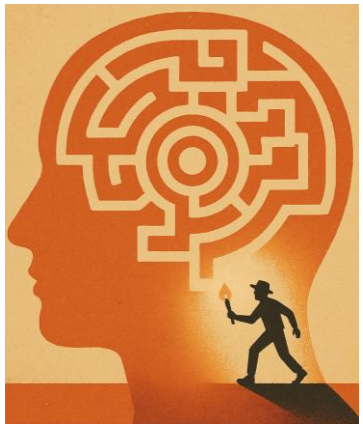
YEAR 11



BHA's Knowledge Quest

Autumn 1
(Sept - Oct)
2026-2027

Bristnall Hall Academy

How to use your

Knowledge Quest Booklet

To support you in making progress in each of your lessons, your teachers have produced Knowledge Organisers which contain all of the main facts, knowledge and information that you need to know to be successful and make progress this half term. There are lots of ways to use these Knowledge Organisers, but the most important thing is that you are revising the knowledge and you are able to recall it in your lessons. Please see below details of how to use this booklet; what your half termly homework looks like and how to secure lots of positive Class Charts points!

English: 1 Seneca assignment set per week (alternating between Language and Literature). Sparx Reader will be used to accompany the reading of Literature set texts. Additional revision may be provided by individual class teachers.

Maths: 1 hour of Sparx Maths, individualised homework set every week. Pinpoint booklets provided following assessments and additional revision provided by class teacher, where appropriate.

Science: 1 hour of Seneca Science homework, set every week.

MFL: 1 hour of vocabulary / listening / reading practice on Language Nut, every week and 30 minutes of learning vocabulary, ready to be quizzed in the following lesson.
History: 1 hour Seneca assignment set by class teacher, every week. Recap content using Knowledge Organiser and, when provided, complete practice exam questions.
Geography: 1 hour Seneca, each week. 1 x Core vocabulary booklet, using OMG revision across the year.
DT: Seneca - core knowledge recap, as well as flip learning resources, both printed and or on teams. Hospitality and Catering: Yr 11- revision workbook, revision tasks set on Teams. Re-cap content using Knowledge Organiser. Online 3D CAD program Year 10 term 1

Art: To complete/refine work for portfolio or set task projects when required.

Computing: 1 hour of Smart Revise. Individualised homework set weekly, based around previously taught topics and current topics.

Film Studies: The 15 or 10 marks 'Explore' exam question which focuses on an aspect of film language.

All other subjects: Revise the information in this booklet using the revision sheets included with each subject.

Timetable

Use this page to copy out your lessons and room numbers

	W1 Mon	W1 Tues	W1 Wed	W1 Thurs	W1 Fri	W2 Mon	W2 Tues	W2 Wed	W2 Thurs	W2 Fri
1										
2										
3										
4										
5										
6										

Dates to remember this half term:

September

October

Attendance record

Term	Attendance %
Autumn 1	
Autumn 2	
Spring 1	
Spring 2	
Summer 1	
Summer 2	

Sparx Check!

Remember to click: 'Login with Microsoft' using your academy email address and password!

In the boxes below, write the XRP score that you achieved for each subject. Your form tutor will award you additional CC points for the more XRP points you achieve in addition to the set points for each weekly homework.

	Sparx Reader Points:	Sparx Maths Points:
Week 1		
Week 2		
Week 3		
Week 4		
Week 5		
Week 6		
Week 7		
Week 8		
Total this half term:		

Seneca Check!

Remember to click: 'Login with Microsoft' using your academy email address and password!

In the boxes below, write the titles of the assignments that you complete for each subject and your overall percentage scores. Your form tutor will award you additional CC points for the highest percentages you achieve in addition to the set points for each weekly homework.

	English Assignment:	Science Assignments:	History Assignments:	Geography Assignments:
Week 1				
Week 2				
Week 3				
Week 4				
Week 5				
Week 6				
Week 7				
Week 8				
Total assignments completed this half term:				

Language Nut Check!

Remember to click: 'Login with Microsoft' using your academy email address and password!

In the boxes below, write out how many points you have achieved from your weekly homework. Your form tutor will award you additional CC points for the highest scores you achieve in addition to the set points for each weekly homework.

	MFL Homework:
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Total assignments completed this half term:	

Independent Study Check!

Your form tutor and your parent/carer will also check that you are completing your independent study within this booklet. Additional positive CC points will be awarded for beautiful presentation and your ability to demonstrate a strong recall of the knowledge within this booklet.

	End of Half term Form Tutor Check:	Parent/Carer Check:
Independent Study Completed?		
Beautiful Presentation?		
Recall of Knowledge?		

Personal Reflection: What are you most proud of within your Independent Study Booklet?

_____

_____

_____

_____

_____

Homework Log

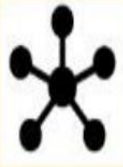
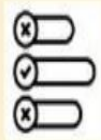
Use this page to record any homework this half term

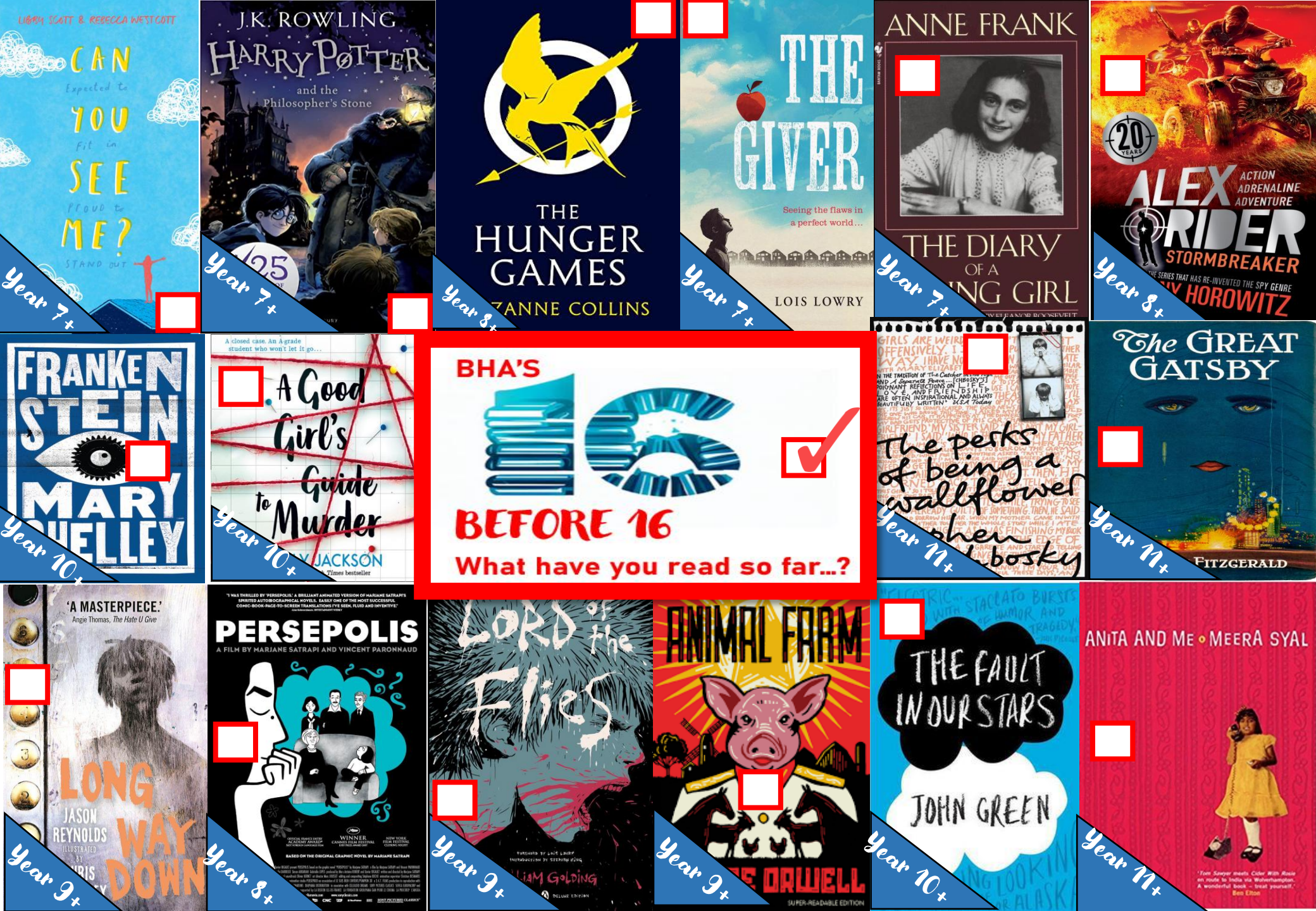
Subject	**Date Due:**	**Additional Notes:**

Homework Log

Use this page to record any homework this half term

Subject	**Date Due:**	**Additional Notes:**

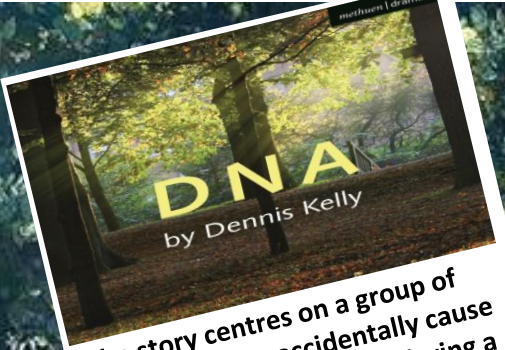
	Look, Cover, Write, Check	Definitions to Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your knowledge organiser. 	Write down the key words and definitions. 	Use your knowledge organiser to condense and write down key facts and or information on your flash cards. 	Use your knowledge organiser to create a mini quiz. Write down questions using your knowledge organiser. 	Create a mind map with all the information you can remember from your knowledge organiser. 	Ask a partner or family member to have the knowledge organiser or flash cards in their hands. 
Step 2	Cover or flip the knowledge organiser over and write down everything you remember. 	Try not to use your knowledge organiser to help you 	Add pictures to help support. Then self quiz yourself using the flash cards.. You can write questions on one side and answers on the other. 	Answer the questions and remember to use full sentences. 	Check your knowledge organiser to see if there were any mistakes with the information you have made. 	They can test you by asking you questions on different sections of your knowledge organiser. 
Step 3	Check what you have written down. Correct any mistakes in green pen and add anything you missed. Repeat. 	Use your green pen to check your work. 	Use a parent/carer or friend to help quiz you on the knowledge. 	You can also use family to help quiz you. Keep self quizzing until you get all questions correct. 	Try to make connections that links information together. 	Write down your answers. 


Year 7+
Year 7+
Year 8+
Year 7+
Year 7+
Year 8+
Year 10+
Year 10+
BHA'S
BEFORE 16
What have you read so far...?
Year 11+
Year 11+
Year 9+
Year 8+
Year 9+
Year 9+
Year 10+
Year 11+

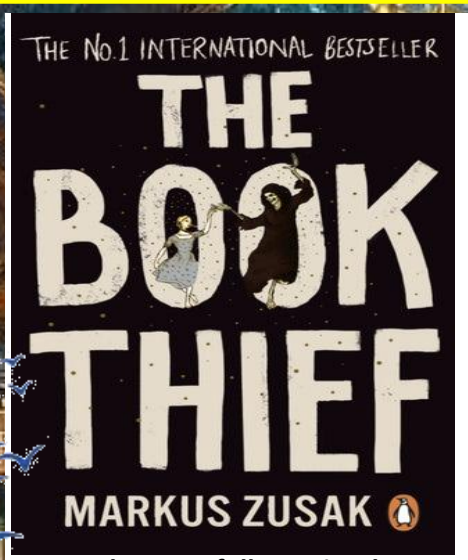
Contents page

YEAR 11

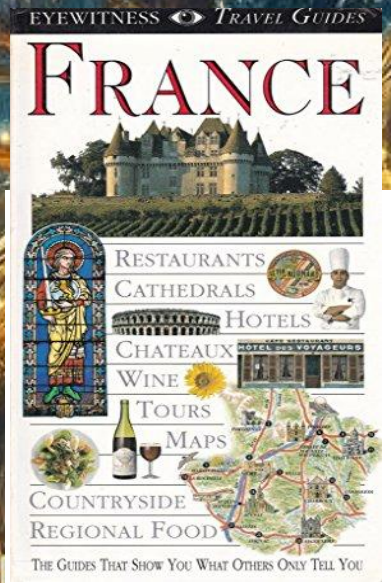
Recommended Reading



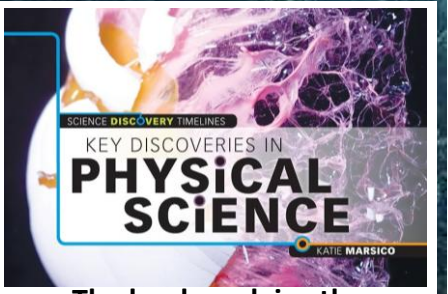
The story centres on a group of teenagers who accidentally cause the death of a classmate during a bullying incident. As panic sets in, they decide to cover up what happened rather than face the truth. Under the manipulative influence of one group member, Phil, they create an elaborate lie that spirals further out of control.



The story follows Liesel Meminger, a young girl sent to live with foster parents after her brother's death. Struggling with loss and hardship, Liesel finds comfort in stealing books and learning to read, guided by her kind foster father. As she grows closer to her new family and her friend Rudy, she begins to understand the power of words, both to harm and to heal'.



The book takes readers on a region-by-region tour of the country, covering major cities like Paris, as well as countryside areas, historic landmarks, and cultural attractions. It provides practical information on places to visit, local food, museums, and travel tips, alongside detailed maps and striking photographs.



The book explains the difference between renewable and non-renewable energy sources, including fossil fuels, solar power, wind energy, and hydropower. It explores how energy is produced, the impact of energy use on the environment and the importance of conserving resources.

The book takes readers on a global journey, highlighting famous rivers such as the Amazon, Nile, and Mississippi, as well as lesser-known waterways. It explains how rivers shape landscapes, support ecosystems, and influence human life, culture, and history. Each river is brought to life with fascinating facts about wildlife, geography, and the challenges these waterways face.

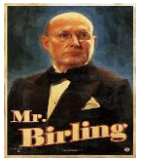
Challenge yourself by reading these topic-related books for this half term!

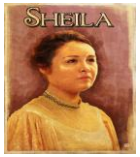
Act summary

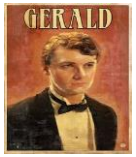
Act 1	The Birling family are celebrating the engagement of Sheila Birling to Gerald Croft. Inspector Goole arrives and tells them a young woman has committed suicide. The audience learns that Arthur Birling (the patriarch of the family) sacked the young woman (Eva Smith) but he is unremorseful. Sheila then got Eva sacked from her next job at a clothes shop due to being jealous. We then learn that Eva changed her name to Daisy Renton. Gerald is startled when he hears this name.
Act 2	We discover that Daisy was Gerald's mistress for some time but Gerald broke things off and turned her out. Sheila hands Gerald back the engagement ring. The Inspector questions Mrs Birling and Sheila forcefully encourages her mother to be honest and open. Eva/Daisy turns to the charity Sybil runs when she needs support for her unborn child. Mrs Birling shows no remorse, instead she says the girl tried to use the Birling name. She condemns the father of the child. Erica enters at this point.
Act 3	Eric confesses to having sex with Eva/Daisy when he was drunk. He reveals how he stole money from his father's company to support Eva and her unborn baby. The Inspector reminds the Birling family of their social responsibility and then leaves. Gerald returns and tells the family that the Inspector is a 'hoax.' The older generation and Gerald rejoice. Sheila and Eric are shocked that the others haven't learnt anything. A phone call at the end reveals a woman has committed suicide and an inspector will be visiting soon…

Themes – A theme is an idea or message that runs throughout a text.

Responsibility	All the family are forced to reflect upon their behavior towards Eva Smith/Daisy Renton and consider how responsible they are for her death. Some characters accept **responsibility** and feel **guilt**. On the other hand some are unwilling to accept any. *'We are members of one body. We are responsible for each other.' The Inspector's final speech.*
Social Class	Class **defines** each character in the play. There is a clear **hierarchy** in the class system that causes **oppression** of the lower class. The actions of the upper class directly **impact** on those below. *'If you don't come down sharply on some of these people, they'd soon be asking for the earth.' Mr. Birling.*
Gender	Throughout the play there is evidence that a woman is to be seen and not heard. The males hold a lot of **power** at the start. Eric's and Gerald's treatment of Eva/Daisy as an **object**. Young women challenge this (Sheila) and by the end **stereotypes** are beginning to be broken. *'...not only something to make 'me look prettier - but - well, a sort of sign or token of their self-respect.' Mr. Birling discussing women.*
Conflict among generations	Priestley uses age to show the **different attitudes** in society at the time. The older characters represent **outdated** ways of thinking; Sybil and Arthur believe in only looking after themselves. The younger characters represent a move towards caring about others in society. *'You're beginning to pretend now that nothing's really happened at all.' – Eric speaking to his parents.*







Context

J.B Priestley: The writer of the play and a social commentator who has a **social conscience**. A popular figure and keen supporter of social reform. He fought in World War I and saw the effects it had on the working class. During the 1930s he became an activist, campaigning about the effects of social inequality in Britain.

Pre and Post-War: Before WW1, there was an air of complacency that a war would actually break out, despite there being numerous strong hints. There were strong distinctions between upper/lower classes and women were subservient to men. After the WW2, the class distinction had been greatly reduced. Women had formed a more valuable and respected place in society. There was a greater desire for social reform.

Capitalism: Capitalism is where businesses aim to make money and a country's trade is owned by private companies/people. It is generally considered the opposite of socialism. Priestley deliberately criticizes the **selfishness** of this system and wants a fairer society. **Birling personifies this.**

Socialism: Socialism is an approach to economic and social systems that is characterized by social ownership, democratic control, and high levels of **equality.** They're generally concerned with ensuring that **inequalities between wealth and class are erased**. In the play, the **Inspector harbors socialist views.**

Social and Moral Responsibility: Attitudes towards social and moral responsibility changed rapidly in the time between when the play was set (1912) and the time when it was first performed (1946). In 1912, the general attitude of those with social and economic sway was towards looking after oneself and one's family. By the mid-1940s, however, Clement Attlee's Labour party won a landslide election, reflecting a wave of enthusiasm towards communal responsibility for everyone in society.

Titanic: RMS Titanic the largest British passenger ship at the time. It was a symbol of **progression** within society. It sunk in 1912 after striking an iceberg. It was one of the deadliest maritime disasters of the modern period and sent shockwaves around the world. It was supposed to be the pinnacle of comfort and safety and was frequently labelled **'unsinkable'.** However, during the disaster it was discovered that there wasn't enough lifeboats and the lower-class passengers were last to be given the chance of escape. Consequently more of these passengers died. It is worth remembering that Arthur holds the arrogant views of that many others did of the Titanic before it met its demise.

Genre and Conventions

Well-made play: This is a popular type of play from the 19th Century where all the events **build up to a climax**. It is primarily concerned with events that happened before the play. The plot is normally **intricate** and **complex**.

Morality play: This would be a play that **taught** the audience lessons that linked to the **seven deadly sins** where characters that committed these sins are **punished**.

English

Assessment Objectives

AO1: Response to question and use of quotations;

AO2: *Analysis of writer's methods using terminology and the exploration of the effects on reader;*

AO3: *Context and links to genre/themes;*

AO4: *Vocabulary and SPAG.*

Main Characters – Consider why Priestley included these characters. What is their purpose in the play? What might they personify?

Arthur Birling is the **patriarch** of the Birling family. His success in his business means his family live in the upper-middle class. He believes in **capitalistic** principles and rejects socialist beliefs. He considers Sheila's engagement **good for business.**
'And I'm talking as a hard-headed, practical man of business. And I say there isn't a chance of war.'

Sybil Birling is often described as being a **'cold'** character and is her husband's **'social superior.'** She is more concerned in ensuring her family does not '**lose face**.' She also serves in a charity committee that's aims are to assist women who need help.
'She was claiming elaborate fine feelings and scruples that were simply absurd in a girl in her position.'

Sheila Birling is the first character to **accept responsibility** and show **remorse**. She is **childish** at the start of the play but grows in **maturity.** Sheila takes on the role of the **inspector**, holding her family to account, once he departs.
'That's what I meant when I talked about building up a wall that's sure to be knocked flat.'

Eric Birling: Eric works for his father and has a drinking problem as he spends his time getting **'squiffy.'** He is **'half shy-half assertive.'** Only once all of his issues have been revealed are his family force to address his issues. He stands by his sister, Sheila, at the end.
'I don't know - really. Suddenly I felt I just had to laugh.'

Gerald Croft is the fiancé of Sheila and comes from a prosperous, well-know family. The Inspector criticizes Gerald's affair with Daisy but suggests Gerald is the least culpable for her death. Gerald goes out of his way to save his skin at the end suggesting his **capitalistic views** are entrenched and **will not learn** from his mistakes.
'The girl saw me looking at her and then gave me a glance that was nothing less than a cry for help.'

Inspector Goole is an **omniscient** character that seems to know all the answers before interviewing each character. He is in **command** of the situation despite others trying to put him off. He acts a **Priestley's mouthpiece.**
'He creates at once an impression of massiveness, solidity and purposefulness.'

Eva Smith/Daisy Renton is a young, working class woman, who is very important to the play, yet we never meet her. Her gruesome death is used to exploit the harsh treatment of the lower classes.

Edna is the Birling's maid and the only working-class character we see on stage.

Critical Verbs

Priestley wrote because he was influenced by what was going on in the world he was living in. Society, religion, politics, family and personal experiences and beliefs will all have impacted on **what** Priestley was writing and **why** he was writing it. Use the structure below to create points.

Writer	Uses	Character/setting/event	Critical Verb	Theme/concept/context
Priestley	uses	Arthur Birling the Birling's home the death of Eva Smith	to advocate to criticise to celebrate to warn to teach to expose to personify	the need for more social responsibility in a post-war society.

Symbols and Killer Quotations

'As if we were all mixed up together like bees in a hive - community and all that nonsense.'
- Simile exploring the Edwardian social structure.
- Bees produce honey. Is Priestley saying the product of socialism is 'sweet'?

'Unsinkable, absolutely unsinkable.'
- Like Mr. Birling's narrow-minded views? He won't be swayed and his views are 'unsinkable.'
- Microcosm of society on board.
- Society is doomed to 'sink' if people don't change.
- Dramatic irony.

'She'd swallowed a lot of strong disinfectant. Burnt her inside out, of course.'
- Disinfectant is used to clean and eradicate germs.
- Eva/Daisy being seen as something needed to be 'cleaned' from society. Is this how she sees herself by the end of her encounters?
- Link to the 'fire' mentioned in the Inspector's final speech?

The unborn child.
- Would 'merge' two classes together.
- He would be a Birling and the 'future' of the family. What does it say about their future?
- Impact on the innocent in society. Doomed from the start?

'Fire, blood and anguish.'
- Divine retribution.
- Foretelling the war. Does the Inspector know that the audience has not changed?
- Hell? Punishment for sins.

Threshold Concepts

Time Theories.
Dunne believed we could begin to see forward in time through our dreams. We could look at our present actions and see the consequences of them. These would allow us to change.
Ouspensky believed that when we die we re-enter our life once more from the beginning. We are born again to the same parents and continue to repeat all the events of our life as before. We can escape repetition by improving ourselves and leading better lives.

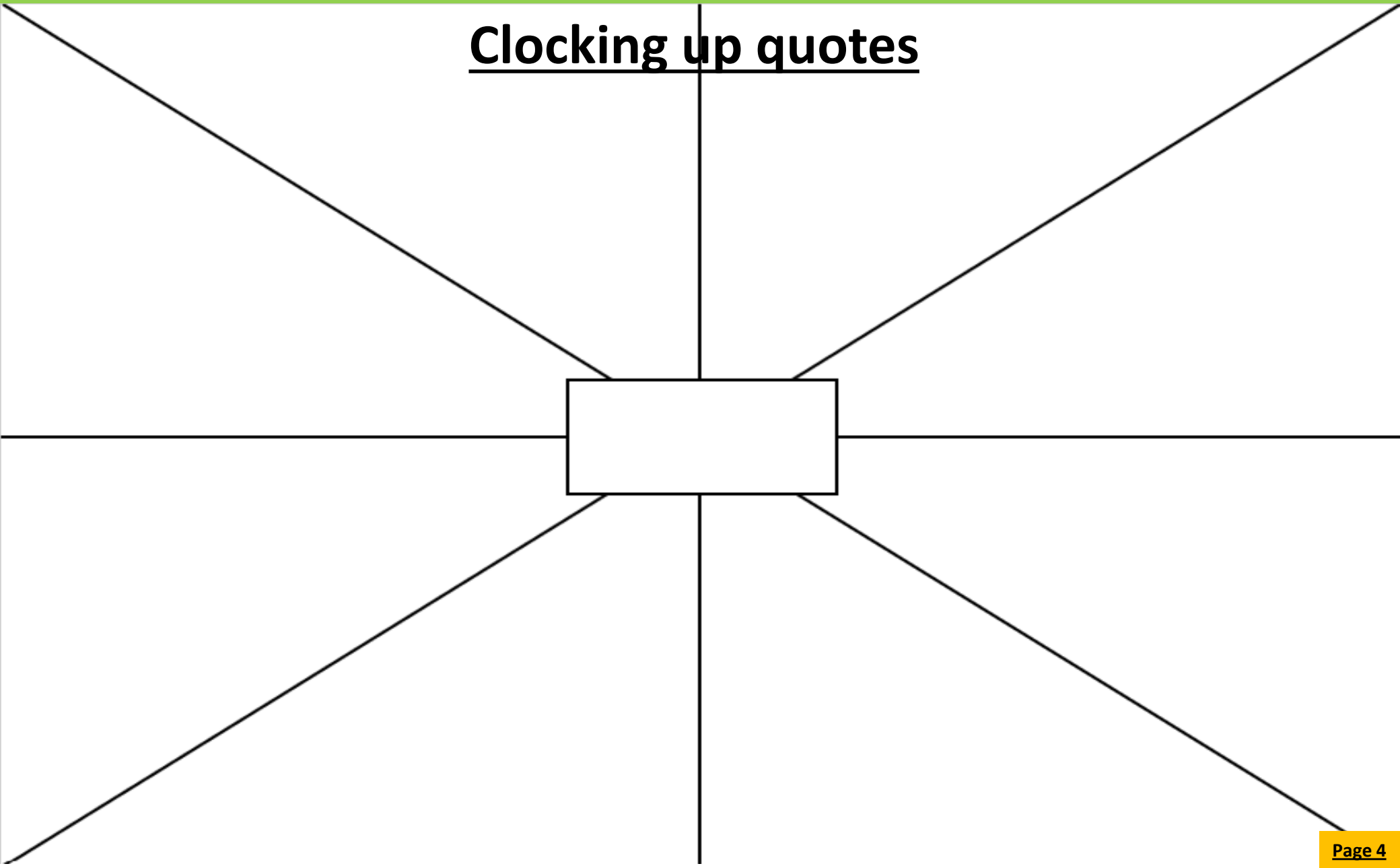
Seven Deadly sins and virtues
Each character represents one of the sins (pride, lust, gluttony, sloth, avarice, wrath, envy). Eva/Daisy shows more virtues than the Birlings do.

Representation of women
Suffragettes (violent and aggressive) and suffragists (peaceful) were political groups focused on achieving power for women and the right to vote.
Consent to sex is something Eva/Daisy doesn't seem to give during her encounter with Eric. Priestley doesn't not class this as a sin for Eric. Raises questions about **misogyny** in society.

Social conditioning
Social conditioning is the sociological process of training individuals in a society to respond in a manner generally approved by the society in general and peer groups within society. The social context that Mr and Mrs Birling grew up in, is not that different to that of their children Eric and Sheila, yet JB Priestly had the latter two reform by the end of the play.

English. Choose what text you would like to revise and write that in the middle (e.g. An Inspector Calls). Each section on the clock can either be a theme or character focus (e.g. Responsibility/ Eric). Once you have decided on the focus, make notes including key quotes and contextual links that you could use in an exam about that question

Clocking up quotes



Maths

NUMBER SKILLS

What do I need to be able to do?

You should be able to:

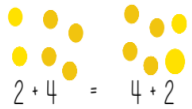
- Understand properties of addition and subtraction
- Understand properties of multiplication and division
- Use formal methods of addition and subtraction for integers
- Use formal methods of multiplication and division for integers
- Add and subtract directed numbers
- Multiply and divide directed numbers
- Understand and use order of operations with positive and negative integers

Key Words

- Commutative: changing the order of operations does not change the result
- Associative: when you add or multiply you can do so regardless of how the numbers are grouped
- Inverse: the operation that undoes what was done by the previous operation
- Subtract: taking away one number from another
- Negative: a value less than zero
- Debit: money that leaves a bank account
- Credit: money that goes into a bank account
- Integer: a whole number
- Product: multiply terms
- Operation: a mathematical process

Addition

Addition is commutative



2 + 4 = 4 + 2

The order of addition doesn't change the result

Addition is associative

6 + (3 + 4) = (6 + 3) + 4

It doesn't matter how you group the numbers

Formal written method:

	H	T	U
	3	4	2
+	1	4	9
	4	9	1
		1	

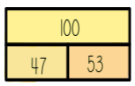
Remember the place value for each column!

Models to help with addition

- Number lines:

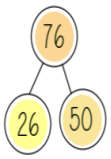
So we can say 33 + 7 + 10 + 5 = 55, or 33 + 22 = 55

- Bar models:



So we can say 47 + 53 = 100

- Part/Whole diagrams:



So we can say 26+50= 76

Subtraction

Subtraction is NOT commutative or associative.

12 - 8 ≠ 8 - 12

When you subtract, the order must stay the same.

Formal written method:

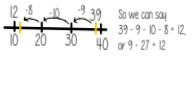
	H	T	U
	5	2 3	12
−	2	1	6
	3	1	6

Remember 0 is a place holder!

	2	0	8
−	0	0	4

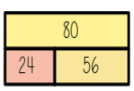
Models to help with addition

- Number lines:



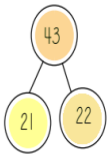
So we can say 39 - 9 - 10 - 8 = 12, or 9 - 27 = 12

- Bar models:



So we can say 80 - 24 = 56 & 80 - 56 = 24

- Part/Whole diagrams:



So we can say 43 - 21 = 22 & 43 - 22 = 21

Written Methods for Multiplication

LONG MULTIPLICATION:

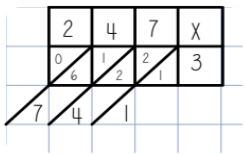
		2	4	7
X	1	2		3
	7	4	1	

GRID METHOD:

X	200	40	7
3	600	120	21

600 + 120 + 21 = 741

GELOSIA:



REPEATED ADDITION:

	H	T	U
	2	4	7
	2	4	7
+	2	4	7
	7	4	1
	1	2	

Written Methods for Division

SHORT DIVISION:

		0	4	2
6	2	2 5	1	2

		1	0	2
8	8	1	1	6

SHORT DIVISION with remainders

		1	2	5	5
2	2	5	1	1	0

Continue after the decimal point! If you start to get a repeating decimal, stop

LONG DIVISION:

	0	4	2	
6	2	5	2	
−	2	4	0	6 X 40
	0	1	2	
−	0	1	2	6 X 2
			0	

This method relies on you being comfortable with multiples of your divisor (in this case, 6!)

Calculations with Directed Numbers

Addition

2 + - 3

Remember, if I add a negative, I am adding something that will make it smaller, so it is the same as subtracting that number!

2 - 3 = -1

Subtraction

2 - - 3

Remember, if I subtract a negative, I am taking away the amount that was making it smaller, so it is the same as adding that number!

2 + 3 = 5

Generalisation

+ - = - - - = +

Multiplication

2 x -3

'2 lots of -3'

= -6

-2 x -3

Think of this as the negative of 2 x -3.

= 6

Division

Remember that multiplication and division are inverse operations.

Eg 6 ÷ -3 = -2

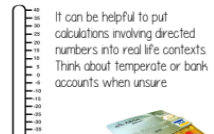
-6 ÷ 2 = -3

Generalisation

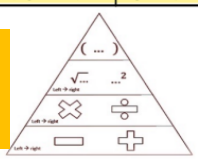
×	+	−
+	+	−
−	−	+

Models to help

It can be helpful to put calculations involving directed numbers into real life contexts. Think about temperate or bank accounts when unsure.



Order of Operations



Example 1

(4 x 7) + 3

So we need to evaluate the brackets first, 4x7 =28

This is now 28 + 3 = 31

Example 2

$(6 + 4 - 3)^2 \times 4$

So we need to evaluate the brackets first and we work left to right ; 6 + 4 - 3 =7

This is now $7^2 \times 4 = 49 \times 4$

= 196

Example 3

4 - 8 x 2 + 12 ÷ 4

So first we do the multiplication/division left to right, 4 - 16 + 3

Now we do the addition/subtraction from left to right: -12 + 3 = -9

Maths

FACTORS, MULTIPLES AND PRIMES

What do I need to be able to do?

You should be able to:

- Understand and use factors
- Understand and use multiples
- Recognise prime numbers
- Recognise square/triangular numbers
- Find common factors, including HCF
- Find common multiples, including LCM
- Express a number as the product of it's prime factors

Key Words

- Multiple: found by multiplying any number by a positive integer
- Factor: integers that multiply together to get another number
- Prime: an integer with only two factors (1 and itself)
- HCF: the highest common factor of two or more numbers
- LCM: the lowest common multiple of two or more numbers
- Product: multiply terms

Factors

A number can have many factors!

Example: what are the factors of 12?

- 1 x 12
- 2 x 6
- 3 x 4

So the factors of 12 are 1, 2, 3, 4, 6, 12

How to find factors

Be systematic! Always find your factor pairs and then write them in ascending order. This way you can be sure you've not missed any out!

Multiples

'The multiples of a number make up it's times table'

Eg. What are the multiples of 4?

4 x 1, 4 x 2, 4 x 3, 4 x 4 etc.

4, 8, 12, 16, 20

This list never ends!

Is 15 a multiple of 3?

5	5	5

As I can share 15 into 3 equally sized parts, 15 is a multiple of 3!

3 x 5 = 15

NON-EXAMPLE

Why is 10 not a multiple of 4?

4 X 2.5 = 10 but 2.5 is not an interesting therefore 10 cannot be a multiple of 4!

Prime Numbers

- Always an integer
- Has only two factors;

1 and itself

Not in any other times tables apart from it's own

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

2 is the smallest, and only even, prime number

1 is not a prime number

A prime number has 2 factors, 1 and itself. 1 only has 1 factor (itself/1) therefore it isn't prime!

Square Numbers

They're called square numbers as, when arranged in an array, they make a square!

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225...

Square numbers have an odd number of factors.

Triangular Numbers

They're called triangular numbers as they make a triangle!

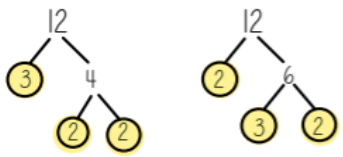
If you add two consecutive triangular numbers, you get a square number!

1, 3, 6, 10, 15, 21, 28, 36, 45, 55, 66, 78, 91, 105, 120...

Product of Prime Factors

Example 1

Write 12 as a product of it's prime factors



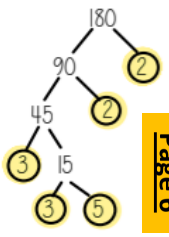
Both of these trees represent the same decomposition

12 = 2 x 2 x 3

$= 2^2 \times 3$

Example 2

Write 180 as a product of it's prime factors



180 = 2 x 2 x 5 x 3 x 3

$= 2^2 \times 3^2 \times 5$

Always try to write your final answer in ascending order using index notation!

Using prime factor decomposition

If we know that 12 written as a product of it's prime factors, how does that help us to write 36 as a product of it's prime factors?

We know 12 x 3 = 36 therefore we can multiply our answer by three and

36 = 2 x 2 x 3 x 3

$= 2^2 \times 3^2$

What about 120?

Well 120 is 10 x 12 so we can say

120 = 2 x 2 x 3 x 10

$= 2^3 \times 3 \times 5$

Remember 10 = 2 x 5

Page 6

Lowest Common Multiple (LCM)

Example 1

What is the LCM of 6 and 8?

6 - 6, 12, 18, 24, 30

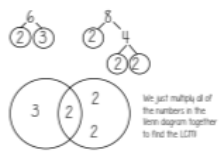
8 - 8, 16, 24, 32, 40

The first time their multiples match is 24 therefore:

the LCM of 6 and 8 is 24

Example 2

What is the LCM of 6 and 8?



We just multiply all of the numbers in the Venn diagram together to find the LCM!

LCM of 6 and 8 = 3 x 2 x 2 x 2

= 24

Example 3a

What is the LCM of 24 and 16?

Choose any factor of 24 and 16 then we chose 2!

Then we divide 24 and 16 by 2!

Then repeat until we cannot take out any more common factors!

	24	16
2	12	8
2	6	4
2	3	2

LCM of 16 and 24 = 2 x 2 x 2 x 3 x 2

= 48

Example 3b

What is the LCM of 12 and 15?

	12	15
3	4	5

LCM of 12 and 15 = 3 x 4 x 5

= 60

Highest Common Factor (HCF)

Example 1

What is the HCF of 6 and 8?

6 - 1, 2, 3, 6

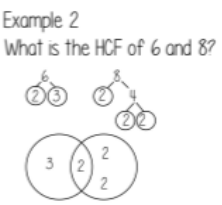
8 - 1, 2, 4, 8

The biggest number which is a factor of both 6 and 8 is 2, therefore

the HCF of 6 and 8 is 2

Example 2

What is the HCF of 6 and 8?



As we are looking for the highest common factor we are looking for the factors which the two numbers share. These can be found in the overlap in the Venn diagram!

HCF of 6 and 8 = 2

Example 3a

What is the HCF of 24 and 16?

As we are taking out common factors here, we find the HCF by multiplying them!

	24	16
2	12	8
2	6	4
2	3	2

HCF of 16 and 24 = 2 x 2 x 2

= 8

Example 3b

What is the HCF of 12 and 15?

	12	15
3	4	5

HCF of 12 and 15 = 3

INDICES

Maths

What do I need to be able to do?

You should be able to:

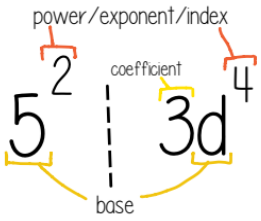
- Add/subtract with indices
- Multiply expressions with indices
- Divide expressions with indices
- Know the addition law for indices
- Know the subtraction law for indices
- Be familiar with the key results
- Work with negative exponents

HIGHER TIER ONLY

- Work with fractional exponents

Key Words

- Base: the number that gets multiplied by a power
- Power: the number of times the number is used in a multiplication.
- Exponent: power (see above)
- Index: power (see above)
- Coefficient: a number used to multiply a variable
- Variable: a letter which represents an unknown number
- Commutative: changing the order of the operations doesn't change the result



Addition Law for Indices

$$a^m \times a^n = a^{m+n}$$

Examples

- $2^2 \times 2^3 = 2 \times 2 \times 2 \times 2 \times 2 = 2^5$
- $k^4 \times k^2 = k \times k \times k \times k \times k \times k = k^6$

Subtraction Law for Indices

$$a^m \div a^n = a^{m-n}$$

Examples

$5^3 \div 5 = \frac{5 \times 5 \times 5}{5} = 5^2$

$d^5 \div d^2 = \frac{d \times d \times d \times d \times d}{d \times d} = d^3$

Further Examples

Remember it is best practice to write your variables in alphabetical order!

1. $4w \times 5z = 4 \times 5 \times w \times z = \underline{20wz}$

Multiply the coefficients together and then consider the variables!

2. $3a \times 4a^2 \times 2a$
$= 3 \times 4 \times 2 \times a \times a \times a \times a$
$= \underline{24a^4}$

Remember if there is no power written, it is to the power of 1

3. $(t^3)^2 = t^3 \times t^3$
$= t \times t \times t \times t \times t \times t$
$= t^6$

Learn a longer way in case you forget something, you multiply it by itself!

4. $\frac{3p^2 \times 4p^3}{6p^4} = \frac{12p^5}{6p^4} = \underline{2p}$

Don't forget about the order of operations!!

Using the subtraction law, 5-4=1

Spotting Patterns

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

$2^2 = 2 \times 2 = 4$

$2^1 = 2$

$2^0 = 1$

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

Each time I add one to the power, I multiply by 2

Each time I take one from the power, I divide by 2

Therefore, 2 to the power of 0 is 1. Remember anything to the power 0 is 1.

If we carry this on, we can even say what 2 to the power of a negative number is!

$2^{-2} = \frac{1}{4} = \frac{1}{2^2}$

$2^{-3} = \frac{1}{8} = \frac{1}{2^3}$

We can even spot that 2 to the power of -2 is the same as 1 over 2 to the power of 2 (or 2 squared)

FRACTIONAL INDICES

HIGHER TIER ONLY

$$a^{\frac{1}{m}} = \sqrt[m]{a}$$

Examples

$25^{\frac{1}{2}} = \sqrt{25} = \underline{5}$ $\quad 8^{\frac{1}{3}} = \sqrt[3]{8} = \underline{2}$

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

Examples

$25^{\frac{3}{2}} = (\sqrt[2]{25})^3 = 5^3 = \underline{125}$

Remember that this is the same as $(25^{\frac{1}{2}})^3$

Harder Examples

$(8x^2)^{\frac{1}{2}} = \sqrt{8x^2} = \underline{9x}$

$(9c^4)^{\frac{3}{2}} = (\sqrt{9c^4})^3 = (3c^2)^3 = \underline{27c^6}$

Remember this means we cube EVERYTHING inside the brackets

$(32f^{20})^{\frac{3}{5}} = (\sqrt[5]{32f^{20}})^3 = (2f^4)^3 = \underline{8f^{12}}$

It is really helpful to know the powers of 2,

2
4
8
16
32 ...

Refer to the ladder on the right if you're struggling to spot the patterns!

Square and Cube Numbers

When working with indices, it is helpful to know your square and cube numbers!

SQUARE NUMBERS

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225...

CUBE NUMBERS

1, 8, 27, 81, 125, 216, 343, 512...

You are expected to know these!

NEGATIVE FRACTIONAL INDICES

HIGHER TIER ONLY

EXAMPLE 1

$8^{-\frac{1}{3}} = \frac{1}{8^{\frac{1}{3}}} = \frac{1}{2}$

Remember this means the cube root of 8

EXAMPLE 2

$25^{-\frac{3}{2}} = \frac{1}{25^{\frac{3}{2}}} = \frac{1}{5^3} = \frac{1}{125}$

Remember this is the same as $(25^{\frac{1}{2}})^3$

EXAMPLE 3

$(343x^9)^{-\frac{2}{3}} \div x^3$
$= \frac{1}{(343x^9)^{\frac{2}{3}}} \div x^3$
$= \frac{1}{(7x^3)^2} \div x^3$
$= \frac{1}{49x^6} \times \frac{1}{x^3} = \frac{1}{49x^9}$

Don't forget the order of operations!

Remember instead of dividing by x cubed, we can multiply by the reciprocal

KEY THINGS TO REMEMBER

$$a^m \times a^n = a^{m+n}$$

$$a^m \div a^n = a^{m-n}$$

$$a^0 = 1$$

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

HIGHER TIER ONLY

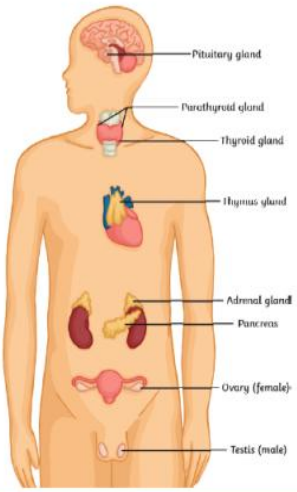
$$a^{\frac{1}{m}} = \sqrt[m]{a}$$

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

AQA GCSE Biology (Combined Science) Unit 5: Homeostasis and Response Knowledge Organiser

The Endocrine System

You should be able to identify the major glands of the endocrine system, as shown below.



Reflexes

A **reflex** is a fast and automatic response to a particular stimulus which may be harmful to the organism. They are quick because there is no conscious thought or process to deliver the response (they are an **involuntary** action). The pathway which carries the information about a reflex action is called a **reflex arc**.

A **reflex arc** begins with the **stimulus** e.g. a bee sting or a hot object on the skin. The stimulus is detected by the **receptor** cells and an electrical **impulse** is transmitted along the **sensory neuron**. The impulse is passed through **relay neurons** in the spinal cord or the **unconscious** areas of the brain. The response is coordinated **automatically** and sent along the **motor** neuron to the **effector** cells.

Hormones

Hormones are **chemical** messengers transported in the **bloodstream** to an effector where they can activate a response. They are produced and released from glands around the body which all make up the **endocrine system**. Hormones do a similar job to the neurons of the nervous system but there are some differences.

	neurons	hormones
speed	fast	slow
duration	short	long
target area	specific	general

The hormones released travel in the blood plasma to their **target cells** and affect only those certain cells. Hormones act on organs or cells where constant adjustments are made to maintain a stable state.

Some examples you should know:

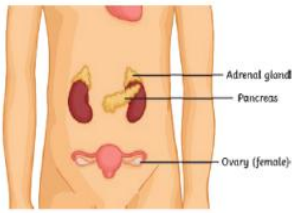
The **pituitary gland** produces a range of hormones including FSH and LH which help to regulate the menstrual cycle. The pituitary gland acts as a **master gland** because many of the hormones it releases control and coordinate the release of other hormones from other glands in the body.

Diabetes

There are two types of diabetes: type 1 and type 2.

Type 1 diabetes is a disorder affecting the pancreas. In type 1 diabetes, the pancreas does not produce enough insulin to control the blood sugar level and so the levels become higher than normal. Type 1 diabetes is usually treated by injections of insulin.

Type 2 diabetes is a disorder of effector cells which no longer respond to the hormones released from the pancreas. Type 2 diabetes can usually be managed through lifestyle choices such as maintaining a carbohydrate-controlled diet and regular exercise.



The risk of developing type 2 diabetes is higher in people who are obese (have a BMI >30).

Hormones in Human Reproduction

Oestrogen is the main reproductive hormone in females. It is produced in the **ovaries**. During puberty, this hormone increases and it stimulates an egg to be released from an ovary each month. This process is called **ovulation** and happens, on average, every 28 days.

Testosterone is the main reproductive hormone in males. It is produced in the **testes**. This hormone stimulates the production of sperm.

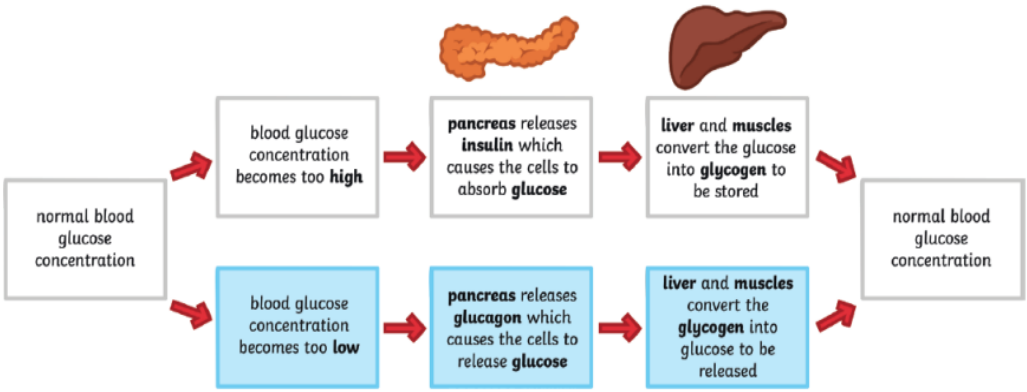
AQA GCSE Biology (Combined Science) Unit 5: Homeostasis and Response Knowledge Organiser

Control of Blood Glucose

The pancreas is the organ and gland which monitors and regulates the blood glucose concentration.

(HT only)

If the blood glucose concentration becomes too low, a negative feedback loop is triggered and the pancreas releases another hormone, **glucagon**, which acts on the liver and muscles to cause the stored **glycogen** to be converted back into **glucose** and released into the bloodstream.

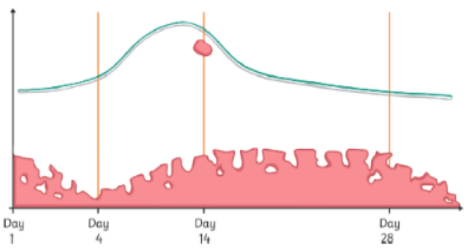


The Menstrual Cycle

The **menstrual cycle** occurs in females, approximately every **28 days**. It is a cyclical process of the building of the lining of the **uterus** and **ovulation**. If the **egg** become fertilised by a sperm, then **pregnancy** follows. If the egg is not fertilised, then the lining of the uterus is shed away and leaves the body as the **menstruation** (or period).

The whole cycle is controlled by four main reproductive hormones:

- **follicle stimulating hormone (FSH)**
- **oestrogen**
- **luteinising hormone (LH)**
- **progesterone**



Hormone	Where It Is Produced	Response Caused	Interaction with Other Hormones (HT only)
FSH	pituitary gland	An egg to develop in one of the ovaries.	Stimulates the production of oestrogen.
oestrogen	ovaries	The lining of the uterus builds up and thickens.	Stimulates the production of LH. Inhibits the production of FSH.
LH	pituitary gland	Ovulation (at around day 14 of the cycle).	Indirectly stimulates the production of progesterone.
progesterone	ovaries	The uterus lining to maintain.	Inhibits the production of LH.

Inheritance, Variation and Evolution Knowledge Organiser

Keywords

allele – An alternative form of a gene.

asexual reproduction – The production of offspring from a single parent by mitosis. The offspring are clones of the parent.

chromosome – Structures that contain the DNA of an organism and are found in the nucleus.

cystic fibrosis – A disorder of cell membranes that is caused by a recessive allele.

DNA - A polymer that is made up of two strands that form a double helix.

dominant – An allele that is always expressed, even if only one copy is present.

fertilisation – The fusion of male and female gametes.

gamete – Sperm cell and egg cell in animals; pollen and egg cell in plants.

gene – A small section of DNA that codes for a specific protein.

genome – The entire genetic material of an organism.

genotype – The combination of alleles.

heterozygous – A genotype that has two different alleles, one dominant and one recessive.

homozygous – A genotype that has two of the same alleles. Either two dominant alleles or two recessive alleles.

meiosis – The two-stage process of cell division that reduces the chromosome number of the daughter cells. It makes gametes for sexual reproduction.

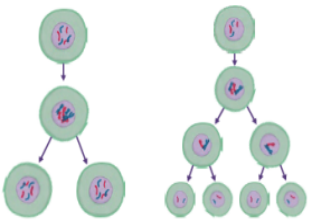
mutation – A change in DNA.

phenotype – The characteristic expressed because of the combination of alleles.

polydactyly – Having extra fingers or toes. It is caused by a dominant allele.

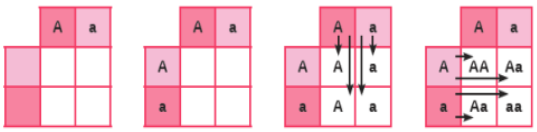
recessive – An allele that is only expressed if two copies of it are present.

sexual reproduction – The production of offspring by combining genetic information from the gametes of two parents. Leads to variation in the offspring.



Mitosis	Meiosis
Produces two daughter cells.	Produces four daughter cells.
Daughter cells are genetically identical.	Daughter cells are not genetically identical.
The cell divides once.	The cell divides twice.
The chromosome number of the daughter cells is the same as the parent cells. In humans, this is 46 chromosomes.	The chromosome number is reduced by half. In humans, this is 23 chromosomes.
Used for growth and repair, and asexual reproduction.	Produces gametes for sexual reproduction.

How to Complete a Punnet Square

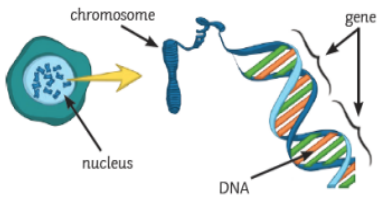


Step 1: Put the two alleles from one parent into the boxes at the top. This parent is a heterozygote. This means they have one dominant and one recessive allele.

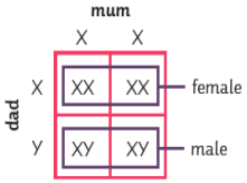
Step 2: Put the two alleles from the second parent into the boxes on the left. This parent is also a heterozygote.

Step 3: Put the alleles from the first parent into the two boxes underneath them.

Step 4: Put the alleles from the second parent into the two boxes to the right of them.



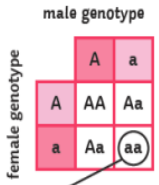
Sex Determination



Females carry two X chromosomes.
Males carry one X and one Y chromosome.

Probability

There are four possible combinations of gametes that offspring can inherit.



One of these four has the genotype aa – that's $\frac{1}{4}$, 25% or 0.25.

The recessive phenotype has a ratio of 1:3 because only one combination will show the phenotype while the other three will not.

Keywords

embryo screening – Genetic tests carried out on an embryo to see whether it carries a faulty allele.

evolution – A change in the inherited characteristics of a population over time through a process of natural selection.

evolutionary tree – A method used to show how scientists believe organisms are related.

extinction – The permanent loss of all members of a species.

fossils – The remains of organisms from millions of years ago which are found in rocks.

genetic engineering – The process by which scientists manipulate and change the genotype of an organism.

natural selection – The process by which organisms that are better suited to an environment are more likely to survive and reproduce.

selective breeding – Humans selecting animals or plants, that have a required characteristic, for breeding.

speciation – The process by which two species evolve from a single original species by natural selection. The two populations have become so different that they can no longer interbreed to produce fertile offspring.

variation - Differences in characteristics of individuals in a population.

Variation

Variation maybe be due to differences in:

- the genes that have been inherited (genetic causes);
- the conditions in which they have developed (environmental causes);
- a combination of genes and the environment.

Evolution

All species of living things have evolved from simple life forms by natural selection.

- If a variant/characteristic is advantageous in an environment, then the individual will be better able to compete.
- This means they are more likely to survive and reproduce.
- Their offspring will inherit the advantageous allele.

Fossils

Fossils could be:

- the actual remains of an organism that has not decayed;
- mineralised forms of the harder parts of an organism, such as bones;
- traces of organisms such as footprints or burrows.

Many early life forms were soft-bodied so have left few traces behind.

Fossils help us understand how much or little organisms have changed as life developed on earth.

Resistant Bacteria

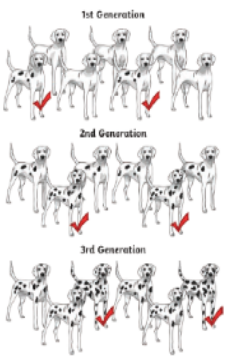
1. There is variation in the bacterial population. One bacterium develops a mutation by chance that means it is resistant to an antibiotic.
2. The antibiotic kills some of the bacteria, the resistant bacterium survives and reproduces.
3. The antibiotic kills the rest of the non-resistant bacteria so the person may start to feel a little better. The resistant bacterium has survived the antibiotic and continues to multiply.

To reduce the rate at which antibiotic-resistant strains appear:

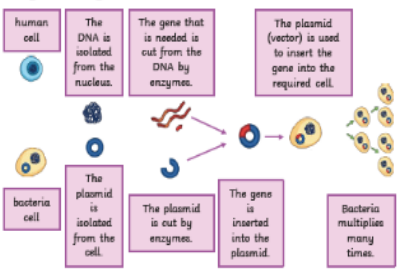
- Antibiotics should only be used when they are really needed, not for treating non-serious or viral infections.
- Patients should complete their courses of antibiotics, even if they start to feel better.
- The agricultural use of antibiotics should be restricted.

Selective Breeding

1. Choose parents who have the desired characteristic.
2. Select the best offspring and breed these to make the next generation.
3. These offspring are then bred again and again, over many generations, until a desired result is achieved.



Genetic Engineering



Classification

Linnaeus classified living things into kingdom, phylum, class, order, family, genus and species.

Organisms are named by the binomial system of genus and species.

Due to evidence from chemical analysis, there is now a 'three-domain system' developed by Carl Woese.

Domain	bacteria	archaea	eukaryota			
Kingdom	eubacteria	archaebacteria	protista	fungi	plantae	animalia

Science

Crude Oil

Hydrocarbons are compounds that are made up of the elements **hydrogen** and **carbon** only.

Crude oil is a **non-renewable resource**, a **fossil fuel**. Crude oil is made up of a mixture of compounds, most of which are long- and short-chain hydrocarbons.

Most of the compounds in crude oil are hydrocarbons called **alkanes**. The alkanes form a **homologous series**. This is a family of hydrocarbons that all share the **same general formula** and have **chemical properties** that are **similar**.

Alkanes are held together by **single bonds**.

The general formula for an alkane is C_nH_{2n+2}.

They differ from the neighbouring alkane with the addition of a CH_2.

Alkanes are **saturated hydrocarbons**. This means that all their bonds are taken up and they cannot bond to any more atoms.

Alkanes have **similar chemical properties** but have **different physical properties** due to differences in chain length. The longer the chain, the higher the boiling point of the hydrocarbon.

The first four alkanes are: methane, ethane, propane and butane.

A mnemonic to help you remember the order of the alkanes: **m**ice **e**at **p**aper **b**ags.

Fractional Distillation

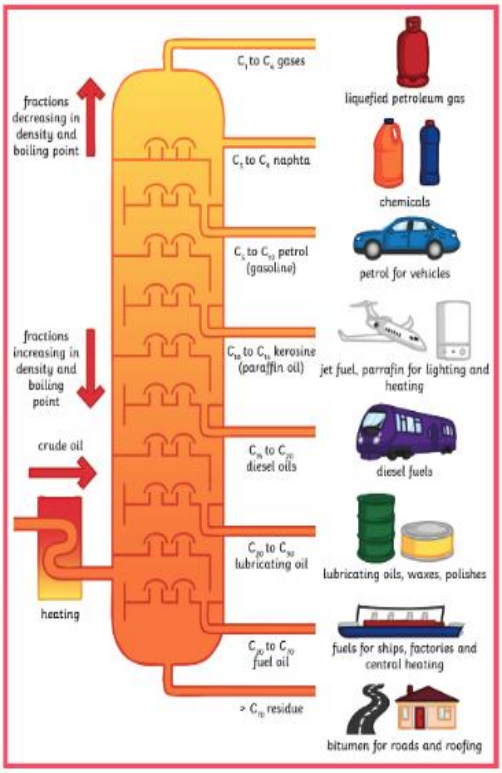
Fractional distillation is used to **separate** a mixture of long-chain hydrocarbons in crude oil into smaller, more useful fractions.

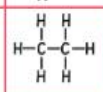
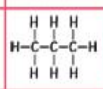
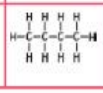
Hydrocarbons have different boiling points depending on their chain length. **Each fraction contains hydrocarbons of a similar chain length.** These fractions will boil at different temperatures due to the difference in sizes of the molecules. The different parts of crude oil are called fractions because they are a small part of the original mixture.

Crude oil is heated and enters at all column called a **fractioning column**. The column is **hot at the bottom** and decreases in temperature toward the top. As the crude oil is heated, it begins to evaporate and its vapours begin to rise up through the column. These vapours condense at the different fractions.

Short-chain hydrocarbons are found at the **top** of the column. This is because shorter chain molecules are held together by **weak intermolecular forces** resulting in low boiling points. These shorter chain hydrocarbons leave the column as gas.

Long-chain hydrocarbons are found at the bottom of the column and are held together by **strong intermolecular forces**, resulting in high boiling points.



Name of Alkane	Structural Formula	Molecular Formula
methane		CH_4
ethane		C_2H_6
propane		C_3H_8
butane		C_4H_{10}

Combustion

Complete combustion occurs when there is **enough oxygen** for a fuel to burn. A hydrocarbon will react with oxygen to produce carbon dioxide and water.

Incomplete combustion occurs when there **isn't enough oxygen** for a fuel to burn. The products in this reaction are water and poisonous **carbon monoxide**.

Cracking

Cracking is an example of a **thermal decomposition reaction**. **Long-chain** hydrocarbons can be **broken** down into **shorter**, more useful hydrocarbon chains.

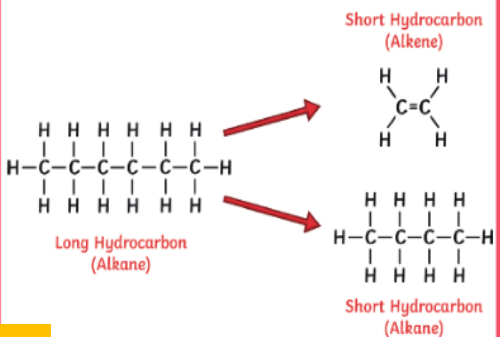
Cracking can be carried out with a catalyst in **catalytic cracking** or with steam in **steam cracking**.

Catalytic cracking involves heating a hydrocarbon to a high temperature (550°C) and passing over a hot catalyst.

Cracking of a long-chain hydrocarbon **produces** a **short-chain alkane** and an **alkene**.

Alkenes are another type of hydrocarbon that is double bonded. The general formula for an alkene is C_nH_{2n}.

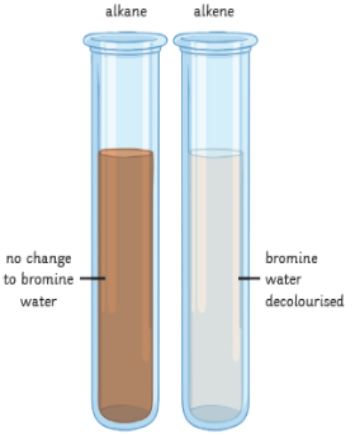
Alkenes are **unsaturated hydrocarbons**. In a chemical reaction, the double bond of the alkenes can break. This allows other atoms to bond to it.



Test for Alkanes

Bromine, when added to an **alkane**, will **remain brown/orange**. Alkanes are saturated hydrocarbons, they have no double bonds which could be broken to accept the bromine molecule and so remain orange.

Bromine, when added to an **alkene**, will **change from brown/orange to colourless**. This is because alkenes are unsaturated hydrocarbons. The double bond breaks and the bromine molecule is accepted.



Making Polymers

The fractional distillation of crude oil and cracking produces an array of hydrocarbons that are key to our everyday lives.

Alkenes are used to produce plastics such as poly(ethene) which is used to make plastic bags, drinks bottles and dustbins. Poly(propene), another polymer, forms very strong, tough plastic.

Short-Chain Molecules	Increasing Chain Length →	Long-Chain Molecules
	As chain length increases, the **boiling point** of the hydrocarbon chains also increases. →	
thin 	**Viscosity** describes how easily a substance can flow e.g. treacle is very viscous; it is thick. →	thick 
	**Flammability** is a measure of how easily a substance burns. →	

Within the 'brain dump', add all the knowledge you can remember from ***Science*** and ***Maths*** without looking back at the sheets. Once you have added everything you can remember, look at these pages again and using a different colour pen, add in the knowledge that you missed out. This is the knowledge you should now continue to revise. Continue this process until you can remember everything on the page.

BRAIN DUMP

Grade 9

phrases French

Reach for the stars

150 word wow phrases

Go through this booklet and pick out between 3-5 phrases in each section that you are going to use in your 150 word piece of writing no matter what the bullet points – learn them off by heart. In your exam write them down when you are planning to make sure you include them in your answers

Opinions

ça m'amuse (used for something funny)

ça me plaît (used for general liking)

ça m'a plu – I enjoyed it

ce qui m'inquiète c'est... - What worries me is

ce qui m'inquiétait c'était – what I found worrying was

je n'en ai pas envie – I don't want to

j'apprécie (often used for comparing two likes)

je pense que - I think that

je crois que - I believe that

je dirais que I would say that

je suis d'avis que- I am of the opinion that

à mon avis – in my opinion

pour ma part – as for me

d'après moi/selon moi – according to me

quant à moi – In my opinion

j'ai l'impression que... – I get the impression that...

je dirais que - I would say that...

je dois avouer que... - I must admit that...

j'aurais dit/cru que - I would have said/believed that

je me suis rendu compte que - i realised that

d'un côté, j'aime ___ parce que..mais de l'autre côté, je n'aime pas ___ parce que - On one hand, i like __ because...but on the other, don't like___ because..

je ne crois pas que ce soit le cas – I don't believe that that's the case

çela peut être... - it can be...

A variety of adjectives	
agaçant (annoying/irritating)	cauchemardesque – nightmarish
noiçif - harmful	réussi (successful)
décevant (disappointing)	ridicule (ridiculous)
délicieux (delicious)	superbe (impressive, in a large scale)
divertissant (entertaining)	serviable - useful
émouvant (moving)	inoubiable (unforgettable)
	épouvantable – horrendous

Idioms (you only need 1 or 2)

Le revers de la médaille – on the other side of the coin

c'est le pied! – its great!

j'ai mangé comme quatre – I ate like a horse

les doigts dans le nez – hands down

je suis tombé sur les pommes – I fainted

ça me prend la tête – it bugs me

coûter les yeux de la tête – costs an arm and a leg

ce n'est pas ma tasse de thé – it's not my cup of tea

mon peché mignon – guilty pleasure

c'est n'est pas la mer à boire – it's not a big deal

ça ne mange pas du pain – it won't break the bank

Extending your sentence (Fancy connectives)

que/qui – which, that - use *que* if you are following with a pronoun eg. La Suisse est le pay **que je** préfère.

- Use *qui* if there is no pronoun eg. Mon frère**, qui est** grand.

ce que/ce qui – use at the beginning of sentences to express an opinion – Ce que j'aime c'est...

Ce qui est...

quand – when

pendant que – while

au moment où – at the point when

puisque – since

depuis que – since

comme – as

non seulement... mais de plus – not only...but also...

par exemple...ou bien – for example...or alternatively

par contre,... – on the other hand,...

d'ailleurs - Besides/Moreover/Furthermore

en fait,... - In fact,...

néanmoins - nevertheless

pourtant,... – however,...

dés que – as soon as

des fois - sometimes

du coup -therefore

de plus... - Furthermore...

A range of grammatical structures

Venir de + INF – to mean you have just done something.

Je viens de rentrer – I have just come back

Je venais de rentrer....quand elle est arrivée – I had just come back...when she arrived

si j'avais su... (+ conditional) - if i had known...

avant de (+ inf),... – Before (doing sth.),...

après avoir/être (+inf)... - After having (done something)...

quand j'étais...- when I was...

j'ai hâte de... - I cant wait

Introducing ideas

il s'agit de – this is about/ to do with

quant à – as for

pour comble de malheur – to cap it all

étant donné que – given that

vu que – considering that

en raison de – in view of

il me semble que – it seems to me that

qu'on ne s'y trompe pas – let there be no mistake about it

à tort ou à raison – rightly or wrongly

grâce à – thanks to

à cause de – because of

en effet – indeed, in fact

tout d'abord – First of all

The Subjunctive

Il faut que (to have to) and bien que (although) are followed by the subjunctive

Il faut que j'aille – I have to go

Bien que je (ne) sois (pas) – although I am (not)

Bien que ce (ne) soit) – although it is (not)

Mes parents veulent que je fasse – My parents want me to do...

Autant que je sâche – as far as I know

MFL

Present Tense

Use: *to speak about what is happening now or regularly*
e.g. I watch films on Saturday evenings
How: *take away the infinitive ending (i.e. IR/RE/ER) and add the correct ending.*

	IR	RE	ER
1. Je	is	s	e
2. Tu	is	es	es
3. Il/Elle	it	-	e
4. Nous	issons	ons	ons
5. Vous	issez	ez	ez
6. Ils/Elles	issent	ent	ent

Examples in English:
- Usually, I go to the swimming pool with my sister.
- I like eating chocolate.
- Right now, I am drinking a coffee.

e.g.
Aimer ➡Aimer ➡Aim ➡Nous aim ➡Nous aim+ons = Nous aimons
Vendre ➡Vendre ➡Vend ➡Vous vend ➡Vous vend+ez = Vous vendez
Finir ➡Finir ➡Fin ➡Je fin ➡Je fin+is = Je finis

Perfect Tense – *Have...*

Use: *to speak about something that has happened in the past, but is now over. e.g. I have eaten/I ate a cheese sandwich for lunch.*
How: *use present tense 'avoir/être' as an auxiliary and add the past participle (with correct agreement if using être).*

1. Je **I**	ai	4. Nous **We**	avons
2. Tu **You**	as	5. Vous **You (pl.)**	avez
3. On **One**	a	6. Ils **They**	ont

1. Je **I**	suis	4. Nous **We**	sommes
2. Tu **You**	es	5. Vous **You (pl.)**	êtes
3. On **One**	est	6. Ils **They**	sont

Past Participle
ER – é
IR – i
RE - u

These verbs use Être
Devenir
Revenir
Monter
Rentrer
Sortir
Venir
Aller
Naître
Descendre
Entrer
Rentrer
Tomber
Rester
Arriver
Mourir
Partir

Agreements if using Être
Feminine – e
Plural - s

e.g.
Aimer ➡j'ai aimer ➡j'ai aimer ➡j'ai aim+é = j'ai aimé
Aller ➡ je suis aller ➡je suis aller ➡ je suis all+é = je suis allé(e)(s)

Imperfect Tense – *Used to...*

Use: *to speak about something that used to happen regularly in the past, but it is now over. e.g. I used to walk to school, but now I take the bus.*
How: *use present tense, third person plural minus –ons and add the correct ending.*

1. Je **I**	Present tense, third person plural (nous) minus -ons	**ais**	4. Nous **We**	Present tense, third person plural (nous) minus -ons	**ions**
2. Tu **You**		**ais**	5. Vous **You (pl.)**		**iez**
3. On **One**		**ait**	6. Ils **They**		**aient**

e.g.
Aimer ➡nous aimons ➡aim ➡on aim ➡on aim+ait = on aimait *one used to like*
Finir ➡nous finissons ➡finiss ➡ils finiss ➡Ils finiss+aient = ils finissaient *they used to finish*

Near Future Tense – *Going to...*

Use: *to speak about things in the very near future (this weekend, tonight)*
e.g. tonight I am going to watch a DVD
How: *use present tense 'aller' and add the infinitive.*

1. Je **I**	vais **am going**	4. Nous **We**	allons **are going**
2. Tu **You**	vas **are going**	5. Vous **You (pl.)**	allez **are going**
3. On **One**	va **are going**	6. Ils **They**	vont **are going**

Infinitive
Jouer – to play
Faire – to do
Manger – to eat

REMEMBER! The infinitive is the basic form of the verb, before it is attached to a person or time. In French, the infinitive always ends in –RE/-IR/-ER. This is what you find in the dictionary. Some examples in English include 'play', 'run', and 'sleep'.

e.g.
Je vais + jouer = I am going to play
On va + faire = we are going to do
Nous allons + aller = we are going to go

Simple Future Tense – *Will...*

Use: *to speak about will happen in the future. There is a nuance of certainty about this.* e.g. I will go to university and I will study law.
How: *use your infinitive (minus the final E for –RE verbs) and add the correct ending.*

1. Je **I**	Infinitive	**ai**	4. Nous **We**	Infinitive	**ons**
2. Tu **You**		**as**	5. Vous **You (pl.)**		**ez**
3. On **One**		**a**	6. Ils **They**		**ont**

e.g.
Je jouer + ai = I will play
Nous manger + ons = we will eat
Ils pourr + ont = they will be able to

Example in English:
- She will play hockey at university.

Conditional Tense – *Would...*

Use: *to speak about something that might happen in the future, but it is based on a condition.*
e.g. I would like go to university and I would like to study law.
How: *use your infinitive (minus the final E for –RE verbs) and add the correct ending.*

1. Je **I**	Infinitive	**ais**	4. Nous **We**	Infinitive	**ions**
2. Tu **You**		**ais**	5. Vous **You (pl.)**		**iez**
3. On **One**		**ait**	6. Ils **They**		**aient**

e.g.
Je jouer + ais = I would play
On manger + ait = we would eat
Ils écouter + aient = they would listen

Example in English:
- They would like to reduce car emissions.

French GCSE Retrieval words

Test each set of words twice 1st time French – English, 2nd time English to French

Connectives

et	and
aussi	also
mais	but
cependant	however
avec	with
sans	without
ou	or
où	where
puis / ensuite	then
après	after
en revanche / par contre	on the other-hand
donc	therefore
comme	like (for example)
parce que / car / vu que / puisque / étant donné que	because / since

Present and Past tense time markers

normalement	normally
généralement	generally
d'habitude	usually
en ce moment	at the moment
aujourd'hui	today
maintenant	now
actuellement	Currently
ce soir	this evening weekend
ce week-end	this weekend
hier	yesterday
avant-hier	the day before yesterday
Il y a + time	…ago
la semaine dernière	last week
le week-end dernier	last weekend

Intensifiers and Negatives

très	very
assez	quite
trop	too
un peu	a little
vraiment	really
tellement	so
extrêmement	extremely
ne..jamais	never
ne..pas	not
ne..rien	nothing
ne..personne	nobody/no one
ne..plus	no more/no longer
ne..que	only/nothing but
ni…ni	neither…nor
pas encore	not yet

Future tense and adverbs of frequency

demain	tomorrow
après-demain	the day after tomorrow
demain matin/après-midi/soir	tomorrow morning/afternoon/evening
le mois prochain	next month
plus tard	later
bientôt	soon
quelquefois	sometimes
parfois	sometimes
souvent	often
toujours	always
de temps en temps	from time to time
rarement	rarely
habituellement	usually

Opinions

J'adore	I love
J'aime	I like
Je n'aime pas	I don't like
Je déteste	I hate
Je pense que	I think that
Je crois que	I believe that
À mon avis,	In my opinion
Selon moi,	According to me
D'après moi,	According to me
Je dirais que,	I would say that
Pour ma part,	For my part
Quant à moi,	According to me
Je suis d'avis que	I am of the opinion that
Je dois avouer que	I must admit that
J'ai l'impression que	I have the impression that

Week 1: Time phrases

French	First guess	After learning	Reviewed
à l'heure			
l'an (m)/ l'année (f)			
après-demain			
l'après-midi			
aujourd'hui			
avant-hier			
bientôt			
demain			
dernier/dernière			
en ce moment			
en retard			
hier			
il y a (2 mois)			
le jour/ la journée			
le lendemain			
le matin			
la nuit			
prochain(e)			
le soir			

Self-test score:..... /20

Teacher test score: ..... /20

Re-test score: ..... /20

Week 2: Expressions of frequency

French	First guess	After learning	Reviewed
chaque			
d'habitude			
de temps en temps			
déjà			
de nouveau			
en train de (faire)			
encore une fois			
une fois			
longtemps			
maintenant			
normalement			
parfois			
par mois			
par semaine			
quelquefois			
rarement			
souvent			
toujours			
tous les jours			
tout de suite			

Self-test score:..... /20

Teacher test score: ..... /20

Re-test score: ..... /20

Week 3: Opinions

French	First guess	After learning	Reviewed
absolument			
ça dépend			
ça m'énerve			
ça me fait rire			
ça me plaît			
ça m'est égal			
ça ne me dit rien			
ça suffit			
croire			
espérer			
étonner			
franchement			
(s')intéresser à			
(en avoir) marre			
(moi) non plus			
penser			
peut-être			
sembler			
supporter			
vraiment			

Self-test score:..... /20
Teacher test score: ..... /20
Re-test score: ..... /20

Week 4: Adjectives

French	First guess	After learning	Reviewed
affreux/affreuse			
agréable			
amusant(e)			
barbant(e)			
beau/belle			
cher/chère			
chouette			
compliqué(e)			
content(e)			
désagréable			
drôle			
embêtant(e)			
ennuyeux/ ennuyeuse			
facile			
faible			
formidable			
génial(e)			
grave			
habile			
intéressant(e)			

Self-test score:..... /20
Teacher test score: ..... /20
Re-test score: ..... /20

Week 5: More adjectives

French	First guess	After learning	Reviewed
inutile			
incroyable			
inquiet/inquiète			
joli(e)			
laid(e)			
marrant(e)			
mauvais(e)			
merveilleux/ merveilleuse			
mignon/ mignonne			
moche			
nouveau/ nouvelle			
nul/nulle			
parfait(e)			
passionnant(e)			
pratique			
ridicule			
rigolo			
sage			
sensass			
utile			

Self-test score:..... /20

Teacher test score: ..... /20

Re-test score: ..... /20

Week 6: Abbreviations and negatives

French	Firstguess	After learning	Reviewed
l'EPS (f)			
le SDF			
la SNCF			
le TGV			
le VTT			
ne ... aucun			
ne ... jamais			
ne ... pas			
ne ... personne			
ne ... plus			
ne ... que			
ne ... rien			
ni ... ni			
ne ... pas encore ...			

Self-test score:..... /20

Teacher test score: ..... /20

Re-test score: ..... /20

History

Knowledge Organiser: KT3 Nazi control and dictatorship, 1933-39

In January 1930, Hitler was appointed Chancellor. Even though Hitler was Chancellor, he still had limited power. The Weimar Constitution (set of rules of the government) restricted what a Chancellor could do on their own. President Hindenburg still had more power than Hitler. These are the 5 events that led to Hitler's **dictatorship** of Germany in a '**One Party State**'.

EVENT 1: The Reichstag Fire, Berlin, 27th Feb. 1933

The **German Parliament building was set** on fire. A Communist was caught, blamed and executed.

What did Hitler do about the fire?

- Hitler used this fire to **blame all communists** of plotting against Germany. **4,000** communists were arrested that night.

What did Hitler ask Hindenburg to do?

- He persuaded Hindenburg to declare a **STATE OF NATIONAL EMERGENCY** - to give Hitler the right to **make decisions on his own. Hitler also wanted another election.**

What did Hitler do with his new emergency power?

- Hitler decided to arrest **communists and put them in prison. He also banned communist newspapers**.
- He told the German **police** to ignored the violence of the SA against the communists despite 70 deaths during the election.
- Hitler persuaded **rich industry bosses** to give him money to stop communism. He made 3 million marks in just one night.

What was the election result and why was this significant?

- The Nazis gained even more power. He banned the Communist Party from being part of the Reichstag.
- He had enough Nazi politicians to vote in any law he wanted.

Importantly, Hitler achieved this legally.

EVENT 2: The Enabling Act March 1933

- ❑ Hitler wanted a law called the **Enabling Act**. This would allow him to **make any law WITHOUT** the need of a vote to agree it for **4 years**.

Why did other politicians allow the law?

Other politicians and parties did not oppose it because…

1. The Nazis already had a two-thirds **majority** to vote for it.
2. The **Communist Party** were banned so could not vote.
3. The **SA** used their violence to intimidate politicians to agree.

The end of democracy in Germany.

The Enabling Act was agreed. Hitler could make any law he wanted without a vote.

Importantly, Hitler again did this legally.

EVENT 3: Bans other political parties July 1933

Hitler used the Enabling Act to ban other political parties. Hitler made Germany a '**one party state**'.

- ❑ The Nazis took over the **regional governments**.
- ❑ **Trade Unions were banned** and their leaders arrested.
- ❑ The SA attacked the headquarters of other political parties.
- ❑ **Hitler officially banned all political parties in Germany apart from the NSDAP/Nazi Party.**

Hitler again did this legally.

EVENT 4: The Night of the Long Knives June 1934

Hitler believed the leader of the SA, **Ernst Rohm** was a threat to his power and wanted to take over as leader of the Nazi Party.

Why did Hitler think this?

1. Rohm had openly opposed Hitler's ideas.
2. Leader of the SS, Heinrich Himmler was jealous of the SA & wanted the SS to be powerful.

So what did Hitler do?

- Hitler arranged to meet Rohm and 100 other SA leaders at a **hotel**. Here they were **arrested and put in prison**.
- Over 4 days, **400 SA members** were shot.

How did Hitler get away with this?

- The Nazis publically announced that they had found out about a '**secret plan**' to start a revolution by the SA.
- People were told the killings had to take place to **protect Germany.**

The propaganda used throughout this time, made every action Hitler made, seem like the right one for Germany.

EVENT 5: The Death of President Hindenburg August 1934

President Hindenburg died. Hitler declared himself **'Fuhrer'** (Leader) of Germany.

- ❑ **He gave himself all the power of the President.**
- ❑ He forced an **oath of loyalty** from every soldier in the army.

How did Hitler do this legally?

With no other option, 90% of Germans agreed with a huge amount of propaganda.

Hitler again did this legally.

After 1933, Germany was controlled by a '**Police State**'. Anyone who said or did anything against the Nazis was **punished**. The **fear** this created was another way of keeping control – a **deterrent** to any form of opposition. The Nazi Party ran the police. The **3** main police units were the **SS**, **SD** and **Gestapo**. The Nazis also created Concentration Camps & controlled courts & judges. The Nazis also used various methods of propaganda, but they still faced **some** opposition.

Nazi Police State (Fear and Terror)

The Nazis use of threat, fear and intimidation was their most powerful tool to control the German people. Heinrich Himmler was head of SS, who controlled SD/Gestapo.

- **The SS** – Loyal police/security force of 240,000, set up as Hitler's bodyguard. They had unlimited power and were responsible for all security, police and concentration camps.
- **Gestapo** - Secret Police of 300,000, who looked for opponents. They spied on Germans, tapped phones, opened mail and could jail anyone. They wore no uniforms and arrested over 160,000 for 'political crimes'. 80% of the crimes were passed on by informers, who they relied on heavily and made them more feared.
- **The SD** – Security Force under Heydrich to find enemies, they kept files on all threats in and outside of Germany.
- **Concentration Camps** – Dachau set up in 1933. Used to hold political opponents/ enemies/ homosexuals. Used beatings and hard work to 're-educate' the 150,000 prisoners.

Legal System

- **Peoples Court**: Courts with Nazi judges who swore loyalty oath to Hitler. It was the judge alone who decided punishments. Although, Hitler sometimes stepped in.
- 44 crimes now punishable by death, 534 killed between 1933-39 e.g. smuggling/jokes.
- Legal system used as a tool to bring Germany under control.

Propaganda and Censorship

- **Gleichaltung: Nazi aim to 'Nazify' all of Germany and indoctrinate (brainwash).**
- **Goebbels** – Propaganda Minister.
- **Film** – 100 films a year, pro Nazi, 250 million watched films in 1933. All films censored.
- **Newspapers** –5000 shut down, remained all under Nazi control who decided what was written, 'Der Sturmer' a Nazi paper.
- **Radio** – Reich Radio company took control of all radio stations in Germany. Hitler's speeches popular, Nazis made cheap 'peoples radio' 70% had them. Loudspeakers were put up in public to broadcast Nazi speeches.
- **Rallies/Events**– Nuremberg rallies (200,000 attend, 20,000 Nazi flag, 100ft Nazi Eagle) and 1936 Olympics wee spectacles to show power, Aryan superiority etc.
- **Culture** – The Reich Chamber of Culture, under Goebbels, controlled Art, Theatre, Music, literature and Architecture. Your work had to be approved and Nazis burnt 20,000 Jewish book, banned Jazz. Architecture used to show power and Nazi statues.
- **Censorship** – Nazis shut down all anti-Nazi things (Films, radio, newspapers) controlled all news stations which meant Germans only saw pro-Nazi news.

Nazis and the Church

On one hand, Nazi beliefs were opposed to Christianity, but open hostility could cause resistance.

Catholics:

- **Concordat** – 1933 truce with Catholics/Pope to not interfere. However, Hitler breaks promise as in 1937. 400 Catholics sent to camps, catholic schools closed & groups banned, crucifixes banned. Priest Block in Dachau.

Protestants:

- **1936 Reich Church** to take control of all Protestant churches, under Nazi Bishop Muller. All had to swear oath to Hitler or be replaced, Old testament removed. Mein Kampf replaces bible & crucifix replaced with the swastika.

Nazi Opposition

Living under fear, terror and propaganda, censorship ended MOST opposition **BUT…**

Church:

- Martin Niemoller set up Confessional Church against Nazi (6000 members), he is imprisoned and church shut down.
- 400 Catholics sent to Dachau after Pope's speech.

Youth:

- VERY small numbers of youth set up anti Nazi groups, most joined Hitler Youth and just kept quiet.
- Swing Youth: listened to Jazz, drank and wore US clothes, groups of 600 went to parties.
- Edelweiss Pirates, 2000 anti Nazis who beat up Hitler Youth, anti Nazi graffiti, went on camps.

Really, these groups were a minority.

Knowledge Organiser: KT4 Life in Nazi Germany, 1933-39

History

The Nazis wanted to completed control German life, the Nazis called this '**Gleichschaltung**' - ensuring people have an identical way of thinking and acting. Historians called it **Nazification**. Control was part of this, but the Nazis also targeted changed life for all groups in German society in their aim to create a '**Volksgemeinschaft' (a peoples community).**

Hitler and Young Germans

Hitler saw the youth as the **future of the Third Reich**. Therefore **indoctrinating** young Germans to be loyal, obedient and useful Nazis was central to policy.

Nazi Education

The function of schools in Nazi Germany was to create Nazis.
All schools had to start and end the day with 'Heil Hitler' and Nazi posters, swastikas and picture of Hitler in rooms.

Curriculum:

- Separate schools for **Boys & Girls to prepare for different things.**
- Boys: Military and Politics.
- Girls: Domestic life and motherhood.
- **Nazi brainwashing** in all lessons – Anti- Jew, military success, Pro Aryans.
- Maths/History/Race Study/ Eugenics (breeding) important.
- **Party beliefs** taught in schools.

Teachers

- All teachers had to join The **Nazi Teachers' League** (97% joined), and told they must become Nazi members.
- Had to attend political courses, to learn how Nazi ideology could be included in the curriculum, or risk being fired.

Nazi Youth - Boys

- **10-14 Cubs, Hitler Youth 14-18**
- All other youth groups banned in 1933 e.g. scouts and church groups.
- Hitler Youth Act, 1936 made joining compulsory, rose to 8 million members.

Activities:

- **Political**: Swore oath of loyalty, learnt Nazi ideology and went to lectures.
- **Military:** Training for army e.g. marching, shooting, and camping.
- **Character**: Activities to increase comradeship and ruthlessness. Used as a brainwashing tool/training.

Nazi Youth – Girls

- **League of German Maidens 14-18** Preparing girls for life in the home.
- **Physical**: Emphasis in sports for healthy mothers, run 40m in 14 seconds.
- **Political:** oath of loyalty and Nazi ideology.

- **Domestic:** trained to cook, iron, sew, be housewives. Also taught about racial hygiene and need to marry an Aryan.

How successful were Nazi Youth policies?

Success: Membership high, many like the activities, comradeship and feeling of importance in Nazi future.

Failure: Opposition groups, complaints of boredom, harsh training and brainwashing. Attendance dropped.

Women in Nazi Germany

Aims: Be a **housewife** and raise Nazis.

- Under Weimar period, women had progressed however Nazis wanted a return to traditional style.
- Discouraged from university and work, given 'marriage bonuses' to not work and get married.
- Abortion and contraception was banned to **encourage reproduction.**
- **Marriage loans of 1000 marks** to give up work to have children, and with every child you didn't have to pay back 250 of it.
- **Lebensborn Program** – From 1936, centres opened to 'donate a baby to Fuhrer' by single Aryan women reproducing with SS men.
- **Mothers Cross Medal**: Gold medal for having 8 children.
- Traditional clothing, focus on housework and raising Nazi children. Three K's: Kinder, Kuche, Kirche (Cooking, Church, Children).

Policies to reduce unemployment

One of Hitler's first aims when he came to power in 1933 was to reduce **unemployment.** There are 3 ways in which he tried to do this:

- **RAD** – Compulsory all 18-25 men work for 6 months, built hospitals, schools, roads.
- **Rearmament** – 1m men in army, more in factories making arms, 72,000 involved in aircraft construction.
- **Autobahns** (motorways) – 125,000 men employed, 3,500km completed by 1938.
- Unemployment dropped 5m in 1933 to 0.5m in 1939 but the Nazis did lie about statistics and removed women and Jews from statistics. This is an example of **invisible unemployment.**

Did the standard of living improve?

German Workers Front (DAF)

- Protected the rights of workers and created a minimum pay levels.
- However, workers lost the right to negotiate their pay and often worked longer hours.

Strength Through Joy (KdF)

- Created to improve the standard of living.
- It provided **leisure activities** such as sporting events, days out, hikes, films, cheap foreign travel.
- The KdF's biggest scheme was an opportunity to save for a new **Volkswagen** – **People's Car**. Workers just had to give 5 marks of their weekly wage to eventually give them a car. However, no one received a car as the factories were turned into arms factories in 1938.

Beauty of Labour (SdA)

This organisation pushed businesses to **provide better facilities** for workers such as toilets, changing rooms, showers and canteens. However, workers often had to do the building and decorating themselves, with no extra pay.

The Main Nazi Racial Beliefs

Eugenics & Social Darwinism:

- A scientific idea which was influenced by **Charles Darwin** and his theory of the **Survival of the Fittest**.
- Eugenics teaches that humans can **control how strong they are** by only **selected the 'best'** parents to have children.
- This meant trying to stop **inferior** parents from having children or marrying.
- Eugenics became a subject in **schools**, **youth groups** and was constantly used in **propaganda**.

The Aryan Race & Racial Hygiene:

- The Nazis believed that 'the best' came from **one race** only –the **Aryan Race**.
- They believed the Aryan Race was **superior (better)** than all others.
- Anyone that was not Aryan were Untermensch (sub-human).
- The Nazis didn't want the Aryan race '**spoiled**' by inferior races.
- Their view was to keep the Aryan race '**clean**' of '**germs**'.

How Minority Groups were treated between 1933-1939.

Homosexuals

The Nazis believed homosexuals spoiled the purity and quality of the German race. They believed homosexuality was a sickness which could be cured.

- ❑ **1936: The Reich Central Office for Combatting Homosexuality** was created. The Gestapo were used to search out homosexual men. 4,000 men in prisons/camps.
- ❑ **1938:** Nazi Law encouraged voluntary castration of homosexual men.
- ❑ **1939:** It is estimated that 5,000 homosexual men died in concentration camps.

Gypsies

There were roughly **26,000** in Germany. Hitler believed they did not work hard enough or contribute to Germany. He believed they were not racially pure.

- ❑ **1933:** They were often arrested and sent to specific **concentrate camps** for Gypsies.
- ❑ **1938:** Gypsies were banned from travelling in groups around Germany.
- ❑ **1938:** Gypsies were registered for medical testing for racial characteristics.
- ❑ **1939:** Orders were given to **deport all Gypsies** from Germany.

Physical and Psychologically Disabled

The Nazis believed that anyone with a disability was a burden on society as they were not able to contribute in many ways. They also believed they weakened the purity of the race

- ❑ **1933: Law for the Prevention of Hereditarily Diseased Offspring** made it **compulsory** to be **sterilised** (prevented from having children) for the: **mentally ill**, **alcoholic**, '**deformed**', **epileptic**, **deaf** or **blind**. **400,000** were sterilised using surgical operations.
- ❑ **1939: The T4 Programme -** The Nazis believed that any child born with a mental or physical disability should be killed by **starvation** of a **lethal overdose** of drugs.
- ❑ **1939:** Children up to the age of 17 were now included. 5,000 children were killed.

Slavs and Poles

Hitler believed Slavs (Eastern European) and Poles were not part of the Master Race. He wanted to push them out of Europe to make more Lebensraum for the Master Race.

- ❑ These people were still sent to **concentration camps** and arrested but were not targeted as much as other minority groups.

Persecution of Jews, 1933-1939

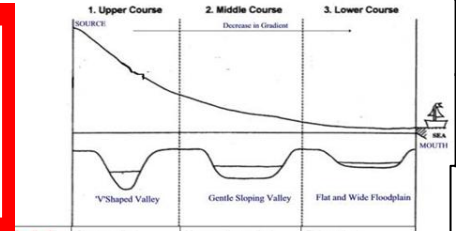
Year	Event
1933	Hitler becomes Chancellor of Germany
	A boycott of Jewish shops is carried out
	Jews are banned from working in public areas
	20,000 books are burned, many by Jewish authors
1934	Jewish companies are no longer mentioned on the radio
	Jewish students can no longer sit law exams
	Jewish newspapers are no longer sold or displayed in public
1935	Jews are forbidden from serving in the armed services and going to some public places
	Nuremburg Laws remove Jews' rights as German citizens – They banned marriage and sexual relations between Jews and none-Jews.
1936	The Olympic Games are held in Berlin. Anti-Semitic actions are 'stopped'
1937	Jews have to register all their possessions
	Jews have to carry identity cards
	Jews' names are changed
	Polish Jews are deported to ghettos and labour camps
1938	***Kristallnacht*** **(Night of Broken Glass) –** a night of violence against the Jews and their shops.
	Jews can no longer own shops
	All Jews are dismissed from German schools
	Jews are banned from entering cinemas and theatres
1939	Jewish doctors lose their qualifications and all Jews lose their jobs
	Jews are deported from Austria to Poland
	Jews in Poland have to wear a yellow star

Geography

RIVER Landscapes in the UK

AQA

KI : The shape of river valleys changes as rivers flow downstream



	1. Upper Course	2. Middle Course	3. Lower Course
Gradient	Steep gradient	More gentle gradient	Flat gradient
Velocity	Low velocity	Faster velocity	Fastest velocity
Features	Water falls, gorges, and rapids	Meanders, Ox bow lakes, floodplains	Floodplains, deltas, estuaries
Channel	Narrow and shallow channel	Wider and deeper channel	Widest and deepest channel

The long profile is the gradient of the river from source to mouth

The cross profile is the side to side cross section of a river channel or valley

Lateral erosion is sideways erosion of a river on the outside of a meander bend
Vertical erosion is downward erosion of a river bed

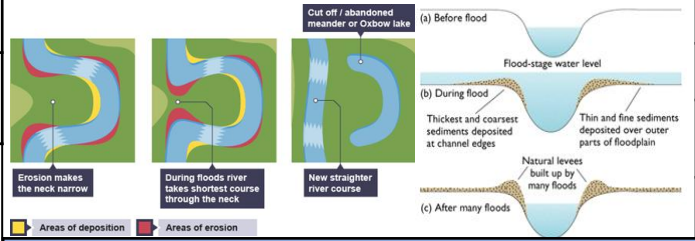
Fluvial processes - Processes relating to river erosion, transportation and deposition

Types of erosion	
Abrasion	Rocks carried by the river wear down the river bed and banks.
Attrition	Rocks smash together and break into smaller pieces.
Hydraulic Action	Force of the river causes air to be trapped in cracks and weakens the bank.
Solution	River flows over rock and rock is slowly dissolved.

Types of transportation	
Saltation	Particles bouncing down the river bed.
Solution	Soluble particles are dissolved into the river.
Suspension	Fine solid material held in the water while it is moving.
Traction	Rolling of boulders and pebbles along the river bed.

KI : Distinctive fluvial landforms result from different physical processes

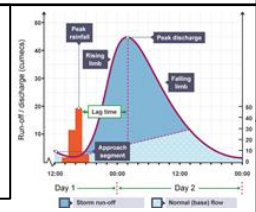
Upper Course	
Gorge	Narrow steep sided valley formed as waterfall retreats.
Interlocking spurs	Series of ridges on alternate sides of the valley the river winds round.
Waterfall	Sudden descent of a river over a vertical or step slope in its bed.
Middle course	
Meander	Pronounced bend in a river.
Ox bow lake	Arc shaped lake cut off from a meander.
Lower course	
Estuary	Tidal mouth of the river where it meets the sea.
Levees	Embankments of sediment along a river.
Floodplain	The flat area forming the valley floor on either side of a river channel.



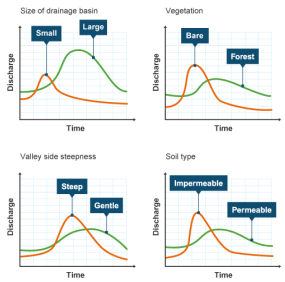
EXAMPLE of river valley in UK - River Clyde Landforms

Location	The River Clyde flows through Scotland. It is about 160km long. It's source is in the Southern Uplands region of Scotland and the river flows north-west through Motherwell and Glasgow. The mouth of the River Clyde is an estuary on the west coast of Scotland.
Upper:	There are interlocking spurs at Crawford (between 300 and 500m high). The Falls of Clyde are four waterfalls near Lanark. The highest fall is Corra Linn – 27m high. There is also a gorge along this part of the river, formed by waterfalls retreating. There are steep cliffs along the banks of the river, then at the top of the gorge the land flattens out.
Middle:	The river meanders between Motherwell and Glasgow. There is an ox-bow lake starting to form from a meander in the New Lanark area.
Lower:	**Lower –** Greater lateral erosion creates a floodplain. Glasgow is built on the floodplain of the River Clyde. The land is about 5m above sea level on either side of the river. The river's estuary is about 34km west of Glasgow – the estuary is 3 km wide. Areas next to the river channel are mudflats, which are exposed at low tide.

A flood hydrograph is a graph showing the discharge of a river, related to rainfall over a period of time
Rising limb : the increase in river discharge as river flows into the river
Peak discharge : the highest discharge
Lag time : the time difference between peak rainfall and peak discharge
Falling limb : the decrease in river discharge as river returns to normal level



Physical factors affecting the flood risk	Human factors affecting the flood risk
• Precipitation – torrential, continuous, sudden snow melt • Geology – permeable, impermeable • Relief – steep / gentle slopes	• Urbanisation – building towns and cities - impermeable • Deforestation – cutting down trees – Agriculture – ploughing patterns, disappearing fields



KI : Different management strategies can be used to protect river landscapes from the effects of flooding

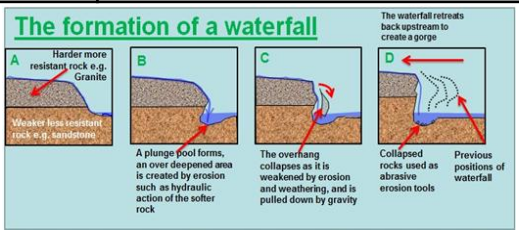
Management strategies – Hard and soft engineering

Dam and reservoir (Hard engineering)	A barrier built across a river to interrupt the flow and create a manmade lake. Regulates flow, provides HEP, boosts tourism, cost, displacement of people, interferes with nature.
Embankments (Hard engineering)	Raised banks constructed along the river. Holds more water, habitats for wildlife, cheaper, unnatural, stops access to river.
Flood plain zoning (Soft engineering)	Land that is near the river and often floods is not built on. Low cost, green space, traditional meadows protected, less housing areas, difficult to get planning permission.
Flood relief channels (Hard engineering)	Artificial channels which are used when the river is close to flood. Decrease flood risk, provide leisure area, displacement of people, creates problems downstream, disturbs habitats.
Flood warning (Soft engineering)	Providing reliable advance information about possible flooding. Plan what to do, cheap, ensures safety, only effective if heeded, still floods.
Channel straightening (Hard engineering)	Removing meanders to make the river straighter. Speeds up river, improves navigation, increases flood risk downstream, expensive, unnatural.
Planting trees (Soft engineering)	Reduces water in river, new habitats, cheap, changes appearance, loss of potential grazing land.
River restoration (Soft engineering)	Return river to original course. Natural process, creates new habitats, aesthetically pleasing, loss of agricultural land, expensive.

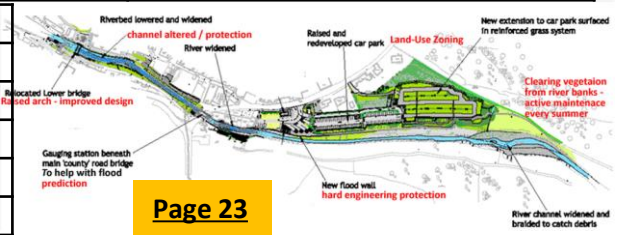
An example of a flood management scheme in the UK - Boscastle, Cornwall

Why the scheme was needed	• 16/8/04 – 3 metre wall of water moved at 60km / hr through the village • 20 businesses and 4 bridges destroyed. Loss of tourism • Some injuries, no deaths • No defences • Steep valley, land upstream deforested, low arched bridge, impermeable rock, unprecedented rainfall
The management strategies	• Old arched bridge replaced with one with higher arch • Embankment strengthened • Channel deepened and widened • Gauge put in • Flood wall built • Car park raised and permeable surface put in • Dead vegetation removed
Social, economic and environmental issues	• Social – disruption to residents, safer, 1 in 75 chance of a flood, spoil character of the village • Economic – less risk of flooding so lower insurance costs, £4 million a year, increased tourism • Environmental – vegetation and river management, habitat improved, engineered to look natural

The formation of a waterfall



Hard engineering	Building of artificial structures to reduce, disrupt or stop the impact of river processes.
Discharge	The quantity of water that passes a given point within a given period of time.
Flood	Occurs when river discharge exceeds river channel capacity and water spills over the floodplain.
Flood risk	The predicted frequency of floods in an area.
Precipitation	Moisture falling from the sky as rain, hail, sleet or snow.
Soft engineering	The use of the natural environment surrounding the river to work with the natural processes.



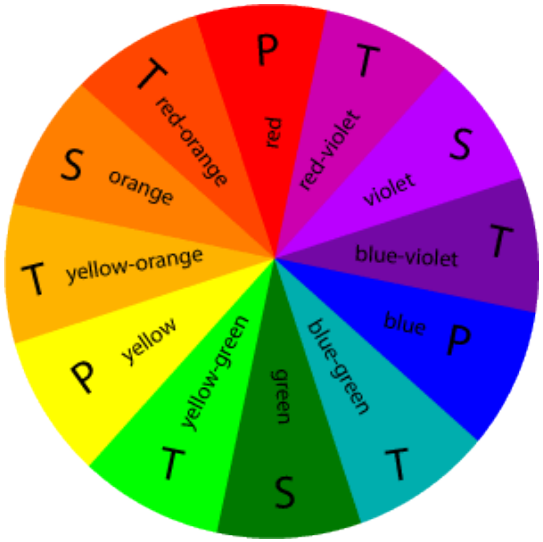
Page 23

Geog your memory/ Hi-story Lane

Use the LANES to recall key information about a particular topic, from from ***History/ Geography,*** without looking at the sheets. Once you have added everything you can remember, look at these pages again and using a different colour pen, add in the knowledge that you missed out. This is the knowledge you should now continue to revise. Continue this process until you can remember everything on the page.

Acrylic Painting -Basics:

- Hold and move brush correctly (by the tip and upright).
- Don't over load brush with paint.



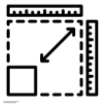
- LAYER (when dry\textures go on last).
- BLEND (when wet and with clean dry brush).
- CONSISTENCY (add the right amount of water to create correct thickness of paint for effect required).
- SMOOTH BLENDING (long slow brush strokes).
- PAINTERLY (Brush strokes to create textures\selected artist's style).

- Mix just the right amount of paint needed.
- Use the correct brush for the job (e.g. detail brush for small areas or detail\flat brush for blending\ large brush for large areas\dry bristle brush for textures).

- Use complimentary colours to create shadows (opposite each other on the colour wheel).
- Mix dark brown and dark blue to create a black tone:

DT: Engineering

Modelling is used to test:


Scale


Proportion


Function

Types of modelling

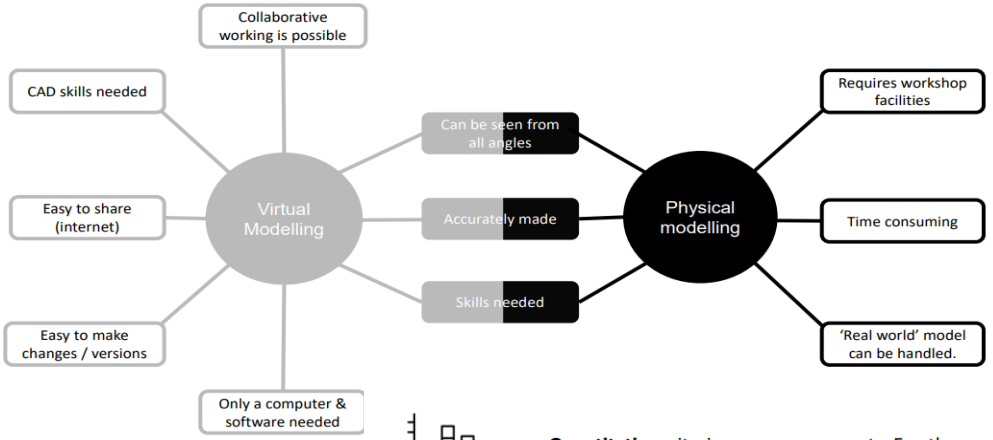

Virtual


Physical

Evaluation of model

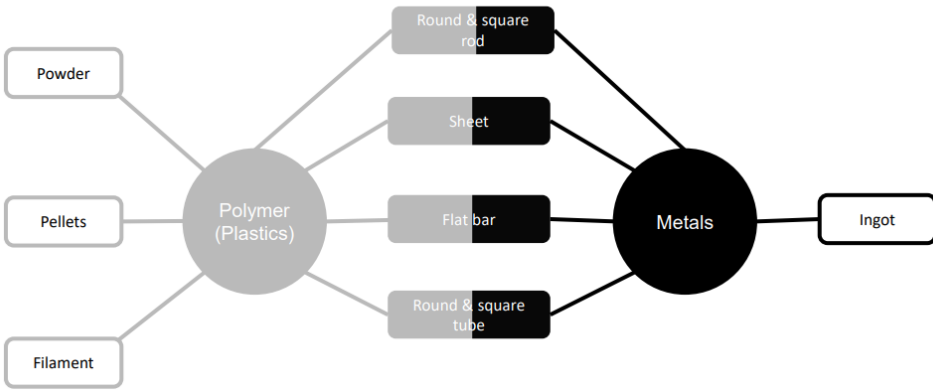
All models or prototypes are compared with the design **brief** and **specification**.

In **iterative** design, this leads to an **improved design** which is then modelled.



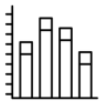
Wasting	Shaping	Forming	Joining	Finishing	Assembly
					
Changing shape by removing material	Forming a shape by moulding or laying up composites.	Changing shape by deformation.	Permenant or temporary fixing.	Creating a surface finish for technical or aesthetic reasons.	Adding components together into a single product.

Polymers and metals have some stock forms in common.
Other materials have their own standard stock forms.



Circular Economy

In a circular economy, products, components and materials are reused and recycled instead of being thrown away



Quantitative criteria are measurements. E.g. the amount of memory in a phone or the capacity of a battery.

Qualitative data are based on opinions, impressions and points of view. E.g. how comfortable a handle should be or how attractive a bath tap must be.

Needs criteria are essential and must be included in a design. E.g. an emergency stop button on a machine.

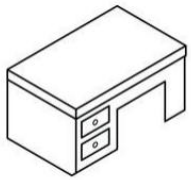
Wants are criteria that are not essential but desirable. E.g. 1950s aesthetic styling on a food mixer.

	Buildings	Capital cost
	Equipment	
	Workers	Labour cost

DT: Engineering

Isometric

A formal 3D style drawing.



Start at the corner all lines

Oblique

Another 3D style that is less realistic that isometric.

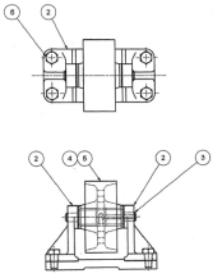
Start with front 'face' then

Freehand sketching

An informal style used to communicate ideas quickly.

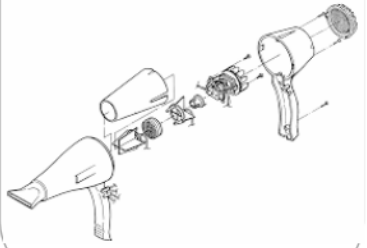
Assembly Drawings

Drawings that show all components assembled together.



Exploded views

A type of assembly drawings that shows space between parts.



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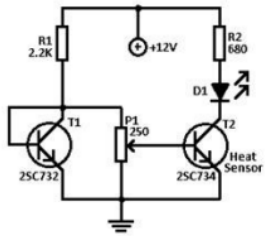
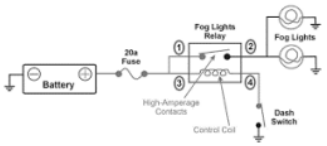
Circuit Diagram

Used to show how electronic components are connected in a circuit.



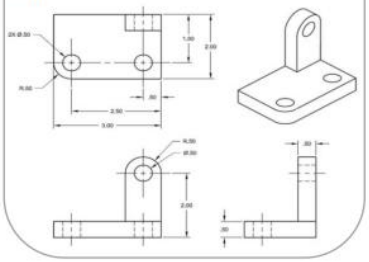
Wiring Diagram

Shows how connections should be made within larger electrical systems.



Orthographic drawing

A formal style of 2D drawing usually used to show dimensions. Drawn to scale.

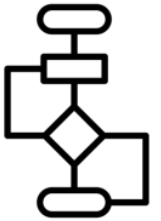


Block diagrams

A diagram of a system showing how stages relate to each other.

Flowcharts

Used to show a decision making process.



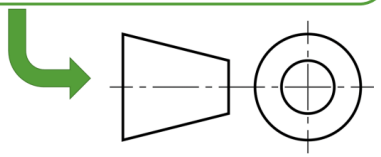
Working Drawings

Outline		Tolerance	
Centre Line		3rd Angle	
Dimension Line		External Thread	
Hidden Detail		Internal Thread	
Projection		Knurl	
Leader Line		Blind Hole	
Diameter	∅	Chamfer	
		Countersink	
		Through Hole	

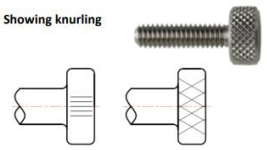
Across Flats	AF
Centre Line	CL
Diameter	DIA, D and Ø
Drawing	DRG
Material	MATL
Square	SQ

Title block example

Title:	Desk lamp base	Date:	19/1/23	Drawn by:	P Miles
Scale:	1:1	Version:	3	Tolerance:	± 0.2 unless stated otherwise
All dimensions in millimetres					



Showing knurling



Straight Knurling *Diamond Knurling*

A/F	Across flats
CL	Centre line
Ø	Diameter
DRG	Drawing
MATL	Material
SQ	Square

Engineering	Evaluating Design Ideas	Year 10-11	R038

Evaluation Models		
1	ACCESS FM	**ACCESS FM** is a design and technology framework used for analysing and evaluating products. It stands for represent?
2	House of Quality (HOQ) 	**The House of Quality (HOQ)** is a matrix-based tool used in Quality Function Deployment (QFD) to translate customer needs into technical requirements for product development.
3	Pugh Chart 	**A Pugh chart,** also known as a Pugh matrix or decision matrix, is a tool used to compare multiple options against a set of criteria, helping to identify the best choice.
4	Quality Function Deployment (QFD)	**Quality Function Deployment (QFD)** is a structured method used to translate customer needs and expectations into specific engineering characteristics and design parameters for products or services
5	Production Plan	A **production plan**, also known as production planning, is a comprehensive strategy that outlines how a company will manufacture its products or deliver its services.
6	Gantt Chart	A chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.
7	Evaluation	In production, **evaluation** is the process of systematically assessing the performance and impact of a product, service, or process to determine its effectiveness, efficiency, and value.
8	Product Testing	**Product testing** is the process of evaluating a product's performance, quality, and usability before its release to the market.

Keywords Vocabulary		
16	**Subjective Evaluation**	Subjective evaluation refers to assessments or judgments based on personal opinions, feelings, interpretations, or preferences, rather than on objective facts or measurable criteria. It involves individual perspectives and can vary from person to person.
17	**Objective Evaluation**	Objective evaluation refers to assessments that are based on measurable, verifiable facts and data, rather than on personal opinions or biases. It emphasizes impartiality and consistency, aiming for judgments that would be similar regardless of who is making them.
18	**Summative Evaluation**	Summative evaluation is a method of assessment conducted at the end of a program, course, or project to measure its overall effectiveness and determine the extent to which objectives have been achieved.
19	**Ranking matrix**	In the context of design, a ranking matrix is a tool used to prioritize or rank different design options or features based on their importance or effectiveness according to specific criteria. It helps designers make informed decisions by systematically comparing and evaluating alternatives.
20	**Qualitative data**	Qualitative data is non-numerical information that describes characteristics and qualities. It focuses on concepts, opinions, and experiences, rather than numerical measurements or statistics. This type of data is often gathered through interviews, observations, and text-based sources, providing insights into the "why" and "how" behind phenomena.
21	**Quantitative data**	Quantitative data is numerical information that can be counted or measured, often used for statistical analysis to understand quantities, frequencies, and trends. It differs from qualitative data, which describes characteristics or qualities. Essentially, quantitative data provides numerical values that can be subjected to mathematical calculations and statistical analysis.

Engineering	Designing Requirements	Year 10-11	R038

Commercial Production methods				
1	Needs and wants	In design, needs represent fundamental requirements for a product or service to function as intended and fulfil basic purpose, while wants are desires or preferences that enhance the user experience but are not strictly necessary. Needs are about functionality and usability, whereas wants focus on aesthetics, features, and emotional connections.		
2	Quantitative and qualitative criteria	Quantitative criteria rely on numerical data and statistical analysis to measure and quantify variables. Qualitative criteria, on the other hand, focus on descriptive, non-numerical data to understand experiences, perspectives.		
3	Scale of manufacture	One-off; One-off manufacturing, also known as job or bespoke production, involves creating a single, unique product tailored to a specific customer's requirements.	Batch; Batch manufacture, also known as batch production or process manufacturing, is a production method where goods are produced in discrete groups or sets, called batches.	Mass; Mass manufacture, also known as mass production, involves producing large quantities of standardized goods, often on assembly lines, using specialized machinery and a division of labour.

Types of manufacturing processes:		
4	Wasting	Wasting is a process that uses tools to remove material from a workpiece until the required component has been produced: wasting can be achieved by hand tools and machine tools. **Examples, drilling, routing, chiselling, turning.**
5	Shaping	Shaping refers to the process that take raw materials and form them into final parts. **Examples, casting, moulding, injection moulding and machining processes.**
6	Forming	Forming, pressing or press forming is where a pressing force is applied to a material to cause it to deform. **Examples, die pressing, line bending, Vac forming, rolling.**
7	Joining	Joining processes are used to physically join two or more components. **Examples, brazing, soldering, adhesives, bolts and rivets.**
8	Finishing	Finishing refers to the process of applying a decorative appearance, protective coating or other treatments to protect a surface material. **Examples, painting, spraying, waxing, heat treating, dip coating.**
9	Assembly	Products with two or more components will have been designed to be assembled so they can function.

Design Development – sketchbook pages

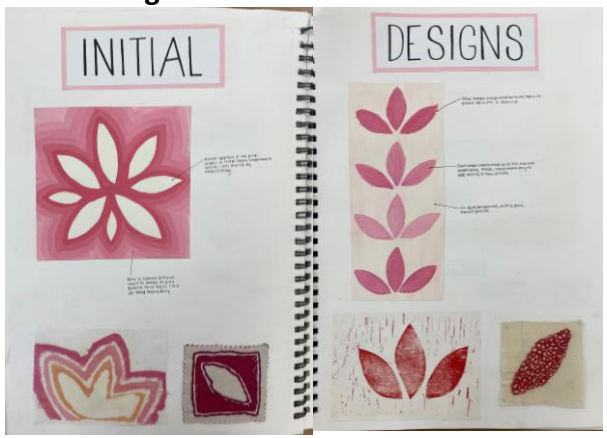
Development and refinement of ideas:

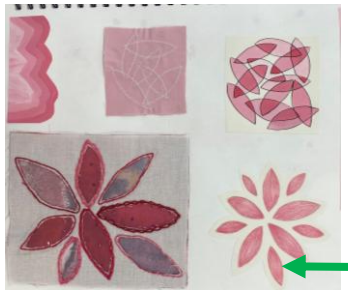
GCSE Textiles - AO4

Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

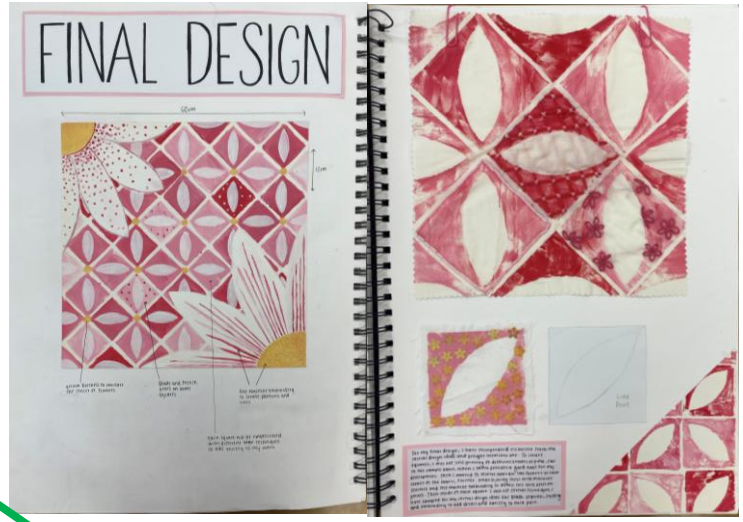
Use the words in the assessment objective to help you understand what it is you should do:
Personal and meaningful response –Your response to a source should be personal to you. What your feelings and reactions are. It must be meaningful by relating to your source inspiration. Make sure everything links and is not random.
Demonstrates understanding of visual language – being able to combine different textures, colours, techniques in an aesthetically pleasing way.

Initial designs:





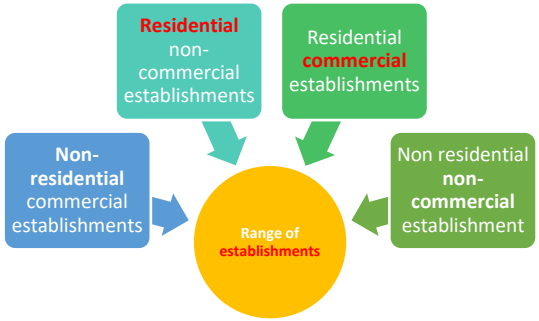
Final design – label with techniques you intend to use



Create a wide range of fabric samples before creating you final design.

AC 1.1
The structure of the hospitality and catering industry

1. Types of Provider



Establishment	Service provided	Examples
Commercial residential	Accommodation, house keeping, food, beverages, conference or training facilities	Hotels, guest houses, campsites, bed and breakfasts, holiday parks, farmhouses
Commercial non-residential	Food and beverage to eat in or take away, areas to sit to eat and drink	Restaurants, cafes, tea rooms, coffee shops, fast food outlets, pubs and bars, street food and pop up restaurants, mobile vans
Non-commercial residential	Accommodation, food and beverages	Hospitals, care homes, prisons, armed forces, boarding schools, colleges, universities.
Non-commercial non-residential	Food and beverages	Canteens in offices, day-care centres, schools and nurseries, charity food suppliers, for example soup kitchen

2. Suppliers

Types of service

Food Service	Description
Formal food	Food is usually served to customers by waiting staff. • **Plate**: the meal is plated up and brought to the customers table by waiting staff • **Waiting service:** the food is served to the customers at the table by waiting staff • **Gueridon** [trolley or moveable service]: the customer's food is cooked at the table, usually for dramatic effect, for example flambéed. Steaks and crepes.
Street food	Ready-to-eat food or drink sold on the street or in a public place, such as a market or festival.
Self Service	Customers help themselves to food, for example a carvery,; in a carvery the meal is on display and carved by a chef, and a customer can help themselves to vegetables, sauces and gravy.
Fast food	Food is made to order very quickly and can be taken away from the restaurant or stall to eat; seats and tables are often provided.
Cafeteria	Small and inexpensive restaurant or coffee bar, serving light meals and refreshments
Takeaway	Takeaway restaurants [(for example Chinese, Indian, pizza) take an order and deliver the food to the customer's home; customers can also order at the restaurant and then take the food away to eat it.

Food Service	Description
Buffet	A selection of dishes is laid out for customers to help themselves, different buffet styles include: • **Sit-down buffet:** once the customer has chosen their food from the buffet, they can sit down at a table to eat it • **Stand-up or fork buffet**: once the customer has chosen their food, they stand to eat it; this allows guests to circulate and meet other guests • **Finger buffet:** all the food is prepared to be eaten with fingers (without the need for a knife and fork); foods are normally bite-size and easy to eat.
Automatic vending	Drinks and snacks are stored in a machine with a glass front and items are selected by the customer; they are often coin operated and placed in establishments where it is may not always be possible to get access to food, for examples colleges and hospitals
Transport catering	A variety of food service options are available on trains, planes and ships.
Hotel	Provides overnight accommodation and food and drink options. Many hotels offer breakfast, evening meals, bar snacks, lunch, room service (food ordered and delivered to your room); budget hotels usually have a simpler offering
Bed and breakfast	Offers overnight accommodation and breakfast; often these are private family homes where rooms are made available to guests; breakfast is usually served in a dining room or the owners kitchen

Hospitality at non-catering venues

Contract Caterers

provide:

- food for functions such as weddings, banquets and parties in private houses.
- prepare and cook food and deliver it to the venue, or cook it on site.
- They may also provide staff to serve the food, if required.
- Complete catering solutions for works canteens etc.

wjec cbac

Unit 1 The Hospitality and Catering Industry

LO1 Understanding the environment in which hospitality and catering providers operate

AC 1.1 The structure of the hospitality and catering industry

3. Standards and ratings

Hotel and Guest house standards:

Hotels and guest houses are often given a star rating. Star ratings help customers to know what services and facilities they can expect at a hotel or guest house. The quality of the service provided is rated on a scale of one to five stars.

3. Standards and ratings

Food hygiene standards

The Food standards agency runs a scheme with local authorities where they score businesses on a scale from zero to five to help customers make an informed choice about where to eat. The rating is usually displayed as a sticker in the window of the premises. The scores mean:

Restaurant standards

The three main restaurant rating systems used in the UK are Michelin stars, AA Rosette Awards and The Good Food Guide reviews:

Michelin stars are a rating system used to grade restaurants for their quality:

- One star is a very good restaurant
- Two star is excellent cooking
- Three stars is exceptional cuisine

AA Rosette Awards score restaurants from one (a god restaurant that stands out from the local competition) to five (cooking that compares with the best in the world).

The Good Food Guide gives restaurants a score from one (capable cooking but some inconsistencies) to ten (perfection).

Environmental standards

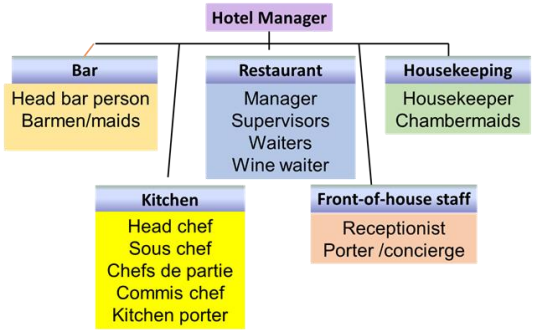
The Sustainable Restaurant Association awards restaurants a one-two-three star rating in environmental standards. To achieve this the restaurant has to complete an online survey about sourcing, society and the environment. It is then given an overall percentage for environmental standards:

One star: 50-59%
Two star: 60-69%
Three stars: more than 70%

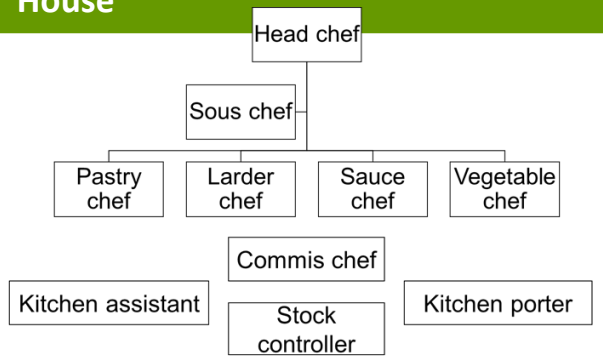
Extended reading
Exam question
Video links
Revision Techniques

4. Job roles in the industry

Staff structure in a hotel



5. The Kitchen brigade- Back of House



Most large establishments could have **chefs de partie** in the following areas:

- **Sauce chef-** Le Saucier
- **Pastry chef-** Le Patisserie- baked goods and dessert
- **Fish chef-** Le Poisoner
- **Vegetable chef-** L'entremetier
- **Soup chef-** Le Potager
- **Larder chef-** Le garde manger- cold starters and salads
- The **commis chef** or assistant chef is a chef in training
- The **kitchen porter** washes up and may do basic vegetable preparation
- The **stock controller** is in charge of all aspects of store keeping and stock control.

6. Front of House roles

Reception
Receptionist: meet customers and direct them to the correct person or place; they manage visitor lists and booking systems
Porter/ Concierge; assist hotel guests by making reservations, booking taxis and booking tickets for local attractions and events.

Restaurant and bar
Restaurant manager (Maître d'Hote): The restaurant manager is in overall charge of the restaurant,; they take bookings, relay information to the head chef, complete staff rotas, ensure the smooth running of the restaurant.
Head waiter (ess): Second in charge of the restaurant,. Greets and seats customers, relays information to the staff, Deals with complaints and issues referred by the waiting staff.

Waiting staff Serve customers, clear and lay tables, check the customers are satisfied with the food and service. May give advice on choices from the menu and special order foods.

Wine waiter- Le sommelier: Specialises in all areas of wine and matching food, advises customers on their choices of wine, Wine waiters serve the wine to the customer and can advise customers on their choices as well.

Bar staff serve drinks and take food orders , wash up, clear tables, change barrels and fill shelves.

Baristas make and serve hot and cold beverages, in particular different types of coffee such as espresso, cappuccino and latte.

wjec cbac
Unit 1 The Hospitality and Catering Industry
LO1 Understanding the environment in which hospitality and catering providers operate
AC 1.1 The structure of the hospitality and catering industry

7. Average salaries in the hospitality and catering industry

Role	Average Salary
Hotel Management	£37,310
Head executive chef	£36,613
Pastry chef	£30,530
Housekeeper	£24,055
Receptionist	£21,596
Porter	£17,718
Waiting and bar staff	£16,735
Kitchen staff	£16,556

8. Training

Level	Types of training
Key stage 4 school courses	Level ½ Vocational award in Hospitality and Catering
Post 16-19	Colleges offer many courses for those leaving school after Year 11, for example: • Certificate in Hospitality and Catering Level 1 • Certificate in Introduction to Culinary Skills Level 1 • Diploma in Introduction to Professional Cookery Level 1 • Diploma in Hospitality and Catering Level 2 • Diploma in Professional Cookery Level 2
Universities	Universities offer degree, HND and HNC courses in subjects such as: • Catering • Hospitality • Culinary Arts • Hotel management • Food and beverage service
Apprenticeships	These provide both work experience and training
In-house training	On-the-job training provided by the organisation you work for

9. Personal attributes

Job Role	Desirable Attributes
Waiter/waitress	Attentive listener, good memory, clear communicator, diplomatic, calm and assured, high level of focus and attention, multitasker, can work in a team, physical stamina, courteous and polite, hardworking.
Receptionist	Professional, positive attitude and behaviour, clear communicator, helpful, an work in a team, courteous and polite, can learn skills quickly, calm, composed, approachable.
Housekeeper	Physical stamina, tactful, diplomatic, calm, courteous and polite, good memory, can work in a team.
Head Chef	Organised, able to accept criticism, physical stamina, creative, attention to detail, can handle highly stressful situations, passion for food and cooking.
Commis chef	Attentive listener, clear communicator, can work in a team, passion for food and cooking, physical stamina, creative.

Extended reading
Exam question
Video links
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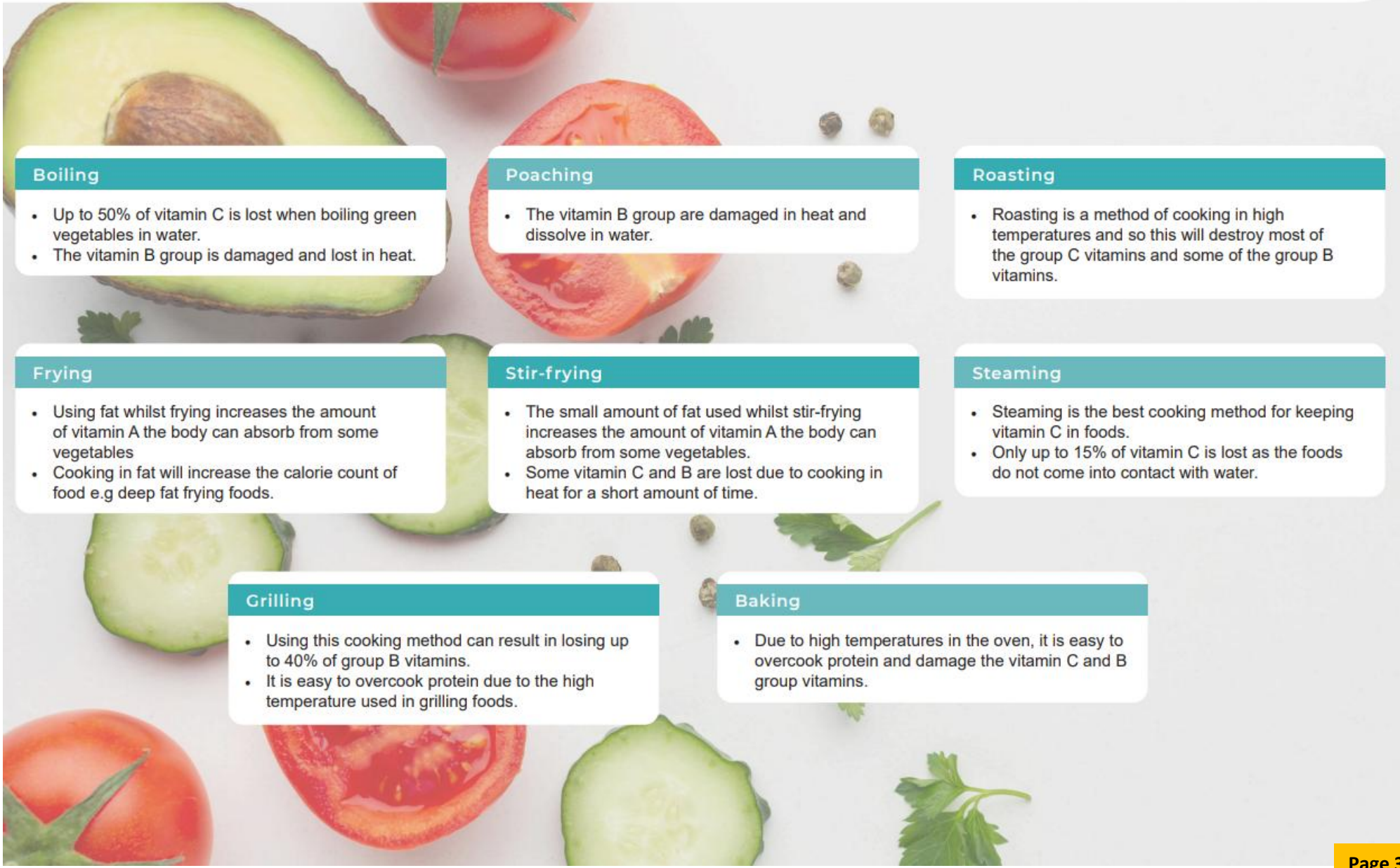
Level 1/2 Hospitality and Catering: Unit 2-2.1.2 -
How cooking methods can impact on nutritional value



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.

Level 1/2 Hospitality and Catering:
Unit 2-2.2.1: Factors affecting menu planning

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?

One, two, three...Knowledge Retrieval

Based on your ***OPTION SUBJECT***, recall 3 points from the topic you have been learning from. Once you have added everything you can remember, look at these pages again and using a different colour pen, add in the knowledge that you missed out. This is the knowledge you should now continue to revise.

Question/ Topic	1	2	3

TA2: Positive Effects the Media can Have in Sport

Increased Participation

- **Increased awareness:** studies have suggested that watching sport on TV may positively influence people to take part in a sport. People can build an interest and then this can increase participation rates.

- **Inspiring others to participate:** When the media cover sport it can inspire people to emulate the sports performers they have seen. Seeing sporting greats achieve success can inspire people to chase their own dreams.

- **Creating and adopting positive role models:** By being seen, heard or spoken about in the media sports performers often become an inspiration to others as they are deemed to be positive role models. Sports performers can also be positive role models due to their behavior and actions in their personal lives.

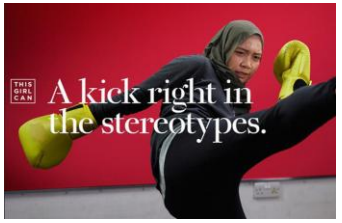
- **Breaking barriers to participation:** In promoting positive role models within media people can realize that the barriers which may have stopped them participating can be overcome. For example, people with disabilities playing adapted forms of a sport using modified equipment.

Raising the profile of the sport

The media can share positive messages and raise the profile of sports, break down barriers and promote the health and fitness industry. The concept of maintaining a **healthy lifestyle** can be promoted through the media and the culture of those watching may be influenced to stay fit and healthy.

- **Sports initiatives** seek to increase participation and aim to achieve a specific goal such as to increase participation. **England Netball launched** the 'back to netball' campaign targeted at re engaging women and girls who had previously given up playing netball. In 2021 they reported that over 110,000 women had taken part in the campaign.

- **Promotion of an active, healthy lifestyle t**he media can use campaigns to promote an active and healthy lifestyle. Examples include:



- **This Girl Can** – lifelong benefits to sport and women/ girls. There have been some iconic This Girl Can Adverts (including an advert centered around women playing sport while on their period) and the first TV advertisement was in 2015.
- Sport England promotes the **'We Are Undefeatable'** campaign, inspiring those with a long-term health condition to believe they can still participate in physical activity.

YEAR 11 DANCE

Technique. Performance. Passion.

Train with purpose. Perform with confidence. Communicate. Create. Inspire.

REMEMBER
Consistent practice, reflection and focus will help you achieve your best.

CONTEMPORARY DANCE TECHNIQUE

Contemporary dance combines elements of ballet, modern and other dance styles. It focuses on fluidity, control, expression and creativity.

KEY FEATURES

- Use of the floor and levels
- Strong use of the torso
- Fluid transitions
- Fall and recovery
- Weight, momentum and breath
- Release of tension
- Expressive and storytelling
- Musicality and sensitivity

TECHNICAL ELEMENTS

- Alignment – length and placement
- Core stability – strength in the centre
- Articulation – clarity in movement
- Balance – control in and out of balance
- Coordination – linking the body efficiently
- Dynamics – working with energy, weight and flow
- Timing – awareness of tempo and phrasing

EXAMPLE MOVEMENTS

- Contraction and release
- Spirals and curves
- Floor work: slides, rolls, crawls, spirals
- Tilts and off-balance shapes
- Suspensions and counterbalance
- Gestural movement
- Stillness and pause

DEVELOPING YOUR CONTEMPORARY TECHNIQUE

- Build strength and flexibility
- Use breath to support movement
- Explore quality and intention
- Connect with the music
- Reflect, refine and repeat

PERFORMANCE SKILLS – CONTEMPORARY CONTEXT

PHYSICAL SKILLS

- Strength, stamina and flexibility
- Balance, coordination and control
- Use of space, levels and pathways
- Safe, efficient movement
- Energy, flow and dynamics

TIP: A strong body supports expressive, clear movement.

TECHNICAL SKILLS

- High quality technique and alignment
- Fluid transitions and clear articulation
- Timing, rhythm and accuracy
- Use of contemporary technique
- Rehearsal discipline and self-awareness

TIP: Practice with detail and focus to improve your technique.

EXPRESSIVE SKILLS

- Communicate meaning and emotion
- Use of facial expression and gesture
- Connection with the audience
- Confidence and authenticity
- Interpretation and performance qualities

TIP: Let your performance tell a story and make people feel something.

SUPPORT WRITTEN WORK

EDQUAS PERFORMING ARTS LEVEL 1 – UNIT 1

MUSICAL THEATRE: DANCING AND ACTING DISCIPLINE

MATILDA THE MUSICAL

ABOUT THE MUSICAL

Matilda is a musical with music and lyrics by Tim Minchin and book by Dennis Kelly. It tells the story of an exceptional young girl with a vivid imagination and telekinetic powers, who challenges the cruel adults around her to change her destiny.

DANCING DISCIPLINE

The choreography in Matilda combines styles including:

- **Jazz** – sharp, energetic and stylised
- **Contemporary** – fluid, expressive and dynamic
- **Musical Theatre** – performance driven, big movement, storytelling
- **Ensemble work** – unison, formations and lifts

TIP: Analyse how choreography supports character, mood and the story.

ACTING DISCIPLINE

Strong acting brings the characters and story to life.

- **Vocal expression** – projection, tone, clarity
- **Physical expression** – gesture, facial expression, body language
- **Interaction** – responding truthfully to others
- **Characterisation** – understanding motivation and relationships

TIP: Think about intention, subtext and how you would play your character.

KEY SCENES TO STUDY

- **'Miracle'** – celebration of Matilda's powers and imagination
- **'Revolting Children'** – ensemble energy and rebellion
- **'When I Grow Up'** – dreams, aspirations and transformation
- **'The Hammer'** – tension, drama and storytelling
- **'Naughty'** – Matilda's defiance and confidence

TIP: Choose two or more of these scenes to analyse in your written work.

KEY TERMINOLOGY

Alignment	Correct body position and placement
Articulation	Clarity and precision in movement
Balance	Control in and out of balance
Contraction	Drawing the body inward
Control	The ability to move with precision
Dynamics	Changes in energy, weight and flow
Expression	Communicating meaning and emotion
Extension	Lengthening and reaching
Motif	A short, repeated movement idea
Pathway	The route a dancer takes
Phrasing	Movement that follows musical phrases
Release	Letting go of tension
Timing	Awareness of tempo and rhythm
Transitions	Moving smoothly between movements

WRITTEN WORK – SENTENCE STARTERS

- In this scene, the choreography shows ...
- The dancer/character communicates ... by ...
- This is supported by ...
- The intention of the movement is to ...
- The relationship between the characters is shown through ...
- The use of space/levels/dynamics enhances ...
- This helps the audience to understand ...
- Overall, this performance is effective because ...

KEY TIPS FOR WRITTEN WORK

- Use correct terminology.
- Be specific with examples from the musical.
- Explain the impact on the audience.
- Structure your answer: Point – Evidence – Explain.
- Proofread and check your spelling and punctuation.

KEY TERMINOLOGY – MUSICAL THEATRE

Characterisation	Creating a believable character
Ensemble	A group of performers
Narrative	The story or plot
Projection	Speaking/singing clearly to the audience
Subtext	The underlying meaning or intention
Intention	The purpose behind an action
Motivation	The reason for the character's actions
Interaction	Responding to other performers
Choreography	The art of creating dance
Stage Presence	Confidence and connection on stage
Performance Qualities	Skills that make a performance engaging

YEAR 11 DANCE

Explore. Create. Develop. Perform.

Choreography is the art of making and structuring dance. It begins with a stimulus, is shaped through ideas and motifs, and developed into a purposeful dance.

REMEMBER
- Be creative and take risks.
- Trust your ideas and refine them.
- Consider your audience and intention.
- Reflect and evaluate your work.

EXPLORING STIMULUS

A stimulus is something that inspires your choreography. It can be anything!

POSSIBLE STIMULI

- Images / photographs
- Objects
- Music / sound
- Poems / stories / quotes
- Themes / issues
- Personal experiences
- Natural world
- Art / paintings
- Cultures / traditions

HOW TO EXPLORE A STIMULUS

1. **Look** – What do you see?
2. **Think** – What does it make you think about?
3. **Feel** – What emotions or moods does it create?
4. **Imagine** – What could happen?
5. **Move** – How can you express this through movement?
6. **Record** – Jot down ideas, words, images or movements that come to mind.

TIP: The more you explore your stimulus, the more rich and original your choreography will be.

CREATING CHOREOGRAPHY: FROM IDEA TO PERFORMANCE

1. GENERATE IDEAS

- Use your exploration to brainstorm movement ideas.
- Try a range of movements, levels, dynamics and actions.
- Don't judge ideas at this stage – be open and creative!

TIP: Quantity leads to quality. Generate lots of ideas.

2. DEVELOP IDEAS

- Select the strongest ideas.
- Experiment with variations (space, time, energy, relationships).
- Combine ideas to see what works well together.

TIP: Ask "What if?" to develop your ideas further.

3. DEVELOP MOTIFS

- A motif is a short sequence of movement.
- Repeat, vary and expand your motifs.
- Try changes in:
  - Dynamics
  - Levels
  - Directions
  - Timing
  - Relationships

TIP: Motifs are the building blocks of your choreography.

4. STRUCTURE YOUR DANCE

- Organise your motifs into a clear structure.
- Consider:
  - Beginning – how will you introduce your idea?
  - Development – how will you show change and contrast?
  - Ending – how will you bring closure?

TIP: A clear structure helps your audience follow your idea.

5. REFINE & EVALUATE

- Watch your choreography with a critical eye.
- Is it clear? Interesting?
- Does it communicate your intention?
- Make changes to improve quality and impact.

TIP: Keep refining! Great choreography is never finished.

DEVELOPING MOTIFS

A motif is a short, memorable phrase of movement. It can be developed in many ways:

REPETITION	DIRECTION	LEVEL	DYNAMICS	TIMING	SIZE/SPACE	RELATIONSHIPS
Repeating the motif as it is.	Changing the direction it travels.	Changing the height of the movement.	Changing the energy or quality.	Changing the energy or rhythm.	Changing the size or use of space.	Changing how you relate to others.
Example: (step turn jump) x 3	Example: forwards → sideways → backwards	Example: high → medium → low	Example: sharp → sustained → sudden	Example: fast → slow → pause	Example: small → big → diagonal	Example: unison → canon → formation

TIP: Combine different ways of development to keep your choreography interesting.

CHOREOGRAPHIC DEVICES

Use choreographic devices to make your dance more interesting and help communicate your ideas.

- **Unison** – Dancers perform the same movement at the same time.
- **Canon** – Dancers repeat a movement one after another.
- **Formation** – The way dancers are arranged in space.
- **Contrast** – Using differences in movement, dynamics or levels.
- **Repetition** – Repeating a movement or phrase.
- **Accumulation** – Adding movement one bit at a time.
- **Climax** – Building to a key moment of energy or impact.
- **Fragmentation** – Breaking movements down into smaller parts.

TIP: Choose devices that support your idea and enhance your choreography. Don't use them just for the sake of it!

KEY TERMINOLOGY

Stimulus	Something that inspires your choreography.
Motif	A short sequence of movement.
Choreography	The art of creating and structuring dance.
Dynamics	The energy or quality of movement.
Relationships	How dancers relate to each other.
Structure	The order and organisation of your dance.
Intention	The purpose or message behind your dance.
Audience	The people watching your performance.
Evaluate	To assess and make improvements.

SENTENCE STARTERS (USEFUL FOR WRITTEN WORK)

EXPLORING STIMULUS	GENERATING IDEAS	DEVELOPING MOTIFS	STRUCTURE	EVALUATION
• I was inspired by...	• I generated ideas by...	• I developed my motif by...	• My dance is structured by...	• I think my dance is successful because...
• This stimulus made me think about...	• I tried different...	• I used changes in...	• It begins with...	• If I were to improve it, I would...
• I explored this stimulus by...	• Some of my initial ideas included...	• This helped to...	• It develops through...	• This shows my intention because...
			• It ends by...	

TOP TIPS FOR CHOREOGRAPHERS

- ✓ Always start with a clear idea or intention.
- ✓ Explore widely before you decide.
- ✓ Use motifs and develop them in different ways.
- ✓ Make strong choices about movement and structure.
- ✓ Consider how your dance communicates to your audience.
- ✓ Reflect, refine and be proud of your creative voice!

KEY QUESTIONS TO ASK YOURSELF

- ? What is the intention of my dance?
- ? How does my movement communicate this?
- ? Is my use of space effective?
- ? How does the structure support my idea?
- ? What choreographic devices have I used and why?
- ? What impact will my dance have on the audience?

CHILDHOOD (4–10 YEARS) PIES MILESTONES

AGE	PHYSICAL Developing the body and physical skills	INTELLECTUAL Learning, thinking and problem solving	EMOTIONAL Understanding feelings and self	SOCIAL Building relationships and belonging
4 years	 • Hops on one foot • Catches a large ball • Uses scissors with support	 • Recognises some letters • Counts to 10 • Asks lots of questions	 • Expresses a range of emotions • Seeks praise from adults	 • Plays cooperatively • Takes turns • Enjoys imaginative play
5 years	 • Skips • Balances well • Draws recognisable pictures • Dresses independently	 • Recognises most letters and sounds • Begins reading simple words	 • More confident • Begins understanding rules	 • Makes friends • Follows classroom routines • Shares with others
6 years	 • Improved handwriting • Rides a bicycle with stabilisers or independently	 • Reads simple books • Understands basic maths • Follows multi-step instructions	 • Better control of emotions • Understands consequences of actions	 • Enjoys group activities and team games
7 years	 • Improved coordination and balance • Greater stamina for physical activities	 • Reads more fluently • Tells the time • Solves simple problems	 • Begins to compare themselves with others • Develops self-esteem	 • Forms closer friendships • Understands cooperation
8 years	 • Refined fine motor skills • Improved sporting ability	 • Uses logical thinking • Understands more complex concepts and instructions	 • Shows empathy towards others • Manages emotions more effectively	 • Enjoys belonging to friendship groups and clubs
9 years	 • Increased strength and coordination • Participates confidently in sports	 • Improved concentration and memory • More independent learning	 • Develops a stronger sense of identity and responsibility	 • Peer relationships become increasingly important
10 years	 • Some children show early signs of puberty • Good control of fine and gross motor skills	 • Thinks more critically • Plans and organises tasks independently	 • Greater emotional maturity • Understands complex feelings	 • Values close friendships • Works effectively in teams • Seeks greater independence from adults

KEY MILESTONES TO REMEMBER

PHYSICAL
- 4 yrs – Hops on one foot
- 5 yrs – Skips confidently
- 6–7 yrs – Rides a bicycle
- 10 yrs – Possible early signs of puberty

INTELLECTUAL
- 4–5 yrs – Recognises letters and numbers
- 6 yrs – Reads simple books
- 7 yrs – Tells the time
- 8–10 yrs – Logical thinking and independent learning

EMOTIONAL
- 4 yrs – Seeks praise
- 6 yrs – Understands consequences
- 8 yrs – Shows empathy
- 10 yrs – Greater emotional maturity

SOCIAL
- 4 yrs – Takes turns
- 5 yrs – Makes friendships
- 7 yrs – Cooperative play and teamwork
- 9–10 yrs – Peer groups become highly important

SIMPLE REVISION TIP

P Physical skills – Get active and grow

I Intellectual skills – Learn and think

E Emotions – Understand feelings

S Social skills – Make friends and belong

Remember: Every child develops at their own pace. These are typical milestones.

Quiz maker

Look through the KO for the SOL you're currently studying in your ***OPTION SUBJECT***. Use it to create a quiz (multiple choice) that you can test yourself on towards the end of studying the topic.

1.

A

B

C

D

2.

A

B

C

D

3.

A

B

C

D

4.

A

B

C

D

5.

A

B

C

D

6.

A

B

C

D

Sources of Finance

When starting and setting up a new business, it is vital that the owner is able to secure the **capital** (also referred to as **finance** or **money**) required to fund the business.

Friends and family – these are often willing to lend money to help start the business. As with personal savings, this type of capital is often lent without any charges of fees and is often repaid when the business has become successful.

If the business fails, friends and families will not get their money back, so this comes with high risk.

This is good because the money is lent without interest and fees which makes it cheaper but friends and family may not have sufficient money to invest to cover all costs of the business. It can also cause arguments with family and friends if the money is lost.

Business Angels – this is a wealthy entrepreneur that is willing to invest in the business. In return the owner gives the business angel a portion of the business and the profits. The business angel is taking a risk as many small businesses will fail but if they make the right decision they can make a lot of money. The business angel will not only invest money but usually comes with the right contacts and business knowledge to help make the business a success. Think **Dragons Den.**

It is good because the owner does not have to repay the money the business angel invests and will get free advice and guidance. However, the owner does have to hand over a portion of the business and the profits to the business angel.

Loans – usually longer-term sources of finance and are offered by banks and other financial institutions. They will ask for evidence that the loan can be repaid and will let the borrower take up to 10 years to repay the debt.

In return for lending the money, the lender will charge interest. This will be repaid along with the rest of the loan amount. Some lenders will ask for collateral which is something the can repossess if the debt is not repaid in full (e.g. the owner's car or home).

An advantage of this is that the loaned amount can be budgeted for and the cost is spread over a long period of time so that repayment can be low. However, interest rates can be high and therefore this can be an expensive form of borrowing.

Small business grants – these can be available from banks, charities or the government. They usually have a set criterion that the business will need to meet in order to access the money, e.g. the business owner must be younger than 25 years or the business must set up in areas of high unemployment.

The business grant does not need to be repaid but because of the strict criteria, not every business will be eligible.

Personal Savings – is money that the owner has invested into their business. This is usually long-term finance and will come from their savings.

There is no cost for this type of finance except that the owner will miss out on the interest they would have gained by leaving the money in their bank account.

The owner may lose the money they invest if the business fails.

A benefit of this type of finance is that it does not have to be repaid but the owner may have limited savings and this might not be enough on its own.

Crowdfunding – this is a fast growing and relatively new method of finance for new businesses. Instead of one person investing in a business idea and taking ownership of a large part of the business, crowdfunding asks as group or crowd of investors for funding. For example, if a new business requires £100,000, instead of one person investing that sum there could be 100 investors all willing to invest £1000. This shares the risk of investment should the business fail.

The **appropriateness** of each source of finance will depend on the following factors:

Purpose – what does the business require the money for?

Time period – how long does the business need the money for?

Amount – how much does the business require?

Type of business – the size and type of ownership of the business will affect the finance that is available. For example, grants many only be available to organisations of a certain size.

Knowledge Organiser 11 : Programming Fundamentals 1

1. Key Terms

Variable	A value stored in memory that can change while the program is running
Constant	A value that does not change while the program is running, and is assigned when the program is designed
Operator	A character that represents an action, e.g. "+" is a mathematical Operator
Assignment	Giving a variable or constant a value
Casting	Converting a variable from one data type to another
Input	A value that is entered into the program after the program has started running
Output	A value that produced by the program and either saved or displayed to the user

2. Correct Use of Data Types

Integer	A positive or negative whole number used when arithmetic will be required
Real / Float	A positive or negative decimal number
Character	A single alphanumeric
String	Multiple characters joined together [n.b. use this for credit card numbers]
Others	Some languages have others, e.g. date, picture…

3. The Three Basic Programming Constructs

Sequence	Executing one instruction after another
Selection	Program branching depending on a condition
Interation	sometimes called looping, is repeating sections of code. Condition controlled or count controlled

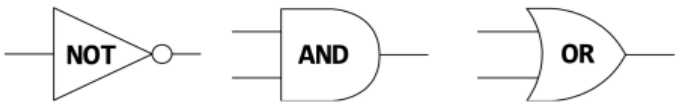
4. Common Arithmetic Operators

+	Addition
-	Subtraction
*	Multiplication
/	Division
^	Exponentiation
MOD	Modulus

5. Common Comparison Operators

==	Is equal to
!=	Is not equal to
<	Is lesser than
>	Is greater than
<=	Is lesser than or equal to
>=	Is greater than or equal to

5. The Common Boolean Operators



6. Basic String Manipulation (general)

string.length	Obtains the length of the string in characters
string.upper	Converts the string to uppercase
string.lower	Converts the string to lowercase
string.left(n)	Gets the left-most n characters of the string
string.right(n)	Gets the right-most n characters of the string
string.substring(a,b)	Gets b characters of the string starting at position a
ASC(char)	Returns the numerical ASCII value of char

Note : this is NOT the way things are done in any particular programming language. In particular Python does things differently

7. Basic File Handling Operations (OCR Reference Language)

myFile=open("…")	Open a file
myFile.close()	Close a file
myFile.readLine()	Read a line from a file
myFile.writeLine()	Write a line to a file
myFile=("…")	Create a new file
string.substring(a,b)	Gets b characters of the string starting at position a
A Workflow	myFile = open ("sample.txt") while NOT myFile.endOfFile() print (myFile.readLine()) endwhile myFile.write("Hello") myFile.close()

Note : this is NOT the way things are done in any particular programming language. In particular Python does things differently

Knowledge Organiser 12 : Programming Fundamentals 2

1. Storing Data in Records

In Text Files	• Stored on the secondary storage (hard disk/SSD/flash). • Used to store data when the application is closed. • Useful for small volumes of data. E.g. configuration files. • Each entry is stored on a new line or separated with an identifier such as a comma or tab. • Can require a linear search to find/read data which is slow (if there is no order to the data or record structure). • Structured text files E.g. CSV, XML & JSON are popular for storing and exchanging data between applications
In Arrays and Lists	• Stored in RAM. • Used to store data when a program is running. • Useful for small volumes of data an algorithm is using. • Can be single or multi-dimensional allowing for tables of data to be stored. • Uses indexes to refer to data items. • Efficient algorithms or linear searches can be used to find data
In Databases	• Often stored on remote servers. • Often used to store data shared by many users, e.g. ticket booking system. • Data is stored in records and fields. • Uses advanced data structures to store data efficiently. • Uses very efficient algorithms to search and sort data executed on the servers. • More secure than text files. • The order of the fields in the database in independent of the code
Record Structure	• A collection of related fields. • A field is a variable. • Each field in a record can have a different data type. • Note the dot syntax when using records: record<dot>Field e.g. car1.Make

2. SQL

SELECT	which fields to be returned. * can be used to indicate all fields
FROM	which table. Databases can have more than one table, each with their own unique name
WHERE	records meet a condition. LIKE and % can be used as a wildcard
Example	SELECT name, age, iq FROM person WHERE name LIKE 'FIS%'

3. Arrays

Definition	An array is a series of memory locations – or 'boxes' – each of which holds a single item of data, but with each box sharing the same name. All data in an array must be of the same data type
Use	• Indexes usually start at 0 for the first data item (known zero indexed). • Arrays may be single or multiple dimensions. • Visualise dimensions as a column (single dimension) or table (two dimension) • In Memory two dimensional arrays are still stored in a linear fashion

4. Sub programs

Why Use them	• Larger programs are developed as a set of sub-programs called subroutines. • Structuring code into sub-programs makes the code easier to read and debug. • Each sub-program can easily be tested. • Sub-programs can be saved into libraries and reused in other programs
Functions	Functions return values and create reusable program components.
Procedures	Procedures create a modular structure to a program making it easier to read. They do not return values

5. Random Numbers

Deterministic	Programs that run on computer systems are deterministic – with exactly the same inputs they should produce exactly the same outputs.
Real World	Randomness is easy to produce in the real world – spinning a wheel, rolling a dice and so on are millennia-old techniques but producing the same randomness in a computer program is actually rather tricky
Computer	• Computers do not produce random numbers at all • They use complex mathematical techniques to produce a series of numbers that may appear random but are really only an approximation to randomness (called pseudo-random numbers) • We refer to them as random numbers anyway
OCR Reference Language	myVariable = random (1,6) will produce a random number between 1 and 6

Computer Science

Knowledge Organiser 4 : Networks and Network Topologies

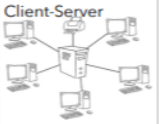
1. Types of Networks

Network	A set of connected computers and other devices (e.g. printers, phones, HomeKit devices) for the purpose of sharing resources
LAN	Local Area Network. Covers a small geographical area (a home, a school, etc.) The infrastructure is often owned by the individual / organisation
WAN	Wide Area Network. Covers a large geographical area. WANs are made up of LANs joined together. The infrastructure is often owned by a Telecoms or other company rater than the individual
Advantages to using a LAN	• Resources (files, etc.) and devices (printers, etc.) can be easily shared across the network • Computers can be configured with the same 'image' so you have the same programs and access to your data from any computer (like in school) • You can control devices (e.g. HomeKit)
Disadvantages to using a LAN	• Security. Malware can spread across a network • Complexity of setting up and maintaining

2. Factors affecting performance of a network

Latency	You can get bottlenecks in parts of your network, either because of a faulty switch, or due to the design of your network. Latency is the term used describe the time it takes data to travel from one designated point to another on the network
Bandwidth	The maximum amount of data transmitted over an internet or LAN connection in a given amount of time.
Transmission Media	WiFi generally has less bandwidth than wired connections. Wired connections (ethernet) can be different speeds (10Mbps, 100Mbps, Gigabit). Switches and routers also have maximum speeds
Concurrent Users	The more users there are on a network the more data is likely being transmitted. This means it can take longer as you have to wait your turn for your packets to travel across the network

3. Network Types

Client-Server 	The network relies on a central server and all the clients (devices) request services from the server such as print services, file services etc. Additional hardware is needed in this type of network: a server. All files can be stored and backed-up centrally on a server which means workers can access files from any computer on the network and the computers can also be updated centrally.
Peer-to-Peer 	All computers have equal status and any computer can act as a client and a server–even at the same time. All computers can request and provide network services. For example, any computer can use a resource physically connected to a different computer. There is no need to buy a dedicated server

4. Required Hardware

NIC	The Network Interface Card is in each computer/devices and allows connection to other devices on the network. It can allow wired connections, wireless connections, or both
Transmission Media	What connects the computer/devices to each other. Copper cables, fibre optic cables, wireless signals
Switch	A device on the network that receives signals from a computer/device and transmits the signal to its intended recipient
Router	A device used to connect different networks together. For example a home LAN to the internet, or a fibre optic cable to a home WiFi network
WAP	A Wireless Access Point is a device that receives and transmits wireless signals on the network. Often connected to rest of the network by cables

5. The Internet

The Internet	The Internet is a global collection of interconnected networks
DNS	The Domain Name Server is a large directory allowing the Internet Service Provider (ISP) to look up the correct IP address for the desired website
Hosting	If you don't own your own servers and host your website yourself you can use a company to do it for you. They will monitor and maintain their servers they are renting you space on
The Cloud	Data can be stored 'in the cloud'. This means on servers (in server farms) run by big companies. The data can be accessed from anywhere
Web Servers and Clients	Servers provide services (e.g. Web server -> Web pages, File server -> file storage/retrieval). Clients request / use services from a server

6. Star and Mesh Topologies

Star Network	Cheaper than mesh network. Less cabling. Easy to add devices BUT total reliance on central node. If it fails whole network fails		Mesh Network	Full or partial. More cabling than star. Costs more to install. Harder to add a device. Harder to maintain BUT no Single Point of Failure	

Knowledge Organiser 6 : Network Security

1. Forms of Attack

Malware	Software written in order to infect computers and commit crimes e.g. fraud or identify theft. Malware exploits vulnerabilities in software
Types of Malware	Malware is term that covers (among other things) viruses, trojans, worms, ransomware, spyware and adware
Phishing	Online fraud technique used by criminals. It is designed to get you to give away personal information such as usernames, passwords, bank details, credit card details… Achieved by disguising as a trustworthy source in an electronic communication, e.g. an email or fake website.
Brute Force Attack	A trial and error method used to decode encrypted data (such as passwords). Uses every combination until it hits upon the correct one.
DOS Attack	Denial of Service attack. Floods a server with useless traffic causing the server to become overloaded and unavailable
DDOS Attack	Distributed Denial of Service Attack. Using multiple computers (zombies) in a Botnet to undertake a DOS attack
Data Interception and Theft	Stealing information from an unknowing victim's computer in order to get confidential information, or to compromise their privacy. E.g. to sniff usernames and passwords
SQL Injection	A technique used to view or change data in a database by inserting additional code into a text input box, creating a different SQL command
Zero Day Attack	An attack using an unknown and undocumented vulnerability in software code (unknown to the code owner)

2. Threats posed to Networks

Malware	• Files are deleted, become corrupt or are encrypted. • Computers crash, reboot spontaneously and slow down. • Internet connections become slow. • Keyboard inputs are logged and sent to hackers.
Phishing	• Accessing a victim's account to withdraw money, or purchase merchandise and services. • Open bank accounts, credit cards, cashing illegitimate cheques. • Gain access to high value corporate data. • Financial services can blacklist the company
Brute Force Attack	• Theft of data. • Access to corporate systems.
(D)DOS Attack	• Loss of access to a service for customers • Lost revenue • Lower productivity • Damage to reputation
Data Interception and Theft	• Usernames and passwords compromised • Disclosure / theft of corporate data
SQL Injection	• Contents of databases can be output, revealing private data. • Data in the database can be amended or deleted. • New rogue records can be added to the database.
People	Many system vulnerabilities are caused by people being careless: • Not installing operating system updates. • Not keeping anti-malware up to date. • Not locking doors to computer rooms. • Not logging off or locking their computer. • Leaving printouts on desks. • Writing passwords down on sticky notes attached to computers. • Sharing passwords. • Losing memory sticks / laptops. • Not applying security to wireless networks. • Not encrypting data.

3. Identifying and Preventing Vulnerabilities

Malware	• Security software (Spam filter, Anti-virus, Anti-spyware, Anti-spam) • Enabling OS and security software updates. • Staff training • Backup files regularly onto removable media.
Phishing	• Strong security software. • Staff training: awareness of spotting fake emails and websites. • Staff training: not disclosing personal or corporate information. • Staff training: disabling browser pop-ups.
Brute Force Attack	• Network lockout policy, Using progressive delays. • Staff training
(D)DOS Attack	• Strong firewall and packet filtering • Properly configuring servers and auditing and monitoring systems
Data Interception and Theft	• Encryption and using virtual networks • Staff training and computer use policies
SQL Injection	• Validation on text boxes • Database permissions

Knowledge Organiser 6 : Network Security

1. Forms of Attack	
Malware	Software written in order to infect computers and commit crimes e.g. fraud or identify theft. Malware exploits vulnerabilities in software
Types of Malware	Malware is term that covers (among other things) viruses, trojans, worms, ransomware, spyware and adware
Phishing	Online fraud technique used by criminals. It is designed to get you to give away personal information such as usernames, passwords, bank details, credit card details… Achieved by disguising as a trustworthy source in an electronic communication, e.g. an email or fake website.
Brute Force Attack	A trial and error method used to decode encrypted data (such as passwords). Uses every combination until it hits upon the correct one.
DOS Attack	Denial of Service attack. Floods a server with useless traffic causing the server to become overloaded and unavailable
DDOS Attack	Distributed Denial of Service Attack. Using multiple computers (zombies) in a Botnet to undertake a DOS attack
Data Interception and Theft	Stealing information from an unknowing victim's computer in order to get confidential information, or to compromise their privacy. E.g. to sniff usernames and passwords
SQL Injection	A technique used to view or change data in a database by inserting additional code into a text input box, creating a different SQL command
Zero Day Attack	An attack using an unknown and undocumented vulnerability in software code (unknown to the code owner)

2. Threats posed to Networks	
Malware	• Files are deleted, become corrupt or are encrypted. • Computers crash, reboot spontaneously and slow down. • Internet connections become slow. • Keyboard inputs are logged and sent to hackers.
Phishing	• Accessing a victim's account to withdraw money, or purchase merchandise and services. • Open bank accounts, credit cards, cashing illegitimate cheques. • Gain access to high value corporate data. • Financial services can blacklist the company
Brute Force Attack	• Theft of data. • Access to corporate systems.
(D)DOS Attack	• Loss of access to a service for customers • Lost revenue • Lower productivity • Damage to reputation
Data Interception and Theft	• Usernames and passwords compromised • Disclosure / theft of corporate data
SQL Injection	• Contents of databases can be output, revealing private data. • Data in the database can be amended or deleted. • New rogue records can be added to the database.
People	Many system vulnerabilities are caused by people being careless: • Not installing operating system updates. • Not keeping anti-malware up to date. • Not locking doors to computer rooms. • Not logging off or locking their computer. • Leaving printouts on desks. • Writing passwords down on sticky notes attached to computers. • Sharing passwords. • Losing memory sticks / laptops. • Not applying security to wireless networks. • Not encrypting data.

3. Identifying and Preventing Vulnerabilities	
Malware	• Security software (Spam filter, Anti-virus, Anti-spyware, Anti-spam) • Enabling OS and security software updates. • Staff training • Backup files regularly onto removable media.
Phishing	• Strong security software. • Staff training: awareness of spotting fake emails and websites. • Staff training: not disclosing personal or corporate information. • Staff training: disabling browser pop-ups.
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BTEC Music Knowledge Organiser- Component 2

Describe some of the capabilities and limitations of your own instrument voice or technolody in terms of its range and characteristing timbre.

Describe how your own instrument, voice or technology is used in different genres.

Describe what types of ensemble your own instrument, voice or technology might be used in.

Describe how your own instrument, voice or technology's use is influenced by context and culture.

Describe some of the capabilities and limitations of your own instrument voice or technolody in terms of the techniques required to play it and any techniques specific to it.

Key Word	Meaning
Clef	A number of musical symbols *(including Treble, Bass, Alto, Tenor/C-clefs)* placed at the left hand side of a musical stave, indicating the pitch of the notes written on it to the performer.
Concert Pitch	Refers to the pitch reference to which a group of musical instruments are tuned for performance. An internationally agreed standard is for the tuning of musical instruments, in which the note A above middle C has a frequency of 440 Hz.
Descriptive Music	Also called "Programme Music", descriptive music suggests visual images or "telling a story". The descriptive idea or story-line is known as the "programme". The opposite of descriptive music is "absolute music" which is music that doesn't attempt to describe something particular and is more concerned with form and structure.
Elements of Music	A number of different things which have often been called "the building bricks of music" and include: Pitch, Dynamics, Duration, Tempo, Texture, Timbre/Sonority, Attack and Decay and Silence. When a composer creates a piece of music, they use the elements of music to build it, just like a builder uses bricks.
Ensemble	A group of musicians who perform together.

Task 1: Choosing suitable equipment and factors for choice

Factors affecting suitability of equipment.

Age and weight appropriateness - recommended age, weight (minimum and maximum), size of child, adjustable.

Durability – hard wearing (will it last for long), materials (wipe down, comfortable).

Safety – safety features, star ratings, safety labelling, review, stable, flammable.

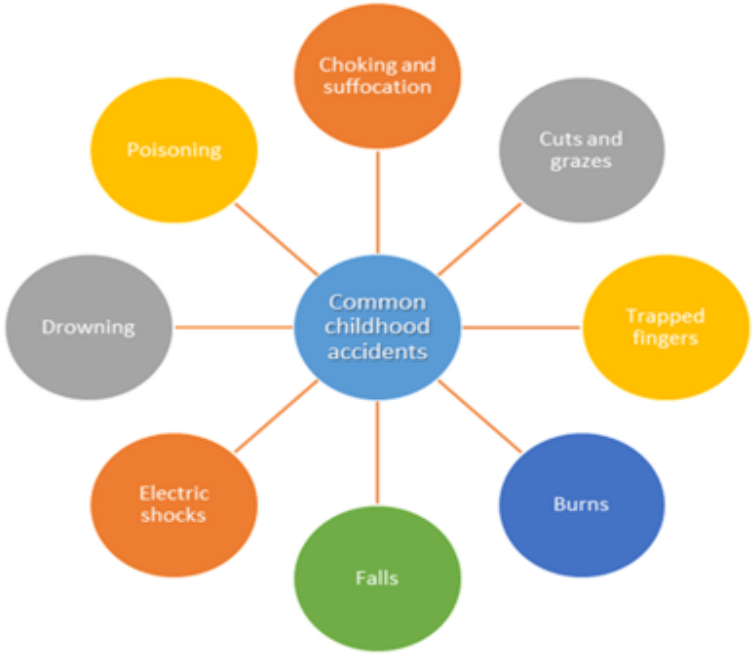
Design – comfort, accessibility, ease of use, aesthetics, adjustability.

Cost – value for money, price range, cost effective, within a suitable budget/price range.

Task 2: Creating a safe environment in a childcare setting

Why do accidents happen?

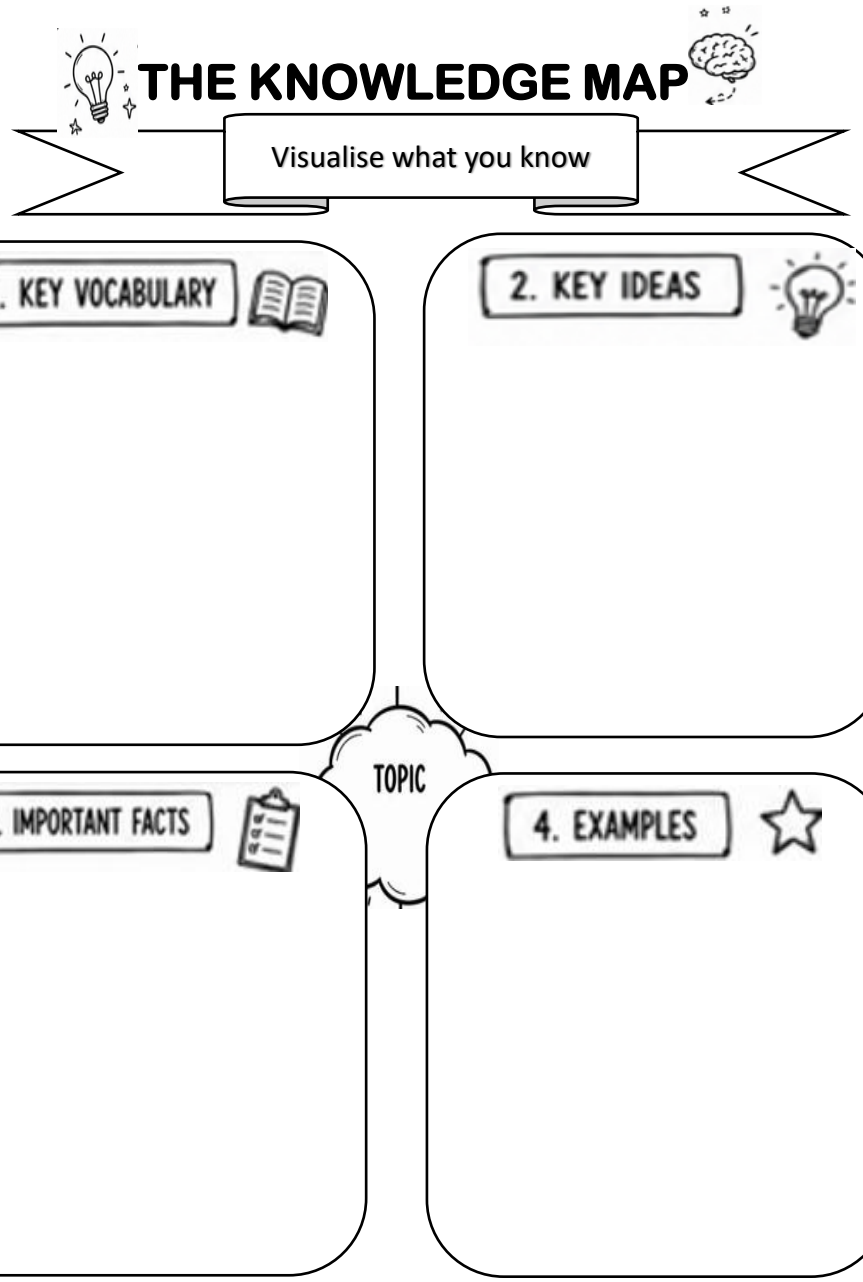
- The environment
- Lack of supervision
- Untrained staff
- Safety equipment
- As part of child's development

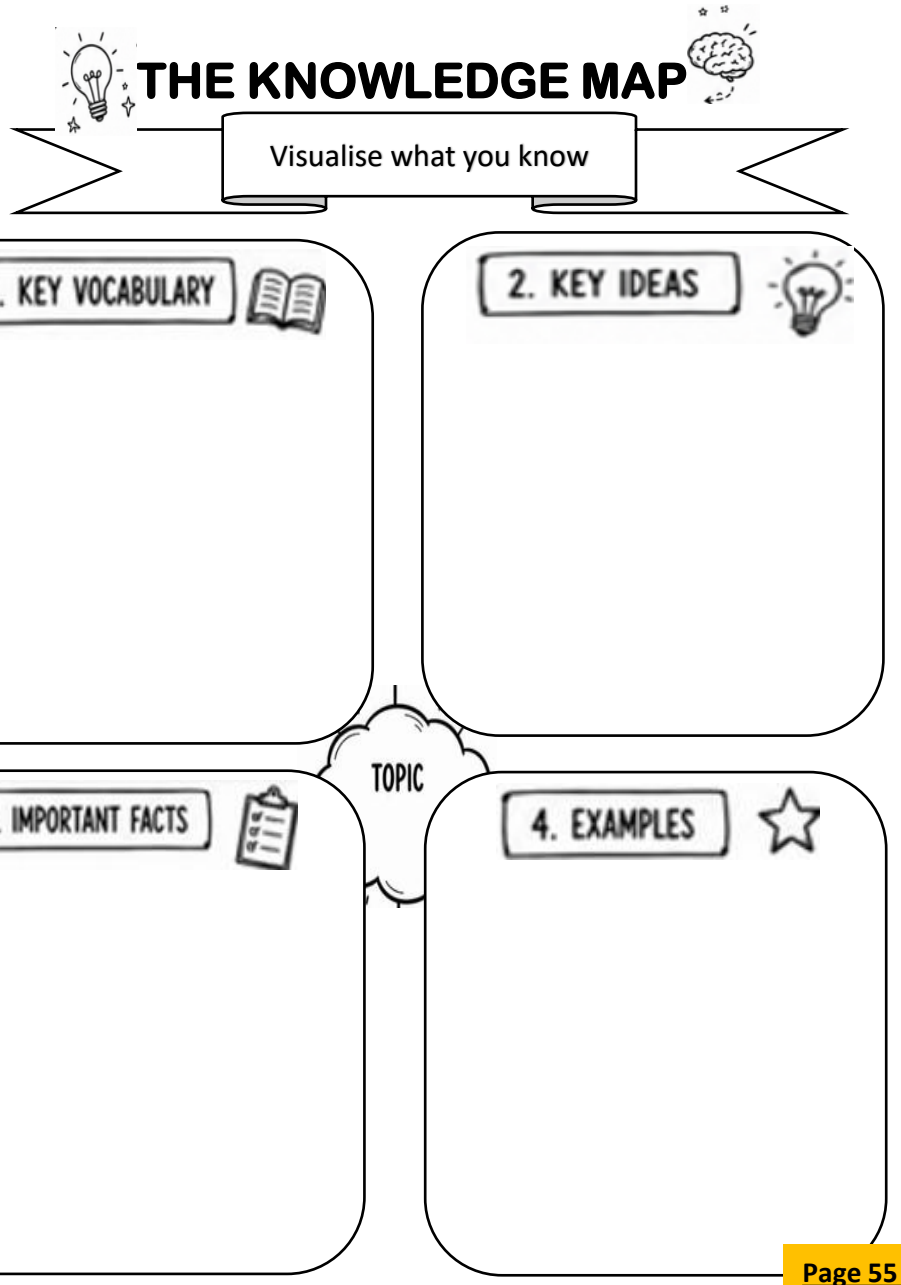


Ways to prevent accidents:

- Staff training
- Staff supervision – correct ratios
- Safety consideration
- Sensible placement of equipment
- Different areas in setting
- Educating the children to keep safe.
- Reasons for plan choices
- Completing risk assessments
- Objects out of reach
- Nonslip objects/mats
- Suitable heights
- Locked cupboards
- Appropriate age equipment
- Safety gates

Have a read through the information on your ***OPTION KO*** and then use the information below to help you create mind maps.





Fancy some additional Class Charts points? Impress your teachers with any of these BHAmazing pieces of vocabulary, and they will award you extra CC points. Challenge: Can you use them in any sentences and show a member of the Senior Leadership Team?

Word List 1	Word List 2	Word List 3	Word List 4	Word List 5	Word List 6	Word List 7
Myriad (adjective) – many	**Caustic** (adjective) – mean / harsh	**Tension** (noun) – feeling of anxiety or nervousness	**Omniscient** (adjective) – all-knowing	**Sentimental** (adjective) – emotional	**Oppressed** (adjective) – subjected to cruel mistreatment	**Metamorphosis** (noun) – a change / transformation
Assert (verb) – state a fact confidently or forcefully	**Elucidate** (verb) – to make clear	**Oblivious** (adjective) – unaware	**Gullible** (adjective) – believes things easily	**Bawdy** (adjective) – rude or vulgar	**Subservient** (adjective) – obedient / submissive	**Abhorrent** (adjective) – repulsive
Egregious (adjective) - outstandingly bad	**Esoteric** (adjective) – likely to only be understood by a small number or people / obscure	**Naïve** (adjective) – Inexperienced / unaware	**Supercilious** (adjective) – arrogant	**Hypermasculine** (adjective) – overly masculine	**Exploit** (verb) – to use someone for your own good	**Abhor** (verb) – to hate
Erroneous (adjective)- wrong	**Tenuous** (adjective) – weak or fragile	**Pretentious** (adjective) – arrogant	**Tyrannical** (adjective) – a cruel dictator	**Atavistic** (adjective) – has characteristics of an earlier generation	**Epiphany** (noun) – a sudden realization	**Fate** (adjective) – destiny
Engender (verb) – to cause	**Perfunctory** (adjective) – carried out with minimal effort	**Pompous** (adjective) – arrogant	**Brazen** (adjective) – bold, shameless	**Troglodytic** (adjective) – like a caveman	**Façade** (noun) – a front (to 'wear a façade' means you wear a metaphorical mask, covering your true emotions or character)	**Integral** (adjective) – important
Employ (verb) – to make use of	**Moral** (noun) – a lesson	**Privileged** (adjective) – having an advantage over other, usually wealth	**Elusive** (adjective) – mysterious	**Apathetic** (adjective) – indifferent / lazy		**Demise** (noun) – a person's downfall or death
Salient (adjective) – most noticeable and important	**Autonomy** (noun) – independence	**Compassionate** (adjective) – sympathetic	**Chauvinistic** (adjective) – has an attitude of superiority to opposite sex	**Segregated** (adjective) - separated		**Ridicule** (verb) – to make fun of
Advantageous (adjective) – providing an advantage / beneficial	**Assertive** (adjective) – confidence	**Vindictive** (adjective) – spiteful, cruel	**Materialistic** (adjective) – cares for objects and commodities	**Misogynistic** (adjective) – hateful towards women	**Microcosm** (noun) – a smaller community which represents a larger one	**Deride** (verb) – to mock
Galvanize (verb) – to shock or excite someone into action	**Conceited** (adjective) – excessively proud / vain	**Duplicitous** (adjective) – having two sides	**Prophetic** (adjective) – able to accurately predict	**Choleric** (adjective) – quick-tempered, angry	**Aloof** (adjective) – stand-offish	**Contempt** (noun) – hate
Substantiate (verb) – to provide evidence	**Superior** (adjective) – better than	**Narcissistic** (adjective) – self-obsessed	**Impulsive** (adjective) – rash / careless	**Secular** (adjective) – not religious	**Degenerate** (adjective) – disgusting	**Hysterical** (adjective) – uncontrolled emotion
					Depraved (adjective) – immoral / evil	
					Feral (adjective) – wild	

My BHAmazing vocabulary, written in sentences:

1.

2.

3.

4.

5.

6.

7.