Year 11
Learning Cycle 1

Student Name:_____

Contents

How to Use your Learning Cycle Planner

Poltair School believe that the Learning Cycle Planner should be used daily for classwork and home learning. The Learning Cycle Planner will inform students and parents of topics that are being covered in class during each learning cycle, enabling all students to extend their learning outside of the classroom.

Students should be using their Learning Cycle Planner as a revision guide for assessments and using their SORT strategies to revise for each subject prior to assessments.

Learning Cycle 1 PPE check dates

06/11/23 - 17/12/23

At Poltair we SORT it!

What are the SORT strategies?

The aim is for all students to be fully prepared and ready for all assessments in all subjects.

To help them with this we have a whole school revision/study strategy – SORT.

There are three learning cycles throughout the academic year. At the beginning of each learning cycle students will be issued with a learning cycle planner which details all the knowledge they are expected to know and recall by the end of the learning cycle.

Each day, for home learning, students are set two activities that support in memorising and recalling this core knowledge.

Summarise	**Organise**	**Recall**	**Test**
Summarise and condense any class notes, revision guides and revision.	Organise your revision materials by topic/subtopic. Traffic light your PLC sheets to identify areas of weakness or gaps (Red/Amber) that need to be prioritised.	Use active recall and spaced repetition to memorise your knowledge organisers until you can recall the information eg. Look, cover, write or self-testing	Use low stakes online tests/quizzes and answer high stakes past paper/sample questions to check and apply knowledge and understanding
Strategies			
• Cornell Notes • Flash cards • Mind mapping • Revision clocks • Dual coding	• How to use your PLC • How to schedule your home learning and stick to it!	• Look cover & test • Leitner system • Blurt it • Transform it	• Low stakes • Self-quizzing • Quiz each other • Online quizzes • High stakes • Exam style questions

ATTENDANCE FOCUS

POLTAIR

ATTENDANCE FOCUS

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Attendance Reflection Sheet	
What is your current attendance?	
How many sessions have you missed of school?	
How many 'I' coded sessions have you had?	
How many 'M' coded sessions have you had?	
How many 'L' coded sessions have you had?	
How many 'U' coded sessions have you had?	
How many 'O' coded sessions have you had?	
How many days does this equate to so far this year?	
If this attendance continued how many days off would you have this year?	

To improve my attendance, I commit to the following:	
1.	
2.	
3.	
What attendance do you want to end this term with?	
What is your end of year attendance target?	
What is our minimum expected attendance to be rewarded?	

Possible strategies to REACH MY attendance Goals

- I will make attending school every day a priority.
- I will keep track of my attendance and absences.
- I will set my alarm clock for _____a.m.
- I will attend school everyday unless I am truly sick.
- I will find a relative, friend or neighbour who can take me to school if I miss the bus.
- If I am absent, I will contact my teachers to find out what I missed.
- I will set up medical and dental appointments for weekdays after school. If I must make a medical appointment during the school day, I will try to attend school for most of the day.
- When I am struggling with a challenge that is keeping me from school I will confide in an adult at school and seek help.

Home Learning timetable - when I am going to complete my home learning

	Mon A	Tue A	Wed A	Thu A	Fri A
Core Activity	1 hour of SPARX Maths XP and target practice				
Subject 1	Science	Maths	Option A	Maths	Science
Subject 2	Option C	English	Option D	English	Option B
	Mon B	Tue B	Wed B	Thu B	Fri B
Core Activity	1 hour of SPARX Maths XP and target practice				
Subject 1	Science	Maths	Option A	Maths	Science
Subject 2	Option C	English	Option D	English	Option B

Expected time home learning will take:

Activity	Time
Reading	30 mins
Sparx Maths	30 mins a goal
All other activities	15 mins each

My Computer passwords:

Platform	Username	Password
School System		
Sparx Maths		
Educake		
Memrise		

Revision Planner

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Time	Saturday	Sunday
8.30am - 4pm						8.30am - 4pm		
4pm - 5pm						4pm - 5pm		
5pm - 6pm						5pm - 6pm		
6pm - 7pm						6pm - 7pm		
7pm - 8pm						7pm - 8pm		
8pm - 9pm						8pm - 9pm		

Revise 50

REVISE FOR 50

Record every 15 minutes that you revise. You are aiming to complete a minimum of 50 hours ahead of your GCSEs. This can include time spent in planned revision sessions or independent study.

#revise50

1	11	21	31	41
2	12	22	32	42
3	13	23	33	43
4	14	24	34	44
5	15	25	35	45
6	16	26	36	46
7	17	27	37	47
8	18	28	38	48
9	19	29	39	49
10	20	30	40	50

Year 11 Learning Cycle 1 Personal Learning Checklists

English – Language Paper 1

Key Ideas	S	O	R	T
Question 1: focus, timings and how to answer the question.				
Question 2: focus, timings and how to answer the question.				
Question 3: focus, timings and how to answer the question.				
Question 4: focus, timings and how to answer the question.				
Selecting relevant information from a fiction text.				
Identifying language methods with accurate terminology.				
Analysing language methods.				
Identifying structure methods with accurate terminology.				
Analysing structure methods.				
Evaluating a statement about a fiction text.				
Supporting my evaluation of a fiction text by identifying and analysing a range of relevant methods.				
Planning an extended descriptive or narrative piece of writing.				
Using a range of sophisticated vocabulary precisely in my creative writing.				
Using a range of language methods in my creative writing.				
Using a range of punctuation accurately in my creative writing.				
Using a range of sentence structures and starters in my creative writing.				
Proof-reading and editing my creative writing.				

English – Literature Paper 2 Section B (Poetry Anthlogy)

Key Ideas	S	O	R	T
Remains by Simon Armitage:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				
The Charge of the Light Brigade by Alfred Lord Tennyson:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				
Bayonet Charge by Ted Hughes:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				
War Photographer by Carol Ann Duffy:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				

Year 11 Learning Cycle 1 Personal Learning Checklists

English – Literature Paper 2 Section B (Poetry Anthlogy)

Key Ideas	S	O	R	T
Poppies by Jane Weir:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				
Kamikaze by Beatrice Garland:				
Key ideas and meanings				
Context and purpose				
Language				
Structure and form				
Key quotations				
Responding to the Exam Question:				
Choosing an appropriate comparison poem.				
Planning my response effectively.				
Writing a thesis introduction.				
Using quotations and references to support my ideas.				
Identifying and analysing language methods.				
Identifying and structure methods and features of form.				
Making thoughtful comparisons between poems.				
Using appropriate connectives.				
Developing analysis with relevant contextual ideas.				

English – Literature Paper 2 Section A (An Inspector Calls)

Key Ideas	S	O	R	T
Recalling significant moments in the plot.				
Understanding characters and how they develop throughout the play.				
Understanding key themes (responsibility, inequality, gender, greed, compassion, power and status, guilt, class politics).				
Identifying and analysing language methods.				
Identifying and analysing structure.				
Identifying and analysing features of the play form.				
Recalling key quotations for all characters and themes.				
Understanding how Priestley's beliefs and motivations influence his writing.				
Understanding Priestley's intentions and messages.				
Recalling key information about the Edwardian context.				
Recalling key information about the Post-war context (1945 onwards).				
Planning thoughtfully sequenced responses to exam questions.				
Writing thesis introductions.				
Developed what, how, why paragraphs.				
Using a range of references (including quotations) to support ideas.				
Using appropriate connectives.				
Developing analysis with relevant contextual ideas.				
Using a range of sophisticated vocabulary to enhance analysis.				

Year 11 Learning Cycle 1 Personal Learning Checklists

English - Literature Paper 2 Section C (Unseen Poetry)

Key Ideas	S	O	R	T
Part 1 - Analysis				
Understanding key ideas and meanings				
Appreciating poet's purpose and messages				
Identifying and analysing language methods				
Identifying and analysing structure methods and features of form				
Planning my response effectively				
Using key quotations and references to support ideas				
Using appropriate connectives				
Writing a thesis introduction				
Writing developed what, how, why paragraphs				
Part 2 - Comparison				
Identifying important methods accurately				
Making thoughtful comparisons between the methods used by both poets				
Using key quotations and references to support ideas				
Using appropriate connectives				
Analysing chosen methods in detail				

Science

Key Ideas	S	O	R	T
I can describe the pathway of a reflex arc				
I can explain how the structure of the nervous system is adapted for its functions				
I can plan and carry out an investigation into the effect of a factor on human reaction time				
I can identify the position of glands and organs in the human body				
I can explain the control of blood glucose concentration				
I can compare type 1 and type 2 diabetes				
I can describe the roles of hormones in human reproduction, including the menstrual cycle				
I can evaluate the different hormonal and non-hormonal methods of contraception				
I can explain the use of hormones in reproductive technologies to treat infertility (HT only)				
I can explain the roles of thyroxine and adrenaline in the body (HT only)				

Science

Key Ideas	S	O	R	T
I can identify scalars and vectors				
I can recall and apply the equations for weight and work done.				
I can explain Newton's 1st, 2nd and 3rd law and apply to given examples.				
I can recall and apply the equation for Hooke's Law and investigate the relationship between force and extension for a spring				
I can recall typical values for speed.				
I can recall and apply the speed equation.				
I can determine speed from a d-t graph				
I can draw and interpret velocity-time graphs				
I can recall and apply equations for acceleration.				
I can explain the factors that affect braking distance.				
I can use the concept of momentum as a model to describe and explain examples of momentum in an event, such as a collision as well as recall and apply the equation p=mv				

Year 11 Learning Cycle 1 Personal Learning Checklists

Science

Key Ideas	S	O	R	T
I can describe the attraction and repulsion between unlike poles for permanent magnets				
I can describe the difference between permanent and induced magnets				
I can describe how to plot the magnetic field pattern of a magnet using a compass				
I can describe how to plot the magnetic field pattern of a magnet using a compass				
I can describe how the magnetic effect of a current can be demonstrated				
I can draw the magnetic field pattern for a straight wire carrying a current and for a solenoid				
I can show how Fleming's Left Hand Rule represents the relative orientation of the force, the current in the conductor and the magnetic field (HT only)				
I can apply and use F=Bil equation (HT only)				
I can explain how the force on a conductor in a magnetic field causes the rotation of the coil in an electric motor (HT only)				

Geography

Key Ideas	S	O	R	T
Describe the characteristics of upland and lowland areas				
Explain the similarities and differences between constructive and destructive waves				
Explain how waves break				
Explain the process of mass movement and weathering				
Explain the process of mass movement and weathering				
Explain the formation of a bay and headland				
Explain the formation of a coastal stack				
Explain the process of longshore drift				
Explain the formation of a spit				
Assess the advantages and disadvantages of coastal management techniques				
Explain the impacts of coastal management upon the Holderness coast				

Geography

Key Ideas	S	O	R	T
Define development				
Name economic development indicators				
Explain the benefits of socio-economic indicators, e.g.; HDI				
Explain the stages in the demographic transition model				
Locate and describe the tropical rainforest biome				
Describe and evaluate strategies to reduce the development gap				
Describe the location of Nigeria in Africa				
Explain the reasons for rapid economic growth				
Explain the advantages and disadvantages of TNCs in Nigeria				
Explain the environmental consequences of rapid industrialisation in Nigeria				

Year 11 Learning Cycle 1 Personal Learning Checklists

History

Key Ideas	S	O	R	T
How the role of the Church changed over time				
The impact of the Printing Press on medical understanding and knowledge				
The developing role of science and scientific understanding				
The importance of individuals in scientific discovery				
Changing attitudes to medicine in society				
The impact of war on medical understanding				
The developing role of technology in 20th Century medicine				

Spanish

Key Ideas	S	O	R	T
I know my non-negotiable verbs for the past, present and future tenses				
I know at least 5 interesting adjectives that I can apply to my work				
In the writing exam, I understand the format that each of the tasks takes				
I can write a success criteria for these tasks from memory				
I can write a success criteria for these tasks from memory				
I feel confident with the key vocab for the role-play				
I use Memrise regularly to learn the key vocab for the reading and listening exams				

Computer Science

Key Ideas	S	O	R	T
I know how to open, close, append and create files in Python				
I know how to open, close, append and create files in Python				
I know the different types of test data, how to design a test and how to record output in a test table.				
Know the difference between Iterative and terminal testing				
I can demonstrate the different Search algorithms and can choose for a task				
I can demonstrate the different Sort algorithms and can choose for a task				
I can perform SQL queries on tables of data				
I can write code which uses selection				
I can write code which uses iteration				
I can implement subroutines and know the benefits of using them				
I can discuss the Cultural, Legal, Environmental and Ethical issues in technology development				
I can create and use 1D and 2D Arrays for problem solving				
I can identify methods to make code more maintainable				

Year 11 Learning Cycle 1 Personal Learning Checklists

Art

Key Ideas	S	O	R	T
Explain and use tone, texture, line, shape, scale and composition to create an interesting observational drawing.				
Experiment with a range of materials.				
Refine work through annotation.				
Record ideas and observations.				
Develop ideas through investigation.				
Present a personal and meaningful response.				
Explain and discuss how decisions have been made through annotation.				

DT

Key Ideas	S	O	R	T
I am able to use ACCESSFM to identify the target areas of products.				
I can model and develop an idea based on a concept.				
I can use my knowledge of previous products to come up with a solution to a problem.				
I am able to think outside the box and be creative with my solutions.				
I can think logically and organise my ideas in my portfolio.				

Engineering

Key Ideas	S	O	R	T
I am able to identify risk when using machines, and can create risk assessments to highlight where mitigations are in place.				
I am able to create and use a GANTT chart in order to create a logical plan to create a product.				
I am able to use the centre lathe to engineer different metal components.				
I am able to use the milling machine to engineer different metal components.				
I am able to use hand tools to engineer different metal components.				
I am able to quality assure my product by looking at accuracy, measurements and finish of a product.				

Year 11 Learning Cycle 1 Personal Learning Checklists

Hospitality & Catering

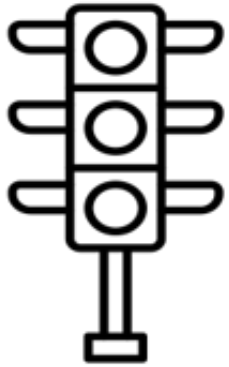
Key Ideas	S	O	R	T
I can describe functions of nutrients in the body (U2, LO1, AC1.1)				
I can compare nutritional needs of specific groups (U2, LO1, AC1.2)				
I can explain characteristics of unsatisfactory nutritional intake (U2, LO1, AC1.3)				
I can explain how nutritional methods impact on nutritional value (U2, LO1, AC1.4)				
I can explain factors to consider when proposing dishes for menus (U2, LO2, AC2.1)				
I can explain dishes on a menu address environmental issues (U2, LO2, AC2.2)				
I can explain how men dishes meet customer needs (U2, LO2, AC2.3)				
I can use techniques in preparation of commodities (U2, LO3, AC3.1)				
I can assure quality of commodities to be used in food preparation (U2, LO3, AC 3.2)				
I can use techniques in cooking of commodities (U2, LO3, AC3.3)				
I can complete dishes using presentation techniques (U2,LO3AC3.4)				
I can use food safety practices(U2, LO3, AC3.5)				

Performing Arts

Key Ideas	S	O	R	T
I am able to use diction and projection effectively.				
I can use emphasis, volume and pitch effectively.				
I have thought about how my accent, rhythm, tempo and tone of my voice is used.				
I have thought about how my accent, rhythm, tempo and tone of my voice is used.				
I have thought about how my accent, rhythm, tempo and tone of my voice is used.				
I have thought about stagecraft skills such as blocking, entrances and exits, proxemics, use of space, levels, audience awareness, sets and props, and energy.				

Year 11 Learning Cycle 1 Personal Learning Checklists

At Poltair we SORT it!



At Poltair students will **SORT a PLC** by:

At the beginning of a learning cycle students are to RAG the key ideas they are studying by self-assessing if they are Red – no understanding, Amber – some understanding, Green – full understanding. They are then to put a R, A or G in the **organise** column.

- Students will then prioritise the Red and Amber key ideas when they are revising.
- Students are to summarise the knowledge for each key idea, then use recall strategies before self-quizzing.

Key Ideas	S	O	R	T
I know and understand the stock characters from Victorian melodrama.				
I know and understand the different physical skills used in melodrama and experiment with them in rehearsals.				
I know and understand the different vocal skills used in melodrama and experiment with them in rehearsal.				
I know the 3-part structure of melodrama performance.				
I can work in a group to plan a melodrama performance.				
I can apply mellodramatic techniques in performance.				

Year 11 Learning Cycle 1 English - Reading 40 marks (50% of Language Paper 1 – 1 hour)

1. The Questions

Question 1: List four things... [4]

- ✓ 5 minutes
- ✓ Use the correct line numbers.
- ✓ Write four different ideas that directly answer the question

Question 2: Language [8]

- ✓ 10 minutes
- ✓ Focusing on the key idea in the question, highlight and annotate the best quotations.
- ✓ Write your answer using two or three What, How, Why paragraphs - say a lot about a little!

Question 3: Structure [8]

- ✓ 10 minutes
- ✓ Select important structural features to analyse, including the opening and the ending (use your paragraph summaries to help you).
- ✓ Write your answer using SEW (structure method, evidence, why) paragraphs.

Question 4: Evaluating a statement and a writer's methods (use methods from Questions 2 and 3 + effect + evaluate statement) [20]

- ✓ 20 minutes
- ✓ Mark out the given line numbers.
- ✓ Read the statement and highlight the key ideas. Think about your response to it.
- ✓ Find the best quotations to support your response to the statement and annotate with their methods.
- ✓ Quickly plan then write your answer using SEMA (statement, evidence, method, analyse) paragraphs, linking your analysis back to the statement.

2. Language Methods Terms

(use these in Q2 and Q4)

noun	identifies a person, thing, idea or state
adjectives	words that describe the noun
verb	describes an action, event, situation or change
adverb	gives information about a verb
sensory imagery	when the writer provides mental "pictures" using the senses
repetition	Using a word or phrase more than once
simile	something is presented as like something else
metaphor	something is described as something else
personification	giving human traits to something non-human
semantic field	a set of words related in meaning
alliteration	repetition of the same sound at the start of a series of words
sibilance	repetition of the 's' sound at the start of a series of words
plosive sounds	harsh letter sounds such as 't', 'd' and 'k'
onomatopoeia	sound words
pathetic fallacy	weather reflects the mood
hyperbole	purposely exaggerated ideas
juxtaposition	two opposing ideas
symbol	the use of characters, events or ideas to represent something broader

3. Structure Methods Terms

(use these in Q3 and Q4)

opening	the way the extract begins
character introduction	the first description of a person in the text
cyclical	ends the same way it begins
focusing attention	our attention is aimed at something
building	when an idea/tension is increased
developing	an earlier point is extended
narrative shift	a swift or change of focus
zooming in	detailed description of something
zooming out	showing the reader the bigger picture
flash-forward	presents future events
foreshadowing	hints at what's to come
climax	the most intense point
dialogue	lines spoken by characters
flashback	presents past events
internal thoughts	description of what a character is thinking or feeling
external action	description of events outside the character
ending	the last ideas/events in the Source

Year 11 Learning Cycle 1 English - Reading 40 marks (50% of Language Paper 1 – 1 hour)

4. Verbs for Analysis

Shows For explicit/ obvious meanings	Suggests For what the writer wants us to work out based on clues, inferences implicit meanings	Highlights For ideas made very clear and stressed by the writer as very important	Links to For making connections between quotations from different parts of a text	Other
Reveals demonstrates Exposes Tells the reader/ audience Conveys Presents Depicts	Implies Hints at Connotes Intimates Indicates Alludes to	Emphasises Underlines Reiterates (for something shown more than once) Accentuates Underscores	Relates to Echoes Mirrors Augments Develops Contrasts Juxtaposes Diverges from	Evokes Establishes Symbolises

5. Connectives for Developing Ideas

To order ideas:	To add a different idea:	To add:	To sum up:
Firstly...secondly Finally Lastly To conclude	By contrast On the contrary Although However Alternatively On the other hand Conversely Despite	This also In addition Furthermore Moreover Again Therefore Consequently What is more Then again Subsequently	Ultimately Above all It is evident that

6. Sentence Stems

Q2	The writer describes …… The use of the [language method] demonstrates…… * Furthermore, the word/phrase "……" powerfully evokes …….
Q3	At the beginning of the Source, the writer focuses the reader's attention on……. As the Source progresses, the writer adds to / contrasts ….. * The conscious introduction of …… as the Source develops builds / contrasts ……. Finally, the writer of the Source ends with …….
Q4	I wholeheartedly/ partially agree that ……. The writer describes "……..", which reveals……. The [language/structure method] highlights…….. This indicates……. [link to statement].

7. Words to identify writers' emotions:

☺		☹	
Content	Euphoric	Perplexed	Overwhelmed
Assured	Optimistic	Suspicious	Dejected
Captivated	Grateful	Irritated	Indifferent
Curious	Delighted	Indignant	Disgusted
Composed	Untroubled	Unsettled	Enraged
Exhilarated	Proud	Pessimistic	Alarmed

Year 11 Learning Cycle 1 English - Writing 40 marks (50% of Language Paper 1 – 45 minutes)

1. Approaching the Question

Plan!
5 minutes

Write
35 minutes

Proof-read
5 minutes

Section B: Writing

You are advised to spend about 45 minutes on this section.
Write in full sentences.
You are reminded of the need to plan your answer.
You should leave enough time to check your work at the end.

Q5: Your school has asked for creative writing pieces to include in their newsletter to parents.

EITHER: Write a description as suggested by this picture:

OR: Write the opening of a story set at night.

(24 marks for content and organisation
16 marks for technical accuracy)
[40 marks]

DISCO!

Drop into your setting (action!)

Zoom **I**n

Shift in time (flashback)

Comment (one line of reported speech)

Overview (return to opening description but change something significant

2. The Mark Scheme

Have you:

Content and Organisation /24	a) Register matches audience and purpose	• Used a descriptive, creative style? • Included a range of descriptive methods, including simile, metaphor, personification and imagery?
	b) Vocabulary and linguistic devices	• Used a range of interesting and challenging word choices? • Used thoughtful, challenging descriptive methods,
	c) Structural features	• Crafted an engaging opening and a thoughtful ending? • Included foreshadowing, a flashback or flashforward, a motif or circular structure?
	d) Ideas	• Included interesting and convincing ideas? • Linked your ideas together coherently throughout the narrative or description?
	e) Paragraphing	• Used paragraphs in your extended writing and linked them together? • Used a range of paragraph lengths for effect?
Technical Accuracy /16	f) Sentence demarcation	• Ended your sentences correctly, using a full stop, exclamation mark or question mark? • Avoided comma splicing?
	g) Punctuation	• Used basic punctuation correctly, including full stops, commas and capital letters? • Used more complex punctuation e.g. semi-colon, colon and dash?
	h) Sentence forms	• Used a range of minor, simple, compound and complex sentences? • Used a range of sentence starters?
	i) Standard English	• Used formal word choices? • Used grammatically correct phrases?
	j) Spelling	• Used correct spellings? • Selected correct homophones e.g. there/their/they're; to/too/two; weather/whether.
	k) Vocabulary	• Used a range of challenging word choices precisely?

Year 11 Learning Cycle 1 English - Writing 40 marks (50% of Language Paper 1 – 45 minutes)

3. Vocabulary

Key Terms	Description
Alluring	powerfully attractive or interesting
Awe	a feeling of great respect and wonder
Captivating	capable of holding someone's interest
Emanates	comes out from or spreads out from
Enlightened	showing understanding to act positively
Ethereal	light and delicate, in a way that makes something seem heavenly
Euphoric	extremely happy or excited
Dreary	depressingly dull or gloomy
Grave	serious in behaviour or appearance or a place where dead bodies are buried
Inescapable	unable to get away from
Loathsome	causing hatred or disgust
Luminous	giving off light; bright or shining
Merciless	showing no kindness
Melancholy	sadness; downheartedness
Morose	unhappy and unwilling act in a happy way
Oppressed	treated harshly and cruelly
Serene	calm, peaceful, untroubled
Shrouded	covered up, making it hard to see or wrapped in material ready to be buried
Tumultuous	very loud or full of confusion
Triumphantly	in a way that shows great happiness at a victory (winning something) or achievement.
Tyrant	a cruel leader
Vivacious	full of energy and enthusiasm
Wither	to become dry, wrinkled or shrivelled

4. Punctuation

Commas are used:

- to separate clauses (groups of words) that add extra information but wouldn't make sense on their own
- after an introductory word or phrase in a sentence
- to separate items in a list

Full stops are used to separate full sentences. We never use a comma to separate two full sentences.

Semi-colons are used to separate two full sentences closely linked in meaning.

Deafeningly, the thunder roared overhead. The merciless iced wind whipped the faces of the survivors; they cowered from each malicious gust that stung like a knife wound. The rain kept up a relentless attack.

"Help us!" they screamed.

Speech marks are used to show a character is saying something. A full stop, comma, exclamation mark or question mark always needs to be used before the closing speech marks.

Their shouts disappeared into the tempestuous night – torn away by the tyrannical wind. Nature's wrath was unrelenting.

Apostrophes are used show that something belongs to something else (possession) or letters have been taken away (omission).

The writer's metaphor is.... *It's a cold night...*

Dashes are used to separate extra information in a sentence that wouldn't make sense on its own and to show this extra information is important.

Year 11 Learning Cycle 1 English - GCSE Anthology Power and Conflict War Poems (Literature Paper 2, Section B)

1. Remains by Simon Armitage

1a. Content and Meaning

- The speaker describes shooting a looter dead in Iraq and how it has affected him, even when he returns home.
- Written to coincide with a TV documentary about those returning from war with PTSD.
- Based on Guardsman Tromans, who fought in Iraq in 2003.

1b. Context and Purpose

- "These are poems of survivors – the damaged, exhausted men who return from war in body but never, wholly, in mind." Simon Armitage
- Poem coincided with increased awareness of PTSD amongst the military, and aroused sympathy amongst the public – many of whom were opposed to the war.
- Armitage shows show the reader that mental suffering can persist long after physical conflict is over.

1c. Language

- Title 'Remains' – double meaning - images/ suffering stays after the event; a person's dead body.
- 'Tosses his guts back into his body' - colloquial language suggests solider is desensitised; authentic voice
- 'He's here in my head when I close my eyes / dug in behind enemy lines' – metaphor for a 'war in his head'; the PTSD is entrenched.
- 'His bloody life in my bloody hands" – blood as symbol of guilt

1d. Structure and Form

- Monologue, told in the present tense to convey a flashback (a symptom of PTSD).
- First 4 stanzas are set in Iraq; last 3 are at home, showing the aftermath.
- 'But I blink / and he bursts again' mirrors the unstoppable nature of the memories; conveys his conversational tone and gives it a fast pace, especially when conveying the horror of the killing
- Repetition of 'Probably armed, possibly not' conveys guilt and bitterness.

1e. Key Quotations

- 'Tosses his guts back into his body'
- 'Probably armed, possibly not'
- ''But I blink / and he bursts again'
- 'And the drink and the drugs won't flush him out'
- 'His bloody life in my bloody hands'

2. The Charge of the Light Brigade by Alfred Lord Tennyson

2a. Content and Meaning

- Describes a cavalry charge against Russians who shoot at the lightly-armed British with cannon from three sides of a long valley.
- Of the 600 hundred who started the charge, over half were killed, injured or taken prisoner.

2b. Context and Purpose

- Published six weeks after a disastrous battle against the Russians in the (unpopular) Crimean War
- A celebration of the men's courage and devotion to their country, symbols of the might of the British Empire; as Poet Laureate, he had a responsibility to inspire the nation and portray the war in a positive light (propaganda).

2c. Language

- "Into the valley of Death": this Biblical image portrays war as a supremely powerful, or even spiritual, experience.
- "jaws of Death" and "mouth of Hell": presents war as an animal that consumes its victims.
- "Honour the Light Brigade/Noble six hundred": imperative and language glorifies the soldiers, even in death. The 'six hundred' become a celebrated and prestigious group.
- "Shot and shell": sibilance creates whooshing sounds of battle.

2d. Structure and Form

- A ballad, a form of poetry to remember historical events.
- 6 stanzas, each representing 100 men who took part.
- Dactylic dimeter (HALF-a league / DUM- de-de) mirrors the sound of horses galloping and increases the poem's pace.
- Repetition of 'the six hundred' at the end of each stanza (epistrophe) emphasises huge loss.

2e. Key Quotations

- 'Half a league, half a league, / Half a league onward.'
- 'Jaws of Death... mouth of Hell'
- 'Stormed at with shot and shell'
- 'Cannon to the left of them, / Cannon to the right of them, / Cannon in front of them.'
- 'Honour the Light Brigade, / Noble six hundred!'

3. Bayonet Charge by Ted Hughes

3a. Content and Meaning

- Describes the terrifying experience of 'going over the top': leaving a trench to charge directly at the enemy.
- Steps inside the body and mind of the speaker to show how this act transforms a soldier Hughes dramatises the struggle between a man's thoughts and actions.

3b. Context and Purpose

- Most- likely set in WWI.
- Hughes' father had survived WWI, and so he may have been drawing attention to the hardships of trench warfare.
- He draws a contrast between the idealism of patriotism and the reality of fighting and killing. ("King, honour, human dignity, etcetera")

3c. Language

- 'Patriotic tear... Sweating like molten iron': sense of duty turned into fear/ pain.
- 'Cold clockwork': plosive alliteration - soldier as part of a cold and uncaring machine of war.
- 'Yellow hare': impact of war on nature – the hare is distressed like the soldiers; sometimes seen as an omen of death in folklore.
- 'King, honour, human dignity, etcetera.' list and dismissive tone trivialises reasons for going to war – these are forgotten in the midst of battle.

3d. Structure and Form

- Begins 'in medias res': in the middle of the action, to convey shock and pace.
- Enjambment maintains momentum.
- Time stands still in the second stanza to convey the soldier's bewilderment and reflective thoughts. "His foot hung like statuary in midstride.": the caesura (full stop) jolts him back to reality.
- Shifts between the chaotic imagery of battle with the internal thoughts of the soldier = adds to the confusion.

3e. Key Quotations

- 'Suddenly he awoke and was running.'
- 'The patriotic tear that had brimmed in his eye sweating like molten iron'
- 'In what cold clockwork of the stars and the nations was he the hand pointing that second?'
- 'A yellow hare that rolled like a flame.'
- 'King, honour, human dignity, etcetera.'

Year 11 Learning Cycle 1 English - GCSE Anthology Power and Conflict War Poems (Literature Paper 2, Section B)

4. War Photographer by Carol Ann Duffy

4a. Content and Meaning

- Tells the story of a war photographer developing photos at home in England. As a photo develops he begins to remember and reflect on the horrors of war - painting a contrast to the safety of his dark room and his home.
- He appears to be returning to a warzone at the end of the poem.

4b. Context and Purpose

- Duffy conveys both the brutality of war and the indifference of those who might view the photos in newspapers and magazines: those who live in comfort and are unaffected by war.
- Inspired to write this poem by her friendship with a war photographer, Duffy explores the challenge faced by these people whose job requires them to record terrible events without being able to directly help their subjects.
- The location is ambiguous and therefore universal.

4c. Language

- 'Spools of suffering set out in ordered rows': sibilance, adjective 'ordered' suggesting he is trying to organise and settle his thoughts, impose order on chaos
- 'He has a job to do': like a soldier, the photographer has a sense of duty.
- 'Running children in a nightmare heat': emotive imagery with connotations of hell.
- 'A half-formed ghost': metaphor highlights the death of the man; suggests he is haunted by the memory (PTSD?)
- 'Blood stained into a foreign dust': lasting impact of war.

4d. Structure and Form

- Final line – "he earns a living and they do not care": pronoun 'they' is ambiguous – it could refer to readers or the wider world, sense of frustration.
- Enjambment – reinforces the sense that the world is out of order and confused.
- Rhyme reinforces the idea that he is trying to bring order to a chaotic world – to create an understanding.
- Contrasts: imagery of rural England and nightmare war zones.

4e. Key Quotations

- 'Spools of suffering set out in ordered rows'
- 'Fields which don't explode beneath the feet of running children in a nightmare heat.'
- 'A half-formed ghost'
- 'Blood stained into a foreign dust'
- 'He earns a living and they do not care.'

5. Poppies by Jane Weir

5a. Content and Meaning

- A modern poem that offers an alternative interpretation of bravery in conflict; it focuses on a soldier's mother who is left behind and must cope with his possible death.
- The narration covers her visit to a war memorial, interspersed with images of the soldier's childhood and his departure for war.

5b. Context and Purpose

- Set around the time of the Iraq and Afghan wars, but the conflict is deliberately ambiguous to give the poem a timeless relevance to all mothers and families.
- There are hints of criticism of war, how soldiers can become intoxicated by the glamour or the military and the grief of loved ones after death.

5c. Language

- Contrasting semantic fields of home and childhood ('cat hairs', 'play at being Eskimos', 'bedroom') with war and injury ('blockade', 'bandaged', 'reinforcements')
- Aural (sound) imagery and metaphor: 'All my words flattened, rolled, turned into felt' shows pain and inability to speak, and 'I listened, hoping to hear your playground voice catching on the wind' shows longing for dead son.
- 'The world overflowing like a treasure chest' – simile suggests excitement and optimism of soldier, irony – son's life might end prematurely.

5d. Structure and Form

- This is an elegy, a poem of mourning.
- Strong sense of form despite the free verse, stream of consciousness.
- Addressing her son directly – poignant.
- Many lines include caesura – she is trying to remain composed, but cannot speak fluently as she is finding her emotions difficult to manage.

5e. Key Quotations

- 'Spasms of paper red, disrupting a blockade of yellow bias binding.'
- 'All my words flattened, rolled, turned into felt / slowly melting.'
- 'Released a song bird from its cage.'
- 'The world overflowing like a treasure chest'
- 'I listened, hoping to hear your playground voice catching on the wind.'

6. Kamikaze by Beatrice Garland

6a. Content and Meaning

- This poem explores a kamikaze pilot's journey towards battle, his decision to return, and how he is shunned when he returns home.
- As he looks down at the sea, the beauty of nature and memories of childhood make him decide to turn back.

6b. Context and Purpose

- In World War 2, Japanese Kamikaze pilots would fly manned missiles into targets such as ships.
- Cowardice or surrender was a great shame in wartime Japan; to surrender meant shame for you and your family, and rejection by society.

6c. Language

- The Japanese word 'kamikaze' means 'divine wind' or 'heavenly wind'.
- 'Powerful incantations' – incantations
- 'Dark shoals of fish flashing silver': sibilance and visual image links to a Samurai sword – conveys the conflict between his love for nature/life and his sense of duty.
- 'They treated him as though he no longer existed' - cruel irony – he chose to live but now must live as though he is dead.

6d. Structure and Form

- Narrative and speaker is third person, representing the distance between her and her father, and his rejection by society.
- Only full stop is at the end of stanza five: he has made his decision to turn back.
- Final two stanzas in italics, represent the consequence of his decision: his life has shifted and will no longer be the same.
- Moving final lines – shame and regret.

6e. Key Quotations

- 'A shaven head full of powerful incantations.'
- 'Dark shoals of fish flashing silver'
- 'Buil.'
- 'They treated him as though he no longer existed.'
- 'He must have wondered which had been the better way to die.'

Year 11 Learning Cycle 1 English - An Inspector Calls (Literature Paper 2, Section A)

1. Plot

1a. ACT ONE

1. The Birling family live in a **'fairly large suburban house'** and, at rise of curtain, they are **'pleased with themselves'**.
2. Birling remarks awkwardly that **'it's a pity Sir George and – er – Lady Croft can't be with us'**.
3. Gerland presents Sheila with an engagement ring and she exclaims, **'Oh – it's wonderful!'**
4. Birling makes predictions about the future; he says, **'we're in for a time of steadily increasing prosperity'**.
5. Birling is unrepentant about his role in the suicide of Eva Smith, remarking that **'it's a free country'**.
6. Eric disagrees by saying that **'it isn't if you can't go and work somewhere else'**.
7. Eva does manage to find another job because **'Milwards suddenly found themselves short-handed'**.
8. Sheila feels deeply guilty about using her influence to get Eva sacked; she says that **'if I could help her now, I would –'**.
9. The Inspector reveals that Eva changed her name to Daisy Renton, which prompts Gerald to ask **'[startled] what?'**
10. Gerald asks Sheila not to tell the Inspector about his relationship with Daisy; he says, **'we can keep it from him'**.

1b. ACT TWO

1. Gerald tries to deter Sheila from staying to witness the questions and answers that are **'bound to be unpleasant'.**
2. Mrs Birling notes Eric's absence and remarks that he **'seems to be in an excitable silly mood'**.
3. Gerald concedes to the Inspector that he met the **'quite different'** and **'young and pretty'** Daisy in the disreputable Palace Bar.
4. Gerald says that he 'broke it off' with her before he went away for **'several weeks'** on business.
5. The Inspector reveals that Daisy kept a diary, in which she wrote that **'she felt there'd never be anything as good again for her'**.
6. Obviously upset, Gerald excuses himself and leaves; however, he says, **'I'm coming back'**.
7. Mrs Birling claims that she **'did nothing I'm ashamed of or that won't bear investigation'**.
8. She refused Eva charity money, stating that it is the father's **'responsibility'** to support her.
9. Mrs Birling defiantly says, **'I blame the young man who was the father of the child she was going to have'**.
10. When it is implied that Eric is the father, Mrs Birling becomes agitated and says, **'I won't believe it'**.

1c. ACT THREE

1. Eric says bitterly to his mother that **'you haven't made it any easier for me'**.
2. Eric admits that he was **'a bit squiffy'** when he met Eva and **'was in that state when a chap easily turns nasty'**.
3. He saw Eva again; he **'liked'** her, but **'wasn't in love with her or anything'**.
4. Eric tells the Inspector that Eva **'didn't want me to marry her'**.
5. Eric admits to taking money from his father; Birling reacts angrily and says that Eric has been **'spoilt'**.
6. As the Inspector prepares to leave, he highlights to the Birlings and Gerald that each of them **'helped to kill'** Eva.
7. He asks them to remember that **'there are millions and millions and millions of Eva Smiths and John Smiths still left with us'**.
8. The Inspector leaves and Birling says that he is **'absolutely ashamed'** of Eric; Eric says that he is **'ashamed'** of his father **'as well'**.
9. Birling believes that he and the rest of the family were **'bluffed'**; he later confidently concludes that the Inspector was a **'fake!'**
10. The play ends with Birling reporting that **'a police inspector is on his way here – to ask some – questions'**.

2. Characters

2a. Inspector Goole

- ✓ Priestley's mouthpiece
- ✓ Commanding
- ✓ Persuasive
- ✓ Didactic
- ✓ Social justice and reform
- ✓ Socialist
- ✓ Omnipotent

2b. Mr Arthur Birling

- ✓ Capitalist
- ✓ Arrogant
- ✓ Verbose
- ✓ Stubborn
- ✓ Ignorant
- ✓ Industrialist

2c. Mrs Sybil Birling

- ✓ Judgmental
- ✓ Old money
- ✓ Condescending
- ✓ Traditional, etiquette
- ✓ Insincere
- ✓ Controlling

2d. Sheila Birling

- ✓ Astute
- ✓ Materialistic
- ✓ Emotional
- ✓ Compassionate
- ✓ Transformed
- ✓ Empowered

2e. Eric Birling

- ✓ Irresponsible
- ✓ Spoilt
- ✓ Product of his environment
- ✓ Reckless
- ✓ Immature
- ✓ Transformative

2f. Gerald Croft

- ✓ Aristocratic
- ✓ Secretive
- ✓ Duplicitous
- ✓ Privileged
- ✓ Evasive
- ✓ Emotional

2g. Eva Smith/Daisy Renton

- ✓ Working class
- ✓ Determined
- ✓ Oppressed and mistreated
- ✓ Vulnerable
- ✓ Allegorical
- ✓ Emblematic

Year 11 Learning Cycle 1 English - An Inspector Calls (Literature Paper 2, Section A)

3. Context

3a. J.B. Priestley Priestley was born into a working class family who lived in Bradford, Yorkshire. It was here that he noticed that many people lived in poverty and the city's 'respectable' folk could be smug, even hypocritical. He fought for England in WWI and witnessed the social inequalities present amongst the commanding officers and the lower ranking soldiers. Priestley held a strong socialist political view and was part of a group that set up the socialist Common Wealth Party in 1942. During WWI he delivered his 'Postscripts' radio broadcasts, calling for a better, fairer society after the war was over.

3b. Women in Edwardian and post-war England At the start of the C20th, women had very conventional roles in society. The Edwardian period was a patriarchal one. If married, women usually stayed at home to look after children while their husband worked. If single, they did work which usually involved some form of service. During the world wars, women were required to work, as men were called up to fight. Women were praised for their wartime work but expected to make way for the returning troops; there was an assumption that their temporary roles had been specifically linked to wartime. By 1951 the number of working women had returned almost to the pre-war level and a bar on married women working continued in many jobs.

3c. Edwardian society and social norms There was a big divide between the rich and the poor, unwritten rules maintaining the status quo. The rich often perceived poor people to have no manners or sophistication, and there was a very low level of social mobility (very few working class people would be able to become middle class).

3d. The Great Unrest Between 1911 and 1914, Britain and Ireland were rocked by a series of mass strikes of miners, railway, dock, and tramway workers, as well as those from other industries that went on solidarity strikes.

3e. Post-war Britain Following the end of WWII, the majority of the British people, did not want a return to pre-war Conservative policies, which they blamed for the hardship of the 1930s, and there was a mood for social reform. At the 1945 general election, Winston Churchill was defeated by the Labour Party headed by Clement Attlee. A welfare state (a society in which the government provides services like healthcare, financial help for those who need it) was established and in 1948 the NHS founded.

4. Authorial Intent

J.B. Priestley wrote this didactic play for a number of reasons...

4a. To encourage... his audience to considers its own attitude towards the working and middle classes, entrepreneurs and gender issues.

4b. To expose... the hypocrisy and double standards of certain strands of Edwardian society.

4c. To refute... Capitalist ideologies and highlight the exploitative nature of Capitalist societies.

4d. To warn... of the terrifying consequences of forsaking social responsibility and neglecting the needs of those who are less fortunate

4e. The text is relevant today as... social inequality, prejudice and injustice still affect many people in modern Britain, as evidenced by the cost-of-living crisis and the rising number of people accessing food banks.

5. Vocabulary

5a = ostentatious (adj) Characterized by pretentious or showy display

5b = condescending (adj) Having or demonstrating an attitude of patronizing superiority

5c = patriarchy (noun) A system of society in which men hold the power and women are largely excluded from it.

5d = privileged (adj) Granted a special right, advantage, or immunity available only to a particular person or group

5e = culpable (adj) Deserving of blame

5f = avarice (noun) Extreme greed

5g = disparage (verb) To speak down to another in an insulting and rude manner

5h = infantile (adj) Acting like or likened to a young child

5i = objectify (verb) To degrade something or someone to the status of a mere object

5j = didactic (adjective) Intended to teach, or to improve morals by teaching

5k = remorseful (adjective) Full of regret for something they have done; sorry for past actions

5l = ignorant (noun) Lacking knowledge or awareness of something.

5m = oppressed (adjective) treated in an unfair or cruel way, preventing someone from having opportunities and freedom

5n = unashamedly (adverb) Openly, without guilt or embarrassment

5o = Socialism (noun) The belief that ways of making money and wealth should be shared more equally in society.

5p = Capitalism (noun) The belief that ways of making money and wealth should in control of individuals and people should be able to control how much profit they earn.

5q = plight (noun) A difficult or unfortunate position; struggle.

Year 11 Learning Cycle 1 English - An Inspector Calls (Literature Paper 2, Section A)

6. Subject Vocabulary

6a = play (noun) In literature, a dramatic work designed to be performed on stage.

6b = allegory A story that can be interpreted to reveal a hidden meaning, typically a moral or political one

6c = morality play (noun phrase) An allegorical drama popular in Europe especially during the C15th and C16th, in which the characters personify moral qualities (such as charity or greed).

6d = act (noun) A section of a play.

6e= stage direction (noun phrase) An instruction in the text of a play how an actor moves or speaker, or the sound effects, props and lighting

6f = prop (noun) An object used on the set of a play.

6g =polemic (noun) a piece of writing expressing a strongly critical attack someone or something.

6h = dramatic irony (noun phrase) A point in a play at which the audience of a play knows something that the characters do not know.

6i = context (noun) The circumstances surrounding writing; social issues, historical events, author's background and beliefs, and how they influence a writer's choices

6j = characterisation (noun) A method used by writers to create and craft characters.

6k = foil (noun) A character who contrasts with another

6l = symbol (noun) A character, idea, image or setting that represents a bigger idea

6m = imagery (noun) The use of language to create vivid pictures in the readers' minds

6n = metaphor (noun) Comparing one thing to another directly – as if one thing is another – to highlight their similarities.

6o = simile (noun) Comparing one thing to another using the words 'like' or 'as', to highlight their similarities.

6p = irony (noun) A situation in which something which was intended to have a particular result has the opposite or a very different result.

7. Themes

7a. Wealth, power and influence The Birlings are a family of wealth and power, who take pride in their high social position. Mr Birling is a successful businessman, and the family inhabits a nice home with a maid (and likely other servants). The play begins with the family celebrating and feeling generally pleased with themselves and their fortunate circumstance. Throughout the Inspector's investigation, however, it comes out that several of the Birlings have used their power and influence immorally, in disempowering and worsening the position of a girl from a lower class: Mr. Birling used his high professional position to force Eva Smith out of his factory when she led a faction of workers in demanding a raise; Sheila, in a bad temper, used her social status and her family's reputation to have the girl fired from Milward's; Mrs. Birling used her influence in the Women's Charity Organization to deny the girl monetary aid. Both Sheila and Mrs. Birling acted upon petty motivations in injuring the girl; Mr. Birling acted upon selfish, capitalist motivations.

7b. Blame and Responsibility The question asked throughout the play is: who is responsible for the suicide of Eva Smith? Who is to blame? The arc of the play follows the gradual spreading of responsibility, from Mr. Birling, to Mr. Birling and Sheila, to Mr. Birling and Sheila and Gerald, and so on and so forth. Each of the characters has different opinions about which of them is most responsible for the girl's suicide. Mrs. Birling, most extremely, ends up blaming her own son, by suggesting that the person most responsible is the man that impregnated the girl, before realizing that the person in question is Eric.

In the end, the Inspector universalizes the shared responsibility that the Birlings feel for the girl's death, into a plea for something like Socialism: "We are members of one body. We are responsible for each other. And I tell you that the time will soon come when if men will not learn that lesson, then they will be taught it in fire and blood and anguish." The lesson of the Inspector, and of the play at large, is that our actions have an influence beyond themselves and therefore that we are already responsible for each other so long as we are responsible for ourselves and our own actions.

7c. Class Politics Mr. Birling describes the politics of the day as revolving around "Capital versus Labor agitations." Mr. Birling is a representative Capitalist, who cares only about his company's profit. He speaks of himself as "a hard-headed, practical man of business," and looks forward to the prospect of being knighted. The girls who lead a worker's strike in his factor, meanwhile, represent the Labor side of the conflict in trying to improve the rights and wages of laborers and the lower classes.

The Inspector speaks the voice of Socialism, of the Labour side of the conflict; he seeks to make the Birlings realise the implicit corruption of Capitalism by emphasizing how easy it was for them to cause pain for the lower class without even realizing at the time the significance of their own actions.

7d. Age Age is an important theme in An Inspector Calls. Priestley uses it to show how he believed that there was hope in the younger generation's ability to learn and change.

The older characters' opinions and behaviours are stubbornly fixed. Mr Birling refuses to learn and Mrs Birling cannot see the obvious about herself and her children. Eric and Sheila however are younger - they accept their mistakes and offer the chance for a brighter future.

7e. Gender An Inspector Calls was written after World War Two. As many British men went away to fight during the war, their positions in work had to be filled by women. This helped change existing perceptions. Men had to acknowledge the fact that women were just as capable as them. As a result of this, many women enjoyed a newfound freedom that working and earning money allowed them.

Not all men saw this change in attitude as a good thing and stayed stuck in the past. Priestley explores the impact of these new gender roles through the independence of Eva Smith and the sexist attitudes of Mr. Birling and Alderman Meggarty.

Year 11 Learning Cycle 1 English - An Inspector Calls (Literature Paper 2, Section A)

8. Key Quotations and Methods

8a. "The lighting should be pink and intimate until the INSPECTOR arrives, and then it should be brighter and harder." Stage directions, contrast – the Inspector will bring about change in the family, altering some of the characters' world view by removing their 'rose-tinted spectacles' and expose their flaws.

8b. "When you're married you'll realise that men with important work to do sometimes have to spend nearly all their time and energy on their business." Mrs Birling Patronising tone imparts patriarchal values maintained by Mrs Birling's traditional values.

8c. "Lower costs and higher prices." Mr Birling contrast highlights Mr Birling's capitalist ideology, increasing his own profit and wealth.

8d. "The Titanic... unsinkable, absolutely unsinkable." Mr Birling Dramatic irony – Mr Birling presented as ignorant, foolish and untrustworthy from the outset.

8e. "As if we were all mixed up together like bees in a hive – community and all that nonsense." Simile and contemptuous tone – derides socialist values, collective responsibility.

8f. "This girl. Eva Smith, was one of them, she'd had a lot to say – far too much – so she had to go." Mr Birling Repeated pronoun 'she' and blunt tone; Mr Birling aware of his power and control as employer. Lack of workers' rights. Gender – females oppressed in patriarchal Edwardian England.

8g. "But these girls aren't cheap labour – they're people." Sheila Transforming attitudes, taking on board socialist ideology.

8h. "You used the power you had, as a daughter of a good customer and also of a man well known in the town, to punish the girl?" Inspector Goole Question highlights Sheila's selfishness and ignorance, but also as a product of her upbringing. Forces her to question her immoral actions. Verb 'punish' – power imbalance.

8i. "I know I'm to blame – and I'm desperately sorry." Adverb 'desperately', Sheila as emotional and remorseful.

8j. "I don't suppose for a moment that we can understand why the girl committed suicide. Girls of that class." Mrs Birling Supercilious tone – creates a divide between her affluent upper-middle class family and the working class.

8k. "I insisted on Daisy moving into those rooms and I made her take some money." Gerald Verbs suggest Gerald took control of the situation, perhaps taking advantage of a vulnerable girl.

8l. "(massively) Public men, Mr Birling, have responsibilities as well as privileges." Inspector Goole Stage direction highlights importance of this message. Abstract noun 'responsibilities' conveys Priestley's socialist message – compassion and care for those less fortunate.

8m. "You slammed the door in her face." Inspector Goole Metaphor highlights how cruel and uncompromising Mrs Birling's treatment of Eva Smith was.

8n. "" She was here alone, friendless, almost penniless, desperate. She needed not only money but advice, sympathy, friendliness." List of emotive adjectives augments Eva's plight.

8o. "I was in that state when a chap easily turns nasty – and I threatened to make a row." Eric Connotations of violence. Affluent male abusing their power.

8p. "One Eva Smith has gone – but there are millions and millions and millions of Eva Smiths and John Smiths still left with us." Inspector Goole Repetition highlights the sheer number of struggling working class people. Eva Smith and John Smith symbols of the poorest and most vulnerable in society.

8q. "We don't live alone. We are members of one body. We are responsible for each other." Metaphor captures Priestley's socialist message.

8r. "(triumphantly)" Mr Birling." Stage direction and adverb. Mr Birling believes – ironically – that he has been victorious over the Inspector.

8s. "(tensely) I want to get out of this. It frightens me the way you talk." Stage direction and troubled tone, reveals how much Sheila has changed. Divide in the family.

8t. "(The telephone rings sharply)" Stage direction and adverb – jolts the Birlings back to reality. Circular structure – no escape from punishment. Ouspensky's theory of time.

Year 11 Learning Cycle 1 English - Unseen Poetry Part 1 (Analysis) and Part 2 (Comparison) (Literature Paper 2, Section C)

1. How to Approach an Unseen Poem – SMILE!

Include all of the following in your answer:

S Structure	What is interesting about **line length** or **stanza length**? How does the poem **begin** and **end**? How does the poet use **punctuation marks** (or lack of!)?
M Meanings and messages	What is the poem **about**? Who or what does it focus on? What **idea**(s) are most important?
I Imagery	What are the most important **images** in the poem? How do they support the poet's idea(s)?
L Language	Which **words** are most important? What are their **meanings** and **connotations**? Has the writer used any **similes, metaphors or personification**? Are their **sounds** important? What **tone** does the poet adopt?
E Effects	What does the poet want the reader to **think about** or **realise**? What do they want the reader to **imagine, picture** or **feel**? How do they want us to **respond**?

2. Writing Your Answer

Introduction summarising the poet's ideas, meanings and messages.

Then, **extended what, how, why paragraphs**.

WHAT is the writer saying about the main protagonist (character)/ theme/ setting?

HOW are they revealing information and creating effects for the reader? Quotation? Language methods?

WHY have they chosen to do this? Purpose?

3. Verbs for Analysis

conveys
presents
asserts
indicates
depicts
suggests
implies
alludes to
connotes
highlights
emphasises
underlines
reiterates
evokes
conjures
establishes
compares
contrasts
juxtaposes
mirrors
reflects
parallels
adumbrates

4. Subject Vocabulary

4a = poem (noun) a piece of writing in which the words are arranged in separate lines and are chosen for their beauty and sound.

4b = stanza (noun) A group of lines in a poem; a verse.

4c = language (noun) words or methods (techniques) used by writers to present their meanings or create effects.

4d = tone (noun) The attitude a writer shows towards a topic using words.

4e = imagery (noun) The use of language to create vivid pictures in the readers' minds.

4f = structure (noun) The way the poet has organised the poem on the page, including stanza length, line length, title and ending.

4g = connotations (noun) A feeling or idea that is suggested by a particular word.

4h = noun (noun) a word that refers to a person, place, thing, event, substance, or idea e.g cat, Christmas.

4i = abstract noun (noun phrase) a word that identifies a feeling or state of being e.g. love, peace.

4j = verb (noun) a word or phrase that describes an action, condition, or experience e.g. run, am

4k = adverb (noun) a word that adds to a verb, adjective or adverb to give more information e.g. quickly, spotlessly, often

4l = adjective (noun) a word that describes a noun or pronoun e.g. tall, beautiful

4m = superlative (noun) the most extreme form of an adjective e.g. calmest, loudest

4n = personification (noun) giving inanimate (not living) things human qualities or abilities

4o = simile (noun) An expression including the words "like" or "as" to compare one thing with another

4p = metaphor (noun) Comparing one thing to another directly – as if one thing is another – to highlight their similarities.

4q = extended metaphor (noun phrase) a comparison of two things using a number of examples to highlight the similarities

4r = symbol (noun) A character, idea, image or setting that represents a bigger idea

4s = alliteration (noun) repetition of a letter sound in a series of words

4t = sibilance (noun) repetition of the letter sound 's' in a series of words

4u = plosive sounds (noun phrase) harsh, abrupt letter sounds e.g. d, t, k

4v = enjambment (noun) No punctuation at the end of a line of poetry.

4w = caesura (noun) Punctuation in the middle of a line of poetry.

4x = rhyme (noun) the repetition of identical syllables sounds in different words, often at the ends of lines

4y = rhythm (noun) he beat and pace of a poem and is created by the pattern of stressed and unstressed syllables

Year 11 Learning Cycle 1 Maths

1.Number

Topic	Topic Code	Rag Rating		
		R	A	G
Ordering positive integers	U600			
Ordering decimals	U435			
Ordering negative numbers	U947			
Adding and subtracting positive integers	U417			
Multiplying and dividing positive integers	U127, U453			
Adding and subtracting negative numbers	U742			
Multiplying and dividing negative numbers	U548			
Adding and subtracting decimals	U478			
Multiplying and dividing with place value	U735			
Multiplying and dividing with decimals	U293, U868			
Order of operations	U976			
Prime numbers, prime factorisation	U236, U739			
Factors, multiples, HCF and LCM	U211, U751, U529			
Powers and roots	U851			
Using standard form	U330, U534			
Calculating with standard form	U264, U290, U161			
Equivalent fractions and simplifying fractions	U704, U646			
Mixed numbers and improper fractions	U692			
Ordering fractions	U746			
Addition and subtraction of fractions	U736, U793			
Multiplication and division of fractions	U475, U544			
Converting and ordering fractions, decimals and percentages	U888, U594			
Fractions of amounts	U881, U916			
Percentages of amounts	U554, U349			
Percentage change	U773, U671			
Reverse percentages	U286, U278			
Simple interest	U533			
Rounding	U480, U298			
Rounding to significant figures	U731, U965			
Estimating answers	U225			
Value for money	M681			

2. Statistics

Topic	Topic Code	Rag Rating		
		R	A	G
Collecting data, frequency tables	U322, U120			
Two-way tables	U981			
Bar charts	U363, U557			
Pictograms	U506			
Pie charts	U508, U172			
Stem and leaf diagrams	U200, U909			
Mode	U260			
Mean	U291			
Median	U456			
Range	U526			
Choosing averages	U717			
Scatter graphs	U199, U277, U128			

3. Ratio and proportion

Topic	Topic Code	Rag Rating		
		R	A	G
Simplifying ratios	U687			
Sharing amounts in a ratio	U753, U577			
Converting between ratios, fractions and percentages	U176			
Direct proportion	U721, U640			
Inverse proportion	U357, U364			
Proportion graphs	U238			
Units of measure: Length, Mass and Capacity	U102, U388			
Units of measure: Time	U902			
Units of measure: Area	U248			
Currency conversion	U610			
Conversion graphs	U652, U638, U862			
Compound units: Speed	U151			

Year 11 Learning Cycle 1 Maths

4.Probability

Topic	Topic Code	Rag Rating		
		R	A	G
Probability scale	U803			
Probability of single events	U408, U510, U683			
Experimental probability	U580			
Expected outcomes	U166			
Listing elements in a set	U748, U296			
Probability from Venn diagrams	U4765			
Frequency trees	U280			
Sample space diagrams	U104			
Tree Diagrams	U558, U729			

5. Algebra

Topic	Topic Code	Rag Rating		
		R	A	G
Algebraic expressions	U322, U120			
Collecting like terms	U981			
Substitution	U363, U557			
Expanding brackets	U506			
Factorising expressions	U508, U172			
Index laws	U200, U909			
Changing the subject	U260			
Coordinates	U291			
Midpoints	U456			
Plotting straight line graphs	U526			
Equations of straight line graphs	U717			
Parallel lines	U199, U277, U128			
Distance-time graphs	U199, U277, U128			
Quadratic graphs	U199, U277, U128			
Linear equations	U199, U277, U128			
Quadratic expressions and equations	U199, U277, U128			
Linear sequences	U199, U277, U128			
Other sequences	U199, U277, U128			

6. Geometry

Topic	Topic Code	Rag Rating		
		R	A	G
Properties of 2D shapes	U121, U849			
Properties of 3D shapes	U719			
Nets of 3D shapes	U761			
Angles: Measuring, Drawing and Estimating	U447			
Angle on a line and about a point	U390			
Vertically opposite angles	U730			
Angles on parallel lines	U826			
Angles in a triangle	U628			
Combining angle facts	U655			
Angles in a quadrilateral	U732, U329			
Angles in polygons	U427			
Bearings	U525, U107			
Translations	U196			
Reflections	U799			
Enlargements	U519			
Rotations	U696			
Congruence	U790, U866			
Area and perimeter of simple shapes	U993, U970, U351, U226			
Area of triangles, parallelograms and trapeziums	U945, U575, U424, U265, U343			
Circles	U767			
Circumference	U604, U221			
Circle area	U950, U373			
Surface area	U929, U259, U871			
Volume of cuboids	U786			
Volume of prisms and cylinders	U174, U915			
Similar shapes	U551, U578			
Scale diagrams	U257			

Year 11 Learning Cycle 1 Maths

1.Number

Topic	Topic Code	Rag Rating		
		R	A	G
Calculating with roots and fractional indices	U851, U985, U772, U299			
Converting recurring decimals to fractions	U689			
Surds	U338, U663, U872, U499			
Rationalising the denominator	U707, U281			
Error intervals	U657, U301, U587			

2. Statistics

Topic	Topic Code	Rag Rating		
		R	A	G
Averages	U877, U717			
Cumulative frequency diagrams	U182, U642			
Box plots	U879, U837, U507			
Frequency polygons	U840			
Histograms	U814, U983, U267			
Capture-recapture	U328			

3. Probability

Topic	Topic Code	Rag Rating		
		R	A	G
Product rule for counting	U369			
Conditional probability	U246, U821, U806			
Probability from Venn diagrams	U476, U748, U699			

4. Ratio and proportion

Topic	Topic Code	Rag Rating		
		R	A	G
Congruence proofs	U866, U887			
Enlargements	U134			
Describe combined transformations	U766			
Circle theorems: Angles inside a circle	U459, U251			
Circle theorems: Tangents and chords	U489, U130			
Circle theorems problems	U808			
Prove circle theorems	U807			
Volume of frustums	U350			
Volume: Problem solving	U543, U426			
Similar Shapes: Area and volume	U630, U110			
Pythagoras' Theorem in 2D and 3D	U385, U541			
Right-angled trigonometry: Problem solving	U319, U283, U545, U967			
3D trigonometry	U170			
The area rule	U592			
Sine rule	U952			
Cosine rule	U591			
Trigonometry and bearings	U164			
Vectors problems	U781, U560			

5. Algebra

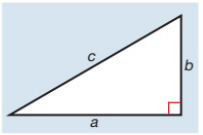
Topic	Topic Code	Rag Rating		
		R	A	G
Expanding triple brackets	U877, U717			
Operations with algebraic fractions	U182, U642			
Factorising quadratic expressions: ax^2+bx+c	U879, U837, U507			
Simplifying algebraic fractions	U840			
Factorising to solve quadratics equations	U814, U983, U267			
Using the quadratic formula	U328			
Completing the square to solve quadratics				
Quadratic equations in context	U877, U717			
Quadratic simultaneous equations	U182, U642			
Index laws	U879, U837, U507			
Equation of a straight line: Perpendicular lines	U840			
Quadratic graphs: Turning points	U814, U983, U267			
Quadratic simultaneous equations on graphs	U328			
Exponential graphs				
Exponential growth and decay problems	U877, U717			
Trigonometric graphs	U182, U642			
Graph transformations	U879, U837, U507			
Velocity-time graphs	U840			
Rate of change graphs	U814, U983, U267			
Estimating gradient from a curve	U879, U837, U507			
Estimating area under a curve	U840			
Equation of a circles and tangents	U814, U983, U267			
Linear inequalities as graph regions	U814, U983, U267			
Quadratic inequalities	U814, U983, U267			
Functions	U814, U983, U267			
Recurrence relations	U814, U983, U267			
Quadratic sequences	U814, U983, U267			
Iteration and numerical methods	U814, U983, U267			
Algebraic proof	U814, U983, U267			

Year 11 Learning Cycle 1 Maths - Key formulae

1. Pythagoras

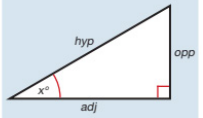
Pythagoras' Theorem

For a right-angled triangle,
$a^2 + b^2 = c^2$



Trigonometric ratios (*new to F*)

$\sin x^o = \frac{opp}{hyp}$, $\cos x^o = \frac{adj}{hyp}$, $\tan x^o = \frac{opp}{adj}$

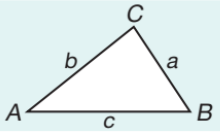


2. Trigonometric formulae

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \frac{1}{2} ab \sin C$

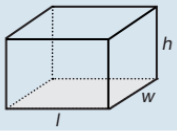


Foundation tier formulae

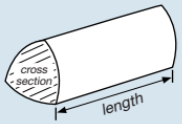
Higher tier formulae

3. Volumes

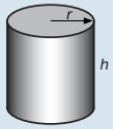
Cuboid = $l \times w \times h$



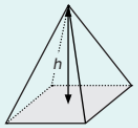
Prism = area of cross section × length



Cylinder = $\pi r^2 h$

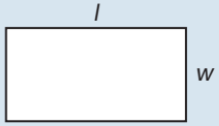


Volume of pyramid = $\frac{1}{3}$ × area of base × h

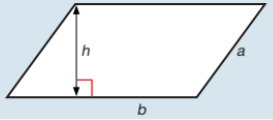


4. Areas

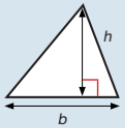
Rectangle = $l \times w$



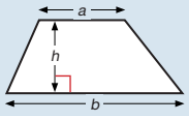
Parallelogram = $b \times h$



Triangle = $\frac{1}{2} b \times h$



Trapezium = $\frac{1}{2}(a + b)h$

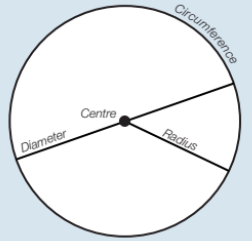


5. Circles

Circumference = $\pi \times$ diameter, $C = \pi d$

Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$

Area of a circle = π x radius squared $A = \pi r^2$



6. Compound measures

Speed

$\text{speed} = \frac{\text{distance}}{\text{time}}$

Density

$\text{density} = \frac{\text{mass}}{\text{volume}}$

Pressure

$\text{pressure} = \frac{\text{force}}{\text{area}}$

7. Quadratic equations

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$,
where $a \neq 0$, are given by $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$

Year 11 Learning Cycle 1 Maths

Command word	Meaning
Calculate	A calculator and some workings will be needed
Change	Usually convert from unit to another, either using known metric conversions of the use of a conversion graph
Complete	Fill in missing values
Describe	Write a sentence that gives the features of the situation
Draw	Produce an accurate drawing
Draw a sketch off.../Sketch	Produce a drawing that does not have to be drawn to scale or a graph that is drawn without working out each coordinate
Expand	Remove brackets
Expand and simplify	Remove brackets and collect the like terms
Explain	Write a sentence of mathematical statement to show how you got to your answer or reached your conclusion
Express	Re-write in another form, some working may be needed
Factorise	Insert brackets by taking out common factors
Factorise fully	Inset brackets by taking out all the common factors
Find	Some working will be needed to get to the final answer
Give a reason	Some working will be needed to get to the final answer
Justify	Must be clear and accurate reasons
Prove	More formal than “show”, all steps must be present. In the case of a geometrical proof, reasons must be given
Show	All workings need to get a given answer or complete a diagram to show given information
Simplify	Simplify the given expression
Solve	Simplify the given expression
Write down	No working is needed

Year 11 Learning Cycle 1 Maths - Calculator Features

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Square numbers: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

Cube Numbers : 1, 8, 27, 64, 125

Prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47...

Useful features on your calculator:

FACT: this express a number as a product of its prime factors

RATIO (menu 4): this will find missing values within equivalent ratios

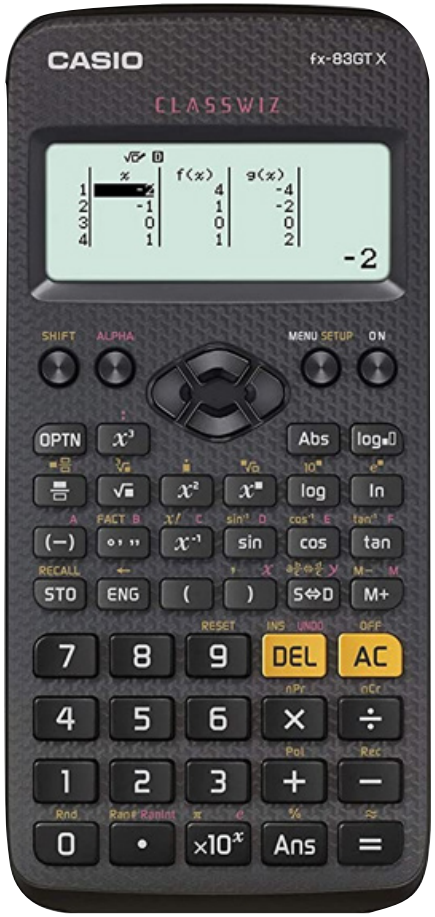
Table (menu 3): This is where you can generate values within a table- useful for plotting graphs and generating terms of a sequence

Statistics (menu 2): this will find all of the averages from a table of data

°‘“: This Is the time button and can do conversion between time units, as well as calculations with different times

Fraction button: can be used for ay calculations with fractions

S-D: Converts decimal answers to fractions and vice vera



Sparx Maths

Homework will be set on Tuesdays and will be due on the following Tuesday morning at 7:30am

You must complete 100% of the homework- if you have not got 100% of the questions correct, then you have not done your homework

You will receive a merit for completion of your homework

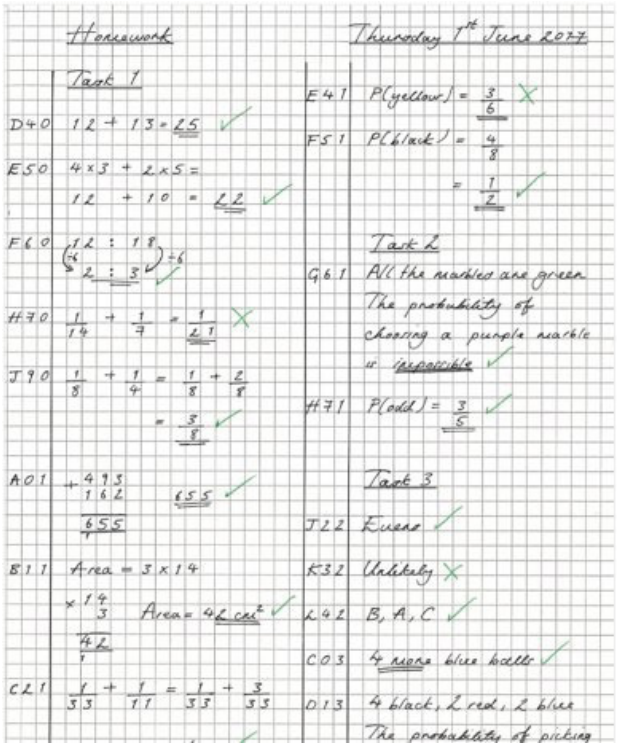
If you complete one of the extra homeworks- XP Boost or Target, you will receive another merit.- they must be 100% complete

Sparx clinics will run Monday, Tuesday, Thursday in Arc 2- where a Maths teacher will be on hand to support you, if you are unsure

It is your responsibility to seek help BEFORE the deadline, if you get stuck

Your bookwork will be checked in lessons- you must write full workings

You must bring your homework book to the first lesson after Tuesday 7:30am- if you do not have your book, then you have not completed your homework



Year 11 Learning Cycle 1 Science - How can I use the Periodic Table?

Group 1 – Alkali Metals

Group 7 – **Halogens**

Group 0 – **Noble gases**

Group number – tells you the number of **electrons** in an elements **outer** shell.

Element **symbol**
Element **name**

Mass Number = number of **protons** and **neutrons** added together.

Atomic / Proton Number = number of **protons** which is the same as the number of **electrons**.

Neutrons = Mass number – Atomic number

Elements in the **same group** have **similar properties**.

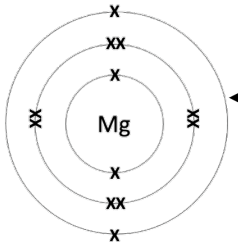
Non-Metals

Noble gases have a **full outer shell** of electrons E.g., Neon (Ne)

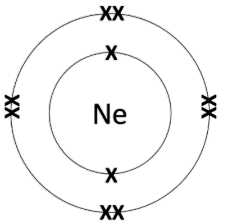
1	2										3	4	5	6	7	0
																4 He helium 2
7 Li lithium 3	9 Be beryllium 4										11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12										27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[97] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] Ac* actinium 89	[267] Rf rutherfordium 104	[270] Db dubnium 105	[269] Sg seaborgium 106	[270] Bh bohrium 107	[270] Hs hassium 108	[278] Mt meitnerium 109	[281] Ds darmstadtium 110	[281] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flerovium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[293] Ts tennessine 117	[294] Og oganesson 118

relative atomic mass
atomic symbol
name
atomic (proton) number

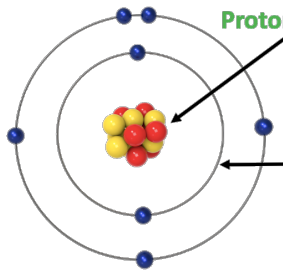
Transition Metals



Magnesium (Mg) has **12 electrons** in total. It is in **group 2** so has 2 electrons in its **outer** shell. Mg's electronic configuration is 2,8,2.



Subatomic Particle	Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	Negligible	-1



Year 11 Learning Cycle 1 Science - Experiments

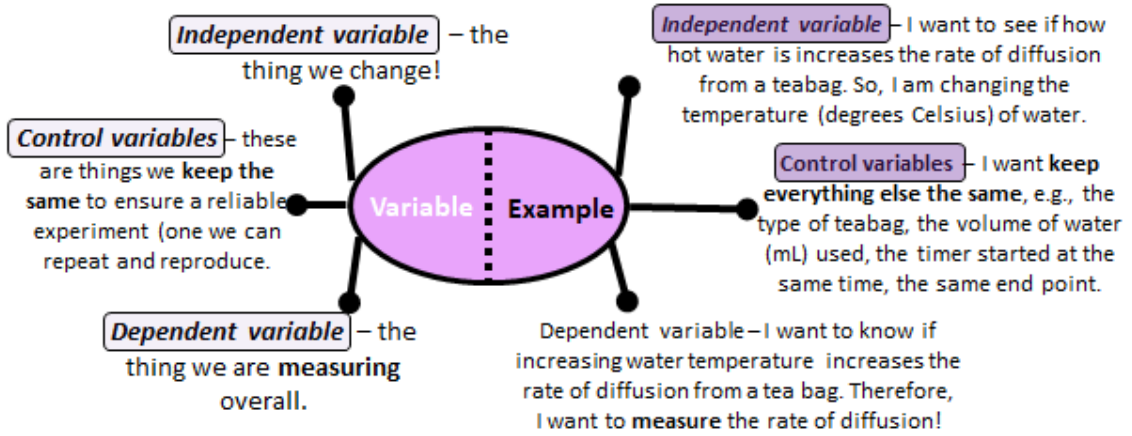
Key Terms	Description
Independent variable	The variable you change in an investigation
Dependent variable	The variable you measure in an investigation
Control variable	The variable you keep the same in an investigation
Hypothesis	A prediction of what will happen in an investigation
Reliability	We use control variables to ensure a reliable experiment
Reproducible	To re-do our experiment and get similar results due to a reliable method
Mean	Doing an experiment 3 times then dividing by 3 to get an average
Fair test	An experiment where only the independent variable changes.
Anomalous result	Result that does not fit with the rest of the data.

1. Designing and performing experiments

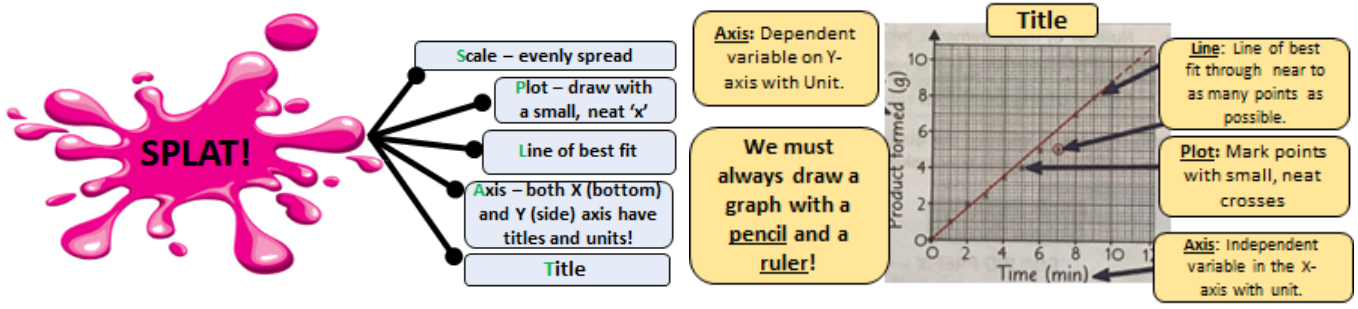
1. ***Repeatable*** – The **same** person gets the **same results** after repeating the experiment using the same method and equipment.
2. ***Reproducible*** – Similar results can be achieved by **someone else** or using a **different method**/piece of equipment.
3. ***Accurate*** – Results are close to the true answer
4. ***Precise*** – data is **close** to the **mean** (or the average!)

For data to be reliable, it must be **repeatable** and **reproducible**

2. The Variables



3. Presenting Data



Drawing conclusions from data:

1. State the **relationship** between the independent and dependent variable, e.g., **'as the time increases the product formed increases.'**
2. **Use statistics to support your answer.** 'For example, at 10 minutes there was 50g of product, compared to 160g at 20 minutes'
3. **Refer to the original hypothesis – does the data support this?**

When **evaluating** think of the **positives** and **negatives** of the method (the validity - did they use enough controls? And of the results – were results **reliable, accurate, reproducible?**) and come to an overall conclusion.

Year 11 Learning Cycle 1 Science - How can I use the Physics equation sheet?

How can I use the Physics equation sheet?

HT = Higher Tier only equations

Triple only equations

kinetic energy = 0.5 × mass × (speed)^2	$E_k = \frac{1}{2} m v^2$
elastic potential energy = 0.5 × spring constant × (extension)^2	$E_e = \frac{1}{2} k e^2$
gravitational potential energy = mass × gravitational field strength × height	$E_p = m g h$
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = m c \Delta\theta$
power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
charge flow = current × time	$Q = I t$
potential difference = current × resistance	$V = I R$
power = potential difference × current	$P = V I$
power = (current)^2 × resistance	$P = I^2 R$
energy transferred = power × time	$E = P t$
energy transferred = charge flow × potential difference	$E = Q V$
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

	thermal energy for a change of state = mass × specific latent heat	$E = m L$
	For gases: pressure × volume = constant	$p V = \text{constant}$
	weight = mass × gravitational field strength	$W = m g$
	work done = force × distance (along the line of action of the force)	$W = F s$
	force = spring constant × extension	$F = k e$
	moment of a force = force × distance (normal to direction of force)	$M = F d$
	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
HT	**pressure due to a column of liquid = height of column × density of liquid × gravitational field strength**	$p = h \rho g$
	distance travelled = speed × time	$s = v t$
	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
	(final velocity)^2 – (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2 a s$
	resultant force = mass × acceleration	$F = m a$
HT	**momentum = mass × velocity**	$p = m v$
HT	**force = $\frac{\text{change in momentum}}{\text{time taken}}$**	$F = \frac{m \Delta v}{\Delta t}$
	period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
	wave speed = frequency × wavelength	$v = f \lambda$
	magnification = $\frac{\text{image height}}{\text{object height}}$	
HT	**force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length**	$F = B I l$
HT	**$\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$**	$\frac{V_p}{V_s} = \frac{n_p}{n_s}$
HT	**potential difference across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil**	$V_p I_p = V_s I_s$

Give
Give
Want

1. What does it give you? What does it want you to calculate?
2. Do you need to rearrange?
3. Do you need to convert?
4. Include the figures
5. Do you need to put it into standard form?
6. Do you need to include the unit?
7. Do you need to give the answer in significant figures?

Year 11 Learning Cycle 1 Science - Homeostasis and response

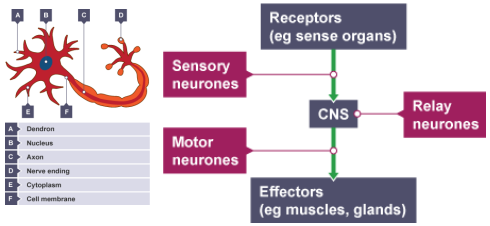
1. Key Terms	Description
Effector	The organ, tissue or cell that produces a response
Receptors	The organ, tissue or cell that produces a response
Reflex action	Automatic and rapid response to a stimulus
Stimulus	A change in environment that sets off a reaction in the nervous system, for example, light, heat, sound and smell.
Synapse	A gap at the junction between two nerve cells, which nerve signals must cross.
Gland	An organ or tissue that makes a substance for release, such as a hormone.
Hormone	Chemical messenger produced in glands and carried by the blood to specific organs in the body
Negative feedback	A mechanism where changes to conditions cause an action to reverse the change, to keep conditions stable
IVF	In vitro fertilization. This involves bringing the sperm and egg together to create an embryo, which is placed into the womb.

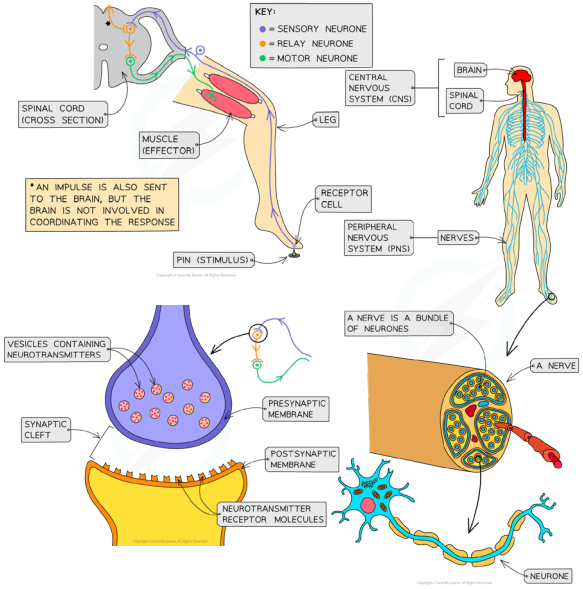
Further reading

SCAN ME

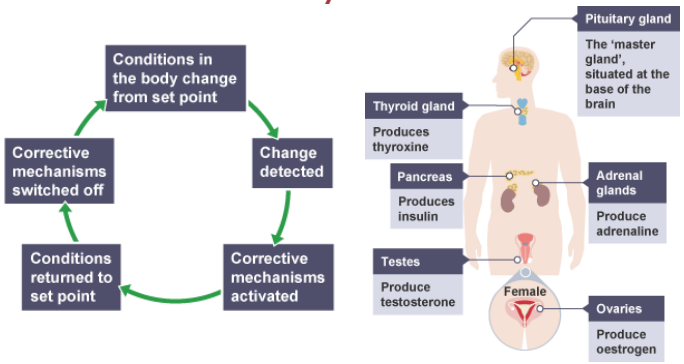
https://www.bbc.co.uk/bitesize/guides/zt2yxfr/revision/1

2. The Nervous system

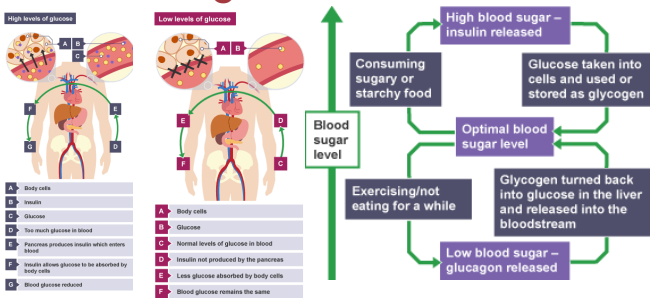




3. The endocrine system



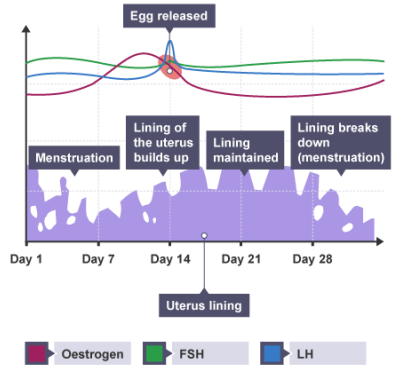
4. Glucose regulation and diabetes



Action of insulin

	Low glucose	High glucose
Effect on pancreas	Insulin not secreted into the blood	Insulin secreted into the blood
Effect on liver	Does not convert glucose into glycogen	Converts glucose into glycogen
Effect on blood glucose level	Increases	Decreases

5. Hormones in reproduction, contraception and infertility

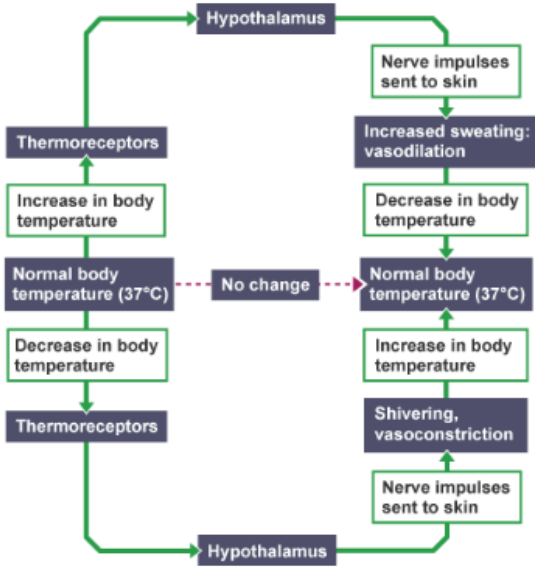


Hormone	Produced	Role
FSH (follicle stimulating hormone)	Pituitary gland	Causes an egg to mature in an ovary. Stimulates the ovaries to release oestrogen
Oestrogen	Ovaries	Stops FSH being produced (so that only one egg matures in a cycle). Repairs, thickens and maintains the uterus lining. Stimulates the pituitary gland to release LH.
LH (luteinising hormone)	Pituitary gland	Triggers ovulation (the release of a mature egg)
Progesterone	Ovaries	Maintains the lining of the uterus during the middle part of the menstrual cycle and during pregnancy.

Year 11 Learning Cycle 1 Science - Homeostasis (Triple Only)

1. Key Terms	Description
Homeostasis	The maintenance of a constant internal environment
Vasodilation	The lumen of blood vessels becomes wider, blood flow increases.
Vasoconstriction	The lumen of blood vessels becomes narrower, blood flow decreases.
Thermoregulation	The maintenance of a constant core body temperature
Negative feedback loop	A response that reverses a change in the environment
Urea	Nitrogenous waste produced from the breakdown of proteins

2. Thermoregulation

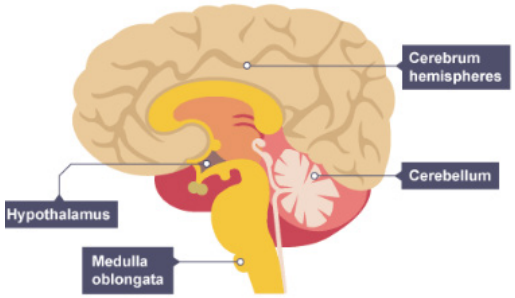


- Human core body temperature needs to be maintained at 37°C
- Too hot: vasodilation to increase heat loss from the skin
- Too cold: vasoconstriction to reduce heat loss from the skin

3. The brain

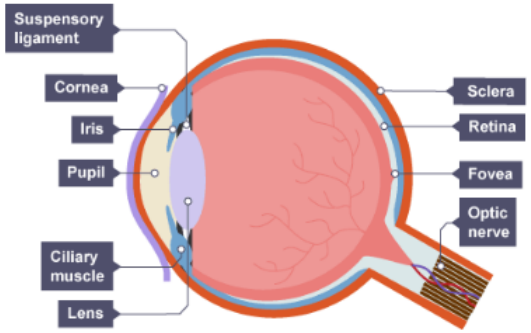
There are four main areas in the brain:

- The cerebrum (the outer layer is called the cerebral cortex), which is split into two hemispheres and is highly folded. It controls intelligence, personality, conscious thought and high-level functions, such as language and verbal memory.



- The cerebellum, which controls balance, co-ordination of movement and muscular activity.
- The medulla, which controls unconscious activities such as heart rate and breathing rate,
- The hypothalamus, which is the regulating centre for temperature and water balance within the body.

4. The eye



Structure	Function
Cornea	Refracts light - bends it as it enters the eye
Iris	Controls how much light enters the pupil
Lens	Further refracts light to focus it onto the retina
Retina	Contains the light receptors
Optic nerve	Carries impulses between the eye and the brain
Sclera	Tough white outer layer of the eye. It helps protect the eye from injury

- The retina contains rods and cones. Rods are useful for sensing dim light whilst cones allow colour vision
- The pupil reflex is a reflex action which prevents excessive light from entering the eye

Too light: the pupil constricts to limit light

Too dark: the pupil dilates to let more light in

- Muscles around the eye control the lens shape to allow us to focus on objects, as shown below.

Position	Ciliary muscles	Suspensory ligaments	Muscle tension	Lens shape	Refraction
Near	Contract	Slacken/loosen	Low	Fat/thicker	Light is refracted strongly
Distant	Relax	Stretched/tighten	High	Thin	Light is only refracted slightly

Year 11 Learning Cycle 1 Science - Forces

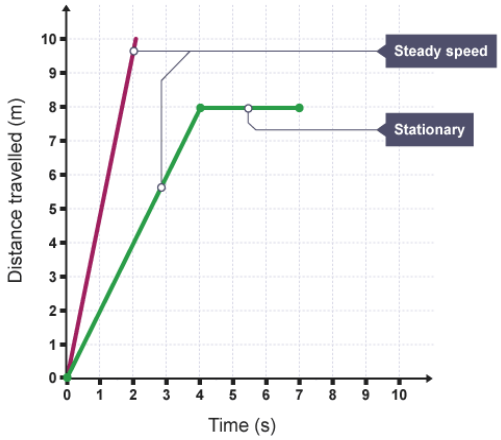
Key Terms	Description
Scalar	A quantity with only magnitude (size).
Vector	A quantity having direction as well as magnitude.
Distance	The total movement of an object.
Magnitude	The size of a physical quantity.
Speed	is the rate of change of distance - it is the distance travelled per unit time. Like distance, speed does not have an associated direction, so it is a scalar quantity.
Velocity	The velocity of an object is its speed in a particular direction.
Acceleration	Acceleration is the rate of change of velocity. It is the amount that velocity changes per unit time.
Displacement	Displacement is a vector quantity and includes the distance travelled in a straight line from start to finish, and the direction of the straight line.

$$s = v\,t$$

Some typical values for speed in metres per second (m/s) include:

Method of travel	Typical speed (m/s)
walking	1.5
running	3
cycling	6
car	13-30
train	50
aeroplane	250

In a distance-time graph, the gradient of the line is equal to the speed of the object. The greater the gradient (and the steeper the line) the faster the object is moving.

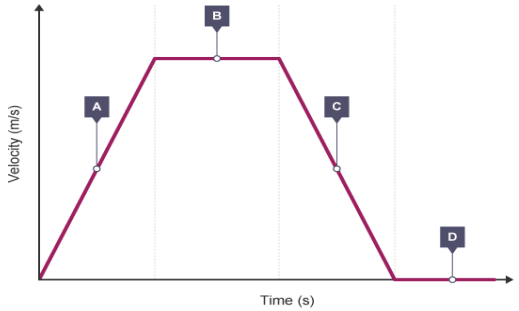


5.

Velocity-time graphs

Determining acceleration

If an object moves along a straight line, its motion can be represented by a velocity-time graph. The gradient of the line is equal to the **acceleration** of the object.



The table shows what each section of the graph represents:

Section of graph	Gradient	Velocity	Acceleration
A	Positive	Increasing	Positive
B	Zero	Constant	Zero
C	Negative	Decreasing	Negative
D ($v = 0$)	Zero	Stationary (at rest)	Zero

Acceleration

Acceleration is the rate of change of velocity. It is the amount that velocity changes per unit time.

The change in velocity can be calculated using the equation:

change in velocity = final velocity - initial velocity

$$\Delta v = v - u$$

The average acceleration of an object can be calculated using the equation:

$$acceleration = \frac{change\ in\ velocity}{time\ taken}$$

$$\alpha = \frac{\Delta v}{t}$$

This is when:

- acceleration (a) is measured in metres per second squared (m/s^2)
- change in velocity (Δv) is measured in metres per second (m/s)
- time taken (t) is measured in seconds (s)

If an object is slowing down, it is decelerating (and its acceleration has a negative value).

This equation applies to objects in uniform acceleration:

(final velocity)^2 - (initial velocity)^2 = 2 × acceleration × distance

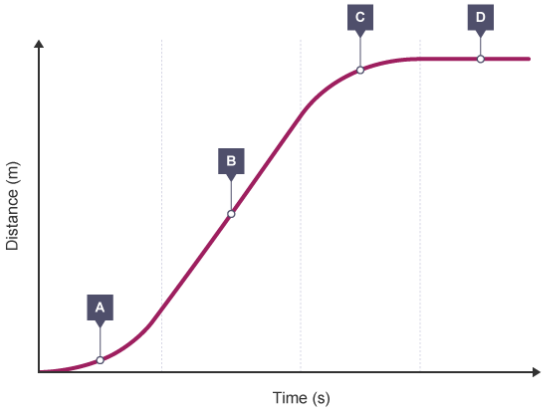
$$v^2 - u^2 = 2\,a\,s$$

Year 11 Learning Cycle 1 Science - Forces

The speed of an object can be calculated from the gradient of a distance-time graph.

Distance-time graphs for accelerating objects - Higher

If the speed of an object changes, it will be **accelerating** or **decelerating**. This can be shown as a curved line on a distance-time graph.



The table shows what each section of the graph represents:

Section of graph	Gradient	Speed
A	Increasing	Increasing
B	Constant	Constant
C	Decreasing	Decreasing
D	Zero	Stationary (at rest)

If an object is accelerating or decelerating, its speed can be calculated at any particular time by:

- drawing a **tangent** to the curve at that time

Further reading

https://www.bbc.co.uk/bitesize/topics/ztmttv4

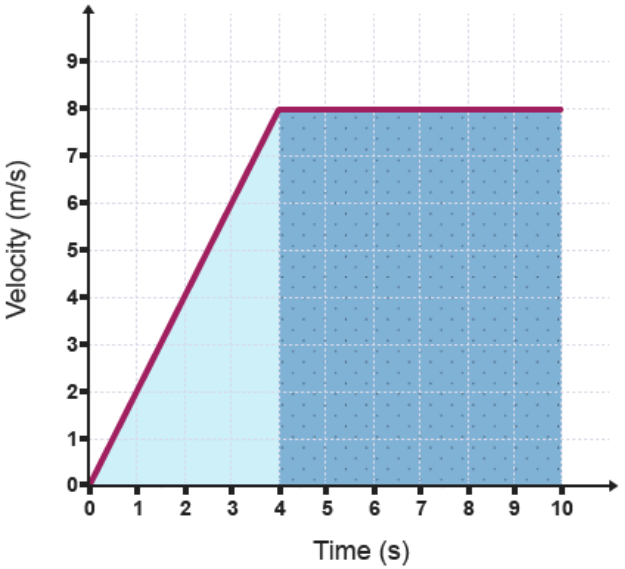
SCAN ME

Calculating displacement - higher

The displacement of an object can be calculated from the area under a velocity-time graph.

The area under the graph can be calculated by:

- using geometry (if the lines are straight)
- counting the squares beneath the line (particularly if the lines are curved)

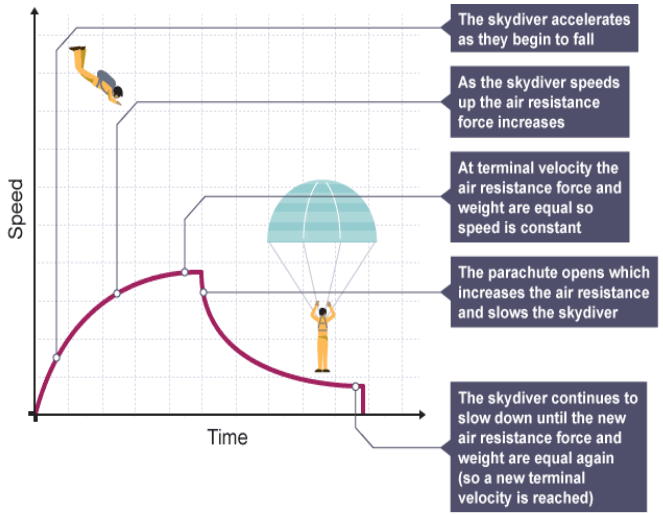


Here, the displacement can be found by calculating the total area of the shaded sections below the line.

Terminal velocity

Near the surface of the Earth, any object falling will have an acceleration of about 9.8 metres per second squared (m/s^2). Objects falling through a **fluid** eventually reach **terminal velocity**. At terminal velocity, the object moves at a steady speed in a constant direction because the **resultant force** acting on it is zero. For exrample, a skydiver falling spread-eagled through the air reaches a maximum speed of 53m/s.

The diagram shows what happens to the speed of a skydiver from when they leave the aircraft, to when they reach the ground after their parachute opens.



Year 11 Learning Cycle 1 Science - Forces

1. Key Terms	Description
Centre of mass	The point representing the mean position of the matter in a body.
Free body diagram	A simplified drawing of an object or system showing the forces acting on it. The forces are shown acting away from the centre of a box or dot
Gravity	A non-contact force All objects with mass produce a gravitational field. The more mass an object has, the greater its gravitational field will be.
Mass	The amount of matter an object contains. Mass is measured in kilograms (kg) or grams (g).
Weight	The amount of matter an object contains. Mass is measured in kilograms (kg) or grams (g).
Newton	The unit of force.
Force	A push, pull or a twist
Reaction force	Force exerted in the opposite direction to an action force.
Resultant force	The single force that could replace all the forces acting on an object, found by adding these together. If all the forces are balanced, the resultant force is zero.
Momentum	The product of mass and velocity. It is a vector quantity.
Thinking distance	This is the distance a vehicle travels in the time it takes for the driver to apply the brakes after realising they need to stop.
Braking distance	This is the distance a vehicle travels in the time after the driver has applied the brake.

2. Newton's first law

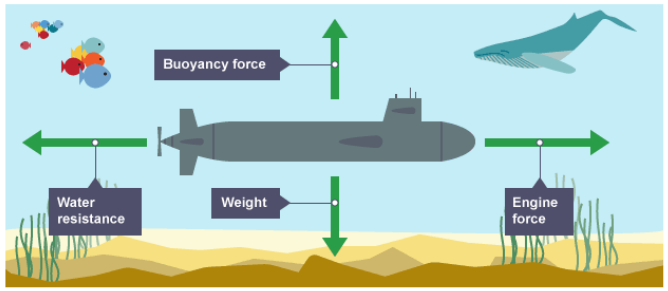
According to Newton's First Law of motion, an object remains in the same state of motion unless a **resultant force** acts on it. If the resultant force on an object is zero, this means:

- a stationary object stays stationary
- a moving object continues to move at the same velocity (at the same speed and in the same direction)

Inertia - Higher

The tendency of an object to continue in its current state (at rest or in uniform motion) is called **inertia**

Forces on a submarine



3. Newton's Second Law Force, mass and acceleration

Newton's Second Law of motion can be described by this equation:

resultant force = mass × acceleration

F=m a

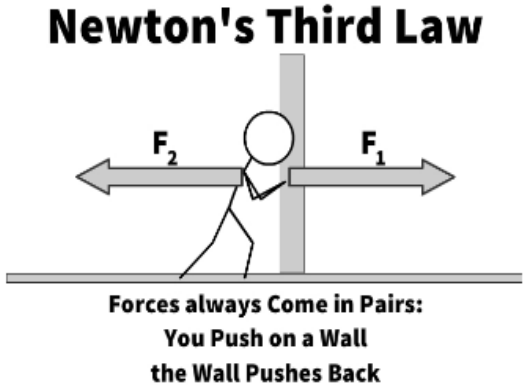
This is when:

- force (F) is measured in newtons (N)
- mass (m) is measured in kilograms (kg)
- acceleration (a) is measured in metres per second squared (m/s^2)

4. Newton's Third Law

According to Newton's Third Law of motion, whenever two objects interact, they exert equal and opposite forces on each other.

This is often worded as 'every action has an equal and opposite reaction'. However, it is important to remember that the forces act on two different objects at the same time.



5. Momentum

Momentum is the product of mass and velocity. Momentum is also a vector quantity – this means it has both a magnitude and an associated direction.

Calculating momentum

Momentum can be calculated using the equation:

momentum = mass × velocity

p=m v

This is when:

- momentum (p) is measured in kilogram metres per second (kg m/s)
- mass (m) is measured in kilograms (kg)
- velocity (v) is measured in metres per second (m/s

Year 11 Learning Cycle 1 Science - Forces

1. Key Terms	Description
Deformation	A change in shape
elastic	Deformation is not reversed when the force is removed – the change in shape is permanent.
inelastic	Deformation is not reversed when the force is removed – the change in shape is permanent.
Extension	When an object increase in length
Compression	When an object such as a spring decreases in length
Spring constant	A measure of the stiffness of a spring up to its limit of proportionality or elastic limit.
Hooke's Law	The extension of a spring is directly proportional to the force applied, provided that the limit of proportionality is not exceeded.
Limit of proportionality	The point beyond which Hooke's law is no longer true when stretching a material

2. Energy stored in a spring

Work is done when a spring is extended or compressed. Elastic potential energy is stored in the spring. Provided inelastic deformation has not happened, the work done is equal to the elastic potential energy stored.

The elastice potential energy stored can be calculated using the equation:

elastic potential energy = 0.5 x spring constant x (extension)2

$$E_e = \frac{1}{2} k e^2$$

This is when:

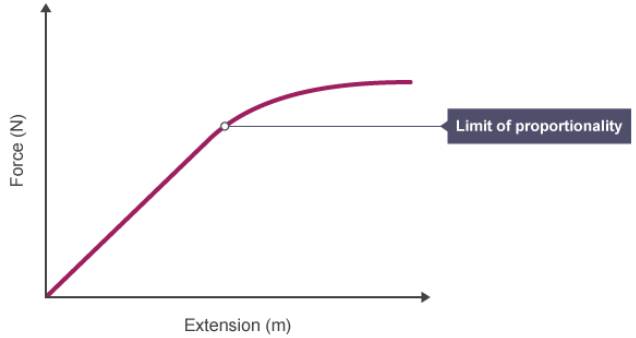
- elastic potential energy (E_e) is measured in joules (J)
- spring constant (k) is measured in newtons per metre (N/m)
- extension (e), referring to the increase in length, is measured in metres (m)

3. Force extension graphs

$$F = k e$$

Linear extension and elastic deformation can be seen below the limit of proportionality.

Non-linear extension and inelastic deformation can be seen above the limit of proportionality. The limit of proportionality is also described as the 'elastic limit'. The gradient of a force extension graph before the limit of proportionality is equal to the spring constant.



4. Required practical - how forces affect the extension of a spring

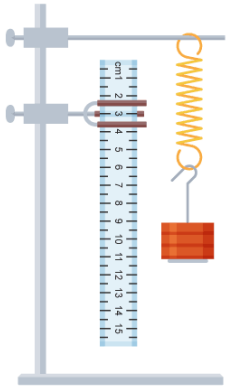
Investigate the relationship between force and extension for a spring.

There are different ways to investigate the relationship between force and extension for a spring. In this practical activity it is important to:

- measure and record length accurately
- measure and observe the effect of force on the extension of springs
- collect the data required to plot a force-extension graph

5. Aim of the experiment

To investigate the relationship between force and extension for a spring



1. Secure a clamp stand to the bench using a G-clamp or a large mass on the base
2. Use bosses to attach two clamps to the clamp stand
3. Attach the spring to the top clamp, and a ruler to the bottom
4. Adjust the ruler so that it is vertical, and with its zero level with the top of the spring
5. Measure and record the unloaded length of the spring
6. Hang a 100g slotted mass carrier - weight 0.98 newtons (N) from the spring. Measure and record the new length of the spring
7. Add a 100g slotted mass to the carrier. Measure and recod the new lenght of the spring
8. Repeat step 7 until you have added a total of 1000g

6. Further reading

https://www.bbc.co.uk/bitesize/guides/zgv797h/revision/1

SCAN ME

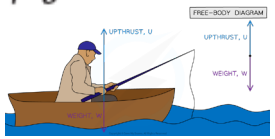
Year 11 Learning Cycle 1 Science – Forces (Triple only)

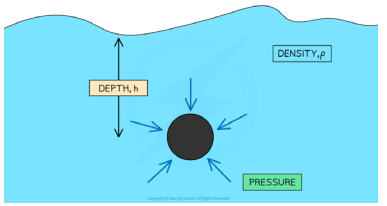
Key Terms	Description
Pressure	Force exerted over an area. The greater the pressure, the greater the force exerted over the same area.
Moment	A turning effect of a force
Pivot	A point around which something can rotate or turn

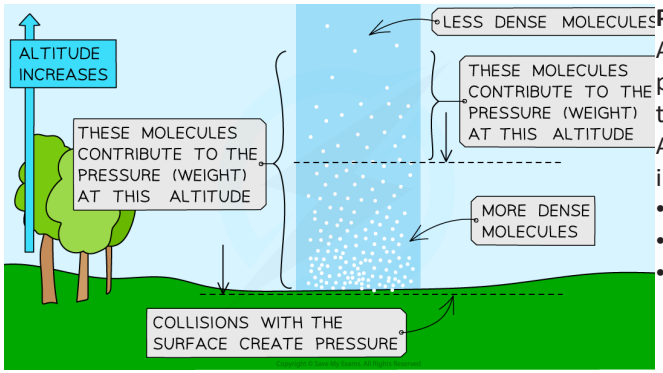
pressure = height of column × density of the liquid × gravitational field strength

$$pressure = \frac{force\ normal\ to\ a\ surface}{area\ of\ that\ surface} \qquad p = h\,\rho\,g$$

$$p = \frac{F}{A}$$





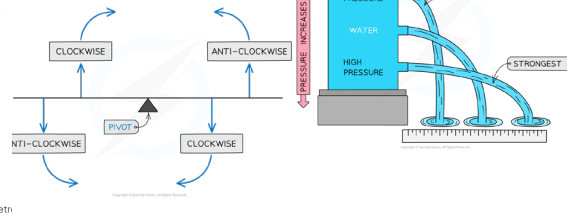


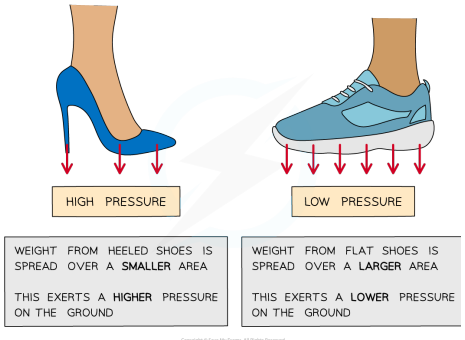
Pressure

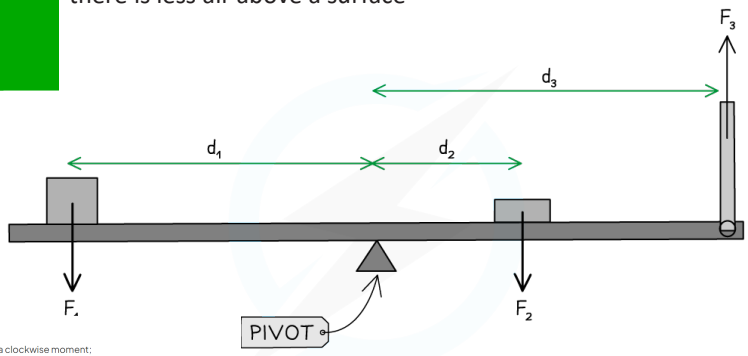
Air molecules colliding with a surface cause atmospheric pressure. Atmospheric pressure at sea level is about 101,000 Pa (101 kPa) but just 27,000 Pa (27 kPa) at the cruising altitude of a passenger plane.

Atmospheric pressure decreases as the height of a surface above ground level increases. This is because, as the altitude increases:

- the number of air molecules decreases
- the **weight** of the air decreases
- there is less air above a surface





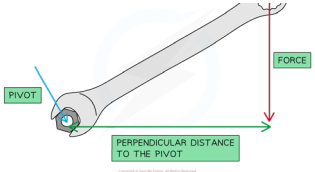


- In the above diagram:
  - Force F_2 is supplying a clockwise moment;
  - Forces F_1 and F_3 are supplying anticlockwise moments
- Due to the principle of moments, if the beam is balanced

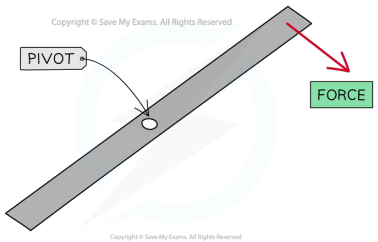
Total clockwise moments = Total anticlockwise moments

- Hence:

$$F_2 \times d_2 = (F_1 \times d_1) + (F_3 \times d_3)$$



$$F_2 \times d_2 = F_1 \times d_1 + F_3 \times d_3$$



The Moment of a Force

- A **moment** is defined as:

The turning effect of a force about a pivot

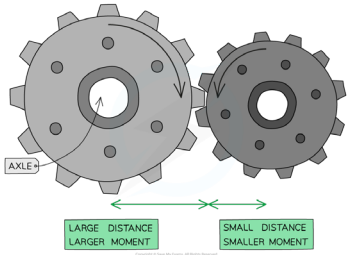
- The size of a moment is defined by the equation:

$$M = F \times d$$

- Where:
  - M = moment in newton metres (Nm)
  - F = force in newtons (N)
  - d = perpendicular distance of the force to the pivot in metr

Gears

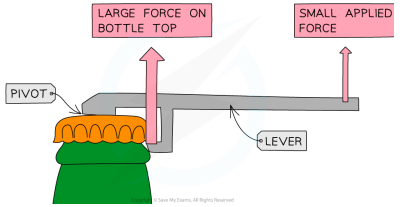
- Gears, similar to levers, multiply the effect of a turning force using moments
- They consist of wheels with toothed edges that rotate on an axle or shaft, which acts as the **pivot**
  - The teeth of one gear fit into the teeth of another gear
  - This lets one gear turn the other, meaning one axle or shaft can be used to turn another shaft
- As one gear turns, the other must also turn
  - Where the gears meet, the teeth will then move in the **same** direction (e.g. downwards)
  - One of the gears will then move clockwise, and the other anticlockwise (in opposite directions)
- Although the force will be the same on both gears, the **moment** will not be. This depends on the size of the gear, which changes the distance of the teeth to the pivot (axle)



Levers

- Levers **increase** the size of a **force** acting on an object to make the object t easily
- The force applied to a lever must act **further** from the pivot than the force h overcome
- To make a lever work better:
  - Increase the **size** of the force applied
  - Increase the **distance** of the force from the pivot

- An example of a lever is a bottle opener



Year 11 Learning Cycle 1 Science - Magnetism

1. Key Terms	Description
Magnet	An object capable of exerting a magnetic force
Induced magnet	A temporary magnet, made from a magnetic material placed in a magnetic field. The induced magnetism is lost when moved out of the magnetic field
Magnetic field	Area surrounding a magnet that can exert a force on magnetic materials
Transformer	An electrical device that increases, or decreases, the potential difference (voltage) of an alternating current.
Solenoid	A straight coil of wire which can carry an electric current to create a magnetic field.
Motor effect	The effect where a force us exerted on a wire carrying a current in a magnetic field

2. Magnetic fields

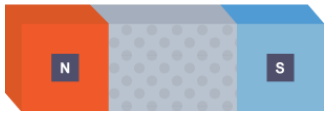
A magnet can exert a force on another nearby magnet. Magnets have two poles:

- a north pole
- a south pole

The magnetic force is strongest near the magnet's poles.

The rules of magnetism

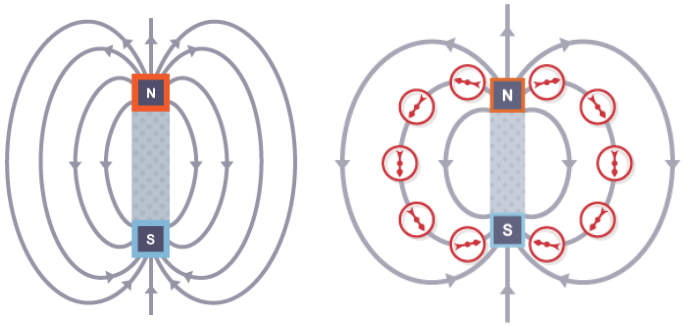
Two magnets will either attract or repel each other in the following way:



- like poles (N-N or S-S) repel
- unlike poles (N-S or S-N) attract

Magnetic forces are non-contact forces - this means that magnets affect each other without touching.

3. Detecting and drawing magnetic fields



4. Permanent and induced magnetism

A permanent magnet is often made from a magnetic material such as iron. A permanent magnet always causes a force on other magnets, or on magnetic materials. Key features of a permanent magnet:

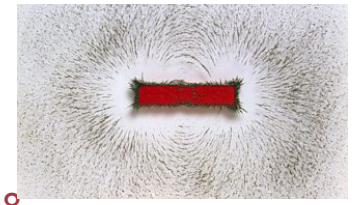
- it produces its own magnetic field
- the magnetic field cannot be turned on and off - it is there all the time

Bar magnets and horseshoe magnets are examples of permanent magnets.

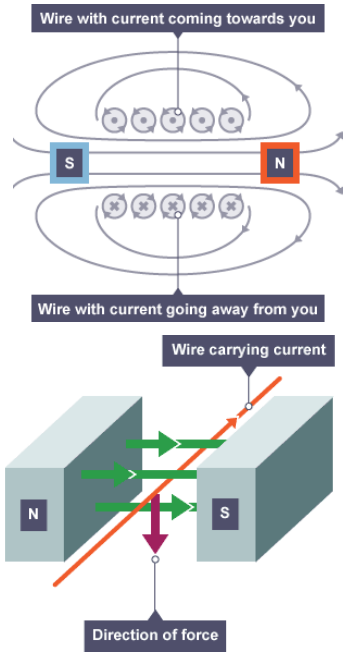
Unlike a permanent magnet, an induced magnet only becomes a magnet when it is placed in a magnetic field. The induced magnetism is quickly lost when the magnet is removed from the magnetic field.

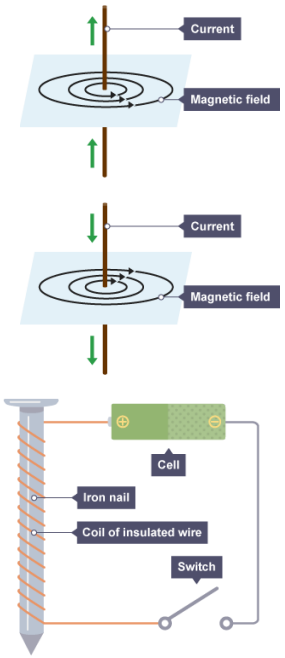
The iron filings in the image become induced magnets when they are near the bar magnet. Like all induced magnets:

- they are only attracted by other magnets, they are not repelled
- they lose most or all of their magnetism when they are removed from the magnetic field
- .



5. Electromagnets





Higher only

force = magnetic flux denstiy x current x length

$F = BIl$

This is when:

- F is force in newtons (N)
- B is magnetic flux density (magnetic field strength) in tesla (T)
- I is current in amperes - also referred to as amps - (A)
- l is length in metres (m)

6. Further reading

https://www.bbc.co.uk/bitesize/topics/zwkww6f

Year 11 Learning Cycle 1 Science - Quantitative chemistry (Triple only)

1. Key Terms	Description
Conservation of mass	No atoms are lost or gained in a chemical reaction
Reactants	Substances found on the left side of a chemical equation
Products	Substances found on the right side of a chemical equation
Uncertainty	A measure of how precise a value is
Concentration	A measure of the number of particles dissolved in a certain volume of solution
HT only – Avogadro's constant	6.02×10^{23}. the number of particles in 1 mole of a substance
HT only – limiting reactant	The reactant which is used up in a reaction
HT only – reactant in excess	The reactant which is left over at the end of a reaction

2. Conservation of mass

- No atoms are lost or gained in a chemical reaction

- Equations are balanced so that there is the same number of atoms of each element in the reactants as there is in the products

2Cu + O_2 -> **2**CuO

3.Chemical cells

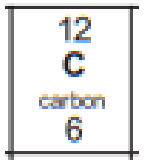
Two different metals are connected using an alectrolyte. The greater the difference in reactivity between the two metals the greater the potential difference produced.

Expensive, rechargeable versions are available which are more sustainable. However most are disposed in landfill at the end of their life.

	Magnesium -2.37	Zinc -0.76	Copper +0.34
Magnesium	0.00 V	1.61 V	+2.71
Zinc	-1.61 V	0.00 V	+1.10 V
Copper	2.71 V	-1.10 V	0.00 V

4. Relative formula mass and percentage by mass

- The relative formula mass (Mr) is the sum of the mass numbers of the atoms found in the formula.



Example: Calculate the relative formula mass (Mr) of carbon dioxide (CO2)

12 + (16 X 2) = 44

- Percentage by mass is calculated by dividing the atomic mass by the formula mass and then multiplying by 100.

Example: Calculate the percentage by mass of carbon in carbon dioxide (CO2)

(12 ÷ 44) x 100 = 27.27%

5. Concentration

$$concentration\ in\ g/dm^3 = \frac{mass\ of\ solute\ in\ g}{volume\ in\ dm^3}$$

Example: 8g of sodium hydroxide is dissolved in 2dm3 of water. Calculate the concentration of the solution.

$$concentration = \frac{mass\ of\ solute\ in\ g}{volume\ in\ dm^3}$$

$$concentration = \frac{8\ g}{2\ dm^3}$$

$$concentration = 4\ g/dm^3$$

6. Mass changes in a reaction

- When a reactant of product is a gas, the reactants can appear to have gained of lost mass.

Example: magnesium reacting with oxygen to make magnesium oxide

2Mg(s) + O_2(g) -> **2**MgO(s)

7. HT only – moles

1 mole is equal to 6.02 × 1023 particles.

Important equations

- Number of moles = mass (g) ÷ formula mass
- Concentration (mol/dm3) = moles ÷ volume (dm3)

A chemical equation tells you the ratio in which the substances react.

$Mg + 2HCl \rightarrow MgCl_2 + H_2$

1 mole of magnesium reacts with 2 moles of hydrochloric acid to make 1 mole of magnesium chloride and 1 mole of hydrogen.

Example question: If 12g of magnesium reacts completely with hydrochloric acid, what mass of hydrochloric acid reacts?

1. How many moles of magnesium react?

12 ÷ 24 = 0.5 moles of magnesium

2. How many moles of hydrochloric acid reacts?

2 X 0.5 = 1 mole of hydrochloric acid

3. What is the mass of 1 mole of hydrochloric acid?

1 X 36.5 = 36.5g of hydrochloric acid

Year 11 Learning Cycle 1 Science - Triple Science students only

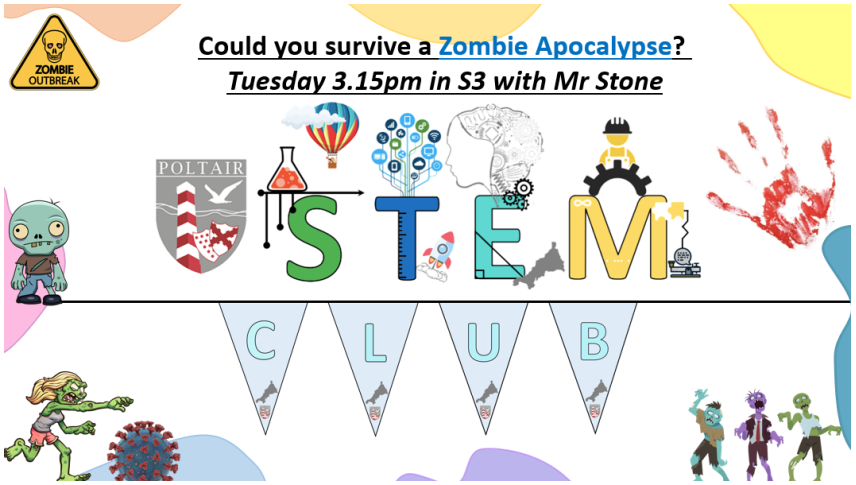
1. How to approach 6 mark questions in Science - Homeostasis

Question	Descrobe how an organism is able to respond to_____
Info	You could be askedthis question for any stimulus for any organism. Past examples that have come up in exams include: • Sharp point touching the skin • Mouse responding to a dropped pin • Knee jerk reflex • Touching a hot plate • Mouse detecting and responding to food To answer this question, you will need to do the following: • Receptor detecting stimulus • Generating impulse • Impulse travelling along sensory neurone • Chemical transmitter difussing across the synapse • Impulse generated on relay neurone • Impulse moves to motor neurone • Identifying the effector that brings about the response (muscle or gland) • Describing the response
Top tip	The examiner is looking for an answer in a logical sequence Receptor ➔ Sensory ➔ Synapse ➔ Relay ➔ Motor ➔ Effector Before you begin write a plan that includes just the first letter for each of these words to help you structure your answer. R, S, S, R, M, E Other key words to use are **synapse** and **electrical impulse**
Model answer	**Describe how an organism is able to respond to a sharp pin touching the skin.** The sharp pin is detected by pressure receptors in skin, this generates an electrical impulse which travels along a sensory neurone, This impulse causes neurotransmitters to diffuse across the synapse to generate another impulse in the relay neurone. The impulse travels to the motor neurone to the effector. The effector is a muscle which contracts to move the hand away from the pin.
Practice	1. Learn and practice the model answer above. 2. Prepare and learn model answers to describe how an organism responds to a dropped pin, knee jerk reflex, and touching a hot plate.

2. How to approach 6 mark questions in Science - Forces

Question	Explain you would determine the centre of mass of a piece of card. Explain how you could check that the centre of mass point is accurate. Explain when an object will topple over etc.
Info	At least one of these questions is likely to come up. The examiner is going to be looking for a clear answer written in a logical sequence.
Top tip	Be careful that you use key words/phrases accurateky (these are in bold in your model answers below).
Model answer	Explain how you would determine the centre of mass of a piece of card. Place three **holes** in the card, with each hole in a different place and close to the edge of the card. Then place a **pin** through the first hole and hold the pin in place using a boss in a clamp stand to suspend the card. Tie a **weight** to a piece of **string** and suspend this string from the same pin. This is a **plumb line**. Draw a line on the card marking where the string was. Repeat this fro the other two holes. The point the lines **intersect** is the centre of mass.
Model answer	Explain how you could check the centre of mass point is accurate. Put another **hole** in the card near the edge. **Suspend** it using a pin and use a string on a weight to create a **plumb line**. Draw a line on the card marking where the string was. If this line **intersects** the **centre of mass** then the centre of mass is accurate.
Model answer	Explain when an object will topple over. **Centre of mass** is the point at which the **weight** of an object acts through. An object will topple over when the centre of mass falls **outside the base** of the object.
Practice	1. Learn and practice the model answer above.

Year 11 Learning Cycle 1 Science - Clubs and Reading



Post 16 GCSE transition activities to explore:

1. AQA | Subjects | Science | AS and A-level

2. Undergraduate Science Courses (thecompleteuniversityguide.co.uk)

3. The official website of the Nobel Prize - NobelPrize.org

4. National Geographic

5. Discover | Natural History Museum (nhm.ac.uk)

6. NASA

7. http://learn.genetics.utah.edu/

8. Science_A_Level_skills_pack.pdf (oup.com)

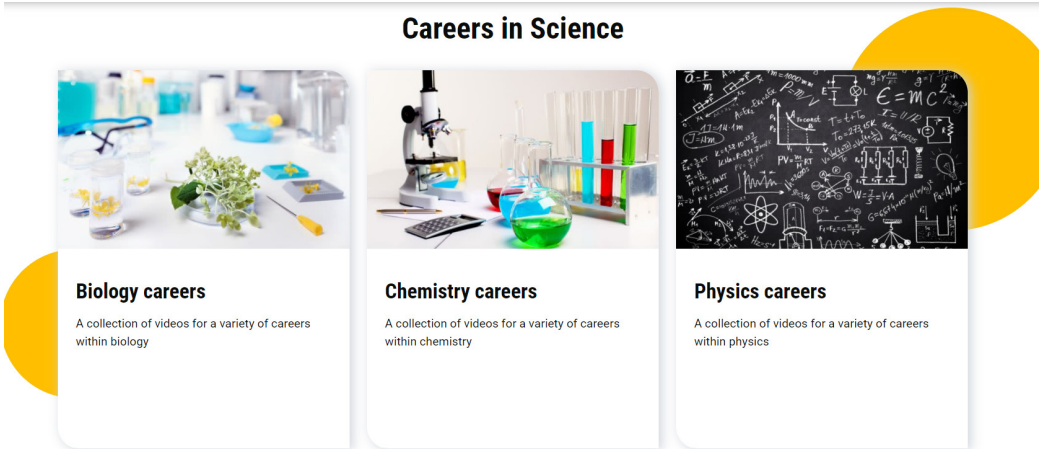
9. Summer Start for A-Level Chemistry – YouTube

10. Why is biodiversity so important? - Kim Preshoff | TED-Ed

11. KS5 Physics Transition workbook 2019.docx - Google Drive

Post 16 GCSE inspirational journals to explore:

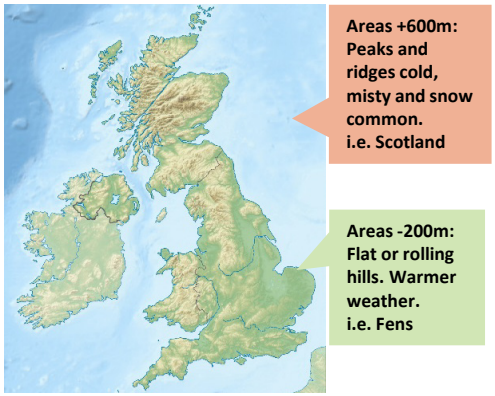
1. Physics World
2. New Scientist



Year 11 Learning Cycle 1 Geography - Physical landscapes

1. Relief of the UK

Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.



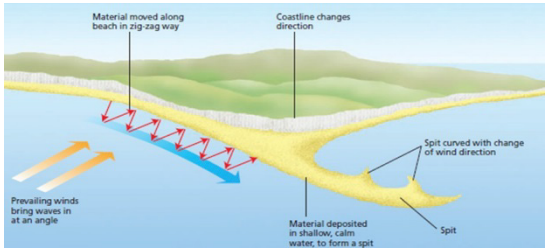
Areas +600m: Peaks and ridges cold, misty and snow common. i.e. Scotland

Areas -200m: Flat or rolling hills. Warmer weather. i.e. Fens

2. Formation of Coastal Spits - Deposition

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

Example: Spurn Head, Holderness Coast.

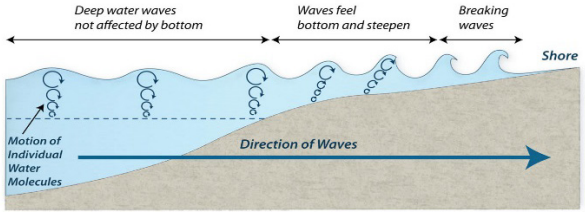


3. How do waves form

Waves are created by wind blowing over the surface of the sea. As the wind blows over the sea, friction is created - producing a swell in the water.

Why do waves break?

1. Waves start out at sea.
2. As waves approaches the shore, friction slows the base
3. This causes the orbit to become elliptical.
4. Until the top of the wave breaks over.



4. Types of erosion

The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

5. Types of Transportation

A natural process by which eroded material is carried/ transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

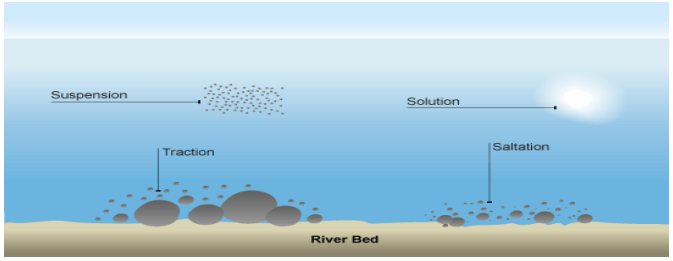
6. Types of Weathering

Weathering is the breakdown of rocks where they are.

Carbonation	Breakdown of rock by changing its chemical composition.
Mechanical	Breakdown of rock without changing its chemical composition.

7. What is Deposition?

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



Year 11 Learning Cycle 1 Geography - Physical landscapes

8. Mechanical Weathering Example: Freeze-thaw weathering

Stage One

Water seeps into cracks and fractures in the rock.

Stage Two

When the water freezes, it expands about 9%. This wedges apart the rock.

Stage Three

With repeated freeze-thaw cycles, the rock breaks off.

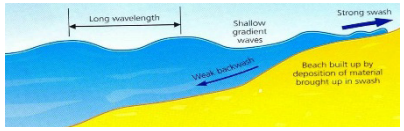
9. Size of waves

- Fetch how far the wave has travelled
- Strength of the wind.
- How long the wind has been blowing for.

10. Types of Waves

Constructive Waves

This wave has a **swash that is stronger** than the backwash. This therefore builds up the coast.



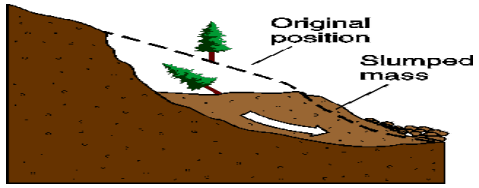
Destructive Waves

This wave has a **backwash that is stronger** than the swash. This therefore erodes the coast.

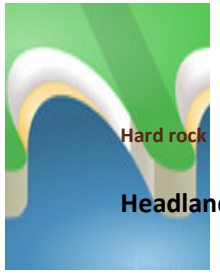
11. Mass movement

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

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

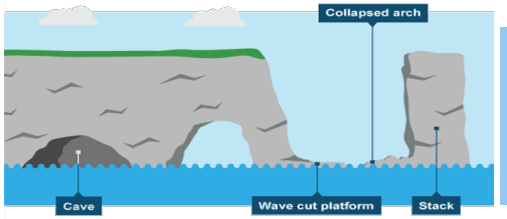


12. Formation of Bays and Headlands



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

13.Formation of Coastal Stack



Example: Old Harry Rocks, Dorset

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

Year 11 Learning Cycle 1 Geography - Physical landscapes

14. Coastal Defences

Hard engineering defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible × No deposition further down coast = erodes faster
Sea walls	Concrete wall break up the energy of the wave. Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding × Curved shape encourages erosion of beach deposits
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind	✓ Cheap ✓ Local material can be used to look less strange × Will need replacing

Soft engineering defences

Beach nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs	✓ Cheap ✓ Beach for tourists × Storms = need replacing × offshore dredging damages seabed
Managed retreat	Low value areas of the coast are left to flood and erode	✓ Reduce flood risk ✓ Creates wildlife habitats × Compensation for land

Coastal Landscapes

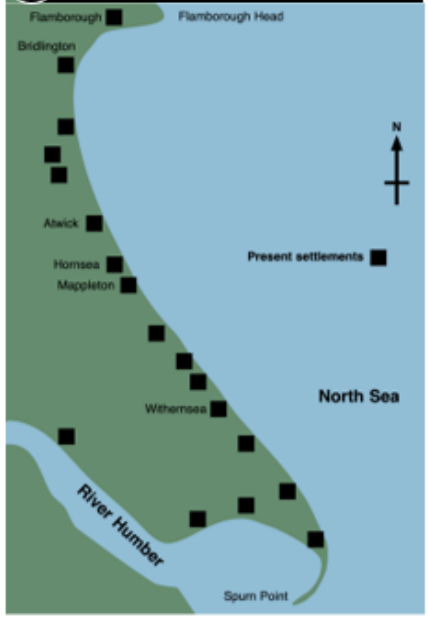
Mappleton – Coastal Management

read quiz

The Big Picture

physical processes — coastal landforms* — Coastal Landscapes — coastal management — case study

Reason for Management



Mappleton lies approximately 3km south of Hornsea on the Holderness Coast, East Yorkshire. The village requires coastal management because:

- The village has around 50 properties
- The soft, boulder clay cliffs are eroding rapidly (two metres per year), resulting in the main road being only 50m from the cliff edge.
- The B1242, the main road connecting settlements along the Holderness Coast, runs through Mappleton.

Management Strategy

In 1991 rock boulders were transported from Scandinavia and deposited on the beach. The rock armour has been used to construct two rock groynes and protect the base of the cliff.

Effects and Conflicts

Coastal management has been effective in stopping erosion along the sea front at Mappleton. However, it has increased the rate of erosion downdrift of the defences.

Conflict

- The increased rate of erosion downdrift of the defences has led to the loss of spaces in the public car park leading to tourists parking on side roads causing conflict with local residents.
- Increased erosion has led to the loss of properties and farm land downdrift of the defences.

Year 11 Learning Cycle 1 Geography - The Changing Economic World

1. What is development?

Development is an improvement in living standards through better use of resources.

Economic	This is progress in economic growth through levels of industrialisation and use of technology.
Social	This is an improvement in people's standard of living. For example, clean water and electricity.
Environmental	This is an improvement in people's standard of living. For example, clean water and electricity.

2. Measuring development

These are used to compare and understand a country's level of development.

Economic indictors examples

Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income per capita	This is the total value of goods and services produced in a country per person, per year.

Social indicators examples

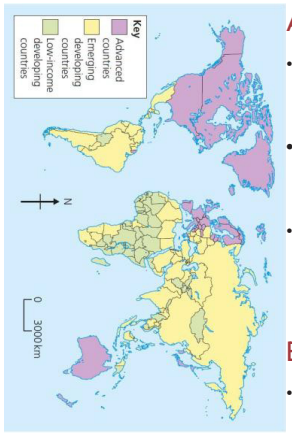
Infant mortality	The number of children who die before reaching 1 per 1000 babies born.
Literacy rate	The percentage of population over the age of 15 who can read and write.
Life expectancy	The average lifespan of someone born in that country.

mixed indicators

Human Development Index (HDI)	A number that uses life expectancy, education level and income per person.

3. Variations in the level of development

LICs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
NEEs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
HICs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.



4. Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.

5. Physical factors affecting uneven development

Natural resources

- **Fuel sources** such as oil.
- Minerals and metals for fuel.
- **Availability for timber.**
- Access to **safe water.**

Natural Hazards

- Risk of tectonic hazards.
- Benefits from **volcanic material and floodwater**.
- Frequent hazards **undermines redevelopment.**

Climate

- **Reliability** of rainfall to benefit farming.
- **Extreme climates** limit industry and affects health.
- Climate can **attract tourists**.

Location/Terrain

- **Landlocked countries** may find trade difficulties.
- Mountainous terrain makes farming difficult.
- **Scenery attracts tourists.**

6. Human factors affecting uneven development

Aid

- Aid can help some countries develop **key projects** for infrastructure faster.
- **Aid** can improve services such as schools, hospitals and roads.
- Too much **reliance on aid** might stop other trade links becoming established.

Trade

- Countries that export more than they import have a **trade surplus**. This can improve the national economy.
- Having **good trade relationships**.
- **Trading goods** and services is more profitable than raw materials.

Education

- Education creates a **skilled workforce** meaning more goods and services are produced.
- **Educated people earn more money,** meaning they also pay more taxes. This money can help develop the country in the future.

Health

- Lack of clean water and poor healthcare means a large number of people suffer from diseases.
- People who are ill cannot work so there is little contribution to the economy.
- More money on healthcare means less spent on development.

Politics

- Corruption in local and national governments.
- The stability of the government can effect the country's ability to trade.
- Ability of the country to invest into services and infrastructure.

History

- Colonialism has helped Europe develop, but slowed down development in many other countries.
- Countries that went through industrialisation a while ago, have now develop further.

Year 11 Learning Cycle 1 Geography - The Changing Economic World

7. Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

Wealth	People in more developed countries have higher incomes than less developed countries.
Health	Better healthcare means that people in more developed countries live longer than those in less developed countries.
Migration	If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

8. Reducing the Global Development Gap

Microfinance Loans

This involves people in LICs receiving smalls loans from traditional banks.

- ✓ Loans enable people to begin their own businesses
- × Its not clear they can reduce poverty at a large scale.

Aid

This is given by one country to another as money or resources.

- ✓ Improve literacy rates, building dams, improving agriculture.
- × Can be wasted by corrupt governments or they can become too reliant on aid.

Fair trade

This is a movement where farmers get a fair price for the goods produced.

- ✓ Paid fairly so they can develop schools & health centres
- × Only a tiny proportion of the extra money reaches producers.

Foreign-direct investment

This is when one country buys property or infrastructure in another country.

- ✓ Leads to better access to finance, technology & expertise.
- × Investment can come with strings attached that country's will need to comply with

Debt Relief

This is when a country's debt is cancelled or interest rates are lowered.

- ✓ Means more money can be spent on development.
- × Locals might not always get a say. Some aid can be tied under condition from donor country.

Technology

Includes tools, machines and affordable equipment that improve quality of life.

- ✓ Renewable energy is less expensive and polluting.
- × Requires initial investment and skills in operating technology

9. CS: Reducing the Development Gap In Jamaica

Location and Background

Jamaica is a LIC island nation part of the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches

Tourist economy

- In 2015, 2.12 million visited.
- Tourism contributes 27% of GDP and will increase to 38% by 2025.
- 130,000 jobs rely on tourism.
- Global recession 2008 caused a decline in tourism. Now tourism is beginning to recover.

Multiplier effect

- Jobs from tourism have meant more money has been spent in shops and other businesses.
- Government has invested in infrastructure to support tourism.
- New sewage treatment plants have reduced pollution.

Development Problems

- Tourists do not always spend much money outside their resorts.
- Infrastructure improvements have not spread to the whole island.
- Many people in Jamaica still live in poor quality housing and lack basic services such as healthcare.

10. Case Study: Economic Development in Nigeria

Location & Importance

Nigeria is a NEE in West Africa. Nigeria is just north of the Equator and experiences a range of environments.

Nigeria is the most populous and economically powerful country in Africa. Economic growth has been base on oil exports.

Influences upon Nigeria's development

Political

Suffered instability with a civil war between 1967-1970.

From 1999, the country became stable with free and fair elections.

Stability has encouraged global investment from China and USA.

Social

Nigeria is a multi-cultural, multi-faith society.

Although mostly a strength, diversity has caused regional conflicts from groups such as the Boko Haram terrorists.

Cultural

Nigeria's diversity has created rich and varied artistic culture.

The country has a rich music, literacy and film industry (i.e. Nollywood).

A successful national football side.

Industrial Structures

Once mainly based on agriculture, 50% of its economy is now manufacturing and services.

A thriving manufacturing industry is increasing foreign investment and employment opportunities.

The role of TNCs

TNCs such as Shell have played an important role in its economy.

- ✓ Investment has increased employment and income.
- × Profits move to HICs.
- × Many oil spills have damaged fragile environments.

Changing Relationships

Nigeria plays a leading role with the African Union and UN.

Growing links with China with huge investment in infrastructure.

Main import includes petrol from the EU, cars from Brazil and phones from China.

Year 11 Learning Cycle 1 Geography - The Changing Economic World

10. Case Study: Economic Development in Nigeria

Environmental Impacts

The 2008/09 oil spills devastated swamps and its ecosystems.

Industry has caused toxic chemicals to be discharged in open sewers - risking human health.

80% of forest have been cut down. This also increases CO^2 emissions.

Aid & Debt relief

- ✓ Receives $5billion per year in aid.
- ✓ Aid groups (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV.
- × Some aid fails to reach the people who need it due to corruption.

Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

11. Case Study: Economic Change in the UK

UK in the Wider World

The UK has one of the largest economies in the world.

The UK has huge political, economic and cultural influences.

The UK is highly regarded for its fairness and tolerance.

The UK has global transport links i.e. Heathrow and the Eurostar.

Causes of Economic Change

De-industrialisation and the **decline** of the UK's industrial base.

Globalisation has meant many industries have moved overseas, where labour costs are lower.

Government investing in supporting vital businesses.

Towards Post-Industrial

The **quaternary** industry has increased, whilst **secondary** has **decreased**.

Numbers in **primary** and **tertiary industry** has **stayed the steady**.

Big increase in **professional** and **technical jobs**.

Developments of Science Parks

Science Parks are groups of scientific and technical knowledge based businesses on a single site.

- Access to **transport routes**.
- **Highly educated workers**.
- Staff benefit from **attractive working conditions**.
- Attracts **clusters** of related **high-tech businesses**.

CS: UK Car Industry

Every year the UK makes 1.5 million cars. These factories are owned by large TNCs. i.e. Nissan.

- 7% of energy used there factories is from **wind energy**.
- New cars are more **energy efficient and lighter**.
- Nissan produces **electric and hybrid cars**.

Change to a Rural Landscape

Social

Rising house prices have caused tensions in villages.

Villages are **unpopulated** during the day causing **loss of identity**.

Resentment towards **poor migrant communities**.

Economic

Lack of affordable housing for local first time buyers.

Sales of farmland **has increased rural unemployment**.

Influx of poor migrants puts **pressures** on local services.

Improvements to Transport

A £15 billion 'Road Improvement Strategy'. This will involve 10 new roads and 1,600 extra lanes.

£50 billion HS2 railway to improve connections between key UK cities.

£18 billion on Heathrow's controversial third runway.

UK has many large ports for importing and exporting goods.

UK North/South Divide

- × Wages are lower in the North.
- × Health is better in the South.
- × Education is worse in the North.
- ✓ The government is aiming to support a Northern Powerhouse project to resolve regional differences.
- ✓ More devolving of powers to disadvantaged regions.

Year 11 Learning Cycle 1 History - Medicine through Time c.1250-present

1. Key words	Description
Circa	Around that time
Physician	A qualified doctor
Symptom	A sign or feature of an illness
Flagellants	Religious people who whipped themselves in hopes that God wouldn't send plague
Miasma	Bad air (poisonous, foul smelling fumes)
Muck rakers / night soil men	Workers hired by local authorities to empty cess pits and dispose of the contents.
Cess pits	Workers hired by local authorities to empty cess pits and dispose of the contents.
Blood-letting	Taking blood from a patient in an attempt to treat their illness
Quarantine	Isolating sick people from the community
Phlegm	A medical term for snot
Humours	A theory claiming the body is divided into 4 humours or liquids: blood, black bile, yellow bile and phlegm.
Pestilence	A word used in the Middle Ages for the plague
Plague Pneumonic Bubonic	Bubonic plague is spread by fleas and originates from black rats from China. Pneumonic plague is spread by a person already with the virus through their coughs and sneezes.
Bubo / buboes	Swollen lumps in armpit and neck glands – a symptom of plague
Planet alignment	When planets in our solar system line up in their orbits. Thought by astrologists to have impact on human health & behaviour

2. Recurring topic themes

CHANGE in...

1. Cause, prevention and treatment of illness.
2. Public health policy- what action the Government took (if any)
3. Caring for the sick.
4. How doctors were trained.
5. Surgery.

3. Key time periods to learn

1250 -1500	Medieval period
1500 -1750	Renaissance period
1750 -1900	Industrial period
1900 -present	Modern era

4. Key people c.1250-1500

Hippocrates	Greek doctor. Created Theory of Four Humours that he said needed to be balanced.
Galen	Greek, worked in Rome. Developed Theory of Four Humours be using Theory of Opposites.

Year 11 Learning Cycle 1 History - Medicine through Time c.1250-present

1. Key words	Description
Barber surgeon	A poorly educated surgeon – very common until 1850s, as surgery did not have same professional status as physician.
Zodiac Man	A chart used by a medieval physician. Each body part was linked to an astrological sign. Used to know when to treat and what with (herbs).
Wound Man	A chart used by a medieval surgeon depicting different wounds caused by a variety of weapons with advice on how to treat.
Urine chart	A chart used by a medieval physician showing different coloured urine samples with smell/taste features to aid diagnosis.
Diagnosis	Information that reveals what illness a patient has
Prognosis	Information that reveals how an illness will develop in the near future
Dissection	Cutting up a corpse to study the internal organs and structure.
Anatomy	The study of the human body
Privy / latrine / water closets	A toilet, usually a public or shared one.
Purge	Empty / get rid something
Apothecary	A medieval word for a chemist
Herbal remedies	Medicines that come from plants and herbs
Lazars / leper houses	Isolated accommodation for lepers. Lepers were infectious, they carried a bell and rang it to warn people to move away
Almshouse / poor house	Charitable housing provided to vulnerable people in the community, run by church or set up by wealthy benefactors.
Pest houses	Isolated accommodation for plague sufferers.

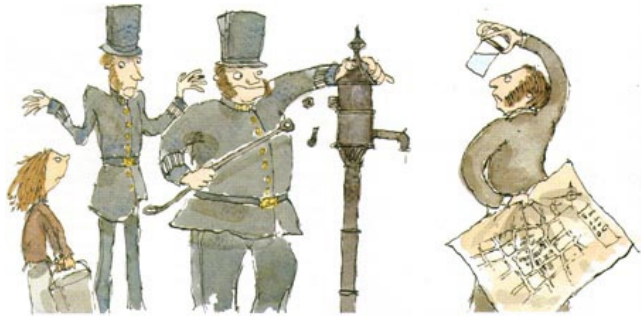
2. Key People	Description
Andreas Vesalius	Italian professor. Performed dissections and published "The Fabric of the Human Body" in 1543 which challenged Galen and encouraged others to do so too. The Printing Press helped to share his theories and ideas.
William Harvey	Worked for James I and Charles I. Discovered blood circulates around the body, pumped by the heart (1628). Started to change ideas on understanding of how the body works. Limited impact at the time- people still believed in bloodletting.
Thomas Sydenham	Important English Doctor. Believed in Doctors being more practical than just using theory. Made detailed notes, and believed diseases could be classified into types. Published "Medical Observations" in 1676 which was used as a medical textbook for the next 200 years.

3. Impact of the Printing Press

Invented in 1440, but impact felt in Renaissance period. Took control of information out of the Church's control, and allowed for new ideas to be shared. Wider variety of topics could be published, and criticisms of ideas, such as of Galen, could be published and shared across Europe.

Year 11 Learning Cycle 1 History - Medicine through Time c.1250-present

1. Key words	Description
Royal Society	Established in 1660, its members included the greatest scientific minds of the period who published and shared research.
Smallpox	Established in 1660, its members included the greatest scientific minds of the period who published and shared research.
Immunity	Your body's natural mechanism for fighting disease
Inoculation	A patient is given a mild dose of a disease, which builds immunity in order to protect from further attacks of the same disease.
Vaccination	A patient is given a mild dose of a disease, which builds immunity in order to protect from further attacks of the same disease.
Industrial revolution	The period c.1750-1900 which saw new machines and technology that led to mass production and increase in population in towns.
Laissez-faire	The point of view of the government in the 1700-mid 1800s. They did not interfere in people's lives or health.
Sanitation	The provision of clean water, with waste being kept separate.
Poor law	In the 1500-1800s poor people could receive a small amount of money from the local authorities, derived from tax on the rich.
Anaesthetic	A chemical (originally it was Chloroform) used to patients to sleep during an operation
Amputation	Surgical removal of a limb
Cautery	Following amputation the wound would be burned to seal it
Antiseptics	Chemicals that kill bacteria and prevent infection
Aseptic	The sterilising of everything needed prior to surgery taking place
Public Health Act	Laws passed by Parliament to improve sanitation nationwide e.g. supply clean water, built underground sewers, collect rubbish.



2. Key People	Description
Edward Jenner	Country Doctor. Saw that Milkmaids did not get smallpox but did get mild version of cowpox. Tested his theory through Vaccination. Vacca- Latin for cow. Could not explain how his theories worked.
John Snow	Country Doctor. Saw that Milkmaids did not get smallpox but did get mild version of cowpox. Tested his theory through Vaccination. Vacca- Latin for cow. Could not explain how his theories worked.
Louis Pasteur	French chemist. Published Germ Theory in 1861. He argued microbes in the air caused decay. He suggested germs caused diseases.
Robert Koch	Built on work of Pasteur. Linked specific diseases to a particular microbe. Identified Tuberculosis (1882) and Cholera (1883) amongst others.
Florence Nightingale	Worked during Crimean War (1853-54). Made all hospitals clean and hygienic with proper food. Death rate fell from 42% to 2%. Published her methods and made nursing much more respectable.
Mary Seacole	Financed herself to go to Crimea and treat soldiers. She was rejected from nursing due to race. She built her own hospital and believed in caring with kindness.
Robert Lister	Financed herself to go to Crimea and treat soldiers. She was rejected from nursing due to race. She built her own hospital and believed in caring with kindness.
James Simpson	Began experimenting with chloroform as pain relief in childbirth. Queen Victoria used in 1853, leading to it being widely used. Sometimes affected the heart, leading to sudden death.

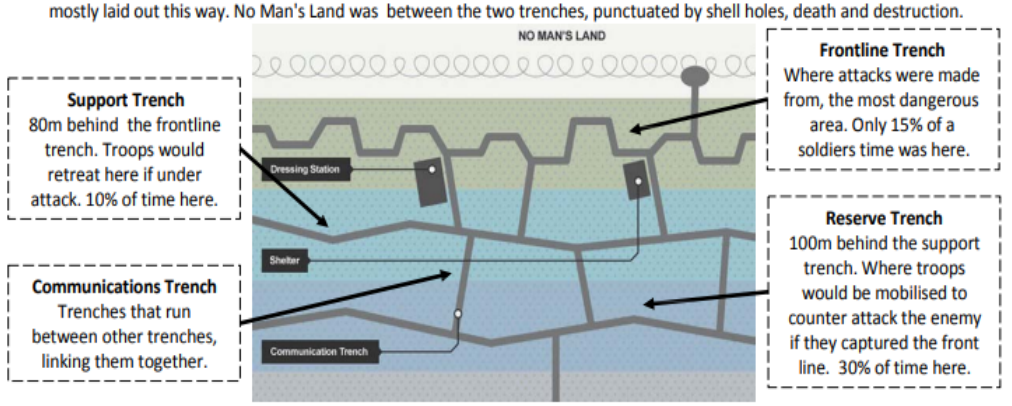
Year 11 Learning Cycle 1 History - Medicine through Time c.1250-present

1. Key words	Description
Patent medicine	A fake remedy sold as real medicine
Quack doctor	A fake physician that sells patent medicines
Magic bullet	A chemical / synthetic / man-made drug that targets and kills disease-microbes
Alternative therapies	Medical treatments not involving drugs e.g. acupuncture
Transfusion	Transferring blood from a donor to a recipient (person receiving the donated blood)
Sodium citrate	A chemical added to donated blood to stop it clotting
Citrate glucose	A chemical added to donated blood so it can be stored for longer
Blood depot	A blood bank / storage facility for donated blood
Gangrene / sepsis	Death of body tissue due to lack of blood flow or serious bacterial infection.
Gas gangrene	When a wound is infected the skin swells and a foul-smelling gas is released when the wound is treated
Sterile	A germ free environment
Pedicle tubes	Tubes made from a patients skin tissue whilst still attached to the body. Stitched onto a wound helping the body to heal itself and avoid infection.
Antibiotics	An organism that kills other organisms such as bacteria
Genetic screening	The study of a person's DNA sequence in order to identify susceptibility to particular diseases
Stem cell research	Stems cells are extracted from human embryos and can be grown to repair faulty cells in a patients body, but the embryo dies.

2. Key People	Description
Paul Ehrlich	Researchers began to find ways of killing germs inside the body without harming healthy human tissue. This idea was called a 'magic bullet'. Salvarsan 606 targeted Syphilis.
Gerhard Domagk	Researchers began to find ways of killing germs inside the body without harming healthy human tissue. This idea was called a 'magic bullet'. Salvarsan 606 targeted Syphilis.
Harold Gillies	Dr Harold Gilles treated serious facial injuries during WW1. He developed plastic surgery for war wounds, using a technique called Tube Pedicles to repair damage.
Alexander Fleming	Fleming accidentally found substance called Penicillin which kills bacteria in 1928. This is now known as Antibiotics. He wrote about his findings in a medical journal.
Florey & Chain	There was no money to develop Penicillin until the USA joined the Second World War. The US government started to pay to mass produce it, meaning it became more available.
Watson & Crick	There was no money to develop Penicillin until the USA joined the Second World War. The US government started to pay to mass produce it, meaning it became more available.

The Trench System

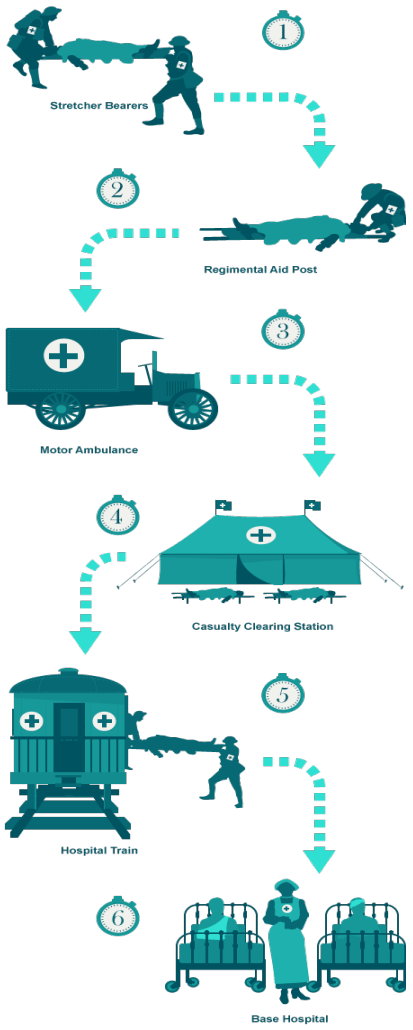
This shows the main features of the Trench System from the Western Front, they were often quite different but they were mostly laid out this way. No Man's Land was between the two trenches, punctuated by shell holes, death and destruction.



45% of a soldiers time was actually spent away from the trenches.

Year 11 Learning Cycle 1 History - Medicine through Time c.1250-present

Type of Source	What can be learnt from this type of source?
National Army Service Records for individual soldiers (NB many were destroyed during a WWII bombing raid but many survive and are available from the National Archives)	Dates of service; where soldiers fought; record of wounds, treatments and hospitals admitted to, discharge records, death record.
Pension record cards (currently being digitised)	Details of war related wounds, sickness and injuries and post-war medical board results.
National newspaper reports	Battles, number of injuries, deaths etc. recorded, eye-witness accounts, government statistics – should be fair but may be one-sided. Propaganda often published as fact. Censorship relaxed during war.
Government reports on aspects of the war	Departmental overview of aspects of the war – spending on munitions, problems with transportation etc.
Medical articles/journals by doctors and nurses who took part in the war e.g. British Medical Journal	Although BMJ is produced for medical professionals it provides an insight in the medical care of soldiers e.g. articles like 'Head injuries in War', 'Some notes on Trench Fever'. Recollections of the work undertaken – injuries of soldiers, conditions, chain of evacuation, new techniques and technology etc.
Personal accounts of medical treatments by soldiers, doctors, nurses or others who were involved e.g. letters, diaries	Often emotive accounts – detailing feelings and thoughts as well as facts. Only give one person's view of events or a snapshot of what was happening at one particular time or place in the war.
Photographs	Show images of what is happening at that exact moment in time although could be staged and not necessarily typical of conditions across the Western Front or throughout the war.
Hospital/RAMC records	Date of admittance, records of injuries and care given, discharge notes, death records, new techniques attempted.
Army statistics	Numbers fighting in each battle, killed or injured.



1. RAP: Regimental Aid Post

- Located within 200 metres of the frontline, in communication trenches.
- The purpose of the RAP was to give immediate first aid and get as many men back to the front as quickly as possible. They could not deal with serious injuries – these were sent to ADS.
- Led by a Regimental Medical Officer with some stretcher bearers.

2. Dressing stations (ADS and MDS)

- There was usually an **Advanced Dressing Station** (ADS) within 400m of the RAP and a **Main Dressing Station (MDS)** about half a mile away, usually in tents or bunker to provide protection from enemy shelling. They could only look after men for a week.
- They were staffed by 10 medical officers, stretcher bearers and nurses too. In total, they could deal with about 150 men but often in battles like Ypres (1917) they dealt with 1,000 causalities in 2 days at Hooge.

3.Casualty Clearing Stations (CCS)

- Around 7 miles away from the front, close to the railway and for ambulance wagons.
- They had several doctors, contained operating theatres, x-ray machines and wards. They could deal with up to 1,000 casualties at a time. At the Third Battle of Ypres the 24 CCS treated over 200,000 causalities with only 4% dying.
- The CCS treated the most critical injuries close to the front. This was important as it would stop gangrene infection and so men could be sent back to the front.
- The CCS had a triage system to assess the wounded into three categories:
  - The walking wounded - patch them up and send back to the front.
  - Those in need of hospital treatment - move to a Base Hospital.
  - No chance of recover y- make them comfortable.

4. Base Hospitals

- Situated near the ports on the French/Belgian coast on trainlines and canals.
- They had operating theatres, x-ray machines, laboratories and even specialist centres for treating gas poisoning and head wounds. These specialist wards allowed doctors to become experts in treatment of particular wounds.
- They could treat upto 2,500 patients at once.
- From here, most patients were sent back to England, those with '*Blighty Wounds*'.

Year 11 Learning Cycle 1 Spanish

1. Know your question words!

To answer any question, it's essential you know your key question words well. These are all on Memrise as well for you to practise.

qué = what
cuál = which
dónde = where
adónde = where to
de dónde = where from
cuándo = when
quién = who
con quién = with whom
por qué = why
cuánto = how much
cuántos = how many
cómo = how
cómo es = what like

2. Non-negotiable verbs

These are the most important verbs in the Spanish. If you know these well you can talk about most things!

fui = I went
vi = I saw
fue/era = it was
me gustó = I like it
me divertí = I had fun
visité = I visited
comí = I ate
había = there was/were
iré = I will go
será = it will be
habrá = there will be
voy a = I'm going to
va a = he/she's going to
me gustaría = I would like

3. Vocab learning techniques

1. Your Knowledge Organiser includes all the topic specific vocabulary for this term, this is also accessible on Memrise.
2. We have created vocab lists of common high-frequency words that you need to know for the various exams- use the resource sheets provided, or practise from the lists on Memrise.
3. Use your Target Books! Last year you were all given Target Reading and Writing books, these are written by the exam board and are an invaluable resource when preparing for the GCSEs

4. Wow phrases

Including this type of vocab will always impress an examiner!

instead of en mi opinión use:

a mi juicio/ desde mi punto de vista or a mi modo de ver

instead of en un mundo ideal use:

si fuera posible (if it were possible)

si pudiera (if I could)

Use less common connectives- see the Wow phrases sheet for the full list.

5. High frequency Vocabulary

This vocab is commonly used all the time in Spain, the more of this you know, the better you will be able to communicate in any situation:

primero= first
luego = then
después = after that
más tarde = later
el primer día = on the first day
el último día = on the last day
la última vez = the last time

6. Further Reading

Revision of Theme 1- Identity and Culture:

https://www.bbc.co.uk/bitesize/topics/zdyvqp3

https://www.bbc.co.uk/bitesize/topics/zj3b2sg

https://www.bbc.co.uk/bitesize/topics/z7grxyc

Revision of Theme 2- Local area, holidays and travel:

https://www.bbc.co.uk/bitesize/topics/zmc4t39

https://www.bbc.co.uk/bitesize/topics/z69kpg8

Revision of Theme 3- School:

https://www.bbc.co.uk/bitesize/topics/zh8dscw

Revision of Theme 4- Future aspirations, work and study:

https://www.bbc.co.uk/bitesize/topics/znwjy9q

Revision of Theme 5- International and global dimension:

https://www.bbc.co.uk/bitesize/topics/zfq7382

Year 11 Learning Cycle 1 Computer Science - Computational thinking, algorithms and programming

1. Key Terms	Description
Iterative Testing	as the program is being developed
File Open	`f = open("myFile.txt")`
SQL	Structured Query Language is used to work with databases
Linear Search	Search the list one element at a time. Works on an unsorted list. Can be slow.
Terminal Testing	at the end of the writing process. More formal and documented
File Close	Always close after opening! `f.close()`
Ethical	Does the software cause harm. What are the rules that govern decisions?
Binary Search	On a Sorted list. Find centre. Look higher or lower for the item. Splitting until found. Faster than linear.
Selecting test data	Using data that is boundary, normal and invalid
File Read	`f= open("myFile.txt", "r")` print(f.read())
Legal & Privacy	Data Protection Act 2018 Computer Misuse Act 1990 Copyright Licences
Bubble Sort	Compare items with the next one. If the first value is bigger, swap the positions of the two values. Repeat passes until sorted.
Maintainability	How to write code so it is clear what is happening, so others can understand

File Write	Append:
	`f = open("demofile2.txt", "a")`
	Overwrite/create:
	`f = open("demofile3.txt", "w")`

Environmental	How are computing devices made? How are they disposed of?
Merge Sort	Divide and conquer. Divide list into two until all the items are separated. Then order in pairs until list sorted.
Syntax and Logic errors	Writing it wrong or designing it wrong
IDE	The integrated development environment. Useful editor for syntax errors, colours and runtime
Cultural	What is the impact on people who use computers?
Insertion Sort	Each item is checked in order and inserted in the correct place until the end of the list

2. File Handling in Python

`file = open("myfile.txt","w")`	Open the file for writing
`file.write("Hello Poltair \n")`	Write to the file
`file.close()`	Close the file
`file = open("myfile.txt","a")`	Open file to append
`file.write("Have a nice day \n")`	Write to the file (adds to the next line)

3. Testing code

Choosing data to test with:

Valid data - sensible, possible data that the program should accept and be able to process

Boundary data - valid data that falls at the boundary of any possible ranges. It should not give an error.

Invalid (erroneous) data - data that the program cannot process and should not accept. You should get an error!

Test input

Name:

Test Number	Input	Expected
1	Joe	No error
2	X	Error
3	12345	Error

Error Types

Syntax	Writing it wrong eg: `PRINT("Hello)` instead of `print("Hello")`
Logic	Designing it wrong eg: `Sum = 12/4` instead of `Sum = 12+4` The IDE will not give you an error message!

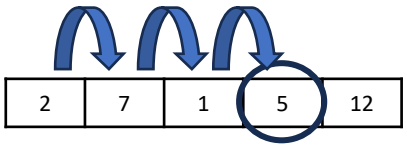
Iterative testing is carried out while a program is being developed. It is repeated until the code works as intended.

Final (terminal) testing is carried out when all parts of the code are complete. The program is tested as a whole to ensure that it functions as it should.

Year 11 Learning Cycle 1 Computer Science - Computational thinking, algorithms and programming

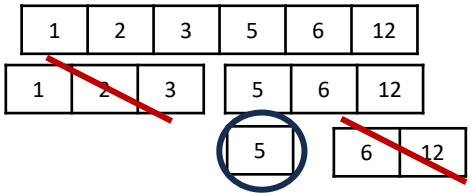
4. Searching and sorting data

Linear search



Starting at the beginning of the data set, each item of data is examined until a match is made. Once the item is found, the search ends. Can be inefficient on large lists, but the list doesn't need to be sorted first.

Binary search



More efficient algorithm than a linear search. Works on an ordered (sorted) list, breaking it into 2 parts until the number is found.

Sorting algorithms

Bubble Sort	Compare the first value in the list with the next one up. If the first value is bigger, swap the positions of the two values. Each pass is a better sorted list but needs a final pass to check.
Merge sort	The list is repeatedly divided into two until all the elements are separated individually. Pairs of elements are then compared, placed into order and combined. The process is then repeated until the list is recompiled. Complex to code but efficient. Divide and Conquer!
Insertion Sort	The list is repeatedly divided into two until all the elements are separated individually. Pairs of elements are then compared, placed into order and combined. The process is then repeated until the list is recompiled. Complex to code but efficient. Divide and Conquer!

5. Structured Query Language

SQL is a language used to manage data in a database

Database	An application which has linked tables of data Eg Microsoft Access

SELECT FROM WHERE	Allows you to choose data to display form a table:
	`SELECT * FROM Students WHERE First_Name = "Fred"`
	This would output all the data from the students whose name is Fred
	`SELECT Last_Name, Telephone`
	`FROM Students WHERE`
	`First_Name = "Fred"`
	This would output the last name and telphone number form all the students whose name is Fred

Using Booleans with SELECT query	You can use NOT, AND and OR in your SELECT query. This would output all the student data for students whose last name was either Smith or Jones. `SELECT * FROM Students WHERE Last_Name= "Smith" OR "Jones"`
Using Operators	Mathematical operators can also be used – here to output the names of all over 16. `SELECT First_Name, Age FROM Students WHERE Age > 16`
ORDER	You can specify the order of the output: `SELECT * FROM Customers ORDER BY Country;`

Year 11 Learning Cycle 1 Computer Science - Computational thinking, algorithms and programming

6. Maintainability

Ways to make your code more maintainable:

- Using Sub Programs
- Naming conventions
- Indentation
- Commenting

7. Programming Fundamentals - Data Types and casting

Integer	Whole number eg 13 `myAge = int(age)`
Real	Number with decimal places eg 105.7 `myHeight = float(height)`
String	Number with decimal places eg 105.7 `myHeight = float(height)`
Character	Number with decimal places eg 105.7 `myHeight = float(height)`
Boolean	TRUE or FALSE

Array/List	One Dimensional Array
	`Names = ["John","Paul","George"]`
	`print(Names[0])`
	Two-Dimensional Array
	`TicTacToe = [[1,2,3],[4,5,6],[7,8,9]]`
	`TicTacToe[1][1] = 5`
	`TicTacToe[0][2] = 3`
	`TicTacToe[2][2] = 9`
	1 2 3
	4 5 6
	7 8 9

8. Constructs

Sequence	Instructions executed in order

Selection	`if day == "Monday":`
	`  print("The start of a brilliant week!")`
	`  day_number = 1`
	`elif:`
	`  print("Halfway through the week!")`
	`else:`
	`  print("Have a great day")`

Iteration	`# display a count from 1 to 10`
	`count = 1`
	`while count <= 10:`
	`  print(count)`
	`  count = count+1`
	`# display a count from 0 to 10`
	`for count in range (11):`
	`  print(count)`
	`# display a count from 1 to 7`
	`for count in range (1, 8):`
	`  print(count)`

Sub Programs	Functions return one or more values
	`def my_function(Num_a):`
	`  Result = Num_a *5`
	`  return Result`
	Procedures perform a task but do not return anything to the main program
	`def my_Hello():`
	`  print("Hello Poltair")`
	`my_Hello()`

9. Operators

Operator	Meaning
=	assignment
==	Is equal to
>	Is greater than
<	Is less than
!=	Is not equal to
>=	Greater than or equal to
<=	Less than or equal to

Operator	Symbol	Example
ADD	+	age + 10
SUBTRACT	-	year - 55
DIVIDE	/	days / weeks
MULTIPLY	*	months = age * 12
MOD (remainder)	MOD	days MOD weeks
DIV (whole number)	DIV	13 DIV 2
To the power of (x^n) exponent	** or ^	2**4

Year 11 Learning Cycle 1 Art

Exam Paper out June 2023.

Choose your Question.
There are 4 questions. Read them all and use the powerpoint that was emailed to you, to look at the work of the artist, craftsperson and designers. Discuss the options with your teachers, friends and family.

Completion of Resource material and initial idea development September 2023

Artist Research.
You will have selected your idea and will now need to find an artist, craftsperson or designer that links to your work. Do a double page spread on them. Write and tell me why you have selected them and how they relate to your work.

Development of Ideas & Contextualisation.
You are now ready to refine your ideas. You might do this through drawing or writing. It is at this point that you must include a contextualisation link if you have not already done so. Split the page into 4 and sketch 4 different ideas, annotate and colour.

Development & Contextualisation September 2023

Brainstorm.
Take the title and create a brainstorm across a double page. This can include images and drawings. The more detailed you make this the more refined your idea will be.

Brainstorm & Artist Research complete. July 2023

Resource Material.
Collect resource materials that links to your ideas. This can be collaged images and information from newspapers and magazine, photographs and drawings. It should be a mixture of all of these and it should be annotated telling me why you have chosen this and how it relates to the question.

Experimentation of Materials.
You will have started this when you initially recorded your ideas, however you should be ready to select one idea, draw it onto A4, split in half and experiment with two different materials such as acrylic and watercolour. Write and say which you prefer and why. How does it relate to your artist? If you are doing 3D you will create small versions of the ceramic piece or samples of the textile piece.

Experimentation. October 2023

Artist Research.
There will be 3 named artists, craftspeople or designers in the question. Look at the work of all 5 then select the three that you like the most. Produce a double page spread on each artist. Think about the presentation and most importantly include your written opinion and a copy of their work.

Second Brainstorm / Ideas
Your ideas will have started to grow and develop from the moment you selected a question. Now you must evidence these ideas. You can do this by writing about them, drawing them or using collage. A second brainstorm is helpful at this point.

Final Composition / Idea.
You will know from your idea development what you want to do as the final outcome / piece. If it is a painting draw the final composition onto A4 and paint it as a mini version of what you will do in the exam. If it is 3D make a smaller model. You are showing the examiner your intentions.

Final Idea. October 2023

GCSE PPE

Dates to be confirmed.

Year 11 Learning Cycle 1 Design Technology - Briefs, Specifications, ideas and development

Design Briefs

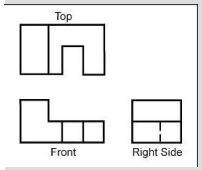
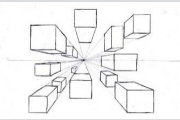
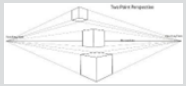
A Design Brief is the statement of how you will solve the Design Problem
It will often include:

- Constraints/ limitations
- What the product is
- Materials/processes
- Any key information you know

Design Specifications

- A Design Specification is a list of requirements your product has to meet in order to be successful
- It is also useful for evaluation. If your product hasn't met the Spec then it gives you a starting point
- for improvements.

Key Words	Definitions
Aesthetics	What the product looks like? Style? Colour Scheme? Design Movement?
Customer	Who would buy it? (Age, gender, socio-economic, personality) How does the design appeal to them?
Cost	How much will it cost? (min-max) Why?
Environment	Where will it be used? Why? How will you make it suitable?
Safety	How is it safe? How will it be checked? Why must it be safe?
Size	What is the maximum or minimum size? Why?
Function	What does the product do? What features make it do that function well? How is it unique from similar products?
Materials	What is it made from? Why?
Manufacture	How might it be made? Why? What scale of production? Why?

Technique	Description/ notes	Diagram
Orthographic Projection/ Working Drawings	• Includes "Front", "Plan" and "End" 2D Views, and often an Isometric 3D View • Standardised method for scale, dimensions and line types • Great for manufacturing	
Isometric	• Common 3D sketching method • Can be drawn free-hand or using isometric paper and ruler • Angles are at 30 degrees • Great for seeing most of the products	
1-Point Perspective	• A 3D drawing method • Often used by interior designers and architects • Gives drawings depth • Only uses 1 vanishing point	
2-Point Perspective	• Used for 3D designs • Exaggerates the 3D effect • Objects can be drawn above of below the horizon line but must go to the 2 vanishing points	
Annotated Drawings/ Free and Sketches	• Quick and easy way of getting ideas down • Range of ideas can be seen • Annotation helps explain designs further	
Exploded View	• Helps see a final design of a product and all it's parts • Can see where all the parts fit • Great for manufacturers	

Modelling and Development

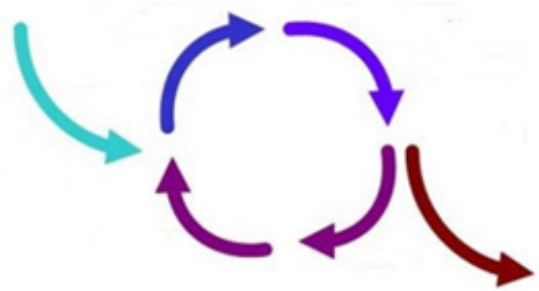
Modelling and development are key to testing and improving products This can be done physically using materials like; card, foam, clay, man-made boards or virtually in CAD.

Modelling helps the designer get feedback from the customer, check aesthetics, function, sizes and even materials and production methods and change them if needed

Year 11 Learning Cycle 1 Design Technology - Design strategies

Design Strategies are used to solve Design Fixation, and help develop creative design ideas.

Iterative Design



- A Proposal is made
- It is then planned and developed to meet the brief
- It is analysed and refined
- It is then tested and modelled
- Then evaluated against the brief – many versions fail but that then informs development to make the idea better
- The cycle then repeats and if the product is successful it is then made and sold on the market

Advantages	Disadvantages
• Consistent testing helps solve problems earlier • Constant feedback • Easy evidence of progress	• Designers can loose sight of "the big picture" • Time consuming

User-Centred Design

- This is when designs are based on fulfilling the needs and wants of the Users/Clients at every stage of the design process
- Questioning and testing is ongoing and is often found through

Advantages	Disadvantages
• User feels listened to • Makes sure the product meets their needs	• Requires extra time to get customer feedback • If focused on just one person it can limit appeal to others

Systems Approach

- Usually used for electronic products
- Often uses diagrams to show systems in a visual way
- Planning the layout for the correct sequences e.g. inputs, outputs, timings, etc
- Electronics and mechanical systems need an ordered and logical approach

Advantages	Disadvantages
• Does not need specialist knowledge • Easy to communicate stages • Easy to find errors	• Sometimes over-simplifies stages • Can lead to unnecessary stages

Collaborative Approach

- Working with others to share data and solving problems and coming up with design proposals can help with creativity
- Numerous companies work in teams, and has been shown to improve the range and quality of ideas produced

Advantages	Disadvantages
• Gets multiple opinions and a range of views • Working in groups can produce more ideas	• Can be difficult to design ideas with opposing views • Can be difficult to find time to communicate with multiple people

Year 11 Learning Cycle 1 Design Technology - Environment

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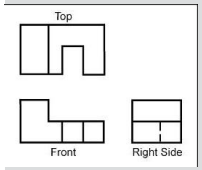
Orthographic Projection/ Working Drawings	• Includes "Front", "Plan" and "End" 2D Views, and often an Isometric 3D View • Standardised method for scale, dimensions and line types • Great for manufacturing	
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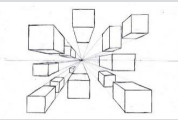
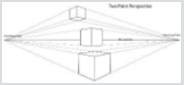
1-Point Perspective	• A 3D drawing method • Often used by interior designers and architects • Gives drawings depth • Only uses 1 vanishing point	
2-Point Perspective	• Used for 3D designs • Exaggerates the 3D effect • Objects can be drawn above of below the horizon line but must go to the 2 vanishing points	
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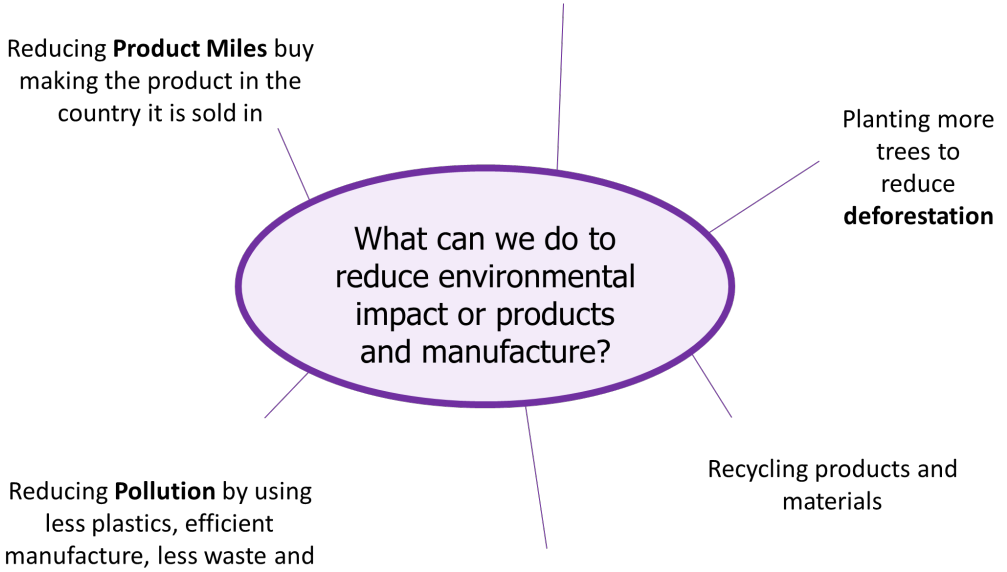
Year 11 Learning Cycle 1 Design Technology - Environment

The 6Rs	Meaning
Reuse	To use a product again either for the same purpose or a different one
Reduce	To have less of material/packaging/pollution when making products by making them more efficient
Recycle	Breaking down and forming the material into another product
Refuse	Customers not buying or supporting products that make an environmental impact
Rethink	Designers and customer rethinking their decisions when making and buying products.
Repair	Fixing a product rather than throwing it away. Extending its life rather than using more resources to make another. Often products are Designed for Maintenance so can easily be repaired. E.g. Using screws so even non-specialists can take a product apart, or using components that can easily be replaced like fuses or batteries



Life Cycle Assessment

This is when a designer looks at the environmental impact a product makes over its life time and how it could be reduced. Including:

- Impact of materials
- Impact of processes
- Product Miles (how far a product has to travel to get from factory to consumer)
- Impact while in use
- Impact when disposed of (6Rs)

Sustainability

Sustainability is maintaining our planet and its resources and making a minimal negative impact

Finite Resources

Will run out of eventually

Plastics
Metals
Polymers (Textiles)

Infinite Resources

Can be re-grown and re-bread. Will not run out of

Paper
Boards
Natural Timbers
Cotton
Leather

Planned Obsolescence

This is where products “die” after a certain amount of time. E.g. Disposable cups, Phones, Lightbulbs, Printer Ink, etc This can have a big environmental impact as customers are throwing away lots of products, and resourc

Year 11 Learning Cycle 1 Design Technology - People, Society and Culture

Market Pull and Technology Push

Technology Push is the development of new technology, materials and manufacturing methods to create new products or improve old ones.

Examples include; Smart Phones, Electricity, Mass Production, etc

Market pull is the demand from consumers for new products and improvements in old ones; this is often found via reviews, polls, surveys, etc Examples include; Product Aesthetics, making products easier to use, etc

Cultures, Faith and Belief

Different groups of people have different interests and have to be catered for.

Different countries and cultures also react to products differently.

E.g. In India McDonalds don't sell beef burgers as it has a large Hindu populatin, and cows are seen as sacred – in contrast the UK sells its most amount of fish and chips on a Friday as it is a Christian tradition to not eat meat on that day.

Case Study: £5 note

Hindu, Sikh and some other faith-based communities may choose to follow a vegetarian diet, and this is part of their culture. In addition to not eating meat, many followers of these faiths, as well as vegans and vegetarians, take every opportunity to avoid using animal products in their day-to-day lives.

The revelation in 2016 that the new polymer Bank of England £5 note contained tallow, an animal fat-based substance, upset a number of communities. There was a prompt call for the Bank of England to find an alternative way to produce the note and in the first two days of an official petition well over 100,000 signatures were received.

Shortly after the Bank of England admitted that the new polymer £5 note contained the animal by-product, some establishments refused to take the notes as a method of payment. One café owner was repulsed by the idea that the note contained tallow and believed that her customers supported her view. They received no complaints.

The Bank of England say they currently have no plans to change the manufacturing process.

Fashion and Trends

Fashion and Trends will change quickly, and you can see major differences in fashions over decades. Designers have to make sure their products meet the fashion and trends of the area they are designing and selling the product to. The change of products over time is called Product Evolution. This is caused by Market Pull, Technology Push and Fashion and Trends.

Some products are seen as timeless. These products are called Iconic Designs. These products are timeless because they were innovative, set a bench mark for following products, changed their industry and are often copied.

Examples include; iPod, iPhone, Angle-Poise Lamp, Swiss Army Knife, Converse Shoes, Levi's Jeans, Classic Mini Cooper

Inclusive vs. Exclusive Design

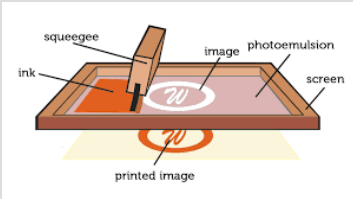
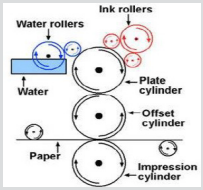
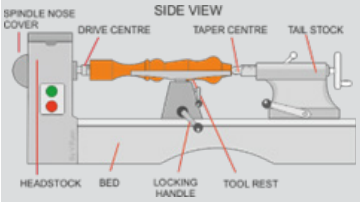
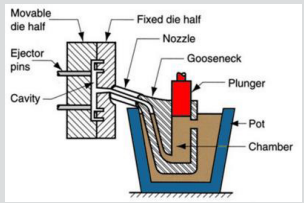
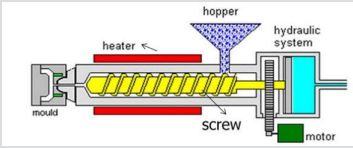
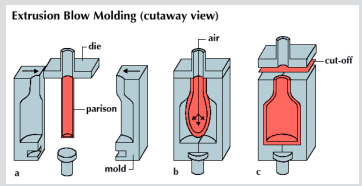
Inclusive Design: The aim to create a product that as many people as possible can use

Examples include; Cars, Doorframes, Adjustable Products, etc

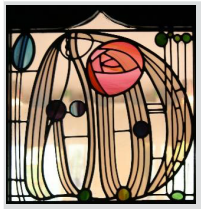
Exclusive Design: The aim to create a product for a particular group and their needs

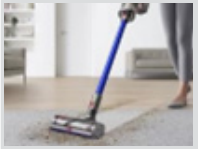
Examples include; Car seats for babies, Wheelchairs, Stair Lifts

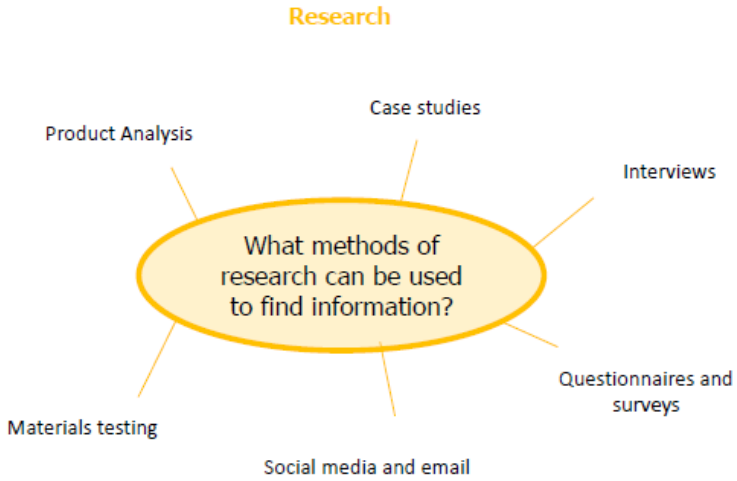
Year 11 Learning Cycle 1 Design Technology - Production Processes

Name of Process	Diagram	Material	Products Made	Key info
Screen-printing		Papers and Textiles	Posters, signs and t-shirts	Screen printing places paint on top of a screen. The screen has a stencil embedded in it, so when the paint is passed across it the desired shape is printed underneath. Good process in one-off and batch production as often done by hand
Offset Lithography		Papers and card (thin, flexible plastics)	Posters, newspapers, plastics bags	Rollers containing the colours and water go onto the plate cylinder. The water stops the colours sticking to certain places, creating the shape. The shape is transferred between rollers and onto the material. Can be used at batch and mass production
Lathe Turning		Wood and metal	Chair legs, baseball bats (cylindrical items)	Material is placed between the tail stock and the headstock and spun at high speed. The material is then cut using specialist tools (either by hand or my automated machinery) to the desired shape. Can be used in one-of and batch production
Die Casting		Metal	Car parts, engine components, etc	Molten metal is poured into a chamber and a plunger forces the metal through the nozzle into the mould. Unlike sand casting, the mould is reusable. Good process for both one-of and batch production
Injection Moulding		Plastics	Chairs, toys, etc	Plastic granules are poured into the hopper and onto the screw. The screw moves the material towards the heater where it turns into a liquid. The liquid is then forced into the mould, cooled and released. Great process for mass production as it makes 100s+ of products at once, to a identical standard.
Blow Moulding		Plastics	Plastic bottles	A Plastic parison is heated and put into the mould. The parison is then filled with air (like blowing up a balloon) and is forced to fit the mould shape. It is then cooled and then released. This is a great process for mass producing bottles.

Year 11 Learning Cycle 1 Design Technology - Work of others and Customer Research

Image/ Example	Designer	Design Movement	Key info
	William Morris	Arts and Crafts	• British designer in 1880s • Simple natural crafts • Useful and beautiful products (wallpapers, cushions, etc)
	Charles Rennie Mackintosh	Art Nouveau	• Scottish designer in 1860s – 1920s • Known for light and shadow • Created stained glass and furniture • Inspired by nature and geometric lines
	Ettore Stottas	Memphis	• Italian designer in the 1950s/60s • Enjoyed making everyday objects wacky and bold • Used lots of bold colours and black lines

Image/ Example	Brand	Key info
	Alessi	• Italian Design Company • Homeware and kitchen utensils • "Post-modern" style • Phillipe Starke is a major designer
	Apple	• USA-based tech company • Famous for iconic designs of iPod and iPhone • Steve Jobs and Johnathon Ive are major designers • Known for innovative and modern design
	Dyson	• British engineering company • Famous for vacuum cleaners and innovative technology • James Dyson is a major designer



Research can be divided into 2 categories; Primary Research and Secondary Research. Primary is research you complete yourself. Secondary is research from resources others can gathered e.g. books, magazines and internet Primary research is generally more reliable as it is done by the person using it and can double-check the data

Anthropometrics and Ergonomics

Another key piece of research, is Anthropometrics and Ergonomics. This helps develop the sizes of products, etc to make sure it fits the User

Anthropometrics	The study of measurements of the human body. E.g. Knowing the grip width of a palm, if designing a new travel coffee cup
Ergonomics	The application of anthropometrics to ensure products are safe and comfortable to use. This can aso include; size, material, appearance, brightness, sound and texture. E.g. making sure the travel cup is the correct size, and an insulating smooth material to make it comfortable

Year 11 Learning Cycle 1 Engineering - Understanding engineering drawings

1. Interpreting engineering drawings

Designers and engineers use engineering drawings to convey information and details about the product to be manufactured or constructed.

Engineering drawings include details such as:

- sizes of parts or elements to be made
- details on materials
- information on finishes
- various views of the product
- tolerances
- scale
- details of complex parts.

Scale informs the engineer what scale should be used when using the drawing. A scale of 5:1 indicates that the drawings are five times smaller than the original product should be. This allows engineers to take dimensions (sizes) directly off the engineering drawings. Care must be taken when doing this to ensure the correct scale is applied.

Finishes information gives details on what the finish of the part or product would look like, for example, a knurled finish on a tightening clamp.

Detail views are sometimes used by engineers to explain the details of more complex parts in an engineering drawing.

Title blocks are used to display key sections of information about the drawing, i.e. scale, who made the drawing, the date it was drawn, the drawing number.

Orthographic views are the standard views used to lay out a set of engineering drawings. They must conform to British standards (BS8888) to allow a common format of presenting information to various people such as manufacturers.

Section views show a drawing of a part that may have been cut through to allow the reader to see further details.

Isometric views are often used by engineers and designers to produce a three-dimensional representation of the product or part.

2. Interpreting engineering information

Engineers need to interpret the information found on engineering drawings to assist them in manufacturing.

The information should be used to identify key areas in preparation for planning such as:

Equipment that will be required to manufacture the engineered product.

Tools that will also be required during the manufacturing should be identified.

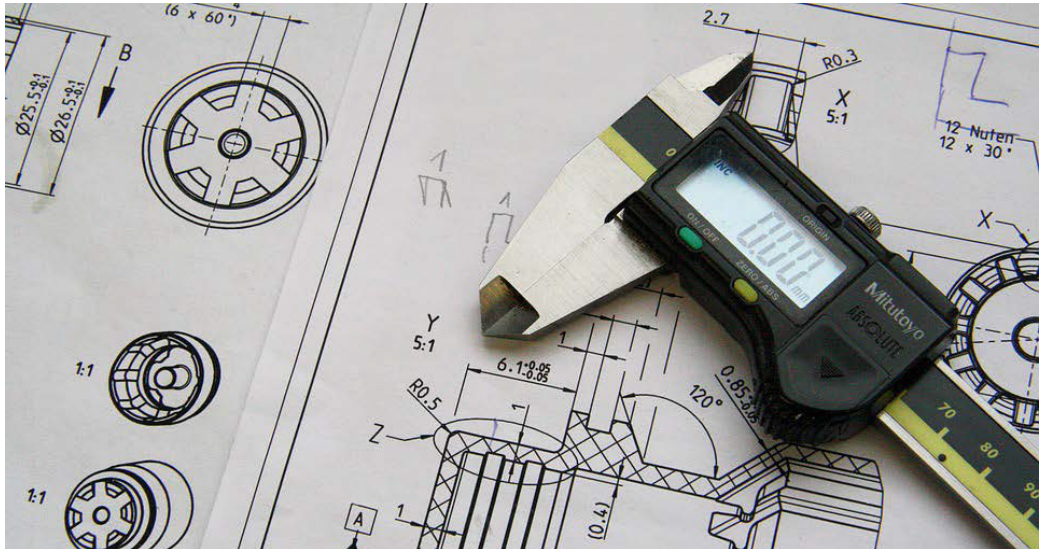
Tolerances are the minimum and maximum limit that a part can be outside of the stated dimension (size) on a drawing. For example, a part that is 20mm long with a tolerance of ±0.3mm would be acceptable if it was 20.3mm or 19.7mm when finally tested.

3. Presenting engineering information

Engineers and manufacturers need to know specific information about the product before they can manufacture it.

The people who will undertake the manufacturing must also understand specific details about how processes are carried out i.e.

- which speed should be used to drill a particular size hole in a particular material
- what speed is needed to cut a slot in a piece of aluminium
- which size hole should be drilled in a material to create a given thread size
- what finished must be applied to a material when it is manufactured
- what component parts are required in production (nuts, washers etc.).



Year 11 Learning Cycle 1 Engineering - Planning manufacture

1. Planning manufacture

Before any manufacturing can take place, a plan is needed to determine each stage or step of the process.

The plan should include:

- the materials to be used to produce the engineered product
- what equipment will need to be used
- what tools will be needed
- the sequence (order) that manufacturing needs to take place in.

The sequences need to consider in what order parts are manufactured, as some parts require others to be made to ensure they join correctly, etc. This is also known as prioritising.

2. Equipment selection

Equipment should be classed as any powered machinery that will be used in the production of an engineered outcome.

Equipment choices should give justifications for their selection and should refer to engineering drawings or other provided sources.

Typical equipment may include:

- centre lathe
- drills
- miller
- laser cutter
- bandsaw
- linisher
- brazing hearth
- buffer/polisher

3. Tool selection

Tools should be classed as any hand tools that will be used in the production of an engineered outcome. These should also include marking and measuring tools.

Tool choices should be justified in the planning stages to explain why they were selected.

These include:

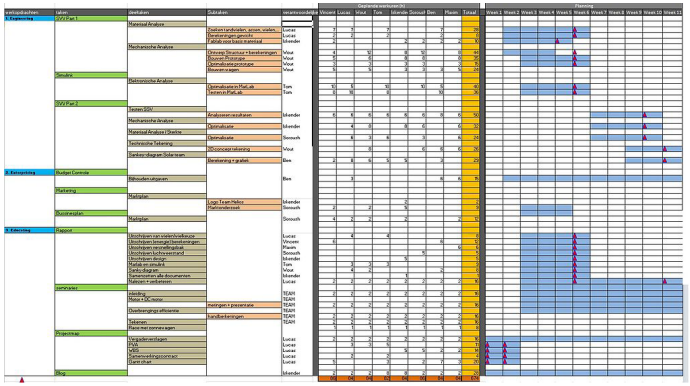
- scriber
- centre punch
- standard, internal, external and odd leg callipers
- soldering iron
- steel rule
- engineer's square
- file
- dividers
- micrometre
- vernier callipers
- rivet sets
- taps and dies
- hacksaw
- fretsaw
- pliers
- screwdriver

4. Planning and sequencing

Plans for manufacture should be presented in a way which is easy to find key information at a glance. Planning information could include tables such as a GANTT chart or other lists or appropriate documents.

Manufacturers should be able to understand from the provided information, the sequence of manufacture and the time it should take to produce the part, which tools and equipment should be required for each stage and any processes such as the use of jigs or templates.

Planning and sequencing should also consider the use of CAM (where appropriate), including 3D printing and laser cutting.



Contingency planning

Planning should also include contingencies to overcome problems that may arise during production. What happens if a machine breaks down or people become ill?

Contingency planning should include ways that problems can be overcome, giving examples of scenarios and possible contingencies.

Year 11 Learning Cycle 1 Engineering - Using engineering tools and equipment

1. Using engineering tools

Files are used to remove material from stock form of metals and plastics. This is known as wastage.

Scribers are used to mark lines for cutting on materials such as metals and plastics.

Centre punch is a tool that is used to create a small depression in material prior to drilling. This helps locate the drill accurately on the material.

Tap and die sets are used to created threaded components. A tap used to thread a hole and a die to thread a bar (i.e. a bolt).

Hacksaws are a framed saw used mainly to cut metal.

Rivet guns are used to place rivets in areas that are often accessible from one side. Traditional rivets use 'sets' to form the rivet on both sides of a joint.

An engineer's square is used in marking out material. It is set at 90° and is also used for parallel marking.

Callipers are used to scribe and measure on metals and plastics. Odd leg callipers can be used to scribe lined parallel to an edge, whilst straight leg callipers can be used to both mark equal distance sizes and produce arcs and circles.

Vernier callipers are used to measure a range of sizes such as length of material, depth of holes, internal openings, etc.

Micrometres are highly accurate measuring tools used to measure sizes, i.e. material width/thickness.

Reamers enlarge, smooth, or contour an existing drilled hole in a work piece for a precise fit when installing fasteners or other parts in metalworking tasks.

Shears and snips are used to cut sheet metal. They may be straight or curved depending on the task.

Gauges are used in a variety of engineering manufacturing tasks such as centre gauges, which locate a centre on a metal bar, and thread gauges, which identify the size and pitch on a screw thread.

In addition to the examples above, tools can also include items used on items of equipment known as tooling:

Knurling tools are used to put a textured grip onto a metal bar using a lathe.

A boring bar is used to enlarge a drilled hole to a precise dimension. They are available for a lathe or a milling machine.

Parting tools are used on a lathes to form a narrow slot to assist in the removal of a work piece from the stock/waste material to remove.

2. Using engineering equipment

Commonly used items of equipment that you may find in a school workshop:

Centre lathe

- Facing off is the process of levelling off the end of the material
- Turning a taper causes a uniformed change in diameter over a set length on a bar
- Applying a knurled finish
- Boring a hole
- Drilling along the centre axis line
- Cutting a thread onto a bar or into a hole.

Drilling machine

- Drilling holes using a range of drill bits
- Trimming off using a trimming tool, i.e. vacuum forming.

Miller

- End milling is used to create a profile in the work piece, including square
- End mills, ball end mills, finishing mills and corner rounding mills
- Slot milling involves using a cutter, which cuts slots or groves into the material.

PCB tank

- Used to produce printed circuit boards for electronic circuits
- Uses a photographic and etching process and is used in combination with a UV light box to prepare the PCB artwork.

Vacuum forming:

- A process where a sheet of plastic is heated to a forming temperature, stretched onto a single-surface mould and forced against the mould by a vacuum.

Year 11 Learning Cycle 1 Engineering - Health and safety

1. Health and safety

Assessing potential risks is a process that is undertaken prior starting manufacture. It should identify what potential hazards and risks may be present. This should include both the working environment and the actual items of equipment to be used.

Deciding on control measures should focus on stating how the identified risks and hazards can be mitigated (made safe). This should include detailing about guards on equipment and specific any hazards around the working environment.

Personal protective equipment should also be identified for manufacturing stages and should only include appropriate choices suitable for the individual task being undertaken.

Health and safety should also form a part of the overall planning stages.

2. Implementing engineering processes

This involves the physical making of an engineering product using a range of processes to produce a product or part. These can include:

Marking out is a process where the required shape is marked onto the stock material.

Cutting can occur using a hand tool like a hacksaw, sheers or snips saw or fretsaw, or using machinery such as a metal bandsaw.

Milling uses a milling machine to cult slots in blocks of metals, and to face off edges.

Finishing is applied at the end stage of production. It could include a range of finishes such as polishing, knurling, enamelling, electroplating or anodizing.

Shaping can involve the removal of materials, called wasting, using saws, files or grinding equipment.

Drilling is a process used when a hole is required in a material. Drilling can be done using a hand drill, or drill press/pillar drill.

Brazing typically involves a brazing hearth to braze metals together forming a permanent joint.

Turning uses a machine called a lathe that can be used to turn a piece of metal to create differently shaped round pieces. It can also be used to create threads and to apply different knurled finishes.

Joining metals can be done permanently using welding, brazing, epoxy resin adhesives and soldering. Temporary methods include nuts and bolts, hinges, screws and rivets.

Soldering is used to heat join softer metals such as silver in jewellery (silver solder) or to attach electronic components to printed circuit boards.

Forming is a process used to change the shape of the material, for example by bending, compressing or extruding.

3. Evaluating the quality of engineered products

Engineers, manufacturers and designers need to constantly evaluate stages of manufacture to ensure that outcomes are produced in line with the given criteria.

Typical examples are:

Inspection techniques can combine a range of methods that can be undertaken to ensure that the product or part meets the set criteria. They could include visual inspection, looking for manufacturing defects or sophisticated digital scanning techniques, which assess accuracy to a minute detail.

Evaluating against a success criteria requires the end product or part to be reviewed against information that may have been included in a brief or manufacturing specification.

Evaluating against engineering information requires checking against information obtained from engineering drawings. This could include checking sizes and finish details but also checking that the tolerances of the final parts are within the allowed parameters.

Quality inspection can include inspection of individual parts as they are manufactured or as they are assembled on the completed engineered product.

Year 11 Learning Cycle 1 Hospitality and Catering - Nutrition at different life stages

1. Nutrition at different life-stages

Adults:

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

Children:

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

2. Special Dietary needs

Different energy requirements based on:

- Lifestyles / Occupation / Age / Activity level

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

Medical conditions:

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

Dietary requirements:

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

Year 11 Learning Cycle 1 Hospitality and Catering - The importance of nutrition

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

Macro-nutrients

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

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

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

fat which are:

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

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

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

Micro-nutrients

Vitamins

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

Minerals

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

Cooking methods

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-f rying

- 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.

Year 11 Learning Cycle 1 Hospitality and Catering - Factors affecting menu planning

1. Sustainability

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

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

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

2. Reduce

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

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

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

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

3. Reuse

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

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

4. Recycle

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

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

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

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

5. 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).

6. 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.

7. 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.

8. 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?

9. 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.

10. 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.

11. 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?

Year 11 Learning Cycle 1 Hospitality and Catering - How to plan production

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

1. Commodity list with quantities

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

2. Contingencies

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

3. Equipment list

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

4. Health, safety and hygiene

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

5. Quality points

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

6. Sequencing or dovetailing

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

7. Timing

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

8. Mise en place

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

9. Cooking

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

10. Cooling and hot holding

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

11. Serving

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

12. Storage

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

Year 11 Learning Cycle 1 Hospitality and Catering - Practical skills and techniques

1. Skills and techniques

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

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

2. Presentation

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

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

3. Basic preparation skills and techniques

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

4. Medium preparation skills and techniques

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

5. Complex preparation skills and techniques

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

6. Basic cooking skills and techniques

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

7. Medium cooking skills and techniques

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

8. Complex cooking skills and techniques

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

9. Creativity

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

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

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

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

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

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

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

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

10. Accompaniments

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

Carbohydrate accompaniments:

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

Fruit and vegetable accompaniments:

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

Sauces:

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

Year 11 Learning Cycle 1 Hospitality and Catering - Presentation techniques

1. Portion control

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

2. Garnish

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

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

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

3. Decoration

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

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

4.Plating styles

Food Safety

1. Food Safety practices

Personal safety and hygiene practices

Hands:

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

Clothing and hair:

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

Cuts:

- Cover with a blue, waterproof plaster.

Equipment:

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

2. Food safety and hygiene practices

Ingredients:

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

Cleaning:

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

Temperatures:

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

Waste management:

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

3. Management of accidents

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

Year 11 Learning Cycle 1 Hospitality and Catering -Reviewing of dishes

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

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

3. Health and safety
- Were you able to use equipment safely?
- Did you store ingredients correctly?

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

5. Reviewing of dishes
PEE: Point, Evidence, Explain

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

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

7. Organoleptic
How did your dishes:
- Look (appearance)?
- Taste (flavour and texture)?
- Smell (aroma)?

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

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

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

11. Organistation
How did you organise your written tasks?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

How did you organise your workstation during the practical session?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

12. Planning
Was the practical session plan in a logical order?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

Were you able to keep to the plan during the practical session?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

13. Time management
How did you manage your time when completing the written tasks?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

How did you manage your time during the practical session?
- Discuss your strengths.
- Discuss your weaknesses.
- Suggest improvements.

Year 11 Learning Cycle 1 Performing Arts

2.vocal skills to become a character for rehearsal and performance (using your voice)

Key word	Meaning
Diction and projection	Diction means pronouncing your speech clearly. Projection is making sure your voice can be heard (this doesn't mean shouting).
Emphasis and volume	Emphasis is when you make a word stand out "I never said **you** stole my hat" is different from "I never said you stole **my** hat". Volume is how loud or quiet the voice is. Don't forget words such as whisper and shout.
Pitch	Pitch means how high or low your voice is. Low pitch may convey sadness, whilst high pitch could convey joy.
Accent	Accent is the way you pronounce your words. It is used to indicate where a character is from, specifically which country or region. It can help distinguish class and status.
Rhythm and tempo	Rhythm is where we pause and leave gaps in speech. This could show a character is thinking or distressed. Tempo is how fast or slow the speech is. E.g. a fast tempo could show someone is excited, a slow tempo could show someone is sleepy or confused.
Tone	Tone describes the emotion behind the line. It can convey meaning. For example: an angry tone.

2. Physical skills to become a character for rehearsal and performance (using your body)

Key word	Meaning
Gestures	Using your hands to highlight meaning or convey emotion. E.g. Scratching your head if you are confused or Waving to say 'Hello'.
Stance	The way someone stands usually to do with feet positioning. This could be with your feet really wide apart or really close together, for example.
posture and body language	Posture and body language is how you hold and position your body to show emotion or a character's personality.E.g. shoulders back and chest out to show confidence. Hanging head and shoulder may show shame or sadness
Expression	Also known as 'facial expressions'. Using your face to communicate emotions and reactions. Smiling to show happiness, frowning to show anger, raising one eye brow to show confusion for example.
Eye contact	Also known as 'facial expressions'. Using your face to communicate emotions and reactions. Smiling to show happiness, frowning to show anger, raising one eye brow to show confusion for example.
Dynamics and movement	Dynamics means HOW you move. For example, sharply / smoothly. Movement is HOW your character walks. For example, with a limp or taking large steps

Year 11 Learning Cycle 1 Performing Arts

3. Roles for rehearsing and running a Theatre production

Roles	Reponsibilities
Blocking	Working out the movement and positioning of all the actors on stage. WHERE you will STAND and WHEN you will move
Extrances and exits	Where and when you come on and off stage.
Proxemics and use of space	Proxemics is how close or near you are to others on stage. This can help to communicate meaning e.g. if your character is scared of another character you might stand far away. Use of space is where you position yourself on the stage so the audience can see you and others clearly.
Levels	How high or low you are positioned on the stage. This could be to communicate how important you are or to show you are in a different place to other characters.
Audience awareness	How high or low you are positioned on the stage. This could be to communicate how important you are or to show you are in a different place to other characters.
Concentration and focus	Being organised and sensible in your performance and staying in role at all times.
Energy	Putting effort into your performance and making sure you are lively and enthusiastic when you perform.
Set and props interactions	Using the objects on stage confidently to show something about your character or the situation. E.g. snatching a bag of sweets to show your character is greedy.

Notes Pages

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