



ALL SAINTS'

CATHOLIC VOLUNTARY ACADEMY

Year 8 Absolutes



Opportunity . Achievement . Success

Fidem House

Term 1 2025-26

NAME:

FORM:

Topic one: Writing a Gothic Short Story

The evolution of the Gothic genre:

The Age of Enlightenment, also known as the Age of Reason, occurred in the 1700s when science became more widely understood, explaining events and happenings that previously may have had more superstitious or imaginative explanations, such as witchcraft.

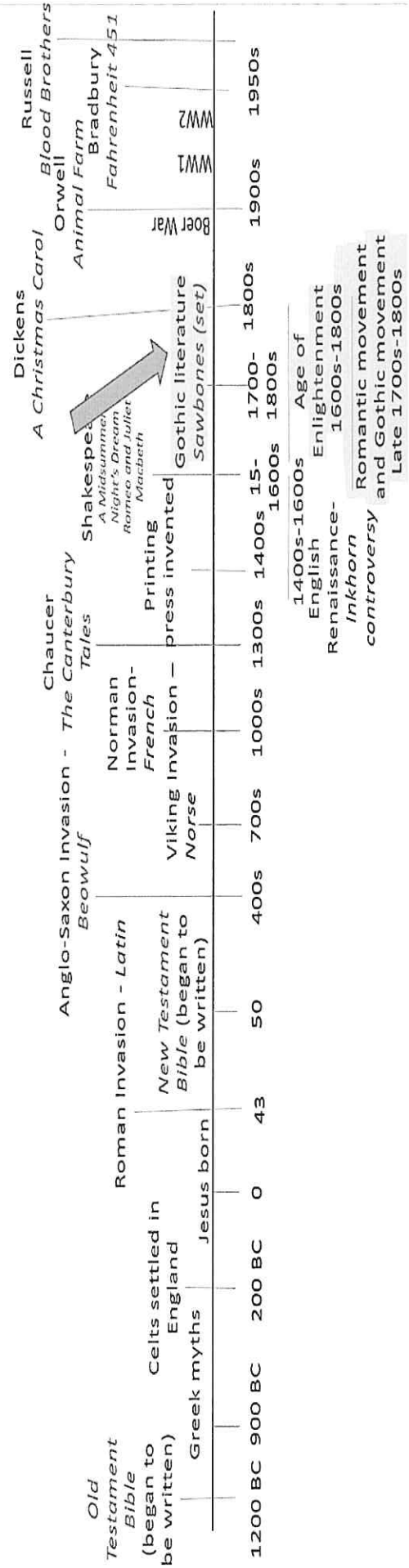
However, not everyone agreed with how logic and reason had overtaken the imagination. A group of writers called the Romantics began writing in this period, and they valued imagination and creativity over reason and logic.

Additionally, some were concerned that this new breed of scientists were trying to 'play God' and use science to interfere with God's will.

Gothic writers came out of the Romantic movement, and Gothic stories were meant to spark the reader's imagination. They were often based in isolated and remote settings and contained elements of mystery and the supernatural - everything that was opposite to cold, hard facts!

Gothic genre conventions – You will find these themes and ideas in Gothic novels:

- The power of Imagination.
- Dark, remote (lonely, cut off from the world) setting such as castles, graveyards, old houses.
- The supernatural – ghosts/monsters etc.
- Sympathetic background/pathetic fallacy
- Characters who suffer (nightmares/feelings of terror and madness).
- Obscurity (not being able to see things clearly).
- Female victims
- Doppelgangers, or 'Gothic doubles' (represent a person's 'darker' side).



Ambitious Vocabulary (From the Tell-Tale Heart by Edgar Allen Poe)

	Word	Definition	Example in a sentence
1	Acute	extreme/accurate	My hearing is acute (I can hear extremely well). He was in acute pain (he was in an extreme amount of pain)
2	Conceive Conceived (past tense)	To invent/think/imagine	I conceived a brilliant plan. I cannot conceive of a world without money. I find it hard to conceive that people are treated so badly.
3	Dissimulate Dissimulated (past tense)	To hide your feelings/ to pretend	He was polite in order to dissimulate the fact that he had lied. She tried to dissimulate but we knew she was upset. It is better to be honest about your feelings than to dissimulate .
4	Sufficient	enough	I had sufficient food for lunch. I do not have the sufficient knowledge to pass this test. A jumper will be sufficient to keep you warm today.
5	Vex Vexed (past tense)	irritate	I was vexed by his constant questions. You are really vexing me now. The computer vexes me when it powers off by itself.
6	Inquiring Inquired (past tense)	asking to gain information:	He inquired what the correct answer was. I inquired what time the bus came. They are inquiring now about where they should go.
7	Profound	intelligent	He asked profound questions. He has the most profound ideas. You said something really profound then.
8	Sagacity	intelligence and wisdom.	His sagacity made me trust him. His political sagacity made him a great Prime Minister. His kindness and sagacity made him well respected.
9	Awe	extreme admiration	I was in awe of his talent. You fill me with awe when I watch you play football. I watched in awe as he answered every question right.
10	Suppositions	beliefs that have no proof:	My suppositions were incorrect. You have proved my suppositions to be right! I may have my suppositions about him but I need to wait to see if they are correct.
11	Envelop Enveloped (past tense)	wrapped up	He was enveloped in his cloak. The mist enveloped the valley I like my coat to completely envelop me on a cold day.

12	Mournful	expressing sadness:	He felt mournful at the funeral. I feel mournful when I watch the news. He felt mournful as he waved goodbye.
13	Unperceived	not seen or recognised:	The thief snuck in unperceived . He was unperceived as he hid in the bushes. My winning plan was unperceived by the opposition.
14	Scarcely	hardly:	He was so terrified, he scarcely moved. He scarcely had anything to drink in the desert. I can scarcely move, I'm in so much pain.
15	Gaily	happily:	She skipped gaily down the street. The sun shone gaily . She called out gaily that her team won.
16	Pulsate Pulsated (past tense)	a strong expansion/contraction:	My heart pulsated in my chest. The music pulsated through my body. Determination pulsated through my veins.
17	Precaution	an action to prevent something dangerous happening	We took precautions against being eaten by wolves in the forest. As a precaution , we took a first aid kit. Wear goggles as a precaution .
18	Conceal	Hide/cover up	He concealed the stolen money when the police came. You should not conceal your true feelings. He concealed himself in the bushes.
19	Waned	decreased/became weaker:	My interest in the lesson waned . Her enthusiasm waned as the day went on. My feelings for him waned as he became more annoying.
20	Dismembered	cut the body parts off a person/animal:	The butcher dismembered the pig. He was told off by his mother because he dismembered the doll he was given. Some machines in factories are so dangerous, you risk being dismembered if you use them incorrectly.
21	Wary	being not completely trusting/certain about something:	I was wary of my crazy next door neighbour. Just be wary when you walk through the dark forest late at night. It is important to be wary of strangers.

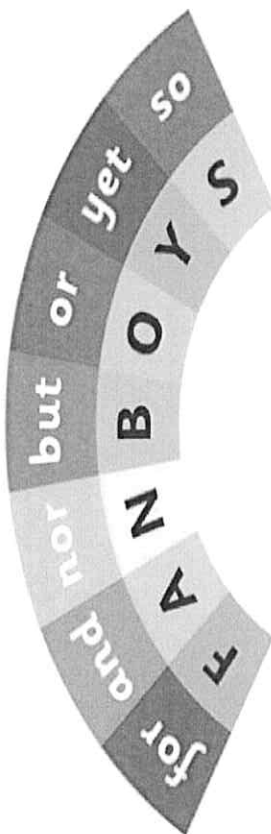
SPAG Absolute

Word Classes		Punctuation	
Proper noun	A naming word - Chris, East Anglia, Nimbus3000 - needs a capital initial letter.	Capital letter	An upper case letter used after a full stop to begin a sentence or to indicate a proper noun.
Concrete Noun	A thing you can see -you can put 'the' or 'a' before a noun e.g 'the table'.	Full stop	. Used to mark the end of a sentence.
Abstract Noun	The name of something you can't see e.g: hate/love/creativity/passion. Again, can put 'the' or 'a' in front: The <u>love</u> I feel...	Comma	- lists e.g: I bought several things from the shop: books, pens and pencils. -before a FANBOYS conjunction to join two independent clauses in a compound sentence. The cat sat on the mat and the dog barked. - sentences which start with a fronted adverbial (SPACED) starts Because it was raining, we ran for cover. - embedded clauses where the clause could be removed The boy, who I disliked intensely, pulled my hair.
Adjective	A word that is used to describe a noun e.g. 'The <u>tall</u> teacher talked to the class.'	Colon	: Used to precede lists, expansions or explanations e.g: I bought several things from the shop: books, pens and pencils.
Verb	A word used to describe an action, state or occurrence. What is being done? E.g: hit/jump/feel/believe	Semi colon	; Used to join two related independent clauses e.g: I ate too much pizza; I felt very sick.
Modal verb	Verbs used to express possibility or certainty (may/might/must/will/shall).	Dash	Also to separate longer items in a list. Used after an independent clause or parenthetically, instead of commas for an embedded clause. Used to emphasise the clause after the dash. You are late – this is the third time!
Adverb	A word that is used to modify a verb e.g. 'He ran quickly.'	Brackets	() Used to indicate an afterthought/sarcasm in a lower tone, like an 'aside' to the reader which can be taken out to leave a grammatically complete sentence. The old man (who smelled like cheese) sat next to me on the bus.
Pronoun	A word that can replace a noun: I, you, he, she, it, they, them, we.	Exclamation mark	! Used at the end of an exclamatory sentence to show strong emotion.
Preposition	A preposition is a word that tells you where or when something is in relation to something else. (at, in, on, after, before, under, inside and outside).	Question mark	? Used to indicate an interrogative sentence or rhetorical question.
Determiner	A determiner comes before a noun and helps to define it. E.g. a boy (a, an/the/those/these)	Apostrophe	' Used to show ownership (Sam's bag) or missing letters 'They're late'.
		Ellipsis	... Can be used to create suspense e.g: I couldn't believe my eyes... or to show the trailing off of a sentence e.g: 'I wonder...' she said.
Sentences			
Main clause	A clause that can stand alone as a sentence. Contains a subject (the person or thing doing the action) and a verb (the action). e.g. 'The cat sat on the mat'.		
Subordinate clause	A clause that depends on an independent clause to make sense e.g. 'The cat sat on the mat <u>without turning around</u> '. Often uses a subordinating ISAWAWABUB conjunction (if, since, as, when, although, while, after, before, until and because.)		
Fronted subordinate clause	As above – but the subordinate clause comes at the front of the sentence: e.g. <u>Without turning around</u> , the cat sat on the mat.' Also can be called a 'fronted adverbial'.		
Relative clause	Relative clauses use a relative pronoun or relative adverb to give us more information, usually about a specific word or phrase (that, which, who, whom, whose when, where, why). Relative clauses that contain non essential information need parenthetical commas and can also be called embedded clauses: e.g: The boy, who I disliked intensely, pulled my hair. The sentence should make sense if the clause was removed and the meaning should be intact.		
Simple sentence	Contains just one main clause. Makes complete sense.		
Compound sentence	Two main clauses joined together with a co-ordinating FANBOYS conjunction (for/and/nor/but/or/yet/so). The cat sat on the mat <u>and</u> the dog barked.		
Complex sentence	A main clause plus a subordinate clause. The subordinate clause <u>ay</u> come after the main clause or before (when it would be a fronted subordinate clause). 'The cat sat on the mat <u>because</u> it was soft.'		
Fronted adverbial	Words, phrases or fronted subordinate clauses at the start of sentences which tell us when, where or how something is done (t hey describe the verb) Can remember them using ISPACED. E.g: <u>Because it was raining</u> , we ran for cover.		
Expanded noun phrases	A phrase that contains a determiner (the/a) and a noun (table – e.g the table) and one or more adjectives (the black table). Can also contain a prepositional phrase e.g: The black table with wonky legs.		

Co-ordinating and subordinating conjunctions

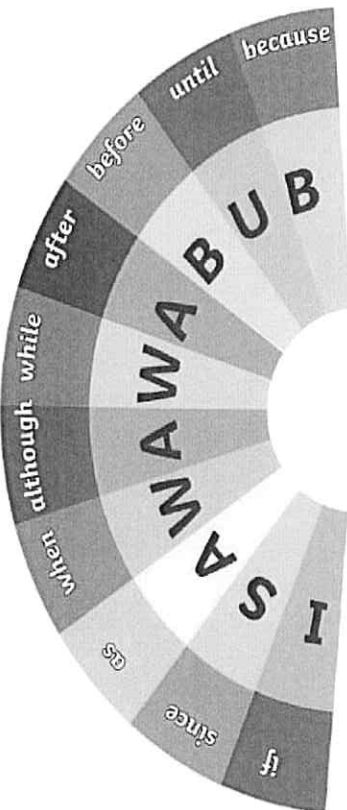
Co-ordinating Conjunctions

There are seven co-ordinating conjunctions. They give equal importance to the words or sentences they connect.



Subordinating Conjunctions

There are 10 subordinating conjunctions. They are used at the beginning of a subordinating clause which is a clause that doesn't make sense on its own.



Their/They're/There

Hear/Here

Your/You're

Was/Were

Ask yourself these two simple questions:

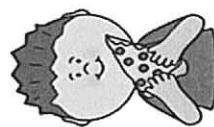
Does the word after it belong to 'them'? → **their**

Is it short for 'they are'? → **they're**

For everything else, it's **there**

Your
pizza

Your = you own it



It is yours.

You're
pizza

You're = you are



You are pizza!

'WAS' is used if you are talking about ONE person or thing (I, he/she/it):

'WERE' is used if you are talking about TWO OR MORE people/things (we/they/you):

'You' is always 'were',

Punctuating Direct Speech

Reporting clause before the direct speech

The reporting clause of direct speech is the short clause that indicates who is talking. It is the clause that is outside of the inverted commas. It is therefore not the words being spoken.

We can write the reporting clause either before or after the direct speech. If the reporting clause is before the direct speech, we write it as follows:

reporting clause

inverted commas

He said, "Let's go to the cinema."

comma

capital letter

full stop

Grammar rules - If the reporting clause is before the direct speech:
We write a comma (,) before the direct speech.
We write the exact words inside the inverted commas.
The first letter is a capital letter.
We write a full stop (.) before the closing inverted commas.
We might also use a ? Or a ! Before the closing inverted commas.

Sometimes we break up the direct speech into 2 parts:

"If you come to London," she said, "then call me."



The second part of the direct speech starts with a small letter if it is the same sentence as the first part of the direct speech.

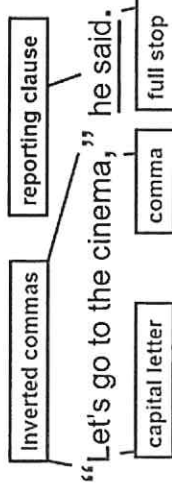
"I'm tired," she said, "Let's stay at home."



The second part of the direct speech starts with a capital letter if it is a new sentence.

Notice that the first part still ends with a , (unless you need a ? Or a !)

Reporting clause after the direct speech



If the reporting clause is after the direct speech:

We write the exact words inside the inverted commas.

The first letter is a capital letter.

We write a comma (,) before the closing inverted commas. We might also use ? or !

We write a full stop (.) at the end of the reporting clause.

New speaker, new line

If someone else speaks, we start a new line.

"Your book is over there," said the teacher.

"Thanks!" replied Johnny.

Using Fronted Adverbial openings - ISPACED

I		S		P		A		C		E	
Ing words		Similes		Prepositions		Adverbs		Conjunctions		Ed words	
Walking	Shivering	Like a mouse	Over	On top of	Hastily	Quickly	First	Excited			
Skipping	Screaming	Like a cheetah	Above	On	Calmly	Slowly	Later on	Delighted			
Running	Growling	Like a statue	Beneath	Underneath	Casually	Gently	Suddenly	Pleased			
Crawling	Shouting	Like a tree	Below	Under	Cautiously	Shyly	Immediately	Amazed			
Creeping	Gasping	Like a predator	Through	Between	Softly	Nervously	Finally	Astonished			
Jumping	Whispering	Like a monster	Inside	Beside	Neatly	Messily	After that	Shocked			
Leaping	Yelling	Like a villain	By	Across	Angrily	Busily	Before long	Scared			
Escaping	Talking	As quiet as a	Before	After	Spitefully	Loudly	Since	Puzzled			
Bursting	Moaning	As loud as a	During	At	Ominously	Honestly	Whereas	Dazed			
Grasping	Whimpering	As still as a	In	Off	Foolishly	Crazily	As	Surprised			
Grabbing	Thinking	As fast as a	By	To	Moodily	Readily	Next	Worried			
Seizing		As timid as a	About		Amazingly		Whenever	Petrified			
Clutching		A bright as a			Expectantly		Despite	Horrificed			
Picking		As slowly as a			Generously		Until	Exhausted			
Shaking		As noisy as a			Chaotically		So				
Hiding		As calmly as a			Unexpectedly		Eventually				
Sleeping		As angry as a			Intelligently						

Remember to use a comma before the main clause: Creeping through the forest, I trembled with fear.

Y8 Rhetoric Absolute

Concepts

Rhetoric

The art of persuasion, getting people to believe what you want them to.



Idolisation

Seeing or representing something as perfect or better than it is in reality.



Injustice

When a result is viewed as being unfair. It may be based in bias and prejudice.



Prejudice

Holding the belief that certain types of people are better than others.



Propaganda

Exaggerated ideas spread by the government or a political party to promote their ideas in a heavily biased way.



Oppression

Absolute control and subjugation, being powerless.



Vocabulary

Alexander the Great Speech			Marc Anthony Speech		
1	Venture	Arisky journey	13	Interred	buried
2	Endurance	The act of suffering something painful or difficult	14	Ambitious	showing a strong desire to succeed
3	Hesitate	Pause over a decision	15	Grievous	Bad and serious
Elizabeth 1 st 's speech			16	Coffers	money chests
4	Multitudes	Many people	17	Thrice	three times
5	Treachery	Betrayal of trust	18	Disprove	Prove something is false
6	Tyrant	A cruel and harsh ruler	19	Mourn	Show sorrow for death.
7	Feeble	Weak/ delicate	20	Brutish:	Cruel and violent
8	Scorn	Hatred	Emmeline Pankhurst Speech		
9	Virtues	Good qualities/high moral standards.	21	Militant:	Being assertive or aggressive in support of a cause.
10	Obedience	Following orders	22	Enfranchise-ment	Given the right to vote
11	Concord	Peaceful behaviour	23	Permeate	Spread through
12	Valour	Bravery	24	Emancipate	Set free from legal restrictions
			25	Salvation	Saving
			Malala Speech		
			26	Illiteracy:	Not being able to read or write

Key word	Definition
Alliteration	Repeating the same sound at the start of consecutive words.
Anecdote	A short amusing or interesting story about a real incident or person.
Anaphora	Starting each sentence with the same words. For example, Martin Luther King's repetition of "I have a dream"
Antithesis	Putting two opposites together in clauses that mirror each other grammatically: "One small step for man, one giant leap for mankind".
Dialysis	Giving an 'either-or' choice: "Either you're with us, or against us."
Direct address	Use of a proper noun (you) to address the audience.
Emotive language	Words or phrases that encourage the reader or audience to feel a particular emotion.
Epiphora	Ending each sentence with the same words.
Ethos	Credibility. "You should believe my argument because you believe <i>me</i> ." or perhaps "...believe <i>in me</i> ."
Hyperbole	Exaggeration to emphasise a point or idea.
Hypophora	A question followed by the answer.
Logos	Using logic and reasoning as your appeal: facts and figures.
Pathos	Pathos is the emotional influence of the speaker on the audience. Its goal is to make the audience feel something.
Purpose	The reason the writer is writing.
Rhetorical question	A question that doesn't require an answer, but is instead used to make a point.
Tricolon	Use of a list of three, or repetition of something three times, to emphasise a point.
Verbal irony	Saying the opposite of what you mean. It can be used to bring humour or express frustration: "Lovely weather we're having!" (when it's raining).

Further Knowledge

The study of rhetoric began in Ancient Greece and has continued to be important around the world today with political leaders, civil rights activists and those trying to get out of doing homework.



There are many devices used to strengthen different aspects of your rhetoric which can be identified in many different speakers work. Aristotle, Hitler and Malala all use the same aspects of rhetoric in their writings!



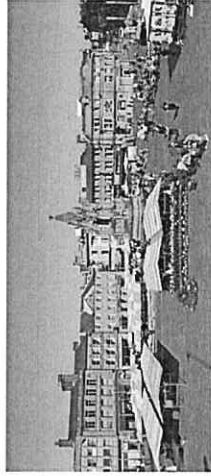
Rhetoric is everywhere: in the news, on the radio, in adverts. Be aware that every thing you hear may contain rhetoric. Keep a critical ear and be aware of how you're unknowingly being persuaded.



LETTERS	
What IS a letter? A formal letter is usually written to an audience who you are not personally familiar with. It is usually written for an official purpose – for example, to complain, to apply for work or to offer your opinions on a particular subject. Here's how a formal letter should look:	What is being tested? • How you engage a reader, the quality of your ideas and how well you present them. • Your ability to hit the right TONE for your audience/purpose. • Your ability to be evaluative when writing. • Your ability to use sentencing, grammar and vocabulary . • Your ability to develop ideas and write about 2 sides. You could use the Seven Part Structure to develop your ideas: First (topic) sentence: <i>My primary reason why a camping week would not be a good idea is that in England the weather is often poor.</i> Second sentence (use a statistic): <i>Even in June last year, 17 of the 30 days had rain, so it is likely that most students would be likely to get wet.</i> Third/fourth sentence (develop the 'stats sentence'): <i>This is not likely to make the experience a very pleasurable one and will lead to many students resenting being made to go. A wet week camping one year is not going to encourage them to participate the following year and the school may have high absence rates as a result.</i> Fifth sentence: (personal anecdote): <i>I've had some experience of camping with a few friends but a couple of horribly rainy days tested our friendship to the limit.</i> Sixth sentence (rhetorical question): <i>Can you imagine what the situation would be if teachers had fifty or sixty miserable, awkward students on their hands miles from home?</i> Seventh sentence (offer a suggestion): <i>Surely it would be better to offer a camping week to those who would like to participate, and provide other educational activities alongside this, so that all students have opportunities to take part in out-of-school activities, but with some element of choice?</i>
Structuring a letter: • Learn how to set out a formal letter – see above. • Start with a focused opening paragraph in which you make clear the purpose of your letter. • Include around five main paragraphs in which you develop your ideas. • Conclude your letter. Either sum up your ideas or discuss the next steps that should be taken.	
Example questions for practice: Your headteacher has decided that all Y11 students should take part in a camping week. Write a letter to your headteacher giving your opinions on this. [20] This was part of an article in a teenage magazine: 'I'm fed up of reading about celebrities and sports stars behaving badly. They do no good and a lot of harm. The worst thing is that teenagers are easily influenced to think they can copy them and behave the same.' Write a letter to the magazine giving your views on the subject (20)	

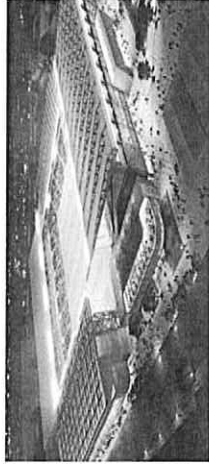
Geography – Why is it difficult for stakeholders to get along?

1. Regeneration in Mansfield – Local focus



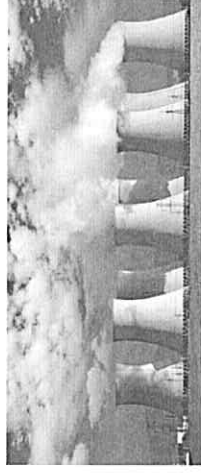
- a – Regeneration is needed to bring improvements in employment and other social conditions within a place (e.g. health, education, housing).
- b – Mansfield has relatively high rates of deprivation in the UK, with higher than average unemployment and lower wage rates and qualifications.
- c – Mansfield and its surrounding area has suffered from deindustrialisation where many of the coal mines and textiles industries have closed due to competition from abroad, where production is cheaper.
- d – The legacy of deindustrialisation in the Mansfield area, since the 1980's in particular, has been high levels of derelict land, low rates of employment and the lack of a skilled workforce.
- e – Mansfield needs to attract more investment into the town to create a positive multiplier effect where more people in work can spend money in shops and business allowing job creation and can increase the council tax base so local services can be improved.
- f – Mansfield District Council has created the Mansfield Masterplan to regenerate Mansfield and attract investment.
- g – It focuses on creating affordable houses, developing new parks, providing better facilities for education and improving public transport.

2. Redevelopment of the City Ground – Regional focus



- a – Each feature of an urban environment has a sphere of influence.
- b – A sphere of influence is an area within which local people are affected in a positive or negative way.
- c – Nottingham Forest have recently been given planning permission to expand the capacity of their City Ground stadium from 30,000 to 36,000.
- d – There are many stakeholders who will gain from the expansion, including businesses who experience greater footfall, those looking for a new home as the redevelopment includes 100 affordable homes and the football club itself, as more ticket sales means greater profits for the club.
- e – Many local stakeholders are against the stadium expansion due to an increase in noise, traffic congestion and anti-social behaviour on matchday.
- f – The football club have had to receive planning permission for the stadium redevelopment. To do this they need to listen to the views of local people, consider the likely benefits and problems with the project and make a proposal to the local council on how any issues can be resolved.
- g – The club have had to create a sustainability plan showing how they will improve public transport, so more fans can attend the game. They also have to plan for affordable housing and support for local businesses.

3. UK Energy Security – National focus



- a – The Russia-Ukraine conflict has had a number of global impacts.
- b – Energy prices have risen due to a shortage in Russian gas supplies.
- c – A food crisis has hit parts of Africa and Asia as Ukrainian grain (used to make bread) cannot be exported.
- d – A key impact of the conflict on the UK has been the increase in energy prices, with an energy cap being introduced from April 2023 to limit household energy costs to £3,000 per year.
- e – The Russia-Ukraine conflict has reignited the debate about energy security in the UK and how the UK can ensure it meets energy demand.
- f – The UK has committed to cutting greenhouse gas emissions as part of the 2015 Paris Agreement. Greenhouse gases (e.g. carbon dioxide and methane) cause climate change by trapping heat in Earth's atmosphere.
- g – Three solutions that the UK could use to meet its energy needs are –
Fracking – The removal of natural gas from shale rocks below the ground.
Nuclear power – The splitting of uranium atoms to generate electricity.
Renewable energy – Investment in wind, tidal and solar energy that will not run out and will not contribute to greenhouse gas emissions.
- h – Taxpayers, business and government disagree on the way forwards.

Keywords

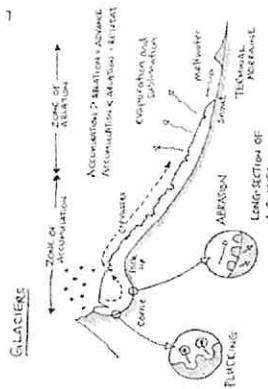
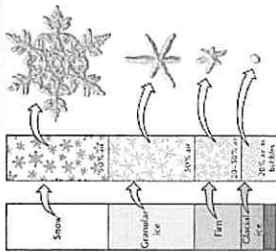
Sustainable	Considering the needs of the present without impacting the needs of future generations.	Legacy	Whether a regeneration project has a positive or negative impact over a period of time.
Deindustrialisation	Decline of traditional industries, such as coal mining and steel making.	Brownfield sites	Land that has been built on previously.
Regeneration	Making improvements to a place. Normally linked to growth in the economy and perception of a place.	New Town Fund	Money given by the national government to support regeneration in towns across the country.
Stakeholders	People who have an interest in a particular regeneration project.	Sphere of influence	The area affected in a positive or negative way by an event or service.
Conflict	Where stakeholders disagree about something because they have different views or interests.	Catalyst	Something that will speed up improvements in an area.
Energy security	The ability to access reliable and affordable sources of energy.	Planning permission	Permission needed from a group in power (local council or national government) before something can be built.
Geopolitics	Relating to politics, especially international relations, as influenced by geographical factors.	Greenhouse effect	Where greenhouse gases in the atmosphere trap heat (infra-red energy) leading to climate change.

Test Yourself Questions

- Why did the coal mining industry decline in Mansfield?
- Why is Mansfield in need of regeneration? Give 3 problems that the town faces.
- Explain why low rates of educational attainment put businesses off from investing in Mansfield.
- Describe in your own words what a positive multiplier effect is.
- Name 3 priorities outlined by the Mansfield masterplan.
- What does the term sphere of influence mean in the context of a football stadium?
- Explain why a football stadium can have positive and negative impacts on stakeholders.
- Explain how the expansion of the City Ground could be a catalyst for growth in Nottingham.
- How do you get planning permission for a redevelopment project?
- Name 2 global consequences of the Russia-Ukraine conflict.
- Why has the Russia-Ukraine conflict led to an increase in energy prices and cost of living in the UK?
- What is energy security and name three options that the UK has to help it secure its energy needs?

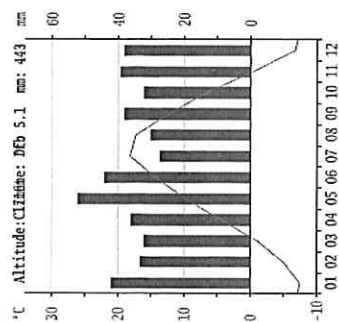
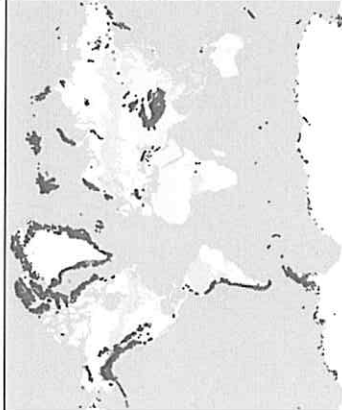
1. What are glaciers?

Glacier formation: snow falls - does not melt through the year - more snow falls - layers build up - the weight over upper layers, compresses the snow in the lower layers - firm forms - eventually most of the air bubbles are squeezed out so the snow becomes ice and forms a glacier.



2. Where are glaciers?

- Polar glaciers are found in areas of high latitude.
- Polar glaciers are found in the north and south polar regions like Greenland, Canadian Arctic and Antarctica.
- Alpine glaciers are found in areas of high altitude.
- Alpine glaciers are found in mountain ranges like the Himalayas in Asia, the Alps in Europe and the Andes in South America.

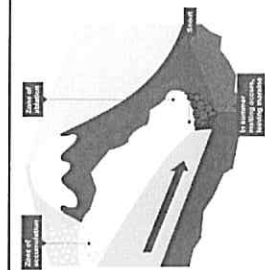


3. What are glacial climates?

- There is plenty of rain all year ground in glacial areas. This is mainly relief rain caused by air rising, cooling and condensing over mountains.
- In the months where the temperature is below freezing, the dominant precipitation type will be snow, which contributes to the build-up of glaciers.
- Temperatures are low (often below freezing point in glacial areas). In Alpine areas this is due to a high altitude, where thinner air transfers heat less effectively. In Polar areas, the cold conditions are mainly down to a high latitude location where the Sun's heat is less concentrated so the temperatures are lower. Glaciers retreat when temperatures are above 0°C and advance when they are below 0°C.

4. How do glaciers move?

- The weight of ice makes glaciers move very slowly downhill as the ice's weight and gravity make the ice crystals change shape (internal deformation) so the glacier moves downward. In summer this is helped by meltwater lubricating the base of the glacier.
- Zone of accumulation = the addition of ice to a glacier from snowfall (normally in cold periods)
- Zone of ablation = the removal of ice from a glacier by melting and evaporation (warm months)
- Glacial advance = the movement of a glacier's snout further down a glacial trough as a result of increased accumulation.
- Glacial retreat = the movement of a glacier's snout back up the glacial valley as a result of an increase in ablation.



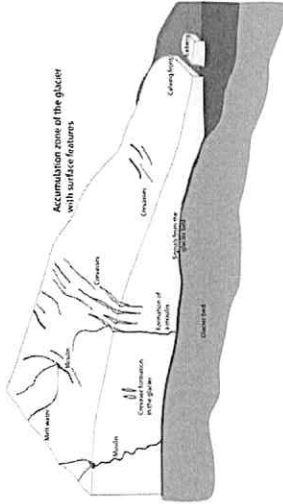
Keywords

Glacier	Ice on the land that is formed by layers of snow building up and being compressed into ice over many years.	Latitude	The distance from the equator.
Alpine	Found in areas of high altitude areas (i.e. Alps, Himalayas).	Accumulation	The high altitude zone of the glacier where snow falls
Polar	Found in areas of high latitude (i.e. the North and South Pole).	Ablation	The low altitude zone of the glacier where the ice melts
Firn	Material made when snow is compressed but not yet solid glacial ice.	Corrie	A hollow in the mountain where snow starts to settle and a glacier is formed
Weathering	When the weather causes something to break down where it is.	Arête	A jagged ridge along a mountain range caused by 2 glaciers on either side
Erosion	When something is broken down and moved away.	Pyramidal peak	A pyramid shaped peak in a mountain, multiple glaciers erode the sides of the mountain
Abrasion	Erosion caused by rocks and boulders in the base of the glacier acting like a giant file scratching and scraping the rocks below.	Crevasse	A deep wedge or crack in a glacier caused by the glacier moving
Plucking	A type of erosion where meltwater in the glacier freezes onto rocks, and as the ice moves forward it plucks or pulls out large pieces along the rock joints.	Moulin	A narrow tunnel in a glacier caused by surface meltwater
Till	When a glacier melts and retreats, the jagged, unsorted pieces of rock held in or on the ice are deposited.	Ice age	An extended period of time with significantly low global temperatures, causing glaciers to advance
Moraine	Frost-shattered rock debris and material eroded from the valley floor and sides, transported and deposited by glaciers.	Glacial	A period of time with cooler temperatures, does not have to be an ice age
Altitude	Height above sea level.	Interglacial	A period of time with warmer temperatures.

Geography – How did Joe Simpson escape Siula Grande?

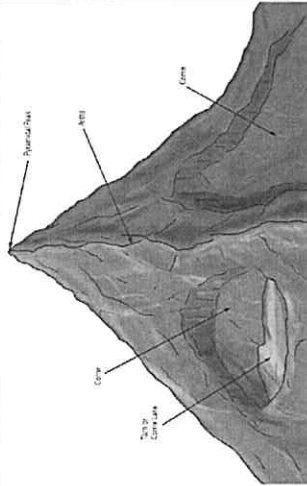
5. What are glacial features?

- Crevasse: A crevasse is a deep, wedge-shaped opening in a moving glacier. Crevasses form when different parts of a glacier move at different speeds. When traveling down a valley, a glacier moves faster in the middle. The sides of a glacier are slowed down as they scrape against valley walls. As the sections advance at different speeds, crevasses open in the ice.
- Moulin: It's a narrow hole worn in the ice by surface meltwater which carries water from the surface to the base far below. Moulins form when summer meltwater streams on the surface of the glacier finds a crevasse in the ice and begins to pour down through the ice. As the water moves downward, its turbulence and heat creates a passage (up to 10m wide) that can go all the way down to the bottom of the glacier, hundreds of meters deep.



6. Where are rock features?

- Corrie: A hollow part of the mountain where snow is collected, the glacier forms and further erodes the hollow. When the glacier melts, we can then see the corrie.
- Corrie lake: When a glacier retreats or completely melts, the corrie may store some meltwater on the surface which we call a corrie lake or tarn.
- Pyramidal Peak: Sometimes, there are 3 or more glaciers on different sides of a mountain. When they erode and make a corrie on all sides, a rough, jagged peak is created at the top which we call a pyramidal peak.
- Arête: Sometimes, there are 2 glaciers on the opposite sides of a mountain. When they erode and make a corrie on either side, a rough, jagged ridge is created along the top which we call an arête.



7. Were there glaciers in the UK?

Ice age = popular name for the cold times experienced in the Pleistocene period. Current ice age began 2.6million years ago. The last glacial maximum was 20,000 years ago. We are now in an interglacial (warmer period) which began 10,000 years ago.

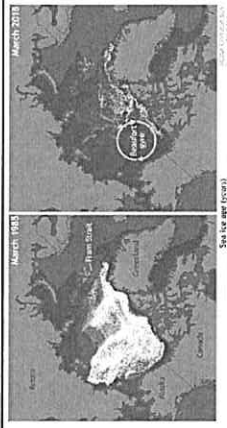
Evidence

- Ice melted 11,500 years ago, filled the corries with water, creating tarn.
- U-shaped valley (glacial trough) was v-shaped but plucking and abrasion eroded the rock and smoothed the valley. Hanging valley created by smaller or weaker glaciers that didn't make a u-shaped valley.
- Moraines are rock walls created by scree that has been transported by the glacier as it advanced.
- Truncated spurs were interlocking spurs (created by rivers) but the glacier plucked rocks and eroded through abrasion which sliced off the end.
- Evidence of free-thaw weathering as water froze in cracks in the rock, breaking them apart.



8. Will we have glaciers in the future?

- Glaciologists around the world are measuring the length and depth of glaciers every summer and winter.
- In the last 100 years, most glaciers have shrunk by two-thirds and many disappeared altogether.
- Daniel Fagre predicts there will be no glaciers left in the USA by 2050.
- 80% of snow and ice on Kilimanjaro have melted since 1912.
- Most Himalayan glaciers will have disappeared by 2035.
- Arctic sea ice has thinned and ice burgs have increased as the ice breaks away from the polar glacier
- Thawing permafrost has caused the ground the subside by 4.6metres in Alaska
- There is indisputable evidence that the climate is getting warmer, causing glacier melt
- The main cause of climate warming is the burning of fossil fuels
- Impacts include rising sea levels and more warm water which expands
- However, current predictions are that it will take 5,000 years for all ice in Greenland, Antarctica and all alpine glacial areas to melt.



Test Yourself Questions

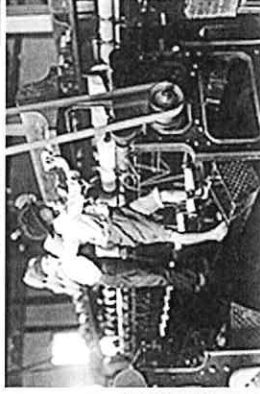
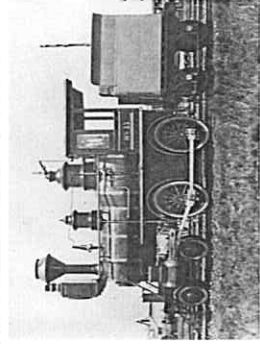
- Explain how snow turns into glacial ice
- Explain how glaciers form at the top of mountains
- Explain why glaciers form at the top of mountains
- What is the difference between alpine and polar glaciers?
- Describe glacial climates
- Explain the difference between glacial climates and the climate of Mansfield
- Describe the location of glaciers
- Explain how glaciers move
- Explain how the movement of glaciers impacts the rock underneath
- Explain why glaciers may be dangerous for climbers
- What is the difference between crevasses and moulins?
- Explain the evidence that glaciers leave behind
- What is the cause of glacial advance?
- What is the cause of glacial retreat?
- Why are there no longer glaciers in the UK?
- Compare the sea ice extend in the Arctic in 1985 and 2018, using the maps in section 8.
- What is the main cause of glacial ice melt? What is the evidence for this?
- Select 5 keywords that you are not confident with and use LCSWC to learn their definitions
- Select 5 keywords that you struggle to spell and use LCSWC to learn their spellings
- What do you think will happen to glacier in the future?

History

Year 8

Topic Industrial Revolution

Timeline	
1.	1771 Richard Arkwright opens the first factory in Cromford, Derbyshire
2.	1825 The first passenger steam railway travels between Stockton and Darlington– invented by George Stephenson
3.	1830 The first inter-city railway is opened, travelling between Manchester and Liverpool.
4.	1831 Brunel designs Clifton Suspension Bridge
5.	1832 Reform Act- Began to give more people the vote including small landowners, tenant farmers and shopkeepers
6.	1833 Factory Act- No children under nine to work in factories, nine hours of work maximum per day for children aged 9-13, two hours of school per day. Factory inspectors appointed.
7.	1842 Edwin Chadwick writes a report to the government on the poor working and living conditions in London.
8.	1844 Factory Act- No women to work more than 12 hours per day, machines to be made safer.
9.	1847 Ten Hour Act- Maximum ten hour day for all women and workers under 18.
10.	1850 Factory Act- Machines to only be operated by women and children between 6am and 6pm.
11.	1851 The Great Exhibition is opened in Hyde Park, showcasing Britain's Industrial achievements.
12.	1854 John Snow discovers the cause of cholera
13.	1863 London underground is opened
14.	1867 Second Reform Act– gave working class men the vote for the first time
15.	1888 Jack the Ripper murders 5 women in London. The killer is never caught
16.	1895 Factory Act– Children under 13 to work a maximum of 30 hours per week



Key words	
1.	Population All the people who live in a particular place
2.	Transport Carry people/goods from one place to another
3.	Living conditions Circumstances of a persons life e.g. shelter, food, clothing, safety, clean water
4.	Working conditions The working environment e.g. hours, breaks, pay.
5.	Back to back houses Form of terraced housing, share 3 out of 4 walls. The only windows and door are on the front.
6.	Cholera Infectious disease of the small intestine, caught from infected water supply.
7.	Rural Countryside
8.	Urban Town/city
9.	Steam engine Use steam to create power
10.	Spinning frame Invention for spinning thread from cotton/wool
11.	Smallpox Contagious disease which caused fever and spots all over the body.

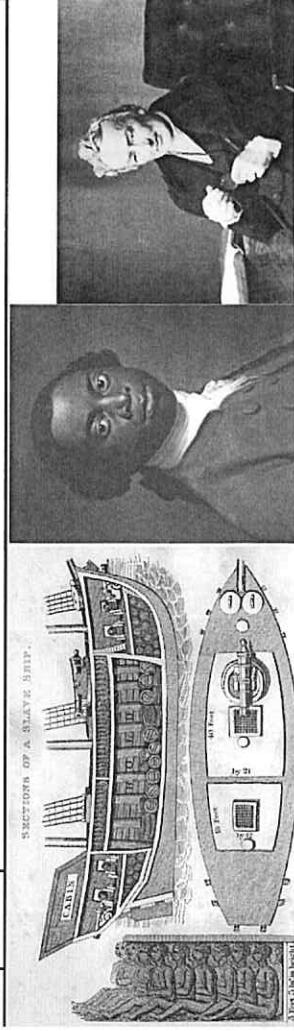
Key individuals	
1.	John Snow Discovered that dirty water caused cholera by plotting the deaths and linking them to the Broad Street pump. When the handle of the water pump was removed, the deaths stopped.
2.	Richard Arkwright Opened the first factory in England and developed several machines to create thread from cotton and wool quickly
3.	George Stephenson Invented the steam engine
4.	Abraham Darby Invented smelting iron which was then used to create bridges and trains
5.	Isambard K Brunel Designed bridges and tunnels which improved transport and access
6.	Jack the Ripper A serial killer who killed 5 women in the Whitechapel area of London in 1888
7.	Edwin Chadwick Wrote a report for the government on the poor living and working conditions in London to try and persuade them to make improvements.
8.	Edward Jenner Discovered that smallpox could be prevented by giving people vaccinations containing cowpox.

History

Year : 8

Topic: Trade in enslaved people & Civil Rights

Timeline	
1. 1562	Sir John Hawkins led England's first slaving expedition. He sailed from Plymouth and captured African slaves in Guinea, and then traded them in the West Indies.
2. 1655	Britain captured Jamaica from Spain, the demand for sugar continued to grow, and the trade became more lucrative.
3. 1771	Granville Sharp (a British abolitionist) won a court case that any enslaved who were brought from the colonies to Britain, could not be forcibly returned to the trade in enslaved people in the Caribbean/America.
4. 1783	British Society for Effecting the Abolition of the Slave Trade is founded.
5. 1789	Olaudah Equiano published his autobiography. He was one of the most prominent black campaigners in the anti-slavery movement. He was an ex-enslaved person who, by the 1780s, lived as a free man in London.
6. 1791	An enslaved uprising, led by Toussaint Louverture begins in Saint-Domingue, France's most lucrative colony.
7. 1804	Enslaved uprising on the island of St Domingue successful and the first independent black state outside Africa - Haiti - is established.
8. 1807	On 25 March, transatlantic trade in enslaved people abolished by the British Parliament.
9. 1833	The Abolition of Slavery Act is passed by the British Parliament, abolishing the practice of slavery in all British territories.
10. 1839	Rebellion on the Amistad. The captured slaves took control of the ship on which they were being transported. Their case was heard in the U.S Supreme Court, and the judged ruled that they were right to regain control. In 1842, the Slaves were returned to their homeland Sierra Leone.
11. 1863	President Lincoln issued the final Emancipation Proclamation freeing all enslaved people in territories held by Confederates in the American Civil War.
12. 1865	6th December: The Thirteenth Amendment to the United States Constitution, passed by Congress on January 31, 1865, is finally ratified. Slavery is abolished in America.
13. 1955-1956	The Montgomery Bus Boycott took place between 5th December 1955 and 20th December 1956. It is regarded as the first large-scale U.S. demonstration against segregation
14. 1964	The Civil Rights Act of 1964 outlaws discrimination based on race, colour, religion, gender, or national origin. It bans unequal voting rights, and racial segregation in schools, employment, and public accommodations.
15. 1965	The Voting Rights Act of 1965, aimed to overcome legal barriers at the state and local levels that prevented African Americans from exercising their right to vote.
16. 1968	The Civil Rights Act of 1968.



Key words	
1. Enslaved person	A person who has no rights, can be bought and sold, has no freedom and does not get paid for their work.
2. The Trade Triangle	The route of the Atlantic Slave Trade, between Britain, West Africa and North America/the Caribbean.
3. The Middle Passage	The sea journey undertaken by slave ships from West Africa to the Caribbean/America.
4. Cash crops	A crop produced for its commercial value rather than for use by the grower.
5. Branding	The action of marking with a hot branding iron.
6. Auction	A public sale in which the enslaved were sold to the highest bidder.
7. Plantation	A large estate on which cash crops are grown, usually by enslaved people.
8. Overseer	A person who supervises others, especially workers.
9. Uprising	An act of resistance or rebellion; a revolt.
10. Abolition	The action of ending a system, practice, or institution.
11. Emancipation	The freeing of someone from slavery.
12. Civil Rights	The rights of citizens to political and social freedom and equality.
13. Colony	A country or area under the full or partial political control of another country and occupied by settlers from that country.

Key individuals	
1. Harriet Tubman	An American abolitionist and social activist. A prominent figure on the underground railroad.
2. Eric Irons	The first black magistrate in Britain. Lived and served in Nottingham.
3. Toussaint Louverture	A Haitian general and the most prominent leader of the Haitian Revolution.
4. Thomas Clarkson	Leading abolitionist in the 18th and 19th centuries. He wrote 'The History, Rise, Progress and Accomplishment of the Abolition of the African Slave Trade by the British Parliament' in 1808.
5. Oluadah Equiano	Prominent abolitionist in Britain. He was a freed enslaved person in London.
6. Granville Sharp	Chairman of the Committee to Abolish the Slave Trade in Britain.
7. William Wilberforce	Was the main figurehead in Parliament for the Abolitionist campaign.
8. Abraham Lincoln	President of the USA during the American Civil War, announced the Emancipation Proclamation to free the enslaved in America.
9. Martin Luther King Jr.	Leading Civil Rights campaigner in the 20th century, arranged the Montgomery Bus Boycott of 1955-56.
10. Rosa Parks	American Civil Rights activist best known for her pivotal role in the Montgomery bus boycott.
11. Malcolm X	A prominent figure in the American Civil Rights movement and spokesperson for the Nation of Islam.
12. Dred Scott	Dred Scott was an enslaved African-American man who, along with his wife, Harriet, unsuccessfully sued for freedom for themselves and their two daughters
13. Nat Turner	Led an enslaved uprising in Virginia in 1831.

History

Year : 8

Topic: World War One

- World War I was a major conflict fought in Europe and around the world between July 28, 1914 and November 11, 1918.
- Nations from across all non-polar continents were involved and over eight million people died, although Russia, Britain, France, Germany, and Austria-Hungary dominated.
- Much of the war was characterized by stagnant trench warfare and massive loss of life in failed attacks.

Timeline	
1. 28 Jun 1914	Arch Duke Franz Ferdinand assassinated by Gavrilo Princip during a visit to Sarajevo, Bosnia.
2. 4 Aug 1914	Germany activates Schlieffen Plan and invades Belgium. Britain declares war on Germany after ultimatum.
3. Apr 1915	Second Battle of Ypres: Germans used poison gas for the first time.
4. 1 July 1916	Haig launched attack at the Somme to relieve French at Verdun. First day resulted in 57,000 British casualties. British used the tank for the first time.
5. Nov 1916	Battle of the Somme ends with loss of 1.25 million men.
6. April 1917	USA declares war on Germany
7. Nov 1917	Battle of Cambrai: British attach -476 tanks are used along the entire line.
8. Oct 1918	German Navy rebels and refuses to fight
9. 11/11/18	Armistice signed and fighting stops after German army is clearly defeated.
10. June 1919	The Treaty of Versailles is signed, officially ending the war and dealing with Germany.

Key medical Developments



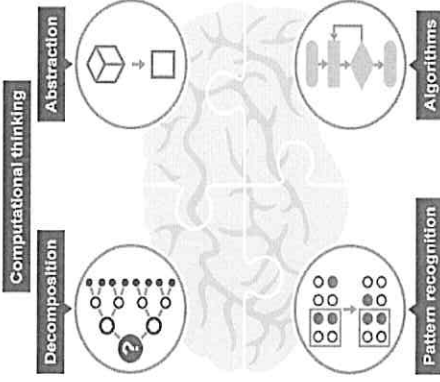
Key words	
1. Militarism	The belief that a country should keep a strong military and be prepared to use it to defend national interests.
2. Alliance	A group of countries that are formally united or working together for a similar aim or common purpose.
3. Imperialism	Extending a country's influence by building a large overseas empire—usually using military force.
4. Nationalism	A feeling of being superior to other countries and following your own national interest above all else.
5. Artillery	Very large guns that fire at long range. Moved on wheels or tracks.
6. No Man's Land	Land between the front line trenches of opposing sides.
7. Morale	Positivity, confidence, motivation.
8. Mobilise	To prepare and organize (troops) for active service.
9. Franz Ferdinand	Heir to the throne of Austro-Hungarian Empire. Assassinated by Gavrilo Princip.
10. Trenches	The area dug into the ground where the troops lived and fought, long and narrow and stretching for hundreds of miles.
11. Triple Entente	France, Russia and Britain.
12. Triple Alliance	Germany, Austria-Hungary and Italy
13. Propaganda	Information that is usually biased or misleading, that is trying to persuade you to believe or support something.
14. Conscription	Requiring everyone over a certain age to serve in the military, rather than using volunteers.
15. Reparations	Making amends for doing something wrong, such as paying a compensation payment.

1. Thomas Splint	Used to support compound fractures. Improved survival rate from 20% to 82%.
2. Blood Transfusions	Blood bank at Cambrai. Citrate glucose added improved storage time up to 4 weeks.
3. X-Ray	Became widely used to locate shrapnel. Mobile units were used on the front line.
4. Plastic surgery	Carried out by Dr Harold Gillies. Used to reconstruct those with major head injuries.

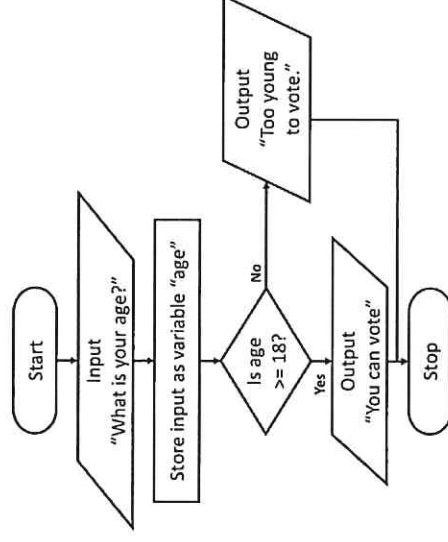
Year 8 Computing – Computational Thinking

The four cornerstones of computational thinking

Decomposition	Pattern Recognition
"Decomposition" is the breaking down of a system into smaller parts that are easier to understand, program and maintain.	"Pattern recognition" is looking for similarities among and within problems.
Abstraction	Algorithms
"Abstraction" is the process of ignoring the characteristics of patterns that we don't need in order to concentrate on those that we do.	"Algorithms" is developing a step-by-step solution to the problem, or the rules to follow to solve the problem.



Example of a flow chart



The syntax of pseudocode

INPUT	indicates a user will be inputting something
OUTPUT	indicates that an output will appear on the screen
IF ... THEN ... ELSE	a decision in which a choice is made
FOR	a counting loop
WHILE	a loop that has a condition that is tested at the beginning of the loop and will execute the loop while that condition is being met.
REPEAT – UNTIL	a loop that will repeat the steps inside it while the condition has NOT been met.
INDENTATION	Any instructions that occur <i>inside</i> another section of code are indented

Flow chart symbols

	Start and Stop The beginning and end points in a sequence
	Process An instruction or command to do something
	Input or Output Data received or sent from the computer
	Decision A decision with different possible outputs

Year 8 Computing – Python Basics

Selection (IF statements)

Data Types

Comparison

Text

Decide to run a block (or not)

```
x = 3
if x == 3:
    print('x is 3')
```

Decide between two blocks

```
mark = 80
if mark >= 50:
    print('pass')
else:
    print('fail')
```

Decide between many blocks

```
mark = 80
if mark >= 65:
    print('credit')
elif mark >= 50:
    print('pass')
else:
    print('fail')
```

► **elif** can be used without **else**
► **elif** can be used many times

Integer

Whole Numbers

Any whole number can be represented by an Integer, usually stored as a single 32bit byte.

We can store 4,294,967,296 values in an integer.

```
int age = 29;
```

Real

Decimal Numbers

Any number with a decimal point, they are usually either 2 or 4 bytes long because they need to store a value for the whole number component and the decimal component.

```
double average = 17.61;
```

String

Many Characters

A one dimensional array used to store many characters together, for example a sentence.

Each character is a byte.

```
String greeting = "Hello there";
```

Boolean

TRUE or FALSE

A boolean only stores two possible values, usually TRUE or FALSE.

Normally one byte long. Really useful for conditions.

```
Boolean isRunning = TRUE;
```

Interact with the user (input and output)

Print a message

```
print('Hello, world!')
```

Print multiple values (of different types)

```
ndays = 365
```

```
print('There are', ndays, 'in a year')
```

Asking the user for a string

```
name = input('What is your name? ')
```

Asking the user for a whole number (an integer)

```
num = int(input('Enter a number: '))
```

Are two values equal?

```
x == 3
```

△ two equals signs, not one

Are two values not equal?

```
x != 3
```

Less than another?

```
x < 3
```

Greater than another?

```
x > 3
```

Less than or equal to?

```
x <= 3
```

Greater than or equal to?

```
x >= 3
```

The answer is a Boolean:

True or False

Repeat a block 10 times

```
for i in range(10):
    print(i)
```

Sum the numbers 0 to 9

```
total = 0
for i in range(10):
    total = total + i
print(total)
```

Single quoted

```
'perfect'
```

Double quoted

```
"credit"
```

Multi-line

```
'''Hello,
World!'''
```

Add (concatenate) strings

```
'Hello' + 'World'
```

Multiply string by integer

```
'Echo...' * 4
```

Length of a string

```
len('Hello')
```

Convert string to integer

```
int('365')
```

Creating a variable

```
celsius = 25
```

Using a variable

```
celsius*9/5 + 32
```

Keywords

Base: The number that gets multiplied by a power

Power: The exponent – or the number that tells you how many times to use the number in multiplication

Exponent: The power – or the number that tells you how many times to use the number in multiplication

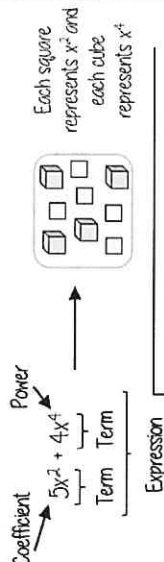
Indices: The power or the exponent

Coefficient: The number used to multiply a variable

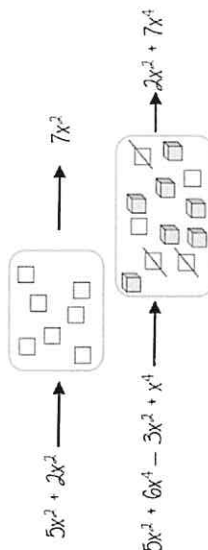
Simplify: To reduce a power to its lowest term

Product: Multiply

Addition/ Subtraction with indices



Only similar terms can be simplified
If they have different powers, they are unlike terms



Multiplying Indices with Brackets

$$(4b^2)^3 = 4b^2 \times 4b^2 \times 4b^2 = 64b^6$$

Rule: $(ab^m)^n = a^n b^{mn}$

Multiply expressions with indices

$$4b \times 3a \equiv 4 \times b \times 3 \times a \equiv 4 \times 3 \times b \times a \equiv 12ab$$

$$5t \times 9t \equiv 5 \times t \times 9 \times t \equiv 5 \times 9 \times t \times t \equiv 45t^2$$

Addition law for indices

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

Divide expressions with indices

$$\frac{5a^3b^2}{15ab^6} \rightarrow \frac{5 \times a \times a \times a \times b \times b}{3 \times 5 \times a \times b \times b \times b \times b \times b} \rightarrow \frac{a^2}{3b^4}$$

Subtraction law for indices

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

Negative Indices

A negative index means that, instead of multiplying by the number many times, we divide by the number many times.

$$3^{-3} = 1 \div 3 \div 3 \div 3$$

$$\frac{1}{3} \div 3 \div 3 = \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} = \frac{1}{27}$$

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

Fractional Indices

A fractional index represents the n^{th} root of the number.

$$8^{\frac{1}{3}} \times 8^{\frac{1}{3}} \times 8^{\frac{1}{3}} = 8^1 = 8$$

$$\sqrt[n]{a} \times \sqrt[n]{a} \times \sqrt[n]{a} \times \sqrt[n]{a} = a$$

Cube root

Cube number

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

Powers of 0 and 1

Any value to the power of 1 is itself.

Any value to the power of 0 is equal to 1.

calculation	shorthand	value
$1 \times 5 \times 5 \times 5 \times 5$	5^4	625
$1 \times 5 \times 5 \times 5$	5^3	125
$1 \times 5 \times 5$	5^2	25
1×5	5^1	5
1	5^0	1

Keywords

Simplify: grouping and combining similar terms
Substitute: replace a variable with a numerical value

Equivalent: something of equal value

Coefficient: a number used to multiply a variable

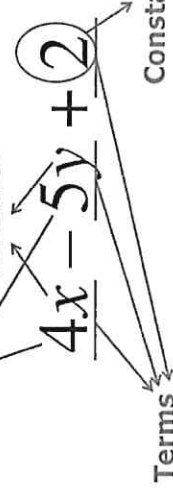
Product: multiply terms

Highest Common Factor (HCF): the biggest factor (or number that multiplies to give a term)

Inequality: an inequality compares who values showing if one is greater than, less than or equal to another

Coefficients

Variables



Constant term

Algebraic constructs

Expression

A sentence with a minimum of two numbers and one maths operation

Equation

A statement that two things are equal

Term

A single number or variable

Identity

An equation where both sides have variables that cause the same answer includes $\equiv$

Formula

A rule written with all mathematical symbols

e.g. area of a rectangle $A = b \times h$

Form expressions

For unknown variables, a letter is normally used in its place

More than — ADD

Less than/ difference — SUBTRACT

e.g. 4 more than $t \rightarrow t + 4$

8 less than $k \rightarrow k - 8$

Only similar terms can be grouped together

e.g. Find the perimeter of this shape

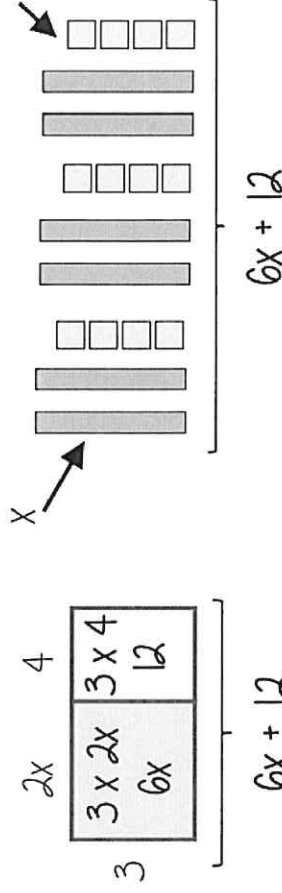
(Perimeter = length around outside of shape)



$$t + 2t + 1 + t + 2t + 1 \rightarrow 6t + 2$$

Multiply single brackets

$$3(2x + 4)$$



To simplify an expression such as $3(n + 4) - 2$, expand the brackets first, then collect terms.

$$\begin{aligned} \text{Simplify } 3(n + 4) - 2 \\ &= 3(n + 4) - 2 \\ &= 3 \times n + 3 \times 4 - 2 \\ &= 3n + 12 - 2 \\ &= 3n + 10 \end{aligned}$$

Expand & Simplify:

$$-4(2 - 6x)$$

$$\begin{array}{r} \times \quad 2 \quad - 6x \\ \quad 4 \quad - 8 \quad 24x \\ \hline \end{array}$$

$$24x - 8$$

Expand & Simplify:

$$2(4 - 6x)$$

$$\begin{array}{r} \times \quad 4 \quad - 6x \\ \quad 8 \quad - 12x \\ \hline \end{array}$$

$$8 - 12x$$

Keywords

Simplify: grouping and combining similar terms

Substitute: replace a variable with a numerical value

Equivalent: something of equal value

Coefficient: a number used to multiply a variable

Product: multiply terms

Highest Common Factor (HCF): the biggest factor (or number that multiplies to give a term)

Inequality: an inequality compares who values showing if one is greater than, less than or equal to another

Expanding

Expanding and factorising are opposite processes.

$$5(-3x + 7) = -15x + 35$$

Factorising

Expanding 'multiplies out' the bracket and the factor outside of the bracket.

Factorising takes the highest common factor of the expression outside of the bracket.

Use Prime Factorisation to find the Highest Common Factor of these numbers.

12

$$2 \times 2 \times 3$$

They share 2 and 3.
So their HCF is 2×3 .

6

SHORTCUT!

We can just find the HCF of the coefficients.
Then add how many 'x's the terms share.

18

$$2 \times 3 \times 3$$

They share 2 and 3.
So their HCF is 2×3 .

6

Use Prime Factorisation to find the Highest Common Factor of these numbers.

12x

$$2 \times 2 \times 3 \times x$$

They share 2 and 2 and x.
So their HCF is $2 \times 2 \times x$.

4x

4x

$$2 \times 2 \times x$$

They share 2 and 2 and x.
So their HCF is $2 \times 2 \times x$.

4x

24x² and 30x³

6x²

Factorise into a single bracket $8x + 4$

$$8x + 4$$

Try and make this the highest common factor

$$2x + 1$$

The two values multiply together (also the area) of the rectangle

Note.

$$8x + 4 \equiv 4(2x + 1)$$

$$8x + 4 \equiv 2(4x + 2)$$

This is factorised but the HCF has not been used

Factorise:

$$15x^2 - 6x$$

1) Find the HCF of the terms.

2) Divide each term by the HCF.

$$\frac{15x^2}{3x} = 5x \quad \frac{-6x}{3x} = -2$$

$$3x(5x - 2)$$

We can check by expanding the bracket.

Are these expressions fully factorised?

☐ ☐ ☐ ☐

$$4am + 20m^3 = 4m(a + 5m^2)$$

Fully factorised

☐ ☐ ☐ ☐

$$9x^2y - 27xy^2 = 9x(xy - 3y^2)$$

Fully factorised

☐ ☐ ☐ ☐

$$14gh + 28g^2 = 7g(2h + 4g)$$

Not fully factorised

We group letters together

$$a + a + a$$

Means 3 lots of a

$$3 \times a$$

$$b + b$$

Means 2 lots of b

$$2 \times b$$

We use indices/powers

$$a \times a = a^2$$

(a squared)

$$b \times b \times b = b^3$$

(b cubed)

We do not use multiplication signs

$$3 \times a = 3a$$

$$6 \times b = 6b$$

$$a \times b = ab$$

$$a \times b \times c$$

$$= abc$$

We write division using fractional notation

$$a \div 2$$

Is written as $\frac{a}{2}$ or $\frac{1}{2}a$

$$b \div 3$$

Is written as $\frac{b}{3}$ or $\frac{1}{3}b$

Brackets help us to disrupt the order of operations. If we want to add or subtract before using a higher operation, we need to use brackets.

For example, $2(n + 1)$ means we add 1 to n first, then multiply the answer by 2

We can **substitute** to calculate the **value** of the **expression**.

Remember to use the **order of operations**.

$$x = 5$$

When $a = 5$ $b = 3$,
find the value of

$$3a + 4b$$

$$(3 \times 5) + (4 \times 3)$$

$$(15) + (12)$$

$$= 27$$

When $n = 2$ and
 $x = 4$, find the
value of

$$3x^n$$

$$3 \times x^n$$

$$3 \times 4^2$$

$$3 \times 16$$

$$= 48$$

By substituting values, calculate the value of:

$$\frac{x^2 + 3x}{4}$$

$$((5 \times 5) + (3 \times 5)) \div 4$$

$$((25) + (15)) \div 4$$

$$10$$

Using pictures can help us to understand substitution.



= 1 point

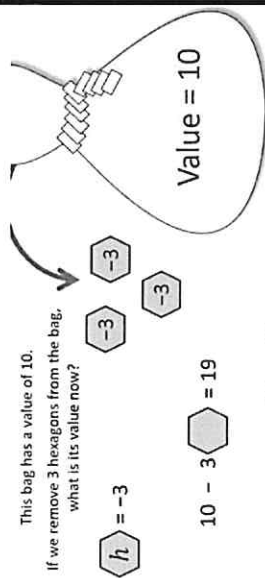
= 2 points



= ?

To make the calculation easier, we can **simplify** this expression.

$$5 \text{ hearts} + 6 \text{ stars} = 17 \text{ points}$$



This bag has a value of 10.

If we remove 3 hexagons from the bag, what is its value now?

$$h = -3$$

$$10 - 3(-3) = 19$$

$$10 - 3h =$$

$$10 - (3 \times -3) =$$

$$10 - (-9) = 19$$

Substitute the values for the variables to find the answer.

$$G = 0.8 \quad i = -1.4 \quad H = 2.6 \quad t = -2$$

$$5t - 3G^3 =$$

$$5 \times -2 - 3 \times 0.8^3 = -11.536$$

$$= -11.5$$

Give your answer to 1 dp.

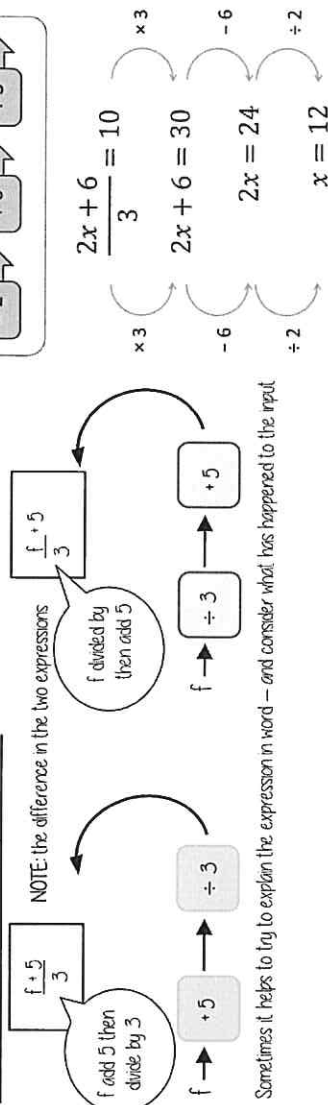


We can do more complex calculations using a calculator. Remember to use the **brackets** (), especially with **negatives**.

Keywords

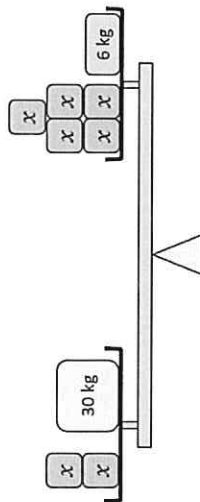
Function: a relationship that instructs how to get from an input to an output
Input: the number/ symbol put into a function
Output: the number/ expression that comes out of a function
Operation: a mathematical process
Inverse: the operation that undoes what was done by the previous operation (The opposite operation)
Commutative: the order of the operations do not matter
Substitute: replace one variable with a number or new variable
Expression: a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)
Evaluate: work out
Linear: the difference between terms increases or decreases by the same value each time

Find functions from expressions



Solving Harder Equations

$$2x + 30 = 5x + 6$$



$$2x + 30 = 5x + 6$$

$$2x + 24 = 5x$$

$$24 = 3x$$

$$8 = x$$

$$4(3x + 2) = 44$$

'four lots of $3x + 2$ '

$$4 \times (3x + 2)$$

$$(3x + 2) + (3x + 2) + (3x + 2) + (3x + 2)$$

We can multiply out the bracket to simplify the expression.

$$12x + 8 = 44$$

This is a fraction.

$$\frac{36}{x+1} = 6$$

We can make the term a whole number by multiplying by the denominator.

$$\begin{aligned} \times (x+1) & \quad \times (x+1) \\ 36 &= 6(x+1) \end{aligned}$$

Forming and Solving Equations



Anne wants to make an enclosure for her T-Rex.
 She has 40 metres of fencing.
 She wants the length to be 10 metres more than the width.
 What dimensions should the field have?

$$x + 10$$

$$P = 40$$



$$\begin{aligned} P &= x + 10 + x + 10 + x + x \\ &= 4x + 20 \end{aligned}$$

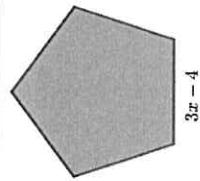
Form an Equation & Solve

$$\begin{aligned} 4x + 20 &= 40 \\ 4x &= 20 \\ x &= 5 \end{aligned}$$

Sentence	Equation	Function Machine
I think of a number I multiply by 4 I subtract 3 The answer is 17	$4a - 3 = 17$	$a \rightarrow \times 4 \rightarrow - 3 \rightarrow 17$
	$4a - 3 = 17$	Solution
	$4a - 3 = 17$	$4a - 3 = 17$ $(+3) (+3)$ $4a = 20$ $(\div 4) (\div 4)$ $a = 5$

Each side is $(3x - 4)$ cm.

The perimeter of the pentagon is 70 cm.



$$\begin{aligned} 70 &= 5(3x - 4) \\ &= 15x - 20 \end{aligned}$$

$$90 = 15x$$

$$\div 15 \quad \div 15$$

$$6 = x$$

Peter is 8 years younger than Paul.

Paul is twice the age of Pam.

Pam is 4 years younger than Peter.

How old is Pam?

Pam: x

$$x - 8 = 4$$

Paul: $2x$

Peter: $2x - 8$

$$x = 12$$

Keywords

Significant: Place value of importance

Round: Making a number simpler but keeping its value close to what it was.

Decimal: Place holders after the decimal point

Overestimate: Rounding up — gives a solution higher than the actual value

Underestimate: Rounding down — gives a solution lower than the actual value

Metric: A system of measurement

Balance: The amount of money in a bank account

Deposit: Putting money into a bank account.

Rounding to the nearest power of ten

If the number is halfway between we "round up"

5495 to the nearest 1000

↑

5000

5475 to the nearest 100

↑

5400

5475 to the nearest 10

↑

5470

↑

5500

5480

We can round numbers according to significant (important) figures.

Every digit after the first non-zero digit is significant.

1st significant figure 2nd significant figure 3rd significant figure

2863

1st significant figure 2nd significant figure 3rd significant figure

0.0046836

Round this number to 2 significant figures.

1) 'Cut' the number.

2) Use the first cut digit to check whether to round UP.

(Remember: a 5 means the last digit is rounded up)

3) If necessary complete the number with zeros.

Stay or round up?

CHECK

0.005277

0.0053

370 to 1 significant figure is 400

37 to 1 significant figure is 40

3.7 to 1 significant figure is 4

0.37 to 1 significant figure is 0.4

0.00037 to 1 significant figure is 0.0004

Round to the first non-zero number

Estimate the calculation Round to 1 significant figure to estimate

$4.2 + 6.7 \approx 4 + 7 \approx 11$

This is an **overestimate** because the 6.7 was rounded up more

$21.4 \times 3.1 \approx 20 \times 3 \approx 60$

The equal sign changes to show it is an estimation

This is an **underestimate** because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths — it helps you identify calculation errors

Round to decimal places

Focus on the numbers after the decimal point

"To 1dp" — to one number after the decimal

"To 2dp" — to two numbers after the decimal

2.46192 (to 1dp) — is this closer to 2.4 or 2.5

2.4

↑

2.5

2.46192

This shows the number is closer to 2.5

2.46192 (to 2dp) — is this closer to 2.46 or 2.47

2.46

192

This shows the number is closer to 2.46

5 and above, give it a shove

26.083 = 26.1

26.083 = 26.08

4 and below, let it go

Keywords

Congruent: The same

Area: Space inside a 2D object

Perimeter: Length around the outside of a 2D object

Pi (π): The ratio of a circle's circumference to its diameter.

Perpendicular: At an angle of 90° to a given surface

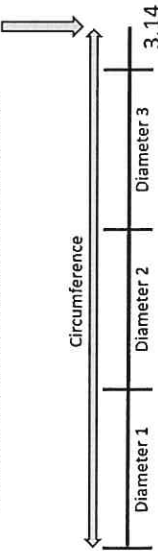
Formula: A mathematical relationship/ rule given in symbols. Eg $b \times h$ = area of rectangle/ square

Infinity (∞): A number without a given ending (too great to count to the end of the number) – never ends

Sector: A part of the circle enclosed by two radii and an arc



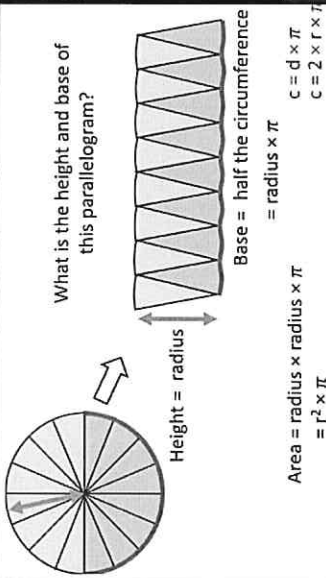
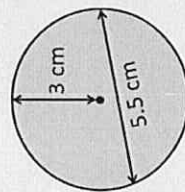
π (Pi) is the relationship between a circle's diameter and its circumference.



Find the circumference of this circle.

$$\text{Circumference} = \pi \times \text{Diameter}$$

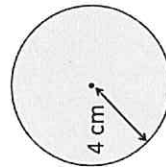
$$C = \pi \times (2 \times 3) = 18.85 \text{ cm}$$



$$\text{Area of a circle} = \pi r^2$$

Find the area of this circle. (to 1 dp)

$$A = \pi r^2$$



$$A = \pi \times (4)^2 = 50.3 \text{ cm}^2$$

Radius Length from centre to edge

Diameter 'Width', through centre

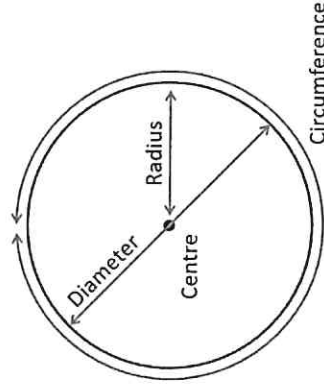
Circumference Perimeter

Arc Part of the circumference

Sector Area between two radii & an arc

Chord Line between two points on the circumference

Segment Area between a chord & an arc

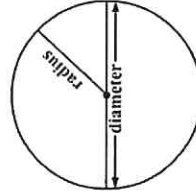


Area of a circle (Calculator)



How to get π symbol on the calculator

Area of a circle
 $\pi \times \text{radius}^2$



It is important to round your answer suitably – to significant figures or decimal places. This will give you a decimal solution that will go on forever!

Keywords

Sequence: items or numbers put in a pre-decided order

Term: a single number or variable

Position: the place something is located

Linear: the difference between terms increases or decreases (+ or -) by a constant value each time

Non-linear: the difference between terms increases or decreases in different amounts, or by $\times$ or $\div$

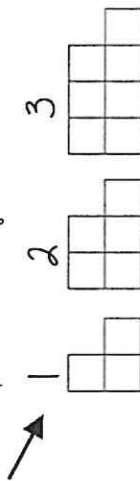
Difference: the gap between two terms

Arithmetic: a sequence where the difference between the terms is constant

Geometric: a sequence where each term is found by multiplying the previous one by a fixed non zero number

Sequence in a table and graphically

Position: the place in the sequence



3 5 7

Term: the number or variable

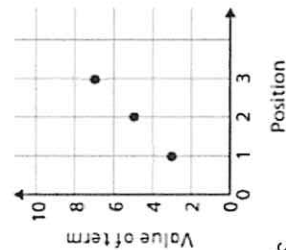
(the number of squares in each image)

In a table

Position	1	2	3
Term	3	5	7

+2 +2

Because the terms increase by the same addition each time this is linear — as seen in the graph



Graphically

"The term in position 3 has 7 squares"

Linear and Non Linear Sequences

Linear Sequences — increase by addition or subtraction and the same amount each time

Non-linear Sequences — do not increase by a constant amount — quadratic, geometric and Fibonacci

- Do not plot as straight lines when modelled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

Fibonacci Sequence — look out for this type of sequence

0 1 1 2 3 5 8 ...

Each term is the sum of the previous two terms



3, 5, 7, 9, a_n

1st term 2nd term 3rd term 4th term n-th term

Sequences from algebraic rules

This is substitution

$3n + 7$

This will be linear — note the single power of n . The values increase at a constant rate

$2n - 5$

e.g.

1st term = $2(1) - 5 = -3$

2nd term = $2(2) - 5 = -1$

100th term = $2(100) - 5 = 195$

Substitute the number of the term you are looking for in place of ' n '

This is not linear as there is a power for n

$3n^2 + 7$

Checking for a term in a sequence

Form an equation

Is 201 in the sequence $3n - 4$?

$3n - 4 = 201$

Algebraic rule

Solving this will find the position of the term in the sequence ONLY an integer solution can be in the sequence

H Finding the algebraic rule

This is the 4 times table

4n

7, 11, 15, 19, 23

This has the same constant difference — but is 3 more than the original sequence

$4n + 3$

This is the constant difference between the terms in the sequence

This is the comparison (difference) between the original and new sequence

Express the nth term

for each linear sequence.

n	1	2	3	4
value	7	10	13	16

n^{th} term = $5n + 3$

Find the value of the 6th term in this sequence.

$n = 6$

6th term = $(5 \times 6) + 3 = 33$

All Saints Absolutes – Year 8 French Term 1a - Free Time in the Past Tense

Quiz 1.1 – Y7 Revision

My name is Robert.	Je m'appelle Robert.
I am 13 years old and I am lazy	J'ai treize ans et je suis paresseux.
My favourite subject is French.	Mon sujet préféré c'est le français.
I have a brother but I don't have a sister.	J'ai un frère mais je n'ai pas de sœur.
However I would like a sister.	Cependant, je voudrais (avoir) une sœur.
I play tennis and I love to do bike riding.	Je joue au tennis et j'aime faire du vélo.

Quiz 1.2 – avoir

I have a mobile and a computer	J'ai un portable et un ordinateur
He has a brother and sister	Il a un frère et une soeur
She has a dog and a cat	Elle a un chien et un chat
We have a sandwich and a lemonade	Nous avons un sandwich et une limonade
They have Maths with Mr Wan	Ils/elles ont les maths avec Monsieur Wan
Have you got any brothers or sisters?	As-tu des frères et soeurs?

Quiz 1.3 – past tense 'avoir' in the first person (je)

Last weekend I played football.	Le weekend dernier j'ai joué au foot.
Yesterday I watched TV.	Hier j'ai regardé la télé.
I listened to music.	J'ai écouté de la musique.
I ate a pizza.	J'ai mangé une pizza.
I did some shopping.	J'ai fait du shopping.
I drank a coke.	J'ai bu un coca.

Quiz 1.4 – past tense 'avoir' with 'il/elle and nous'

He played tennis.	Il a joué au tennis.
He watched a film.	Il a regardé un film.
She listened to the radio.	Elle a écouté de la radio.
She ate a sandwich.	Elle a mangé un sandwich.
We did some bike riding.	Nous avons fait du vélo.
We drank coffee.	Nous avons bu du café.

Quiz 1.5 – consolidation of half term 1

Quiz with someone at home from quizzes 1/2/3/4	
You will have a translation to see how much you can recall	

Parallel texts

Yesterday, I watched the television with my family. After that, I ate a pizza. After having done that, I read a book in my bedroom. The evening, I spoke with my sister and my brother. The weekend last, I went into town with my friends. I bought a t-shirt, but my female friend bought a skirt. After that, we ate in a café. The afternoon, we visited the park. The week last, I went to the cinema where I watched a film. It was fantastic! After I went to the home.	Hier, j'ai regardé la télévision avec ma famille. Après ça, j'ai mangé une pizza. Après avoir fait cela, j'ai lu un livre dans ma chambre. Le soir, j'ai parlé avec ma sœur et mon frère. Le weekend dernier, je suis allé en ville avec mes copains. J'ai acheté un t-shirt, mais ma copine a acheté une jupe. Après ça, nous avons mangé dans un café. L'après-midi, nous avons visité le parc. La semaine dernière, je suis allé au cinéma où j'ai regardé un film. C'était fantastique ! Après je suis allé à la maison.
---	---

Yesterday, I watched the television with my family. After that, I ate a pizza. After having done that, I read a book in my bedroom. The evening, I spoke with my sister and my brother. The weekend last, I went into town with my friends. I bought a t-shirt, but my female friend bought a skirt. After that, we ate in a café. The afternoon, we visited the park. The week last, I went to the cinema where I watched a film. It was fantastic! After I went to the home.	Hier, j'ai regardé la télévision avec ma famille. Après ça, j'ai mangé une pizza. Après avoir fait cela, j'ai lu un livre dans ma chambre. Le soir, j'ai parlé avec ma sœur et mon frère. Le weekend dernier, je suis allé en ville avec mes copains. J'ai acheté un t-shirt, mais ma copine a acheté une jupe. Après ça, nous avons mangé dans un café. L'après-midi, nous avons visité le parc. La semaine dernière, je suis allé au cinéma où j'ai regardé un film. C'était fantastique !
---	--

	Après je suis allé à la maison.
--	---------------------------------

All Saints Absolutes – Year 8 French Term 1b - Free Time

Quiz 2.1 – past tense with être

I went into town.	Je suis allé en ville.
I went to the park.	Je suis allé au parc.
I went to the swimming pool. (feminine)	Je suis allée à la piscine.
I went to school. (feminine)	Je suis allée au collège.
I stayed at home.	Je suis resté à la maison.
I stayed in bed. (feminine)	Je suis restée au lit.

Quiz 2.2 – opinions in the past tense

It was interesting.	C'était intéressant.
It was useful.	C'était utile.
I went into town and it was brilliant!	Je suis allé(e) en ville et c'était super !
I did shopping but it was expensive.	J'ai fait du shopping mais c'était cher.
It was very fun.	C'était très/vraiment amusant.
I found it boring.	Je l'ai trouvé ennuyeux/barbant.

Quiz 2.3 – where + other connectives and places

After having done that, I bought a t-shirt.	Après avoir fait cela, j'ai acheté un t-shirt.
Later I saw a film in town.	Plus tard j'ai vu un film en ville.
I went to the park where I played football.	Je suis allé au parc où j'ai joué au foot.
I stayed at home where I relaxed	Je suis resté à la maison où j'ai relaxé.
However , I didn't play rugby.	Cependant , je n'ai pas joué au rugby.
Then I decided to play football.	Puis j'ai décidé de jouer au foot.

Quiz 2.4 – Speaking assessment phrases

In my family there are 5 people including me.	Dans ma famille il y a 5 personnes y compris moi.
I am very funny but quite lazy.	Je suis très amusant mais assez paresseux.
Normally, I like to eat pasta.	Normalement, j'aime manger des pâtes.
My favourite subject is French because it is super.	Mon sujet préféré c'est le français parce que c'est super.
Last weekend, I went into town with my friends.	Le weekend dernier, je suis allé(e) en ville avec mes amis.
In my opinion it was really great and very funny.	À mon avis c'était vraiment génial et très amusant.

AVOIR IN PAST		
person	avoir (have)	past tense activity
j'	ai	mangé
il	a	regardé
elle	a	écouté
nous	avons	dansé
		pris – took

Parallel texts

Hi In our family there are four people including me. I am very sporty and always patient. Usually I like eating chicken with chips but when it's sunny I love an ice cream. My favourite subject is Art because I am creative and I love teacher. Last weekend, I stayed at home with my family. I watched television and I listened to music in my room. We ate our meals together and we played cards in the evening. It was nice but a bit boring.	Salut Dans notre famille il y a quatre personnes y compris moi. Je suis très sportif et toujours patient. D'habitude j'aime manger du poulet avec des frites mais quand il y a du soleil j'adore une glace. Mon sujet préféré est le dessin vu que je suis créatif et j'adore la prof. Le weekend dernier, je suis resté(e) à la maison avec ma famille. J'ai regardé la télé et j'ai écouté de la musique dans ma chambre. Nous avons mangé nos repas ensemble et Nous avons joué aux cartes le soir. C'était sympa mais un peu ennuyeux/barbant.
--	---

Hi In our family there are four people including me. I am very sporty and always patient. Usually I like eating chicken with chips but when it's sunny I love an ice cream. My favourite subject is Art because I am creative and I love teacher. Last weekend, I stayed at home with my family. I watched television and I listened to music in my room. We ate our meals together and we played cards in the evening. It was nice but a bit boring.	Salut Dans notre famille il y a quatre personnes y compris moi. Je suis très sportif et toujours patient. D'habitude j'aime manger du poulet avec des frites mais quand il y a du soleil j'adore une glace. Mon sujet préféré est le dessin vu que je suis créatif et j'adore la prof. Le weekend dernier, je suis resté(e) à la maison avec ma famille. J'ai regardé la télé et j'ai écouté de la musique dans ma chambre. Nous avons mangé nos repas ensemble et Nous avons joué aux cartes le soir. C'était sympa mais un peu ennuyeux/barbant.
--	---

Half Term 1 Greetings and all about me



Quiz 1.1 – wie heißt du? (what are you called?)

Guten Morgen / Guten Tag	Good morning / good day
Wie heißt du?	What are you called?
Hallo! Ich heiße Simon	Hello! I am called Simon
Tschüss / Auf Wiedersehen	See you / good bye
Es geht mir gut / es geht mir schlecht	I'm fine / I'm not so good
Ich mag / ich liebe / ich hasse	I like / I love / I hate
Schokolade / Musik / Bücher / Katzen / Cola / Chips	Chocolate / music / books / cats / coke / crisps

Quiz 1.2 – Wann hast du Geburtstag? (When is your birthday?)

Wie alt bist du?	How old are you?
Ich bin zwölf Jahre alt	I am twelve years old
Wann hast du Geburtstag ?	When is your birthday?
Ich habe am ersten Januar Geburtstag	I have my birthday on the first January
Mein Geburtstag ist am dritten Februar	My birthday is on the third February
zwölf, achtzehn, einundzwanzig, dreißig	twelve, eighteen, twenty-one, thirty
Meine Lieblingszahl ist.../ mein Lieblingsmonat ist....	My favourite number / month is....

Remember
CAPITAL
LETTERS on
ALL nouns

Quiz 1.3 – Wie bist du? (what are you like?)

Wie bist du?	What are you like?
Ich bin freundlich und launisch	I am friendly and moody
Ich bin sehr frech aber lustig	I am very cheeky but funny
Ich bin ziemlich intelligent aber ich bin nicht kreativ	I am quite intelligent but I am not creative
Ich bin ziemlich sportlich	I am quite sporty

Quiz 1.4– Wie ist er / sie? (what is he/she like?)

Er ist freundlich	He is friendly
Sie ist lustig	She is funny
Er ist launisch und faul	He is moody and lazy
Sie ist sportlich aber sie ist nicht kreativ	She is sporty but she is not creative
Sie sind intelligent	They are intelligent

Quiz 1.5. Wo wohnst du? (where do you live?)

Ich wohne in Deutschland	I live in Germany
Ich wohne in Österreich	I live in Austria
Ich wohne in der Schweiz	I live in Switzerland
Er / sie wohnt in....	He / she lives in.....
Das ist in England / Deutschland	That is in England / Germany
Ich finde Mansfield prima denn es ist interessant	I find Mansfield great because it's interesting

Model written answers

German

English translation (word for word with German word order)

Guten Morgen! <u>Ich heiße</u> Jacob und ich bin vierzehn <u>Jahre</u> alt. Es geht mir sehr gut. Wie geht's? Ich wohne in Wien, das ist in Österreich. Ich finde Wien prima denn es ist interessant Ich habe am dritten März <u>Geburtstag</u>. Ich finde mein Geburtstag ziemlich toll aber mein Lieblingsmonat ist Januar. Ich bin <u>ein bisschen</u> sportlich und <u>sehr</u> intelligent aber ich bin nicht kreativ oder laut. Wie bist du? Mein Freund Tomas ist sehr sportlich und interessant. Er wohnt in München. Das ist eine Stadt in Deutschland. Ich finde Deutschland prima denn es ist wirklich cool. Tschüss	Good morning! I am called Jacob and I am fourteen years old. It goes me very good. How are you? I live in Vienna, that is in Austria.. I find Vienna super because it is interesting. I have on the third March Birthday. I find my Birthday quite brilliant but my favourite month is January. I am a bit sporty and very intelligent and but I am not creative or loud. . How are you? My friend Tomas is very sporty and interesting. He lives in Munich. That is a town in Germany. I find Germany great because it is really cool. See you!!
---	---

Guten Morgen! <u>Ich heiße</u> Jacob und ich bin vierzehn <u>Jahre</u> alt. Es geht mir sehr gut. Wie geht's? Ich wohne in Wien, das ist in Österreich. Ich finde Wien prima denn es ist interessant Ich habe am dritten März <u>Geburtstag</u>. Ich finde mein Geburtstag ziemlich toll aber mein Lieblingsmonat ist Januar. Ich bin <u>ein bisschen</u> sportlich und <u>sehr</u> intelligent aber ich bin nicht kreativ oder laut. Wie bist du? Mein Freund Tomas ist sehr sportlich und interessant. Er wohnt in München. Das ist eine Stadt in Deutschland. Ich finde Deutschland prima denn es ist wirklich cool. Tschüss	Good morning! I am called Jacob and I am fourteen years old. It goes me very good. How are you? I live in Vienna, that is in Austria.. I find Vienna super because it is interesting. I have on the third March Birthday. I find my Birthday quite brilliant but my favourite month is January. I am a bit sporty and very intelligent and but I am not creative or loud. . How are you? My friend Tomas is very sporty and interesting. He lives in Munich. That is a town in Germany. I find Germany great because it is really cool. See you!!
---	---

Half Term 2– Familie und Tiere



Quiz 2.1 – Hast du ein Haustier? (Do you have a pet?)

Hast du ein Haustier?	Have you got a pet?
Ja, ich habe ein Haustier.	Yes I have a pet
Ich habe einen Hund	I have a dog
Es heißt.....	It is called.....
Nein, ich habe kein Haustier	No I don't have a pet
Ich möchte	Il would like.....

Quiz 2.2 – Wie ist dein Haustier? (What is your pet like?)

Er / sie / es ist....	He / sie / it is...
Mein Hamster ist klein und niedlich	My hamster is small and cute
Mein Pferd ist schlau und kräftig	My horse is clever and strong
Meine Katze ist frech	My cat is cheeky
Hast du ein Lieblingstier?	Do you have a favourite animal?
Ja, mein Lieblingstier ist einen Hund	Yes my favourite animal is....

Quiz 2.3 – Hast du Geschwister?

Hast du Geschwister?	Have you got any brothers and sisters?
Ja ich habe einen Bruder und eine Schwester	Yes I have a brother and a sister
Nein ich habe keine Geschwister	No I don't have any siblings
Ich bin Einzelkind aber ich möchte..	I am an only child but I would like a..
Mein Bruder ist elf Jahre alt	My brother is eleven years old
Meine Schwester ist lustig und kreativ	My sister is funny and creative

Quiz 2.4 – Wie viele Personen gibt es in deiner Familie? (how many people are there in your family?)

In meiner Familie gibt es vier Personen	In my family there are 4 people
Es gibt meine Mutter, meinen Vater, meine Schwester und mich	There is my mum, my dad, my sister and me
Meine Mutter / mein Vater heißt...	My mum / my dad is called...
Meine Mutter ist vierzig Jahre alt	My mum is forty years old
Mein Vater ist groß und sportlich	My dad is tall and sporty
Meine Großeltern wohn <u>en</u> in....	My grandparents live in....

Model written answers

German

English translation (word for word)

Hallo! Ich heiße Maya und ich bin vierzehn Jahre alt. Ich wohne in Köln, das ist in Deutschland. Ich finde Köln sehr interessant denn es ist laut und lustig!

Ich habe am fünfzehnten Juni Geburtstag.

In meiner Familie gibt es vier Personen. Ich habe einen Bruder und er heißt Oliver. Er ist zehn Jahre alt und er ist sportlich aber faul. Ich habe auch eine Schwester. Sie heißt Maria und sie ist neun Jahre alt. Sie ist ziemlich frech aber süß

Zu Hause haben wir einen Hund und eine Katze, jedoch möchte ich ein Pferd. Ich finde meine Katze wirklich cool denn sie ist niedlich.

Ich bin ziemlich intelligent und total freundlich, aber ich bin gar nicht sportlich denn ich finde Sport stinklangweilig.

Hello. I am called Maya and I am fourteen years old. I live in Cologne, that is in Germany. I find Cologne very interesting because it is loud and funny!

I have on 15th June birthday.

In my family there are 4 people. I have a brother and he is called Oliver. He is 10 years old and he is sporty but lazy. I have also a sister. She is called Maria and she is 9 years old. She is quite cheeky but sweet

At home have we a dog and a cat however would like I a horse. I find my cat really cool because it is cute.

I am quite intelligent and totally friendly but I am not a all sporty because I find sport dead boring

EXTRA WORDS AND PHRASES

Year 8: RE– Branch 1 – Creation and Covenant

Big Picture

This unit explores the **human condition** as depicted in the **Fall (Genesis 3)**, linking it to the **moral law** (especially the **Decalogue**) for faithfulness to God and others. It examines the role of **conscience** in moral decision-making and how **Baptism** offers forgiveness and a new life in Christ.

Key Vocabulary

Term	Meaning
The Fall	The event in Genesis 3 where Adam and Eve disobey God, introducing sin.
Original Sin	The sin inherited from Adam and Eve, affecting all humanity.
Concupiscence	The human tendency to sin, even after Baptism.
Sinai Covenant	The agreement between God and the Israelites at Mount Sinai.
The Decalogue	The Ten Commandments given to Moses by God.
Freedom	The ability to choose the good and live according to God's will.

The Fall and Human Nature

Genesis 3 tells the story of **Adam and Eve's disobedience** in the Garden of Eden.

They eat the forbidden fruit after being tempted by the serpent, breaking God's command.

This story is not just about two individuals—it is a **symbolic reflection** on the **flawed nature of humanity**.

It shows how humans often choose selfishness or pride over trust in God.

The result is what the Church calls **original sin**—a condition passed on to all people. It means we are born with a tendency to sin and are **separated from God** without His grace.

The Fall explains why the world is not perfect and why we need **salvation**. It sets the stage for God's plan to restore the relationship through **Jesus Christ**.

Original Sin and Baptism

Original sin is the condition inherited from Adam and Eve, which means all humans are born with a tendency to turn away from God.

In contrast, **personal sin** is the wrong we choose to do ourselves.

Baptism is the sacrament that washes away all sin—both original and personal—and marks the beginning of a new life in Christ.

It is one of the **three Sacraments of Initiation**, along with Confirmation and the Eucharist.

Covenantal Commitments

The **symbols of Baptism** each have deep meaning:

Water – cleansing from sin and new birth in the Spirit

Oil – strength and being chosen by God

Candle – the light of Christ guiding the person

White garment – purity and new life in Christ

These are more than rules—they're **promises**.

God promises to be faithful.

His people promise to **live by His ways**.

Like **vows in a relationship**, they build **trust** and **belonging**.

The Sinai Covenant and the Decalogue

Divine Origin

God gave the **Ten Commandments to Moses** on Mount Sinai.

A **key moment in Israel's history**—a turning point.

Marked the beginning of a **special covenant** between **God** and **His people**.

Relational Guidance

The commandments guide how we live in **relationship**:

With God: Worship only Him, **honour His name**, keep the Sabbath.

With others: **Respect parents**, protect life, **speak truth**, live justly.

They show that **faith is not just belief**—it's how we treat **God** and **each other**.

Freedom and Responsibility

True freedom doesn't mean doing whatever we want—it means choosing what is **good, loving, and right**.

When we follow what is good, we become more fully ourselves and live in a way that brings peace and purpose.

Rules are not restrictions—they are **guides**.

They help us make **wise choices**, avoid harm, and live well with others.

Like road signs, they **protect our freedom** by keeping us on the right path.

According to **Catholic teaching, freedom and responsibility go hand in hand**.

We are free to choose, but we are also **accountable** for our actions.

True freedom respects others, honours God, and leads to a life of love and justice.

Conscience and Moral Decision-Making

Conscience is our **inner guide**—the voice within that helps us choose between **right and wrong**. It's not just a feeling; it's a **moral compass** that points us toward what is good and true.

Conscience doesn't work on its own. It must be **formed and informed**.

We shape it through **prayer**, reading **Scripture**, and learning from **Church teaching**.

A well-formed conscience helps us make decisions that reflect love, justice, and truth.

The **Catholic Church teaches** that we must always follow our **conscience**—but it must be a **well-formed** one.

That means we have a responsibility to **educate and guide** it, so it leads us closer to God and to what is right.

Modern Witnesses to Conscience and Justice

Desmond Doss was a **conscientious objector** during **World War II**.

He refused to carry weapons due to his beliefs, yet served bravely as a **combat medic**.

Through his actions, he **saved many lives** on the battlefield.

His story is a powerful example of **courage, compassion**, and a deep commitment to **faith and conscience**.

Doss followed his moral convictions even under extreme pressure, showing true heroism can come through **peaceful service**.

Today, issues like **child asylum seekers** and the **climate crisis** challenge us to live out **Catholic Social Teaching** in real and urgent ways.

These are not distant problems—they affect the dignity of people and the health of our planet.

Such challenges call for a response rooted in **love, action**, and **faith**.

We are invited to stand up for justice, care for creation, and protect the most vulnerable, guided by the values of the Gospel.

We are called to be **witnesses to justice**—to **stand up for the vulnerable, care for creation**, and **follow our well-formed conscience**, even when it's difficult.

This means living with **courage and compassion**, guided by **faith** and a commitment to what is **right and true**. In a world facing injustice and crisis, our response must be rooted in **love, action, and hope**.

Year 8: RE– Branch 2 – Prophet and Prophecy

Big Picture

Advent invites reflection on the role of **prophets** in restoring covenant fidelity. We will explore **messianic prophecies** and global **Advent traditions**. A focused study on **Amos** reveals the prophetic pattern of **call, message, fulfillment**. The unit revisits **baptism**, highlighting the anointing with **Chrism**. We will reflect on living out the threefold office of **priest, prophet, and king** today.

Key Vocabulary

Term	Definition
Prophet	a person inspired by God through the Holy Spirit to share messages from God
Priest	a person anointed by God to make thanksgiving offerings on behalf of the people; also refers to an ordained minister of the Catholic Church.
King	an anointed person who has authority, power and responsibility for people in his care
Messianic	Any topic that is in relation to the Messiah
Advent	the first season in the liturgical year, prepare and wait for the birth of Jesus and the Second Coming of Christ
Amos	early Hebrew prophet who called people back to God warned of divine judgement on sinners
Elijah	Old Testament prophet foretells the coming of the Messiah
John the Baptist	New Testament prophet who prophesied and prepared the way for Jesus as the Messiah;

Prophecy

A **prophet** is someone chosen by God to speak His message.

Prophecy is that message—often a call to change, a warning, or a promise of hope.

Some prophecies are described as **messianic**, meaning they point to the coming of the **Messiah**, who Christians believe is **Jesus Christ**.

Biblical prophecy follows a clear **cycle**: first, the prophet receives a **call** from God; then comes the **message**, which is delivered to the people; finally, there is **fulfilment**, when the prophecy comes true.

Understanding this helps us see how God communicates through history and how these messages still speak to us today.

Cycle of Prophecy

The **Cycle of Prophecy** follows a pattern: **call, message, and fulfilment**.

A prophet is **called by God**, delivers a **message** to the people—often a warning or a call to change—and then the message is **fulfilled** in God's time.

Elijah was a powerful prophet in the Old Testament. People believed he would return before a major act of God.

John the Baptist came much later, but he **dressed like**

Elijah, spoke like Elijah, and preached a **bold message** about preparing for the Lord.

John's ministry mirrors the prophetic cycle:

He was **called** by God from birth.

His **message** was clear—**repent and prepare** for the coming of the Messiah.

The **fulfilment** came with the arrival of **Jesus**, whom John introduced as the **Lamb of God**.

John the Baptist is seen as the **new Elijah**, sent to **prepare the way** for Jesus, fulfilling ancient prophecy and continuing the cycle of God's saving plan.

Isaiah 11:1–10 is a powerful **messianic prophecy**.

It begins with the image:

"A shoot will come up from the stump of Jesse; from his roots a Branch will bear fruit."

This means the **Messiah** will come from the family line of **Jesse**, the father of **King David**.

Christians believe this points to **Jesus**, who is often called the **Son of David**.

The passage describes the **Spirit of the Lord** resting on this figure bringing **wisdom, understanding, counsel, might, knowledge, and fear of the Lord**.

These are known as the **Gifts of the Holy Spirit**, which Jesus embodies throughout His ministry.

Isaiah also speaks of a time of **peace and justice**:

The **wolf will live with the lamb**—symbolising harmony and the end of violence.

The **Messiah will judge with righteousness**, defending the poor and meek.

How Jesus Fulfills This Prophecy (Gospel Examples)

Line of David: Matthew 1:1–17 traces Jesus' genealogy back to **David and Jesse**.

Messianic Prophecy

Spirit of the Lord: At His baptism (Matthew 3:16), the **Holy Spirit descends** on Jesus.

Wisdom and Teaching: Jesus amazes crowds with His **wisdom and authority** (Luke 4:22).

Justice and Compassion: He defends the poor, heals the sick, and lifts up the outcast (Luke 7:22).

Peace and Reconciliation: Jesus teaches **love of enemies** and brings peace (Matthew 5:9, John 14:27).

This prophecy paints a picture of the **Messiah as a bringer of peace, justice, and spiritual renewal**—all fulfilled in the life and mission of **Jesus Christ**.

Amos

Amos was a prophet from the southern kingdom of Judah, but he was sent by God to speak to the **northern kingdom of Israel** during a time of wealth and corruption.

He was not a professional prophet—he was a **shepherd and fig farmer**, chosen by God to deliver a bold message.

Amos called the people to **repentance**, warning them to turn away from **injustice and false worship**.

He strongly **criticised the rich** for living in luxury while the poor were oppressed and ignored.

His message included both **warnings and promises**.

He warned of coming judgment if the people did not change, but he also offered hope:

God would **preserve a faithful remnant**—a small group who remained true to Him.

Amos also spoke of **God as the judge of all nations**, not just Israel.

His message was clear: **God cares about justice**, and He holds everyone accountable.

Prophets' Relevance Today

Some people claim that the **words of the prophets are not relevant today**.

They argue that prophets spoke to ancient cultures with different problems, and that modern society has moved beyond those old messages.

Others may feel that prophecy is too symbolic or religious to apply to today's world.

Many of the **messages from prophets like John the Baptist, Isaiah, and Amos** still speak powerfully to our time:

John the Baptist called people to **repent and prepare** for God's coming.

His message challenges us to live with **integrity, humility, and spiritual readiness**.

- **Isaiah** spoke of **peace, justice, and hope**—values that are deeply needed in a world facing war, division, and despair.
- **Amos** condemned **injustice and inequality**, calling out the rich who ignored the poor.
- His voice still echoes in today's struggles for **social justice** and **economic fairness**.

These prophets remind us that **faith must lead to action**, and that **God cares deeply about how we treat others**.

Priest, Prophet, King

The Church teaches that **Jesus Christ** holds a **threefold**

office: Priest, Prophet, and King.

Through **baptism**, all Christians share in this mission.

At baptism, the priest anoints the person with **Chrism oil**—a sign of being set apart for a holy purpose.

This oil symbolises being united with Christ in His roles as **Priest, Prophet, and King**.

Lay people are called to live out these roles in everyday life:

As **Priests**, they offer their lives to God through **prayer, worship, and sacrifice**—not just in church, but in daily choices.

As **Kings**, they serve others with **love**, lead with **integrity**, and help build a world that reflects **God's kingdom**.

This calling is not just for clergy—it's for **everyone** who is baptised into Christ.

As **Prophets**, they **speak the truth, stand up for justice**, and **share the Gospel** through words and actions.

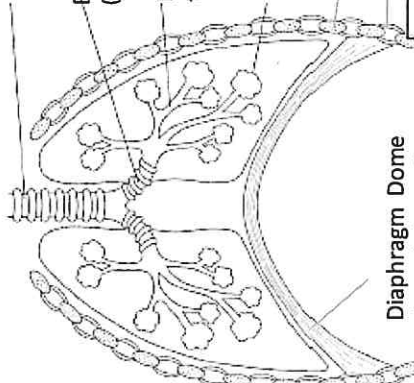
B3 healthy body 1. Health

Health	State of physical and mental wellbeing.
Risk factor	Something that increases the likelihood of you getting a disease.
obesity	A medical term used to describe someone with high excess body fat.
Type 2 diabetes	Obesity is a risk factor for type 2 diabetes where blood glucose levels cannot be regulated properly.
cancer	Where cells in the body grow in an uncontrolled way creating tumours.

3. Smoking

cilia	Hair-like structures found in the trachea and bronchi.
Tar	Causes cancer of the lungs, mouth and throat. Damages the alveoli, making it difficult for gas exchange to happen.
Smoke	Damages the cilia which move mucus and trap dirt and microbes. Smokers cough can develop.
Nicotine	Addictive. Can increase the heart rate and blood pressure.
Carbon monoxide	Takes the place of oxygen in red blood cells- so they can carry less oxygen. This can cause heart disease.

2 Lungs and breathing.



Trachea This is also called the windpipe.. It is lined with rings of *cartilage* which keep it open at all times

Bronchus The trachea splits into a left and right bronchus (plural: bronchi), each leads to a lung

Bronchiole each bronchus splits again and again into thousands of smaller tubes called bronchioles

Alveolus at the ends of bronchioles are tiny air sacs called alveoli.

Intercostal muscles – muscles in between the ribs

Ribs bones that form the rib cage

Diaphragm Dome shaped sheet of muscle under the lungs

- Breathing rate** (the number of breaths you take per minute)
- Tidal volume** (the volume of air breathed in and out in one breath)

Breathing in Inhaling	When you inhale, your diaphragm moves downwards, and the intercostal muscles move the ribs upwards and outwards. This increases the volume of the lungs and so air moves into the lungs.
Breathing out Exhaling	When you exhale, our diaphragm muscle moves upwards, and the intercostal muscles move ribs downwards and inwards. This reduces the volume of the lungs, which forces air outwards.

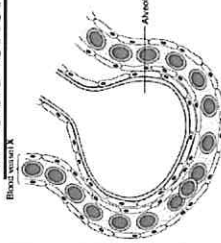
Asthma

Asthma affects the bronchioles, causing them to constrict (tighten) and become inflamed. This can cause symptoms such as coughing, wheezing and shortness of breath.

Inhalers contain drugs which are relievers; these relax and open the airways to make it easier to breathe.

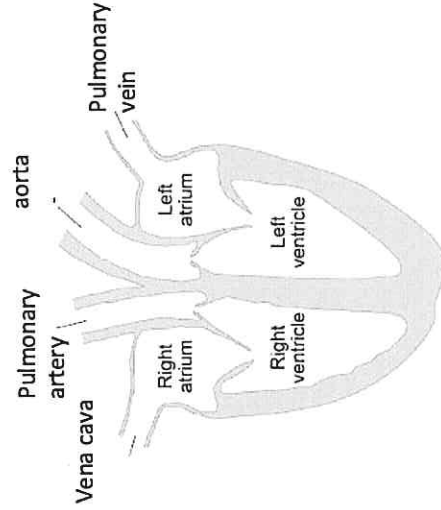
4. Gas exchange

The function of alveoli is to allow gas exchange to take place. Gas exchange is when oxygen diffuses into the blood and carbon dioxide diffuses out of the blood into lungs.



Adaptation of alveoli	reason
Large surface area	So more oxygen and carbon dioxide can diffuse through the wall of the alveoli in a given time.
Thin walls	So the distance the gases diffuse through is shorter. Making gas exchange more efficient.
Blood always moving passed the alveoli	Taking the diffused oxygen away creating a diffusion gradient which increases diffusion.

5. Structure of the heart

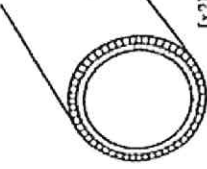
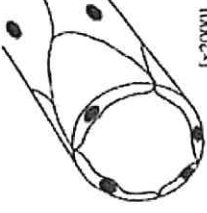
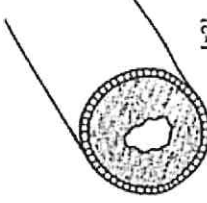


6. Heart Keywords

Vena cava	Vein that returns de-oxygenated blood to the heart from the body.
Pulmonary artery	Takes de-oxygenated blood to the lungs to pick up oxygen.
Pulmonary vein	Returns oxygenated blood to the heart
Aorta	Artery that pumps oxygenated blood around the body.
oxygenated	Blood that is transporting lots of oxygen.
De oxygenated	Blood that has little or no oxygen being transported.

7. Heart disease	
Coronary heart disease	In coronary heart disease layers of fatty material build up inside the coronary arteries. This reduces the flow of blood through the coronary arteries, resulting in a lack of oxygen for the heart muscle.
Coronary arteries	Blood vessels transporting blood to the heart muscle
Fatty deposits	These build up inside arteries because of an unhealthy lifestyle due to raised cholesterol in blood.
stents	Tubes placed inside the coronary artery to keep blood flowing
statin	Medicine that lowers cholesterol

8. Blood and blood vessels	
Blood is made of 4 components	
plasma	A yellow liquid that transports carbon dioxide.
Red blood cells	Transports oxygen
platelets	Causes clotting of blood when you are wounded
White blood cells	Kill pathogens
Substances transported by blood	
oxygen	Transported by red blood cells
Carbon dioxide	Transported in the plasma
Digested food	Transported in the plasma
hormones	Transported in the plasma

Vein	capillary	artery
Carries blood back to the heart	Carries blood away from the heart	Carries blood away from the heart
thin walls	Has thick elastic and muscular walls.	Only 1 cell thick. So thin that oxygen can diffuse through to the cells and carbon dioxide can diffuse from the cells back into the plasma.

9. Infectious diseases

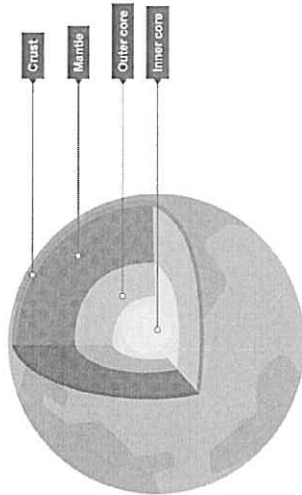
pathogen	A microorganism that can cause disease. Bacteria, viruses and fungi are examples .		
Infectious disease	Diseases that you get from a pathogen.		
Ways diseases are transmitted	Breathing in particles from the air. Eating contaminated food or water. Exchange of body fluids. From bites sharing needles.		
disease	pathogen	transmission	
salmonella	bacteria	Eating infected food	
AIDS	HIV	Exchange of bodily fluids	
Flu colds and measles	virus	Touch and breathing in virus particles in the air.	

10. Defense against diseases	
Primary defence the first line of defence against disease. Tears, stomach acid, skin, scabs, ear wax and mucus are all ways that the body prevents infection.	
If the pathogen gets into our body.	
1. White blood cells called lymphocytes respond by producing antibodies.	
2. White blood cells called phagocytes respond by surrounding and engulfing pathogens.	
antigens	Structures on the surface of pathogens that white blood cells can recognise.
antibody	Chemical produced by lymphocytes in response to an infection. They destroy pathogens.
immunity	Lymphocytes produce antibodies specific to the antigen and can reproduce it quickly again when needed

Drug	Effect	Examples	Possible side effects
Painkillers	Relieve pain	Paracetamol, morphine	sickness and constipation.
Stimulants	Makes a person more alert.	Caffeine, cocaine, ecstasy,	Risk of heart attack and weight loss.
Depressants	Makes a person relaxed or sleepy.	Alcohol, cannabis, heroin	Can cause depression. Risk of death if overdosed
Hallucinogens	Cause a person to see things	LSD and psilocybin mushrooms	Can cause depression and anxiety

12. Drug trials	
Stages in a drug trial:	
1.	Computer simulations
2.	Cells, tissues and organs
3.	Animals
4.	Human volunteers
5.	Small number of patients
6.	Large number of patients
Some patients will receive the drug, and some will receive a placebo (fake/inactive drug). The patient does not know which they have been given; this is called a blind trial .	
In a double-blind trial neither the volunteers nor the researchers know which group the volunteers are in until the end of the trial.	
Drug trials are important so that the safety, dose and how well the drug works are found out.	

1. Structure of the Earth



- The crust is made up of solid rock
- The mantle is made up of solid and liquid rock
- The outer core is made up of liquid iron and nickel
- The inner core is made up of solid iron

5. Metamorphic Rock

Formation of metamorphic rock:

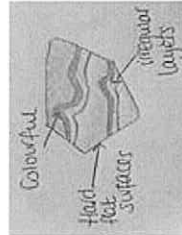
- Metamorphic rock is formed from sedimentary and igneous rock
- The rocks experience high heat and pressure
- This causes the existing rock to chemically change into a metamorphic rock

Examples of igneous rock:

- Slate
- Gneiss
- Marble

Properties of igneous rock:

- Irregular layers
- Colours
- Hard and flat

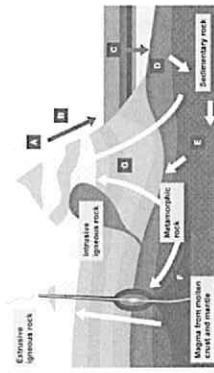


2. Volcanoes

1. The Earth's crust is made up of plates that move
2. When these plates collide with one another one plate is forced into the mantle
3. The crust that makes up this plate will melt due to the temperatures in the mantle
4. The melting plate creates magma
5. This causes a build up of Magma
6. This magma will eventually be forced to escape through any weaknesses in the Earth's crust above it - this is a Volcano



6. Rock Cycle



A	Weathering breaks down rocks on the surface of the Earth. Wind and water move the broken rock particles away. This is called erosion.
B	Rivers and streams transport rock particles to other places. Rock particles are deposited in lakes and seas.
C	Rock particles form layers.
D	Compaction and cementation presses the layers and sticks the particles together. This creates sedimentary rock.
E	Rocks underground get heated and put under pressure, and are changed into metamorphic rock.
F	Rocks underground get heated so much they melt turn into magma. When the magma cools quickly, it turns into solid extrusive igneous rock.
G	Areas of rock can move slowly upwards, pushed up by pressure of the rocks forming underneath. This is called uplift.

3. Sedimentary Rock

Steps of sedimentary rock formation:

1. Weathering and erosion
2. Transportation
3. Deposition
4. Sedimentation
5. Compaction
6. Cementation

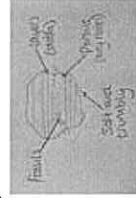
Examples of sedimentary rock:

- limestone
- Shale
- Chalk

Properties of sedimentary rock:

- Layers
- Small holes (porous)
- Soft and crumbly
- Sometimes fossils!

Limestone (CaCO₃) requires carbon dioxide to be formed, removing it from the atmosphere and trapping it in the rock!



7. Quarrying

A quarry is a large, deep pit where materials can be extracted such as limestone and metal ores

Advantages	Disadvantages
Provides raw materials	Eye-sore
Economic benefits	Destroys habitats
Creates jobs in community	Increased traffic from lorries
Empty crater could be used as a reservoir/landfill	Dust particles released could cause health issues

4. Igneous Rock

Formation of igneous rock:

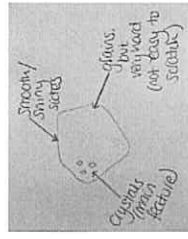
- Liquid rock (magma) is released from a volcano, when it cools it forms **extrusive** igneous rock
- The magma can also cool down below the crust forming **intrusive** igneous rock
- Igneous rock forms crystals, intrusive rocks cool down slower meaning they have bigger crystals than extrusive rocks!

Examples of igneous rock:

- Obsidian
- Basalt

Properties of igneous rock:

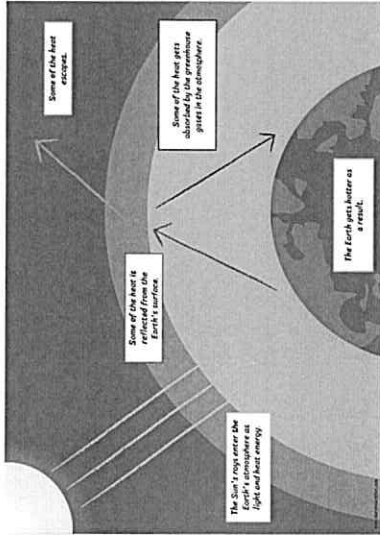
- Crystals
- Sharp edges
- Dark and shiny



8. Definitions 1

- **Weathering** – breaking up of rock into smaller pieces
- **Erosion** – breaking up of rock into smaller pieces and moving the pieces away
- **Transport** – moving of sediments far away from their original rock
- **Deposition** – settling of sediments that have moved away from their original rock
- **Compaction** – squashing of sediments together to make new rocks
- **Sedimentary rock** – rock formed by the compaction of smaller sediments of rock
- **Igneous rock** – rock formed when magma cools and solidifies and crystals form
- **Metamorphic rock** – rock formed under the surface of the earth at high heat and pressure
- **Quarry** – large, deep pit where materials can be extracted

9. Global Warming

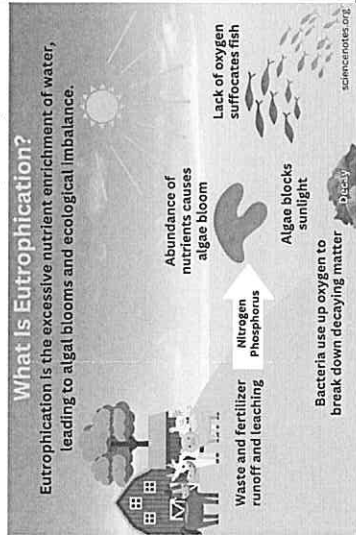


- Greenhouse gases: carbon dioxide, water vapour, methane
- Human activities which can increase greenhouse gases: agriculture, deforestation, landfill, combustion of fossil fuels

13. Water Pollution

Causes of water pollution:

- Sewage and wastewater
- Oil spills from ships or pipes
- Industrial waste
- Agricultural runoff (e.g. fertiliser)
- Marine dumping and plastic pollution in the sea
- Radioactive waste from nuclear power plants



10. Climate Change

- Greenhouse effect – greenhouse gases in the Earth atmosphere absorb heat radiation reflected by the Earth preventing it from escaping
- Global warming – an increase in the average temperature of the Earth
- Climate change – a long-term change in weather patterns

Greenhouse effect leads to global warming which leads to climate change

Impacts of climate change:

- Ice caps melting (destroying habitats)
- Bleaching coral reefs
- Increase in extreme weather
- Increases droughts
- Sea levels rise

14. Recycling

Reuse – using a product more than once

Reduce – reduce the demand for limited resources

Recycle – turn waste products into new products

Advantages and disadvantages of recycling:

Advantage	Disadvantage
Reduces the amount of energy required to manufacture new products	Recycled waste has to be transported, sorted and cleaned in factories
Reduces carbon dioxide	Requires lots of people
Requires lots of people	Some recycled items are poor quality
Limits waste in landfill	Costs a lot of money to transport, sort and clean goods
Reduces demand for limited resources	

11. Acid Rain

Formation of acid rain:

- Sulfur containing plant dies
- Over millions of years the sulfur becomes trapped in fossil fuels
- When these fossil fuels are burnt the sulfur reacts with oxygen forming sulfur dioxide
- Sulfur dioxide dissolves in rainwater forming acid rain



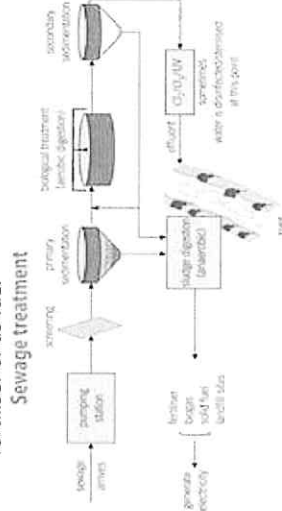
Effects of acid rain:

- Lakes become acidic killing wildlife
- Soil becomes acidic killing plants and trees
- Statues and buildings are eroded

15. Treatment of water

Treating sewage water:

- Screening – removes large solids
- Sedimentation – separates solid and liquid
- Aerobic digestion of liquid (effluent)
- Secondary sedimentation – removes bacteria
- Sterilisation – with chlorine
- Released into rivers and lakes
- Anaerobic digestion of solid (sludge) – used for fertiliser or as fuel

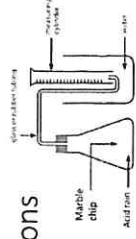


16. Definitions 2

- Greenhouse effect** – greenhouse gases in the Earth atmosphere absorb heat radiation reflected by the Earth preventing it from escaping
- Global warming** – an increase in the average temperature of the Earth
- Climate change** – a long-term change in weather patterns
- Fossil fuels** – made from the remains of organisms over millions of years – coal, oil and natural gas
- Eutrophication** = excessive nutrients in water leads to algal blooms and damages ecosystems
- Reuse** – using a product more than once
- Reduce** – reduce the demand for limited resources
- Recycle** – turn waste products into new products

12. Acid Rain Investigation

Instructions



- Set up your equipment as follows
- Add 10cm³ of one of the acid rain samples into a conical flask and record in your table where the sample is from
- Drop a marble chip into the conical flask
- Record how long it takes to produce 25cm³ of gas
- Repeat the experiment using the two other acid rain samples

Variables:

- Independent variable:** The country the acid rain was from
- Dependent variable:** the time taken for 25cm³ of gas
- Control variables:** volume of acid rain, mass of marble chips, size of marble chips

Year 8 – Energy and Resources

1 – Energy Stores

The units of energy are **Joules (J)**

There are 1000 Joules in 1 kilojoule (kJ)

Energy is stored in objects in various forms:

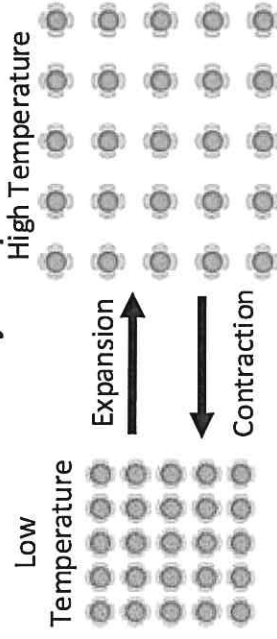
Energy Store	Example
Thermal	When objects are hot
Chemical	Food, fuel and batteries
Kinetic	Moving objects
Elastic potential	Stretched/squashed objects
Gravitational potential	Objects lifted up higher

Internal (Thermal) Energy = total of the kinetic (moving) energy of all the particles in an object

4 – Thermal Expansion

When an object is **heated up**

- The particles **vibrate more**
- The particles **move apart more**
- This means the **object expands**



NOTE: The particles **DO NOT** expand, the spaces between them get bigger, and the object expands.

Expansion joints in bridges / slack pylon wires are designed to allow thermal expansion & contraction

2 – Energy Transfer Pathways

(H.E.R.M.)

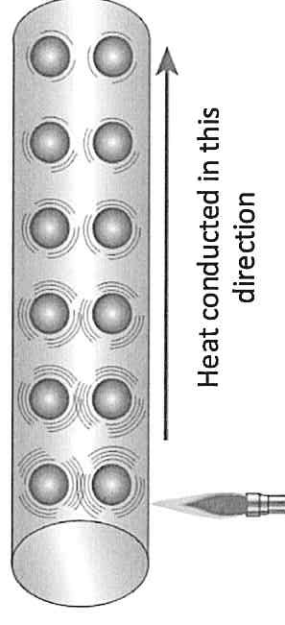
Energy can be transferred from one store to another. When this transfer takes place, work is done (in Joules)

Transfer Method	How transferred
H eating	By increasing the internal energy store
E lectrical	By moving charges
R adiation	By light or sound
M echanical	By a force acting on the object

3 – Conduction

Conduction is the transfer of thermal energy through a solid material by **vibrating particles**.

Hotter particles have more **energy**. This causes them to vibrate more and **collide** with particles next to them.



6 – Insulation Investigation

Thermal insulation *reduces* heat transfer between objects or an object and its surroundings.

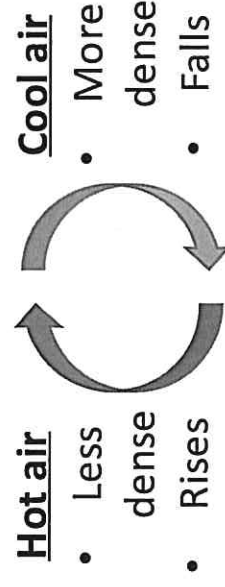
Investigation Vocab

Variable	What it is
Independent	The one we change
Dependent	The one we measure
Control	The one(s) we keep the same to make it a valid test

5 – Convection

Liquids and gases are **FLUIDS**.

When a fluid is *heated*, it becomes *less dense*. This makes it *rise* above the cooler, more dense, fluid.



This cycle of rising and falling fluid is called a **CONVECTION CURRENT**.

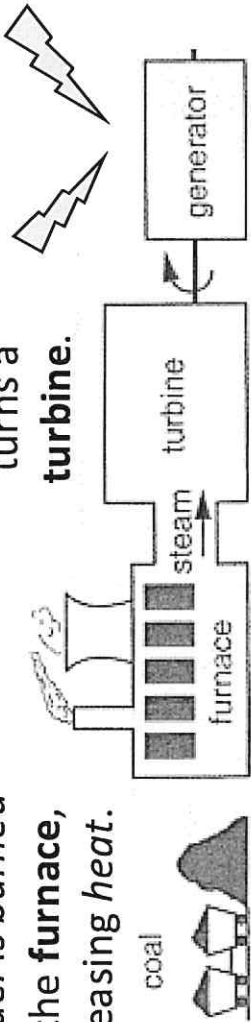
7 – Generating Electricity

In a power station:

1. Fuel is burned in the furnace, releasing heat.

3. Steam

turns a turbine.



2. Heat boils water, turning it to steam.

4. The turbine turns a generator which produces a voltage.

9 – Renewable Energy Resources

Advantages:

- WILL NEVER RUN OUT because they can be replaced when they have been used
- Don't produce Carbon Dioxide meaning renewable resources have less impact on global warming.

10 – Energy Island

Renewables Disadvantages:

Can take up a lot of space

- Solar - lots of panels in solar farms
- Wind - lots of wind turbines in wind farms
- Hydroelectric – valleys get flooded behind dams.
- Biofuel – Large fields of crops grown for burning / turning into bio-oil.
- Geothermal – Needs to be where there are hot rocks near the surface

Renewable Energy	Energy comes from
Solar	The Sun
Geothermal	Earth's hot rocks
Hydroelectric	Water falling behind a dam
Wind	Turbines turn in wind
Biofuel	Living things (trees/plants)

8 – Fossil Fuels

The fossil fuels are



- Takes millions of years to form from the remains of dead organisms.
- Are **non-renewable** – WILL RUN OUT because they are being used faster than they can be replaced.
- **Advantage:** compact energy sources.
- **Disadvantage:** release carbon dioxide (a greenhouse gas) when burned.

11 – Energy Conservation

Carbon Dioxide released from fossil fuels leads to the **Greenhouse Effect**.

The Greenhouse Effect leads to **Global Warming**.

We can reduce our effect on the environment by:

- Conserving energy – not using it when we don't need to
- Renewable energy resources – build more to replace fossil fuels
- Electric Cars – Don't burn petrol which comes from oil

Y8 Food Preparation and Nutrition – Knowledge Absolute

Bridge and Claw



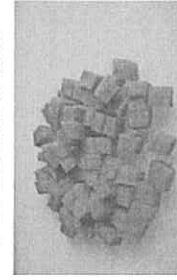
Fine Dice



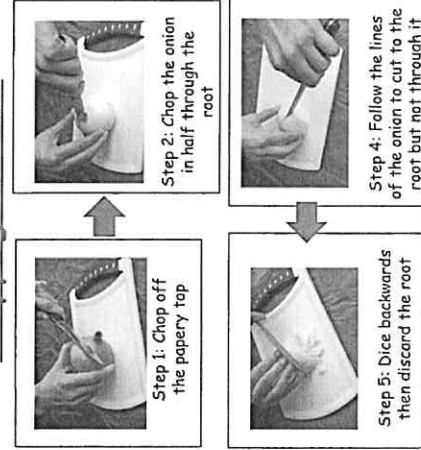
Slicing



Medium Dice



Chopping an onion



- Quality Control** – How do you ensure the product is of a high quality
- ✓ Weigh and measure accurately using scales and measuring jugs
 - ✓ Check you are using the correct setting and heat on the oven
 - ✓ When baking ensure no mixture is spilt on the side
 - ✓ Chop ingredients accurately
 - ✓ Keep products to the same size and thickness
 - ✓ Use a timer
 - ✓ Check for readiness before removing from the heat
 - ✓ Space products out evenly

Nutrient	Function	Food Group	Food example	Food Science Term	Description	Example
Carbohydrate	To provide the body with energy.	Starchy food	Rice, potatoes, bread, pasta	Caramelisation	When sugar turns brown with the addition of heat	✓ Baking a cake ✓ Frying onions
Fats	To insulate and protect the body.	Fats	Cheese, butter, oil	Coagulation	When an egg sets	✓ Omelette ✓ Cake
Protein	To help growth and repair of the muscles.	Meat, fish and alternatives	Chicken, beef, pork, salmon, eggs, lentils, beans	Dextrinisation	The browning of starch when heat is applied	✓ Cake ✓ Toast ✓ Pastry
Vitamins	To perform specific functions e.g. vitamin C supports the immune system.	Fruits and vegetables	Carrots, strawberries, spinach	Aeration	Adding air into a product e.g. whisking	✓ Cake ✓ Meringue
Minerals	To perform specific functions e.g. calcium keeps bones strong.	Dairy foods	Milk, cheese, yoghurt	Shortening	The process of coat starch with fat in order to reduce the gluten strength and give a crumbly texture	✓ Shortcrust pastry ✓ Scones ✓ Shortbread biscuits
				Gelatinisation	When starch is heated in a liquid until it bursts and thickens a liquid	✓ Roux sauce

Nutrition and health claims on labels

Nutrition and health claims are controlled by European regulations. Claims on a food or drink should have been authorised and listed on the European register of claims and have met certain conditions.

Nutrition claims - A nutrition claim describes what a food contains (or does not contain) or contains in reduced or increased amounts. Examples include: Low fat (less than 3g of fat per 100g of food); High fibre (at least 6g of fibre per 100g of food); Source of vitamin C (at least 15% of the nutrient reference value for vitamin C per 100g of food).

Health claims - A health claim states or suggests there is a relationship between a product and health. In order to make a claim, the amount present of the nutrient, substance or food must fulfil the specific conditions of use of the claim. The types of health claims are: 'Function Health Claims'; 'Risk Reduction Claims'; Health 'Claims referring to children's development'.

Y8 Food Preparation and Nutrition – Knowledge Absolute

To find out more about labelling , go to:
<https://bit.ly/2SPnj1g>

Design Consideration	Issues
Healthy Eating	- Low in fat especially saturated (use low fat alternatives e.g. skimmed milk) Low sugar - use sweetener - Low in salt - don't add use herbs and spices - High in fibre- use wholemeal flour, bread, rice and pasta, use high fibre veg and leave the skins on - Varied - so you get all the nutrients you need
Allergies	- Gluten Intolerance people with coeliac disease can't eat protein called gluten. Gluten is found in wheat and other grains. They must avoid flour, bread, cereals and pasta. They can eat rice and potatoes. - Nut Allergies avoid products containing nuts. - Lactose Intolerance they can't digest lactose - at sugar found in milk. They avoid dairy products like milk and cream. They get calcium from green leafy vegetables and salmon. They often use soya, rice or almond milk instead of normal milk
Health problems	- Obesity - Caused by overconsuming foods - Heart disease - Can be helped if saturated fat and health risk are lowered - Diabetes type 2 - Must control sugar levels in their diet - Dental caries - Caused by poor dental hygiene and consuming too much sugar
Vegetarian/ Vegan	- Vegetarian: don't eat meat or fish. They get protein from eggs, milk, nuts and pulses - Vegan - Eat a diet free from all animal products e.g. meat, milk, cheese, eggs, honey
Religion	- Hinduism - Mainly vegetarians, cows are considered sacred. - Islam - Meat must be halal, cant eat pork, fast during Ramadan. - Judaism - Food must be kosher, do not eat pork, dairy and meat must not be cooked or eaten together
Environmental	- Organic - Food produced without artificial fertilisers and pesticides. - Free range - Animals have more space to roam - Packaging - Recyclable packaging like cardboard is better for the environment - Food miles - The amount of miles food has travelled from farm to fork - Seasonality - When a product will grow better and with less help e.g. strawberries are in season in summer.
Function of ingredients SR Flour - (raises the product) and plain flour - add bulk and 'form' to the mixture - create the structure Golden syrup - adds sweetness, flavour, colour and moisture to the product Butter/margarine - binds the ingredients and adds flavour, colour and moisture Bicarbonate of soda/ baking powder (chemical raising agents)help the mixture to rise by releasing carbon dioxide Water/milk - add moisture and 'bind' the ingredients together; help the mixture to rise (steam)	

Key Terms

Upskilling
 Origin
 Uniformity
 Fermentation
 Caramelisation
 Reduction
 Al dente
 Shortening
 Plascity
 Vegan
 HBV
 LBV
 Pulses
 Micronutrients
 Macro nutrients

Food labelling

Labels provide the consumer with information that they can then use to justify their choice.

- ✓ Ingredients list
- ✓ Dietary information
- ✓ How to store and cook the food
- ✓ Origin
- ✓ Animal welfare

Food additives

Preservatives: Prevent food spoilage
 Antioxidants Prevent foods going rancid or brown
 Colours Help restore a foods colour after processing
 Flavour enhancers Monosodium glutamate added to enhance the flavour of processed food

Key temperatures

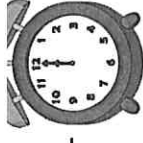
- Freezer = -18°C
- Fridge = 5°C
- Cooked food = 75°C
- Hot Held Food = 63°C
- Danger zone = 5°C to 63°C

BEST BEFORE
 01-01-07

USE BY
 01-01-07

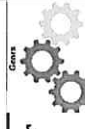


All Saint' s Absolutes : Design & Technology Y8 Clock



KEYWORDS

Customer	The person that you are designing for or who buys your product	Specialist equipment	Uses
Client Interview	Finding out the needs and wants of a client by asking questions, which will help a designer design a product.	Scroll saw	Scroll saws have a thin blade that allows you to cut intricate curves and corners.
Materials	What products are made from, metals, woods, manufactured boards, polymers (plastics), fabrics, papers and cards. Fixtures (nails, screws) and adhesives (glues)	Coping Saw	To cut shapes and cut small areas in wood and manufactured boards
Product analysis	Asking questions about a product performance. It can mean experts analysing a product or members of the general public or potential customers/groups of people. ACCESS FM questions used for evaluation of performance.	Vacuum Former	Vacuum Forming is an industrial technique which may be used for batch production or mass production. The process deforms polymer sheet material.
Mood board	This is a page of images that shows a range of existing products that help to produce a range of designs	Finite-	A resource that will run out eventually. Also called a non renewable resource. For example : coal, oil or gas will run out.
Testing	A range of tests are carried out to check the performance and or quality of materials and or products for summative evaluation.	Non- Finite-	A resource that can be replaced by natural processes as fast as it can be consumed. Also called a renewable resource. For example, trees.
Analysis	Investigation into a contextual challenge, defining the needs and wants of the user and include relevant research to produce a design brief and specification.	Deforming processes	The method of shaping materials by either bending in a straight line or by creating a bowl or dish shape.
Market research	Market research involves gathering in-depth information about customer or user needs and preferences.	Materials	Meaning
Specialist Terms	Uses	P.V.C	PVC is available in sheet form or granules, making it suitable for vacuum forming or injection moulding. It is chemical and water-resistant and is commonly used in blister packs, plastic toys and window frames.
Mould	A former used to shape materials. E.g. for pewter casting	High Density Polystyrene HIPS	A tough, rigid polymer material with high impact strength. Used to vacuum form the clock design using the mould.
Gear	A mechanism used to transfer rotary motion, which can also change the direction and magnitude of force transmitted.	Acrylic -	A thermoplastic.
Orthographic projection	This type of drawing shows a 3D object in a set of 2D drawings viewed from different angles. - A front view plan view and end view.	Thermoforming Polymer / plastics	A type of plastic that can be melted and remoulded over and over again. E.g. acrylic, HIPS ...
Stock Form-	The different shapes that materials can be bought in. Rods, sheets, planks, tubes etc.	Thermosetting Polymer	Thermosetting plastics are plastics do not soften on heating. They are used when resistance to heat is important (e.g. kettles, plugs, laptop chargers etc). A type of plastic that undergoes a chemical change when heated, which makes it permanently hard and rigid. Thermosetting plastics cant be remoulded. E.g. Urea Formaldehyde
The 4 Motions	The four types of motion are: Linear, rotation, reciprocation, oscillation.	M.D.F - medium density fibreboard	This is manufactured board that is made from wood dust and glue it is cheap but breaks easily when cutting. Used to make the mould base for the clock.



Design Specification

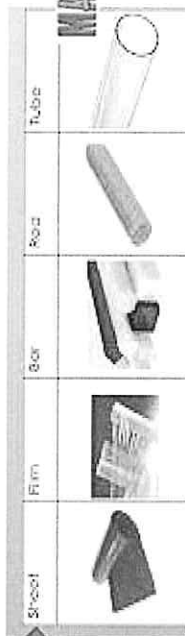
The 'Design Specification' is a list of conditions a product must meet, called design criteria. A specification is written in bullet points with each point explained. It is a detailed document providing information about the characteristics of a project to set criteria the developers will need to meet. Design specifications are used for everything from laying out plans for a new space ship to addressing the design concerns of a pencil holder.

The specification should cover:

- Size — how big it is
- Aesthetics — how it looks
- Consumer — who will buy it
- Function — what it will do
- Quality — e.g. the required finish
- Cost — the price range
- Materials — what it is made of
- Safety — how to make sure it's safe
- Environment — the impact on the world
- Sustainability — its future impact

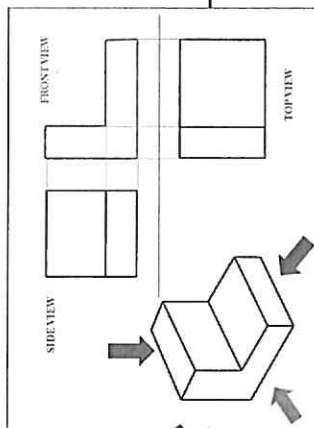
Stock Forms

Polymers come in different forms - sheets, tubes and rods can be cut to size and bent.



Orthographic Drawing

They show a 3D object in a set of 2D drawings viewed from different angles. - A front view, plan view and end view.



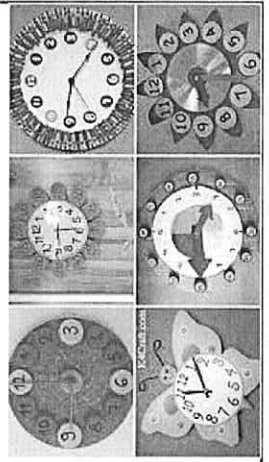
CAD CAM Modelling

CAD can be used to model. CAD can be used to draw detailed 3D designs, then CAM machines such as 3D printers can be used to produce models. The CAD package we use in school is called Tech soft 2D design.

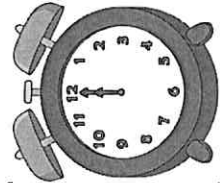
Modelling a physical representation of a structure - built to study aspects of design or to communicate design ideas. Depending on the purpose, models can be made from a variety of materials, including blocks, paper, and wood, and at a variety of scales.

Is making a practice version of a design or part of a design. The benefits of card modelling are;

- Test out parts of a design/ the design in 3 dimensions.
- See how the product might look in real life.
- Check out material proportions and dimensions.
- Consider and identify fabrication issues that cannot be seen in a 2D paper drawing.
- Save on expensive high quality material where mistakes and changes in the 3D form might still occur.



MATERIALS



THERMOPLASTICS



(Can be melted repeatedly)

THERMOSETS



(Once shaped, cannot be melted)

Types of thermoplastic polymer

Type	Common uses	Characteristics
Acrylic and Perspex	windows, bath tubs	Can be transparent. Hard wearing and tough. Softens between 85°C and 165°C.
High density polyethylene (HDPE)	Pipes, buckets, bowls	Strong and stiff. Softens at about 130°C.
PET	Drinks bottles, food packaging	High strength and toughness. Heat resistant. Softens about 80°C.
High impact polystyrene (HIPS)	Packaging	Good toughness and reasonable strength. Softens about 90°C.

Types of thermosetting polymer

Type	Common uses	Characteristics
Polyester resin	Car bodies, boats, suitcases/luggage	Good strength and stiffness. Very good temperature resistance.
Melamine formaldehyde	Laminate coverings for kitchen worktops	Stiff, hard, strong, resistant to many chemicals and stains.
Polyurethane	Foam insulation panels, hoses, sealants	Hard with high strength. Flexible and tough.

THERMOSETTING POLYMERS

Thermosetting polymers undergo a chemical change and once formed or set, cannot be reformed. Thermosets are resistant to higher temperatures but tend to burn when heated rather than melt. They are harder, more brittle and provide good insulation and chemical resistance.

Polyester resin (PR)



Properties
Good electrical insulator, hard, but becomes tough when mixed with glass strands to form glass reinforced plastic (GRP).

Uses
Encapsulation, boat hulls as GRP.

Epoxy resin (ER)



Properties
Good strength to weight ratio, good electrical insulator, heat resistant.

Uses
Bonding waterproof coatings, electronic circuit boards.

Phenol formaldehyde (PF)



Properties
Heat resistant and a good electrical insulator.

Uses
Heat resistant handles, electrical components, snooker balls.

Melamine formaldehyde (MF)



Properties
Lightweight, hard but brittle.

Uses
Worktops, surfaces, some kitchenware.

Urea formaldehyde (UF)

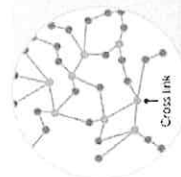


Properties
High tensile strength, heat resistant, good electrical insulator, hard, brittle, easily injection moulded.

Uses
Adhesives for bonding particle boards, decorative laminates, electrical casings.



Thermosetting
plastics are more flexible and have loose polymer chains that break apart when heated.



Thermosetting
plastics have rigid cross-linked polymer chains that set when heated and cannot be reformed.

THERMOFORMING POLYMERS

Plastics are mainly synthetic materials made from polymers traditionally derived from finite petrochemical resources. Naturally occurring plastics include amber and rubber.

Thermosetting polymers are generally more flexible than thermosets, especially when heated. This is owing to their physical structure: polymer chains are quite loosely entangled with very few cross links. This allows the chains to easily slide past each other when heated. They can be formed into complex shapes and reformed multiple times.

Polypropylene (PP)



Properties: Flexible, tough, lightweight, food safe
Uses: Kitchens, medical products

Acrylic (PMMA)



Properties:
Tough but brittle, easily formed and bonded.
Uses: Car lights, alternative to glass, clothing.

High density polyethylene (HDPE)



Properties: light weight, rip & chemical resistant
Uses: Milk bottles, pipes, crates, wheeler bins.

High impact polystyrene (HIPS)



Properties: Flexible, impact resistant, light weight, food safe. **Uses:** yogurt pot, vacuum form products.

Polyvinyl chloride (PVC)



Polyethylene terephthalate (PET)



Properties: blow moulding, chemically resistant, recyclable
Uses: Drinks bottles, food containers.

Properties: flexible, easy to extrude, tough, chemical resistant
Uses: Pipes, electrical tape

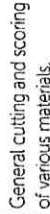
Design and Technology – Clock

Coping saw



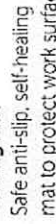
Uses: For cutting curved lines through a thin material.
For: Timber, plastic and thin metal.

Craft knife



General cutting and scoring of various materials.

Cutting mat



Safe anti-slip, self-healing mat to protect work surfaces.

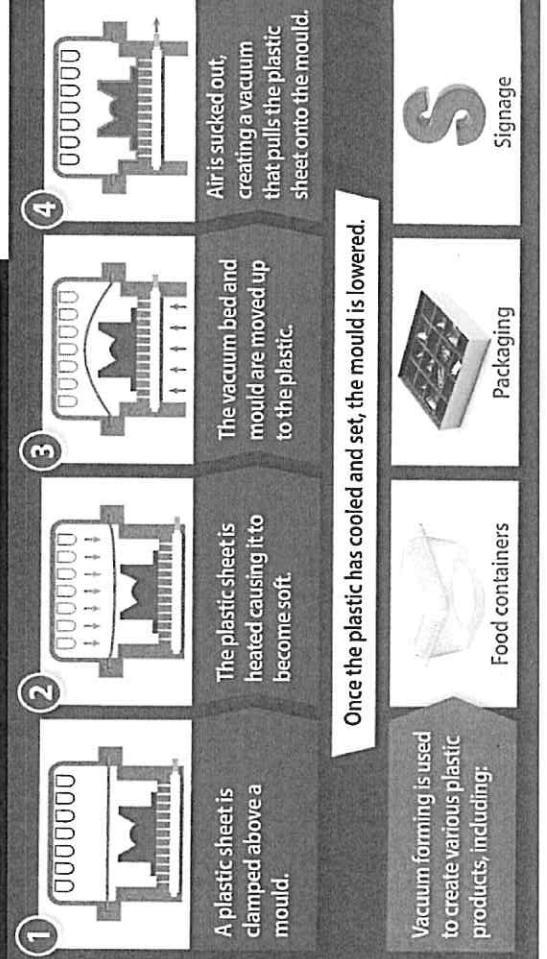
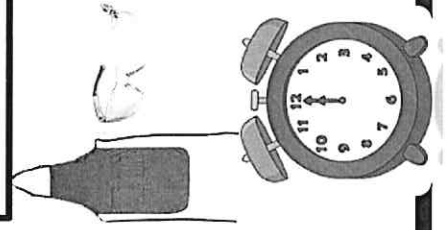
Maun safety rule

The rule has a 'M' profile which keeps fingers away from a knife when cutting or scoring paper.



Scroll saws are used for cutting curves that are too intricate for a coping saw or jigsaw.

PPE : personal protective equipment



Vacuum forming

This technique is used to shape plastic. It works by heating a sheet of plastic, which is then pulled by the vacuum to form around the shape or mould. Once the plastic has cooled and set hard it can be removed from the moulding tool.



KEYWORDS

Sublimation printing
Tolerance
Woven
Knitted
Synthetic
Over locker
Heat press
Inspiration board
Thread
Gantt Chart
Modification
Client
Life cycle analysis
Biodegrade

MATERIALS

Sublimation printing
Inserting a zip
Sewing machine
Over locker- neatenning a raw edge

Polyester
Polycotton
Zip
Thread

Tools and Equipment

Heat Press

Sublimation printer- uses dye instead of ink.

Zipper Foot- The Zipper Foot can be used for inserting zippers as well as making and inserting piping or cording. The zipper Foot allows the needle to stitch close to a raised edge such as the teeth of a zipper or the thickness of cording.

Iron

Unpicker- Unpickers are also known as seam-rippers, quick-unpickers. You insert the unpicker between the stitches and pull up so the threads are cut by the small blade.

Dressmaking scissors- Also called fabric shears to cut fabric. These have long very sharp blades.

Pins- Hold the fabric together before stitching together.

Needles- for hand stitching- there are several sizes for thickness of the thread/ beads being used.

Sewing Machine- are strong and work at high speeds.

Overlocker- finishes and edge and stops in from fraying. It has a blade to trim the fabric. They are also used for stretchy fabric like jersey.

Heat Press risk assessment

Minimise the risk of tripping by carefully arranging the heat press, ironing boards, etc. in relation to the socket outlets. Do not lean against the equipment. A 'HOT' warning sign is visible. Ensure the equipment has an annual portable appliance test, which should be sufficient to avoid electric shock but it would be advisable to check the equipment at suitable intervals for damage to the power cable. Always allow heat presses to cool before being put away. It is advisable to store heat presses in a storeroom when not in use because of the risk of harm.

The Absolutes

y8 Textiles

Research

Task Analysis- The designer should pick out all the key points in the brief - one way of doing this is through a spider diagram called a task analysis. It's a way of analysing the brief and deciding what research is needed. This helps the designer get ideas; checks people actually want the product; finds out what the target market likes/dislikes about existing products; find out about materials, components, techniques, manufacturing processes and costs.

Inspiration Board a collage of various items, as photographs, drawings, words, fabric swatches, textures, used to visualize specifics in the design of a project. Include a summary of your inspiration and how the images will help you design.

Client Interview - Interviews can give you more detailed information than a questionnaire. They can be difficult to analyse results than a questionnaire because of the breadth of knowledge. Information for the client will guide your design ideas.

Suggest Modifications

Modify means 'change'. On evaluation of your project suggest parts that you could modify in the future in order to improve your design. Explain where you modified your design from your original idea.

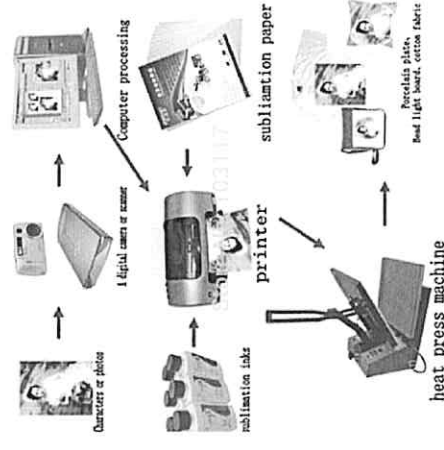
Tolerance - The margin of error allowed for a measurement of part of a product.

Tolerances are usually given as an upper and lower limit. e.g. 23m (+/- 2)

Manufacturing Process- Sublimation

Printing

- Create an artwork/design using a product design software- 2d design or photoshop.
- Send the design to a sublimation printer and reproduce it onto transfer paper.



Gantt Chart

This is a sequenced diagram.

The tasks are listed down the left hand side and the timing is plotted across the top. The coloured squares show how long each task takes to complete.



Manufacturing Specification

Can be a series of written statements or working drawings and sequence diagrams. It can explain exactly how to make the product and should include: clear construction details, materials, equipment, sizes, tolerances, finishing details, quality control and costings.



Life Cycle Analysis

Life Cycle Assessment looks at how a product impacts on the environment from its raw state to its end of life. The LCA looks at the processes that occur during the life cycle of a product.

This includes:

Manufacture 	Natural resources? Does it use chemicals? Is it made from recycled goods? Where in the world is it made?
Packaging 	What is the packaging made from? Can the packaging be recycled? Is the packaging necessary?
Transportation 	How is it transported? Is it environmentally friendly? How can you limit pollution?
Use 	Does it use energy? Is it built to last? How can you make it environmentally friendly?
Recycling 	RECYCLE REUSE REDUCE RETHINK REPAIR REFUSE After it is no longer needed how can you recycle it?

Key Word- "Biodegradable" refers to the ability of things being broken down by the action of living things (such as microorganisms) disintegrated (decomposed) naturally. There's no ecological harm during the process.

Synthetic fibres: polyester, polyamide (nylon), elastane (lycra) Polycotton

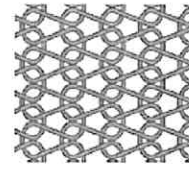
Synthetic fibres are manufactured from oil based chemicals.

	Example	Properties	Uses
Polyester		Tough, strong, hard wearing, very versatile, holds colour well, non-absorbent so quick drying, machine washes well. Often blended with other fibres. Easily coloured	Clothing, fleece garments, bedsheets, carpets, wadding, rope, threads, backpacks, umbrellas and sportswear

Fabric construction

Fabric	Example	Properties	Uses
Woven fabric (Plain Weave)		Simple and cheaper to produce than more complicated weaves, stronger than other weave patterns	Used on textiles such as cotton, cheesecloth and gingham, found on table cloths, upholstery and clothing

Knitted (Weft knitted)



Knitted fabrics are produced by hand or by knitting machines. Knitting is produced horizontally. The loops above and below interlock holding the fabric together.

Warm to wear, different knits have different properties such as stretch and shape retention. Weft knits ladder and unravel more easily than warp knits.

Jumpers, sportswear and underwear fabrics, socks, tights and leggings, craft items such as soft toys