguro - safe rápido - fast peligroso - dangerous ruidoso - noisy atestado - crowded limpio - clean sucio - dirty	Cada año voy de vacaciones a <b>Chipre</b> con mis padres	Every year I go on holiday to <b>Cyprus</b> with my parents
	Vamos a - we go to	Egipto - Egypt Italia - Italy Irlanda - Ireland Chipre - Cyprus Grecia - Greece		viajamos en - we travel by	tren - train coche - car barco - boat moto - motorbike		y viajamos en <b>avión ya que es rápido y cómodo.</b>	and we travel by <b>plane because it's fast and comfortable.</b>	
	Van a - they go to	Estados Unidos - USA Bélgica - Belgium Portugal - Portugal Alemania - Germany Turquía - Turkey Nueva Zelanda - New Zealand		viajan en - they travel by			Me chifla <b>Chipre</b> ya que siempre <b>hace calor</b>	I love <b>Cyprus</b> because <b>it's</b> always <b>hot</b>	
							y <b>solemos ir a la playa</b> y <b>tomar el sol</b>	and <b>we tend to go to the beach</b> and <b>sunbathe</b>	
							<b>aunque puede ser</b> un poco <b>aburrido.</b>	<b>although it can be</b> a bit <b>boring.</b>	
							<b>Acabo de ir a París</b> con <b>mi clase</b> y	<b>I've just been</b> to <b>Paris</b> with <b>my class</b> and	
							nos alojamos en un <b>alberque juvenil.</b>	we stayed in a <b>youth hostel.</b>	
Weather	Hace - it is Hizo - it was	sol - sunny calor - hot	viento - windy frío - cold	buen tiempo - nice weather mal tiempo - bad weather					
	Hay - it is Había - it was	tormentas - stormy	nubes - cloudy	niebla - foggy					
	Llueve - it's rainy/raining Nieva - it's snowy/snowing								
Activities	En vacaciones me gusta - On holiday I like	visitar monumentos - visit monuments sacar fotos - to take photos ir de excursión - to go on a day trip montar en bicicleta - to go on a bike ride ver lugares de interés - see places of interest ir al parque temático - to go to a theme park ir al parque acuático - to go to a water park hacer deportes acuáticos - to do water sports	nadar - to swim esquiar - to ski tomar el sol - to sunbathe descansar - to relax					Además, perdí <b>mi pasaporte.</b>	Moreover, I lost <b>my passport.</b>
								<b>¡Qué desastre!</b>	<b>What a disaster!</b>
Past holidays	Fui a/en... I went to/by Fuimos a/en... - we went to/by	y - and	visité - I visited descansé - I relaxed tomé el sol - I sunbathed	vi - I saw esquíé - I skied	nadé - I swam saqué - I took				
	Me alojé en... - I stayed in. Nos alojamos en... - we stayed in								
	Por desgracia tuve/tuvimos - Unfortunately I/we had	un accidente - an accident un pinchazo - a puncture	un retraso - a delay una avería - a breakdown						
	Tuve/ tuvimos que - I/we had to	esperar mucho tiempo - wait a long time ir al hospital/la comisaría - go to the hospital/the police station llamar a un mecánico - call a mechanic							
	Perdí/perdimos - I/we lost	el equipaje - the luggage la maleta - the suitcase	la cartera - the wallet las llaves - the keys						
Cuando llegamos... - when we arrived	Era muy tarde - it was very late estaba cansado/a - I was tired La recepción ya estaba cerrada - the reception was already closed								
								Me gustaría ir en el futuro con mis amigos y	I'd like to go in the future with my friends and
								visitaríamos muchos monumentos históricos.	we would visit lots of historical monuments.
								<b>Lo peor es que cuesta un ojo de la cara.</b>	<b>The worst thing is that it costs an arm and a leg.</b>
								<b>¡Ojalá tuviera más dinero!</b>	<b>If only I had more money!</b>

↑ ↑ ↑  
A model text on holidays

# Las vacaciones



Future holidays



Hotel facilities



Reservations



Complaints

Future holidays	Me alojaré en... - I will stay in viajaré a/en... - I will travel to/by	y - and	visitaré - I will visit veré - I will see sacaré - I will take tomaré el sol - I will sunbathe	haré - I will do iré - I will go nadaré - I will swim descansaré - I will relax	
	Nos alojaremos en... - We will stay in viajaremos a/ en... - We will travel to/by				
	Haré - it will be	sol - sunny	calor - hot	frío - cold	viento - windy
	Habrá - it will be	tormentas - stormy	nubes - cloudy	niebla - foggy	
Lloverá - it will rain	neverá - it will snow				

Hotel facilities	Me alojo en - I stay in	un hotel de _____ estrellas - a _____ star hotel		hay - there is había - there was habrá - there will be	vista al mar - view of the sea piscina - swimming pool piscina climatizada - heated pool piscina infinita - infinity pool aparcamiento - car park
	Me alojé en - I stayed in	un albergue juvenil - a youth hostel	donde - where	tiene - it has tenía - it had tendrá - it will have	calefacción central - central heating tienda de recuerdos - souvenir shop tratamientos de masaje - massage treatments bar de piscina - pool bar
	Me alojaré en - I will stay in	un camping - a campsite		es - it is era - it was será - it will be	toallas gratuitas - free towels servicio de peluquería - hairdressing service servicio de lavandería - laundry service

Reservations	Quiero - I want	una habitación doble - a double room	con baño - with a bath con ducha - with a shower con balcón - with a balcony con aire acondicionado - with air condition con pension completa - full board	para una noche - for a night para una semana - for a week
	Me gustaría/ quisiera reservar - I would like to reserve	una habitación individual - a single room		

Complaints	El ascensor - the lift El aire acondicionado - the air conditioning La ducha - the shower La luz - the light La habitación - the room	...está sucio/a - ...is dirty ...no funciona - ... doesn't work	Es inaceptable - it's unacceptable Quiero hablar con el director - I want to speak to the manager Quiero cambiar de habitación - I want to change rooms
	No hay... - there isn't any... Necesito... - I need...	papel higiénico - toilet paper jabón/champú - soap/shampoo toallas - towels un secador - a hairdryer	
	Perdone/lo siento - I'm sorry	el hotel está completo - the hotel is full el director no está - the manager isn't here voy a llamar el servicio de limpieza - I'll call the cleaning service hay otra habitación libre - there is another free room	

**Recepcionista:** Buenos días, Hotel Mar. ¿En qué puedo ayudarle?

**Cliente:** Hola. Me gustaría reservar una habitación doble.

**Recepcionista:** ¿Para cuántas noches?

**Cliente:** Para cinco noches, del cinco al diez de mayo.

**Recepcionista:** De acuerdo. ¿Algo más?

**Cliente:** Si quiero un balcón y pension completa..

**Recepcionista:** Muy bien. Son ciento treinta euros por noche.

**Cliente:** Gracias. ¿Hay wifi gratuita?

**Recepcionista:** Claro que sí.

**Recepcionista:** ¿En qué puedo ayudarle?

**Cliente:** Mi habitación está sucia y el aire acondicionado no funciona.

**Recepcionista:** Lo siento. Voy a llamar el servicio de limpieza.

**Cliente:** Es inaceptable. Además, no hay papel higiénico y necesito un secador. Quiero cambiar de habitación.

**Recepcionista:** Perdona pero el hotel está completo.

**Cliente:** Pues, quiero hablar con el director.

**Recepcionista:** Claro, voy a llamarle.

↑ ↑ ↑  
Role play examples

# Year 10 Subject Term Knowledge Organiser: Business Studies

## Topic 1.2 Spotting a Business Opportunity

= means connective

### What is Added Value?

**Added Value:** the increase worth that a business creates for a product. It is the difference between what a business pay it's supplier and the price that it is able to charge for the product/service.

**Example:** It costs Tesco 50p to make a ham sandwich (spent on bread, butter and ham). They sell the sandwich for £2.00. They have added value of £1.50 per sandwich.

**Be careful:** Added Value in **NOT** profit. Think of all the other costs Tesco would have to make the sandwich. It's only the raw materials. Your answer **MUST** be about why they can charge a **HIGHER PRICE**

**Ways to Add Value:** convenience, branding, quality, design, unique selling point, greater speed of service – in your answer **WHY** will these methods lead to a higher price

### 4 Customer needs:

- o Price
- o Choice
- o Quality
- o Convenience

### Impact of competition on decision making.

May have to charge a lower price – so that customers come to you business and not competitors as if it is too high you will get no sales.

May have to improve the features of the product so that it stands out from competitors and customers pick your product giving you a competitive advantage.

### o Market Map

- o Allows you to see a gap in the market – no competition – can charge a higher price
- o Just because there is a gap doesn't mean customers want the product – could open the business and it still fail

### Business Aims and objectives.

#### Financial aims and objectives:

- o Survival
- o Profit
- o Sales
- o Market share- **the proportion of sales in a market made by a business**
- o Financial security

#### Non-financial aims and objectives:

- Social objectives,
- Personal satisfaction
- Challenge,
- Independence and control
- Customer Satisfaction
- Rewards and recognition

#### Explain one non financial aim

Independence – can make their own decisions and not be told what to do – likely to be happier and more satisfied.

#### Explain one financial aim

To survive – if a business does not attract enough customers it will fail so before a business aims to makes lots of profit their first aim must be to survive

#### Explain why a business would set financial aims

These are normally numerical – the business can clearly see if they have achieved these aims – investigate and find reasons if they don't

## Business Location

# Year 10 Subject Term Knowledge Organiser: Enterprise and Marketing

## L01: Understand how to target a Market: Market Segmentation

We need customer segmentation because: Customers are

### **DIFFERENT.**

They are different in

- **Benefits** they want
- Amount of **money** they are able/willing to pay
- **Quality** of goods they require
- **Quantity** of goods they require

**WAYS** to Segment the Market:

- Age
- Gender
- Occupation
- Income
- Geographic
- Lifestyle

The **BENEFITS** of market segmentation

- Can make more **profit**
- Happier **Customers**
- Allows for better **advertising**
- Ensures products fully meet the needs of customers

The purpose of **Market Research**

- To reduce **risk**
- To help with **decision making**
- To gain **customers' views** and understand what they **want**

## L01: Understand how to target a Market: Market Research

### **Primary Research/Field Research**

#### **Advantages:**

- Relevant and Up to date
- Specific to the organisation
- Only your business has the information, your competitor don't

#### **Disadvantages:**

- Costly
- Time Consuming

### **Secondary/Desk Research**

Gathering data and information that has **ALREADY** been collected before

- Books/newspapers/magazines
- Sales Data
- Competitors' data
- Government statistics
- Purchased research material (e.g. Mintel)
- The internet

### **Secondary Research/Desk Research**

#### **Advantages:**

- Cheap
- Quick to get

#### **Disadvantages:**

- May not be up to date or reliable
- Competitors can get the same information as you.
- Not Specific to your business

### **Primary Research/Field Research**

Gathering data and information that has **NOT** been collected before

- Observations
- Questionnaires
- Surveys
- Focus groups
- Consumer trials

# Year 10 Subject Term Knowledge Organiser: Enterprise and Marketing

## L01: Understand how to target a Market: Primary Market Research

### Observations

#### Advantages:

- **Accurate** as it shows someone how they truly behave

#### Disadvantages:

- **Doesn't give reasons** for the behaviour you are watching e.g. why does the customer not go up a super market aisle
- Time Consuming
- Expensive

### Consumer Trials

#### Advantages:

You can get **honest and reliable** information as you can see their reaction

#### Disadvantages:

- Expensive as you have to give away free products

### Focus Group

#### Advantages:

The information is **detailed** and you can find out the **WHYs** and their detailed opinions

#### Disadvantages:

- Expensive and Time consuming
- Don't get a lot of responses as it's normally only a small group

### Telephone Survey

#### Advantages:

- Can cover **all over the UK**

#### Disadvantages:

- Many people don't answer and hang-up
- Expensive and Time Consuming

### Personal Survey/Face to Face

#### Advantages:

Information can be **clarified** by the interviewer if the person being asked doesn't understand

#### Disadvantages:

- Time Consuming
- Expensive

### Internet Survey

#### Advantages:

- **Quick and cheaper** than the other methods

#### Disadvantages:

- May be **ignored**

### Postal Survey

#### Advantages:

- Less Time Consuming than Face to Face

#### Disadvantages:

- Many people just put them in the **bin**

### Questionnaire

#### Advantages:

Business can ask the **questions they want**

#### Disadvantages:

- Time Consuming
- Expensive
- People **may not** want to answer the questions

# Year 10 Subject Term Knowledge Organiser: Enterprise and Marketing

## L01: Understand how to target a Market Research: Secondary Market Research

### Internal Sales Data

#### Advantages:

Can clearly **see trends** over a set amount of time

#### Disadvantages:

- Only gives **limited information** – doesn't give the why.

### Government Statistics

#### Advantages:

**Free** to access on the internet

#### Disadvantages:

- **Out of date** quickly

### Books and Magazines

#### Advantages:

Cheap

#### Disadvantages:

- **Out of date** quickly

### Purchased Research Materials – e.g. Mintel

#### Advantages:

Is **very detailed**

#### Disadvantages:

- Have to **pay for it**

### Competitors Data

#### Advantages:

Can find it **quickly** on the internet

#### Disadvantages:

- **Out of date** quickly

## L01: Understand how to target a Market Research: Customer Feedback Techniques

### Methods

- Social media
- Online surveys
- Customer comment cards
- Comments made to staff members
- Telephone/email surveys
- Email contact forms

### Social Media

#### Advantages:

**Free** to access on the internet

#### Disadvantages:

- If it's negative may damage your reputation

**Online Survey/Telephone and email survey – see above .**

### Customer Comments Cards

#### Advantages:

- **Cheap** method as the customer fills it in themselves

#### Disadvantages:

- **Easily ignored/** not filled in

### Customer Comments to staff

#### Advantages:

- Costs **nothing**

#### Disadvantages:

- No guarantee the staff member will pass the information on to management

## L01: Understand how to target a Market: Data

### Types of Data

**QUANTITative** Data (think **QUANTITY**). This is numerical data made up of numbers e.g. from **surveys** e.g. 95% of people like Business or looking at **Sales data** e.g. a business made £20,000 last month

**QUALITative** Data (think **QUALITY**). This is data made up of people's opinions. You get the "Why behind the people's answers. This is from **Focus groups or Interviews**