The Trafalgar School at Downton

Knowledge Organiser

Year 7: Terms 5 and 6

2022/2023

Contents

Name..House.........................

Using a Knowledge Organiser well

What is a Knowledge Organiser? A Knowledge Organiser is a document that sets out the key information you need to understand, learn and memorise in each of the subjects you study this term.	**Why do I have to carry my Knowledge Organiser around with me?** Your teachers will want you to use your Knowledge Organisers in lessons. They are yours forever and you may want to annotate or highlight on them when your teacher talks about things in them. They will certainly be used in lessons when you have a cover teacher and you can use them whenever you find yourself with some spare time.
How should I use my Knowledge Organiser? You should use your Knowledge Organiser to learn this key information and commit it to memory. Your teachers will often quiz you on the information on the Knowledge Organiser in your lessons. The best way of using it is to use the look, cover, write, check method which you will have been introduced to in your Knowledge Organiser launch assemblies.	**What do I do with my Knowledge Organiser at the end of the term?** You don't have to carry your Knowledge Organiser around with you anymore but you should keep it somewhere safe where you can easily get it out and use it. Remember that the information on the Knowledge Organiser includes things you will need to remember for your GCSE exams, so your teachers will continue to quiz you on it.

Why is a Knowledge Organiser important?
New GCSE specifications mean that students have to memorise more facts, equations, quotations and information than ever before and there are things you will learn right from the start of year 7 that you will need to know in year 11 when you sit your GCSE exams – the Knowledge Organiser helps you to identify the things that you need to try and commit to your long term memory and return to over and over again during your time at secondary school. There are also things that we think it is important you learn about and remember that might not be in a GCSE exam but represent useful knowledge for life.

WHAT *WE* EXPECT FROM *YOU*

BE ON **TIME**

BE **EQUIPPED**
PEN, PENCIL, RULER, KNOWLEDGE ORGANISER& EXERCISE BOOK (AS A MINIMUM)

LISTEN TO STAFF AND **ALWAYS** COOPERATE

DO NOT INTERRUPT **LEARNING** TIME

COMPLETE **ALL WORK** SET
BEST WORK, FIRST TIME

SHOW **RESPECT**

WEAR UNIFORM **PROPERLY** AND WITH **PRIDE**

MOBILE DEVICES/SMART WATCHES TO BE IN **YONDR** CASE

GREAT PEOPLE - GREAT TEACHING - GREAT OUTCOMES

Being Trafalgar

At the end of your time at the school your knowledge organisers will provide you with lots of help and support when your prepare for your GCSE exams.

To help yourself you should:

- Keep your Knowledge Organisers as tidy as possible

- Highlight parts of them as you go through learning lessons or add in post-it notes etc. to help you learn key knowledge

- Keep your used Knowledge Organisers safe at home. If you have used them since Year 7 you will end up at the end of Year 11 with 14 Knowledge Organisers. Line them up on your shelf at home and keep coming back to them for your revision, homework and learning

- Show them to your parents and talk through with them the facts and knowledge you have learned about in lessons – help them to learn new things too!

- Take your Knowledge Organiser for the term you are in to school every day and use it in every lesson you can!

Learning the knowledge in the organiser

Your Knowledge Organiser is a vital document. It contains all the key things from your lessons that you will need to work on committing to your long-term memory.
The best method to use when you are working on memorising things from your Knowledge Organiser is to self-quiz, using the Trafalgar Revision Method, below:

Really read and understand	Read the information 3 or more times and ask for help in understanding
Reduce the knowledge	Rewrite the information, making revision cards or mind maps
Remember	Reread and test that you can remember
Repeat	Repeat the process above until you can recall the information quickly and accurately. Only at this point have you acquired the knowledge!

How do I remember? Activating your memory

Students often say "I can't remember" and the reason for this is that the information they are trying to remember and learn is not yet in their **long term memory**.

Your long term memory gets activated by repetition over a number of days. And so repeat the following process to embed knowledge in your long term memory.

Look	Read the information 3 or more times
Cover	Now cover what you have just read up
Write	Now try and write down the information you have just read
Check	Did you write down the information correctly?
If you made mistakes, correct them with a different colour pen and repeat daily until you "just know it".

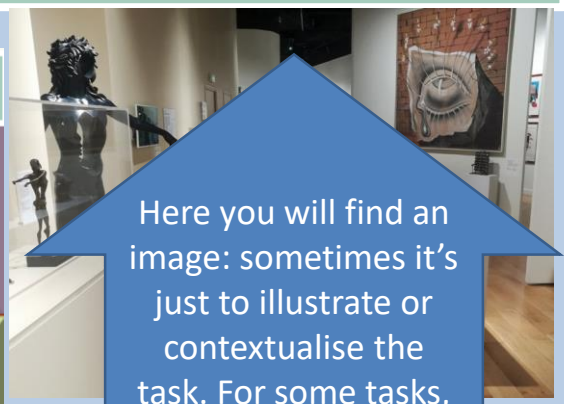**Fortnightly Writing Challenge: First Person Narrative**

Here is the form, genre, purpose of the writing. It might be hyperlinked to a model to help you.

Methods to include:

sensory description: olfactory (smell) and auditory (sound)

Here you will find an image: sometimes it's just to illustrate or contextualise the task. For some tasks, the image will be part of the writing challenge.
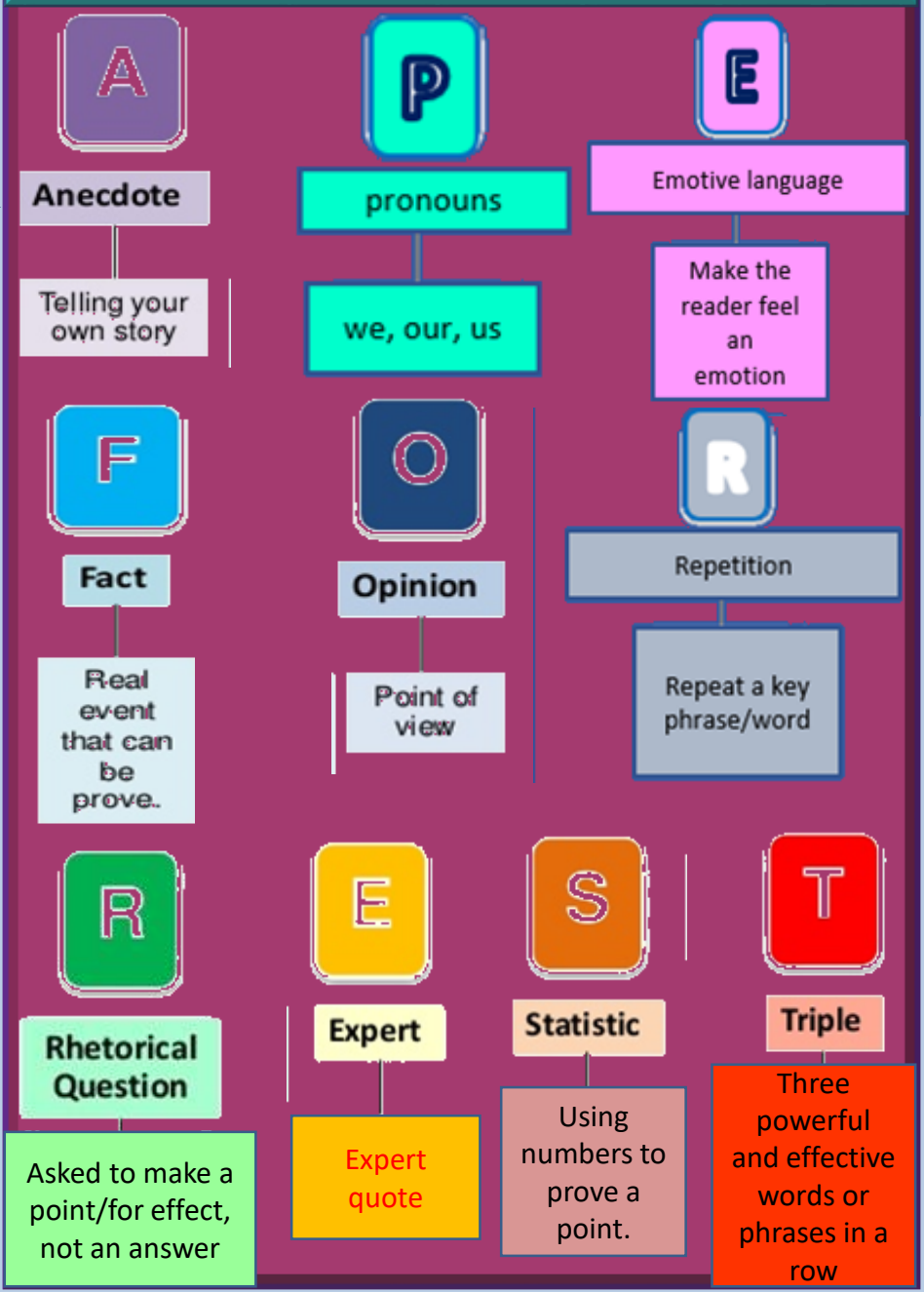
Write a short story based on ~~it to a haunt... room!~~

You should include these methods. They are colour-coded to match the pages of your FWC Knowledge Organiser. If you click on each one on the slide, it's hyperlinked to another slide to help you learn about that method, with examples.

Here you will find the task details. Read them carefully as it will provide more information about about what you are writing (form, purpose) when you have your Week A FWC lesson.

Don't forget to plan writing!

T...al Accuracy ...der:

Here you will find prompts so you don't forget important things like planning, punctuating accurately, etc.

...ter at ...ning ...top, ...ion or question mark at the end.
• Use paragraphs.
• Spell accurately.

Each Week B, you will have an FWC PPT loaded onto Classcharts. Your homework is to make notes, learn from, and prepare for the task and methods included, ready to write it in your Week A FWC writing lesson.

When writing non-fiction in Year 7, you should practise using the APE FOR REST rhetorical methods:

A Anecdote — Telling your own story

P pronouns — we, our, us

E Emotive language — Make the reader feel an emotion

F Fact — Real event that can be prove.

O Opinion — Point of view

R Repetition — Repeat a key phrase/word

R Rhetorical Question — Asked to make a point/for effect, not an answer

E Expert — Expert quote

S Statistic — Using numbers to prove a point.

T Triple — Three powerful and effective words or phrases in a row

Fortnightly Writing Challenge Year 7

Language Methods to Practise in your Fortnightly Writing Challenge

alliteration: You'll never put a better bit of butter on your knife

ALLITERATION ALWAYS APPEARS APT.

anecdote: Talking to his children about the dangers of running in the house, a dad might include an <u>anecdote</u> about falling in his home as a boy and breaking his arm.

antithesis: That's one small step for man, but a giant leap for mankind.

chiasmus: 'Let us never negotiate out of fear, but let us never fear to negotiate.'

emotive language: Think about the poor, defenceless animals that suffer due to our rubbish!

experts: 'Group chat can often be a source of upset,' <u>warned psychologist Dr Linda Pappadopolis.</u>

extended metaphor: *The Road Not Taken*, by Robert Frost, is one of the most famous examples of extended metaphor; in the poem, he compares life's journey to a forest path.

foreshadowing: The witches in Macbeth are used to foreshadow that Macbeth is not innocent: 'Fair is foul and foul is fair', a line he echoes in his first appearance when he says 'so foul and fair a day I have not seen'.

Foreshadowing ahead!

imperative verbs: Chill out! Do as I say! Don't eat the daisies! Please be quiet! Be quiet!

metaphor: 'The sun in the west was a drop of burning gold that slid near and nearer the sill of the world.'

modal verb: You <u>must</u> be home by midnight. You <u>could</u> be tired if you're any later. E.g. <u>mustn't</u>, <u>can</u>, <u>might</u>, <u>shouldn't</u>, <u>may</u>, <u>will</u> etc.

pathetic fallacy: In *Macbeth*, the night the King is murdered 'has been unruly ... in th' air, strange screams of death .... Some say the Earth was feverous and did shake.'

sensory description: Wind swirled around the beach house, whistling loudly. He felt the snowflakes melting on his skin, their liquid trickling down his neck, cold, wet, seeping into his clothes.

simile: Without warning, Lionel gave one of his tight little sneezes: it sounded like a bullet fired through a silencer.

statistics: You only have a 20% chance of surviving a 60mph crash if you don't wear a seatbelt!

superlative: This is the <u>worst</u> day of my life but at least we're in the <u>finest</u> café in London.

onomatopoeia: The dog knocked over the vase with a crash!

Onomatopoeia

personification: Dancing on the water, the sun shone endlessly.

repetition: 'As my grandfather went, arm over arm, his heart making sour little shudders against his ribs, he kept listening for a sound, the sound of the tiger, the sound of anything but his own feet and lungs.'

COMMON MISTAKES

Apostrophe To Show Ownership

1 normal singular noun
the **man's** idea ✓
add 's

2 normal plural noun
the **girls'** idea ✓
add '

3 singular noun ending s
Moses' idea ✓
add '
or...
Moses's idea ✓
add 's

4 plural noun not ending s
the **children's** idea ✓
add 's

Using Apostrophes (Showing Joint Ownership)

The Rules

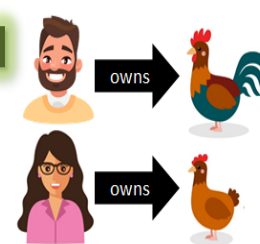**Joint possession?**
Make the last word in the series possessive.

Individual possession?
Make all parts possessive.

Examples

owns

own

owns

Janet and John's chickens

Janet's and John's chickens

SENTENCES

Use fronted adverbials:

Rather slowly, (manner)
During the night, (time/temporal)
Every minute or two, (frequency)
At the end of the corridor, (spatial)

Just beyond the stairwell on his left, he opened the door.

Use a two and then three word sentence:

It hurt. I was dying!

Snow fell. Flakes floated precariously.

Use anaphora:

Now is the time for action. Now is the time to take up arms. Now is the time to fight for your country.

Use epiphora (epistrophe)

I can't believe I was robbed. Everything is gone. My television and electronics are gone. The money I left on my nightstand is gone.

Use a range of sentence structures:

The spotted green frog jumped into the pond.
(simple)

The spotted green frog jumped into the pond and he splashed water on me.
(compound – coordinating conjunction: for, and, nor, but, or, yet, so)

The spotted green frog jumped into the pond when the hawk flew overhead.
(complex – subordinating conjunction: if, although, as, before, because, when, after, since, until, so that, while etc.)

When the hawk flew overhead, the spotted green frog jumped into the pond.
(subordinate/dependent clause start)

The frog, which had been lurking underwater, jumped on the lily pad.
(embedded clause)

Use a past participle - 'ed' start:
Glazed with barbecue sauce, the rack of ribs lay nestled next to a pile of sweet coleslaw.

Use a present participle - 'ing' start:
Whistling to himself, he walked down the road.

Use a tricolon (tripartite list):

'I stand here today humbled by the task before us, grateful for the trust you have bestowed, mindful of the sacrifices borne by our ancestors.'

Snap! Crackle! Pop! (Rice Krispies slogan)

Use a conditional sentence:

When people smoke cigarettes, their health suffers.

If I had cleaned the house, I could have gone to the cinema.

Use paired adjectives to describe a noun:

Take a look at this bright red spider.

Luckily, it isn't a wild, dangerous one.

Use anadiplosis (yoked sentence):

Building the new motorway would be disastrous, disastrous because many houses would need to be destroyed.

'Fear leads to anger. Anger leads to hate. Hate leads to suffering.'
Yoda, *Star Wars*.

Use different sentence types:
The wind is blowing. (declarative)

Put your pen down. (imperative)

Who do you trust most in the world? (interrogative)

Pollution is killing us! (exclamation)

Use discourse markers to begin paragraphs and start/link some sentences:
First of all, To begin with, Firstly,

Therefore, Consequently, Hence, As a result,

Furthermore, In addition, Additionally, Moreover,

Meanwhile, Later that day, Seconds later, Subsequently, That afternoon,

On the whole, Interestingly, Basically, In short, Broadly speaking,

Alternatively, Conversely, Similarly, On the other hand, Despite this, Likewise, However,

To conclude, Finally, In conclusion, Eventually, In the end,

PUNCTUATION PIT STOP

Full Stop

Full stops are used to:
1) mark the end of a sentence.
Carefully, he kicked the ball into the goal.
2) show when a word has been abbreviated.
Saint Peter's Road is on the High Street.
→ St. Peter's Road is on the High Street.

COMMAS

Commas are used to separate:
1) items in a list .
Bert, Ernie and Elmo are my three pet rats.
2) dependent clauses and phrases.
While I was in the bath, the cat scratched at the door. That meant, because I was on my own in the house, I had to get out to let him in. Thankfully, I had a towel handy!

Quotation Marks

Quotation marks show exact words that are spoken or written by someone.

'Don't be late!' shouted Mrs Smith.

'I will be,' Molly said, and added, 'so don't expect me before 11.'

Question Mark

Question marks are used at the end of direct questions instead of a full stop.
What is your favourite food?
How do you feel today?
An indirect question ends with a full stop rather than a question mark:
I'd like to know what you've been doing all this time. I wonder what happened.

Exclamation Mark

Exclamation marks express strong emotions: forcefulness, commands, anger, excitement, surprise etc.
Don't buy that car! Stop telling me what to do! I'm free! You're late! She actually won!
They're also used for most interjections:
'Hi! What's new?' 'Ouch! That hurt.'
'Oh! When are you going?'

Semi-colon

Semi-colons are used to separate two sentences that are closely related:
It was winter; the snow was falling heavily.
They can also be used to separate items in a list made of longer phrases. I have been to Newcastle, Carlisle, and York in the North; Bristol, Exeter, and Portsmouth in the South; and Cromer, Norwich, and Lincoln in the East.

Colon

Colons are used to:
1) begin a list.
I have three pet rats: Bert, Ernie and Elmo.
2) indicate that what follows it is an explanation or elaboration of what precedes it.
Unfortunately, the weather forecast was wrong: it rained all day!

Apostrophe

An apostrophe is used to show:
1) omission - where a letter or letters has been missed out.
does not → doesn't   I am →I'm
2) possession – when some thing/one owns something. Thankfully, they played Susan's game. Interestingly, David's house has no garden, but Susan's house does.

Dash —

Dashes are used for parenthesis: a word or phrase inserted as an explanation or afterthought into a passage which is grammatically complete without it. E.g.
Last year, they roasted the winning brisket — the size of a pillow — in a mighty clay oven. Paul felt hungry – more hungry than he'd ever been.

Brackets

Brackets are used in pairs for parenthesis: a word or phrase inserted as an explanation or afterthought into a passage which is grammatically complete without it. E.g.
Andrew Jacklin (last year's losing finalist) is expected to win this heat.
Tigers are carnivores (meat eaters)!

Ellipsis

Ellipsis is used to:
1) show a pause or hesitation in someone's speech or thought.
I don't know … I'm not sure.
2) build tension or show that something is unfinished.
Looking up, Paul couldn't believe what he saw …

Writing Forms

Writing the text for a leaflet

Stay Safe and Sound Online
(clear/apt/original title)

Manage your online reputation
(subtitles)

Anything that you upload, email or message could stay online forever. Therefore, before you post anything online, consider whether or not you would want your parents, teacher or a future employer seeing it. If the answer is no, don't post it! Your privacy is key here.

Privacy Matters
Make sure you set high privacy settings on networks. Regularly you should change passwords and never share or put online any of your personal details like a phone number, address or your school details. Make sure your safety and privacy settings are activated on your mobile devices too, so you aren't sharing private information. Be aware that using public WiFi might not filter inappropriate content, so look for friendly WiFi symbols when you're out and about.

(effectively/fluently sequenced paragraphs)

....

Remember:
- make sure you know how to block abusive comments and report worrying content;
- don't arrange to meet people in real life that you've only talked to online;

(bullet points)

Text for a Speech
'Address to Nation on the Challenger' by Ronald Regan (28th January, 1986)

Ladies and Gentlemen, I'd planned to speak to you tonight to report on the state of the Union, but the events of earlier today have led me to change those plans. Today is a day for mourning and remembering. Nancy and I are pained to the core by the tragedy of the shuttle Challenger. We know we share this pain with all of the people of our country. This is truly a national loss.

…

(a clear address to an audience)

For the families of the seven, we cannot bear, as you do, the full impact of this tragedy. But we feel the loss, and we're thinking about you so very much. Your loved ones were daring and brave, and they had that special grace, that special spirit that says, 'Give me a challenge and I'll meet it with joy.' They had a hunger to explore the universe and discover its truths. They wished to serve, and they did. They served all of us.

…

(rhetorical indicators that an audience is being addressed throughout)

The crew of the space shuttle Challenger honoured us by the manner in which they lived their lives. We will never forget them, nor the last time we saw them, this morning, as they prepared for the journey and waved goodbye and 'slipped the surly bonds of earth' to 'touch the face of God.'

Thank you.

(a clear sign off e.g. 'Thank you for listening')

Article

Andy Murray's Appliance of Science
(clear/apt/original title)

By Jim White
(by-line)

If the Caledonian superman wins Wimbledon this year, it will be thanks to pieces of sushi a day, a magic potion and a battalion of experts.

(strapline)

If you want to know what it is about Andy Murray that makes him stand out from the rest of us – apart from that fizzing backhand return and the huge-mouthed celebratory yodel – it is summed up in one word: science!

Sample Check
(sub-headings)

Today, before he even steps out on to the Centre Court for his Wimbledon semi-final against the huge-hitting Pole Jerzy Janowicz, Murray will have been subject to several of these. He does it every time he pops to the lavatory. The osmolarity check is conducted by one of his staff, its purpose to gauge the percentage of water and minerals in his urine, to show whether his body is correctly hydrated. The fact is, if Murray wins today, it will partly be thanks to the bloke who inspects his wee.

(introductory (overview) paragraph)
(fluently sequenced paragraphs)

Daily Diet
At 7.30 this morning, while many others arriving at Wimbledon's press restaurant will have begun their day assaulting a spluttering Himalaya of fried starch, Murray will have eaten yogurt, fruit and a bagel smeared in peanut butter …

Writing in the Essay Form

(clear title)

Zoos Should be Banned

(effective introduction)

In America, approximately 175 million people visit a zoo each year. That's half of America's population. Clearly this suggests that zoos remain popular places for people to visit for entertainment and to learn about wild animals. However, although some people are of the opinion that zoos can provide a source of educational entertainment and a sanctuary for endangered animals, I believe that the cruelty the animals suffer outweighs this benefit, and that they should be shut down!

(effectively/fluently linked paragraphs to sequence a range of ideas)

On the surface, zoos are a huge tourist attraction because they allow families to spend a day out in the sun, looking at animals, and eating overpriced junk food. But what most people don't know is that zoos are far more sinister than selling small bottles of water for £5.00. Statistics show that in all zoos, fifteen percent of animals die every year due to living in captivity. Obviously then, zoos must be an unsuitable environment for wild animals and should, therefore, be abolished. How can zoos justify their existence by claiming animals in captivity provide people with the experience of observing wildlife they wouldn't otherwise experience, when it comes at a cost to their life?

…

(a range of ideas (no room to reproduce the other two paragraphs here))

In conclusion, a zoos only purpose is to make as much money as possible by allowing thousands of people per day to gawk at animals and spend far too much money on souvenirs and junk food. Zoos do not protect or help to repopulate animals, nor do they educate people on the specifics of these animals, and therefore should be abolished.

(convincing conclusion)

Writing a formal letter

Writing Forms

writer's address → 35 Hibiscus Crescent
Andover
Hants
SP10 3WE

221B Bakers Street
London
NW1 6XE
← reader's address

date → 20th February, 2020

Dear Sir or Madam

Formal Salutation: Sir/Madam/Mr Roderick/Mrs Roderick

I am writing because you chair a committee in charge of the compulsory wearing of school uniforms. I am a student at Brinsley High School, a friendly and successful school where uniforms are not worn.

Of course, ... wearing uniforms that students won't spend all morning choosing what to wear or beg parents for clothes that I will impress. ... there is another side to this case: uniforms breed uniformity. We are a culturally diverse nation and ... all dress the same, this encourages us to be the same. At Brinsley High, we are encouraged to express ... individuality, yet this seems to be in contradiction of the message enforced uniform sends to us.

fluently sequenced paragraphs

fluently sequenced paragraphs

Furthermore, …

Yours faithfully
Boris Johnson

formal sign off: Yours faithfully (Sir/Madam = Faithfully) (Mr/Mrs = Sincerely)

Description of Place

spatial discourse markers

adjectives

Green limbs tangled above the decaying shells of long-abandoned vehicles, forming a canopy that barely permitted the harsh rays of the sun to burn through. The stealthy fingers of squat oak trees reached out tenaciously towards them. The vehicles themselves were coated in a thick layer of rust ... colour of burnished copper – and were battered and bruised through years of exposure to the elements.

Metaphor, simile, personification

Like a queue of taxi cabs, the vehicles waited patiently ... forgotten depths of the forest. Specks of light from the midday sun, which had successfully fought their way through the overhead canopy, lit up their broken bodies. Their trunks gaped open woefully and their shattered eye sockets stared blindly forward.

sensory description

sensory description

The aroma of rust and decay occupied the clearing: it was choking, corrosive. No fresh breeze could infiltrate the thick shrubbery to provide relief. The cars lay there, suffocating on their own putrid stench. It was overpowering. Meanwhile, the squawks of blackbirds echoed like sirens around the clearing. The chilling sound was relentless. It echoed through the car's hollow bodies, fee ... its way through the cracks in windows and doors, stroking the upholstery of the rotting seat as it passed.

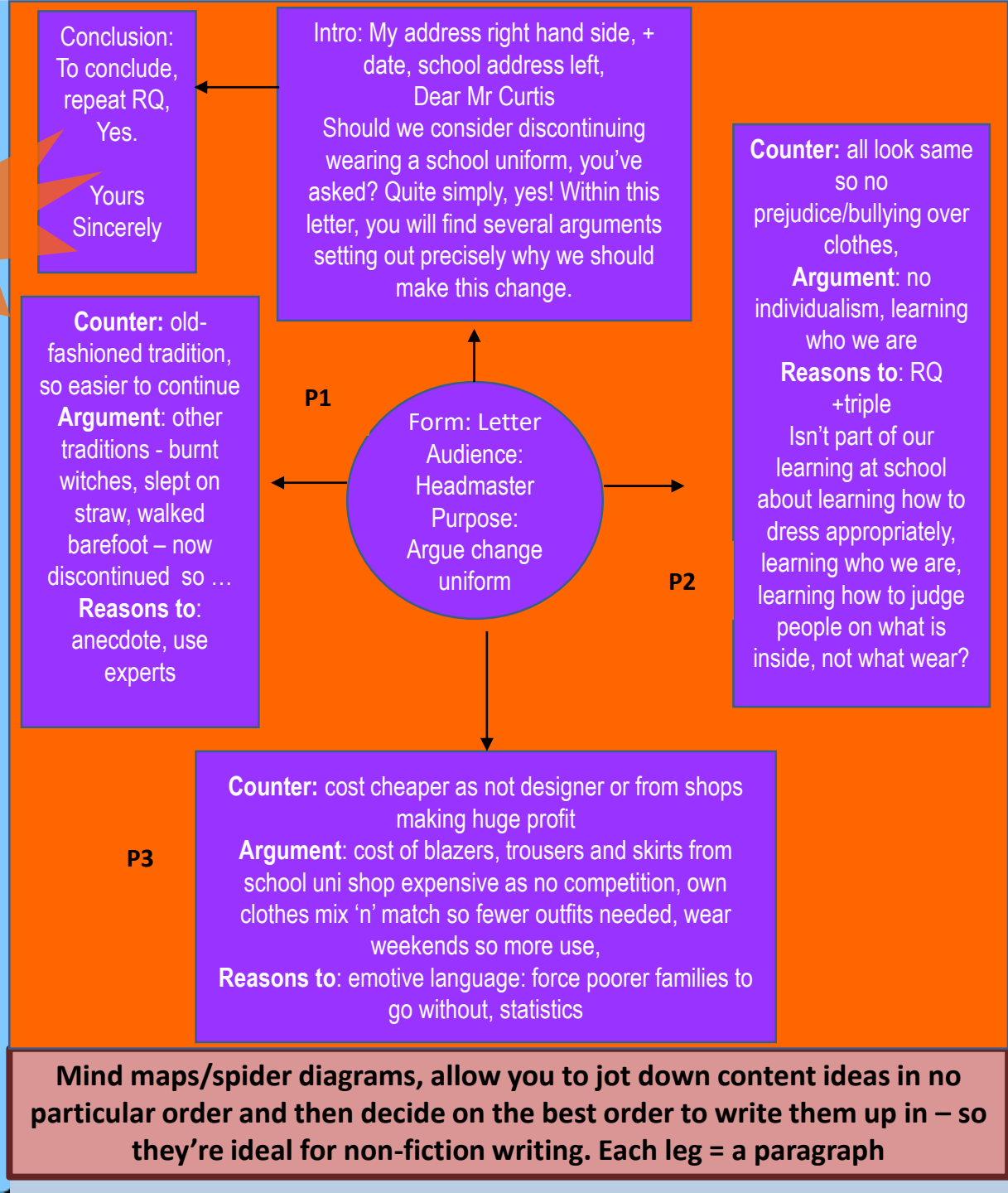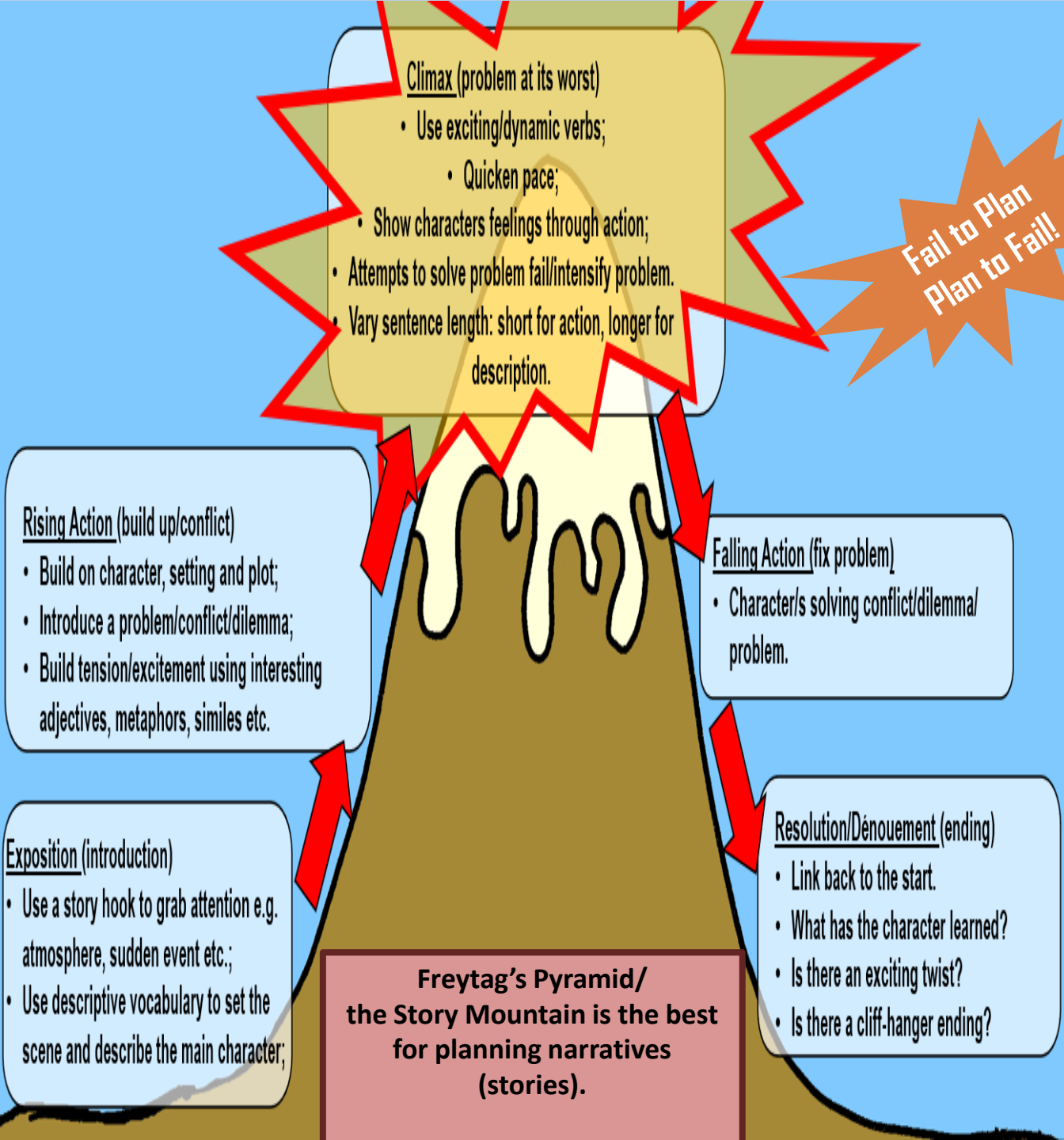sensory description

spatial discourse markers

Spread over the floor of the clearing, a thick blanket of autumn leaves hid the earth beneath. They had turned a shade of burnt red and had bleached edges that resembled torn parchment. They were brittle and cracked f ... the heat in the clearing. Amongst them, all manner of insects scuttled- manoeuvring themselves between moments of shade, before the unforgiving rays of sun could scorch their exposed bodies.

adjectives

Dystopian Narrative: *The Machine Stops* by E.M. Forster

Above her, beneath her, and around her, the Machine hummed eternally; she did not notice the noise, for she had been born with it in her ears. The earth, carrying her, hummed as it sped through silence, turning her now to the invisible sun, now to the invisible stars. She awoke and made the room light.

"Kuno!"

"I will not talk to you," he answered, "until you visit me."

"Have you been on the surface of the earth since we spoke last?"

His image faded.

Again she consulted the book. She became very nervous and lay back in her chair palpitating. She directed the chair to the wall, and pressed an unfamiliar button. The wall swung apart slowly. Through the opening she saw a tunnel that curved slightly, so that its goal was not visible. Should she go to see her son, this would be the beginning of the journey.

Of course she knew all about the communication-system. There was nothing mysterious in it. She would summon a car and it would fly with her down the tunnel until it reached the lift that communicated with the air-ship station: the system had been in use for many, many years, long before the universal establishment of the Machine. Those funny old days, when men went for change of air instead of changing the air in their rooms! And yet — she was frightened of the tunnel: she had not seen it since her last child was born.

Journey Description

Sitting in my seat — aisle, two rows from the front — I look out. Illuminating a town engulfed in darkness, lights flash past me: shop lights, street lights, car lights, and as the clouds part just enough for the moon to penetrate through the smog, moonlight!

Inside it's silent. No one speaks. The bus windows shut, lulled by the rocking motion, side-to-side, back-and-forth, up-and-down, my eyes feel heavy. Outside, I'm mesmerised by the noise I can only see, only imagine: mouths asking, replying, laughing, traffic screeching, angry drivers honking, shop doors opening and closing.

Once more the bus door opens and, as if I've lifted my head out from underwater, I can hear the street bustle, smell the takeaways, taste the diesel fumes.

Left side - Story Mountain (Freytag's Pyramid):

Climax (problem at its worst)
- Use exciting/dynamic verbs;
- Quicken pace;
- Show characters feelings through action;
- Attempts to solve problem fail/intensify problem.
- Vary sentence length: short for action, longer for description.

Rising Action (build up/conflict)
- Build on character, setting and plot;
- Introduce a problem/conflict/dilemma;
- Build tension/excitement using interesting adjectives, metaphors, similes etc.

Falling Action (fix problem)
- Character/s solving conflict/dilemma/ problem.

Exposition (introduction)
- Use a story hook to grab attention e.g. atmosphere, sudden event etc.;
- Use descriptive vocabulary to set the scene and describe the main character;

Resolution/Dénouement (ending)
- Link back to the start.
- What has the character learned?
- Is there an exciting twist?
- Is there a cliff-hanger ending?

Freytag's Pyramid/ the Story Mountain is the best for planning narratives (stories).

Fail to Plan
Plan to Fail!

Right side - Mind map (Letter):

Conclusion: To conclude, repeat RQ, Yes.

Yours Sincerely

Intro: My address right hand side, + date, school address left,
Dear Mr Curtis
Should we consider discontinuing wearing a school uniform, you've asked? Quite simply, yes! Within this letter, you will find several arguments setting out precisely why we should make this change.

Form: Letter
Audience: Headmaster
Purpose: Argue change uniform

P1

Counter: old-fashioned tradition, so easier to continue
Argument: other traditions - burnt witches, slept on straw, walked barefoot – now discontinued so …
Reasons to: anecdote, use experts

P2

Counter: all look same so no prejudice/bullying over clothes,
Argument: no individualism, learning who we are
Reasons to: RQ +triple
Isn't part of our learning at school about learning how to dress appropriately, learning who we are, learning how to judge people on what is inside, not what wear?

P3

Counter: cost cheaper as not designer or from shops making huge profit
Argument: cost of blazers, trousers and skirts from school uni shop expensive as no competition, own clothes mix 'n' match so fewer outfits needed, wear weekends so more use,
Reasons to: emotive language: force poorer families to go without, statistics

Mind maps/spider diagrams, allow you to jot down content ideas in no particular order and then decide on the best order to write them up in – so they're ideal for non-fiction writing. Each leg = a paragraph

Personify train - a victim moving along railway line, past houses, towards destination - metaphor: caterpillar train sways and pitches precariously along the track to its daily destination. Snatching bites, the sea salt nips at its metal skin as it passes, gnawing at it, killing it. Rattles. Will it survive?

houses , like soldiers standing to attention - defending their inhabitants. Diff pastel colours of a seaside town: prawn pink, salmon peach, oyster grey, seaweed green …

canopy of sky above threatening Adjectives for mood: grey sky, stuffed clouds full of cold, sharp rain, Verb: beating down, attacking!

waves engulfing and devouring the sea side town - noisy and disruptive, onomatopoeia: Crash! whip, smash personify so violent/ threatening movement.

zoom in - one carriage window. Windows hit by spray that's 'like a tame cat turned savage'. Passenger pitched side-to-side; bubbling sickness, rising bile from stomach!

Plan describing pictures by boxing/framing parts of the image to help you to focus <u>description</u> on specific areas, zooming in on minute detail, and out again to another area. Each boxed area = a paragraph.

Fail to Plan Plan to Fail!

The Grid Plan is good for making sure you include lots of different methods, or to compare two/more things side-by-side. Each row/column = a paragraph.

Paragraph content/ topic	Language method/vocab	Sent structures	Punc
1: waves engulfing and devouring the sea side town - noisy and disruptive, movement	onomatopoeia crash, whip, smash personify so violent/threatening	'ing' start verbs (pres part)	! ;
2: train victim moving across railway line past houses towards destination	personify - victim, alliteration, metaphor: A caterpillar, the train sways and pitches precariously along the track to its daily destination. Snatching bites, the sea salt nips at its metal skin as it passes, eating away at it, killing it. Rattles. Will it survive?	Chain/ tricolon Question	? - -
3: zoom in on one carriage window, motion sick	Windows hit by spray that 'like a tamed ca' has 'turned savage' today. Passenger pitched side-to-side; bubbling sickness rising bile from stomach!	Anadiplosis (yoked)	' ' ; !
4: houses	Like soldiers standing to attention they are defending their inhabitants. Diff pastel colours of a seaside town: prawn pink, salmon peach, oyster grey, seaweed green, cracking paintwork	Fronted spatial adverbials	( ) :
5: canopy of sky above threatening	Adjectives for mood: grey sky, stuffed clouds full of cold, sharp rain, Verb: beating down, attacking,	Two then three word sentences	… ;

Intro: Here you will find everything you need to know about buying a goldfish. Follow this advice to …

First of all, research the fishes needs and best fish breeds …

Next, decide where to put … bedroom could be best habitat for your fish because … However, it might be better to …

After this, it's back to the research. Make a list of … Don't …. Do …

Linear flow and vertical charts are useful for planning writing that has to follow a step-by-step process. Each section/shape = a paragraph.

Defining poetry is tricky because a simple definition can't do it justice. It's like trying to define a tree or a sunrise. To truly understand poetry, you must experience it: you must read it – deeply, widely, carefully, and repeatedly, and you must write it as well.

Putting words
On paper to
Express in part,
Thoughts from me
Right to
Your heart

https://learnodo-newtonic.com/famous-english-poets

Terminology	Definition
Rhyme	Two or more words that have the same or similar ending sounds
Rhyme scheme	A way of describing the pattern of line end rhymes in a poem.
Rhyming couplet	A pair of lines with the same rhythm and end rhyme.
Internal rhyme	Words within a single line of poetry rhyme or in the middle of two adjacent lines of poetry.
Rhythm	The repeated pattern of stressed and unstressed syllables in a line of poetry e.g. de – DUM – de – DUM – de – DUM
Speaker	The narrator of the poem – not necessarily the poet.
Stanza	A verse or paragraph of poetry.
Sonnet	A 14 line poem, with each line having 10 syllables, written as a single stanza.
Volta	This literally means 'turn' and involves a change in mood or tone.

Terminology	Definition
Autobiography	The subject of the poem/book is the writer's own life.
Biography	The subject of the poem/book is the life of someone other than the writer.
Caesura	A pause within a line of verse.
Enjambment	An idea or phrase that continues from the end of one line to the next with no pause or punctuation between.
Fiction	Literature that describes imaginary events or people.
Non-fiction	Prose writing that is informative or factual (not made-up).
Prose	The ordinary way of writing – without rhyme or rhythm
Juxtaposition	Placing two ideas/characters/places next to each other so the reader can compare them.

How to write a quotation

You will often need to use quotations in English. A quotation is a group of words taken from a piece of writing and reproduced in your work to support your ideas.

1. You must show that these are someone else's words and not your own by enclosing them in quotation marks – 'All animals are equal, but some animals are more equal than others.'
2. You must quote accurately, don't swap words or guess what it says, use the same spelling and punctuation.
3. Keep your quotations short – a few words will usually do and you rarely need more than a sentence.
4. If you need to shorten your quotation you can do this by using square brackets and an ellipsis - 'All animals are equal, but some […] are more equal than others.'

Year 7 Poetry – Term 5 and 6

SOME USEFUL WEBSITES TO HELP YOU WITH POETRY:
poetryarchive.org
Poetryfoundation.org
Poetrybyheart.org.uk
Poetry4kids.com
Rhyme Zone's Rhyming Dictionary

YOU CAN ALSO GOOGLE 'The Nation's Favourite Poems'

BBC BOOKS
The
NATION'S
FAVOURITE
POEMS
POEMS

Timeline of British Literary History

Beowulf — Old English (450-1066)
Middle English (1066-1500)
Renaissance (1500-1660)
Neoclassical (1600-1785)
FRANKENSTEIN — Romantic (1785-1832)
OLIVER TWIST — Victorian (1832-1901)
Peter Pan — Edwardian (1901-1914)
Georgian (1910-1936)
MRS DALLOWAY VIRGINIA WOOLF — Modern (1914-1945)
CATCH-22 JOSEPH HELLER — Postmodern (1945-present)

ThoughtCo.

Rhyming Verse

A Rhyme Scheme shows the pattern of rhymes at the end of lines. Every sound is labelled with a letter, starting with 'a'.

Silver

Slowly, silently, now the **moon**	A
Walks the night in her silver **shoon**;	A
This way, and that, she peers, and **sees**	B
Silver fruit upon silver **trees**;	B
One by one the casements **catch**	C
Her beams among the silvery **thatch**;	C

Walter de la Mare

What is a simple definition of poetry?

Poetry is a type of literature, or artistic writing, that attempts to stir a reader's imagination or emotions. The **poet** does this by carefully choosing and arranging language for its **meaning**, sound, and rhythm. Some **poems**, such as nursery rhymes, are **simple** and humorous.

Poetic technique	Definition	Example
Alliteration	When a sentence or phrase has many words or syllables that start with the same <u>sound,</u> not necessarily the same letter e.g. f & ph but not t &th.	The fair breeze blew, the white foam flew, The furrow followed free;
sibilance	A type of alliteration where the repeated consonants are 'hissy' sounds – s, sh, z.	She sells sea shells by the sea shore. 'And the silken sad uncertain rustling'. Six zany zebras.
Assonance	The repetition of similar vowel sounds within a sentence.	D<u>o</u> y<u>ou</u> like bl<u>ue</u>? - using 'o', 'ou', 'ue' H<u>e</u> rec<u>ei</u>ved thr<u>ee</u> emails today. - using 'e', 'ei', 'ee' and 'e'
Onomatopoeia	A word that describes and mimics a sound.	Pop, whizz, fizz, crackle, slurp, pow, whoosh, crash.
Repetition	When words or phrases are repeated.	Let it snow, let it snow, let it snow. "Oh, woeful, oh woeful, woeful, woeful day!"
Rhetorical question	A question asked to make a point and where no answer is expected.	Are you kidding me?
Simile	Comparing one thing to another using the words '<u>as</u>' or '<u>like</u>' to make a description more vivid.	As brave <u>as</u> a lion; As light <u>as</u> a feather; His heart felt <u>like</u> breaking after they broke up.
Metaphor	A word or phrase used to describe one thing as if it <u>is</u> another thing to aid understanding and description.	My mouth <u>is on fire </u>(after eating chilli) After they broke up, his heart <u>was broken.</u>
Extended metaphor	A metaphor introduced and then further developed throughout all or part of a literary work, especially a poem.	Robert Frost uses two roads as an extended metaphor in "The Road Not Taken."
Personification	When human thoughts, feelings or actions are attributed to something non-human.	My shadow <u>followed</u> me. 'The little dog <u>laughed </u>to see such fun/And the dish <u>ran away with </u>the spoon'
Imagery	Language and description that appeals to our five senses: smell, sight, taste, touch and hearing.	I could hear the popping and crackling as the bacon dropped into the frying pan, and the salty, greasy smell wafted toward me. Glittering white, the blanket of snow covered everything in sight.
Hyperbole	An exaggerated statement not meant to be taken literally, but used for emphasis or humour.	I have told you a <u>million</u> times.

Command Words in Maths questions

These words are the clue to what the examiner expects you to do. Remember to always show your workings. You can get marks for it, even if you get the final answer wrong.

TECHNICAL VOCABULARY

Factor	A number which divides exactly into another.
Multiple	A multiple is a number made by multiplying two other numbers.
Prime	A prime number has exactly two factors.
Integer	The positive and negative whole numbers.
Estimate	Usually a calculation where the numbers have been rounded before the operation is performed.
Index (indices plural)	An index is a power or exponent.
Square root	Is the number that was multiplied by itself to get the square number.
Square number	Is a number that has been multiplied by itself.
Cube number	Is a number that is multiplied by itself then again by the original number.
Cube root	Is the number that was multiplied by itself and itself again to get the cube number
Numerator	The number on the top of the fraction. Shows how many part there are.
Denominator	The number on the bottom of the fraction. Shows how many equal parts the item is divided into.
Common denominator	When two or more fractions have the same denominator.
Equivalent	Having the same value
Inverse	The opposite mathematical operation.
Reciprocal	The number produced by dividing 1 by a given number
Odd	An integer that cannot be divided exactly by two.
Even	An integer that can be divided exactly by two.

Divisibility Test

2	Even
3	Digits sum to a multiple of 3
4	Last 2 digits are divisible by 4
5	Ends in 5 or 0
6	Divisible by 2 and 3
8	Can be halved 3 times
9	Digits sum to a multiple of 9

Millions 1000000	Hundreds of thousands 100000	Tens of thousands 10000	Thousands 1000	Hundreds 100	Tens 10	Units 1	Tenths $\frac{1}{10}$	Hundredths $\frac{1}{100}$	Thousandths $\frac{1}{1000}$
M	HTh	TTh	Th	H	T	U			
5	2	9	7	8	2	1 •	6	0	3

Five million, two hundred and ninety seven thousand, eight hundred and twenty one point six zero three.

12 X 12 Multiplication Table

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Squares

$1^2 = 1 \times 1 = 1$ $5^2 = 5 \times 5 = 25$ $9^2 = 9 \times 9 = 81$
$2^2 = 2 \times 2 = 4$ $6^2 = 6 \times 6 = 36$ $10^2 = 10 \times 10 = 100$
$3^2 = 3 \times 3 = 9$ $7^2 = 7 \times 7 = 49$ $11^2 = 11 \times 11 = 121$
$4^2 = 4 \times 4 = 16$ $8^2 = 8 \times 8 = 64$ $12^2 = 12 \times 12 = 144$

Square Roots

$\sqrt{1} = \pm1$ $\sqrt{25} = \pm5$ $\sqrt{81} = \pm9$
$\sqrt{4} = \pm2$ $\sqrt{36} = \pm6$ $\sqrt{100} = \pm10$
$\sqrt{9} = \pm3$ $\sqrt{49} = \pm7$ $\sqrt{121} = \pm11$
$\sqrt{16} = \pm4$ $\sqrt{64} = \pm8$ $\sqrt{144} = \pm12$

Websites to help you with understanding and revision

SparxMaths.com

CorbettMaths.com

Trafalgar Maths Site

Maths Genie

Maths Bot

Types of angles:

Right angle	Straight Line	Acute Angle	Obtuse Angle	Reflex Angle
L shaped and is shown as a box	Straight Line	Smaller than right angle	Bigger than a right angle but smaller than a straight line	Bigger than a straight line, the angle is on the outside

Sparx M502

Parallel and Perpendicular Lines

Parallel lines are two lines which travel in the same direction
They are always the same distance apart and will never meet

Parallel lines are marked with arrows

Perpendicular lines meet at a right angle

Sparx M239

Drawing a Perpendicular Bisector of a Line

Bisecting a line means 'cutting it in half'
You need to use a set of compasses and a ruler to bisect a line

Place the point of a compass on one end of the line and open it so that it is more past the halfway point of the line

Draw an arc above and below the line

Move the point of the compass to the other end of the line (keeping it the same size)

Draw another arc above and below the line

Join the points where the arcs cross with a ruler to form the perpendicular bisector

Sparx M232

Bisecting an angle

Bisecting a line means 'cutting it in half'
You need to use a set of compasses and a ruler to bisect a line

Place the point of a compass at the corner of the two lines and extend open

Place an arc through the both lines that are creating the angle

Keeping the compass at the same width, place the compass where the arc crosses the line (1) and draw an arc

Repeat the process from the other cross (2)

Draw a line to the point where the two arcs cross to make the angle bisector

The line between point A and B is called line AB

<ABC or AB̂C

Construct triangles using protractor and compass.

Sparx M565

Constructing triangles

Example

Construct a right angled triangle with hypotenuse 7cm and shorter side 5cm.
Measure the other two angles.

7cm
5cm

Equilateral All 3 sides are the same length	Isosceles Two sides are the same length	Scalene All the sides are different lengths	Right Angled It has a right angle

Equilateral All 3 angles are the same	Isosceles Two angles are the same	Scalene All the angles are different	Right Angled It has a 90° angle

Rectangle Opposite sides are the same length and all angles are right angles	Square All 4 sides are the same length and all angles are right angles	Parallelogram Opposite sides are same length and parallel

Trapezium Only 2 opposite sides are parallel, but different in lengths	Kite Two pairs of adjacent sides are equal in length	Rhombus All 4 sides are the same length and opposite sides are parallel

Reflection Symmetry

A shape is symmetrical if you can draw a line through it and it is the same both sides
If you fold the shape along the line, one side should fit on top of the other

1 line of symmetry	2 lines of symmetry	0 lines of symmetry
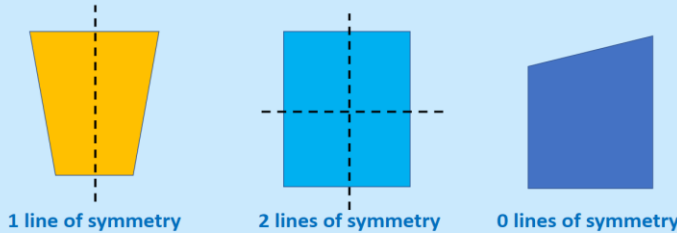
Rotational Symmetry

A shape has rotational symmetry if it fits inside itself more than once when rotated
The order of rotational symmetry is the number of times the shape fits inside itself

2	5	1
Rotational symmetry Order 2	Rotational symmetry Order 5	Rotational symmetry Order 1
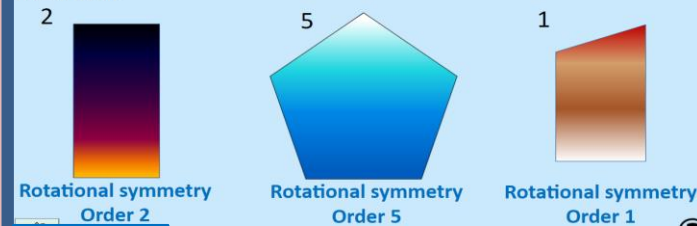
Sparx M523

Angles in a Polygon

Any polygon can be split into triangles to find the sum of the interior angles
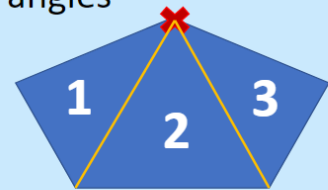
Step 1: Pick a corner

Step 2: Draw the lines to the other corners from the chosen point

Step 3: Multiple the number of triangles by 180⁰

Sum of Interior Angles = 3 x 180⁰ = 540⁰

There are two fewer triangles than sides so:

Sum of interior angles = (n – 2) x 180   n is the number of sides

Sparx M818

Sparx M163, M606

Sparx M679, M653

Exterior angles

An Interior Angle is an angle inside a shape

Exterior Angle
150°

Interior Angle
30°   180°

Interior & Exterior Angles

You can calculate the interior angle of any regular polygon by dividing the sum of the interior angles by the number of sides

Example: Calculate the size of the interior and exterior angles in a regular octagon

Sum of the interior angles = (8 – 2) x 180⁰

= 1080⁰

Interior angle = 1080⁰ ÷ number of sides

= 1080⁰ ÷ 8 = **135⁰**

Exterior angle = 180⁰ – 135 = 45⁰

Exterior angle of a regular shape can also be calculated by dividing 360 by the number of sides   360⁰ ÷ 8 = 45⁰

Straight Lines

Angles on a straight line equal 180⁰

Example: Find the missing angle

61°   63°

Subtract the know angles from 180⁰

180 – 61 – 63 = 56⁰

Around a Point

Angles around a point add up to 360⁰

Example: Find the missing angle?

21⁰

112⁰   84⁰

Subtract the know angles from 360⁰

360 – 112 – 21 – 84 = 143⁰

In a triangle, the three interior angles always add to 180°:

$A + B + C = 180°$

Vertically opposite, alternate, corresponding and co-interior angles

a)
42°   x

x = 42 because vertically opposite angles are equal

b)
38°   x

x = 38 because vertically opposite angles are equal

a)
x
57°

x = 57° because alternate angles are equal

b)
x
148°

x = 148° because alternate angles are equal

a)
x
51°

x = 51 because corresponding angles are equal

b)
145°
x

x = 145 because corresponding angles are equal

a)
50°
x

x = 130° because co-interior angles sum to 180°

b)
x
151°

x = 29° because co-interior angles sum to 180°

Mental Methods

Complements
Sparx M952

Group numbers that add to a multiple of 10 together to make numbers simpler to add or subtract:

$3 + 4 + 26 + 17$
$20 + 30 = 50$

Partitioning
Break down the number you are adding so you can do the calculation in stages:

$54 + 68 =$ $50 + 60 = 110$
$4 + 8 = 12$
$54 + 68 = 122$

Counting on
Sparx M347

Find the difference between two numbers by counting on from the smaller

$73 - 16 = 57$

+4   +50   +3
16   20   70   73
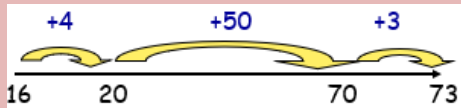
Compensation
Solve problems by adding or subtracting a near multiple of 10 then adjusting

$548 + 199 = 747$

+200   -1
548   747   748
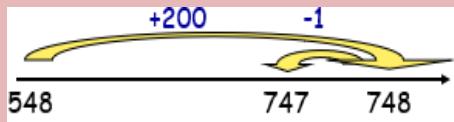
Estimation
Sparx M878

When we estimate, we round to one significant figure. It is a good strategy to work out a rough size of a calculation.

Example
Estimate 0.724 + 0.849
Round each of them to 1 s.f.
Answer: **0.7 + 0.8 = 1.5**
This is an **under-estimate** as we rounded each number down.

Example
Estimate 374 + 297
Round each of them to 1 s.f.
Answer: **400 + 300 = 700**
This is an **over-estimate** as we rounded each number up.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Negative Numbers (−)   Positive Numbers (+)
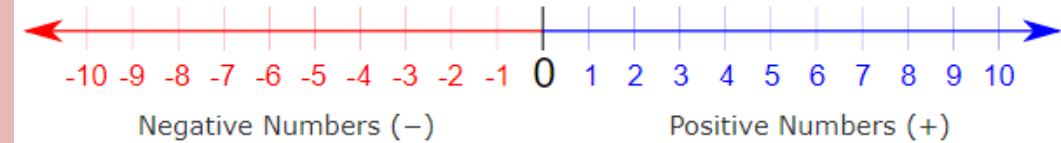
Negative Numbers
Sparx M106

$+$ $+$
$-$ $-$ } $+$

Same signs together give a positive: $3 + (+2) = 3 + 2 = 5$
Same signs together give a positive: $3 - (-2) = 3 + 2 = 5$

$+$ $-$
$-$ $+$ } $-$

Different signs together give a negative: $3 + (-2) = 3 - 2 = 1$
Different signs together give a negative: $3 - (+2) = 3 - 2 = 1$

Column Method – Addition

- Estimate your answer first.
- Remember to line up the columns by value.
  - Use the decimal points as the marker to line up the columns
  - Write decimals with the same number of decimal places – fill in with zeros as needed
- Add columns from right - "carry" tens to next column over
  - …. and remember to add onto total for that column

$543 + 379 =$

543
+379
922
1 1

Sparx M928

$5.4 + 3.79 =$

5.40
+3.79
9.19
1

Sparx M429

Careful! This changes sign of the middle operation NOT the answer

---

Column Method – Subtraction

- **Estimate** your answer first.
- Remember to line up the columns by value
  … and to write the number to be taken away on the bottom
  - Use the decimal points as the marker to line up the columns
  - Write decimals with the same number of decimal places – fill in with zeros as needed
- Subtract columns from right
  - If the bottom digit is bigger than the top, "take 10" from the next column over which has a digit > 0
  - Move "taken 10" back one column at a time to account for size!

$543 - 379$

5̶4̶3
-379
164

$9.1 - 2.76$

9̶.1̶0
-2.76
6.34

Sparx M347

$5.04 - 3.79$

5̶.0̶4
-3.79
1.25

Sparx M152

Written Multiplication - Integers

- Consider place value and add a 0 on the second line
- Include your carries

Sparx M187

Multiplying and Dividing Negatives

When multiplying or dividing two numbers, if the signs are the same the answer is positive
If the signs are different, then the answer is negative

+ x + = +	+ ÷ + = +
− x − = +	− ÷ − = +
+ x − = −	+ ÷ − = −
− x + = −	− ÷ + = −

Examples:
1) $-7 \times 5 = -35$
2) $-3 \times -7 = 21$
3) $24 \div -8 = -3$
4) $-30 \div -5 = 6$

Sparx M288

Short Division ("Bus Stop")

Sparx M354

Written Multiplication - Decimals

- Multiply both decimals by a power of 10 to change them to integers
- Divide by the same power of 10 to obtain your final answer

Sparx M803

Long Division

Dividing by a decimal

- Change the number you are dividing by into an integer by multiplying by a power of 10.
- Multiply the dividend by the same power of 10.
- There is no need to alter you answer at the end.

Example: Calculate $6.4 \div 0.08$
Step 1: Multiply both numbers by 100
Step 2: Calculate the answer

$6.4 \div 0.08$
x100   x100
$= 640 \div 8 = 80$

Sparx M263

B · Do brackets first

I · Then indices or square roots

D M · Then division and multiplication, reading from left to right

A S · Then add and subtract, reading from left to right

$3 - 5 + 2 = 0$ (not -4)
Add and subtract have the same precedence, so you read from left to right.

Sparx M521

Year 7 Maths Term 6 - Sets and Probability

Keywords

Set: collection of things
Element: each item in a set is called an element
Intersection: the overlapping part of a Venn diagram (AND ∩)
Union: two ellipses that join (OR ∪)
Mutually Exclusive: events that do not occur at the same time
Probability: likelihood of an event happening
Bias: a built-in error that makes all values wrong (unequal) by a certain amount, e.g. a weighted dice
Fair: there is zero bias and all outcomes have an equal likelihood
Random: something happens by chance and is unable to be predicted.

Identify and Represent sets

A set is a collection of things –you write sets inside curly brackets { }

The universal set has this symbol ξ–this means EVERYTHING in the Venn diagram is in this set

ξ= {the numbers between 1 and 50 inclusive}

My sets can include every number between 1 and 50 including those numbers

A= {Square numbers}
A= {1, 4, 9, 16 ,25, 36, 49}

All the numbers in set A are square number and between 1 and 50

Probability of a single event

Probability = number of times event happens / total number of possible outcomes

P(Blue) = 4 ← There are 4 blue sectors
10 ← There are 10 sectors overall

Probability notation:
P(event)

The probability of getting a blue ball is $\frac{1}{5}$

∴ The probability of NOT getting a blue ball is $\frac{4}{5}$

Interpret and create Venn diagrams

Mutually exclusive sets
The two sets have nothing in common
No overlap
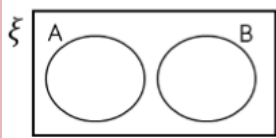
Union of sets
The two sets have some elements in common –they are placed in the intersection
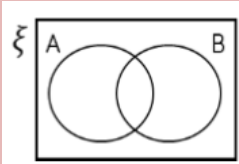
Subset
All of set B is also in Set A so the ellipse fits inside the set.
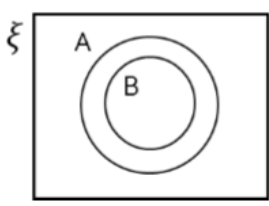
The box
Around the outside of every Venn diagram will be a box. If an element is not part of any set it is placed outside an ellipse but inside the box

A **Probability Scale** is used to describe all probabilities, or how likely they are to happen

Sparx M655

Impossible   Unlikely   Even Chance   Likely   Certain
0   1
1-in-6 Chance   4-in-5 Chance
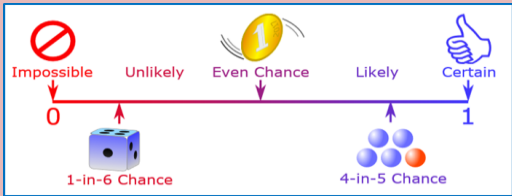
If an event is **Certain** its probability is 1
Boxing Day will follow Christmas Day in December

If an event is **Impossible** its probability is 0
You will grow to be 5m tall

An event has a probability **Evens** if the two outcomes are equally likely. Flipping a coin and getting heads. The probability of getting a head is ½ or 50%

A Sample Space is way of recording the outcomes of two events

This sample space records all the possible outcomes of a game of rock, paper scissors

	ROCK	PAPER	SCISSORS
ROCK	RR	RP	RS
PAPER	PR	PP	PS

Intersection of sets

Elements in the intersection are in set A AND set B

The notation for this is $A \cap B$
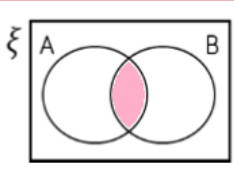
ξ= {the numbers between 1 and 15
A= {Multiples of B= {Multiples of 3}

The element in $A \cap B$ is 15

In this example there is only one number that is both a multiple of 3 and a multiple of 5 between 1 and 15
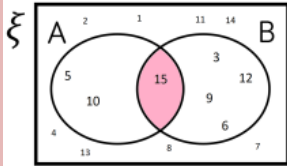
Union of sets

Elements in the union could be in set A **OR** set B

ξ= {the numbers between 1 and 15 inclusive}
A= {Multiples of 5}
B= {Multiples of 3}
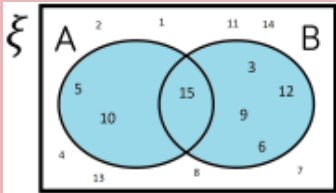
The notation for this is $A \cup B$

The elements in $A \cup B$ are 5, 10, 15, 3, 9, 6, 12

There are 7 elements that are either a multiple of 5 OR a multiple of 3 between 1 and 15
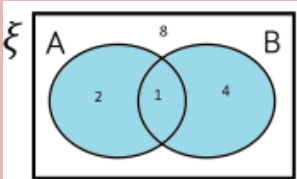
This Venn shows the number of elements in each set

Probability is always a value between 0 and 1

$$0 \leq \text{probability} \leq 1$$

Prime numbers:
integers have only 2 factors – 1 and itself. The first 25 prime numbers are:

2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97

Sparx M322

Factors are numbers that can be divided evenly into the given number,

Multiples are the results of multiplying that number by another.

Sparx M108

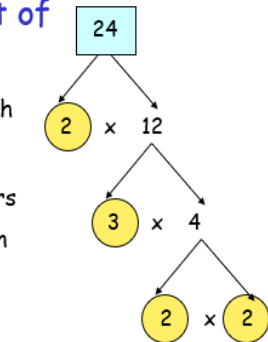### Write 24 as the product of its prime factors

24

Step 1: Find two numbers which multiply together to make the number

2 × 12

Step 2: Circle any prime factors

Step 3: Continue to break down any factors until they are prime factors.

3 × 4

Step 4: Write the original number as the product of its prime factors

2 × 2

Step 5: Can you simplify using index notation?

$24 = 2 \times 2 \times 2 \times 3$
$= 2^3 \times 3$

Square numbers

Odd   even   odd

1, 4, 9, 16, 25, 36, 49, 64 ...

Representations are useful to understand a square number n^2

Triangular numbers

Add two consecutive triangular numbers and get a square number

1, 3, 6, 10, 15, 21, 28, 36, 45...

Representations are useful – an extra counter is added to each new row

---

The **highest common factor** is the biggest number that is a factor of both numbers in question.

Example
What is the highest common factor of 24 and 30? List the factors of both numbers and circle the biggest one in both lists.

24 and 30

1, 24	1, 30
2, 12,	2, 15
3, 8	3, 10
4, 6	5, 6

1, 2, 3, 4, 6 8, 12, 24
1, 2, 3, 5, 6 10, 15, 30

HCF = 6

Example: Find the HCF of 24 and 36   Step 2: 24   36

Step 1:
24   36
2 12   2 18
2 6   2 9
2 3   3 3
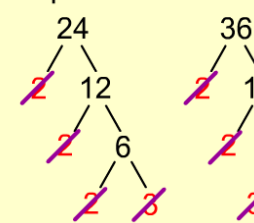
If a number is in both trees it goes in the middle

The leftovers go into their group
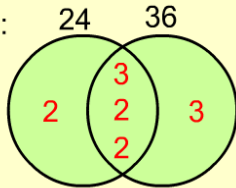
Step 3: HCF = 3 x 2 x 2 = 12

Example: Find the LCM of 16 and 60   Step 2: 16   60
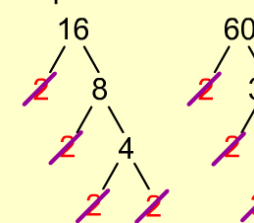
Step 1:
16   60
2 8   2 30
2 4   2 15
2 2   3 5

If a number is in both trees it goes in the middle

The leftovers go into their group

Step 3: LCM = 2 x 2 x 2 x 2 x 3 x 5

Using prime factors for predictions
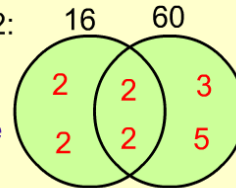
e.g. 60   is 30 x 2   is   2 x 3 x 5 x 2
       150   is 30 x 5   is   2 x 3 x 5 x 5

<u>Venn Diagrams</u> can be used to show the relationship between multiple groups of things and how they overlap.

These diagrams can be used to calculate probabilities

A   B
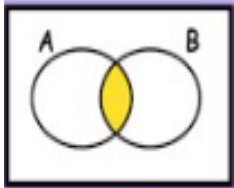
LCM of 9 and 12

| 9 | 9, 18, 27, 36 45, 54 |
| 12 | 12, 24, 36, 48, 60 |

LCM = 36   The first time the multiples match

9 18 27 36 45
12   24   36   48

Conjecture   A pattern that is noticed for many cases

Counter examples   Only one counter example is needed to disprove a conjecture

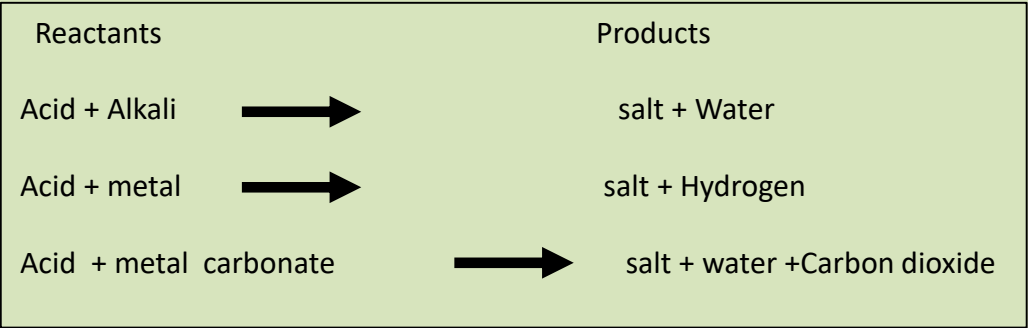# KS3 Chemistry – Acids and alkalis

Strong acid Weak Acid   Weak Alkali Strong Alkali

Acidic   Neutral   Alkaline

1 2 3 4 5 6 7 8 9 10 11 12 13 14

An acid is a substance with a pH of 6 or lower.

An alkali is a solution with a pH of 8 or higher.
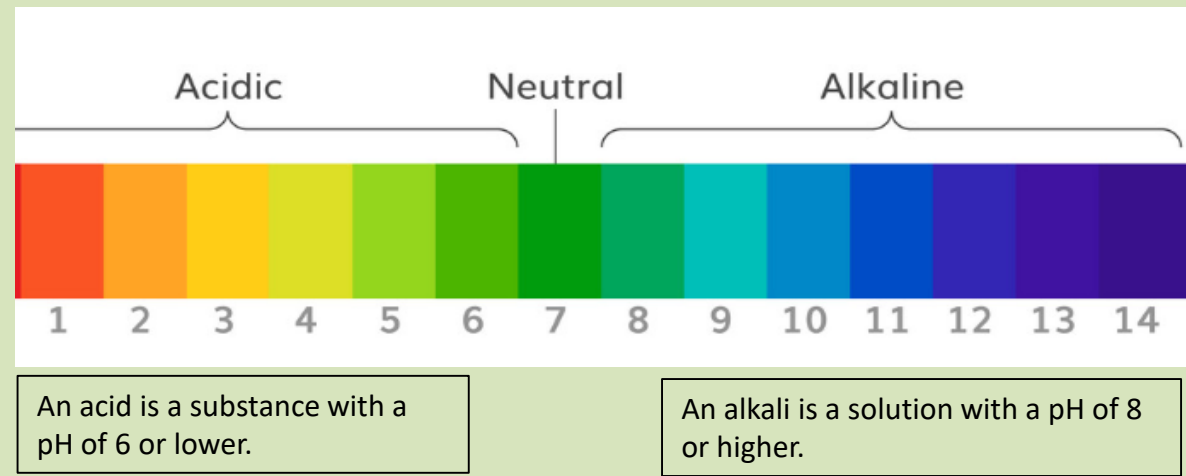
Substance	pH
Battery acid	pH1
Lemon juice	pH2
Vinegar	pH2
Orange juice	pH3
Acid rain	pH4
Black coffee	pH5

Substance	pH
Urine (wee)	pH6
Water	pH7
Eggs	pH8
Very soapy water	pH12
bleach	pH13
Drain cleaner	pH14

Reactants → **Products**

Acid + Alkali → salt + Water

Acid + metal → salt + Hydrogen

Acid + metal carbonate → salt + water + Carbon dioxide

Neutralisation is when an acid is added to an alkali to return its pH to neutral OR adding alkali added to acid to return the pH to neutral.

Keyword	Definition
Acid	An acid has a pH value of less than 7
Alkali	An alkali has a pH value of more than 7 and dissolves in water
Base	A substance that neutralises an acid but does not dissolve in water
Citric acid	Acid found in lemons
Concentrated	A substance is concentrated if it has a large number of particles in a litre of water
Corrosive	A substance that causes damage
Dilute	A substance with a small number of particles in a litre of water
Indicator	A substance that changes colour in acid or alkali
Litmus paper	There is red and blue litmus paper, they are indicators
Neutral	A solution with pH of 7 e.g. water
Neutralisation	Adding an alkali to an acid to make a neutral solution
pH scale	The pH scale shows whether a substance is an acid or alkali
Sodium hydroxide	An alkali that is often used in experiments, its formula is NaOH
Sulphuric acid	An acid that is often used in experiments, its formula is H_2SO_4
Universal Indicator	An indicator that changes colour to show the pH

KS3 Chemistry – Acids and alkalis

Blue litmus paper turns red when it is put into an acid.
If the substance was an alkali or neutral, the blue litmus paper would stay blue.

Red litmus paper turns blue when it is put into an alkali.
If the substance was an acid or neutral the red litmus paper would stay red.
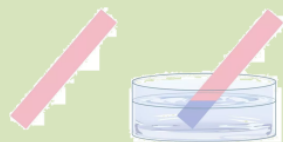
Acid / Alkali	Formula	Salt that is made
Hydrochloric acid	HCl	Chloride
Sulfuric acid	H_2SO_4	Sulfate
Nitric acid	HNO_3	Nitrate
Sodium hydroxide	NaOH	N/A

Some acids can be dangerous. Hydrochloric Acid (HCl), Sulfuric Acid (H_2SO_4) and Nitric Acid (HNO_3) are acids which we use in the Science Lab. These acids can come as dilute or more concentrated.

Uses of acids/alkalis

Some of the salts formed from neutralisation can be used as fertilisers for plants/crops to increase the growth speed

Acids and alkalis can be added to lakes and soils to neutralise them so that they are habitable. However some plants prefer to grow in acidic (such as blueberries or alkaline soils (lavender)

Corrosive hazard sign. Usually found on more concentrated acids and alkalis.

Irritant hazard sign, used for substances that are not corrosive but are irritants. Usually found on more dilute acids and alkali.

Acid   + Metal   ⟶   Metal salt + Hydrogen

POP!

When an acid reacts with a metal it will produce a metal salt (see table) and hydrogen gas- you can test this by putting a lit splint to it and you will hear a squeaky pop as the hydrogen combusts

Further reading
https://www.bbc.co.uk/bitesize/guides/zyn3b9q/revision/1

https://www.bbc.co.uk/bitesize/guides/z89jq6f/revision/1

Energy transformations
Energy transformations describe how the transforms from one form to another.

Chemical energy store → kinetic energy store + sound energy store + thermal energy store

Chemical energy store → Electrical energy store → Light energy store + thermal energy store

Energy transfers can be thought of emptying one energy store and filling another energy store

The arrow means <u>transforms into</u>

Types of energy store

Kinetic energy store
➢ Energy stored by moving objects

Sound energy store

Light energy store

Elastic potential energy store
➢ Energy stored in compressed springs or stretched elastic bands

Thermal energy store

Gravitational potential energy store
➢ Energy stored by lifting something against the force of gravity
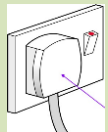
Electrical energy store

Chemical potential energy store
➢ Energy stored in chemical bonds examples include batteries, coal, gas, and food
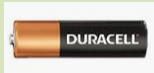
Nuclear energy store

Magnetic energy store

Energy is measured in Joules (J)
Energy is always conserved, it can not be created or destroyed only transformed from one form to another

The input energy must equal the output energy

Chemical energy store → Light energy store + thermal energy store

200J → 40J

Work done is the amount of energy transferred during an energy transfer

It can be calculated by using the following equation

Work done (J) = Force (N) x distance (m)

If a person lifts a 10 newton weight from the floor 1.5m off the ground we could calculate the work done (energy transferred) during this process

Work done = Force x distance

W = F x d

W = 10 x 1.5

W = <u>15J</u>

Always write out the equation you will use, substitute in the numbers, calculate the answer and give the unit

Mechanical energy transfer - energy transferred by moving arts of machines and when an objects motion is changed
Radiative energy transfer – by radiation such as IR radiation or light
Dissipation – energy is transferred to the surroundings

Units
Force – Newtons (N)
Energy – Joules (J)
Distance – meters (m)
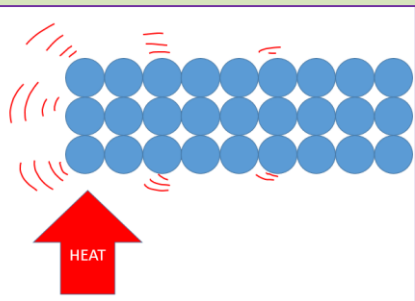
Conduction

Conduction transfers heat through a solid by increasing the kinetic energy of the particles (making them vibrate faster). This energy is then transferred to neighbouring particles causing thermal energy to transfer through the object.

Metals are very good conductors
Non-metals and gases are poor conductors. A poor conductor is called an **insulator**

HEAT

Insulation

Insulators like foam and wool often trap air which is a poor conductor. They also prevent convection currents. Insulation reduces the rate of thermal energy transfer. So insulating a hot object will make stay warmer for longer. However insulating a cold object will make it stay cold for longer too.
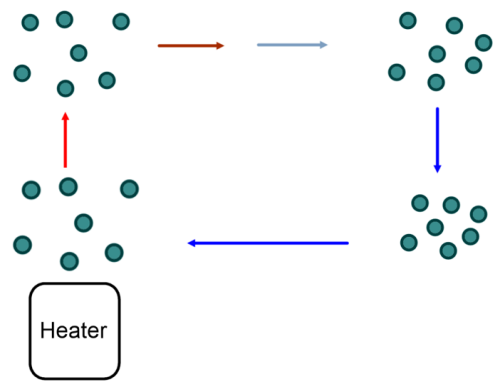
Convection

Convection transfers heat through fluids (gases and liquids)

Particles of a fluid are heated, they move faster and expand, this makes the group of particles less dense than the surrounding particles so they rise. Once they near the top of the container they will be forced across in a different direction. As the particles move away from the heater they cool, contract and become more dense again falling to the base of the container. They then repeat this cycle creating a **convection current**, which raises the temperature of the entire fluid.

Heater

Radiation

Heat radiation is known as infrared radiation (IR radiation). It is different from the other types of heat transfer as it does not require particles. It is an electromagnetic wave that can travel through a vacuum and is how energy travels through space from the sun to the earth.

Different surfaces are better/worse at absorbing or Infrared radiation.

Emitting IR radiation
The best surfaces at emitting IR radiation are matte dark surfaces – Matte Black
The worst surfaces at emitting IR radiation are light shiny surfaces – shiny silver
Absorbing IR radiation
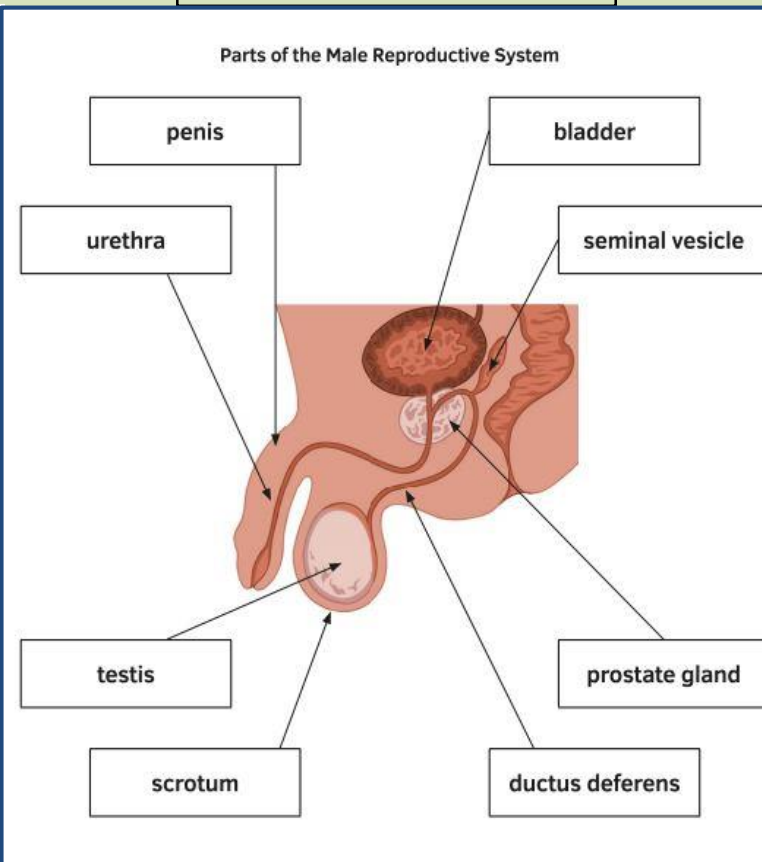The best surfaces at absorbing IR radiation are also matte dark surfaces – Matte Black
The worst surfaces at absorbing IR radiation are also are light shiny surfaces – shiny silver

Key words and meanings in relation to energy transfer topic
Emit – give out
Absorb – take in
Density – how closely packed
particles are to each other
Expand – take up more space
Contract – particles take up less space
Work done – energy transfer

KS3 Biology: Reproduction

Key word	Definition
Ovary	Organ where egg cells develop in females
Oviduct	Egg tube connecting ovary to womb.
Uterus	Organ where baby develops (also called the womb)
Cervix	Ring of muscle at bottom of the uterus
Vagina	Tube going from outside to the uterus.
Testes	Organ producing sperm in males
Scrotum	Bag of skin containing testes in males
Sperm duct	Tube that carries sperm from the testes to the urethra
Glans	Adds a special fluid to sperm to make it easier for them to swim
Fertilisation	Joining of sperm and egg
Embryo	Tiny new human life
Urethra	Tube down centre of penis carrying sperm
Hormone	Chemical messenger carried in blood
Menstruation	When lining of uterus passes out of the vagina, also called period
Ovulation	Release of an egg from an ovary
Amnion	Bag containing amniotic fluid
Umbilical cord	Cord connecting mother to unborn baby
Placenta	Organ attached to uterus wall, exchanging materials between mother and baby

Male reproductive System

Parts of the Male Reproductive System

Female Reproductive System

Parts of the Female Reproductive System

Sperm are produced in the testes, and travel through the urethra and penis during sexual intercourse. They collect useful lubricants at the seminal vesicle to become semen.
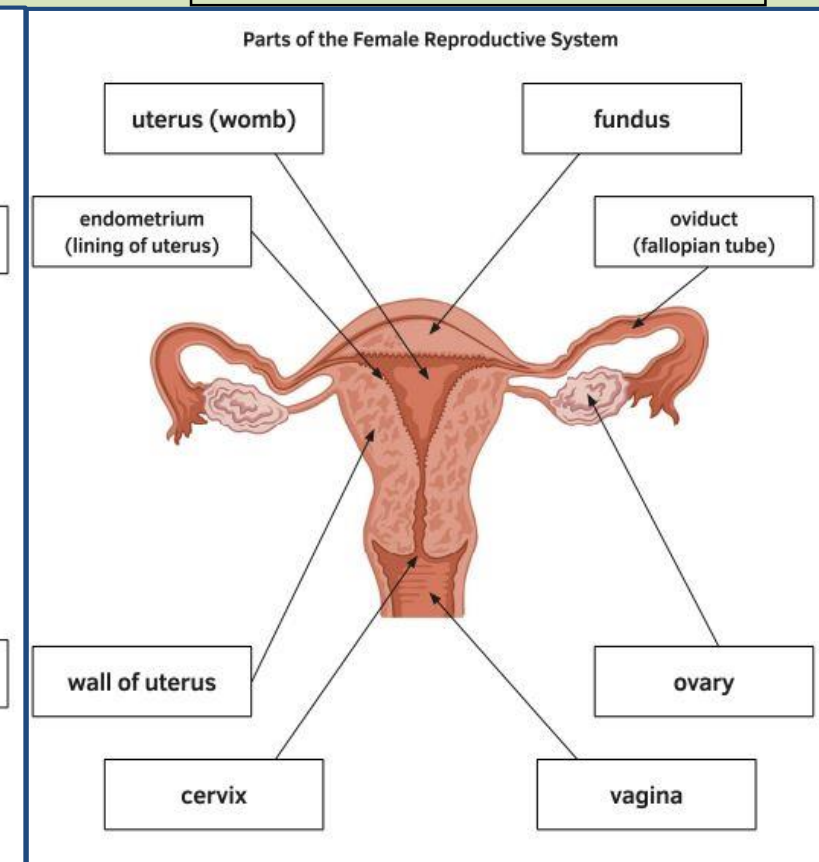
Eggs are produced in the ovary, and released once a month during ovulation. The eggs travel through the fallopian tube (or oviduct) towards the uterus (or womb).

Fertilisation of the egg

If a sperm meets an egg in the fallopian tube, fertilisation occurs. The sperm nucleus fuses with the egg nucleus to form a tiny zygote.

Gestation and Birth

The normal period of gestation in humans is 9 months. The amniotic fluid comes out and then the baby is born head first through the cervix. The umbilical cord needs to be cut.

The Menstrual Cycle

The menstrual cycle lasts about 28 days in females, and is controlled by hormones. Every 28 days the lining of the uterus is passed out of the vagina along with a little blood. Periods help prepare women for becoming pregnant.

The Impact of lifestyle on the foetus

TRANSFER OF SUBSTANCES
mother's blood
umbilical cord
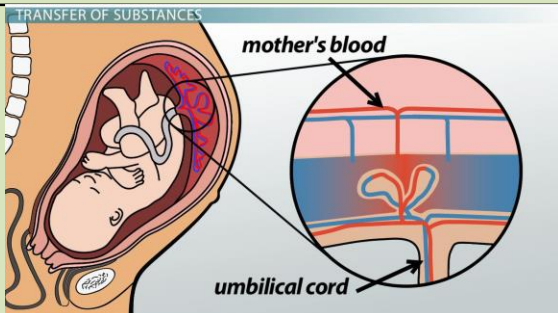
Any drugs or chemicals (e.g. alcohol or nicotine) the mother takes can get passed into the baby's blood.

Structure of a Flower

The flower is the reproductive organ of the plant. The female part is the carpel, which consists of the stigma, style, ovary and ovule.
The male part is the stamen, which consists of the anther and filament.

stigma
style
ovule
peduncle
anther
petal
filament
sepal
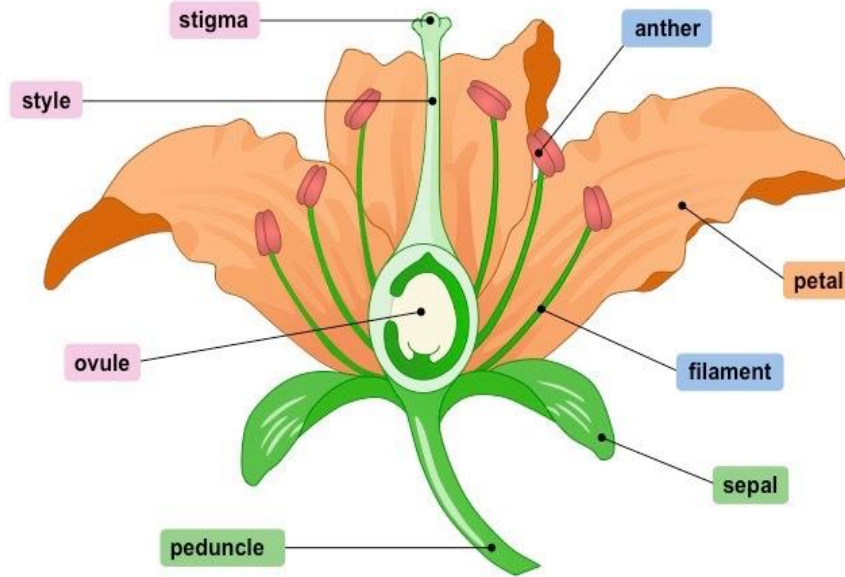
Pollen grains – containing the male DNA - are produced in the anther.
The Ovule within the ovary contains the female DNA.
When pollen reaches the ovule fertilisation has occurred.
The pollen must arrive on the stigma, and then travels down the style through a pollen tube to reach the ovule. If fertilisation occurs an embryo forms which becomes a seed.

Methods of Pollination

Pollination is the transfer of pollen grains from the anther of one flower to the stigma of another.
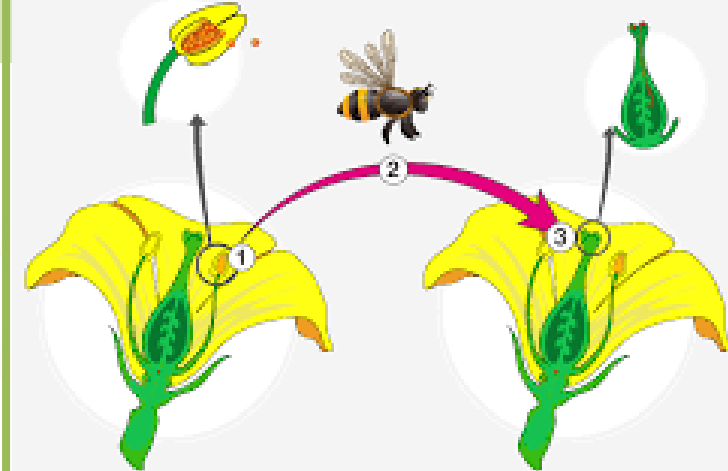
Pollination can be by wind or insect. Pollen grains have special shapes and designs depending on how they are transferred.

The importance of bees

Bees pollinate the majority of the World's crops. Their numbers are declining due to destruction of habitats, over-use of pesticides, and diseases.
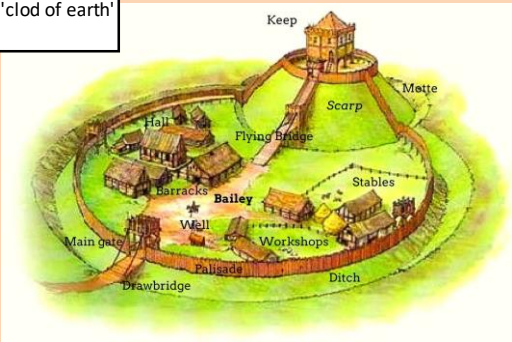
Uses of bees

All bees:
Estimated 1/3 of food is pollination dependent
Pollinate 70 types of crop
Make 6,000 tonnes of honey
Contribute £400 million to the economy
A colony:
Pollinates 4,000 m² fruit trees
Makes avg 14kg of honey
Contains 50,000 bees
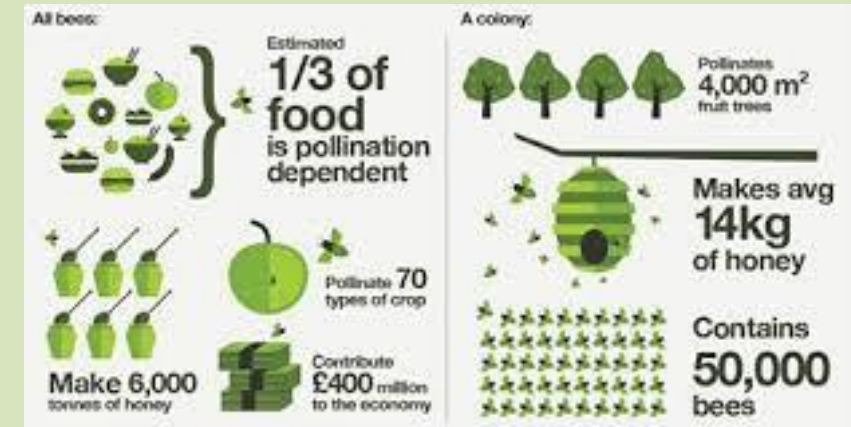
Year 7 History Term 5 - Medieval Castles
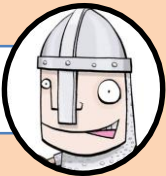
Motte - mound or 'clod of earth'
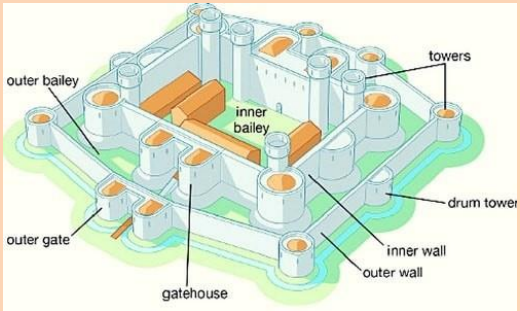**Bailey** - enclosure.

Motte and Bailey

Motte and bailey castles appeared in England after the Norman Conquest of 1066.
Motte and bailey castles were a common feature in England by the death of William the Conqueror in 1087. Their construction was the start of what was to become a massive castle building programme in England and Wales.

The most important part of the Motte and Bailey castle was the Keep. It was built on a huge mound (the motte). Mottes ranged from 25 feet (8 metres) to over 80 feet (24 metres) in height

The major weakness of the motte and bailey castle was the likelihood of the keep rotting or burning down. The solution was to build stone keeps but these could not always be built on the same site since the weight of the stone would sink into the motte.

Stone Keep

Harlech Castle, North Wales, built in 1283 AD

Stone keep castles were first built during the reign of William I as a natural extension to the more traditional motte and bailey castles. The main difference between the two was that motte and bailey castles were designed to be temporary (although lots survive to this day) while stone keep castles were designed to last as long as possible.

Following rebellion in the north of England, and the subsequent "Harrying of the North" in response, William the Conqueror decided to build stone keep castles as the ultimate display of his power. The most famous of these castles was the White Tower at the Tower of London and Rochester Castle in Kent.

Concentric castles

After stone keep castles, concentric castles became popular in England. This occurred during the reign of Edward I and they are mainly associated with north-west Wales, where many were built. The most famous concentric castles include Harlech, Beaumaris, Caernarfon and Conwy.

While stone keep castles were square and based around a central keep, concentric castles had no 'strong' point and were instead considered to be secure the whole way round. Each of these castles did have a strongly defended entrance point though, and the core of the castle was defended by a series of curtain walls. The furthest of these would have been the shortest to allow defenders to spot an enemy as they approached. Similarly, the curtain wall closest to the edge of the castle would have been longest to give those defending the castle the greatest height advantage over their enemy.

Term	Definition
Bailey	A castle courtyard
Barbican	A stone building protecting the gateway or entrance of a castle
Battlements	A parapet with indentations and raised portions (merlons). Battlements are sometimes called crenellations.
Buttress	Projection from the wall that provides extra support for the building
Concentric	Castles built with rings of stone walls one inside the other
Constable	Official in charge of a castle when the owner is absent
Curtain	Connecting wall between towers of a castle
Drawbridge	A movable bridge. Drawbridges usually moved horizontally
Fosse	A ditch surrounding a castle
Garderobe	A castle toilet. The garderobe was often a projection from the wall over the moat
Gatehouse	A building protecting the entrance to a castle
Great Hall	The main room in the building where the castle owner and his family lived
Keep	Main stone tower of a castle
Loop	Narrow opening in castle wall that was used by archers to fire on attacking soldiers
Machicolations	Projecting stonework on the outside of castle towers or walls, with holes in floor for dropping missiles on people attacking the castle
Moat	A deep wide trench round a castle
Motte	A mound of rammed layers of soil. Some mottes were only about 5 metres (16 feet) high, but some were over 18 metres (60 feet). The Normans built wooden watchtowers on the top of their mottes
Murder-Holes	Holes (also called meutrieres) in the roof or ceiling of a castle. Cold water could be poured through the holes to put out fires. These holes were also used for pouring scalding water, hot oil or other substances on soldiers who had managed to enter the castle
Palisade	A strong timber fence built on top of an earth rampart.
Parapet	A low wall on the outer side of the main wall.
Portcullis	Grating made of metal and wood. The portcullis was dropped vertically from grooves to block passage through the gate of the castle.
Rampart	A defensive stone or earth wall surrounding a castle.
Shell-Keep	A wall surrounding the inner portion of the castle.
Solar	The upper living room of castle. The solar was usually situated above the hall and was used mainly as a bedroom.
Tower	A high building. Towers in castles were either square, many sided (polygonal), or round.
Turret	A small tower. A turret on top of the main tower was often the main observation point in a castle

1066	1085	1095	1170	1215	1314	1348	1381	1415	1485
The Battle of Hastings	The Domesday Book is completed	The First Crusade is decreed	Thomas Becket is murdered	Magna Carta is signed	Battle of Bannockburn	The Black Death arrive in Britain	The Peasant's Revolt	Henry V defeats the French at Agincourt	Richard III is defeated at the battle of

1 Ladders

Ladders were used by those attacking a castle to climb over the walls and fight the castle inhabitants within the castle walls. However, ladders had the disadvantage of leaving the man climbing the ladder subject to attack by arrow, boiling water or oil, or by being thrown to the ground if the ladder was pushed away from the wall.

2 The Battering Ram

The thick stone walls of the Stone Keep castles were difficult for men to knock down. Although pickaxes could be used against castles with thinner walls, it would take a very long time to knock a hole through a castle with very thick walls. The battering ram was particularly useful since the weight of several men would be put behind it. This would seriously weaken and possibly destroy doors or walls. Unfortunately, the defenders of the castle could throw boiling oil or fire arrows at the attackers as the Battering Ram had no protection from these missiles.

3 The Catapult

A variety of catapults or siege engines were developed during the Middle Ages to fire stones, fireballs or other objects such as dead sheep, cattle, or plague victims, at the castle walls or into the castle itself. This type of catapult works by twisting rope as tightly as possible so that it acts like elastic when the arm is released. The catapult was very heavy to pull into place.

4 The Trebuchet

A trebuchet a type of catapult that was used in the Middle Ages. It is sometimes called a counterweight trebuchet. The counterweight trebuchet appeared in both Christian and Muslim lands around the Mediterranean in the 12th century. The average weight of it's projectiles ranged from 50 -100kg with an average throwing distance of 300m, however balls of up to 1500kg were recorded to have been used at the battle of Ashyun.

5 The Longbow

- The longbow dominated medieval warfare. he long bow was about six feet long and made from a yew tree. An experienced archer could shoot an arrow every five seconds. From 200 metres, a longbow arrow could penetrate the armour worn by soldiers. Plate armour gave more protection but could still be penetrated from 100 metres. The maximum range of a long bow was 400 metres but at this distance, it was far less effective.
- In 1346 at the Battle of Crecy, English archers devastated the French who lost 11 princes, 1,200 knights and 30,000 common soldiers. The English lost just 100 men.
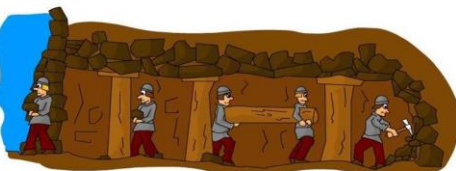
6 The Ballista
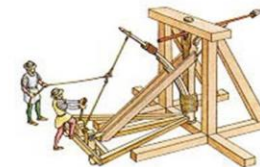
The next medieval weapon is the ballista. This ancient weapon was actually just a giant crossbow capable of firing enormous bolts that could pass through several men at once. It was not very effective and could not be used against walls.
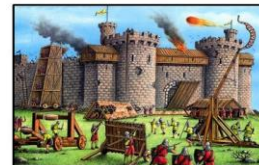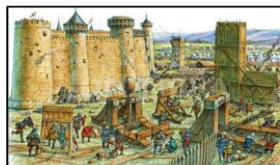
Mining under the castle

7

A good way of attacking a stone castle was through mining. Skilled miners (sappers) were used to dig tunnels under the walls/ towers, using wooden poles to support the tunnel. They would then burn the poles and the wall or the tower would collapse. The advantage of mining was that the attack could not be seen by those living in the castle. However, if those inside the castle were aware that attackers were mining underground, they would often mine from the castle to meet the attackers underground and there would be a sword battle.

Putting the Castle under Siege

Castles were sometimes so strong that the only method of attack was to wait. This was called laying siege. It was basically staying out of arrow range and surrounding the castle until it was starved into submission. Sieges could take a very long time to work. Many castles had wells in the keep and large storerooms always prepared in case of a siege.

8

What were the strengths and weaknesses of these forms of attack?

Curtain Walls
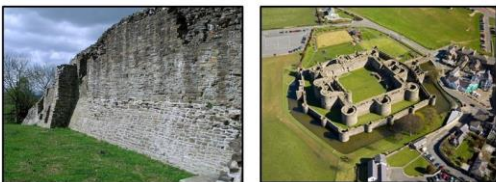
As castles were static (didn't move), an enemy could usually get close to the actual buildings. Therefore outer walls -curtain walls - were built as a first line of defence. If these were broken into, then the castle itself had many defensive features.

Machicolations

These were stone boxes that projected from the walls of castles and had holes in the floors for dropping stones or boiling oil on attackers. Wooden versions of these were called hoards.
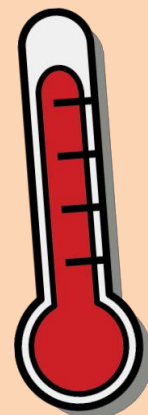
Round Towers
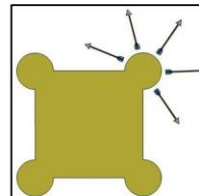
It was harder for attackers to make round towers collapse. Unlike square towers they had no corners, which collapsed if holes were dug underneath the foundations. Furthermore, the tower also allowed the soldiers inside the castle to fire in all directions along the front walls
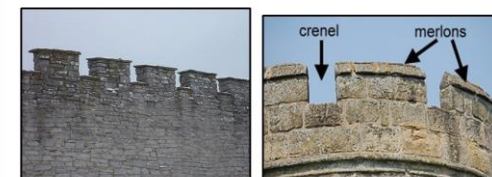
Arrow Loops

These provided a safer means of firing arrows on the attackers of the castle. They are found in many different styles on the curtain wall and towers of the castle.

The Moat

Attackers were easy to shoot whilst swimming or rowing across the moats filled with water. Moats reduced the risk of tunnelling under the castle.

How effective were these features in protecting the castle from attack?

The Battlements

crenel   merlons

The top of the castle walls were the battlements, a protective, tooth shaped parapet often with a wall walk behind it for the soldiers to stand on. The defenders could fire missiles through gaps (crenels). The raised sections between, called merlons, helped to shelter the defenders during an enemy attack.

Spiral Stair Case and Trip Step

Spiral stair cases were a useful defence once the attackers were in the castle. The stair case usually spiralled clockwise which made it difficult for right-handed attackers to use their sword. A trip-step would be built into the stair case. It would be shorter than the other steps which could make the attacker lose his footing and trip up.

The Portcullis

A spiked wooden or metal barrier, called portcullis, helped protect the doors from fire and battering. It was lowered by chains from a chamber above the gateway.
*The word portcullis comes from the Old French *porte-coleice*, meaning sliding door.
*(one pence coins carry an image of them).

Murder Holes

Murder holes were openings in the ceiling just in front of a gate or in the passage beyond. They were so called because it was believed that they were used by defenders to pour hot sand, water and lime through to kill and wound an enemy.

The Drawbridge

Helmsley Castle

Drawbridge

To stop the enemy actually getting in, the entrance to the castle was heavily fortified it was known as a barbican. It had a drawbridge which could be lifted up to stop the enemy getting inside the castle.
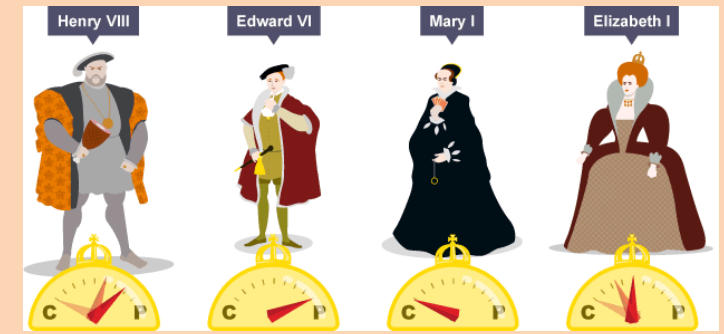
PROTESTANT REFORMATION

Summary

Attempts to reform (change and improve) the Catholic Church and the development of Protestant Churches in Western Europe are known as the Reformation.

The Reformation began in 1517 when a German monk called Martin Luther protested about the Catholic Church. His followers became known as Protestants.

Many people and governments adopted the new Protestant ideas, while others remained faithful to the Catholic Church. This led to a split in the Church.

MARTIN LUTHER
1483–1546

Martin Luther was a German monk. He thought that the Catholic Church had too much power and was corrupt. In 1517 he wrote a document called the Ninety-five theses and nailed it on to the door of his local church.
Luther set up a new, Protestant Church – the Lutheran Church. One of the differences between Protestants and Catholics is the way they view bread and wine during religious services. Catholics believe that the bread and wine actually turns into the body and blood of Christ. Protestants believe it stays bread and wine and only represents Christ.
Luther also translated the Bible into German so more people could read and understand it.
Luther's ideas spread and were developed further. The Reformation in Europe led to revolution, war and persecution.

Features of a Protestant church
+ Stone flag floor
+ Clear glass windows
+ Minister wearing plain black and white vestments
+ Wooden candlesticks and crucifix
+ Plain wooden pews
+ Simple wooden table as an altar.

Features of a Catholic church
+ Gold candlesticks and crucifix
+ Stained-glass windows
+ Carved wooden pews
+ Statues of saints
+ Altar covered with a gold embroidered cloth
+ Walls covered with ornate motifs
+ Painted ceiling
+ Carved wooden rood screen
+ Priest wearing colourful vestments.

Henry VIII	Edward VI	Mary I	Elizabeth I

Who	Religion	Actions
Henry VIII	Catholic	Split the English Church away from the Pope, but this was an argument about the heir to the throne and power and not a move towards Protestantism. Henry remained a Catholic to the end of his life.
Edward VI	Protestant	He extended some of the changes Henry VIII had begun.
Mary I	Catholic	Tried to restore the Catholic Church to what it had been like at the beginning of Henry VIII's reign.
Elizabeth I	Protestant	She first tried to promote a 'middle way' in religion. She wanted to create an inclusive Protestant church that allowed her to be in authority whilst enabling former Catholics to feel that they could follow Protestant forms of worship. She later began to persecute Catholics and by the end of her reign England was a fully Protestant country.

Overview of the Protestant Reformation here:

SCAN ME

You Tube

Overview of Henry VIII here:

SCAN ME

YouTube

Key Events

1485	Henry VII defeats Richard III at the Battle of Bosworth, to become the next King of England.
1509	Henry VII dies and his son Henry VIII becomes King.
1516	Mary I (Henry's first child) born
1531	Henry VIII became 'head of the Church in England and Wales as far as the word of God allows.'
1533	25th January - Henry secretly married Anne Boleyn
1533	Elizabeth I (Henry's second child) born
1534	Act of Supremacy made the king head of the English church instead of the pope.
1536	Start of the dissolution of the monasteries and Anne Boleyn is executed
1537	Edward VI (Henry's first son and heir) born
1547	28th January - Henry VIII died aged 57. His reign had lasted 37 years and 8 months.

Key Concepts

Church of England	Sometimes known at the Break with Rome, Henry VIII created the Church of England so he could divorce Catharine of Aragon and marry Anne Boleyn. He became head of the Church, with the power of the Pope in England. Henry also gained money and power from the break.
Dissolution of the monasteries	The destruction or sale of buildings and land belonging to religious communities in England by King Henry VIII after he became head of the Church of England. Henry wanted to make the Church less powerful and he needed money. Many people in England at the time felt that the Church was too rich and wasted its great wealth.
Tudor	The family name of Welsh nobleman Owen Tudor. His grandson became King Henry VII. He and his descendants, Henry VIII, Edward VI, Mary I and Elizabeth I were all Tudor monarchs. The word is also used to describe the time when the Tudor family reigned, from 1485-1603.

Key Words

Annulment	Where a marriage is cancelled or made invalid. Henry annulled his marriage to Anne of Cleves
Pope	The Head of the Catholic Church in Rome.
Roman Catholic	A branch of the Christian religion headed by the Pope in Rome.
Protestant	A branch of the Christian religion, founded during the Reformation.
Monarch	The king or queen
Monk	Man who have dedicated their life to the service of God
Monasteries	A house, usually for monks
Reformation	A Christian movement to reform the Roman Catholic Church that led to the founding of the Protestant religion
Religious persecution	Punishing someone because of their religious beliefs.
Traitor	Someone who has betrayed the monarch or her or his country
Treason	The act of betraying your monarch or country
Heresy	Going against the established religion of the country.
Indulgence	A special pardon that can be purchased to gain entry to heaven.
Tower of London	The famous prison in London. Henry VIII sent many of his political enemies to the Tower of London
Heir	The person who is next in line for the throne. Prince Edward was Henry VIII's heir
Illegitimate	The term used when a child is born out of wedlock/marriage
Archbishop	Highest ranking official in the Catholic Church in England. They advised the King on matters of religion

Edward VI
King of England (1547 to 1553)

At nine, Edward was too young to rule by himself, so he had protectors to help him. Edward had been born after his father had created his own Church in England, and he was brought up and educated by Protestant tutors. His mother had been protestant too.

While he was still a young boy, England was ruled by Protestant ministers and many people in England became Protestant. Edward brought in the 'Book of Common Prayer' to ensure everyone prayed in the same, Protestant way. Priests were allowed to marry and expensive Catholic decorations in churches were removed. Instead, he ordered plain glass windows, scripture of the Bible to be displayed instead of images of saints, and a simple wooden table instead of an altar. Even priests had to wear plain robes (called 'vestments') to show he was not 'above' others.

Sadly, Edward died aged just 15 and Lady Jane Grey was named as heir.

Mary I
Queen of England (1553 to 1558)

Edward's much older sister Mary was the daughter of Catherine of Aragon and was a firm Catholic. She refused to accept Jane Grey as queen, so she raised forces and executed Jane Grey at the age of 16.

Mary wanted England to become Catholic again, and the Pope became head of the Church once more. She stopped priests marrying (and forced married ones to divorce!). She brought back Catholic decorations in church – lots of gold crosses, painted walls and rich statues. She even returned the Latin Bible and Latin services. To ensure happened smoothly, she made an unpopular decision in 1554 to marry the powerful Catholic king of Spain, Philip II. This angered many Protestants who were fed up of religion changing. Many rebelled and went against Mary.

Mary was angry at those who refused to return to Catholicism, so she had many Protestants executed by burning them alive, 300 in total! She gained the nickname 'Blood Mary'. But Mary was not well, she had stomach problems. Mary died without any children aged 42.

Edward's Changes
- Edward VI was only a child when Henry died. He was brought up a Protestant, but most people in England were still Catholics.
- The Latin Mass was no longer used.
- A Book of Common Prayer was introduced. It was written in English.
- Priests were allowed to marry.
- Statues of the saints were removed, and pictures on church walls were whitewashed.
- Stone altars were taken out of churches and replaced by wooden communion tables.
- Ornaments such as candles and goblets were sold and stained glass windows were smashed.
- Catholics bishops were imprisoned in the Tower of London.
- Protestant missionaries were sent out round the country to tell people about the new beliefs. They gave people Bibles written in English.
.

1. She restored the rule of the Pope
2. The Latin Mass and Bibles were brought back
3. In 1554 the country was officially reunited with Rome
4. Mary married Prince Philip of Spain
5. Protestants burned to death

Elizabeth I

Queen of England (1558 to 1603)

Elizabeth was the daughter of Ann Boleyn and was brought up as a Protestant. When Mary had been queen, Elizabeth had pretended to be a Catholic so as to not be executed! When Mary died and Elizabeth became queen, she decided to go back to Protestantism and created her own Church of England, but she wanted to find a 'middle-way': to please all Christians.

She named herself the Supreme Governor of the Church (instead of 'head' to not annoy Catholics). She kept Bishops to please Catholics, but all services had to be in English again. Once more, priests were allowed to marry and the Catholic decorations in churches were removed, but she kept music and singing to please Catholics. A new English prayer book replacing the one Catholics hated from Edward's reign, was introduced. She also wasn't strict with Catholics who wanted to pray in private so long as they showed their obedience outwardly. Many Catholics were happy with this 'middle-way' and the Protestants were happy too.

She ruled for many years and by the time she died, England had become a mostly protestant nation. Elizabeth never married or had children.

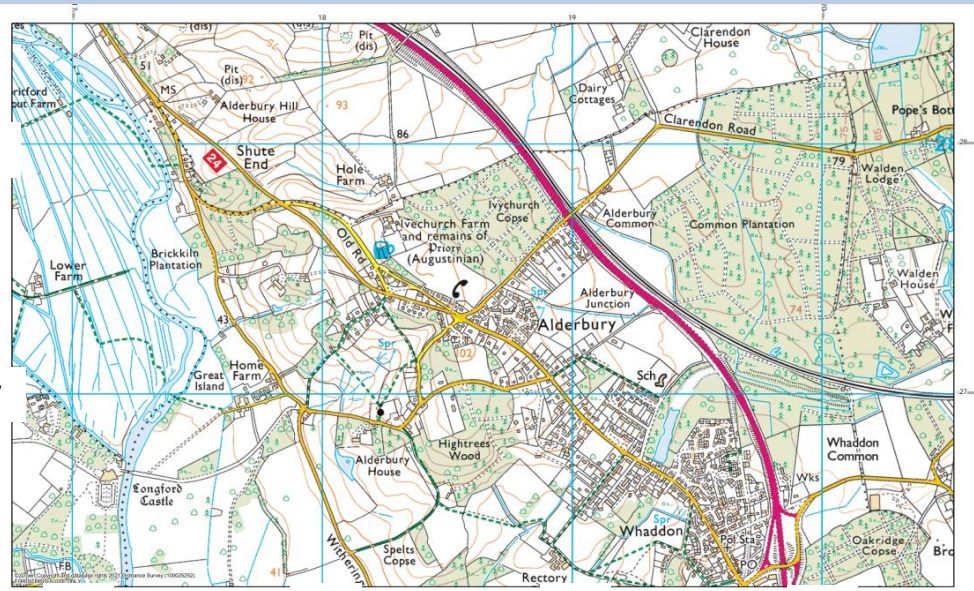| Protestant	Middle Way
Church services and Bible in English	Called herself 'Supreme Governor'
Act of Uniformity (1559)	Many elements of the Catholic services were allowed
Punished those who refused to go to Church of England services (recusants)	English and Latin prayer book
Executed Catholic plot leader	Changes to Communion service
Catholic priests conducting secret services were executed	

Elizabeth I was brought up a Protestant. She realised that religion had caused a lot of problems for England. She tried to find a 'middle way' that both Catholics and Protestants could accept:
- She called herself 'Supreme Governor', not 'head' of the Church of England.
- Church services and the Bible were in English.
- Many elements of Catholic services were allowed, including bishops, ordained priests, church decorations, music and colourful robes.
- The English prayer book was brought back, but a Latin edition was also printed.
- The new prayer book said that Christ was 'really present' in the bread and the wine in the Communion service. This was halfway between Catholic and Protestant beliefs.
- There was no question, however, that people could believe what they wanted. The Act of Uniformity (1559) stated that everybody had to attend the Church of England and use the Book of Common Prayer.
- She punished the Puritans and any Catholics who refused to go to Church of England services.
- Catholic priests who conducted secret services for Catholics were tortured and executed. Elizabeth executed as many Catholics as Mary burned Protestants
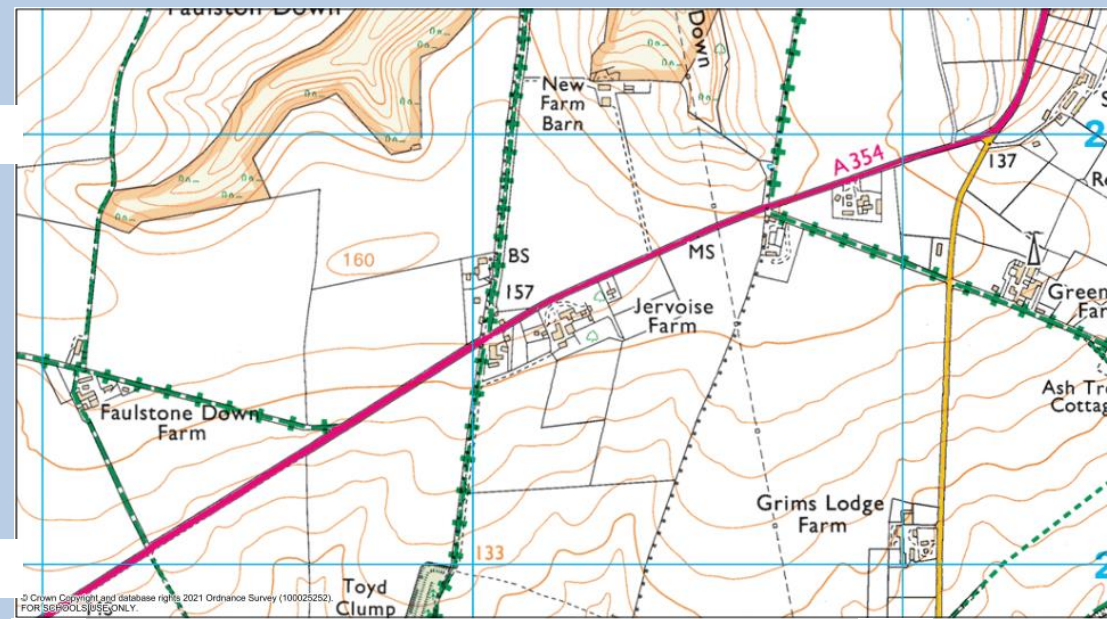
Scale 1:25000

0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 km

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The Trafalgar School at Downton

Map 1 (top left)

Clarendon House
Dairy Cottages
Pope's Bott
Clarendon Road
Walden Lodge
Alderbury Hill House
Shute End
Hole Farm
Ivychurch Copse
Alderbury Common
Common Plantation
Walden House
Brickkiln Plantation
Ivychurch Farm and remains of Priory (Augustinian)
Lower Farm
Alderbury Junction
Alderbury
Great Island
Home Farm
Hightrees Wood
Sch
Longford Castle
Alderbury House
Whaddon Common
Whaddon
Spelts Copse
Oakridge Copse
Rectory
Pol Sta
PO

28 27 17 18 19 20

Map 2 (bottom left)

Faulston Down
New Farm Barn
Down
A354
137
BS
MS
157
Jervoise Farm
Green Far
Ash Tre Cottag
Faulstone Down Farm
Grims Lodge Farm
Toyd Clump
133
160

24 23 08 09 10

Map 3 (right)

MS
Reservoir
Idmiston
Motor Sports Circuit
Cusse's Gorse
Down Barn
Birdlymes Farm
Church Farm
Horefield
Porton
Enclosure
Tumulus
Eley's
Sch
Downbarn West
West Gomeldon Farm
Gomeldon
West Gomeldon
Medieval Village of Gomeldon (site of)
Idmiston C
East Gomeldon
Crabtree Cottages
Manor Farm
Finsbury Farm
Village Earthworks
Horse Barrow
Broadfield Farm
WINTERBOURNE CP
The Croft
Ford
Winterbourne Gunner
Winterbourne Dauntsey
Great Drove
War Mem
ROMAN ROAD
Dogdean
Ford
FB
Barracks
FIRSDOWN CP
Thorneydown Road
Home Bridge
Hurdcott Lodge
Tumuli
Winterbourne Earls
Hurdcott
Sewage Works
Figsbury Ring
River Bourne
P
Heatherlea Farm
Manor Farm
Bracknell Croft
Old Malthouse Lane
ROMAN ROAD
Monarch's Way
Garage
MS
Broken Cross
Hillcrest
Tumulus
Stockbottom House
Ford
Ford Down
Tumulus
Stock Bottom
Motel
King Edward's Belt
Fussells Lodge Long Barrow

37 36 35 34 33 16 17 18 19

Settlements – Term 5 Geography

What is a settlement?
"A settlement is a place where people live."
The settlement hierarchy is a way of ordering settlements from their largest to smallest.

Function of settlements
The function of a settlement refers to its main activities.

Site and Situation
- **Site** is the land which a settlement is built on.
- **Situation** is where a settlement is located in relation to other surrounding, mainly human, features.

Some Settlement Advantages
- **Bridging point** - Where a river was shallow enough to be crossed or narrow enough to easily build a bridge
- **Dry Point** - In especially wet areas, settlements were built on slightly raised land to avoid flooding
- **Nodal Point** - Where natural routes meet, such as several valleys or at the confluence of two rivers
- **Defensive** - In order to protect themselves from attack, settlements were built within a river meander, with the river giving protection on three sides, e.g. Shrewsbury, or on a hill with good views, e.g. Edinburgh.
- **Wet Point** -These settlements were built at a source of water in an otherwise dry area. For example, in lowland Britain, many settlements were built at springs at the foot of chalk escarpments

Settlement Patterns

Settlements can be different sizes, shapes and can have different functions. They also look different in different countries. This can be because of cultures, climate, wealth or history as well as topography.
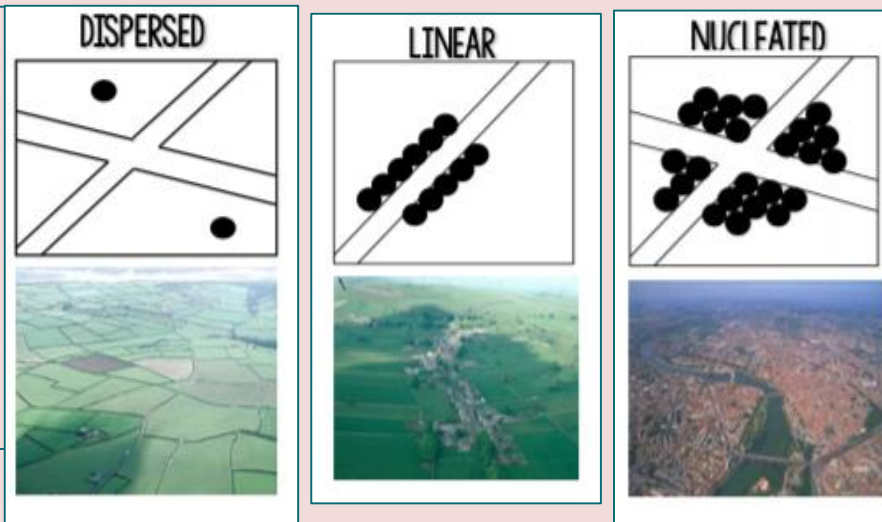
Types of settlement	Description
Hamlet	There is a very small group of homes. They are unlikely to be many other facilities.
Village	This is larger than a hamlet and contains more functions e.g a few shops, post office, doctors practice. Villages can vary in size
Town	This may contain tens of thousands of people. Towns have a range of functions such as shopping centres, secondary schools, railway stations and hospitals.
City	Cities are densely populated. Providing a range of functions including more specialised functions such as universities, football stadiums. Previously Cities were decided upon by whether they had a cathedral.

Burgess and Hoyt Models

Many geographers have noticed how towns develop in very specific sections.
- **CBD (Central Business District)** located at the centre of the city where rail and roads meet. Contains many commercial activities, shops, entertainment and business activities.
- **Inner City** mixed land-use containing small industries as well as high-density residential land-use – often characterised by terraced housing.
- **Inner Suburbs** residential areas which developed during the 1920s/30s – often semi-detached houses with bay windows and front/back gardens.
- **Outer Suburbs** residential areas which grew up later as greater public transport and private car ownership allowed people to commute. These houses are often semi-detached/detached with larger gardens.
- **Rural-urban fringe** this is right on the edge of towns and cities and is mainly low density, private housing (often larger detached properties); new industrial estates/business parks and facilities requiring larger open spaces such as golf courses.

The Burgess Model
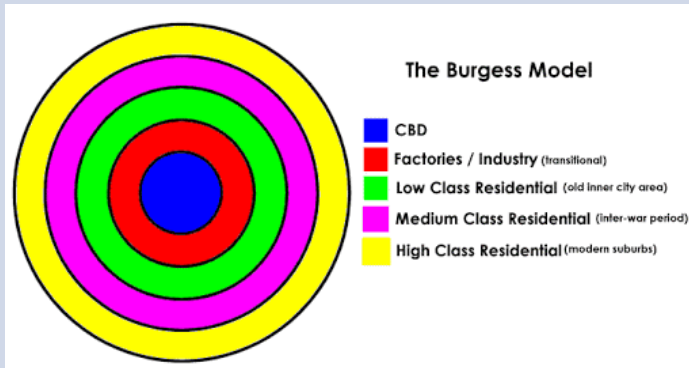
This model is based on the idea that land values are highest in the centre of a town or city.

Limits of this model
- The model is now quite old and was developed before the advent of mass car ownership.
- New working and housing trends have emerged since the model was developed.
- Many people now choose to live and work outside the city on the urban fringe - a phenomenon that is not reflected in the Burgess model.
- Every city is different - there is no such thing as a typical city.

The Hoyt Model
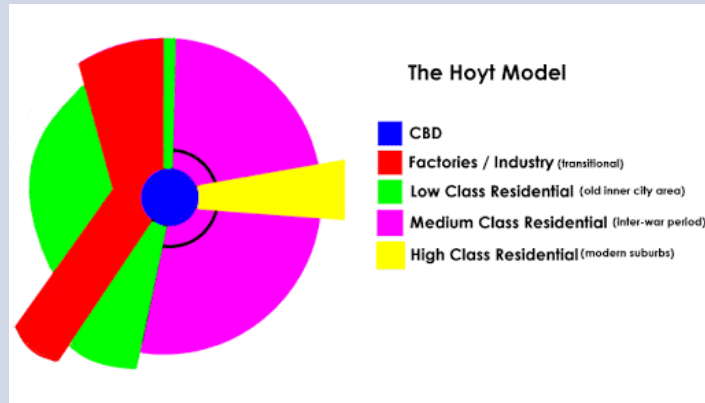
This is based on the circles on the Burgess model, but adds sectors of similar land uses concentrated in parts of the city.

- Notice how some zones, eg the factories/industry zone, radiate out from the CBD.
- This is probably following the line of a main road or a railway.

A village is born
In the nineteenth century, growing cities such as Liverpool and Manchester needed solid roads that could cope with an increasing amount of traffic. The answer was to make roads with bricks of granite.
In 1861 Putman quarry was opened. Quarrymen extracted the granite from the quarry and it was shipped to Liverpool where it was used to build roads.
In the early days, the quarrymen lived in barracks near the quarry during the week and returned to their families at the weekend. However, as more workers appeared, the owners decided to build homes for the families and from this Nant Gwrtheryn was built.

Ghost Town
As tarmac became more popular because it was cheaper, the need for granite decreased. The quarry closed and Nant Gwrtheryn was abandoned – it no longer had a purpose. In 1959 the village became a ghost town.

A New Beginning
In 1978, a local doctor called Carl Clowes heard that the owners of the village were planning to sell it. He thought of a solution to bring back jobs to stop the local people leaving.
The deserted village was turned into The Welsh language and heritage centre. Since 1982, over 25,000 people have benefited from training at the centre.
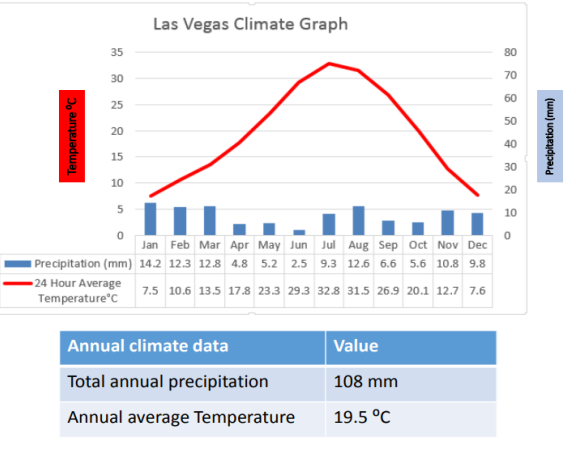
Key words:

Burgess model, Hoyt Model, CBD, inner city, suburbs, terraced house, semi-detached house, detached house.

Where is Las Vegas ?
Las Vegas is the largest city in the U.S. state of Nevada.
It is located in the **Mojave Desert** of Southern Nevada

Causes of water shortages
Drought

Las Vegas Climate Graph

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (mm)	14.2	12.3	12.8	4.8	5.2	1.4	9.3	12.6	6.6	5.6	10.8	9.8
24 Hour Average Temperature°C	7.5	10.6	13.5	17.8	23.3	29.3	32.8	31.5	26.9	20.1	12.7	7.6

Annual climate data	Value
Total annual precipitation	108 mm
Annual average Temperature	19.5 ºC

Reduction in water from lake mead
- The Hoover Dam was built in 1935 creating Lake Mead as the largest artificial lake in the world.
- But the Nevada lake providing most of the water to lake Mead has lost 4 trillion gallons of water in the past 14 years.
- the effect of a drought that began in 2000 is starting to threaten the Las Vegas water supply due to the dramatic extent to which the reservoir has dried up

Hoover Dam
(white chalk lines show the original water height)

Las Vegas
- Laz Vegas appears to be a green oasis set in a blazing desert, but environmentalists warn water supplies could run dry within the next 50 years; while urban areas develop on protected areas. There is a stark contrast between the lush city against a barren desert that stretches in all directions. Yet, this is a region in the grip of one of the worst droughts on record.
- Each day countless tourists walk the Strip, in awe of dancing fountains, tropical landscaping, pools and many water features.
- But this is one of "Sin City's" greatest myths, as local hotels only account for just 7% of the area's total water usage.

Quotes & Facts:
"The hotel casinos use only 30% of their water allocation on outdoor use, while 70% is used indoors in hotels and homes kitchens and that water is reclaimed and used again."
"Even though the Bellagio has the largest water feature on the Strip, it benefits from ground water. We are consuming less water than when it was functioning as a golf course."
Water authorities estimate around 70% of residential water is used outdoors, washing the car and irrigating the lawns, and only 30% is used indoors.
" It seems there are too few of us that are willing to stand up and say we need to protect our environment "

Water Shortage Problems	Potential water shortage solutions
• Las Vegas consumes around 870 litres of water per person per day, and environmentalists worry Water Supplies could run dry within the next 50 years	• concept of 'xeriscaping' is being promoted to its residents. • Xeriscaping is the practice of designing landscapes to reduce or eliminate the need for irrigation. Therefore xeriscaped landscapes need little/no water beyond what the natural climate provides.
• Although Nevada has been banking excess water from the Colorado River in Arizona, environmentalists fear this is a short-term solution.	• A $5 billion 555km pipeline from central Nevada could be the answer to the future water needs of Las Vegas. • But farmers and residents in rural parts of the state are unwilling to share the precious resource and it is becoming a battle.
• "In 15-20 years from now, our current water supplies will be overtaxed and we will need to find an alternate source of water."	• Las Vegas could pay for desalination plants along the West Coast in exchange for the right to use California's or Mexico's share of the Colorado.
• Las Vegas, draws its water from the Colorado-fed Lake Mead, the nation's largest reservoir. During the past decade Mead's level has fallen more than 100 ft,and the basin is now just over half full.	• Southern Nevada Water Authority – placed mandatory water conservation measures such as outdoor watering restrictions and landscape watering assignments, as well as increases in water rates and water waste fees

The different environments of a National Park

A National Park does not need to be just one type of landscape, it can be a vary from mountains to forests. All these landscapes below can be found in UK National Parks:


- Mountainous areas
- Heather covered moorlands
- Wild uplands
- Dramatic coastlines
- Large lakes
- Underground caves
- River valleys and waterfalls
- Wildlife habitats (plants, animals and birds)
- Large forests

Northumberland
Designated: 1956
Area: 1,048 sq km
Annual visitors: 1.5m

Lake District
Designated: 1951
Area: 2,362 sq km
Annual visitors: 16.4m

North York Moors
Designated: 1952
Area: 1,434 sq km
Annual visitors: 7m

Yorkshire Dales
Designated: 1954
Area: 2,179 sq km
Annual visitors: 9.5m

Peak District
Designated: 1951
Area: 1,437 sq km
Annual visitors: 8.8m

Snowdonia
Designated: 1951
Area: 2,176 sq km
Annual visitors: 4.3m

The Broads
Designated: 1989
Area: 303 sq km
Annual visitors: 8.8m

Pembrokeshire Coast
Designated: 1952
Area: 621 sq km
Annual visitors: 4.2m

South Downs
Designated: 2010
Area: 1,624 sq km
Annual visitors: 19m

Brecon Beacons
Designated: 1957
Area: 1,344 sq km
Annual visitors: 4.2m

New Forest
Designated: 2005
Area: 570 sq km
Annual visitors: 13.3m

Exmoor
Designated: 1954
Area: 694 sq km
Annual visitors: 1.4m

Dartmoor
Designated: 1951
Area: 953 sq km
Annual visitors: 13.3m

- ● Welsh National Parks
- ● English National Parks (Designated in the 1950s and 60s)
- ● English National Parks (Designated post-1980)

Possible new National Parks
- ① The Chilterns
- ② The Cotswolds
- ③ Hardy's Dorset
- ④ "Brumbria"

Conflicts in National Parks

Conflicts between visitors and residents:
- Roads can become congested with traffic which makes it difficult for locals to go about their daily lives. This can increase air pollution and even delay emergency services
- Some towns might have their character changed by tourism. Residents might find it easy to find guide books, but find it difficult to buy things like milk
- Visitors might buy second homes. This increases house prices and pushes locals out of the area as they cannot afford to live their anymore – especially young first time buyers
- Tourists may walk over and damage farmers' crops as well as leaving gates open for animals to escape

Conflicts between visitors:
- Many people may visit the area for peace and quiet, but some may want to visit the area for adventurous activities – these activities are not always compatible together
- People go walking in the Forest to get away from it all, but with many people walking on the paths, it can cause destruction to the area
- On popular days, competition for parking spaces and restaurant tables may cause stress – maybe even violence!
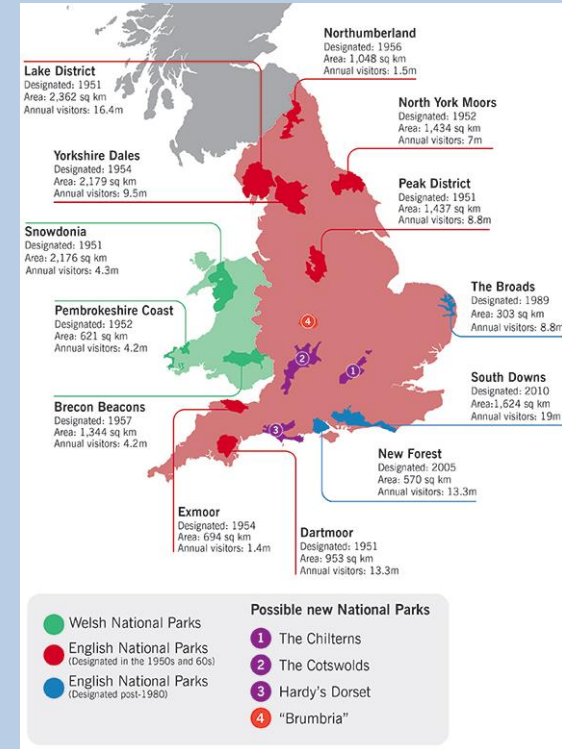
Ways to reduce conflict and damage to National Parks

Positive Management:
- Undertaking conservation work
- Providing facilities for visitors such as information centres and picnic areas
- Making new paths and repairing old ones

Negative Management:
- Stopping the building of new houses and extensions in the area
- Limiting access to certain areas
- Restricting activities in the area

Why are National Parks so important?

Many people think National Parks are only important for preserving nature. However, as our cities are constantly expanding and our air quality reduces due to pollution, our National Parks are important for many more reasons:
- Provide facilities for tourists e.g hikes/camping
- Encourage tree planting
- Buy land to protect its character
- Monitor and clean up pollution
- Provide an information service
- Encourage suitable developments/Refuse permission for unsuitable developments

Urban Sprawl
National Parks are also important due to increasing levels of ' urban sprawl'. Urban Sprawl refers to the out migration of residents from urban areas such as cities to the rural countryside. This can be due to wanting a better quality of life, slower pace of living, more space for families and activities.

For example the New Forest is particular important due to urban sprawl from cities such as Bournemouth, Salisbury and Southampton that surround the New Forest.

Why were National Parks set up ?

The National Parks were created as part of the post World War II re-establishment process
The aim was to bring long-term protection to areas of beautiful countryside that were highly valued for physical and spiritual refreshment.
The first UK National Parks were The Lake District, Dartmoor, The Peak District, Snowdonia. Created in 1951

Positives and negatives of tourism in the New Forest

Activity	Positive	Negative
Walking	People are more likely to spend money. People become more aware of protecting the landscape.	Paths become eroded so will need to be repaired. Areas where tourists visit will become less popular for locals. Wildlife may be affected.
Tourist shopping and (honey pot sites)	People spend money in the local area. These shops can provide jobs for locals.	Busy towns with more cars could cause traffic and environmental problems
Wildlife sanctuaries	Protects wildlife and preserves the ecosystem	Can be expensive. Potential to make wildlife dependent on us.

When did the New Forest become a National Park ?

- The New Forest was created as a royal forest by **William I** in about 1079 for the royal hunt, mainly of deer.
- It was created at the expense of more than 20 small hamlets and isolated farmsteads; hence it was 'new' in his time as a single compact area.
- It was first recorded as "Nova Foresta" in Domesday Book in 1086.
- It officially became what we know to be a National Park in 2005.

NEW FOREST: National Park Case Study

The New Forest Marque

The New Forest Marque is a local food and produce scheme set up to champion businesses who pride themselves on producing and providing food, drinks and craft from the New Forest area. Whether you're a Commoner, a Primary Producer, a Processer or you offer local produce to your customers, you can apply to join the New Forest Marque.

It provides many benefits to local businesses by:
- Promoting the use of local resources and providing jobs for locals
- Provides training for local businesses
- Creates a local trading network
- Allows for local businesses to advertise for each other

New Forest: Conservation measures

The New Forest is designated as a
- Site of Special Scientific Interest (SSSI)
- EU Special Area of Conservation (SAC),
- Special Protection Area for birds (SPA),
- Ramsar Site is a **wetland site** (designated to be of international importance)
- it also has its own Biodiversity Action Plan (BAP)

New Forest National Park :Location

- The **New Forest is** located in southern England.
- It covers south-west Hampshire and extends into south-east Wiltshire and towards east Dorset.
- It is situated between the cities of Southampton, Bournemouth and Salisbury.
- The boundary of the New Forest is shown highlighted in yellow in the above OS Map

New Forest: Physical landscape

- New Forest covers 566 km2
- The New Forest includes one of the largest remaining pieces of open pasture land, heathland and **forest** in the heavily-populated south east of England.

- is the largest area of semi-natural vegetation in England and is of international importance.
- The Geology of the New Forest consists mainly of sedimentary rock, in the centre of a sedimentary basin known as the Hampshire Basin.

NEW FOREST NATIONAL PARK
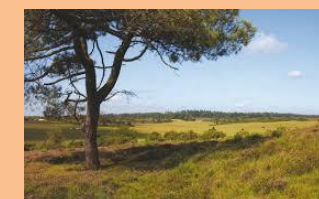
Origins of Judaism

Moses

Judaism was started about 4,000 years ago by a man called **Abraham**.

God spoke to Abraham and Abraham knew that there was only one true God. God told Abraham to go to his promised land; a place called Canaan (now Israel). God told him that he and his family would be blessed.

God said *"Leave your country…. I shall make you a great nation… I shall bless those that bless you"*.

- Anyone that followed Abraham and God would blessed and protected. These were Gods **chosen people**.
- God gave them his promised **Holy land**.
- In return they followed his commandments.
- This agreement is called the **covenant**.

God said that Abraham's faith to God would be tested 10 times. The first test was when he had to leave him home (above).

The final and greatest test was when God asked Abraham to **sacrifice** his son Isaac as an offering to him. In Genesis it says *"Take your son, your only son, Isaac, whom you love….. Sacrifice him"*. Both Abraham and Isaac were willing for God, but just before Abraham was going to kill him, God intervened and stopped him. A ram was sacrificed and given to Abraham instead.

They had passed God's test. This showed Abraham's loyalty and dedication to God.

Key vocabulary
Israelite
Covenant
Mount Sinai
Plagues
Pharaoh
Commandment
Holy Land
Abraham
Canaan

Abraham's sacrifice of Isaac

Moses parting the Red Sea

1,000 years had passed since Abraham. Abraham's descendants were called the Israelites (this is what the Jewish people were called then) and they had spread to many countries.

In Egypt the Pharaoh saw the Israelites as a threat and made the Israelites his slaves. He ordered all Israelite slave baby boys to be killed.

The story of Moses is a teaching to show how one man was chosen by God to free his promised people.

This is how this happened:

- God appeared to Moses in the flames of a fire in a burning bush and said "You shall tell the Pharaoh that I am the only God and shall lead the Israelite slaves out of Egypt to freedom".
- Moses was scared but went to tell the Pharaoh that he should free the Israelite slaves, but the Pharaoh said no.
- Moses used the power of God to send **10 plagues** to the Egyptians: some of these include the plagues of frogs, locusts, darkness, killing cattle, flies.
- But it was the last plague that was the worst. The first born son of every Egyptian was to be killed.
- After this plague the pharaoh was so angry, but allowed Moses to lead the Israelites out of Egypt. He told his people *"Fear not! Stand your ground... the Lord himself will fight for you".* But the Pharaoh's soldiers chased them. They came to the Red Sea, **Moses parted the sea** so the Israelites could be free.
- Moses and the Israelites spent 40 days together in the desert and on top of Mount Sinai and God gave Moses *"...the two tablets of the covenant law, the tablets of stone inscribed by the finger of God made a promise to God". (Exodus)* This was the promises of the **10 commandments**.

Judaism - Religious Practices

Worship

The Jewish place of worship is called a synagogue; this place contains a variety of symbols which represent and remind Jews of their religious history.

Synagogues contain:
- **An Ark** – which holds the scrolls of Jewish law called the **Torah**
- **Bimah** – a raised platform where readings from the Torah are given
- An **eternal candle** - which represents the light of God

The most famous Jewish prayer is known as the **Shema** – "Hear O Israel, the Lord our God, the Lord is one. You shall love the Lord your God with all your heart and with all your soul and with all your might".

Jews may use these items to also worship:
- **Tefillin** are cubic black leather boxes with leather straps. Inside them are 4 prayers. They are worn in morning prayers.
- A **Tallit** is a shawl for prayer which is often worn too. This represents God wrapping around the person, protecting them.

Key vocabulary
Synagogue
Tefillin
Ark
Torah
Bimah
Shema
Monotheist
Omnipotent
10 Commandments
Mitzvot

Ten Commandments
Exodus 20:2-2-17

I Have no other gods

II Do not make an idol or any likeness

III Do not take the name of the Lord God in vain

IV Remember the Sabbath

V Honor your father and mother

VI You shall not murder

VII You shall not commit adultery

VIII You shall not steal

IX You shall not bear false witness

X You shall not covet anything that belongs to your neighbor

Tallit

Tefillin

"Commandment 4: You shall remember the Sabbath and keep it Holy"

The Jewish Sabbath is known as **Shabbat** which runs from sundown on Friday to sundown on Saturday.
A traditional Jewish family will gather at the synagogue for worship on Friday night, and then eat together after the service. Special bread called **Challah** is eaten and candles are lite.
This special time for Jews is about worship but also community – meeting together as a family.

Beliefs

- Jews believe there is only one God. This makes them a Monotheistic religion.
- The Jewish God is the same God as the Christian and Muslim God.
- Jews believe God is **omnipotent** and **all loving** and because of this made the world for them.
- However, Jews believe that **Jesus was a teacher or prophet** (not the son of God like Christianity)
- Jews were given the **10 commandments** by God. These were told to Moses on Mount Sinai.
- These are the laws which they live by, as they are the Word of God. These laws need to be followed so that Jews can go to Heaven.
- These 'laws' are known as **Mitzvot**. There are 613 Mitzvot, of which 10 are the main commandments.

Jewish Festivals

Hannukah

History:

- 2,200 Years ago the Jewish people lived in their Promised Land. However at this time the Greeks wanted to increase their empire.
- Greek King **Antiochus** invaded the Promised Land; banned the Jews worshipping their God and banned them reading their Holy Book the **Torah**. Many Jews were killed.
- The Greek army smashed up the religious temple in Jerusalem, including a sacred lamp in the temple and the oil needed to brunt the lamp.
- A family called the **Maccabees** stood up against the Greek army. They beat them and marched back to Jerusalem.
- A new lamp was found and lit, however they only had enough oil for one day. A miracle from God allowed the oil to last 8 days, giving the Jews light in their holy temple.

Festival of Light

Hannukah is therefore named the Festival Light for the lamp burnt for 8 days.
Jews celebrate this festival by coming together as a family, with friends and sharing special food; one is called **sufganiyot** (like donuts) and play games using a **Dreidel**.
The candle that is lit every one of the 8 days in remembrance is called the **menorah.**

Key vocabulary
Pesach
Seder plate
Hannukah
Maccabees
Menorah Candle
Antiochus
Menorah

sufganiyot

Dreidel

Pesach (Passover)

The main Jewish festival which takes place in April (but moves, like Easter). It celebrates **Moses freeing the Israelites.**
The Jewish home is cleaned of any old food. Special foods are bought, prepared and eaten.

The leader of the house wears white linen robes to signify freedom. He reads the story of Moses freeing the Israelites before the special meal. The special meal contains certain foods. These foods are placed on the **Seder plate** and have special meaning. E.g. the bone represents God's mighty arm helping them. 10 drips of wine are split, one for each plague.

CELEBRATE PASSOVER
FESTIVAL OF FREEDOM

Sedar Plate

BVT
Who is God?

Around 2,000BC: **Abraham** made an agreement called the **Covenant** with God. God granted his people the land Israel (Holy Land).

Son of Abraham – **Isaac** continued the religion Judaism in Israel.

Second Son of Abraham – **Ishmael** – moved and settled in Arabia.

Around 1,000BC: **Moses** continued as a leader of Judaism, freeing the Israelites from the slave rule in Egypt.

Thousands of years passed, Arabia was lived in by tribal groups; some worshiped One High God – Allah; some worshipped idols.

Judaism

Around the turn of the BC/AD: **Jesus Christ** preached that he was the incarnation of God – God's Son.

Around 600AD: **Muhammad** was chosen by God to unite and start the Islamic Faith. He as also a descendent of Ishmael.

Islam

Christianity

How do the Monotheist Religions compare?

Judaism	Christianity	Islam
All 3 religions have spiritual leaders called prophets to teach their religion. Each religion can use prophets of previous religions.		
Prophets of **Abraham** and **Moses** are most important	**Jesus**, the Son of God, is a their teacher	**Muhammad** is the most important prophet
All 3 religions have sacred texts. Each religion can use books previous to their religion.		
The **Torah.** Written by Moses followers after Moses died.	The **New Testament Bible.** Written by the disciples after Jesus died.	The **Qur'an.** God's words spoken to Muhammad were dictated and written down.
All 3 religions was have a set of teachings that include ideas about God and how to follow their religion		
The **10 Commandments**	Jesus **parables**	The **6 Articles of Faith**
All 3 religions have very special festivals in celebration of their prophets and teachers.		
Festival of **Passover**; recognising Moses freeing the Israelites	Festival of **Christmas / Easter**; recognising Jesus birth and death	Festival of **Eid**; recognising when Muhammad spoke to Allah (God) and wrote the Qur'an
All 3 religions have a special place to worship God; so they feel connected and close to Him.		
Synagogue	**Church**	**Mosque**

BVT
Who is God?

God is All Powerful (Omnipotent)

This means God is all powerful
Examples of this include
- God creating the world in 7 days – "In the beginning was the Word and the Word was God" Bible
- God working through Moses and Jesus to perform **miracles** e.g. calming of the storm / 10 plagues
- "No vision can grasp him… He is above all comprehension" Qur'an

God is all loving (Omnibenevolent)

This means that God is caring and merciful (forgiving) to religious believers.
Examples of God being all loving include
- The **incarnation** of Jesus. This is where God lives through Jesus on earth – showing that God sent down his son to earth to guide us – "The word became flesh and lived among us for a while" Bible
- The parable of the Prodigal Son.
- "He will be with you wherever you maybe be" a quote Muslims read in the Qur'an.
- **Lords' prayer** "Forgive us our trespasses (sins)"
- Qur'an "Those that pardon will be rewarded by God"
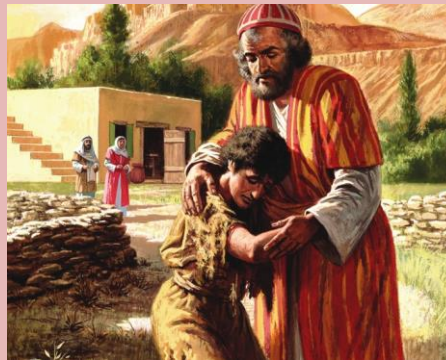
God is Just

This is the belief that God is fair and brings justice: He can reward those that serve him and punish those that commit sin. This is because God is all knowing (**Omniscient**).
Examples of God being just include:
- **Judgement day.** When religious believers die they believe if they are good their souls will go to Heaven, if not they will go to Hell. In the Qur'an it talks about judgement day "We will show you the truth of what you did"
- The **parable** of Lazarus and the Rich man.
- The story of the **Original Sin** in where Adam and Eve are punished for eating the forbidden fruit.

Parable of Lazarus and the Rich man

A beggar called Lazarus is begging on the street. Each day a rich man walks past and does not give him any money or food. When the rich man dies God sends him to hell.

This teaches God is almighty and can punish those that sin

Parable of the Prodigal Son

A farmer leaves his inheritance for his 2 sons. One son saves his inheritance and stays to work on the farm, the other son leaves and spends all his inheritance. He returns home with no money and no place to go. The farmer welcomes his son back and forgives him.

This parable story teaches to be loving to one another and forgiving of mistakes

BVT
Who is God?

Suffering – Is there a God?

Some people question whether there is a God….

One compelling argument why people question this is that people suffer in the world – if God is really all loving how can there be suffering?

Religious people explain suffering by these arguments:

- Suffering is caused by evil in the world, Satan has made individuals to act in evil ways
- Suffering is a test from God to strengthen your faith, to allow us to grow stronger
- Suffering is God balancing out the world, it can't always be all good!
- God is too powerful and divine to understand what he does
- Suffering is God's way Suffering is a punishment for sin"

What makes someone religious?

Glossary of key words

Abraham	Founder, created and leader of Monotheist religions. Founder of Judaism. Prophet of religion.
Covenant	Religious agreement between Abraham and God.
Eid	Islamic Festival, which celebrates God choosing the Prophet Muhammad.
Incarnation	Belief that God lives through Jesus.
Monotheist religions	Religions that believe in One God: Judaism, Islam and Christianity.
Moses	Prophet for religion. Freed the Israelites from Egypt.
Mosque	Place of worship for Muslims.
Omnibenevolent	God is All Loving
Omnipotent	God is All - Powerful
Omniscient	God is all knowing
Parable	Stories that Jesus told, which had teaching messages.
Passover	Jewish Festival, which celebrates the Prophet Moses.
Qur'an	Religious book / scripture for Muslims.
Six Articles of Faith	Set of beliefs that Muslims follow, which includes the belief about God and other authorities like prophets and angels.
Synagogue	Place of worship for Jews.
Torah	Religious book / scripture for Jews, it includes the 10 Commandments.

FRENCH YEAR 7: EN VACANCES!

Où vas-tu normalement en vacances?
(Where do you normally go on holiday?)
Normalement / d'habitude / en juin / juillet / août / septembre / en je vais en France / en Italie / en Belgique / en Allemagne / aux États-Unis
(Normally / usually in June / July / August / September / I go to France / Italy / Belgium / Germany / the USA)
Je reste / on reste à la maison
(I stay / we stay at home)
Je pars en vacances / on part en vacances
(go on holiday / we go on holiday)

J'**y** passe une semaine / deux semaines / quelques jours avec ma famille / mes amis / mon père
(I spend one week / two weeks / a few days with my family / my friends / my dad there)
On **y** va en bateau / avion / voiture / camping-car / à vélo)
(We go there by boat / plane / car / campervan / bicycle)

au bord de la mer / à la campagne / dans une ville / dans un village / dans une forêt
(by the sea / in the countryside / in a town / in a village / in a forest)

Follow this QR code to find out the names of some more countries in Europe!

On reste dans un camping/ un hôtel / un gîte
(We stay in a campsite / hotel / holiday home)
D'habitude il fait chaud / froid / beau / mauvais / il pleut / il neige
(Usually it's hot / cold / nice weather / bad weather / it rains / it snows)
Pendant la journée j'aime aller à la plage / aller en ville / nager dans la mer / jouer sur la plage / faire des magasins / acheter des souvenirs
(During the day, I like to go to the beach / go to town / swim in the sea / play on the beach / do some shopping / buy some souvenirs)
Pendant la soirée j'aime aller au restaurant / danser / lire un livre / regarder un film / promener en ville
(During the evening, I like to go the restaurant / dance / read a book / watch a film / walk to town)
J'aime / je n'aime pas passer mes vacances en France parce que / car c'est genial / barbant
(I like / I don't like to spend my holidays in France because it's great / boring)

Game!

Follow this QR code to listen to and read an example of someone talking about their summer holidays.
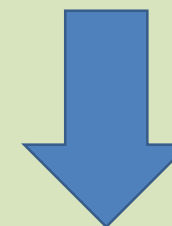
Et l'année prochaine? Qu'est-ce que tu vas faire?
(And next year? What are you going to do?)

Qu'est-ce que tu vas faire l'année prochaine / en septembre?
(What are you going to do next year / in September?)
L'année prochaine je vais / je veux / je voudrais / j'espère…
(Next year I am going / I want / I would like / I hope…)
Aller / visiter / voyager
(to go / to visit / to travel)
Je vais rester dans un hôtel / un camping / un gîte)
(I'm going to stay in a hotel / campsite / holiday home)

Game!

The verb 'aller' (=to go) is <u>very</u> important. Try to learn it off by heart – the song might help!
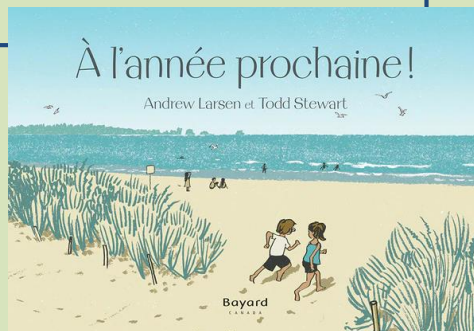
aller = *to go*
je **vais** *(I go)*
tu **vas** *(you go)*
Il / elle **va** *(he / she goes)*
nous **allons** *(we go)*
vous **allez** *(you go)*
Ils /elles **vont** *(they go)*

À l'année prochaine !
Andrew Larsen et Todd Stewart
Bayard

Talking about future plans

Just like in English, to say what you are going to do, simply use the verb 'aller' with an infinitive verb.

Reminder – infinitive verbs end in either –er, -ir or –re.

Examples:

L'année prochaine, <u>je vais visiter</u> la France
(Next year, I am going to visit France)
En septembre, <u>je vais aller</u> en Allemagne et nous allons faire du camping
(In September, I am going to go to Germany and we are going to go camping)
Dans deux ans, <u>nous allons voyager</u> autour du monde!
(In two years' time, we are going to travel around the world)

partir en vacances – **to go on holiday**
visiter des monuments – **to visit the sights**
rendre visite chez mes grandparents – **to visit my grandparents**
faire des randonées – **to go on hikes / walks**
apprendre une langue – **to learn a language**

Other ways to express future plans...
je voudrais = **I would like**
je veux = **I want**
j'espère = **I hope**

Je cherche un souvenir pour mon père... *(I'm looking for something for my dad*

les magasins *(The shops)*
la boulangerie *(the bakery)*
la boucherie *(the butcher)*
la librairie *(the bookshop)*
le magasin de vêtements / la boutique *(the clothes shop)*
le magasin de jouets *(the toy shop)*
le marché *(the market)*
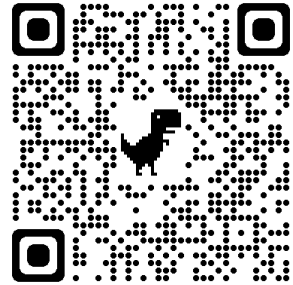
C'est combien... ? (*How much...?)*

un livre *(a book)*
un poster *(a poster)*
un jouet *(a toy)*
une photo de... *(a photo of...)*
un drapeau *(a flag)*

Vous désirez ? *(What would you like)*

je voudrais *(I would like)*
je cherche *(I'm looking for)*
Avez-vous...? *(do you have)*
j'ai besoin de... *(I need)*

un cadeau *(a present)*
un souvenir *(a souvenir)*

un manteau *(a coat)*
un pull *(a jumper, sweater)*
une ceinture *(a belt)*
un chemisier *(a blouse)*
une chemise *(a shirt)*
un tee-shirt *(a tee-shirt)*
une jupe *(a skirt)*
un chapeau *(a hat)*
des chaussures *(some shoes)*

rouge *(red)*
jaune *(yellow)*
bleu *(blue)*
vert (*green)*
blanc *(white)*
noir *(black)*

c'est pour mon père / ma mère *(it's for my dad / mum*)
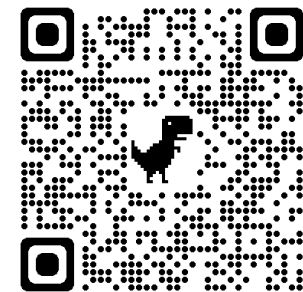
SPANISH YEAR 7: LAS VACACIONES

¿ Dónde vas de vacaciones normalmente? = *Where do you normally go on holiday?*

normalmente *(normally)*
generalmente *(generally)*
cada año *(each year)*

me quedo en Inglaterra/ salisbury *(I stay in salisbury)*
voy de vacaciones a *(I go on holiday to)*

Italia   *(Italy)*
Francia   *(France)*
España   *(Spain)*
Los Estados Unidos *(USA)*
Australia   *(Australia)*

me gusta/n *(I like)*
no me gusta/n *(I don't like)*
prefiero *(I prefer)*
odio *(I hate)*

pasar las vacaciones (spending the holidays)

en *(in)*
las montañas *(the mountains)*
el campo *(the countryside)*
la costa *(the coast)*
la ciudad *(the city)*

Listening practice!

¿ Cómo vas normalmente? = *How do you normally get there?*

voy *(I go)*
viajo *(I travel)*   **+ en (by)**
vamos *(we go)*
viajamos *(we travel)*

avión *(plane)*
coche *(car)*
tren *(train)*
barco *(boat)*
bici *(bike)*

¿Dónde te alojas? = where do you stay?

me alojo en *(I stay)*
nos alojamos en *(we stay)*

un hotel *(a hotel)*
un camping *(a campsite)*
un airbnb *(an airbnb)*
un chalet *(a holiday home)*

porque es *(because it is)*

cómodo *(comfortable)*
facíl *(easy)*
guay *(great)*
barato *(cheap)*
relajante *(relaxing)*
animado *(lively)*

What is a youth hostel?

¿Qué haces durante tus vacaciones? What do you do on holiday?

para pasar el tiempo *(to pass the time)*
durante el día *(during the day)*

si hace buen/mal tiempo *(if it is nice/bad weather)*
si hace sol/viento/tormenta *(if it is sunny/windy/stormy)*
si llueve *(if it rains)*

bailo en la discoteca *(I dance i the disco)*
como en restaurantes *(I eat in restaurants)*
compro recuerdos *(I buy souvenirs)*
doy una vuelta en bici *(I go for a bike ride)*
me relajo *(I relax)*
visito los monumentos *(I visit munuments)*

hago/ practico … (*I do/ I practise…)*

el ciclismo *(cycling)*
el esquí *(skiing)*
el patinaje *(skating)*
la equitación *(horse riding)*
la natación *(swimming)*
la vela *(sailing)*
(practico) el idioma *(the language)*

juego … *(I play)*

al rugby *(rugby)*al baloncesto *(basketball)*
al fútbol *(football)*
al voleibol *(volleyball)*

¿ Dónde vas de vacaciones en el futuro?= Where are you going on holiday in the future?

este año *(this year)*
en el verano *(in the summer)*
durante las vacaciones escolares *(during the school holidays)*

voy a ir a *(I am going to go to)*
voy a viajar a *(I am going to travel to)*
vamos a ir a (we are going to go to)
vamos a viajar a (we are going to travel to)

España   *(Spain)*
Alemania   *(Germany)*
Suiza   *(Switzerland)*
Grecia   *(Greece)*
Los Estados Unidos *(USA)*
Australia   *(Australia)*
Cuba   *(Cuba)*

¿ Dónde te gustaría ir de vacaciones?= where would you like to go on holiday?

si gano la loteria *(if I win the lottery)*
cuando sea major *(when i am older)*

me gustaría ir a*(I would like to go to)*
iría a *(I would go to)*
viajaría a *(I would travel to)*

Talking about the future;
using the verb 'ir' (to go)

Saying what you are going to do in Spanish is really the same as in English.
Examples:
I am going + to go
You are going + to play
He is going + to watch
etc

So:

Use the verb **'ir'** (to go) and follow it with 'a' and then an infitive verb.

ir = to go
voy = I go / am going
vas = you go / are going
va = s/he goes / is going

vamos = we go / are going
váis = you go / are going
van = they go / are going
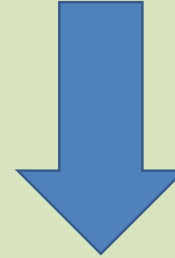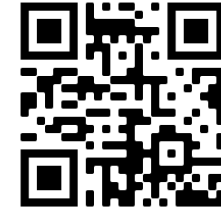
voy a ir de vacaciones = I am going to go on holiday
vas a jugar al golf = you are going to play golf
vamos a comer = we are going to eat

FUTURO

Estoy buscando un recuerdo para mi padre... *(I'm looking for something for my dad*

Las tiendas *(The shops)*

la panadería *(the bakery)*
la carnicería *(the butcher)*
el mercado *(the market)*
la librería *(the bookshop)*
la tienda de ropa *(the clothes shop)*
la juguetería *(the toy shop)*

¿Cuánto cuesta(n)...?*(How much...?)*

un libro *(a book)*
un poster *(a poster)*
un juego *(a toy)*
una foto de... *(a photo of...)*
una bandera *(a flag)*

¿Qué desea? *(What would you like)*

quisiera *(I would like)*
estoy buscando *(I'm looking for)*
¿Tiene...? *(do you have)*
 necesito *(I need)*

un regalo *(a present)*
un recuerdo *(a souvenir)*

un abrigo *(a coat)*
un suéter *(a jumper, sweater)*
un cinturón *(a belt)*
una blusa *(a blouse)*
una camisa *(a shirt)*
una camiseta *(a tee-shirt)*
una falda *(a skirt)*
una gorra *(a hat)*
unos zapatos *(some shoes)*

rojo *(red)*
amarillo *(yellow)*
azúl *(blue)*
verde (*green)*
blanco *(white)*
negro *(black)*

es para mi padre / madre *(it's for my dad / mum*)

The Fundamentals of Art

TERM 5 and 6

LINE

A **LINE** is the path left by a moving point, eg. A pencil or a brush dipped in paint. A **LINE** can take many forms, eg.
Horizontal, diagonal or curved.
A **LINE** can be used to show contours,
movements, feelings and expressions.
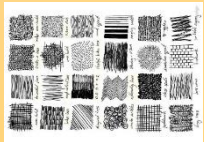
TONE

TONE means the lightness or darkness of something. This could be a shade or how dark or light a colour appears.
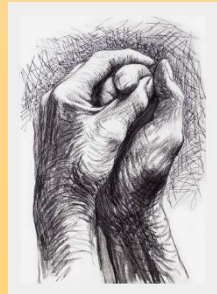
SHAPE/FORM

A **SHAPE** is an area enclosed by a **LINE**. It could be just an outline or it could be shaded in.
FORM is a three dimensional shape such as a sphere, cube or a cone.

Sculpture and 3D design are about creating **FORMS**
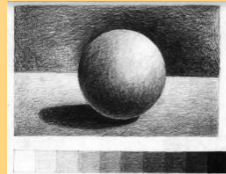
TEXTURE

TEXTURE is the surface quality of something, the way
something feels or looks like it feels.
There are two types of texture: **ACTUCAL TEXTURE** and **VISUAL TEXTURE**.
ACTUAL TEXTURE: really exists so you can feel it and touch it
VISUAL TEXTURE: created using different marks that
represent actual **TEXTURE**

COLOUR

There are 3 primary **COLOURS**: **RED**, **YELLOW**, **BLUE**

By mixing any 2 **PRIMARY COLOURS** together you create **SECONDARY COLOURS**; **ORANGE, GREEN, PURPLE**

PATTERN

PATTERN is a design that is created by
repeating **LINES, SHAPES, TONES or COLOURS.**

Patterns can be manmade or natural.

Artists you could research:
- Mark Hearld
- Brian Wildsmith
- David Hoickney – dachshund series
- Henri Rousseau
- Franz Marc

The Fundamentals of Art

ESSENTIAL EQUIPMENT:
- PENCIL PACK (2B, 4B, 6B ETC)
- ERASER
- SHARPENER
- SKETCHBOOK

OPTIONAL EQUIPMENT:
- DRAWING PENS
- WATERCOLOUR SET
- WATERCOLOUR PENCILS
- PAINTBRUSHES

ART MAKES PEOPLE POWERFUL

PRIMARY COLORS   SECONDARY COLORS   TERTIARY COLORS

Lesson 1: Understanding the Value Scale

Positive/Negative Shapes
Positive shapes – subject or dominant shapes on the picture plane
Negative shapes – background areas

TALKING ABOUT ART:
- What are you looking at?
- How was it made?
- Who made it?
- How will it inspire your work?
- Do you like it or dislike it? Why?

Techniques you will explore:
- Observational drawing
- Experimental drawing
- Mono-printing
- Poly-printing
- Extending the frame
- Painting
- Collage
- Colour theory
- Photography

COLOUR	LINE	SHAPE/FORM/SPACE	PATTERN AND TEXTURE	TONE
BRIGHT	FLUENT	CLOSED	REPEATED	BRIGHT
BOLD	CONTINUOUS	OPEN	UNIFORM	DARK
VIBRANT	CONTROLLED	DISTORTED	GEOMETRIC	FADED
PRIMARY	LOOSE	FLAT	RANDOM	SMOOTH
SECONDARY	POWERFUL	ORGANIC	SYMMETRICAL	HARSH
TERTIARY	STRONG	POSITIVE	SOFT	CONTRASTING
RADIANT	ANGULAR	NEGATIVE	IRREGULAR	INTENSE
VIVID	FLOWING	FOREGROUND	UNEVEN	SOMBRE
DULL	LIGHT	BACKGROUND	ROUGH	STRONG
CONTRASTING	DELICATE	COMPOSITION	BROKEN	POWERFUL
COMPLIMENTARY	SIMPLE	ELONGATED	GRID	LIGHT
HARMONIOUS	THICK	LARGE	FLAT	MEDIUM
MONOCHROME	THIN	SMALL	WOVEN	DARK
NATUARL	BROKEN	2D	ORGANIC	LAYERED
SATURATED	OVERLAPPING	3D	SMOOTH	DEPTH
PASTEL	LAYERED	TWISTED	ABSTRACTED	DEVELOPED
COOL	MARK MAKING	JAGGED		SOFT
WARM				

A
R
T
I
S
T

ATTITUDE

Be positive and try your best!

RESPECT

Respect others, work and the room

THINK

Understand and demonstrate.

IMAGIINE

Be creative, use your imagination!

SPOTLESS

Tidy up after yourself.

TARGET

Follow directions.

MARK HEARLD

Mark Hearld is a contemporary British artist, printmaker, designer and ceramicist.
He has illustrated many books, exploring the British countryside.
He is inspired by wildlife, and the natural world around us.

COLOUR

BRIGHT
BOLD
VIBRANT
PRIMARY
SECONDARY
TERTIARY
RADIANT
VIVID
DULL
CONTRASTING
COMPLIMENTARY
HARMONIOUS
MONOCHROME
NATUARL
SATURATED
PASTEL
COOL
WARM
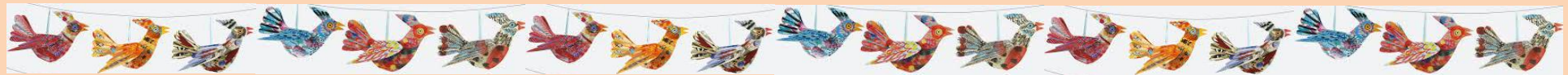
Mark Hearld uses a range of media to create his pieces, including…

Mixed media
Oil pastel
Lino cut
Wood cut
Mono printing
Drawing
Painting
Collage
And much much more!

Wax Resist how to…
1. Draw out your design in oil pastel.
2. Make sure your lines don't have any paper showing through them.
3. Carefully layer your ink over your oil pastel and use water to spread out the colour.
4. Use tissue to dab up any excess ink.
5. Let your ink dry and watch the oil resist the ink!

1. Add design in oil pastel

2. Paint over with ink

3. Reveal your wax resist design!
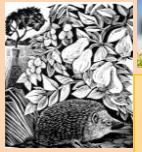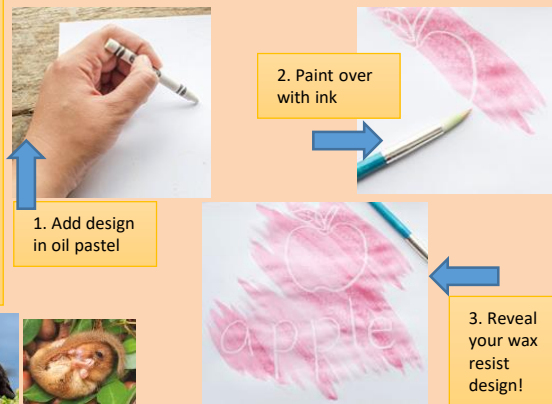
Techniques you could potentially explore:

- Observational drawing
- Experimental drawing
- Mono-printing
- Poly-printing
- Painting
- Collage
- Colour theory
- Photography
- 3D
- Oil pastel
- Wax resist

How to make a successful artist analysis page
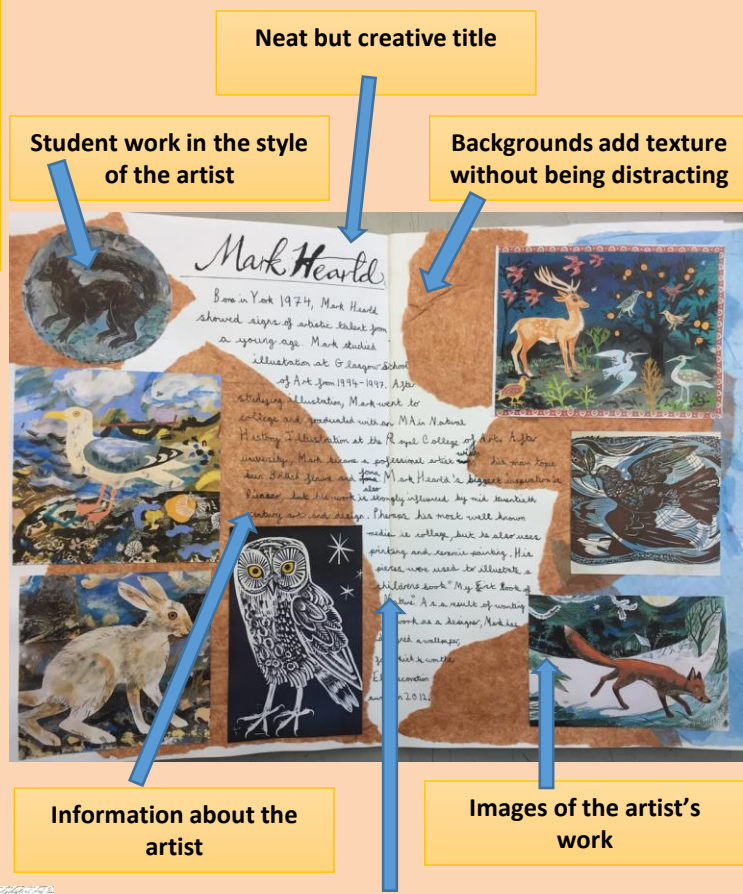
Neat but creative title

Student work in the style of the artist

Backgrounds add texture without being distracting

Information about the artist

Images of the artist's work

Added opinion of the work using key art specific language

MARK HEARLD

There are lots of different habitats in Britain, including:

Cliffs and beaches

Farmland

Estuaries and mudflats

Heathland

Meadows and grasslands

Uplands, mountains and moors

Urban and suburban

Wetlands

Woodlands

Natural Forms

Colour
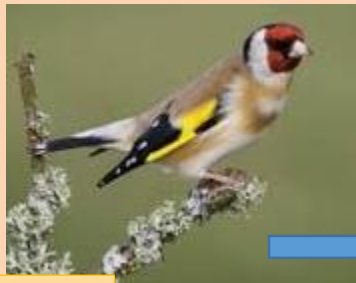
Vibrant

Uneven

Organic

Mixed Media

Examples of British wildlife that inspires Mark Hearld

Layered

Overlapping

Mark making

Visual Texture

Sense of movement

How to research habitats…

Where do the animals live?

How are their fur/scales/feathers adapted to their climate?

Where do they build their homes?

What do they eat?

How do they build their homes?
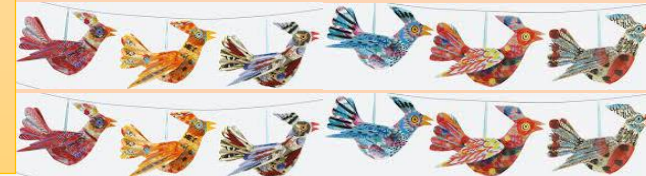
Form and Structure

Module Learning Objectives

Understand what Form and Structure is in music.
Understand what Question and Answer, Binary, Ternary and Rondo Forms are in music.
Recognise the differences between music based on different Forms and Structures.
Know how to label or identify different sections within a complete piece of music.
Recognise that music with a recurring or repeated section provides familiarity to the listener.
Recognise why Form and Structure is important in music.
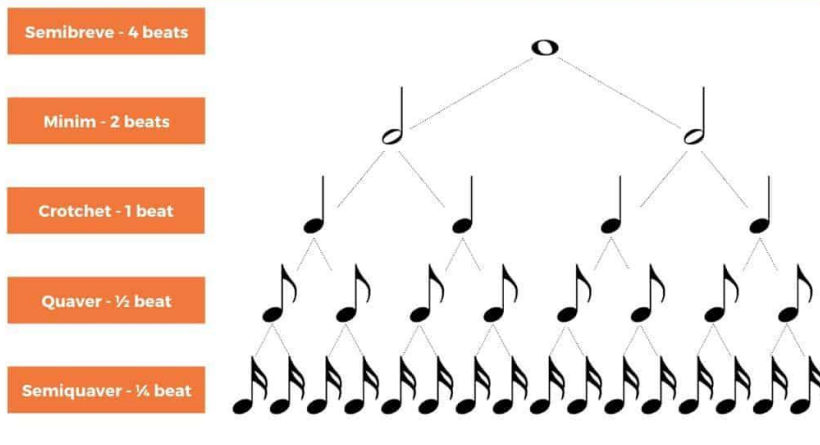
Language for Learning/Music Theory

FORM/STRUCTURE – How a piece of music is organised into different sections or parts.
PHRASE – A short section of music, like a "musical sentence".
BINARY FORM (AB) – Describes music in two separate sections. The first section is labelled "A" and the second section labelled "B" – either or both sections may be repeated. The "B" section **contrasts** musically in some way to the first "A" section.
TERNARY FORM (ABA) – Describes music in three sections. The first section can be labelled "A" and the second section "B". The "B" section **contrasts** in some way to the first "A" section which is then **REPEATED** after the "B" section again making a "musical sandwich".
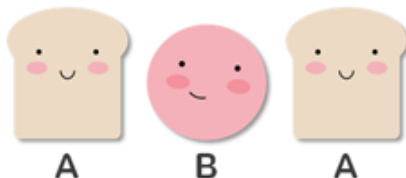**RONDO FORM (ABACADA….)** – Describes music where a main **THEME** or **MELODY** "A" keeps returning between different contrasting sections "B", "C", "D". etc called **EPISODES**.
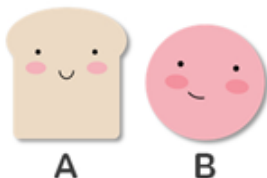
THE MUSIC NOTE TREE

- Semibreve - 4 beats
- Minim - 2 beats
- Crotchet - 1 beat
- Quaver - ½ beat
- Semiquaver - ¼ beat

Additional Vocabulary to Research and Learn

- Pitch
- Chord
- Dynamics
- Repetition
- Beat
- Ensemble
- Solo
- Key signature
- Time signature

- Treble Clef
- Bass Clef
- Harmony
- Sonority
- Drone
- Ostinato
- Solo
- Rhythm
- Tonality

Form and Structure

A. Question and Answer Phrases

Two short sections in a piece of music. The first **QUESTION PHRASE** is followed by the **ANSWER PHRASE** which in some way copies or answers the first – like a 'musical conversation'. The **MELODY** below shows the opening of "Twinkle Twinkle Little Star" - notice how the **QUESTION PHRASE** rises in **PITCH** and the **ANSWER PHRASE** descends in **PITCH**.

Question Phrase

Answer Phrase

B. Binary Form

BINARY FORM (AB) describes music in two sections. The first section can be labelled "A" and the second section "B" (either or both sections may be repeated). The "B" section **contrasts** musically in some way to the first "A" section.

A   B

C. Ternary Form

TERNARY FORM (ABA) describes music in three sections. The first section can be labelled "A" and the second section "B" The "B" section **contrasts** in some way to the first "A" section which is then **repeated** after the "B" section again.

A   B   A

D. Rondo Form

RONDO FORM (ABACADA...) describes music where a main **theme** or **melody** "A" keeps returning between different contrasting sections "B, C, D..." (called **episodes**)

A   B   A   C   A

E. Key Words

1. **FORM/STRUCTURE** – How a piece of music is organised into different sections or parts.

2. **PHRASE** – A short section of music, like a "musical sentence".

3. **PITCH** – The **highness** or **lowness** of a sound or musical note.

4. **MELODY/THEME** – The main **tune** of a piece of music. The melody or theme often varies in **pitch** and "good melodies" have an organised and recognisable shape.

5. **HARMONY** – Playing two or more notes at the same time. The "harmony part" in music is different to the melody part.

6. **DRONE** – A repeated note or notes of **long duration** played through the music. When two notes are used, they are often **five** notes apart (a **fifth**).

7. **OSTINATO** – A repeated musical pattern. An ostinato can be a repeated rhythm or a repeated melody and are usually short.

F. Music Theory

Treble Clef Pitch Notation

C   D   E   F   G   A   B   c'   d'   e'   f'

Treble Clef "Lines" Note Names

E   G   B   d'   f'

Treble Clef "Spaces" Note Names

F   A   c'   e'

Repeat Mark
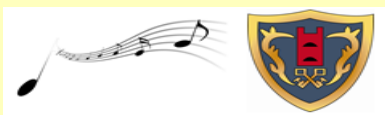
#Learning Objectives

#How to use different forms of Musical Accompaniments to accompany traditional Folk Songs in different ways, showing an awareness of intervals and the Harmony created.

#Understand the different textural layers and form and structure of Folk Songs.

#Know some of the different instruments, timbres and sonorities often used in the performance of Folk Music.

#Understand and use the different musical information given on a lead sheet and available musical resources in creating an effective Musical Arrangement of a Folk Song.

Language for Learning/Music Theory

ACCOMPANIMENT – Music that accompanies either a lead singer or melody line.

DRONE – A form of musical accompaniment consisting of continuous sounding pitched note or notes (usually a fifth apart (5 notes)), often in the bass part.

HARMONY – The effect produced by two or mote pitched notes sounding together at the same time

BASS PEDAL - A note of long duration, often held in the bass part

INTRO – The introduction sets the mood of a song. It is often instrumental but can occasionally start with lyrics.

VERSES – Verses introduce the song theme. They are usually new lyrics for each verse which helps to develop the song's story, but the melody is the same in all verses.

CHORUS – All the choruses have the same lyrics each time with the same melody and music.

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*Many folk songs are hundreds of years old and were passed down orally through several generations. Often songs were memorized as people couldn't read or write

*Folk songs are often related to national culture as people learn songs from the same country as their grandparents

*Folk songs often commemorate historical and other events so as can learn from the past by studying the lyrics

*Folk songs can evolve over time and lyrics to songs might be different in different regions so there are many versions. Often we don't even know who wrote the song in the first place. Most folk songs are anonymous

*Some folk songs originated from doing boring work such as planting, weaving and milling. Some are for entertainment and some for story and history-telling. Some are about war

*English folk songs are linked to sea-shanties (see Voice and Songs 2), Jigs, Hornpipes and Morris Dancing

*Ralph Vaughan-Williams (see English Composer 2) collected English folk songs

*In the 1960s, there was a revival of folk music and this is called contemporary folk music. Folk rock was also popular

---

Suggested Folk Songs

Cockles and Mussels (Irish)

Lavender's Blue (English dated around 1670)

Scarborough Fair (English dated around 1700. Simon and Garfunkel recorded a version in 1965)

Amazing Grace (An English hymn from 1779. This became popular in the 60s folk revival)

Skye Boat Song (Scottish dated late 1800s. Tom Jones and Rod Stewart recorded versions in the 60s)

Greensleeves (English dated late 1500s. It is popular belief that this was written by Henry VIII although it was more likely Elizabethan

Charlie is my Darling (Scottish)

The Tree in the Wood (English dated around 1900s)

The Ash Grove (Welsh 1800s)

The Cuckoo (English 1800s)

Modern Folk Artists

Bellowhead

Kate Rusby

Jim Moray

Folk Music

A. History of Folk Music

Folk Music is **TRADITIONAL** music **of the people** performed by the people themselves and played within their own communities. Folk Music was passed on **ORALLY** (through speech or song) from one generation to the next – the **ORAL TRADITION** (passed down by word of mouth), and many Folk Songs were not originally written down. The Industrial Revolution of the 18th and 19th Centuries destroyed communities so many of the traditional Folk Songs were lost. Attempts were made to collect these songs and *Cecil Sharp* published a 'written down' collection of English Folk Music in 1907 which had taken a lifetime to collect. During the 1950's a great **FOLK MUSIC REVIVAL** began and bands in the 1970's 'mixed together' Folk and Rock (**FOLK ROCK**) as a type of musical **FUSION** *e.g., Lindisfarne, Steeleye Span*. Other musicians created more modern and commercial **ARRANGEMENTS** of Folk Songs such as *Ralph McTell's "Streets of London"* in 1975. Folk Music influenced bands such as *The Beatles* and artists such as *Paul Simon* and modern-day groups such as *The Corrs* use traditional Folk Music in their songs.

Cecil Sharp · The Corrs · Ralph McTell · Lindisfarne

B. Types of Folk Music

People from different countries and cultures have their own **FOLK MUSIC**. However, although it may sound different, **FOLK SONGS** are often include **WORK SONGS**, including **SEA SHANTIES**: songs sung at sea by sailors, the rhythm of these helped the sailors haul the ropes that hoisted the sails, and songs about **EVERYDAY LIFE, THE SEASONS, BATTLES AND WARS, SHEPHERD'S SONGS** and **LULLABIES** (cradle songs). People also sang Folk Songs to help them forget their aches and pains *e.g., shepherds sang about their sheep and lambs and the bitter weather to help keep their spirits high.* Folk Music can also be **INSTRUMENTAL**, often used for dancing, entertainment, celebration, and religious ceremonies. Dancing to Folk Music still happens such as MORRIS DANCERS or MAYPOLE DANCING.

Morris Dancing · Maypole Dancing
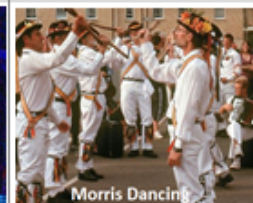
C. Folk Song Accompaniments

TONIC PEDAL - A (BASS) PEDAL (POINT/NOTE) is a note of long duration, often held in the bass part (lower down the keyboard) which uses the **TONIC** note, over which the melody line and chords will "fit" *e.g.*

DRONE - A form of musical accompaniment consisting of continuous sounding pitched notes, usually a **FIFTH** apart (5 notes), again, often in the bass part *e.g.*

OSTINATO – A repeated musical pattern as an accompaniment, often using notes of the **CHORD** and rhythm patterns from the song *e.g.*

CHORDS – Many Folk Songs use PRIMARY CHORDS (CHORD I, CHORD IV and CHORD V) and sometimes the SECONDARY CHORDS of CHORD III and CHORD VI as a musical accompaniment. The notes of a CHORD can be performed in different ways to create different accompaniments:

As a **TRIAD** (all three notes (**ROOT, THIRD, FIFTH**) performed together, the **ROOT** sometimes in the BASS part acting as BASS LINE).
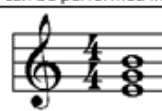
As a **BROKEN CHORD** - a way of playing the notes (**ROOT, THIRD, FIFTH**) of a chord separately ('broken' up) in a different order, ascending (going up) or descending (going down).

As an **ARPEGGIO** - playing the notes of a chord ascending or descending (**ROOT, THIRD, FIFTH**) in order, but separately.
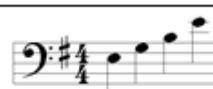
As an **ALBERTI BASS** - a way of playing the notes of a chord in the order: lowest (**ROOT**), highest (**FIFTH**), middle (**THIRD**), highest (**FIFTH**), repeated several times as a bass line **ACCOMPANIMENT**

D. Harmony in Folk Music: Intervals

ACCOMPANIMENT – Music that accompanies either a lead singer or melody line. This can be instrumental performed by members of a Folk Band but also vocal often known as the "backing" provided by backing singers. (see C for different forms of accompaniments).

HARMONY – The effect produced by two or more pitched notes sounding together at the same time *e.g.*, a chord or triad creates harmony or a lead singer and backing singers singing different melodies or parts 'in harmony' (**COUNTER MELODY**)

INTERVAL – The distance between two musical notes. The intervals of a **FOURTH** and **FIFTH** are common in Folk Music.

2nd   3rd   4th   5th   6th   7th   Octave

F. Instruments, Timbres and Sonorities of Folk Music

Many **FOLK SONGS** are often performed **UNACCOMPANIED** (with no instrumental accompaniment) = **A CAPPELLA**. However, the following instruments are often used in Folk Music:

Penny/Tin Whistle	Harmonica or Mouth Organ	Acoustic Guitar	Northumbrian Pipes	Accordion	"Fiddle" (Violin)	Mandolin	Banjo	Concertina

The Most Disastrous Family Holiday Ever. Ever!

Study Focus

In this scheme of work you will work with the idea of the mishaps and mistakes that can happen on a family holiday. You will use the **character** and **playwriting** skills that you learned earlier in the year. The aim is for you to extend your abilities in each of these skills and combine them to produce an extended play, in several scenes in several different settings in the comic genre (style). You will practise introducing characters through narration and remember that an actor *plays* a character It is best if you have a good time while you are working on this – it will help you get the light-hearted nature which is so helpful in this scheme of work. Good luck.

Things that you will learn in this topic…

- Ways to create depth and detail in the characters and plays that you write and devise.
- How to adapt a story into play format.
- Ideas about *Internal* & *External Character*.
- How **contrast** (difference) in personality can make a character more interesting and life like.
- How **contrasts** between characters can make your story and a play more engaging, exciting & entertaining.
- How characters and their relationships can make a story and play funny and entertaining – how you can write in the *comic genre*.

The Tasks that you may do in this topic

Writing your version of, The Most Disastrous Holiday Ever. Ever!!
Writing a character profile for each character.
Adapting your story into a play using *Play Format*.
Enrolling your family members to read through your play with you.
Imagining and sketching the costumes that you would choose for each character.
Making a chart listing *Internal Character* & those we include as, *External Character*

Key Ideas to learn & remember

One thing that you will consider when writing a play is the characters. When writing your characters you will need to think about what they are like AND how you present them
Internal Character – (what they are like inside) this includes; the character's personality, age, mood, thoughts & feelings.
External Character – (How we present them to audience) This is the way the actor shows the audience what the character is like. It includes; clothes / costume, facial expressions, gestures, accent, tone of voice, tempo rhythm (how quick / slow they talk and move). You must also consider what the characters do and how they do it, and how this is recorded in a script. Remember to include:
Cues – This is an indication to the actor that is their character's turn to speak.
Stage directions - These tell the actor how to say the line and what to do, for example (slowly and sadly whilst walking away) stage directions are written in brackets just like I have done.
Classic Play Structure- Remember that the beginning scenes of a play need to show the audience where the scene is set, what the weather is like, what the characters are like, what their relationships are like- who likes who, who irritates who etc.

The 6 Ingredients of a Play- (IOP)

Characters- the people in the play

Plot- The storyline- Your characters in this topic are all part of a family.

Setting- Where & when the scene is set. Your play story and play will change settings because the characters are going on a journey. Different scenes will have different settings.

Speech – The words that the characters say.

Theme – What the play is about- its meaning- its message

Genre – The style of the play. You are writing in the comic genre in this topic.

Play Format

This is the style of writing we use to write plays. It is the style that playwrights use (note the spelling). We don't use speech marks because everything is speech in a play, except for the stage directions which are put in brackets and usually written in italics. The character's name is usually written in bold and then the words that they say are written after with a colon separating them so it looks like this:

Brighton beach Tuesday evening. It is warm and sunny with a gentle breeze. The Postlethwaite family are enjoying a picnic. Carrie, the dog is snapping at wasps.

Dad: *(sternly)* Carrie! Sit! Leave the wasps.

Mum: She's only playing, Derek. Let her be.

Dad: it's not you who'll be paying the hospital bills if she gets stung and goes into an anaphylactic shock.

Rachel: (worried) Will Carrie die if she gets stung, mummy?

Mum: No darling, (*even more harshly than dad*) Carrie! Sit! ….You get the idea?

You can also use the margin in your books

Playwright (not 'playwrite')

Wright is a very old English word for a 'maker' – someone who makes things. A wheelwright is someone who makes wheels. So, a playwright is someone who *makes*, or *writes* plays. Can you guess what a Plowright does?

Ideas: What could possibly go wrong?

People can forget things, like; passports, or money, or, suitcase or clothes, or keys, or the kids, or the dog, or grandma.

The car could get a puncture. It could roll downhill. Someone could lock the car keys in the car. They could go to the wrong train station/ airport/ country. Bags can get lost. People can get lost and so on and so on.

What can the characters be like?

Look to make the characters different - we say the characters have, *contrasting attributes..*
Maybe their personalities clash… maybe some things irritate each other.
The characters should have a positive part of their personality and something not so useful like; they are always late, clumsy, forgetful, greedy, moody, sulky, loud, silent, stroppy, stressy…

Guidelines & notes

Remember that it is a **family holiday-not** a group of friends' holiday.
Make your characters have different personalities, moods, likes and dislikes.
Make your play a comedy so it is in the, *comic genre.*
You do not need to tell jokes. Instead, make it funny through the different characters' actions, relationships, personalities, mistakes and changing moods.

Things that you will learn in this topic

- How to create greater depth and detail in your characters.
- How to keep a diary as your character.
- How to use interview techniques and *hot-seating* to create clarity and depth in your characters.
- How to work with others using *PIPS* and *Physical Theatre to* create the shape and movement of your own yacht sailing on an ocean.
- How to combine **emotion** and **mime technique** to devise and perform a powerful *monologue.*

SHAMBHALA POCKET CLASSICS
MOUNT ANALOGUE
René Daumal
TRANSLATED BY ROGER SHATTUCK
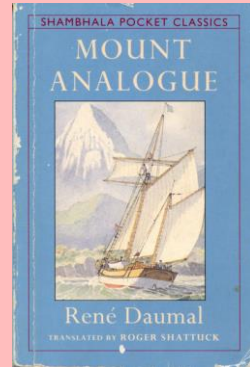
About the Book and Author

Rene Daumal began writing, *Mount Analogue* in 1939. The Second World War had started and Rene had learned that he was seriously ill with tuberculosis. It was a very difficult time. His wife was Jewish which meant they had to flee German occupied Paris and seek refuge in the Pyrenees mountains- an area that was still free. As refugees in wartime, life was incredibly hard for them. Rene did his best to complete the book but his failing health in such awful conditions prevented him in the last. He passed in 1944 leaving his book unfinished.


Rene Daumal was a man of great wisdom, generosity & courage. He was deeply interested in science, ancient languages, philosophy and religion. He was a creative, learned and spiritual man. We can learn much from his life as well as his books.

The Story:

Professor Sogol did some calculations to work out how much the world weighed- quite a task! He was puzzled, however, because the weight that he came up with didn't match the amount of land mass known to make up the Earth. Professor Sogol concluded that there must be some land missing- some land not yet discovered even though explorers had mapped the whole world. His calculations suggested that the missing part would be a mountain. He named it, *Mount Analogue* and even though it would be very difficult to find even if it existed and he wasn't sure it existed, he decided to organise an expedition to find it.

Professor Sogol knew that Mount Analogue would be a very special place and unlike anywhere else on Earth. It would take a very special crew to journey there. They would need to have specialist skills to find this land and knowledge to understand it. Men and women who were accomplished in the fields of zoology, botany, anthropology, languages, medicine, cartography, for example. As the Professor planned to voyage by sea on his yacht, the crew would also need to be fine sailors and navigators.
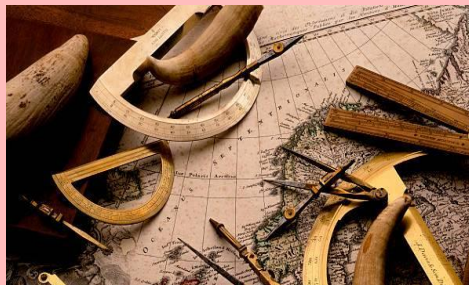
Navigating using a sextant

The Story Continued:

Professor Sogol thought that *Mount Analogue* must be so dense that it bends light, a bit like the way massive star's gravity bends light. This would be the reason that it had never been discovered, or that anyone who had found it, never returned. The journey would be a long one, perhaps a life time. The trip would require total commitment and a willingness to give up everything. Such an expedition would require those successful in gaining a place on the yacht to have many qualities; honesty, courage, resilience, kindness- perhaps you will think of some more.

Eventually, by rigorous interview, the Professor found all the suitable crew members. They set sail one fine morning, at first light on their trusty yacht which they called, *'Impossible'.* And so, their expedition to a place that may not exist, began...

Key Ideas and things from the story

Analogue – A thing (or person) seen as comparable to another. "An Interior analogue of an exterior world" is one example in the Oxford Dictionary. Analogy comes from the same source.

Expedition – **A journey** undertaken by a group of people with a particular purpose, especially that of exploration…

The Impossible – The name of the yacht they sail on to find Mount Analogue. Why would they call it, *The Impossible* ?

One for the Botanists

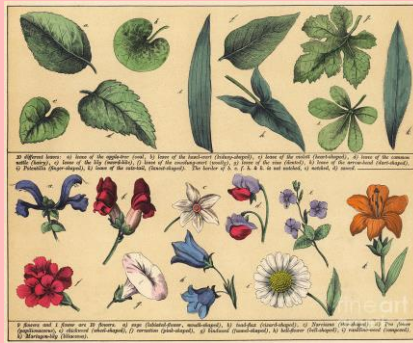Homo erectus – an early human species. For the anthropologists

An example of cuneiform writing from ancient Mesopotamia. A linguist would be curious about this

An extract of the Mappa Mundy – one of the earliest maps in existence

An example of Hieroglyphic writing from ancient Egypt.

Some subjects and skills that are useful on the expedition

Have a think why people with these skills would be useful on an expedition to a land that may not exist and we know nothing about

Zoology – The study of everything to do with animals. We get the word zoo from the same place.

Botany - The study of everything to do with plants. A Botanist.

Anthropology – The scientific study of creatures like us- human beings! *Anthropologists* are scientists who study ancient people as well as modern people. **Homo Erectus** was an early type of human (about a million years ago). I wonder what might come after us.

Archaeology – The study of our human past from such things as ancient cities, tools, coins, jewellery. These things are usually buried through time. Archaeologists often have to carefully dig these up.

Linguistics – The scientific study of language and languages

Sociology – The study of society. *Social scientists* or *sociologists* study social relationships and social interaction- how people work and live together in groups including families.

Cartography – The study of maps and map making. A *cartographer* is someone who studies & makes maps.

Geology – **geologists** study the rocks from which the Earth is made and how they change over time.

Key Previous Knowledge and learning to Draw upon

As we enter the last two term of your first year in the school it is timely and useful to remember some things we have done & learned in our drama lessons

You will need to remember our work on **character**; how characters are made up of their personalities, backgrounds, attitudes, beliefs, thoughts and feelings. You will add a character's job, education and training to this list.You will also need to remember the ways that an actor shows their character to the audience once that they know what they are like (their personality etc.)

You will also need to remember the **mime** skills that you learned and practiced in terms 3 & 4. To **mime** something successfully an actor first needs to picture the object and then show its weight, shape, size, texture, temperature etc.

Freeze frames are also known as **Still Images** and when we make a Still Image we need to consider (think about) our-

Posture
Gestures
Body Language
Facial Expressions
Space
Levels

Do you know why these are SO important in a Freeze Frame ??

No ? ! ?

Well I'll tell you …

It's because there is no talking or moving in a freeze frame so those six things are the only way that the audience can understand what the characters are like and what is going on.

Remember that you are *playing a* character. You are not the character. You are you.

In these lessons, you will get to create and play a specialist role of your choice – an archaeologist, perhaps

Physical theatre term 4
You will use only your bodies and the stage blocks in to make your version of, *The Impossible.*

Mime

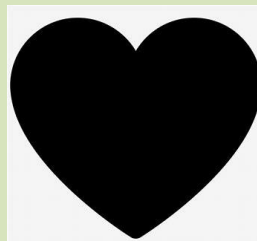| Internal skill	External Skill
Picture	Show
	shape
Visualise	weight
	temperature
Imagine	size
	texture
See	function

You will use the story and your understanding of character to discover those things that are most important to you

Athletics

Analyse

Competition

Resilience

Performance Analysis:
- Using the success criteria for each event, identify the strengths and weaknesses in technique.
- Suggest what needs to improve and how it can be improved.

Sprint Start
Take your marks:
1. Focus eyes on where first stride will land.
2. Shoulders directly over hands.
3. Place the rear knee in line with front foot.
4. Hands make bridge between thumb and forefinger.
5. Hands are placed shoulder width apart.

Set:
1. Shoulders move forward and up (needs strength!).
2. Hips move up higher than shoulders so making correct angles at knee joints (90° front knee, 120° rear knee).
3. Keep head in line with spine.

Go:
1. Vigorous arm action (fast elbows) to get legs moving.
2. Drive and extend – good line from toe to head.
3. Drive hard off blocks and drive head and shoulders out.

Implementation of the Academic Standards to the PE Environment:
- Arrive promptly and change within the allocated time.
- Always have the correct PE kit.
- Fully engaged throughout the lesson, striving to improve performance of skills and techniques at every opportunity.
- Motivated and contributes 100% effort.
- Can work independently to complete a warm-up, drills and competitive situations.
- Perseveres and doesn't give up, demonstrates resilience when practicing and applying skills to different situations/ game scenarios.

Long Jump
Approach:
- Start approach by stepping onto your take off foot
- Mark out your approach distance (11-15 running strides form the take off board)
- Good sprinting form – high knees and good leg drive
- Run fast at a speed you can take off from
- Stay relaxed as you get to the take off board

Take off:
- Drive your non-take off leg and both arms upwards at take off

Flight: Hang technique
- Extend your lead leg and bring it back to join trailing leg before pushing both legs out in front.

Landing:
- Push both legs forwards

Shot Put
Grip:
- Hold the shot at the base of your three middle fingers, supported by your thumb and little finger.
- The shot must be held on the shoulder close to the chin
- The elbow of your throwing arm should be kept high

Preparation:
- Chin, knee, toe all in line

Release:
- Push up through your legs, lifting your body upward, you're the arm should be 'last and fast'
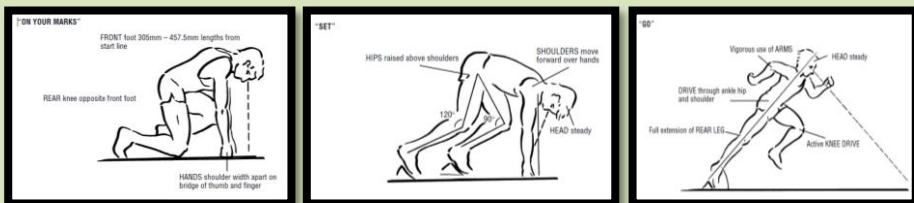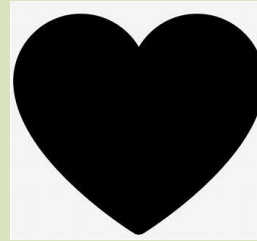
Cricket

Resilience

Analyse

Competition

Performance Analysis:
- Using the success criteria for each of the skills of Cricket – Bowler, Batter, Fielder and Wicket Keeper.
- Identify the strengths and weaknesses in technique.
- Suggest what needs to improve and how it can be improved.

Bowling:
Students will be able to bowl over-arm with increasing accuracy at a slow to a medium pace.

The bowler's job is to take as many wickets as possible.
- That job will be a lot easier if they have control of their line and length or their bowl, making the batsman's job of scoring runs that much more difficult.

- The batsman does not need to hit every single ball they face.
- The bowler must attempt the batsman into playing a stroke, increasing the chances of taking a wicket.
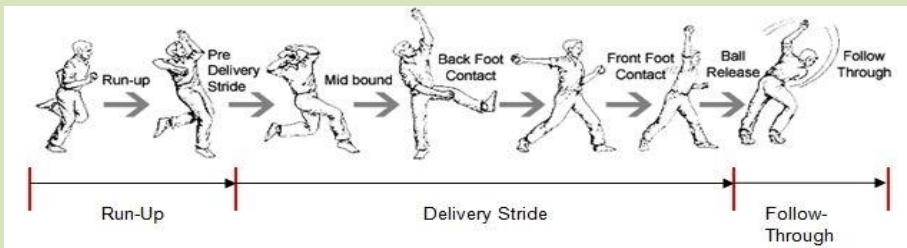
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Batting: Grip
1. The grip principles are the same for right and left-handers.
2. For a right-hander the left hand should be at the top of the handle - vice versa for a left-hander.
3. Check both your hands are fairly close together on the bat, towards the top of the handle.
4. Form a "V" by pointing your thumb and forefinger down between outside edge and centre of back of bat.
5. The top hand rests comfortably on the inside of the front thigh (left thigh for a right hander).

Batting: Stance
1. Be comfortable and relaxed.
2. The feet should be approximately a foot length apart either side or on the crease
3. The weight of the batsman should be on the balls of their feet, with the knees slightly bent.
4. The batsman should be side on when the bowler is about to deliver
5. Some batsmen prefer to open their stance to help them see the ball clearer
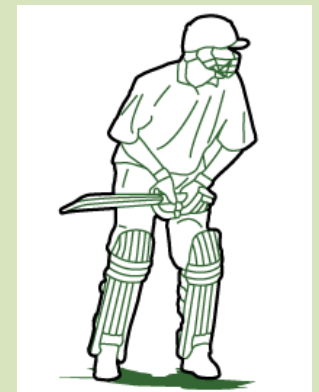
Rounders

Resilience

Performance Analysis:
- Using the success criteria for each role within Rounders – Fielder, Bowler and Batsperson.
- Identify the strengths and weaknesses in technique.
- Suggest what needs to improve and how it can be improved.

Batting technique
- Hold the bat high (in one hand).
- Have a strong grip on the handle.
- Make sure your wrist is strong.
- Keep your eye on the ball.
- Stand side on to the bowler.
- Swing through the ball.
- Stamp forwards into the move to gain power (transfer your weight from the back foot to the front foot as you move).

Scoring
- A rounder is scored by the batting team when a player hits the ball and runs around all 4 posts.
- A half rounder is scored if the batter hits the ball and runs to the second post.
- A half rounder can also be scored if the batter does not hit the ball but runs around all four posts.
- A half rounder can also be awarded by the official for two consecutive no balls and obstruction by a member of the fielding team.

Implementation of the Academic Standards to the PE Environment:
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- Perseveres and doesn't give up, demonstrates resilience when practicing and applying skills to different situations/ game scenarios.

Fielding
Overarm throwing
- Hold the ball between the fingers and thumb.
- Bring your throwing arm straight back over your shoulder.
- Let the ball roll off the tip of your two fingers and follow through.
- Point your non throwing arm at the player you are going to throw to.

THROWING PROCESS
Body movement steps for an overarm throw
1. Body side on. Ball arm position back and higher than shoulder.
2. Forward arm pointing at target.
3. Push off from back foot. Stride front foot forward and plant foot.
4. Pivot hips to face direction of throw.
5. Rotate shoulder and arm towards target.
6. Flick wrist at point of release. Just behind ear for a long distance throw.
7. Arm follows through towards target.
Preparation   Action   Follow Through

Bowling Technique
- Hold the ball in your dominant hand, gripped in the fingers and held by the thumb.
- Step forwards into the move to gain power (transfer your weight from the back foot to the front foot as you move.
- Hold your bowling or throwing arm straight, like a swinging pendulum (swing from behind the body to the front of the body.
- Release the ball at waist height.
- Aim for the backstop's hands.

Tennis

Resilience

Performance Analysis:
- Using the teaching points for each of the shorts, identify the strengths and weaknesses in technique.
- Suggest what needs to improve and how it can be improved.

Ready Position
- Students are able to return to the ready position after every shot to allow them to choose which shot to play and when to attack and defend.
- It allows you to push off to the ball with maximum acceleration in as short a time as possible.
- It also starts the shot off technically - if your ready position is wrong then you have little chance with the rest of the shot.

Step One
- Both hands need to start on the racquet, this allows quick grip changes and stronger, earlier body rotation for the shot.

Step Two
- Your feet need to be at least shoulder width apart with your head forwards into the court.
- Bend your knees slightly, this lowers your centre of gravity and stores energy in your muscles.

Step Three
- As your opponent strikes the ball try to bounce onto your toes for extra spring in your legs.
- The timing of this is crucial.
- It's difficult to master but if you get it right it will allow you to accelerate

Step Four
- After hitting the ball return to the centre of the court and the ready position as soon as possible.

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Forehand
Step One
- Prepare by turning both your hands towards the ball.
Step Two
- Look to bring the racquet head back in a loop.
- Think of a circular type movement as you lift it up as you bring it back then drop it lower as you start to accelerate forwards.
Step Three
- Start from the legs, then the hips, your shoulder, arm and finally your wrist.
Step Four
- The forward swing of the racquet should be from low to high.
- You should be looking to make contact with the ball at around waist height.

Backhand
Step One
- From the ready position, twist your racquet into your preferred grip as you begin your backswing by turning your hips and shoulders.
- Step out towards the line of the ball, shifting your weight to the outside foot.
Step Two
- Hit through the ball as you bring most of your weight onto your front foot.
- Use your whole body
Step Three
- Keep your weight on the front foot until after contact and remain balanced during the follow-through and recovery.
- Practice keeping your chin over your leading foot until a second or two after the ball has gone.

Design and Technology

Timber is wood that has come from tree trunks and has been dried and cut into planks. Timber has been used as a building material for thousands of years to make homes, furniture and tools. Timber is still used a lot as trees grow naturally, their wood is easy to work with and it is relatively strong and lightweight.

Hardwood comes from a broad leaved tree whose seeds are enclosed in a fruit. They grow quite slowly, often taking over 100 years to be big enough to be used for timber.
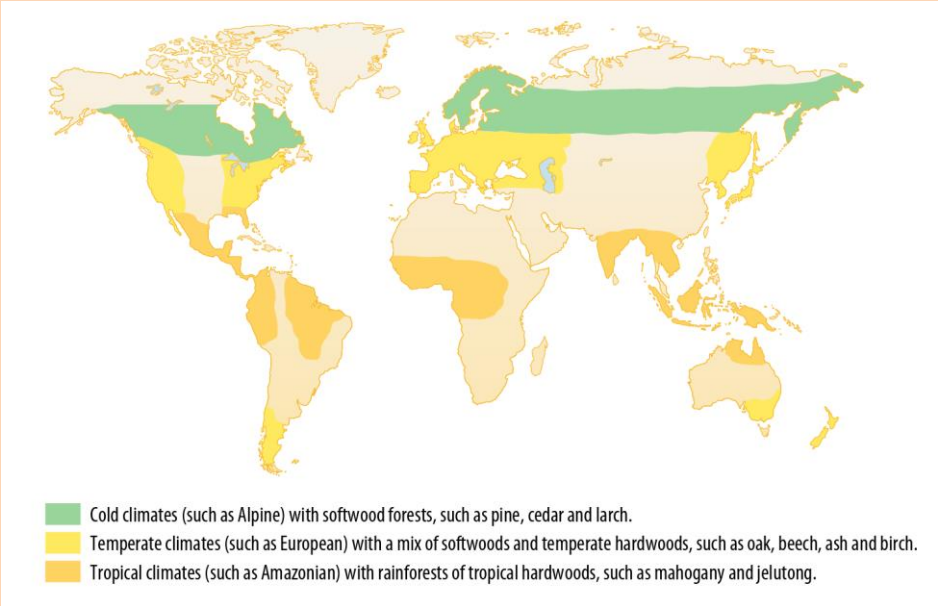
Softwood comes from a tree with needle like leaves, and seeds in a cone, they are coniferous. Most softwood trees are evergreen, meaning they have leaves all year. They grow quite quickly, and can be used for timber after about 30 years. This means they can be grown commercially, which is why softwood is a lot cheaper than hardwood.

Hardwoods	Advantages	Disadvantages	Common uses
Oak	Strong and durable Has an attractive grain when well finished	Expensive, becoming rarer Harder to work than other woods Corrodes iron and steel	Building houses and boats, high quality furniture, wine and whisky barrels
Mahogany	Has a very attractive finish Quite easy to work with	Expensive, environmental problems with sourcing from tropical forests, oil in the wood can cause skin or breathing problems	High quality furniture, jewellery boxes and window frames
Beech	A tough wood Does not crack or splinter easily Hard	Expensive, not very resistant to moisture Not suitable for exterior use	Toys, cooking implements, solid wood and laminated furniture
Ash	Strong, tough and flexible Finishes well	Low resistance to rot and insect attack	Handles for tools, sports equipment and ladders
Balsa	Very lightweight Easy to cut	Much too soft and weak for most products	Model making, surfboard cores, buoyancy aids
Jelutong	Even close grain Easy to cut and shape	Soft and not very strong Not good for structural use	Model making, moulds for casting or vacuum forming
Birch	Regular even grain Easy to work	Low resistance to rot and insect attack	Veneers to make plywood and surface cheaper materials that are used for furniture or doors

Softwoods	Advantages	Disadvantages	Common uses
Pine	Very durable, easy to work, quite cheap as it grows quickly enough to be forested, reasonably strong and lightweight	Can warp, crack and splinter more than some other woods	House construction for roof joists and floorboards Furniture doors and interior woodwork
Cedar	Natural oils make it resistant to water and fungal growth	More expensive than pine and not as strong	Outdoor furniture, fences, sheds and boats
Larch	Tough, durable and resistant to water It can be used outside untreated and weathers to a silvery grey	Costs more than other softwoods	Small boats, yachts, exterior cladding on buildings

Cold climates (such as Alpine) with softwood forests, such as pine, cedar and larch.

Temperate climates (such as European) with a mix of softwoods and temperate hardwoods, such as oak, beech, ash and birch.

Tropical climates (such as Amazonian) with rainforests of tropical hardwoods, such as mahogany and jelutong.

MDF   Plywood

 FSC

Chipboard

Manufactured timbers use natural timbers to make boards that have different properties to plain timber. Because of the size of a tree trunk timber is limited to fairly narrow planks. If you need large, thin sheets of wooden material you will need a manufactured board.

Boards	Advantages	Disadvantages	Common uses
Plywood	Flat and structurally sound, surface looks like real wood, resistant to warping, cracking and twisting	Quite expensive, edges can look rough, susceptible to water damage if using the wrong grade	Building and furniture panels that need some strength
MDF	Cheap (made from waste wood), smooth ungrained surface is good for painting or staining, easy to machine	Poor aesthetics, so needs coating, weak compared to real or plywood, tools blunt quickly due to glue content	Flat pack furniture, wall panels, display cabinets, storage units and kitchen units
Chipboard	Use waste materials so is cheap to produce	Poor structural strength, especially in damp conditions, surface is very rough so usually plastic coated	Desktops, kitchen worktops, cheap flat pack furniture

Properties

It is important to know the correct meaning of the words that describe a material's properties. Comparing materials helps to define each material's properties. For example, do not say oak is hard, because there are lots of harder materials. Say: oak is harder than pine.

Hardness is the ability of a material to withstand cutting and scratching. Timber is generally quite a soft material. It can easily be scratched and cut with metal tools, which are much harder than wood. Oak is quite hard for a wood. Balsa is very soft for a wood. This should not be confused with the classification of trees as hardwoods and softwoods.

Toughness is the ability of a material to withstand being hit. A tough material can be quite soft, and might bend or deform when hit, but not break. Timber is quite a tough material. If you hit it with a hammer it may dent, but not break.

Durability is the ability of a material to last a long time. Timber that has been dried out and is kept dry is durable. Oak beams in old buildings can be hundreds of years old. However, wood that is left wet can rot quite quickly and won't then be very durable. Some timbers contain natural oils that make them more durable outside. Timber can be treated with preservatives to make it more durable for outside use.

Elasticity is the ability to stretch and return to its original length or shape. Timber is not generally elastic, but some are more than others, yew is used to make archery bows for example.

Tensile strength is the ability to withstand pulling force, timbers tend to have a good tensile strength, often 3 or 4 times better than compressive strength.

Compressive strength is the ability to withstand a crushing force, the denser the timber the better its compressive strength.

Orthographic views

Orthographic projection is used to show the detail and measurements of the product clearly from a range of angles so that a stranger could use the drawing to work out the shape and dimensions for manufacture. A furniture designer would be a perfect example of someone who may use orthographic projection.

To create an orthographic projection, you draw the front view, side view and plan view of your product in 2D. You can either draw them out by hand or generate the views using various CAD programs from your CAD model. You can use first angle projection or third angle projection – although the views may appear the same, the order that they are laid out differ.
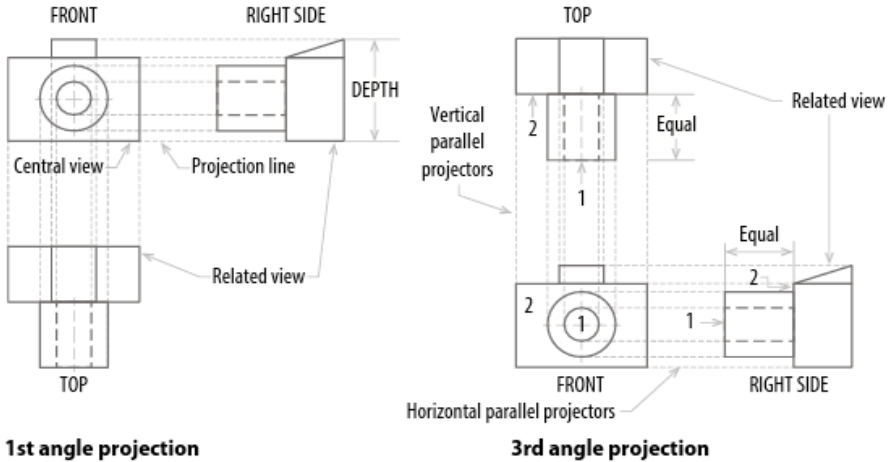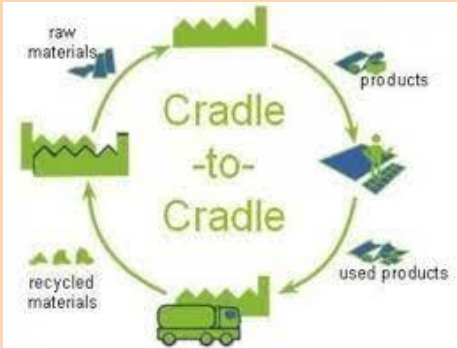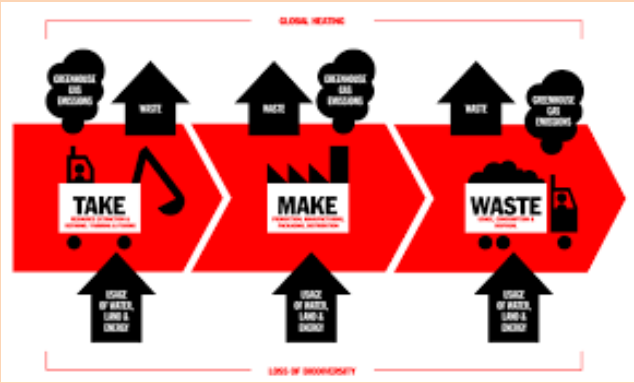

Figure 1.17.7 First and third angle projections for orthographic projection showing all sides of the product

Tools and equipment	
Try Square	
Steel rule	
Marking gauge	
Saws (tenon, hand, coping, scroll and jigsaw)	
Mallet	
Chisel	
Pillar drill	
Centre lathe	
Disc sander	

The environmental impact of manufacturing and using products

Life Cycle Assessment	
Raw materials	Where have your materials originated from? What is the environmental impacts of using them? Timber comes from trees, which are cut down.
Timber processing	How were your raw materials made into the actual material that you used? Trees are processed in a sawmill to turn them into timber, this has an impact on the environment
Manufacture	How did you shape/join/finish/ embellish your raw materials? Using tools, equipment and machinery all have an impact on the environment, some greater than others.
Distribution	If you were to make this product on a larger scale, how would you distribute it to the retailers? Shipping raw materials and products around the planet uses a great amount of energy.
Product in use	Having observed your user interacting with your product, what impact could it have? Is the product simple to use, does it require power?
Repair and maintenance	Is the product durable, does it require frequent servicing to keep it working? Will the product damage easily in normal use?
Disposal	Thinking ahead, what would happen to your product at the end of its life? Could it be easily disassembled and sorted for recycling? Have you include recycling symbols to make this process easier for your user? Are there any treatments that make disposal more difficult? Could the materials be upcycled?

Macro & Micro Nutrients

Carbs   Protein   Fats

What are Nutrients?
Nutrients are the building blocks that make up food and have specific and important roles to play in the body. Some nutrients provide energy while others are essential for growth and maintenance of the body.

Macro Nutrient	Role in the body	Food Example
Carbohydrate	The main source of energy for the body.	Bread, rice, pasta, potatoes
Protein	Provides the body with growth and repair.	Meat, poultry, beans, eggs, lentils, tofu, fish
Fat	Provides the body with insulation and a small amount protects vital organs. Provides essential fatty acids for the body.	Butter, oil, cheese, cream, nuts, oily fish, crisps

| Vitamin	Role in the body	Food examples
A	Helps to keep the eyes healthy and strengthen the immune system.	Dark green leafy vegetables, carrots, liver
B	Helps to release the energy from the food we eat.	Bread, milk, cereals, fish, meat
C	Help with skin healing and healthy skin. Help with the absorption of Iron.	Fresh fruit, broccoli, tomatoes
D	Important for absorbing calcium and help with healthy bone structure.	Oily fish, eggs, butter, Sunshine

Vitamins -Help to keep our immune system up and help our body to stay healthy – they important for body maintenance.

Mineral	Role in the body	Food Examples
Calcium	Important for strong teeth and bones. It also helps with blood clotting.	Milk, yoghurt, soya, dark green leafy vegetables
Iron	Needed for red blood cells which help to transport oxygen around the body.	Nuts, whole grains, dark green leafy vegetables, meat, liver

Minerals- Help to keep our immune system up and help our body to stay healthy. Vitamins and minerals are Micronutrients.

Key Temperatures
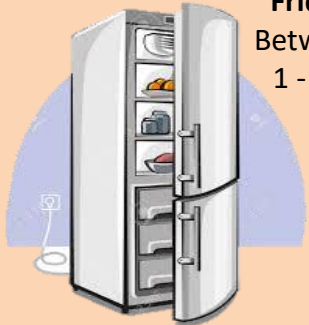
Fridge Between 1 - 5◦C

Freezer Below -18◦C

Danger Zone Bacteria multiply quickest between 5 - 63◦C

Cooking Food should be cooked above 75◦C

Knife Skills

Bridge Hold – Hand creates a bridge holding the food in between. The knife slices through the middle of the bridge. Used for cutting food in half.

Claw Grip – Fingers tucked under holding food. Knife comes down from flat knuckles to slice food. Used for slicing.

Eatwell Guide

Fruit & Vegetables

Carbohydrates

Protein

Dairy

Oils & Spreads

The Cooker

Control panel

Main oven

Hob

Top oven/grill

PREVENT CROSS CONTAMINATION
USE CORRECT COLOUR CODED
CHOPPING BOARDS & KNIVES
RAW MEAT
RAW FISH
COOKED MEATS
SALADS & FRUITS
VEGETABLES
DAIRY PRODUCTS

8 Tips for healthy eating

1) Base your meals on starchy foods
2) Eat lots of fruit and veg
3) Eat more fish
4) Cut down on saturated fat and sugar
5) Eat less salt
6) Get active and be a healthy weight
7) Drink plenty of water
8) Don't skip breakfast

Weighing and Measuring

For good results in most recipes, **accurate** weighing and measuring is essential. When you are baking with flour, sugar and liquids, you must measure accurately or your cooking will be spoiled. If you weigh out too much sugar or too little raising agent, your cakes would not rise or you could spoil the taste and/or texture.
Food can be weighed in **Grams (g)** and there are **1000g** in a **Kilogram (kg)**. Liquid is measured in **Millilitres (ml)** or **litres.**

Equipment

Weighing scales, knife, chopping board, measuring spoons, saucepan, wooden spoon, tablespoon, teaspoon dessert spoon, mixing bowl, grater, pan-stand, baking tray, cooling rack, peeler, pastry brush, spatula.

Hygiene

Personal
Hair up – Reduces the risk of bacteria transferring to food through hair dropping in
Aprons on – Protects you from spillages and reduces risk of bacteria transferring to food from everyday clothing
Washing hands - regularly using hot soapy water to reduce the bacteria on your hands
Blue plasters – Blue plasters should be used to cover cuts and grazes as they will be easily seen if they accidentally fall into food.

Food – Understanding the 4 C's Concept
Cooking – thorough cooking kills bacteria so ensure food is cooked to 75°c to make sure all bacteria are killed – check this by using a food probe.
Cleaning – effective cleaning removes harmful bacteria and stops them spreading so ensure all work tops, utensils and equipment are cleaned thoroughly with hot soapy water.
Cooling – effective chilling prevents harmful bacteria multiplying so ensure all food is stored at the correct temperatures, ensure cooked food is cooled within 90 minutes.
Cross contamination – Good hygiene practice prevents Cross contamination so when raw food comes into contact with ready to eat food. For example raw meat juices spilling onto salad.

Wider thinking / further reading: www.foodafactoflife.org.uk www.grainchain.com

Year 7 Design Technology Knowledge Organiser – Graphic Design: Chocolate Bar Design


Graphic design is a craft where professionals create visual content to communicate messages.

What does a graphic designer basically do?

Graphic Designers create visual concepts to communicate information. They create everything from posters and billboards to packaging, logos and marketing materials. Graphic Designers use elements such as shapes, colours, typography, images and more to convey ideas to an audience.

Graphic Designers:
- Alex Trochut
- David Carson
- Marta Veludo
- Jon Burgerman
- Rob Foote
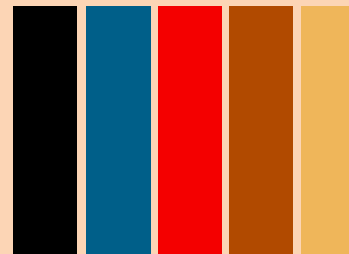- Milton Glaser
- Alan Fletcher
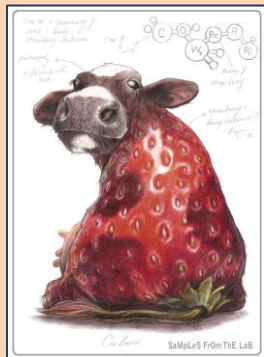
GRAPHIC DESIGN

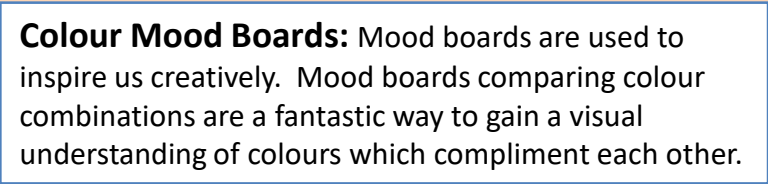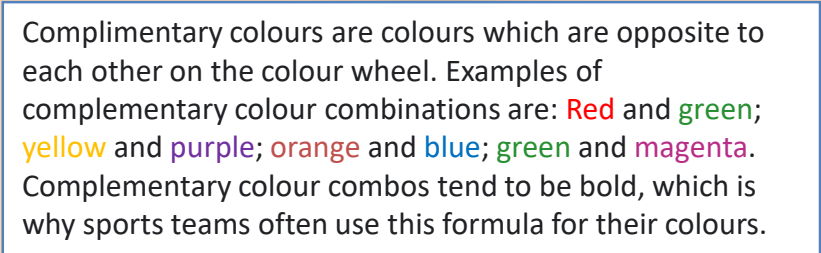|	
GAMES	
POSTERS & BILLBOARDS	
WEBSITES	
VIDEO & ANIMATION	
BOOKS & PUBLICATIONS	
FLYERS & BROCHURES	
CD'S	
BOOKS & PUBLICATIONS	

KEY TERMS	DEFINITION
Graphic Design	The art or skill of combining text and pictures in advertisements, magazines, or books.
Design Process	An approach for breaking down a large project into manageable chunks.
Target Audience	A particular group at which a product is aimed towards.
Design Brief	Outlines the specifics of a design project which can include the design project overview, timelines, target audience information, and budget.
Research	A collection of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts and understandings.
Colour Theory	The collection of rules and guidelines which designers use to communicate with users through appealing colour schemes in visual interfaces.
Typography	The art or practice of setting and arranging type.
Mood board	An arrangement of images, materials, pieces of text, etc. intended to present a particular style or concept.
Evaluation	Is a process that critically examines a design.
Modelling	Making a model allows designers to visualise and test how a product looks and performs in 3D and is a great way of checking a product's viability .

COLOUR THEORY

Colours can convey a message that give us an idea of how the product or company wants to be perceived. They can entice a certain type of customer and can make us think of different things.

Complimentary colours are colours which are opposite to each other on the colour wheel. Examples of complementary colour combinations are: Red and green; yellow and purple; orange and blue; green and magenta. Complementary colour combos tend to be bold, which is why sports teams often use this formula for their colours.

Colour Mood Boards: Mood boards are used to inspire us creatively. Mood boards comparing colour combinations are a fantastic way to gain a visual understanding of colours which compliment each other.

CATERPILLAR — OPTIMISM, CLARITY, WARMTH

Fanta — FRIENDLY, CHEERFUL, CONFIDENCE

Cadbury **Coca-Cola** — EXCITEMENT, YOUTHFUL, BOLD

CREATIVE, IMAGINATIVE, WISE, EXPENSIVE, ROYAL

facebook — TRUST, DEPENDABLE, STRENGTH

JOHN DEERE — PEACEFUL, GROWTH, HEALTH, NATURE, ENVIRONMENT

Apple — BALANCE, NEUTRAL, CALM

EXISTING PRODUCT ANALYSIS

Product analysis means studying how well a product does its job. It is a form of primary research and involves looking at existing products, working out how they were made and seeing what features might be useful to any possible new design.

- What colours have been chosen and why?
- Have they included any imagery on their packaging e.g. A Lion on a 'Lion Bar'? Why have they used images?
- Does the design include a slogan?
- How does the logo reflect the chocolate? E.g. The 'I' on a Twirl Chocolate bar spins.

What should be included on your chocolate wrapper/box design…

- Brand
- Logo
- Slogan?
- Ingredients
- Allergy
- Use by date
- Bar Code
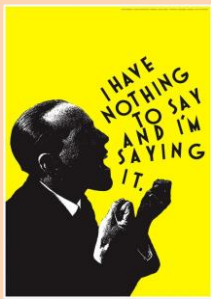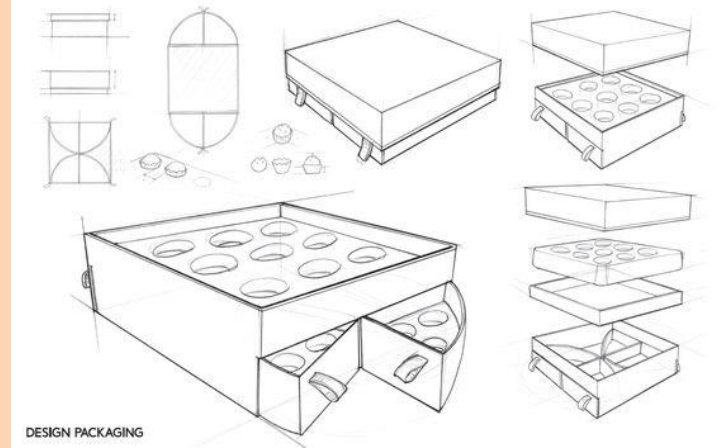
(Legal requirements highlighted in Green)

TYPOGRAPHY

- The art or practice of setting and arranging type.
- The selection of typefaces and arrangement of type in a composition.

- The style of font/typeface can also express a message about the product or company and in some cases the style of writing has become the logo itself.

'Design is not a thing you do it is a way of life'.

Alan Fletcher

BAR CODES

A barcode is a method of representing data in a visual, machine-readable form.

Make your Bar Codes eye catching and relevant to your design ideas.

INITIAL DESIGN IDEAS

An opportunity to explore possible solutions that meet the design brief that has been set and the specification. Initial drawings do not need to be perfect and can be quick 'concept' sketches. Annotation should be added to explain your ideas in detail and depth.

DESIGN PACKAGING

What is the difference between labelling and annotating?

Labelling is when you show what something is for example a logo.
Annotation is when you explain why the logo looks like it does and reasons for your design choices.

FINAL DESIGN IDEA

Your final design idea should be presented using a variation of design mediums – this should include 2Dimensional and 3Dimensional drawings, a final model and a CAD (Computer Aided Design) drawing created using Autodesk TinkerCAD.

TINKERCAD

AUTODESK® TINKERCAD®

Follow the Safety Rules in the Textiles Technology workroom to stay safe!

1. FOLLOW instructions.

2. Put all bags and coats under the table.

3. Keep chairs tucked in.

4. Do NOT run in the Textiles workroom – WALK!

5. Use all equipment correctly and appropriately.

6. Put all equipment away in the correct place after you have used it.

7. Always make sure that you have been shown how to use equipment before using it.

8. Tie long hair back.

9. Carry scissors closed and by the blades.

10. A sewing machine is used by one person – don't try to use a sewing machine with someone else.

11. NEVER distract anyone who is using a sewing machine.

12. Turn sewing machines off when you have finished using them.

13. No food and drink in the Textiles workroom.

Key Terms

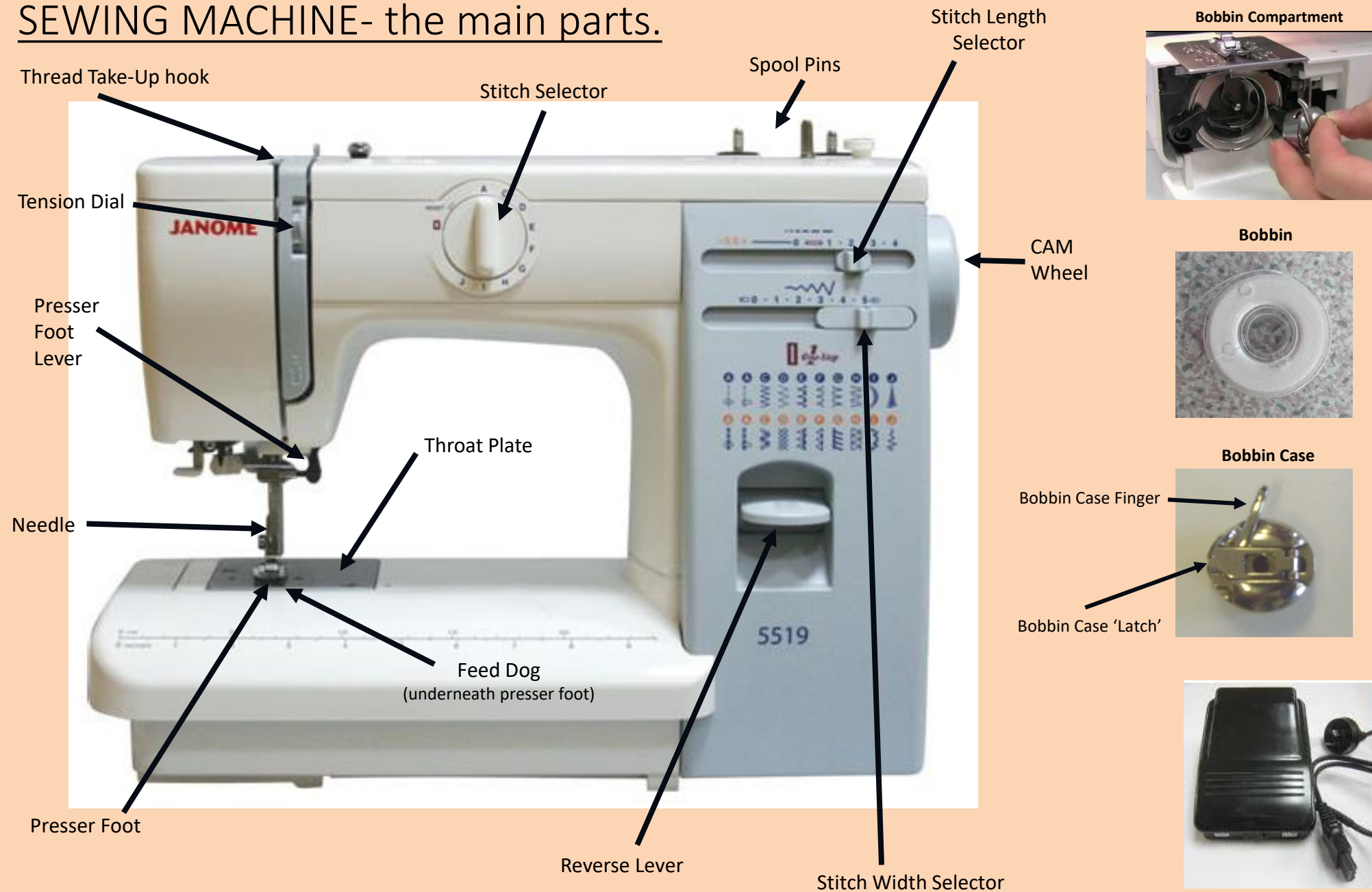**Safety:** taking care not to hurt or injure yourself or others.

Hazard: any feature of a situation which may cause harm or injury.

Risk: the chance of a hazard causing harm or injury.

Risk Assessment: calculating how big a risk is by thinking about whether the harm or damage is likely to happen.

Risk Control: action taken to ensure that the harm or damage is less likely to happen.

SEWING MACHINE- the main parts.

Thread Take-Up hook

Stitch Selector

Stitch Length Selector

Spool Pins

Bobbin Compartment

Tension Dial

CAM Wheel

Bobbin

Presser Foot Lever

Throat Plate

Bobbin Case

Bobbin Case Finger

Needle

Bobbin Case 'Latch'

Feed Dog
(underneath presser foot)

Presser Foot

5519

Reverse Lever

Stitch Width Selector

Foot Pedal and Lead

JANOME

Y7 Textiles: Knowledge Organiser

Hand sewing Needle		Hand sewing needles are used with thread for sewing by hand. They have a point at one end - this is very *sharp* - and a hole at the other which is called an 'eye'; this is where the thread goes. Needles are *sharp* so you need to be careful when using them so you don't prick yourself!
Pins		They are also known as *Dressmaker Pins*. They are used for holding fabrics together *temporarily* while sewing. They are also used for holding pattern templates onto fabric while you cut out. Pins are *sharp* so you need to be careful when using them so you don't prick yourself!
Pin Magnet		This might also be known as a *Magnetic Pincushion*. This keeps the pins in one place. Pins should be put onto a pin magnet and not left on the table or near the sewing machine as they will get damaged.
Fabric Scissors		Sometimes called *Fabric Shears*. We use these for cutting fabric. *Only fabric*. They cut fabric accurately and they allow you to cut for longer periods of time without getting hand fatigue. Notice that the blades are longer and they have one large for 3 -4 fingers and a small hole just for your thumb.
Embroidery Scissors		We use these for cutting threads. They have short blades and can cut right to the tip. We use them by the sewing machine but they are also useful for cutting detail in fabric such as button holes. Not for use with paper!
Pinking Shears		These scissors feature a characteristic zig-zag edge. We use them to create a ravel-resistant edge on fabric; this means it will help prevent the fabric from *fraying*. These scissors can also be used to give a decorative edge on craft projects.
Paper Scissors		We use these for cutting paper. *Only paper and cardboard.* Notice that the two holes are small and the blades are short.

Y7 Textiles: Knowledge Organiser

Tape Measure		It is **long** and **flexible** and made from durable plastic or fabric. Most tape measures are marked with centimetres on one side and inches on the other. We use it to measure obviously but because it is long and flexible you can take body and other measurements easily.
Quick Unpick		Also known as a *Seam Ripper* and this really handy tool removes unwanted stitches quick and easily. It has a *sharp point* and *cutting blade* o be careful when using it.

NEVER be afraid to make a mistake. |
Aqua Pen		This is another tool used for marking fabric. It is also known as a *Water Erasble Pen*. It's useful if you want to mark fine lines or trace a design or transfer complex pattern markings onto fabric. This pen makes bright blue marks which are easily removed with *water*.
Tailors Chalk		This is used for *marking fabric* so you know where to cut out or alter a garment. It is often found in the shape of a triangle - the edge can mark fabric with precision. Tailor's chalk is easily removed.
Machining Thread		These are fine *yarns* of *cotton*, *nylon* or *polyester* and are used for *sewing by hand* or *by machine*. Threads come in different sized spools and in lots of colours to match the fabric you are sewing together.
Embroidery Thread		Comes with 6 threads intertwined that can be 'split' to reduce the thickness. Used to create *decorative stitches* on products.

Y7 Textiles Key Words

| Stitch	Thread passes through fabric to keep it together.
Seam	Where two pieces of fabric join together by stitching.
Seam allowance	The area between the edge of your fabric and the line of stitching being used to join two or more pieces of material together.

A **seam allowance** is the space between a stitching line and the edge of the fabric.

Sewing a seam right against the edge of two pieces of fabric can lead to fraying and may not hold in place. It is important to include a seam allowance that makes sure that the seam will be sturdy and not come away from the raw edge of the fabric.

Add **seam allowance** all the way around your design.

Seam allowances are also useful when making garments or products that may need to be altered, such as clothing.
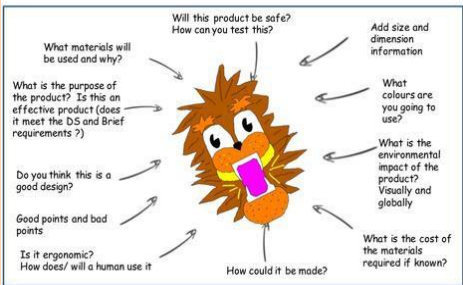
Seam Allowance
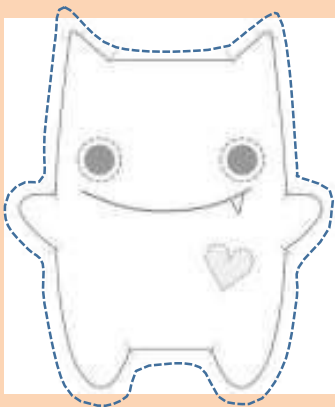
Designing

Communicating your ideas with others.

Carefully sketching our your ideas and neatly shading in your ideas to ensure your ideas are clear.

Annotation

Adding short explanations to your design ideas to help explain your designs further.

Hand stitches

Straight stitch

Blanket stitch

Back stitch

Cross stitch

The Design Process

Design Brief	A statement outlining what is to be designed and made.
Research	Sourcing information and inspiration to help with design work.
Specification	A list of design criteria.
Design Ideas	A range of potential solutions to the problem.
Development	Further improving an idea.
Final Design Idea	A presentation drawing of chosen idea.
Manufacture	Making the final outcome.
Evaluation	Reviewing strengths and weaknesses of final product and design work.

Appliquè

Applying one layer of shaped fabric to another. This can be done either by hand or by a sewing machine.

Design Strategies

You can use design strategies to come up with initial design ideas without getting you on a bad one. Designing is a really complex process and there are several different ways of doing it:

Systems approach: This means breaking down the process into a number of different strategies and doing each in turn.

User-Centred design: The wants and needs of the client are prioritised - their thoughts are given a lot of attention at every stage of design and manufacture

Iterative design: Centred around the design process of evaluation and improvement at each stage of designing.

When you are designing a product it is easy to get stuck on a particular idea. This is called design fixation and it can stop you thinking creatively and coming up with innovative ideas.

Following the design strategy can help you avoid design fixation and encourage you to look at your design in a critical way to make improvements. Other ways to avoid are-
- Collaboration
- Honest feedback
- Focusing on new solutions
- Using fresh approaches

Key Words

PRODUCT ANALYSIS: investigating the design of existing products.

FUNCTION: the task that the product is designed to do.

AESTHETICS: relating to the beauty of a product; how something looks.

Product Analysis: involves investigating **existing products**. It's not just about describing them, it's about understanding why they are designed in the way they are too! If you can identify the good features of the product you may be able to use these in your own design.

Aesthetics	Describe - Appearance? Use of Colour? Lettering? Images? Style? Decoration method?
Cost	Is the product value for money? Do you think it was expensive or cheap to make? How much would it sell for?
Customer	Who's the customer? Who is it aimed at and why? How well does it suit the customer. What makes it suitable for them?
Environment	Is the product environmentally friendly? Is it recyclable? Can it be re-used? Does it use organic cotton? Will it last a long time?
Safety	Is the product safe to use? Are there any sharp edges or loose parts? What regulations has it passed? What does the care/flammability label say?
Size	What size is it? What shape is it? Are the measurements equal?
Function	What is the product's job? What has it been designed to do? How well does the product do its job?
Materials	Is it made from suitable materials? What is the fabric content? What are the wash/ care instructions

Existing Products An example

Aesthetics – This is a square removable cushion cover with heart applique on the front. It has piping around the edge.
The colour scheme is light beige with accents of blue. It has been made from linen and is soft. There are some buttons on the front which have been hand stitched on.

Cost – This cushion is **machine** constructed although it has **hand stitched** embellishments and piping around the edge. Although made using a machine, the hand embellishments will make it more **expensive.**

Materials & Manufacture – This cushion has been made from **linen** and the hearts from cotton.
A sewing machine has been used to make the cushion. The buttons have been sewn on **by hand.**

Customer – I think that this cushion is for use by **men** and **women** however it has hearts on the front which may appeal more to women. It has buttons on the front which could be dangerous for young children.

Function – This cushion is for **comfort** and for **decorative** purposes for use on a sofa or chair.
It is made from linen so it is **easy to wash** and is comfortable.

Environment – This cushion has been made from linen which comes from a plant. This is a good material to use because it is natural and is a **RENEWABLE RESOURCE**. It should last a long time because it has been well made and this also means that it can be **PASSED ON** to someone else, given to a **CHARITY SHOP** when the user no longer wants it.

Size – This cushion is **40cm x 40cm**. It is a good size and very usable.

Safety Because the cushion has been made by machine training would be required to use it. The cushion is safe to use however the buttons could be a **choking hazard** to young children.

ACCESS FM: is a way of remembering what you should investigate when analysing a product. Each letter stands for a different thing you should analyse.

A **SPECIFICATION** can come from analysing existing products. ACCESS FM can be used to check that you have covered all the different types of need in your specification.

Reduce

Refuse

Repair

Rethink

Recycle

Reuse

Minimise the amount of materials you use, reduce the amount we need to buy and make long-lasting products .

Don't use or buy a product if you don't need it or if its unsustainable or wasteful.

Take an existing product that has become waste and reprocess the material to use in a new product. This uses less energy than obtaining new materials.

Ask whether we can sustain our current way of life and the way we design and make. Can something be made in a different way?

When a product breaks down, or doesn't function properly, try to fix it – it's better than throwing it away into landfill.

Take an existing product that has become waste and use the material or parts for another purpose, without processing it.
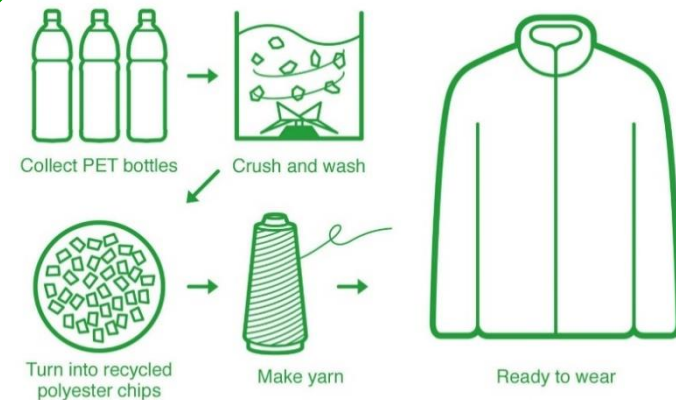
This symbol is called the **MOBIUS LOOP** or 'recycling symbol' and indicates that a product **can** be **recycled**, but not necessarily that it **has** been itself produced from **recycled** materials.

The **6 RS OF SUSTAINABILITY** are used to remind us of how we can improve the impact textile products have on society.

FAST FASHION' - inexpensive clothing produced rapidly by mass-market retailers in response to the latest trends.

The **6R's** are a way of helping you think about the reducing the impact of a new product on the **ENVIRONMENT** and **PEOPLE.**

Unwanted textile items will end up in **LANDFILL** – a place where unwanted materials are sent, which are then buried underground.

Collect PET bottles

Crush and wash

Turn into recycled polyester chips

Make yarn

Ready to wear

FLEECE fabric is made from **RECYCLED PLASTIC BOTTLES**. This makes a polyester yarn that can be woven or knitted into fabric to make clothing.

CS KS3: HARDWARE COMPONENTS THAT MAKE UP COMPUTER SYSTEMS

Term	Definition
CPU	Central Processing Unit: "The main part of the computer, consisting of the registers, ALU and control unit."
Fetch-decode-execute cycle	"The complete process of retrieving an instruction from storage, decoding it and carrying it out. Also known as the instruction cycle."
ALU	Arithmetic Logic Unit: "Performs calculations (e.g., x = 2 + 3) and logical comparisons (e.g., IF x > 3) in the CPU."
CU	Control Unit: "Decodes instructions. Sends signals to control how data moves around the CPU."
Cache	"Memory in the processor that provides fast access to frequently used instructions and data."
Register	"Tiny areas of extremely fast memory located in the CPU, normally designed for a specific purpose where data or control information is stored temporarily – e.g., MAR, MDR, etc."
Von Neumann architecture	"Traditional computer architecture that forms the basis of most digital computer systems. Instructions are fetched, decoded and executed one at a time."
MAR	Memory Address Register: "Holds the address of data ready to be used by the memory data register or the address of an instruction passed from the program counter. Step two of the fetch-decode-execute cycle."
MDR	Memory Data Register: "Holds data fetched from or to be written to memory. Step three of the fetch-decode-execute cycle."
Program counter	"Holds the address of the next instruction to be executed. Step one of the fetch-decode-execute cycle."
Accumulator	"Holds the result of calculations."
Clock speed	"Measured in hertz, the clock speed is the frequency at which the internal clock generates pulses. The higher the clock rate, the faster the computer may work. The clock is the electronic unit that synchronises related components by generating pulses at a constant rate."
Cache size	"The larger the cache, the more data that can be stored without having to go back to main memory (RAM) – this has a significant impact on processing speed."
Cores	"Part of a multi-core processor, a single component with two or more independent CPUs that facilitate the fetch-decode-execute cycle."
Embedded system	"A computer built to solve a highly specific problem. Not easy to change. For example, the operating system placed inside a washing machine, microwave or set of traffic lights."
Primary storage	"Comprised of random-access memory (RAM) and read-only memory (ROM). It holds data and instructions that the CPU can access more quickly and easily than from secondary storage devices."
RAM	Random-Access Memory: "Volatile (data is lost when the computer is powered off). Read-and-write. Purpose: Temporary storage of currently executing instructions and data – e.g., applications and the operating system."
ROM	Read-Only Memory: "Non-volatile (data is retained when the computer is powered off). Read-only. Purpose: Stores startup instructions, otherwise known as the bootstrap."
Virtual memory	"Using part of the hard disk as if it were random-access memory. Allows more applications to be open than physical memory can hold."
Secondary storage	"Permanent storage of instructions and data not currently in use by the processor. Stores the operating system, applications and data. Read-and-write and non-volatile."
Optical storage	"CD-R, CD-RW, DVD-R, DVD-RW. Use: Music, films and archive files. Low capacity. Slow access speed. High portability. Prone to scratches. Low cost."
Magnetic storage	"Hard disk drive. Use: Operating system and applications. High capacity. Medium data access speed. Low portability (except for portable drives). Reliable but not durable. Medium cost."
Solid-state storage	"Memory cards and solid-state hard drives (SSD). Use: Digital cameras and smartphones. Medium capacity. High portability. Reliable and durable. No moving parts. Fast data access speed. High cost."
Storage capacity	"The amount of data a storage device can store."
Storage speed	"The read/write access speed of a storage device."
Storage portability	"How easy it is to transport a storage device – e.g., solid-state and optical storage are highly portable, whereas magnetic storage is designed to stay in place."
Storage durability	"How resistant a storage device is to damage and wear. Devices with low durability are likely to fail earlier."
Storage reliability	"A relative measure of confidence that a storage device will function correctly and allow you to write, read, delete and modify data."
Storage cost	"The relative price of a storage device – e.g., per megabyte of data."

THE CPU and RAM

PRIMARY MEMORY
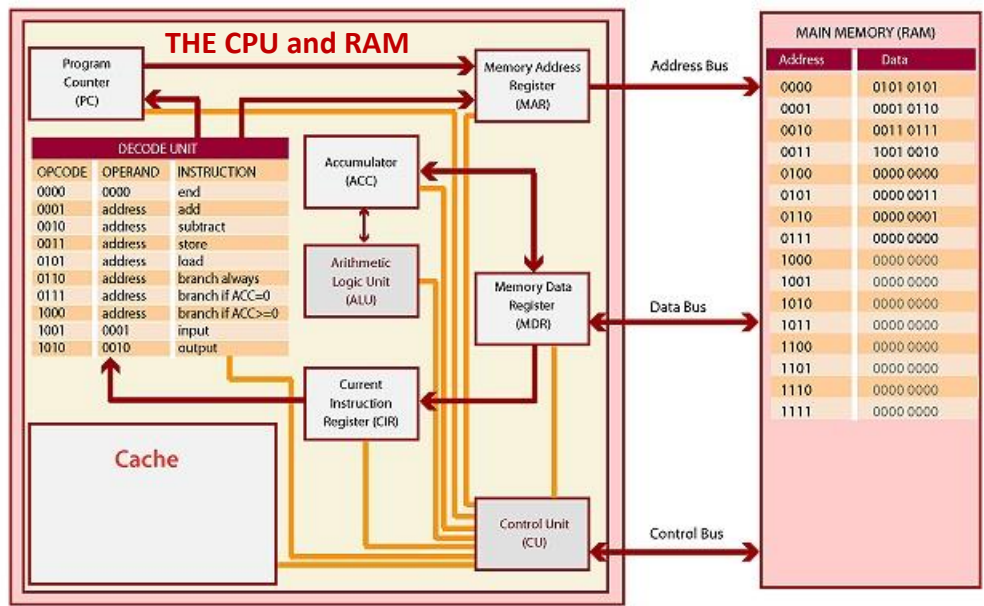
FETCH – DECODE – EXECUTE
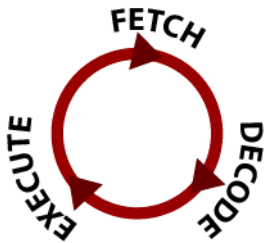
The CPU Fetches, Decodes and Executes instructions/data from RAM. Each cycle is measured in Hz per second.

Symbol	Number
1 Hz (hertz)	1 Hz
1 kHz (kilohertz)	1000 Hz
1 MHz (megahertz)	1,000,000 Hz
1 GHz (gigahertz)	1,000,000,000 Hz

UNITS OF STORAGE

1 bit **(1/0)**   1000 Mb = **1Gb**
4 bits = **nibble**   1000 Gb = **1Tb**
8 bits = **1 Byte**   1000 Tb = **1Pt**
1000 B = **1Kb**   1000 Pt = **1Eb**
1000 Kb = **1Mb**   1000 Eb = **1Zb**

Bit, Byte, Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte, Exabyte, Zettabyte…

PRIMARY MEMORY

THE MOTHERBOARD   **THE CPU**   **ROM**   **RAM**

SECONDARY STORAGE

SSD   **HDD**   **CD**   **DVD**   **BLUE-RAY**   **FLASH DRIVE**

CS KS3: SOFTWARE COMPONENTS AND REPRESENTING NUMBERS USING BINARY

We tend to count using Base 10/Denary (because we have 10 digits across our hands).

Denary Number System place values

10^4	10^3	10^2	10^1	10^0	
10,000s	1,000s	100s	10s	1s	←Denary values Base 10↓
0	0	0	6	5	65

Computers do not use fingers, but they do use electricity. Electricity has two states **on** or **off**. If we use switches in sequence to turn off/on electricity (shown here as **1** for **on** and **0** for **off**) we can make a number in binary that is the same in denary (shown here we are making **65**).

This switch is worth 32

This switch is worth 1

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	
128	64	32	16	8	4	2	1	←Binary values Base 10↓
0	1	0	0	0	0	0	1	65

Binary Number System place values

16^3	16^2	16^1	16^0	
4096s	256s	16s	1s	←Hex values Base 10↓
0	0	4	1	65

Hexadecimal Number System place values

Hexadecimal	Denary	Binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
A	10	1010
B	11	1011
C	12	1100
D	13	1101
E	14	1110
F	15	1111

Computer Scientists found that writing out binary numbers was quite time consuming and long! They found that if they used a Base-16 system then they could represent 4 binary numbers in one character (handy!). This system is known as **Hexadecimal**. You will see it in MAC addresses, HTML colour codes, and it is used in Assembly and Machine Code.

You may have seen this symbol before? It is the **on/off** switch which is made up of a **1** and a **0**.

Computer Science Joke:
"There are **10** types of people in the world. Those who understand binary and those who don't!"*
* I never said it was funny

Software is the instructions that we give to a computer. These instructions are written in programming languages.

Software

System
- **Operating System**: Memory management, User interface, Multitasking, Peripheral management, User management, File management
- **Utilities**: Anti-virus software, Disk management tools, Disk defragmenter, Compression, Backup
- **Drivers**: Computer printers, Graphic cards, Modems, Network cards, Sound cards

Application
- **Browser**
- **Spreadsheet**
- **Word Processing**

There are many more examples of application software

Binary Multiplication / Division

1 shift left = multiply x 2

0100 0001 = 65
1000 0010 = 130
0100 1010 = 74
0010 0101 = 37

1 shift right = divide x 2

2 shifts left/right will multiply/divide x 4

Shift left to **multiply** and shift right to **divide**.

Binary Addition

Rule 1: $0 + 0 = 0$
Rule 2: $1 + 0 = 1$
Rule 3: $0 + 1 = 1$
Rule 4: $1 + 1 = 0$ — Carry the 1 into the next column
Rule 5: $1 + 1 + 1 = 1$ — Carry the 1 into the next column

CS KS3: REPRESENTING TEXT, SOUND, AND IMAGES USING BINARY

Representing data
All data inside a computer is transmitted as a series of electrical signals that are either **on** or **off**. Therefore, in order for a computer to be able to process any kind of data (including text, images and sound) *they must be converted into binary form*. If the data is not converted into binary – a series of 1s and 0s – the computer will simply not understand it or be able to process it.

A = 0100 0001
Letter | Binary number
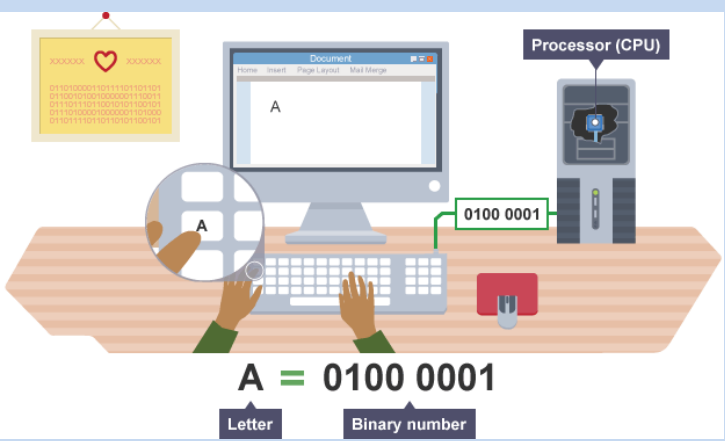
SCAN ME TO VISIT ASCIITABLE.COM

Representing text
When any key on a keyboard is pressed, it needs to be converted into a binary number so that it can be processed by the computer and the typed character can appear on the screen. A collection of binary codes assigned to characters is known as a **Character Set**. The most common ones are **ASCII (American Standard Code for Information Interchange),** and the (now) more commonly used **Unicode**. ASCII is a 7-bit (128 characters) was then extended to an 8-bit (256 characters) character set. This was fine for English, but inadequate when trying to represent other world languages and so Unicode was created and could store characters in 16-bits (65,536 characters).

Representing sound
Sound needs to be converted into binary for computers to be able to process it. To do this, sound is captured - usually by a microphone - and then converted into a digital signal (**see first image →**).
An analogue to digital converter will sample a sound wave at regular time intervals (called the **Sample Rate** and is measured in *Hz*). The samples are converted to binary and recorded to the nearest whole number. If we examine the sampled amounts compared to the original wave, we can make a judgement about the quality of the sound (**see second image →**). If a sound has a *high* sample rate, more snapshots have been captured and it will be closer to the original sound. We also need to concern ourselves with the amount of space we have to store these samples, again called the **bit depth**. *A high bit depth + a high sample rate = a high quality sound*. The opposite would also be true.
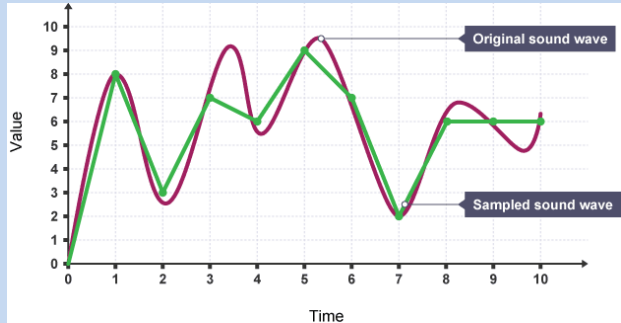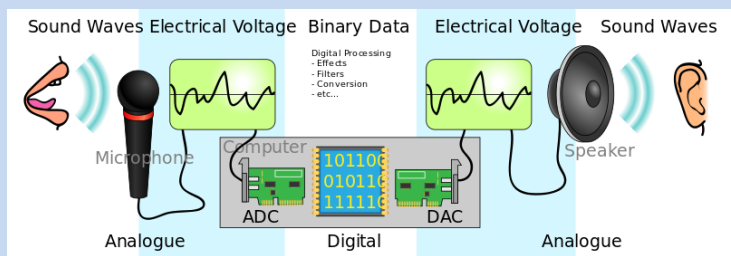
Representing images
Digital images are made up of grids of **Pixels (Pic**ture **El**ements**)**. Each pixel is made up of a binary numbers. If we allocate **1 bit** to 1 pixel we can represent 2 colours. 1 (on) for White and 0 (off) for Black. The amount of bits allocated to a pixel is called the **bit depth**. A simple table below shows bit depth to colour amounts.

Bits	Amount of Colours
1	2
2	4
3	8
4	16 (…and so on)

1	0	0	0	0	0	1
0	1	1	1	1	1	0
0	1	0	1	0	1	0
0	1	1	1	1	1	0
0	1	1	0	1	1	0
0	0	1	0	1	0	0
1	0	1	0	1	0	1
1	1	0	0	0	1	1

The quality of an image can be judged by the amount of pixels in a given area (**the resolution**) and the amount of space allocated to storing colours (**the bit depth**). The more of each, the better the quality.

Representing video
Video is just lots of images displayed per second with sound underneath.

A high quality video would have all the features of a high quality image and a high quality sound played at a high frame rate (such as 24fps).

Image size calculation →
  width(px) x height(px) x bit depth
Sound size calculation →
  sample rate x bit depth x duration (secs)

CS KS3: COMPUTER NETWORKS, AND THE INTERNET

Compressing data

Data can become quite large. By reducing its size it takes up less space on secondary storage, and it will also reduce the time it will take to upload/download the data over networks. There are two types of compression: **lossy** and **lossless**.

LOSSY	LOSSLESS
Lossy compression removes some of a file's original data in order to reduce the file size. This might mean reducing the numbers of colours in an image or reducing the number of samples in a sound file. This can result in a small loss of quality of an image or sound file.	Lossless compression doesn't reduce the quality of the file at all. No data is lost, so lossless compression allows a file to be recreated exactly as it was when originally created. There are various algorithms for doing this, usually by looking for patterns in the data that are repeated
image: JPEG **audio:** MP3, AAC **video:** AVC, HEVC, MPEG	**image:** GIF, RAW, BMP, PNG **audio:** WAV, FLAC **general:** ZIP
Some algorithms used in lossy compression include: • Transform Coding • Discrete Cosine Transform • Discrete Wavelet Transform • Fractal Compression	Some algorithms used in lossless compression include: • Run Length Encoding • Lempel-Ziv-Welch (LZW) • Huffman Coding • Arithmetic Encoding

What is a network?

A network is two or more computers (or other electronic devices) that are connected together, usually by cables or Wi-Fi.

Some computer networks will have a **server**. A **server** is a powerful computer that often acts as a central hub for services in a network, e.g. emails, internet access and file storage. Each computer connected to a server is called a **client**.

A computer that is not connected to a network is called a **standalone computer**.

Benefits of a network	Problems with a network
• Using a network allows you to share: • hardware, such as a printer • software, allowing multiple users to run the same programs on different computers • data, so that other people can access shared work and you can access your data from any computer on the network • Networking is critical if you want to use your computer to communicate. Without it you couldn't send an email, a text or an instant message.	• If the network breaks, this can make a number of tasks it is used for quite difficult. • If computers and devices are networked together, we can expose ourselves to hackers and viruses. Most viruses are spread over a network and most hackers use a network to access other people's computers. Without a network connection, a hacker would have to physically get to your computer.

Packet Switching

The Internet uses Packet Switching to send data. This means it splits it up into little envelopes called packets and sends it on its way via different routes (**scan the QR-Code to see 'A Packet's Tale').**
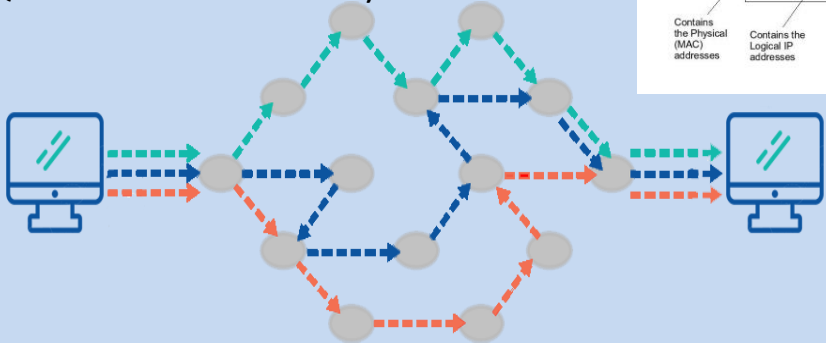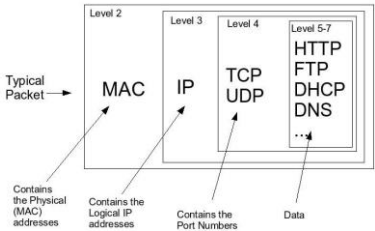

Local area network (LAN)
A local area network is when computers or devices are connected together over a small geographical area (e.g. a home, a building or one site). A LAN can be created to share data or hardware such as a printer, or to share an internet connection.

Wide area network (WAN)
A wide area network is when computers or devices are connected together over a large geographical area. Some companies will connect a number of LANs in different areas together to create a WAN. The biggest WAN we know is the internet

CS KS3: COMPUTATIONAL THINKING, ALGORITHMS AND PROGRAMMING

Computational Thinking is the thinking a Computer Scientist does in order to produce an algorithm (which can then often go on to be programmed). The four main pillars of it are: **Pattern Recognition**, **Decomposition**, **Abstraction**, and **Algorithm** design.

Algorithms for searching and sorting:

Linear Search — Find '20'
0	1	2	3	4	5	6	7	8
10	50	30	70	80	60	20	90	40
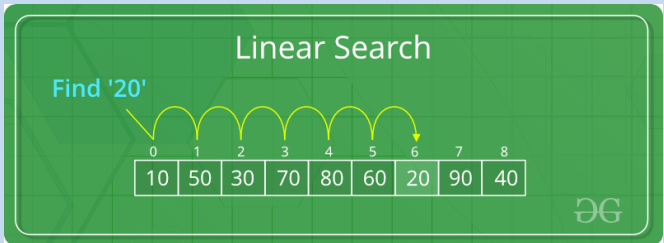
The **linear search** examines one item at a time until it finds what it is looking for or it reaches the end and it hasn't found it.

Binary Search

The **binary search** examines the middle item in a list. If the middle item is:
a) the correct item it stops
b) smaller than the item it is looking for, it then gets rid of everything from the midpoint and lower and starts again at a the midpoint of the now smaller list
c) larger than the item it is looking for, it then gets rid of everything from the midpoint and higher and starts again at a the midpoint of the now smaller list
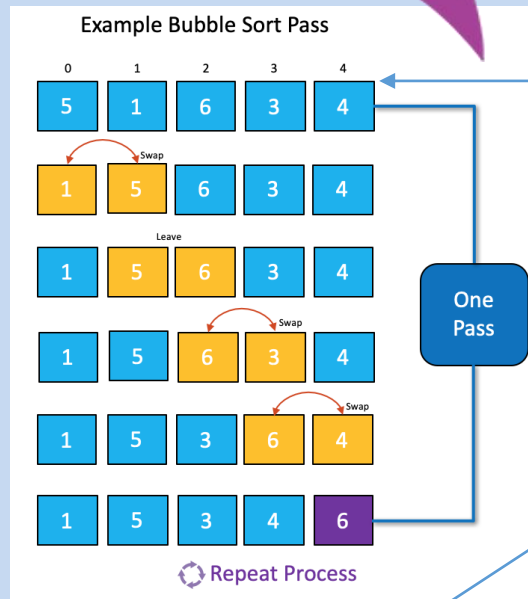**A binary search will only work if the original list is sorted.**
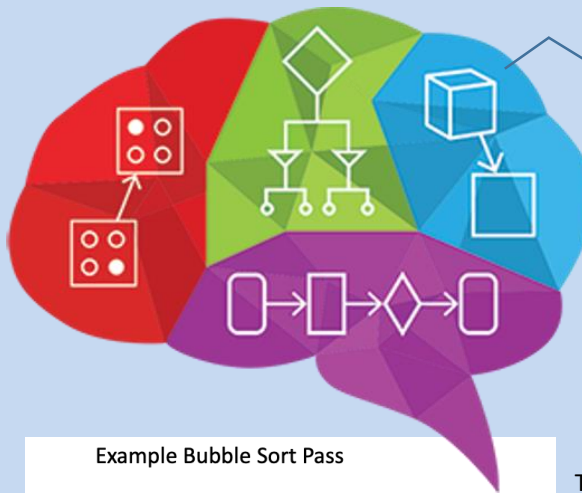
Pattern recognition: looking for patterns.
Decomposition: breaking a problem down into smaller, and more manageable parts.
**Abstraction**: removing unnecessary detail.
Algorithm: putting together a step-by-step set of instructions to solve a specific problem.
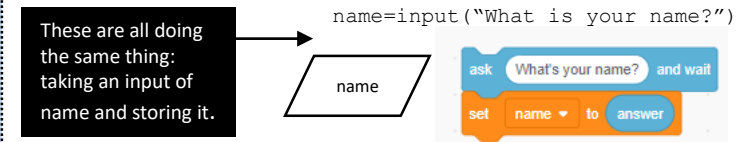
Example Bubble Sort Pass

The **bubble sort** examines the first item and compares it with the next. If it is larger it swaps. It continues this action until the largest item has 'bubbled' to the end of the list. This is called **the first pass**. It repeats this process again until the second largest item is now in place. This is called **the second pass.** This process repeats until the list is sorted.
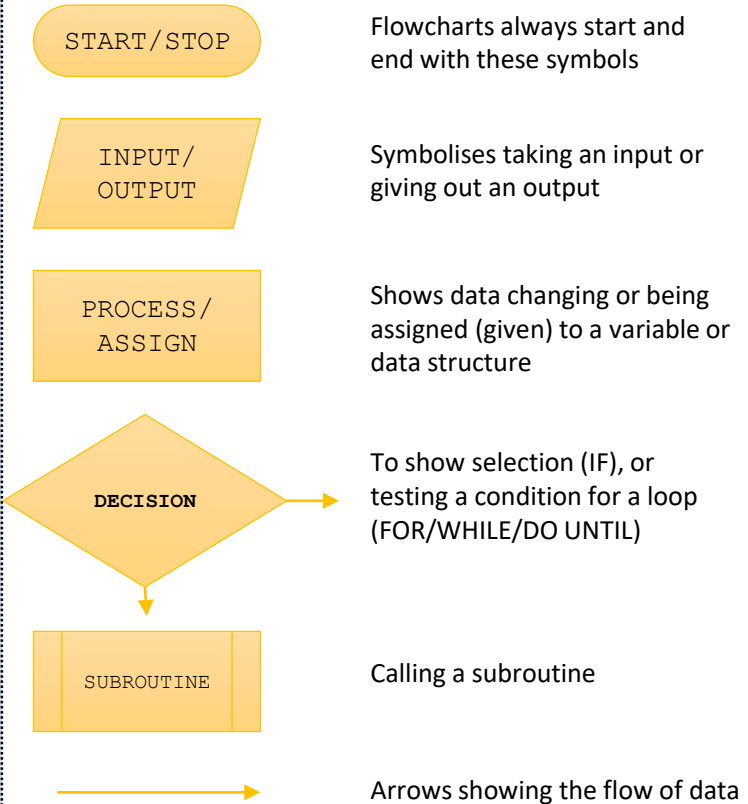
The **merge sort has two parts.**
1. The first part divides the list until it cannot be divided anymore.
2. The second part then compares the first items in sublists and places them in bigger lists in the correct order until there is a new and sorted list.

Merge Sort
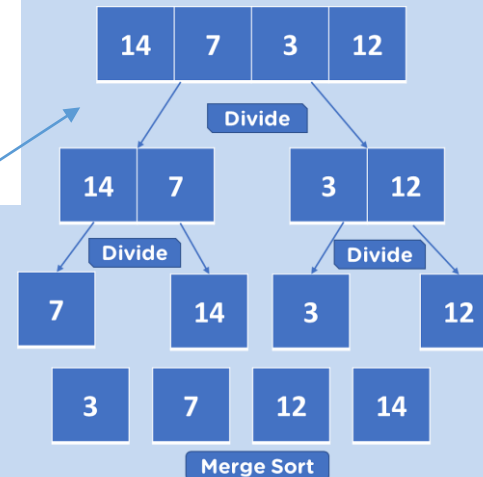
Programming is what we do when we need to give instructions to a Computer. We can use high-level languages (like Python, Java, C#, or even Scratch) or low-level-languages (like Assembly or Machine Code). High-Level languages are easier to work with as they look a lot like structured English.

These are all doing the same thing: taking an input of name and storing it.

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

Flowcharts are a great way of depicting algorithms. Below are the common symbols.

Symbol	Description
START/STOP	Flowcharts always start and end with these symbols
INPUT/OUTPUT	Symbolises taking an input or giving out an output
PROCESS/ASSIGN	Shows data changing or being assigned (given) to a variable or data structure
DECISION	To show selection (IF), or testing a condition for a loop (FOR/WHILE/DO UNTIL)
SUBROUTINE	Calling a subroutine
→	Arrows showing the flow of data

CS KS3: PROGRAMMING & LOGIC, E-SAFETY & CYBERSECURITY

Programming Constructs

All Programming languages have the same constructs (illustrated below). Once you understand what each one of them does, you can then learn the syntax in any programming language to get going. It's like learning about nouns and adjectives in languages or notes in music.

Data Types and Structures

All Programming languages have the ability to handle different data types and can store the data in different structures. The most common types are illustrated below. The structures are shown below in green. The data types are split into numbers (blue), characters (orange), Boolean (purple) and the special Data/Time (red).
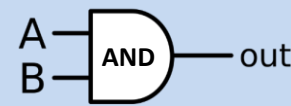
if
This construct only executes the code statements in the group if a condition has been met.

```
if(varHeight>1.8) {

}
```

else
This construct only executes if the condition of the if statement has not been met.

```
if(varHeight>1.8) {
} else {
}
```

else if
This construct allows us to provide further conditions to an if statement to execute different code.

```
if(varHeight>1.8) {
} else if(varHeight<=1.8) {
}
```

switch
Defines a variable and code to execute in different cases.

```
SELECT varHeight{
CASE 1: countSmall++;
    break;
CASE 2: countTall++;
    break;
CASE default: break;
}
```

while
This condition controlled loop executes its code if a condition is met. After reaching the last statement it checks the condition before starting again.

```
While(varCount<10) {
    varCount++;
}
```

repeat until
This condition controlled loop executes its code then checks to see if the condition is met, if so it starts again.

```
Repeat {
    varCount++;
} until(varCount>=10)
```

for
This condition controlled loop executes its code whilst the condition is true, it uses parameters to set up the default value, condition and increment of the variable used.

```
for(i=0;i<10;i++) {

}
```

subroutine
This is a section of code within a larger body of code. It performs a specific task and is run, or 'called' from the main body of code.

We would use this for code we want to use many times, or to make the logical flow simpler.

recursion
This is a subroutine that calls itself.

It will keep creating versions of itself until it reaches a base case where it will start returning values and moving back up the stack of instances of the subroutine.

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

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

```
year = 1984
```

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.

```
average = 43.262
```

Character
Single letter / number / symbol
Any single letter, number or symbol can be stored as a character. It is one byte long and stores a single ASCII code to represent it.

```
gender = 'f'
```

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

Each character is a byte.

```
myName = "Jo Smith"
```

Boolean
True or False
A boolean only stores two possible values, usually True or False.

Normally one byte long. Really useful for conditions.

```
keepGoing = True
```

Date/Time
Special integers
A date would be represented in the form XX/XX/XXXX e.g. 12/04/2023 and Time in the form XX:XX:XX such as 18:21:59.

Usually 8 bytes long.

```
datetime.date(1984, 1, 24)
```

Arrays
Sets of Data
An array is a set of data of the same type that is grouped together using the same identifier. This means we can store loads of data in a single place.

```
score = [ 4, 5, 21 ]
```
would create an array with three elements, 4, 5 and 21. To access these we start with index 0 which shows the first item in the array.

```
score[0] = 4
score[1] = 5
score[2] = 21
```

2D Arrays
'Tables' of Data
Using two levels of index for an array turns it into a simple table that we can address through normal coordinate notation.

```
score[0][3] = 5
```
would access the fourth row of the first column.

Records
A record is a way of storing lots of data, with multiple data types, together. Commonly used with databases, a record would store all of the information relating to a single subject in a data wrapper so that it could be kept logically together.

Key

Selection — These constructs are used to select whether code is executed depending on a condition

Iteration — A group of instruction is repeated for a set number of times until a condition is met

Modularisation — Where code is seperated into logical groups and used repeatedly

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LEARN TO CODE
www.scratch.mit.edu
www.python.org
http://www.w3schools.com/
https://code.org

scratch   python

Simple Logic Gates and their Truth Tables

AND gate
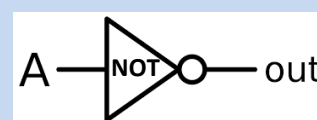
A	B	out
0	0	0
1	0	1
0	1	1
1	1	1

The **AND** gate allows us to use the Boolean operator of **AND**. It only works if both input A **AND** B are on (1)
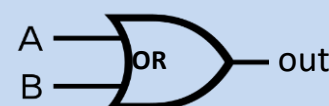
OR gate

A	B	out
0	0	0
1	0	1
0	1	0
1	1	1

The **OR** gate allows us to use the Boolean operator of **OR**. It works if input A **OR** B **OR** A *AND* B are on (1)

NOT gate

A	out
0	1
1	0

The **NOT** gate allows us to use the Boolean operator of **NOT**. If A is on, the output is **NOT** on. If A is off, the output is **NOT** off (it is on).

STRONG PASSWORD TIPS

DO ✅
- 7-10 CHARACTERS — THE LONGER THE BETTER
- MIX IT UP! NUMBERS PUNCTUATION UPPER/LOWER CASE
- 2-FACTOR AUTHENTICATION — USE WHEREVER POSSIBLE

DON'T ❌
- CHARACTER SERIES — DON'T USE 12345 OR ABC
- NO PERSONAL INFO — Pet Names, Birthdays, Street Names
- NO SINGLE WORDS — Don't use any single words you can't find in a DICTIONARY

Age Restrictions on Social Media

13 — Facebook, Twitter, Instagram, Snapchat, TikTok, Kik, Ask.fm, Houseparty, Periscope

13+ — Tumblr, Pinterest, Reddit, WeChat, Whisper, Yubo (13+ means with parental consent)

16 — YouTube, WeChat, Yubo

18 — LinkedIn, Whatsapp, Tinder, Bumble, Hinge

Stay safe online

1. Protect against malware
Install antivirus software, a firewall, show caution opening emails and downloading files or programs.

2. Protect against phishing
Don't follow links contained in a suspicious email (unknown sender, poor spelling & grammar, email address etc

3. Protect against unsavoury character/cyber-bullying
Don't give out personal information, never agree to meet in person someone you have only met online. Report cyberbullying using site tools or talk to someone at school.