KNOWLEDGE ORGANISER

YEAR 9 – TERM 5

THOMAS HALL SCHOOL

Think Like An
Environmentalist

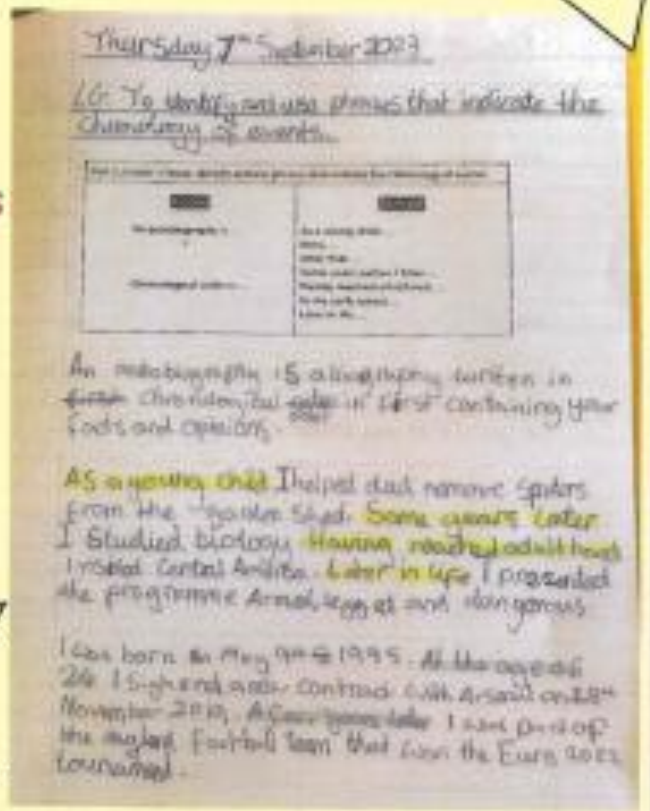
Community, Collaboration and Challenge

Long date and learning goal (LG) on left and underlined.

Minimise errors

Use pencil or blue or black pen for <u>all</u> written work, ruler for straight lines.

Worksheets glued in straight, next to margin.


Thursday 7th September 2023

LO: To identify and use phrases that indicate the chronology of events.

An autobiography is a biography written in chronological order in first person, giving your facts and opinions.

As a young child I helped dad remove spiders from the garden shed. Some years later I studied biology. Having reached adulthood I visited Central America. Later in life I presented the programme Animal Eggs at one dangerous

I was born on May 9th 1995. At the age of 24 I signed a new contract with Arsenal on 28th November 2019. A few years later I was part of the England Football team that won the Euro 2021 tournament.


Monday 18th September 2023

Music notes:

Numbered questions written in margin.

Always try your best to be neat (even when note taking).

Feel proud

Prepare for the future

Respond to feedback in green pen.

Easier to read and give better feedback

Single line through mistake. No scribbles.

ATTENDANCE MATTERS

EVERY DAY COUNTS
Missing just 1 day every 2 weeks is the same as missing 10% of the school year.

LEARNING
Being in school allows you the best opportunity to learn.

WELLBEING
Attending school supports your mental and emotional health.

FUTURE SUCCESS
Regular attendonce at school is vitol for building the key skills needed for future employment

EQUIPMENT


School Bag


Knowledge Organiser

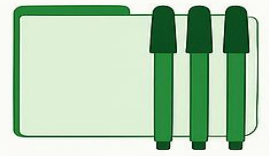

Black and Green Pens


Pencil case


Calculator


Pencil


Rubber


Whiteboard and whiteboard pen


Highlighters


Ruler

SCHOOL DAY

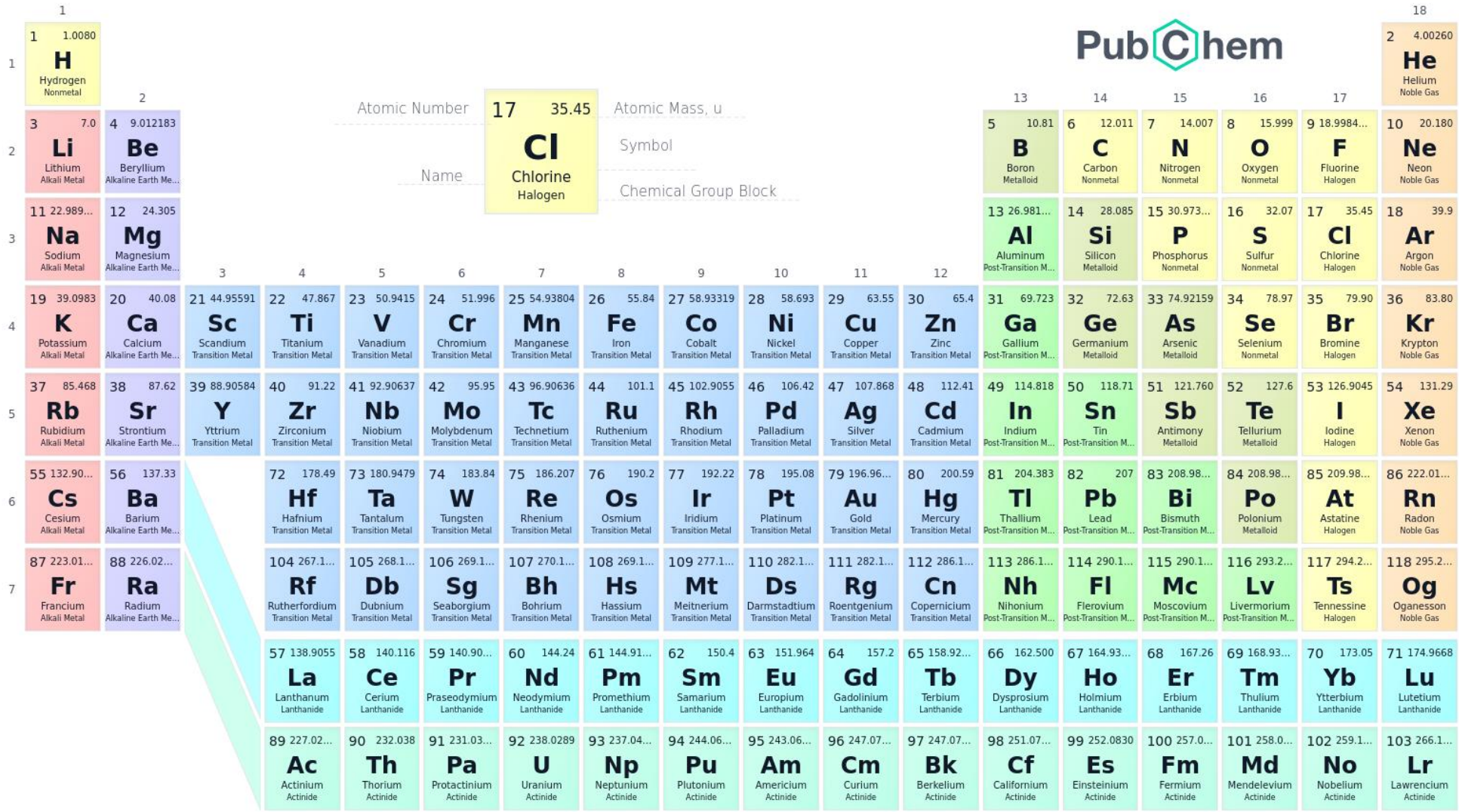
9:00–9:05	AM Reg
9:05–10:20	Lesson 1
10:20–11:35	Lesson 2
11:35–12:05	Break 1
12:05–13:20	Lesson 3
13:20–13:50	Break 2
13:50–15:05	Lesson 4
15:05–15:30	PM Reg – assembly or guided reading

Multiplication Grid

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

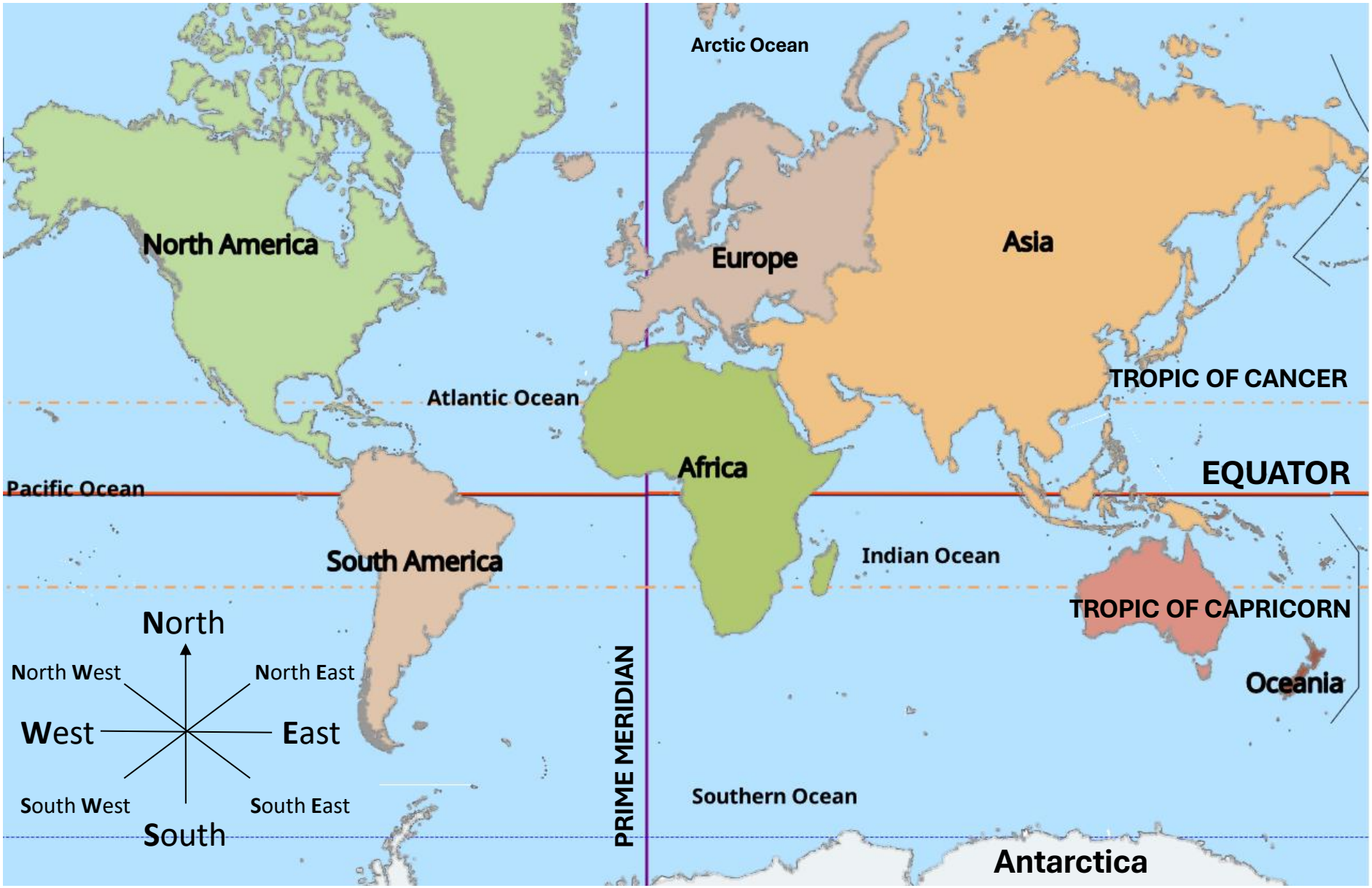
PERIODIC TABLE OF ELEMENTS

Chemical Group Block




01 Adjectives
THAT DESCRIBE:
age: young, old
colour: red, blue
condition: new, used
size: large, medium
speed: fast, slow
etc.
COMPARATIVE:
smaller, better...
SUPERLATIVE:
the smallest,
the worst,
the best...
02 Adverbs
PLACE:
here, there,
outside, everywhere,
upstairs, nowhere,
somewhere....
TIME:
ago, before, since,
yet, for, still,
afterwards...
FREQUENCY:
often, never,
sometimes, always
MANNER:
just, quite,
quickly, hardly,
well, carefully,
barely, almost,
scarcely,
beautifully...
03 Conjunctions
COORDINATING:
and, or, but,
yet, nor, for, so
CORRELATIVE:
both... and...,
either... or...,
just as... so...,
whether... or...,
neither... nor...,
not only... but also...
SUBORDINATING:
after, since, if,
while, although,
before, because,
unless
04 Determiners
TELLS US WHICH:
each, every,
some, none,
all...
TELLS US WHOSE:
my, your, her, his, its,
our, your, their (= possessive
adjectives or determiners)
05 Nouns
COMMON NOUNS: house, dog, laptop...
PROPER NOUNS:
(Capitalised)
London, Paris,
James, William,
Julia, Jennifer...
> VERBAL:
swimming...
> COLLECTIVE:
choir, jury...
> COMPOUND:
mother-in-law...
> COUNTABLE:
book, day...
> UNCOUNTABLE:
traffic, calm...
> ABSTRACT V. CONCRETE:
wit vs. road...
06 Prepositions
PLACE / DIRECTION:
in, at, on,
under, above,
across,
among,
between...
TIME:
in, at, on,
over, until, about,
during, before,
after, while,
through...
OTHER (agent,
phrase...):
by, with, on, over,
to, up, within,
beyond, for...
07 Pronouns
PERSONAL
(subject):
I, you, he, she, it,
we,
you, they
PERSONAL
(reflexive):
myself, yourself,
himself, herself,
itself, ourselves,
yourselves,
themselves
DEMONSTRATIVE:
this, these,
that, those
PERSONAL
(object):
me, you, him, her,
it, us, you, them
POSSESSIVE:
mine, yours, his,
hers, its, ours,
yours, theirs
INTERROGATIVE:
how, where,
when, which...?
INDEFINITE:
somebody,
anyone...
RELATIVE:
that, which,
whose, whom...
08 Verbs
ACTION:
to run, to organise,
to read, to think...
> Transitive
or
> Intransitive
LINKING:
to be,
to look, to appear,
to seem, to smell...
HELPING
(= AUXILIARY):
can, may,
will, must,
should, to be,
to have...
Word Classes

World Map


Arctic Ocean
North America
Europe
Asia
Atlantic Ocean
TROPIC OF CANCER
Africa
EQUATOR
Pacific Ocean
South America
Indian Ocean
TROPIC OF CAPRICORN
Oceania
North
North West
North East
West
East
South West
South East
South
PRIME MERIDIAN
Southern Ocean
Antarctica

Art

Year 9 GCSE Past Paper: Food

Art

Term 5

Introduction GCSE assessment objectives: Mind Mapping (AO1)

- **Objectives:** Introduce theme; explore interpretations of "Food"
- **Activities:**
- Brainstorm individually and as a class
- Create a detailed mind map
- Begin sketchbook work on personal interpretations
- **Homework:** Photograph or draw food from your own kitchen


Artist Research (AO1)

- **Suggested Artists:**
- Wayne Thiebaud (painted cakes and sweets)
- Sarah Graham (hyperrealist sweets)
- Claes Oldenburg (sculptures of food)
- Giuseppe Arcimboldo (portraits made of food)
- **Activities:**
- Create artist research pages
- Copy an artwork in chosen medium
- Annotate with personal response
- **Homework:** Write why one artist inspires you

Observational Drawing & Photography (AO3)

- **Objectives:** Develop observational skills
- **Activities:**
- Draw a variety of foods from life (fruit, packaging, etc.)
- Experiment with different media (pencil, ink, watercolour)
- Take high-quality photos with interesting compositions

Media Experiments (AO2)

- **Objectives:** Explore materials and techniques
- **Activities:**
- Try painting, collage, mixed media, printmaking
- Create texture studies (e.g. chocolate, bread, fruit skin)
- **Homework:** Write a reflection on which media suits your theme

Artist Response Piece (AO1 & AO2)

- **Objectives:** Create a developed response to an artist's style
- **Activities:**
  - Plan and produce your own artwork inspired by your chosen artist
  - Include annotation and evaluation
- **Homework:** Refine and photograph your piece for the sketchbook

Final Piece – (AO4)

- **Objective**: Begin final piece.
- **Activities**:
  - Start working on the final outcome (canvas, large paper, digital work).
  - Ensure regular photo documentation and annotation of progress.


Computing

Python data types			
Data type	**Python Abbreviation**	**Explanation**	**Example**
integer	int	A whole number.	**45**
string	str	A sequence of characters that can include letters, spaces and other characters.	**“Have a nice day!”**
float	float	A number with a fractional part. Also known as a real number.	**16.76**
Boolean	bool	Boolean or logical data that can only have one of two values: True or False**.**	**True False**

Built-in functions		
Syntax	**Description**	**Example**
len()	Calculates the length of a string.	**>>> ans=len("my string")** **>>> ans 9**
print()	Displays information on the screen.	**>>> print(“Hello world”)**
type()	Displays the type (int, bool, str or float) of a variable or value.	**>>> ans=7.8** **>>> type(ans)** **<class 'float'>**
int()	Converts a string or float value into an integer number. Often used in conjunction with the input function, e.g. number = int(input(“Please enter the number of T-shirts you require:”))	**>>> ans=7.8** **>>> int(ans) 7**
input(“prompt”)	Prompts for input from the user. The data entered is assigned to a variable.	**>>> reply=input("Enter your name: ")** **Enter your name: Fred** **>>> reply 'Fred'**

Built-in functions		
Syntax	**Description**	**Example**
range()	Creates a list of numbers. Often used with the for loop, e.g. range(start number, end number, in steps of). End number is the number after the last number required.	**>>> for next in range(1,4):** **print(next)** **1** **2** **3**
max()	Returns the largest of a set of numbers.	**>>>max(12,16, 33)** **33**

Variables and lists (arrays)		
Syntax	**Description**	**Example**
variableName = <value>	Assigns a value to a variable.	**myString="hello world" myNumber= 89 myAnswer=True**
variableName = <expression>	Computes the value of an expression and assigns it to a variable.	**number= 7 * 8** **answer= len("this is the age")**
listName = [value,value,value]	Assigns a set of values to a list.	**myList= ["apple","oranges",8]**
listName[index]	Identifies an element of a list by reference to its position in the list, where index is an integer value starting at 0.	**myList[2]**
listName[row][column]	Identifies an element of a nested list (equivalent to a two dimensional array).	**myList[0][6]**

Drama

Year 9 Drama Term 5

Plot

Act 1 - The Crime and the Pact
The play opens in the aftermath of a violent incident: Adam is believed to be dead. The group of teenagers is tense, frightened, and divided, with John Tate trying to control everyone through intimidation. Mark and Jan explain how Adam fell into a grille after they attacked him, justifying their actions. Phil, usually silent, asserts authority by devising a plan to invent and frame a fake suspect, bringing the group together around a shared lie. Leah's philosophical monologues about human nature hint that violence and social dominance are inherent traits, reflecting the play's darker view of bullying.

Act 2 - The Cover Up Starts to Collapse
The group's plan begins to unravel when the police find a real man who matches the invented suspect. Brian refuses to cooperate but is threatened into helping. Tension increases as the lie starts to have real consequences. Meanwhile, Leah becomes increasingly isolated, repeatedly trying and failing to connect with Phil through stories about happiness, death, and déjà vu. The act shows the moral cost of the cover up and the growing cracks in the group's unity.

Act 3 - Truth Versus Harmony
It is revealed that Adam is alive, having survived with severe injuries. At the same time, Leah discovers that the group is happier and more orderly since the cover up, suggesting the crime has created social harmony. When Adam reappears, Phil chooses to protect the unity of the group rather than face the truth, orchestrating Adam's second killing and instructing others to remain silent. Leah finally rejects Phil completely, leaving in disgust, marking a moral breaking point.

Act 4 - Aftermath and Loss
Leah has gone, and her absence destabilises Phil, who withdraws into silence and stops eating. Richard attempts to reconnect him to the group, mirroring Leah's earlier attempts for connection. The group technically survives, but the act reveals the emotional emptiness left behind: the harmony created by violence has come at the cost of humanity, empathy, and meaningful connection.

Key Themes

Peer Pressure and Gang Mentality: The influence of the group drives individuals to commit immoral acts.
Responsibility and Morality: The teenagers avoid taking responsibility, choosing to hide their actions.
Silence and Power: Phil's silence makes him powerful and untouchable, while Leah's constant talking displays her anxiety and desperate need for connection.

Characters

Mark and Jan - Act as a "chorus," opening acts with disjointed gossip, justifying their actions and trivialising the violence.
Leah - The insecure, talkative narrator/conscience who seeks Phil's validation, representing a desperate desire for connection.
Phil - Controlling leader who manages the cover-up with cold, callous efficiency, rarely speaking but holding authority.
Lou - Lou is a pessimistic girl who constantly believes that she and her friends are right on the precipice of being caught.
John Tate - Initially in charge, he rules through fear but loses control and abandons the group for religion.
Danny - A worried, academic member who fears his future is ruined by the situation.
Richard- Intimidating initially, he becomes increasingly guilty and detached as the situation escalates
Cathy - Increasingly cold and violent, she takes pleasure in the danger, becoming the dominant force behind the group's actions.
Brian - Emotionally fragile, he breaks down under the pressure.
Boy (Adam) - The victim of bullying, later found alive but mentally destroyed, showing the cruel consequences of the group's actions.

DNA by Dennis Kelly

TRAVEL WRITING English

Travel writing is writing about places, persons, and things in other places - also writing about how to travel, when to travel, and advice on traveling–all with the reader in mind. It is about relaying your travel experiences to others so that they may copy them. It is writing about things that are local to you that maybe exciting to someone else: a local farmer's market, historic site, restaurant.

2. Reflect on the descriptive writing from recent lessons. Choose a place you have visited on holiday or find an image of a place you would love to visit and bring the image to life in 100-200 words.

3. Practise using the DAFOREST persuasive techniques by creating a short travel advertisement for the place you brought to life in task 2 of the knowledge organiser.

DAFOREST

Technique	Effect on the Reader
Direct Address/Pronoun (second person –' you')	Engages the reader to read, feel more directly involved and part of the subject/draws the reader in/adds to the realism/authenticity
Alliteration	Makes the text catchy – it sticks in the reader's mind
Facts	Makes the text more authoritative, authentic and accurate
Opinion	Sways the reader towards the writer's viewpoint.
Rhetorical question	Engages the reader to read on as they feel that by being addressed directly, the text is relevant to them/involves the reader more
Emotive language	Allows the reader to feel for the character's/writer's thoughts and feelings – triggers a certain response in the reader.
Statistics	Makes the text more authoritative, authentic and accurate Adds to the reader's knowledge, understanding and interpretation.
Three (list of)	Makes the text catchy – it sticks in the reader's mind

5. Find an online article about a travel destination of your choice. Read through it and copy down any vivid interesting adjectives and superlatives you come across – this will form a useful word bank for future travel writing tasks.

After you have read the article and created a small word bank, summarise what impression the writer of the article gives about the place they have written about. Is it lively, peaceful, beautiful, etc.? What are the main attractions of this place? Etc.

You can find 1000's of travel articles online. Please choose carefully and make sure it is a suitable site. Alternatively, ask your English teacher for a suitable example article. Bill Bryson and Michael Palin are two very popular travel writers.

Researching a travel destination. Spend some time finding key information about an idyllic holiday destination. This will be useful for your travel guide and will provide you with plenty of detail to develop a guide to this wonderful destination. You may also want to find some images that will appeal to potential travellers and jet-setters. Find out about: location; weather; transport; facilities; accommodation; culture; shopping; tourist attractions; cuisine; etc.

Mind-map the features of your favourite or ideal holiday destination. Consider: location; weather; transport; facilities; accommodation; culture; shopping; tourist attractions; cuisine; etc. This may be used to develop into a tourist guide later in the unit.

With the information you found from the research task, list a series of adjectives and other appealing language choices that describe the wonderful travel destination you have chosen for your travel guide. E.g., idyllic, tranquil, tropical, enticing, etc. This may prove useful for making your guide lively and persuasive.

Why is it important to travel to new countries and places? Create a mind-map or a list of reasons. As an extension, you could explain the benefits that travel has on people. E.g., experiencing different cultures.

Create a series of questions you will ask to a friend or family member on what they would want from their ideal holiday destination and vacation. See what they look for from their accommodation, the climate, cuisine, facilities and activities. This will help you make certain decisions on what relevant information to include in your travel guide.

English

Transactional Writing Knowledge Organiser

Paper 2 Section B
Two tasks (1hr)

Before you start writing think about the TAP

Text type – what should the style and layout look like?

Audience – who are you writing for?

Purpose – what are you trying to achieve?

Text Types:

- Article
- Leaflet
- Letter
- Review
- Report
- Speech

Consider your purpose:

Persuade? Argue? Advise? Inform?

Article

- Catchy and punchy heading
- Introduction to create interest – (include who, what, where, when, how and why?)
- Can use subheadings underlined
- 3-4 middle paragraphs with connectives
- Short but effective conclusion
- Could offer a handful of bullet points at the end (some helpful hints on topic).
- RAPFOREST techniques

Report

- Heading to refer to what the report is about and who it is directed to
- Factual introduction to provide information and shed light on a problem/event/incident
- Who, what, where, when, how and why?
- Write in third person mainly
- Use subject specific jargon/language
- Can use subheadings underlined
- 3-4 middle paragraphs with connectives
- Offer recommendations in conclusion (could include first person here)
- RAPFOREST techniques

Leaflet/newsletter

- Present information so it is easy to find using headings and sub-headings
- Lively and engaging
- Some bullet points could be used.
- RAPFOREST techniques

Letter

- Your address and date in the top right of the page
- Address of the person you are writing to on the left (formal letter only).
- Dear Mrs Fletcher = Yours sincerely **or** Dear Sir/Madam. = Yours faithfully
- Short introductory paragraph
- 3-4 middle paragraphs with connectives
- Concluding paragraph summarising ideas
- RAPFOREST techniques

Speech

- Open with a welcome/greeting e.g. 'Good afternoon ladies and gentlemen' **or** 'Fellow classmates'
- Lots of first person (I, me, we, our)
- Lots of second person (you, your)
- Offer a personal anecdote (emotive)
- Outline what the speech will be about: 'I will talk to you about…
- Make 3/4 key points and expand on them – use connectives
- Conclusion to summarise ideas
- End acknowledging the audience: 'Thank you for listening.'
- RAPFOREST techniques

Review

- Title/star rating
- Punchy, humorous opening sentence
- Introductory paragraph stating what is being reviewed and provide an overview of film/product.
- Middle paragraphs provide positives/negatives – add connectives
- Conclusion to summarise ideas and give a recommendation
- Make your opinion clear
- Try to use humour
- Lively and engaging
- RAPFOREST techniques

Rhetorical question

Alliteration & anecdotes

Personal pronouns

Facts

Opinions

Repetition

Emotive language and exaggeration

Statistics

Triple (rule of three)

Connectives/Discourse Markers:

Position

Firstly
Secondly
Thirdly
Next
Meanwhile
Subsequently
Finally
To summarise
In conclusion

Emphasis

Importantly
Notably
Significantly
In particular

Addition

Furthermore
Additionally
In addition
As well as

Contrast/Compare

Although
Whereas
Alternatively
Likewise
Similarly
Equally

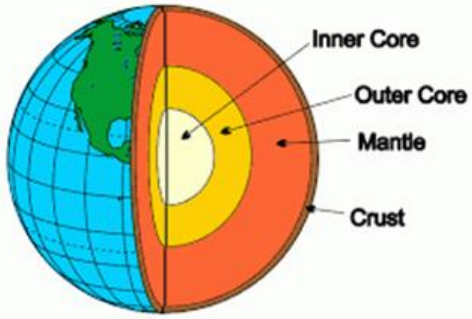
Natural Hazards: Tectonic Hazards

Geography

1. Natural Hazards

What: A natural process that could cause death, injury or disruption to humans or destroy property & possessions
Types: volcanoes, earthquakes, tsunamis
Factors that can affect the impact of a hazard:
Urbanisation – Cities are growing, but some are in hazardous areas e.g. Tokyo, Los Angeles are—more buildings/people = greater damage/ costs/deaths/injuries
Poverty – Poverty may force people to live in riskier areas e.g. on unstable slopes liable to **flooding & landslide**. **Poor quality housing** = easier to be damaged in earthquakes
Farming – volcanic soils are very fertile & good for farming so people farming in these areas are at greater risk
Climate Change - The warmer weather & seas leads to more intense storms which can form over greater areas as the seas warm.

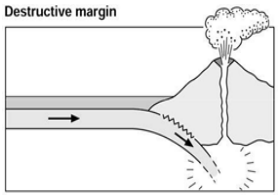
2. Structure of the Earth

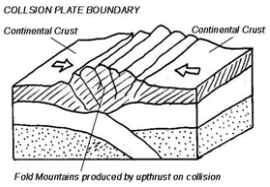


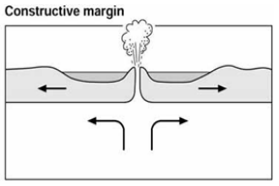
Tectonic plates: the earth's crust is divided into slabs that float on the mantle.
Plate margins/boundaries: where two or more plates meet
Continental crust: crust that is thicker, lighter & older and cannot be created or destroyed
Oceanic crust: crust than can be created or destroyed, dense, thinner, newer.
Convection currents: circulations of rising, heated magma & sinking cooling magma in the mantle that cause the plates to move.

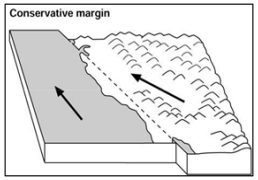
3. Plate Boundaries

Destructive Subductive: Oceanic plate & continental plate move towards each other eg South American plate and Nazca plate. Denser oceanic plate is forced down (subducted) into the mantle & destroyed. This can cause severe earthquakes & violent volcanoes.
• **Earthquakes**: the plates stick, tension builds, then the energy is released in seismic waves when the oceanic plate eventually moves.
• **Volcanoes**: oceanic crust melts in the mantle & the thick sticky magma rises & is squeezed under pressure through cracks in the crust called vents. Lava eventually explodes through the crust surface in a violent eruption. Eg Montserrat. Repeated eruptions create **cone shaped composite volcanoes** with alternating layers of solidified lava & ash from pyroclastic flows
Destructive Collision: Two plates of the same type of crust move towards each other due to convection currents in the mantle eg between Eurasian & Indian plate. As the two plates of the same density move toward each other the sedimentary rock between them is folded & forced upwards into forming large mountains ranges eg Himalayas.
• **Earthquakes:** caused as plates collide & the crust pushed upwards.
Constructive: Two plates move away from each other & can cause earthquakes & volcanoes
• **Volcanoes**: magma rises from the mantle to fill the gap, cools & solidifies creating new crust. Repeated eruptions build up layers of lava forming **low , flat shield volcanoes** eg mid-Atlantic ridge between North American & Eurasian plate. The lava is thin, runny & less explosive than volcanoes found at destructive subductive plate margins
• **Earthquakes:** tension builds along cracks within the plates as they move away from each other. Pressure is released in waves creating earthquakes.
Conservative: Two plates move sideways past each other or in the same direction but at different speeds, this can cause severe earthquakes.
• **Earthquakes**: crust isn't created or destroyed but pressures builds as the plates grind past each other & get stuck. The plates eventually jerk past each other sending out shock waves causing violent earthquakes.









Natural Hazards: Tectonic Hazards

Geography

5.	
HIC Japan 2011	**LIC Nepal 2015**
What: 9.0 on the Richter Scale earthquake When: Friday 11th March, 2011, 2:46pm Why: Destructive – Eurasian and Pacific	What: 7.9 on the Richter Scale earthquake When: 25th April, 2015, 11:26am Why: Collision – Indian and Eurasian
Primary effects: 15,900 died | 26K injured |130K displaced | 4.4 mill without power | 332K buildings damaged | 300 damaged hospitals |2K roads, 56 bridges, 26 railways | Est. cost US$ 235 billion **Secondary effects**: Tsunami with 40m high waves (causing most deaths) | 7 meltdowns of nuclear reactors in nearby power station Fukushima | Radiation 8 times normal level **Immediate responses**: Japan Meteorological Agency issued tsunami warnings | Rescue workers & 100K Japanese Self-Defense Force supported search & rescue | 20km evacuation zone set up around Fukushima nuclear plant | US military, rescue teams from US, India, S Korea, China & Australia **Long term responses**: Government budget of 23 trillion yen (£190 billion) over 10 years | Coastal sea wall protection upgraded | Nov 2011 96% electricity restored, 98% water supplies	**Primary effects**: 9K died | 19K injured |8 mill affected | 1.4 mill without water, food, & shelter | 7k schools destroyed |50% shops destroyed in Kathmandu |Est. cost US$ 5 billion **Secondary effects**: Avalanches & landslides in Himalayas |19 died due to avalanches |Land slide blocked Kali Gandaki River | Tourism income declined |crops ruined **Immediate responses**: India and China donated $1 billion aid | UK provided 100 search and rescue responders | GIS crisis mapping | Tent city in Kathmandu – ½ million tents donated | Field hospitals set up **Long term responses**: $200 million for rehabilitation from Asian Development Bank | Lakes behind blocked rivers drained | Stricter building codes introduced | 7k schools rebuilt

4. Distribution of tectonic hazards Most earthquakes & volcanoes occur along plate boundaries so the majority are distributed in long lines. There are some anomalies where earthquakes & volcanoes occur away from plate boundaries but are rare eg hotspots

Volcanoes

- See plate boundaries for how volcanoes form at constructive & destruct-subductive plate boundaries
- Some volcanoes form over parts of the mantle where the crust is weak - hotspots eg Hawaii/Iceland.
- Volcanic eruptions can emit lava, gases & ash which cover land, & block out the sun
- Some emit pyroclastic flows - a dense mass of very hot (up to 600*C) ash, lava fragments, & gases ejected explosively at speed (up to 200m/s)

Earthquakes Earthquakes are caused by the tension that builds up at ALL three types of plate margin (see 'plate boundaries' for how they form at each plate.)

- Plates don't move freely, get stuck & tension builds. Plates eventually jerk free when they move, sending out vibrations called shock or seismic waves. Vibrations = earthquake.
- The shock waves spread out from the focus—the point where the earthquake starts in the Earth's crust.
- Near the focus the waves are stronger & cause more damage.
- The point on the Earth's surface directly above the focus is the epicentre.
- Earthquakes are measured by the amount of energy that is released (magnitude) on the Richter Scale. The scale is logarithmic meaning a magnitude 7 is 10X bigger than a 6. Earthquakes with a magnitude of 6 & below normally only cause slight damage to buildings. Magnitude 7+ can cause major damage.

5. Monitoring a Tectonic Hazard: think 3Ps—**Prediction, Protection, Planning**
Earthquakes - very difficult to **PREDICT** as they occur without warning but seismographs can help & sometimes changes in water pressure & ground deformation can be an indicator. Historic data can help indicate when one is due but not precisely. **PROTECTION** involves building earthquake proof buildings with steel frames, shock absorbent foundations & counterbalances on the roof &/or carrying out drills so people know what to do. **PLANNING** can be done by producing maps of areas most at risk & having planned evacuation routes/procedures as well as emergency supplies.

History

Cold War in 2 pages

Cold War Background

•**Grand Alliance** of USA, USSR, Britain and France in WW2 to defeat Nazi Germany
•Met at **Tehran** (1943) and **Yalta** (1945) to agree how to defeat Germany and how Europe should look after the war.
•**Potsdam Conference** (1945) agreed to de-nazify Germany and split it (and Berlin) into 4 zones shared between the 4 allies. Agreed USA would have a sphere of influence in the West, and the USSR would have one in the East.

Increasing Tension

Long and Novikov Telegrams 1946
• USA and USSR used their ambassadors to secretly report on the other country
•Both reported fears that their opponents were building up their armies
Truman Doctrine 1947
• President Truman declared that he feared the spread of communism and said it was a threat to freedom- the USA had the right to use its military and economy to fight the spread of communism
Marshall Plan 1947
•USA offered $13 billion of aid to Europe to stop poverty leading to communism
• This upset the USSR who thought USA was trying to bride its satellite states
Iron Curtain Speech 1947- Churchill declared Europe was divided into two spheres
Cominform/Comecon
•In response to the Marshall Plan the USSR united all communist parties together from satellite states- Cominform. Also tried to tie all satellite states together economically- Comecon

The Berlin Blockade (1947-1948) and its consequences

•USSR worried the Western allies were trying to unite West Germany into Trizonia.
• Blocked all road, rail and canal access to force them out of West Berlin
•USA kept Wets Berlin supplies through a huge airlift of supplies for 11 months. USSR eventually backed down. Couldn't shoot down planes as would be act of war.
FRG and GDR- Germany became officially divided into 2 different countries- FRG in West and GDR in East. Berlin also official split.
NATO- USA and Western European military alliance against USSR
Warsaw Pact- USSR responded to NATO by creating own military alliance of satellite states in Eastern Europe

Hungarian Uprising 1956

•Encouraged by Khrushchev's Secret speech which criticised the hard, repressive policies of Stalin
•Imre Nagy wanted to take Hungary out of the Warsaw Pact and make the country less repressive
•USSR sent in troops and executed Nagy. Reforms undone. West didn't help at all despite promising to.

The Berlin Ultimatum and Summits

•By 1958 3 million East Germans had crossed to the West (1/3 pop) Showed unpopularity of communism
•Khrushchev wanted to take over West Berlin to stop this- 1958 demanded West recognise East as independent country, and Berlin to be demilitarised (**Berlin Ultimatum**) or he would hand control of Berlin transport to the East government.
Camp David Summit 1959
•Eisenhower and Khrushchev met and agreed to withdraw ultimatum.
Paris Summit 1960
• USSR shot down US U2 spy plane. US tried to cover up and Khrushchev walked out of the meeting
Vienna Summit 1961
• Khrushchev saw Kennedy as weak and reissued Ultimatum. Kennedy refused to make concessions, so nothing was agreed.

The Berlin Wall

•12 August 1961 East German Leader Ulbricht ordered a barbed wire fence around West Berlin to stop the refugee problem.
•Soon grew to 165km, cutting through streets and even buildings.
•Two walls separated by no man's land with booby traps, barbed wire, watch towers and guards with machine guns
•People tried to escape- 130 killed, most famous was Peter Fechter.
•Khrushchev had to abandon plans for a united communist Germany and showed how unpopular communism was, but it did stop the refugee problem and showed communism was in control in the East
•The Berlin Wall became a symbol of freedom and defiance against communism, and showed Khrushchev had accepted Western control in Berlin
•Kennedy's '*Ich Bin Ein Berliner*' speech 1963 very popular

The Fall of the Berlin Wall

•1989 Gorbachev refused to help East Germany stop protests.
•East Germany then announced border into West Berlin to be opened. Huge numbers cross the border and the wall is quickly pulled down.
•Germany officially reunited 1990

History

The Cuban Missile Crisis 1962

- 1959 Fidel Castro and Che Guevara topple the pro-American government in Cuba.
- US boycotted buying Cuban sugar, so Castro sold it to Khrushchev, and receive arms from USSR.
- 1961 CIA trained Cuban exiles to invade Cuba and overthrow Castro (**Bay of Pigs invasion**) but failed as USA backs out of air support and Cuban army superior to exiles. Makes USA look very bad!
- Khrushchev sent nuclear missiles to Cuba to help defend from future US attacks. USA discovers them in 1962
- Kennedy decides to blockade Cuba to stop missiles arriving from USSR.
- Khrushchev sent a telegram saying he would remove missiles from Cuba if USA wouldn't invade.
- Khrushchev then sent another telegram adding he wanted US missiles removed from Turkey too.
- Kennedy responded to first telegram publicly and second one secretly, increasing his reputation as a strong leader, making Khrushchev look like he backed down- maybe why he was dismissed as leader of USSR in 1954
- Moscow-Washington **Hotline** set up and 3 treaties (**Test Ban 1963, Outer Space 1967, Non-Proliferation 1968**) signed to reduce testing and spread of nuclear weapons.

Czechoslovakia 1968

- Alexander Dubcek introduced reforms '*Socialism with a human face*'. Not anti- communist, just wanted more freedom. This became known as the **Prague Spring**.
- Brezhnev worried about reforms spreading so invaded with 500,000 troops. Czechs didn't fight back- learn their lesson from Hungary!
- **Brezhnev Doctrine**- actions of any individual country affected whole Eastern Bloc, so he would use Warsaw Pact troops to stop any reforms.

Gorbachev's New Thinking

- USSR couldn't afford war in Afghanistan or new missiles to compete with USA, and living standards were low.
- **Perestroika**- reform economy to include some capitalist ideas
- **Glasnost**- introduce more openness and less corruption in government, allowed opposition to government.
- Brezhnev Doctrine would also be dropped.
- Reagan saw this as an opportunity to end the Cold War
- **Reykjavik Summit 1986**- Gorbachev suggested phasing out nuclear weapons if USA gave up SDI. No agreement but improved relations.
- **Washington Summit 1987**- Agreed a treaty reducing abolishing intermediate range missiles
- **Malta Summit 1989**- No new agreements but seen as the end of the Cold War as both sides announced peaceful intentions

Détente 1970s

- After the Cuba crisis the USA and USSR wanted to get on better in the 1970s- this thaw (peaceful period) in the Cold War is called **détente**
- Both needed to focus on economic and social problems at home, not war

SALT 1 1972- Strategic Arms Limitation Treaty. Limited the number of nuclear weapons both sides had

Helsinki Accords 1975- agreed to respect borders, work for closer relations and respect human rights.

SALT 2 1979- Tried to introduce restrictions on missiles, but USA didn't trust the USSR after invasion of Afghanistan so US withdrew from talks

Soviet Invasion of Afghanistan 1979

- There was a communist revolution in Afghanistan in 1978 and civil war broke out.
- USSR invaded in 1979 to help the communist government
- USA very unhappy with this and ended détente. Supported Afghan rebels (Mujahedeen)
- **Carter Doctrine**- USA would use force to repel any threats in Persian Gulf area, and introduced sanctions
- USA boycotted the Moscow Olympics in 1980. USSR then boycotted LA Olympics in 1984
- Cost USSR $8 billion a year and 15,000 troops were killed

Reagan's Second Cold War

- Reagan became President of USA in 1980, called the USSR an 'evil empire' and ended détente.
- Planned the **Strategic Defence Initiative** (SDI) 1983 nicknamed 'Star Wars'- using satellites to destroy soviet missiles in space.
- USSR too poor to compete but didn't know USA hadn't actually made SDI yet.
- Reagan increased funding for the Cold War and supported anti- communist groups in South America

End of the Cold War

- Without Brezhnev Doctrine, satellite states could introduce reforms without fear
- Many hold new elections and elect non-communists (Poland, Hungary, Czechoslovakia, Bulgaria and Yugoslavia)
- 12 Soviet Republics left the USSR and formed the Commonwealth of Independent States after hard-line communists tried to remove Gorbachev.
- Gorbachev resigned on Christmas Day 1990, dissolving the USSR and ending communist rule in Europe.
- Warsaw Pact formally dissolved 1991.

YEAR 9 – REASONING WITH GEOMETRY...

Enlargement & Similarity

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Recognise enlargement and similarity
- Enlarge a shape by a positive SF
- Enlarge a shape from a point
- Enlarge a shape by a fractional SF
- Work out missing sides and angles in a pair of similar shapes

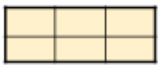
Keywords

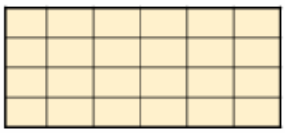
Similar Shapes: shapes of different sizes that have corresponding sides in equal proportion and identical corresponding angles.
Scale Factor: the multiple describing how much a shape has been enlarged
Enlarge: to change the size of a shape (enlargement is not always making a shape bigger)
Corresponding: objects (or sides) that appear in the same place in two similar situations
Image: the picture or visual representation of the shape

Recognise enlargement & similarity

Shapes are similar if all pairs of corresponding sides are in the same ratio

These shapes are similar because all sides are increased by the same ratio

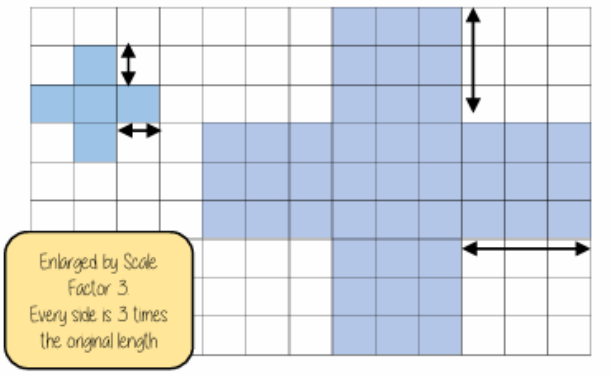




Enlargements are similar shapes with a ratio other than 1

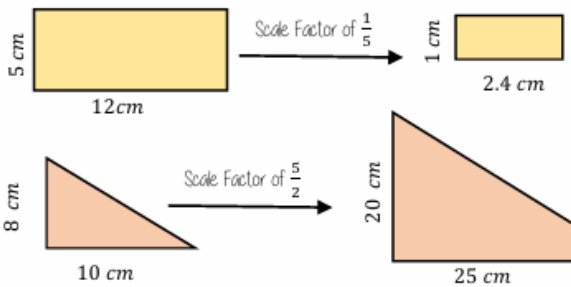
Enlarge by a positive scale factor

With a scale factor larger than 1 it makes the shape **bigger**



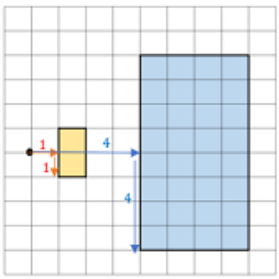
Positive fractional scale factor

With a scale factor between 0 and 1 it makes the shape **smaller**



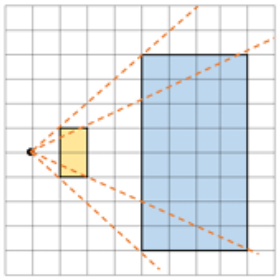
Enlarge a shape from a point

Scaled distances method



Scale the distance between the point of enlargement and each corresponding vertices

Rays method

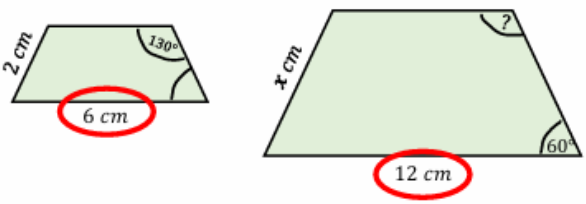


Multiply the distance from the centre of corresponding vertices by the scale factor along the ray

Calculations in similar shapes

Don't forget that properties of shapes don't change with enlargements or in similar shapes

The two trapezium are similar find the missing side and angle



Corresponding sides identify the scale factor

$\frac{12}{6} = 2$ Scale Factor = **2**

Calculate the missing side

Length (corresponding side) x scale factor

$2cm \times 2$

$x = 4cm$

Enlargement does not change angle size

Calculate the missing angle

Corresponding angles remain the same

$130°$

Maths

YEAR 9 – REASONING WITH GEOMETRY...

Solving ratio & proportion problems

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Solve problems with direct proportion
- Use conversion graphs
- Solve problems with inverse proportion
- Solve ratio problems
- Solve 'best buy' problems

Keywords

Proportion: a comparison between two numbers
Ratio: a ratio shows the relative size of two variables
Direct proportion: as one variable is multiplied by a scale factor the other variable is multiplied by the same scale factor.
Inverse proportion:: as one variable is multiplied by a scale factor the other is divided by the same scale factor.

Direct Proportion

As one variable changes the other changes at the same rate

4 cans of pop = £2.40

4 cans of pop = £2.40 → (×0.5) → 2 cans of pop = £1.20 (×0.5)

This multiplier is the same in the same way that this would be for ratio

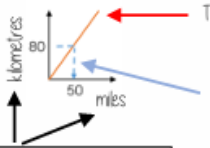
This is a multiplicative change

4 cans of pop = £2.40 → (×3) → 12 cans of pop = £7.20 (×3)

Sometimes this is easiest if you work out how much one unit is worth first
e.g. 1 can of pop = £0.60

Conversion Graphs

Compare two variables



Labelling of both axes is vital

This is always a straight line because as one variable increases so does the other at the same rate

To make conversions between units you need to find the point to compare – then find the associated point by using your graph
Using a ruler helps for accuracy
Showing your conversion lines help as a "check" for solutions

Inverse Proportion

As one variable is multiplied by a scale factor the other is divided by the same scale factor

Examples of inversely proportional relationships

Time taken to fill a pool and the number of taps running

Time taken to paint a room and the number of workers

T is inversely proportional to G. When T=2 then G=20

		÷2	×4
T	1	2	8
G	40	20	5
		×2	÷4

Best Buys

Have a directly proportional relationship

To calculate best buys you need to be able to compare the cost of one unit or units of equal amounts

	Shop A	Shop B
	4 cans for £1.20	3 cans for 93p
	£1.20 ÷ 4	£0.93 ÷ 3
Cost per item	1 can is £0.30 Or 30p	1 can is £0.31 Or 31p

Shop A is the best value as it is 1p cheaper per can of pop

	Shop A	
	4 cans for £1.20	3 cans for 93p
	4 ÷ £1.20	3 ÷ £0.93
Cost per pound	£1 buys 3.333 cans of pop	£1 buys 3.23 cans of pop

Shop A is still shown as being the best value but pay attention to the unit you are calculating per item or per pound

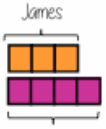
Best value is the most product for the lowest price per unit

Sharing a whole into a given ratio

James and Lucy share £350 in the ratio 3:4
Work out how much each person earns

Model the Question

James : Lucy
3 : 4



Find the value of one part

Whole: £350
7 parts to share between
(3 James, 4 Lucy)

£350 ÷ 7 = £50

□ = one part = £50

Put back into the question

James : Lucy
3 : 4 (×50) → £150 : £200

James = 3 x £50 = £150
Lucy = 4 x £50 = £200

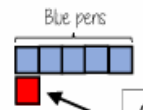
Finding a value given 1:n (or n:1)

Inside a box are blue and red pens in the ratio 5:1
If there are 10 red pens how many blue pens are there?

Model the Question

Blue : Red
5 : 1

□ = one part = 10 pens



Put back into the question

Blue : Red
5 : 1 (×10) → 50 : 10

Blue pens = 5 x 10 = 50 pens
Red pens = 1 x 10 = 10 pens

There are 50 Blue Pens

Maths

YEAR 9 — REASONING WITH GEOMETRY...

Rates

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Solve speed, distance, time questions
- Use distance time graphs
- Solve density, mass, volume problems
- Solve flow problems
- Use flow graphs
- Interpret rates of change and their units

Keywords

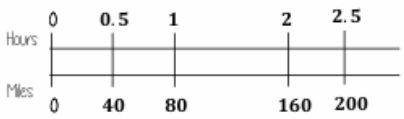
Convert: change
Mass: a measure of how much matter is in an object. Commonly measured by weight.
Origin: the coordinate (0, 0)
Volume: the amount of 3D space a shape takes up
Substitute: putting numbers where letters are — replacing numbers into a formula

Speed, Distance, Time

"per" for every
e.g. 80 miles per hour (mph)
Travel 80 miles every hour

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

You can use a double number line to help you calculate distance

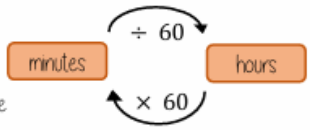


e.g. A boat travels at a constant speed for 2.5 hours
It travels 300 miles...

Bar models can help to calculate mph

Each part is half an hour
Each part is 60 miles

Speed, Distance, Time



Before calculations — make sure you are working in the same units as the speed

Learn or learn how to rearrange the formular for speed, distance and time

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

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

Substitute in the variables given

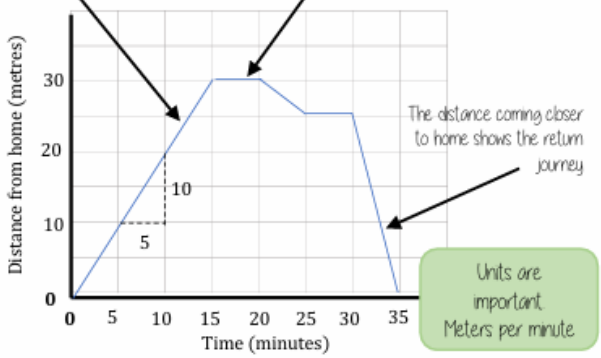
Distance — Time graphs

Gradient = speed

The steeper a gradient, the faster the speed

$\frac{10}{5} = 2$ metres per min

Horizontal lines represent staying still



The distance coming closer to home shows the return journey

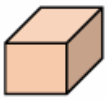
Units are important
Meters per minute

Density, Mass, Volume

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

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

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



volume of prism = Area of cross section × Depth

R

Flow problems & graphs

This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed

The cylinder will fill at a constant speed

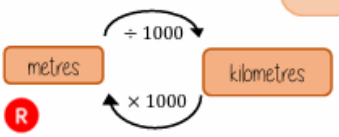
Units are important
Ensure any volume calculations are the same unit as the rate of flow

Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

Speed: miles **per** hour
Exchange rates: euros **per** pounds
Density: mass **per** volume



R

Maths

Music

Year 9 Music Term 5

Year 9: Reggae and Offbeats Walking Bass Lines

Practise on keyboard phone app

Bass lines in Reggae are **low, melodic** lines that carry the **groove** with a **deep** full sound. Often follows beats 1 and 3 in the reggae groove, and notes are played 'stepwise' or 'walking', which are notes that are close together to create melodic lines.

Stir it up bass line:

A,C#,C#, D, C# C#,D, F#, A, D, E, G#, B (high)

Hooks and offbeat chords

Practise on keyboard phone app

Off beat chords in Reggae land on the '***ands***' between beats – with a short '***clipped***' sound (organ or guitar typically). **Reggae Hooks** are light and melodic and sit neatly in the off-beat rhythm.

A B A E C# B A (Right hand version)
1 2 1 5 3 2 1

Blue – on the beat Yellow – off the beat Grey in-between

A major chords – on the off beat

1	A(A C# E)	3	A(A C# E)
2	A(A C# E)	4	A(A C# E)

D major chords – on the off beat

1	D(D F# A)	3	D(D F# A)
2	D(D F# A)	4	D(D F# A)

Lyrics in Reggae Songs

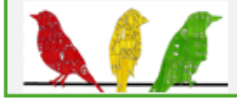
Practise with chords on keyboard phone app

Lyrics in Reggae are a **hopeful** and **positive** response to the history of **fights** between factions in **Jamaica**.

Bob Marley's "***Three little birds***", with its message of "*Don't worry about a thing, because every little thing is going to be alright*" is a classic example of the style.

Words are often about life, **struggle**, **love**, and **unity**.

Write some words of your own in this style to some chords played on your phone app (Try A major and D Major)



Instrumentation and textures

Practise with chords on keyboard phone app

Instrumentation and textures in Reggae describes how **layers of sound** are combined from a number of **repeating parts.**

Main instrumentation:
Bass + drums + chords + vocals.

Clarity:
The texture of Reggae is very **clear**, with each of the instrument and vocal parts being **very easy to hear**. The **bass** is **deep**, and doesn't **compete** with other sounds – the guitar is **clean** and its **short notes** give plenty of **space** to other **instruments** -

Write a melody that plays **only on the on beats**, while **chords** play **on the off beats.**

Keywords :

Bassline– The **low melodic notes, played** on **bass guitar** or **keyboards.**

Syncopation– **Accenting** the **weaker beats.**

Layers – Each **musical part** has its own '**layer**' in **recording**, it would be an **audio track**.

Texture- The **layers** of **sound, each** with their own **quality**.

Loop – A **short section** of **music** that is **repeated.**

Reggae musical arrangements

Practise with chords on keyboard phone app

Arrangements are the result of putting together the parts of the music to create a full and final piece.
This includes:
What instruments are **playing** – and **when...**
How **loud** instruments are **compared to each other.**
How **full** and **layered** the sound might be – or how **thin** and **sparse** it could be.

Arrangements are normally built by adding individual layers, making sure each sits well with the rest.

Reggae arrangements are often built from simple loops, coming together to make a full sound and song, with a hypnotic and relaxed groove.

Create your **own arrangement** by using a **multitrack** recording app to record your chords, melody and bass.

Reggae and off beats

PE

Year 9 Physical Education Term 5

1 Why Risk Assessments Matter

Risk assessments help identify and reduce potential dangers during sports sessions. They are used to keep **participants safe**, **prevent injury**, and **ensure activities run smoothly**.

2 Types of Risks

Risks can be: **Environmental** (e.g. slippery floors, bad weather), **Equipment-based** (e.g. broken cones, damaged balls), or **Human** (e.g. lack of warm-up, dangerous behaviour).

3 Spotting Hazards

A hazard is something with the potential to cause harm. Good coaches learn to **spot risks early** by checking the space, equipment, and behaviour of players before starting a session.

4 Minimising Risk

You can reduce risk by doing things like **clearing the playing area**, **checking equipment**, having **first aid available**, and setting **clear rules**. Always do a **dynamic check** just before starting..

5 Emergency Procedures

Know what to do if something goes wrong. This includes **knowing where first aid is**, how to **contact help**, and keeping **calm** if someone is injured. Leaders must act responsibly and get support quickly.

6 Structure or a Session Plan

A good session plan includes: 1) **Warm-up**, 2) **Main activity**, 3) **Skill development**, 4) **Game or application**, 5) **Cool down**. Planning helps keep sessions **safe, focused, and fun**.

Risk Assessing and Planning a Session

Chemistry

C7 - Crude Oil

Keywords

Hydrocarbon	A compound made of only hydrogen and carbon atoms.
Fractional Distillation	Separating a liquid mixture into fractions differing in boiling point by distillation.
Fuel	Any substance that releases energy when burned.
Cracking	The process by which complex, long chain hydrocarbons are broken down into smaller, simpler ones.
Alkane	A saturated hydrocarbon.
Alkene	An unsaturated hydrocarbon that contains a double bond.
Complete Combustion	When a fuel is burnt in a plentiful supply of oxygen.
Incomplete Combustion	When a fuel is burnt in a limited supply of oxygen.
Condensing	When a gas cools and turns into a liquid.

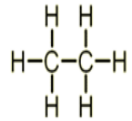
Alkanes

Saturated hydrocarbons

Do not contain a double bond.

General formula C_nH_{2n+2}

Ethane C_2H_6



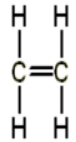
Alkenes

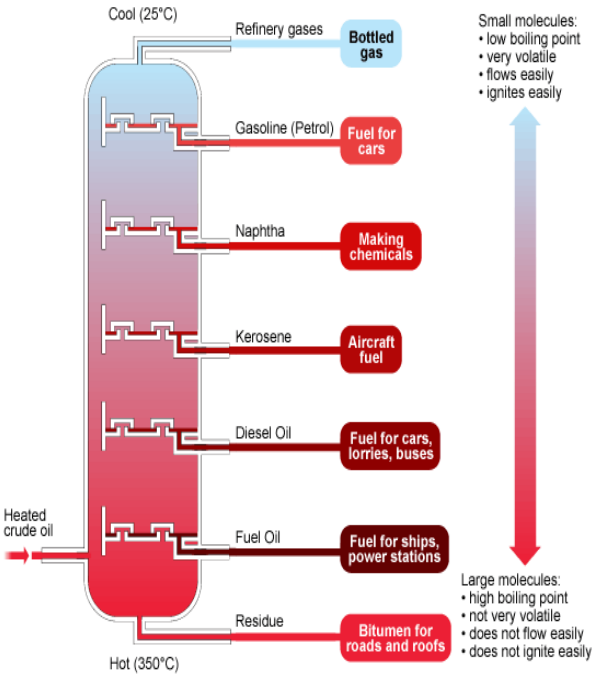
Unsaturated hydrocarbons.

Contain a double bond

General formula C_nH_{2n}

Ethene C_2H_4





Cracking

Cracking is the process of breaking down large hydrocarbons into smaller ones. It uses either a catalyst or steam to make the hydrocarbons thermally decompose. Alkanes and alkenes are the products of cracking.

For example, decane can be broken down with a catalyst at 500^{O}C to make pentane which can be used in petrol

Decane → Pentane + Propene + Ethene

$C_{10}H_{22} \rightarrow C_5H_{12} + C_3H_6 + C_2H_4$

Fractional Distillation

Crude oil is a mixture of different alkanes. Each compound has a different boiling points.

⇩

To separate crude oil, it is heated, vapourised and passed through a fractionating column.

⇩

In this column, the hydrocarbons cool and condense at different points depending on their boiling points.

⇩

Short chain hydrocarbons condense at the top where it is cool and long chain hydrocarbons condense at the bottom where it is hot.

⇩

The mixtures taken out of the column are called fractions

Combustion

During combustion, hydrogen and carbon atoms in fuels are oxidised. There are two types.

Complete Combustion:

hydrocarbon + oxygen → carbon dioxide + water

Incomplete Combustion:

hydrocarbon + oxygen → carbon + water + carbon monoxide

Physics

P2 Electric circuits

Charge - Q
Property of matter - can be +ve or -ve.
Caused by an imbalance of protons and electrons.

Current - I
Rate of flow of charge.

Potential difference - V
Energy transferred by each coulomb of charge between 2 points in a circuit.

Resistance - R
Opposition to flow of charge

Equations

Current = charge/time
$I = Q/t$

Potential difference=Energy /charge
$V = E/Q$

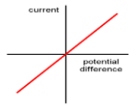
Potential difference = current x resistance
$V = IR$

Units:
Time - seconds (s)
Current - Amps (A)
Potential difference - Volts (V)
Resistance - ohms (Ω)
Charge - coulombs (C)
Work done - Joules (J)

Component characteristics

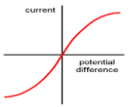
Wire

Resistor



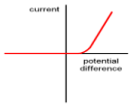
Resistance constant: **OHMIC conductor:** current directly proportional to potential difference if temperature remains constant

Filament lamp



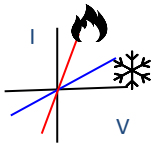
Resistance NOT constant: resistance of filament lamp increases as the temperature of filament increases

Diode



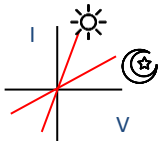
Current through diode flows in one direction as there is a very high resistance in reverse direction

Thermistor



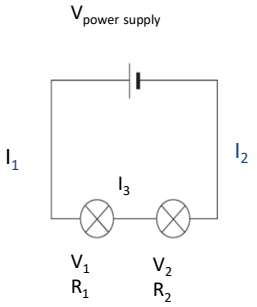
Resistance decreases as temperature decreases.
Useful in thermostats

Light dependent resistor



Resistance decreases as light intensity increases.
Useful for switching on lights as it gets dark

Series circuits
Single loop of connected components
I: Current is same throughout the circuit
I1= I2 = I3...
V: total potential difference from power supply shared between components
$V_{power\ supply} = V_1 + V_2$ ..
$R_{total} = R_1 + R_2$



Parallel circuits
More than one path for current to travel through
I: total current is sum of current through separate paths
$I_{total} = I_1 + I_2$
V: potential difference across each component is the same
$V_{power\ supply} = V_1 = V_2$
R: Total resistance < R of smallest resistor