

Curriculum Companions

Year 7

Term Three

Name:

Tutor Group:



Literacy & Reading Tracker

Bedrock Username: _____ Password: _____

Accelerated Reader Colour: _____

WHY READ?

Reading helps you in **all** aspects of your life. Research shows that young people who read for pleasure between the ages of 10 and 16 have:

- Better self-esteem and higher levels of mental wellbeing and happiness.
- Much better scores in vocabulary, spelling, and maths at age 16 – your GCSE age!
- Active readers are likely to earn up to five times more than those who spend little or no time reading

Bedrock Milestones		Reading for Pleasure – Half Term 1			Reading for Pleasure – Half Term 2		
		Session	Title	Page	Session	Title	Page
Bronze		Week 1	DEAR		Week 1	DEAR	
			Literacy			Literacy	
		Week 2	DEAR		Week 2	DEAR	
			Literacy			Literacy	
Silver		Week 3	DEAR		Week 3	DEAR	
			Literacy			Literacy	
		Week 4	DEAR		Week 4	DEAR	
			Literacy			Literacy	
Gold		Week 5	DEAR		Week 5	DEAR	
			Literacy			Literacy	
		Week 6	DEAR		Week 6	DEAR	
			Literacy			Literacy	
Platinum		Week 7	DEAR		Week 7	DEAR	
			Literacy			Literacy	

Knowledge Organiser | The Tempest | Summer Term

Plot Summary:

- **Prospero's Betrayal** – Prospero and his daughter Miranda are stranded after his brother Antonio steals his title.
- **The Storm** – Prospero uses magic to create a storm, shipwrecking Antonio, King Alonso, and others.
- **Secret Control** – With Ariel's help, Prospero guides the shipwrecked people.
- **Love Story** – Miranda loves Ferdinand, Alonso's son. Prospero acts strict but approves.
- **Caliban's Plot** – Caliban teams up with Stephano and Trinculo to overthrow Prospero.
- **Evil Plans** – Antonio and Sebastian plot to kill Alonso, but Ariel stops them.
- **Forgiveness** – Prospero reveals himself, forgives his enemies, and gives up magic.
- **Happy Endings** – Ferdinand and Miranda are alive and in love. Alonso rejoices.
- **Caliban Learns** – He regrets trusting Stephano and Trinculo.
- **Going Home** – Prospero reclaims his dukedom and frees Ariel.



Responsibility in the play:

- **Prospero as Leader** – He protects and educates Miranda, shaping her future.
- **Power and Control** – He must decide whether to rule with kindness or revenge.
- **Forgiveness** – He takes responsibility by choosing mercy over punishment.
- **Caliban's Blame** – He refuses to change and blames Prospero for his troubles.
- **Ariel's Loyalty** – He serves Prospero and reminds him to keep his promise of freedom.



What makes a responsible leader?

Accountability: Own up to mistakes and successes.

Integrity: Be honest and stick to your values.



Empathy: Care about how others feel.

Decision-making: Make smart, fair choices.

Growth: Keep learning and improving.

Respect for diversity: Value everyone's differences.

English | The Tempest | Topic Dictionary

Image	Word	Definition	In a sentence
	colonialism	This the system by which countries control other countries when they have colonised them.	Prospero colonised Caliban's island.
	dominant	Being more powerful, important and successful than others.	Prospero is dominant over Caliban and Ariel as they are his slaves.
	epilogue	The end of a text which shows the resolution/the final speech in a play.	Prospero's epilogue is famous as he gave up his powers.
	humanity	Humanity refer to all humans. Or showing humanity means showing kindness and love.	Caliban lost his humanity due to the way people treated him.
	imperative	If something is imperative , it means it must be done urgently.	Prospero uses an imperative verb when he commands Ariel to ' Speak. Tell me. '
	mercy	Showing mercy means showing love and kindness. Being as someone's mercy means having no power over them.	Alonso lay at Antonio's mercy when he was asleep on the island.
	regicide	The act of killing a monarch (king or queen)	Antonio and Sebastian plot to kill King Alonso.
	responsibility	An expectation that you will look after something.	If you are responsible for a mistake, you are to blame for it.
	savage	Wild, fierce violent and animalistic.	Caliban was viewed as savage for assaulting Miranda.
	subservient	Being less powerful, listening to others and doing exactly as you are told to do.	As a slave, Caliban is expected to be subservient to Prospero.
	tempest	Tempest (noun) – a violently <u>windy</u> storm.	The play begins with a tempest and a shipwreck.
	tragedy	An extremely sad event or situation. A tragedy (play) ends badly with death.	The Tempest is not considered a tragedy as no one dies and all is resolved.
	utopia	An imaginary ideal world where everything is perfect.	Characters in the play describe what their own utopia would look like.

Y8 English | The Tempest | Assessment Guide

Writing a persuasive speech to present your opinion based on a statement.

This statement has two points you need to talk about.

For this part of the statement, you need to explain if you sympathise with Caliban.

A student read Act 1 Scene 2 and said: 'I do not sympathise with Caliban. Prospero treated him fairly after he tried to assault Miranda.'

To what extent do you agree?

This means you explain how much you agree or disagree with the statement. Your opinion could be in the middle.

Here, you need to explain if you think the way Prospero treated Caliban was fair.

You must always use evidence to prove your points, so you have a strong opinion. Evidence for this is quotations from the play.

Persuasive Speech - Skills Guide

Introduction	<ol style="list-style-type: none"> 1. Greet your audience 2. Explain your opinion on the topic
Paragraph 1	<ol style="list-style-type: none"> 1. Introduce your first point 2. Give your evidence 3. Explain why your evidence supports your point
Paragraph 2	<ol style="list-style-type: none"> 1. Introduce your second point 2. Give your evidence 3. Explain why your evidence supports your point
Paragraph 3	<ol style="list-style-type: none"> 1. Introduce your final point 2. Give your evidence 3. Explain why your evidence supports your point
Conclusion	<ol style="list-style-type: none"> 1. Summarise your key points 2. State your opinion one last time 3. Use a strong closing line

Persuasive Writing Techniques:

- Direct Address** - talking directly to the audience ("you might think")
- Anecdote** - two or more words beginning with the same letter (cold, callous, cruel)
- Facts** - something which is true!
- Opinion** - your viewpoint or belief
- Rhetorical Question** - a question asked to prove a point (how would you feel?)
- Emotive Language** - words to cause an emotion in the listener (Caliban has suffered horribly at Prospero's cruelty.)
- Statistics** - numerical facts/data used to support a point (1 in 10 people / 90%...)
- Triplets** - List of three things in a sentence (Prospero has been usurped, betrayed and abandoned).

Quotation Bank

Agree

- Prospero taught him **'how to name the bigger light'** so initially tried to help Caliban and educate him
- Prospero was kind to him **'until thou didst seek to violate the honour of my child.'**
- Miranda **'pitied'** him and **'took pains to make thee speak'** and teach him other things but he still tried to assault her
- **'Would't had been done!'** – Caliban shows no remorse for his actions and wishes he could have carried out the rape
- Caliban wanted to **'people else this isle with Calibans'** – he intended to rape Miranda so that he could fill up the island with his children
- Caliban is pleased Miranda taught him language as **'my profit on't is, I know how to curse.'**

Disagree

- He is treated cruelly by Prospero and Miranda who insult him – **'tis a villain', 'thou poisonous slave' 'got by the devil.'**
- The island belongs to Caliban – it was his mothers before Prospero came – **'This island's mine, by Sycorax my mother, which thou tak'st from me'**
- Caliban says **'I loved thee' to Prospero and Miranda, and he showed them and taught them 'all the qualities of the isle'**
- Prospero keeps Caliban away from the island that he loves and makes him stay on **'this hard rock'** fetching wood and making the fires. Caliban is afraid of Prospero's power
- Miranda says Caliban is from a **'vile race'** which **'good nature could not abide to be with'.**

Annotated Example Paragraph

I address both parts of the statement and explain my opinion.

I have included a quotation for evidence

I do not sympathise with Caliban because Prospero treated him fairly, especially after Caliban tried to harm Miranda. Prospero says, *“until thou didst seek to violate the honour of my child.”* This shows that Caliban attempted to assault Miranda, which is a terrible act. Prospero had originally been kind to Caliban, teaching him language and taking care of him. However, after such a betrayal, Prospero had every right to punish him. Caliban’s actions prove that he could not be trusted, so Prospero’s treatment of him was justified.

Here I show my opinion my using emotive language

I return to the statement in my paragraph and statement my opinion one final time.

I emphasise my opinion to make it clear.















As a Year 7 English student I know:

The structure and features of a Shakespearean tragedy and comedy.	
The definition and effects of responsibility and colonialism.	
Elizabethan society, attitudes and big ideas.	
A range of dramatic and literary techniques.	
The skills needed to present my point of view.	

As a Year 7 English student I can:

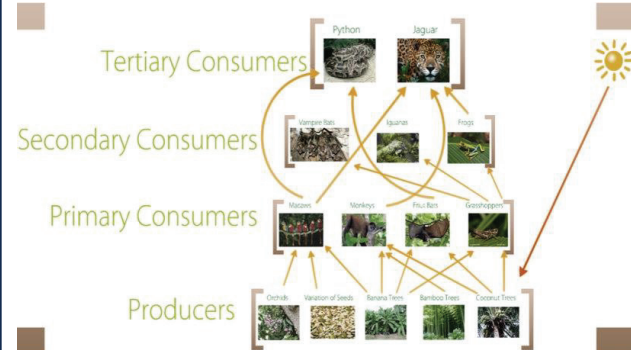
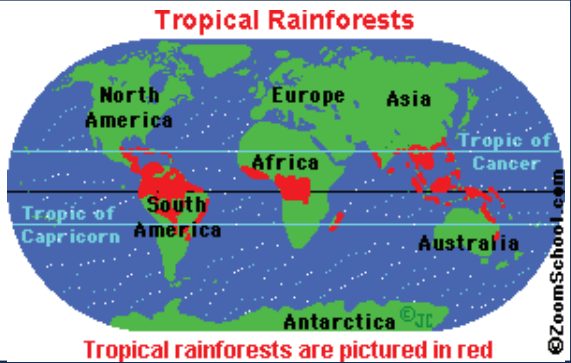
Identify tragic and comedic elements in a text.	
Consider how responsibility and colonialism are portrayed.	
Make links between text and context.	
Analyse techniques.	
Write and present a persuasive speech.	

Geography | Why are rainforests important? | Topic Dictionary

Image	Key word	Definition	In a sentence
	Abiotic	Non living	Rocks and rainfall are abiotic characteristics.
	Adaptation	An adaptation is a change that helps an organism (plant or animal) survive in its environment.	The Scarlet Macaws have adapted to tropical rainforests through certain characteristics claws to grip onto trees and powerful beaks to break open nuts.
	Biome	A very large ecosystem.	The world is made up of lots of different biomes , for example deserts, rainforests, tundra and temperate.
	Biosphere	The parts of Earth and atmosphere where life exists.	The plants, animals and humans are all part of Earth's biosphere .
	Biotic	Living.	Plants and animals are biotic characteristics.
	Climate	The average weather conditions of a location over a long period of time.	The climate of a rainforest is hot and wet all year round.
	Decompose	The process of breaking down dead organisms and organic materials into smaller pieces.	When an animal dies in the rainforest, the corpse slowly decomposes , and the nutrients go into the soil.
	Deforestation	The purposeful cutting down or clearing of a forested area.	The world's rainforests are slowly shrinking due to irresponsible deforestation .
	Ecosystem	A community of living organisms (plants and animals) sharing an environment.	A pond is a small-scale ecosystem , and a rainforest is a large-scale ecosystem
	Food Webs	A diagram showing the flow of energy in an ecosystem.	Humans are top of the global food web as we have no natural predators.
	Global Impacts	Something that affects people and the environment around the world.	The climate change crisis has a global impact , where all parts of the world experience a variety of different consequences.
	Interdependence	The dependence of two or more people or things on each other.	The bees and flowers are interdependent , meaning the bees need the flowers for food, and the flowers need the bees to spread their pollen so they can make more flowers.
	Local Impacts	Something that impacts a small area or low amount of people.	Deforestation can cause indigenous tribal communities to lose their traditions, which is a local impact .
	Photosynthesis	Photosynthesis is the process by which plants use the energy from sunlight to convert water and carbon dioxide into glucose and oxygen.	Photosynthesis is the process by which trees 'breathe' and feed themselves.

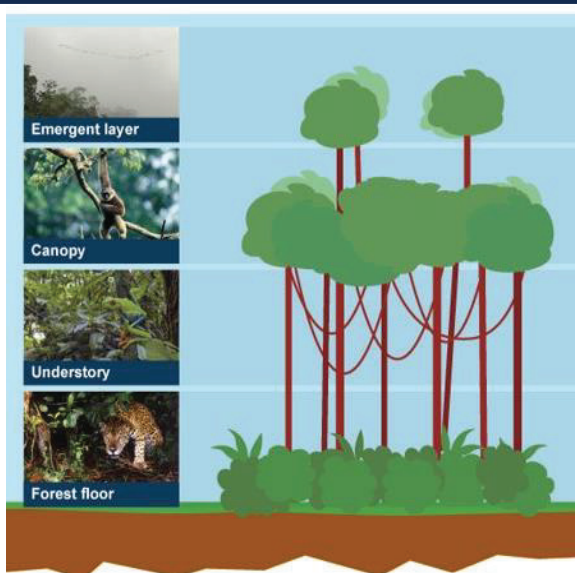
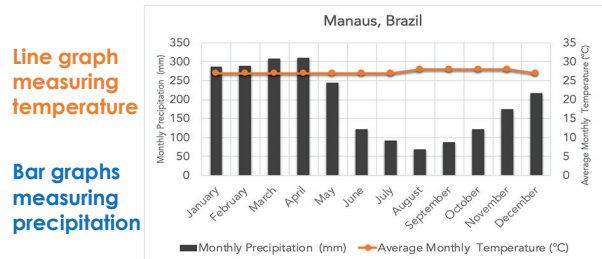
Geography | Why are rainforests important? | Knowledge Organiser

Tropical rainforests are found along the equator, in between the Tropics of Cancer and Capricorn. This type of biome is warm, wet and full of biodiversity.



Within the rainforest, there is interdependence between the animals, which means all the different parts rely on each other for survival. This can be demonstrated through the food web.

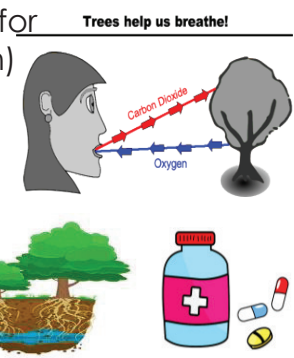
This climate graph illustrates constantly high temperatures and fluctuating precipitation throughout the year in Manaus; one of the Amazon rainforest's two cities.



Each of the four layers in the rainforest offers a unique habitat for different animals and plants

Rainforests are important for the biosphere (living earth) because they...

- 1) Capture carbon and release oxygen
- 2) Reduce flooding
- 3) Provide the soil with nutrients.
- 4) Provide natural medicines



Concerningly, high rates of deforestation threaten the existence and health of our rainforests. But if we know it is bad, why does it happen?

Reasons for deforestation

- Farming
- Logging
- Mining
- Dam Building
- Settlement

Deforestation results in climate change, soil erosion, biodiversity loss, water cycle disruption and impacts on tribal communities.



As a Year 7 Geographer, I know...

1. The location and features of tropical rainforest biomes	
2. How plants and animals have adapted to this climate	
3. Why rainforests are important	
4. How interdependence shapes the rainforest food web	
4. Why deforestation occurs	
5. The negative impacts of deforestation	

Geography | Why are rainforests important? | Skills Guide

Locating places 1

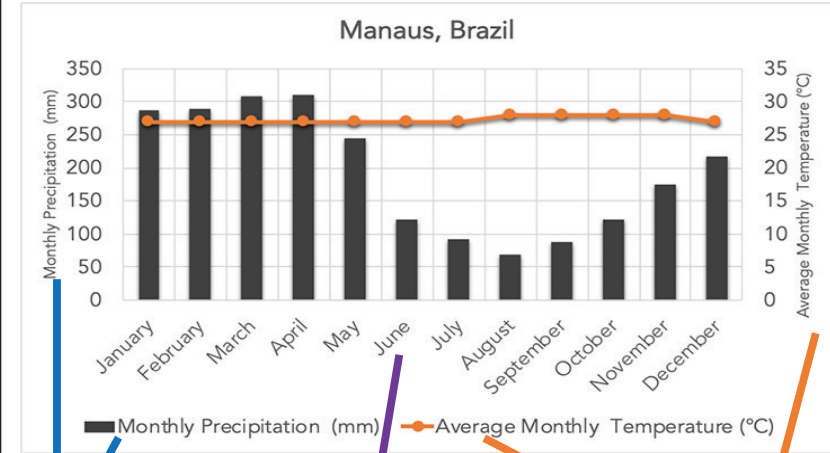
Success criteria:

- ✓ Includes compass direction
- ✓ Includes place names

The Amazon Rainforest is located in **north** of the continent of **South America**, which is **west** of **Africa**. The majority of the rainforest is in **north west Brazil**, however it also spreads into surrounding countries such as **Bolivia, Peru and Colombia**.



Using climate graphs 1



Bar graph, plotted along the left axis (in this case), measuring precipitation

Year broken down into months, along the bottom axis

Line graph, plotted along the right axis (in this case), measuring temperature

How to explain a geographical process. 3

Explain - Set out purposes or reasons/ Say why something happens.

Explain how rainforests support the biosphere. (5)

A rainforest supports all animal life by filtering the air. Through photosynthesis, (1) trees absorb or 'capture' carbon dioxide- a gas that can be harmful to the atmosphere if released in large quantities (1). Trees then release oxygen, which allows all land animals to breathe (1).

Additionally, trees act like a sponge by soaking up lots of water (1) through their roots. This prevents flooding from taking place during precipitation. (1)

We can see here the student has given a reason for **why** rainforests support the biosphere through a detailed explanation of the physical geography.

The climate graph demonstrates a climate in Manaus, Amazonia, as having consistently high temperatures and a variety of precipitation levels across the year. As the bar graph shows, highest amount of rain falls in March at 325mm, with the wettest months being between January and May. The drier season is between June and October, however rain never falls below 50mm. The temperature is much more consistent, and as the line graph shows is around 27 degrees Celsius across the whole year. There is therefore less variation in temperature than precipitation.

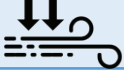









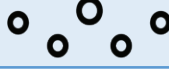




Precipitation



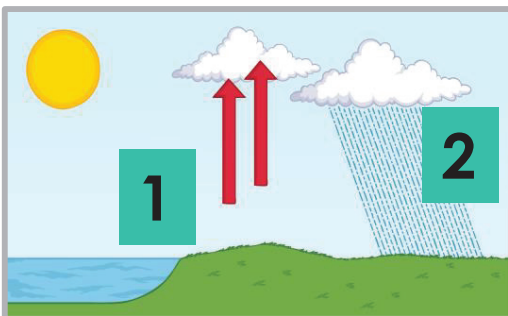
Temperature

Geography | Why is it important to study weather? | Topic Dictionary

Image	Key word	Definition	In a sentence
	Air pressure	Air pressure is the weight of air pressing down on earth.	In deserts, the air pressure is very high as the air sinks to the ground. However, we cannot feel it!
	Climate	The average weather conditions of a location over a long period of time.	The UK has a temperate climate : warm summers, mild winters and some rainfall all year.
	Condensation	The process when water vapour turns into a liquid.	Clouds indicate that water vapour has condensed in the air.
	Condensation nuclei	Microscopic particles of dust, smoke or salt in the atmosphere on which water vapour condenses to form cloud droplets.	The more condensation nuclei there are in the air, the more likely it is that clouds will form.
	Continental	Relating to a landmass.	Continental air masses (air that has travelled over land) bring dry weather.
	Evaporation	The process when water turns from a liquid to a gas (water vapour).	When water heats up, it evaporates and turns into a gas.
	Human geography	The study of where and how people live, work and travel around.	Year 9 students were learning about people who live in China in their human geography lesson.
	Maritime	Relating to oceans or seas.	Maritime air masses (air that has travelled over sea) bring wet weather.
	Physical geography	The study of the natural landscapes and features of the Earth.	Year 7 students learnt about rivers in their physical geography lesson.
	Prevailing wind	The most common wind direction.	The UK's prevailing wind is typically from the southwest. These maritime air masses are why we have so much rainfall!
	Water vapour	water held in the air as a gas.	Once water has evaporated, it turns into a gas called water vapour . We cannot see or feel this.
	Weather	The conditions of the atmosphere, such as temperature and presence of rain and clouds. The weather changes daily.	Today the weather is warm and cloudy. Last week however the weather was very cold and rainy!
	Weather instruments	Weather instruments are used to measure and record the weather.	Weather instruments can be found in weather stations on land. The Met Office has hundreds of weather stations all over the UK.

The three types of rainfall

1) Convective rainfall



1. The sun heats the ground causing any moisture to evaporate and form water vapour.

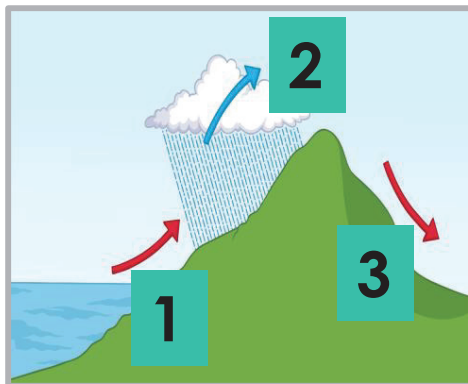
2. As the warm, moist air rises it cools and condenses into clouds and eventually rain.

2) Relief rainfall

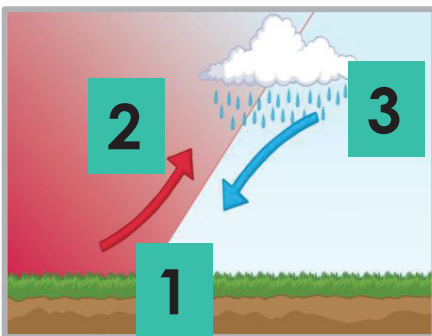
1. Moving air is forced to rise over hills or mountains

2. The rising air cools and the water vapour condenses to form clouds and rain

3. As the air descends on the other side, it warms up and becomes dry.



3) Frontal rainfall

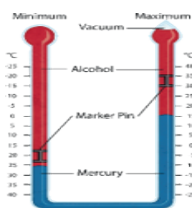


1. When a warm air mass meets a cold air mass, they don't mix.

2. The warm, less dense air is forced to rise over the cold, dense air.

3. The warm air cools as it rises and the water vapour condenses into clouds and rain

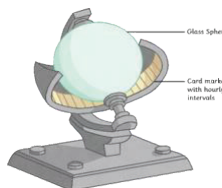
Weather instruments



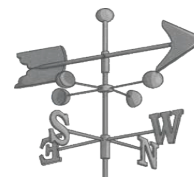
Thermometer
Measures temperature



Anemometer
Measures wind speed



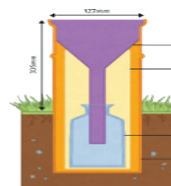
Campbell-Stokes sunshine recorder



Wind vane
Measures wind direction



Barometer
Measures air pressure

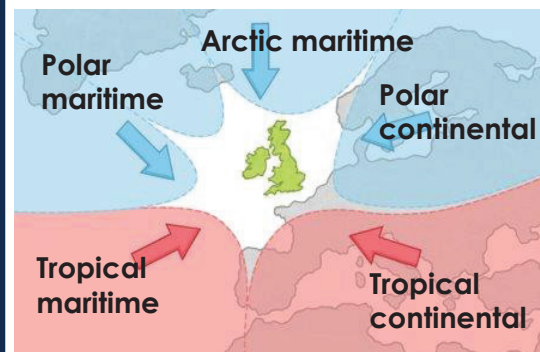


Rain gauge
Measures rainfall

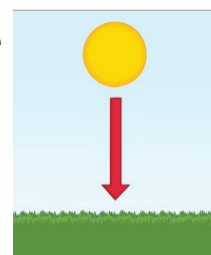
As a Year 7 Geographer, I know...

- | | |
|-----------------------------------------------------|--|
| 1. The difference between weather and climate | |
| 2. How to measure weather | |
| 3. How clouds form and why it rains | |
| 4. Why air pressure determines the types of weather | |
| 4. Why the UK has such varied weather | |
| 5. The social impacts of different weather types. | |

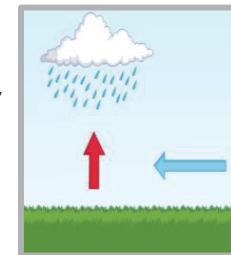
The UK has very varied weather due to the different air masses that pass overhead.



In **high pressure** weather, air sinks. There is no wind or clouds.



In **low pressure** weather, air rises, creating clouds. Wind rushes into the area.



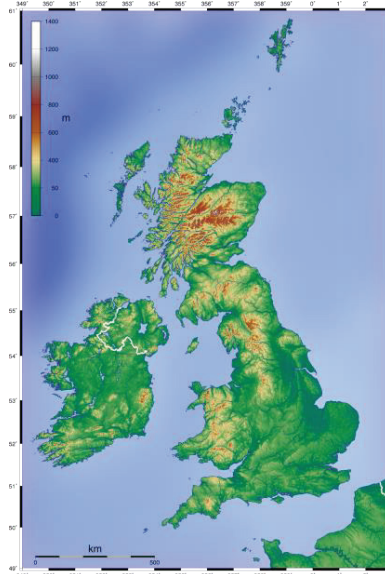
Explaining in Geography 4



Consequently
As a result of
Therefore
This means that

Use the map to explain different rainfall patterns across the UK (4)

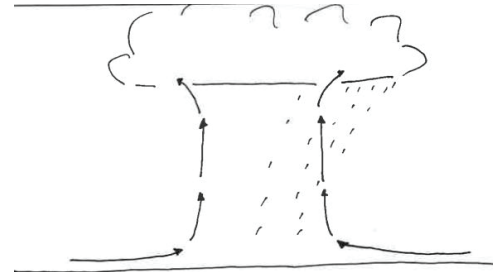
The map shows that areas in Scotland and northwest England have lots of mountains. (1) **Therefore**, air will be forced to rise over these landforms (1), causing condensation of water vapour and precipitation to take place (1). **This means that** these areas will receive high levels of relief rainfall. (1)



How to complete a geographical illustration. 3

Whenever drawing a geographical illustration, it is vital to include **labels** and detailed **annotations** describing what geographical processes have taken place.

Illustrate the process of convectional rainfall (6)

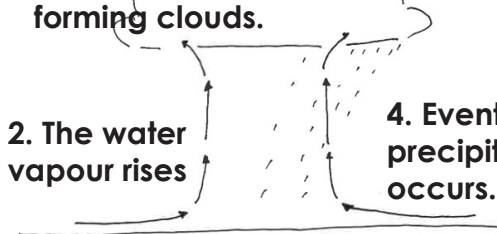


3. As the water vapour rises, it cools and condensation takes place forming clouds.

2. The water vapour rises

4. Eventually, precipitation occurs.

1. Heat from the sun causes moisture to evaporate



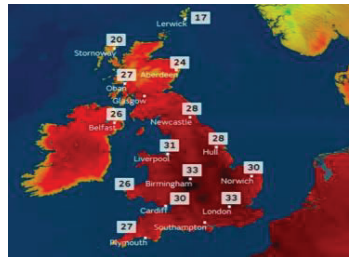
Describing in Geography 3








Describe - Set out characteristics. Say what you can see. You will often be given an image or graph to look at.

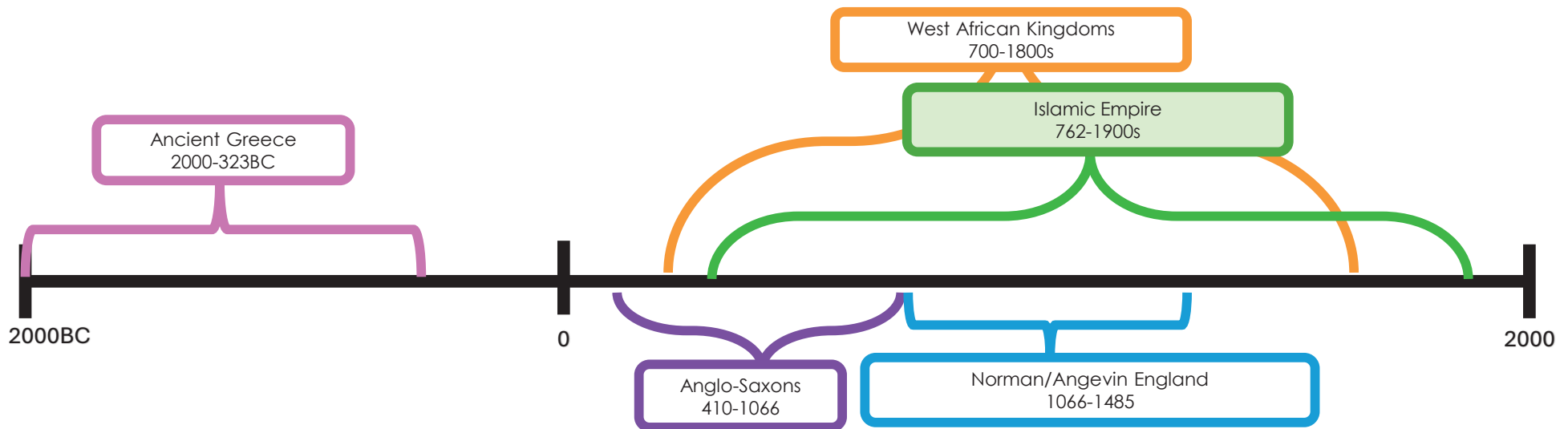
Use the images to describe the social impacts in the UK of the 2022 European Heatwave (3)

During the 2022 European heatwave, many countries recorded their highest temperatures for 500 years. The heatwave caused many deaths (1), and there was a record number of visits to hospitals in the UK which put strain on the NHS (1). However, many people decided to stay in the UK for the summer holiday, which boosted the economy (1).



History | The Islamic Empire | Topic Dictionary

Image	Key Word	Definition	In a sentence...
	adaptation	Noun: A retelling of a story with some changes	Disney likes to adapt famous stories and turn them into films.
	arabesque	Adjective: A decorative design made of intertwined flowing lines, originally found in ancient Islamic art.	The artwork could be described as arabesque.
	Caliph	Noun: The chief Muslim civil and religious ruler, regarded as the successor of Muhammad.	Sunni Muslims believe that Abu Bakr, Muhammad's (pbuh) close friend should have been caliph after Muhammad's death.
	Golden age	Noun: When art, literature and culture is at its peak	Some people describe ancient Greece as a golden age .
	sack	Verb: To attack somewhere and steal its valuable things	The sacking of Rome was in 410AD.



Muhammad, 'peace be upon him (pbuh)' is the founder of Islam. He was born in Macca (in today's Saudi Arabia) in 570 AD. The angel Gabriel appeared before him whilst he was meditating in a cave on Mount Jabal al-Nour. He would eventually



what he was told but these teachings were against the polytheism (worshipping many Gods) of the Arab tribes. This forced Muhammad (pbuh) and his Muslim followers to relocate to Medina in 622 AD. 8 years later he returned to Mecca and destroyed statues of the pagan Gods.

In the first century after Muhammad's (pbuh) death, the Islamic empire had conquered most of north Africa, the middle east, The Byzantine empire, Spain and stretched as far east as Afghanistan. This was because

- They were skilful fighters on horseback and without heavy armour like the Byzantine's
- They did not force Christians and Jewish people to convert, they only taxed them (and less than the Byzantine's had)

1



Another example of an Islamic world, separate to the Abbasid caliphate was Cordoba in what is southern Spain today (known as al-andalus) from 929 to 1031. The Córdoba Caliphate was led by an Emir (high ranking nobleman) called **Abd ar-Rahman III** also famed for its religious tolerance; Christians and Jews were welcomed as "people of the book". Medieval monks, and his chief surgeon was Jewish. About 300,000 people lived in Cordoba. It was also a round city, but lots of its architecture was inspired by Mediterranean styles too. The great Mosque's architecture (shown below).

3

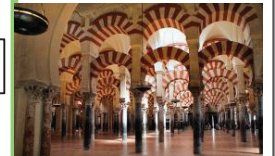
The second of the Abbasid Caliphs, Al-Mansur would build his capital on the banks of the river Tigris (to supply it with water and for transport) He would call this city **Baghdad**. Construction began in 762 AD. At its centre lay a great mosque. Wealth poured into Baghdad via the 'silk road' and it became a centre for intellectuals. The house of wisdom for example, housed over 400,000 books. Boys and sometimes girls learnt to recite the Qur'an in schools like a Kuttab (primary school). They also learnt writing and basic arithmetic. In the Streets, there were busy markets selling fruit, vegetables and clothing produce. This was just one example of an Islamic world...



2

The **Golden Age** began in 786AD, when the House of Wisdom in Baghdad was finished. It ended in 1258, when the Mongols sacked Baghdad. Luxury items such as silk, ivory and diamonds, passed through Baghdad on their way between Asia and Europe. Learning was seen as holy. In 751, after defeating the Chinese Tang dynasty, they captured paper makers allowing them to make more books and allowed ideas to spread. For example, Ibn al-Haythm (picture) who invented the first camera and could explain how the eye sees, or Al-Khwarizmi was a Persian mathematician who invented algebra. Arabesque art also flourished as shown on the prayer mats on the right. Mosaic patterns were used on mosques, an Example of a technique learnt from the Romans

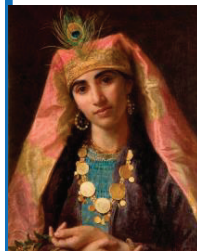
2



As a Year 7 Historian I know ...

1.	How was Islam started and how did it spread
2.	How Baghdad was founded and what life was and whether it was a golden age
3.	What the Cordoba Caliphate was like
4.	The importance of the Arabian nights
5.	What the Silk Road was
6.	How Baghdad ended

- 1) The Mongols** were a nomadic (no fixed home) people, incredibly skilled at fighting on horseback and archery. Anyone who opposed the Mongols was generally met with violence. Under the infamous Genghis Khan, between 1207 and 1227, the Mongolian Empire expanded to stretch from China to European Russia. Hulegu Khan, grandson of Genghis, attacked Baghdad using siege tactics in 1258. Baghdad fell in February after a two week siege.
- 2) Overconfidence:** Caliph al-Musta'sim was given the chance to surrender but instead called Hulegu young and ignorant and claimed he could raise more armies (he couldn't)
- 3) Bad Luck:** Baghdad suffered historic flooding in 1256, leading to violence between different groups of Muslims. One of Hulegu's commanders had also managed to drown and defeat 20,000 Caliphal soldiers while they celebrated victory two weeks before.



6

The *One Thousand and One Nights*, or *Arabian Nights*, is a collection of Middle Eastern and Indian folk tales (stories passed on word of mouth). It contains fairy tales, romances, legends, and fables. It is set within a "frame story"- an overarching plot involving a clever woman called **Scheherazade**. She was the daughter of a vizier (advisor) to an angry king **Shahryar**. Shahryar, had demanded to marry a new wife each day and murder them the next day after his first wife was unfaithful. Scheherazade, to her father's alarm, volunteered to marry Shahryar. Each night Scheherazade (shown on the left) would tell Shahryar a new and brilliant story, leading each one incomplete thereby saving her life. After 1001 nights, Shahryar falls in love and Scheherazade is made queen. Some examples of her stories are below:

- **Aladdin** tells the story of a young man who, thanks to the help of wishes from a genie in a lamp, becomes sultan of a city in China.
- **Sinbad**, a sailor who has seven adventures across the sea, encountering mythical creatures and escaping danger each time richer than before.
- **Ali Baba** finds a cache of treasure hidden by forty thieves and takes a bag of gold from it. The thieves then try to kill him and are foiled each time by a clever enslaved woman called Morgiana.

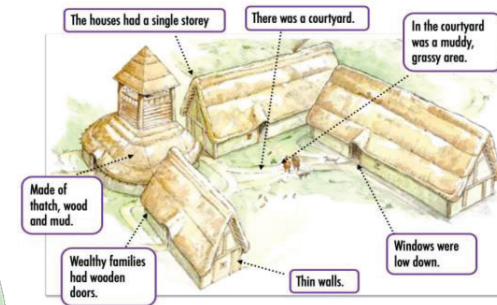
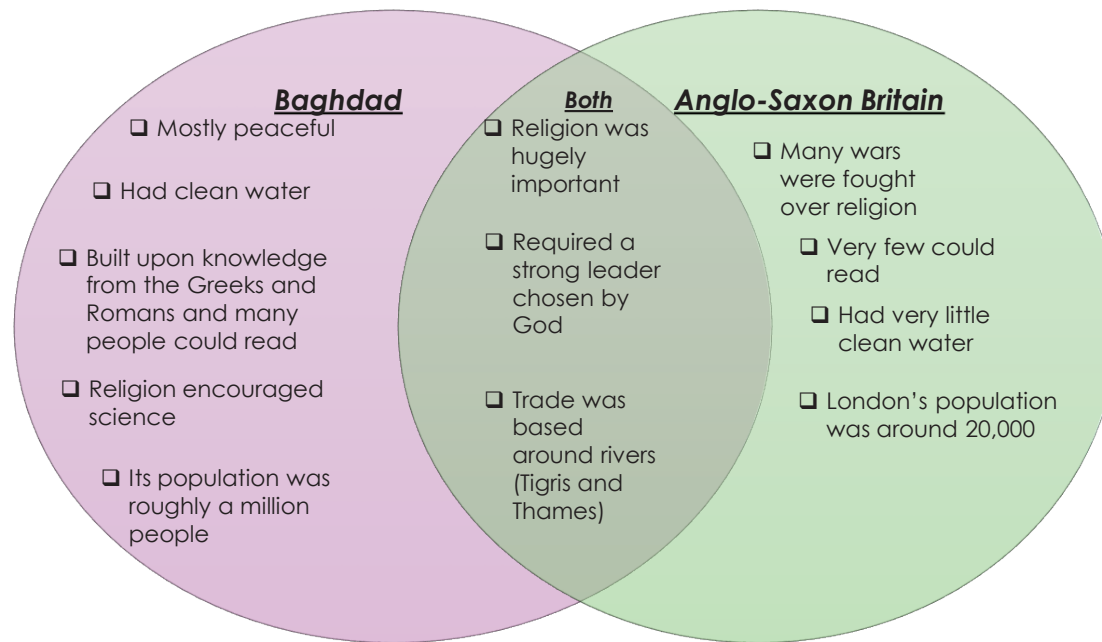


A long-distance trade passage (around 5000 miles) in which valuable items such as silk, jade and later gunpowder are taken from one part of the world to another. The route is shown on the right.

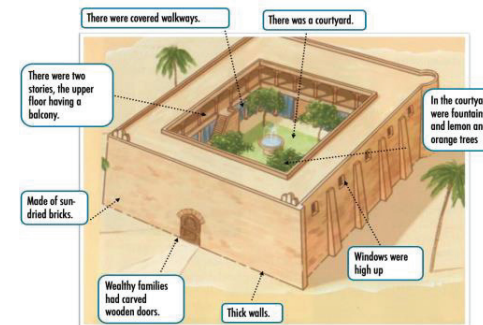
History similarity and difference Skills Guide

In history lessons, you must remember that even though there could be many **similarities** between people's lives in the past, there were probably big **differences** in their experiences too, even if they lived in the same period of history. Historians often call this **diversity**.

Compare the ways in which life in medieval Baghdad and Anglo-Saxon Britain were similar and different in the year 900AD



An Anglo-Saxon house in 900AD




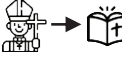






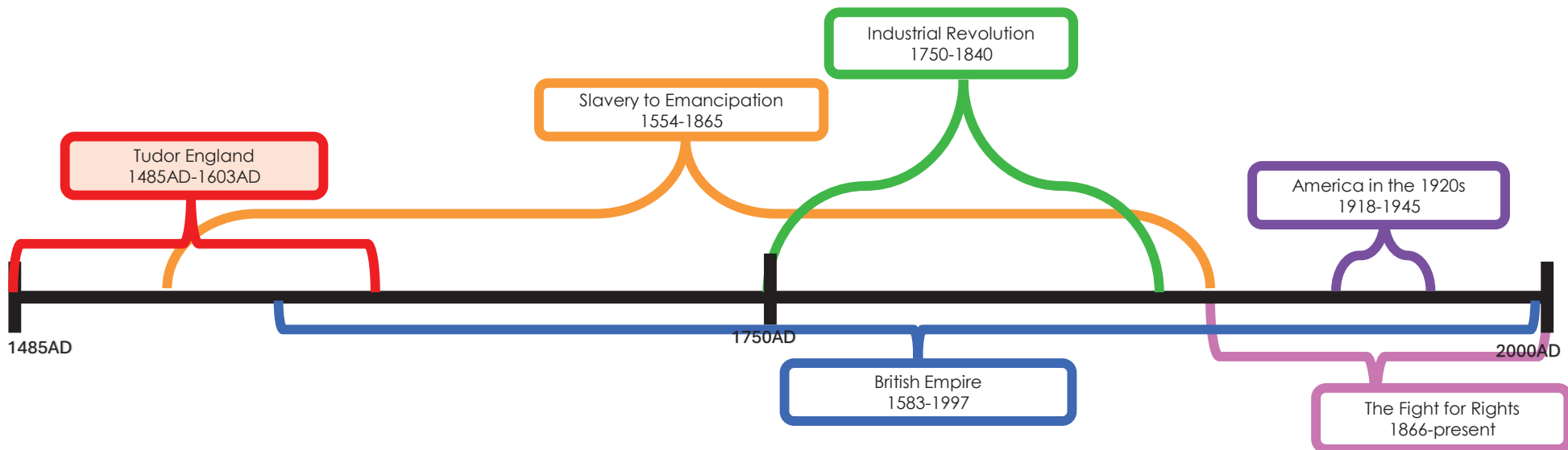
A Baghdadi house in 900AD

There were several **differences** in the way Anglo-Saxons and people in Baghdad lived. One clear example, is the **houses** they lived in.

Baghdadi houses were far more **advanced** than Anglo-Saxon houses. For **example**, they had two floors and a courtyard in the middle, where Anglo-Saxons just had the one floor. Additionally, **the way they were made** was also different. Baghdadi houses were made using sun-dried brick **whereas** Anglo-Saxons used wood, thatch and mud. This made Baghdadi houses stronger and also less likely to burn down.

History | How did the Tudors change our local area? | Topic Dictionary

Image	Key Word	Definition	In a sentence
	Catholic	(noun/adjective) a member of the denomination (branch) of Christianity led by the Pope	The Pope leads the Catholic church.
	compromise	(noun/verb) a way of reaching an agreement in which both sides give and get something	My sister and I found a compromise on what to have for dinner.
	dissolution	(noun) the act of formally ending an organisation; dissolving it	The dissolution of the monasteries affected everyone.
	English Reformation	(noun) when England's official religion was changed by Henry VIII from Catholic to Protestant	King Henry VIII began the English Reformation to divorce his wife, Catherine of Aragon.
	Golden Age	(noun) a time of peace, well-being and happiness, often when an activity is at its peak	Elizabethan England was a Golden Age .
	priory	(noun) a building where a small community of monks or nuns live	The ruins of Merton Priory remain.
	Protestant	(noun/adjective) a member of the denomination (branch) of Christianity formed in protest to the Catholic church	The Church of England is a Protestant church.
	reform	(verb) to make changes to something in order to improve it	Year 8 campaigned to reform the homework policy.



Henry VIII became king in **1509**. He married **Catherine of Aragon**, a Spanish princess. **He wanted a son as a male heir.** Catherine gave birth to six children, but only one survived; **Mary**. By **1527**, **Henry wanted a divorce.** He thought Catherine was too old to have any more children, and he wanted to marry **Anne Boleyn**. He asked the **Pope** for a divorce, but the Pope said nope! Henry hated the power the Pope had over him, **so he made a new church, the Church of England**, and made himself Head of it. In **1533**, Henry gave himself a divorce, and married Anne Boleyn. She gave birth to **Elizabeth** in September 1533. Because some monks didn't support the new church, **Henry shut down the monasteries**, which also meant he could claim their **wealth**.



1.



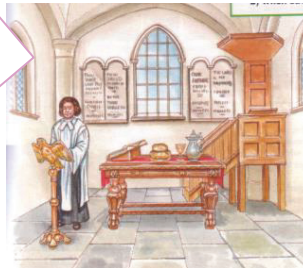
Catholic

Richly decorated
Statues and artwork
Priests wore rich garments
Service is in Latin

2.

Protestant

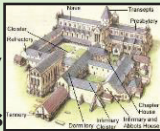
Plain and simple
No statues or art
Priests wore plain garments
Services in English
Formed in protest of Catholicism



As a Y8 Historian, I know...	
1.	who Henry VIII was, and why he caused the English Reformation.
2.	what Protestantism is, and how it differs from Catholicism.
3.	what Merton Priory was, and why it was significant.
4.	what happened to Merton Priory.
5.	who Edward VI and Mary I were, and how they changed England.
6.	about religion, culture and education under Elizabeth I.

Merton Priory was built in 1114 by Gilbert Norman. It housed monks, men who devoted their lives to God. Monks...

- ...spread **religious teachings**
- ...**cared** for the sick and elderly
- ...**educated** boys
- ...kept **animals** and grew **crops**



Famous visitors came to the priory to learn and pray.

Thomas Becket studied there before he became an ill-fated Archbishop of Canterbury.

King John stayed at the priory in June 1215 to escape the barons who were plotting against him in London. Shortly after, he was made to sign the Magna Carta!

King Henry III loved staying at the priory as a boy, and often spent Christmas relaxing there.

Nicholas Breakspear was educated at Merton Priory around 1125... and it must have been quite a good education, since he became Pope Adrian IV in 1154!

3.

Merton Priory was dissolved because...

4.

- Monks are loyal to the **Pope**, not the king
- The church owned a lot of **land** and **wealth** the king could claim
- Some members of the church were accused of **misconduct**
- Henry wanted a divorce!

Edward VI (1547-1553)

5

- Very Protestant (made the churches more Protestant)
- Very young (king at 9)
- Very sick (died at 15 of TB)



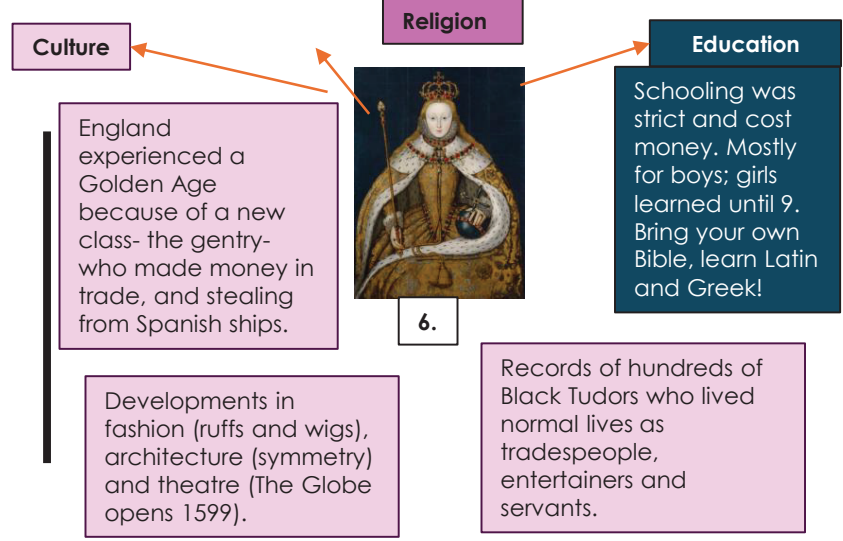
Mary I (1553-1558)

- Very Catholic (changed the religion back to Catholicism)
- Very bloody (burned 300 Protestants to death)



Elizabeth's Middle Way was a *compromise*. Elizabeth made herself Governor of the C of E, and replaced Edward's prayer book.

However, bishops were allowed to keep their jobs, priests could get married, and Catholics who missed church services (recusants) were allowed to pay fines instead of attending.



6.

History | How did the Tudors change our local area? | Utility Skills Guide

How useful is this source for an enquiry into why the monasteries were dissolved?

In History you may get shown several sources and be asked 'how useful' they are for an enquiry into a specific environment. The following steps help us to judge this:

Content: What does the source say – or show? What does it tell you about the event or person?

Caption: Where does the source come from (provenance)?

Context: Is the source accurate? Does it match what you already know?

Conclude: Reach a judgement on how useful the sources are.

This is a report on a monastery in Lincoln, written in 1518. The report was ordered by the Bishop of Lincoln.

The prior is frequently drunk. [...] The brothers of the monastery, especially the older ones, play dice and other games for money.

The content of the source suggests that the prior was "frequently drunk", and the monks played "games for money". This is useful as it tells us that one of the reasons the monasteries were dissolved was a failure of the monks to act in a holy way. This also suggests it was all the residents of the priory, not only the prior.

The provenance makes the source useful because it is an official report. An official report to the Bishop would have come from multiple sources, and the Bishop would have used it as evidence to punish those involved, perhaps in court. It is unlikely the Bishop would have reported poor behaviour that was not there in an official capacity.

This extract is useful because it is accurate. I know from my own knowledge that there were many similar reports that wrote about "pregnant nuns", and abbots profiting from piracy, at this time. This makes the extract useful because it shows it was a widespread issue across multiple monasteries. This report is further useful because I know that protestants had been complaining about corruption in the monasteries, for example Martin Luther in Germany.

Overall, this source is quite useful as it suggests one reason that the monasteries were dissolved; they failed to fulfil their role as places of aid, learning, and spiritual leadership. It also implies that this involved everyone in the monasteries. It is also useful as it is likely to be a reliable source because it comes from an official report to the Bishop. However, a historian looking for a full picture of why the monasteries were dissolved should also look for evidence of Henry VIII's own disagreements with the Pope, how wealthy monasteries were, and the king's relationship with his first wife, Catherine of Aragon.

IT | Spreadsheet | Topic Dictionary

Word	Definition	In a sentence
average	The result when numbers in a list are added together, and then divided by the amount of numbers there are.	I used the AVERAGE function to work out the average on a list of numbers.
axis titles	The labels for the 2 lines (axis) on a bar chart.	So I can know what my graph is showing, it will need to have axis titles .
bar chart	A graph that uses rectangles to show data.	I created a bar chart to present my data .
cell reference	The letter and number that describes a cell's position on a spreadsheet .	I am looking at the cell reference B2.
cell	A box on a spreadsheet .	I selected a cell on the spreadsheet .
data	Facts and figures.	I collected data about student's favorite subject.
format	The presentation and layout of work.	I am working to improve the format of my data .
formula	A mathematical calculation.	To complete calculations on my spreadsheet I will type in a formula .
function	Words used on a spreadsheet to complete maths calculations.	I can type in a function to find the total of my numbers.
information	Facts and figures that have been organised, so they have context and meaning.	I am organising my data so it can become information .
maximum	The highest number in a list.	The maximum (highest) value in my list is 15, which I found using the MAX function .
minimum	The lowest number in a list.	I know I can use the MIN function to find the lowest number in a list – the minimum .
pie chart	A graph that is a circle (like a pie), divided up into sections to show data .	I can understand data by viewing it in a pie chart .
primary (source)	Data collected first-hand accounts of a topic, from people who had a direct connection with it.	The scientist collected primary data for his experiment
secondary (source)	Data collected second-hand, created later by someone that did not experience it firsthand	The scientist used secondary data for his experiment
spreadsheet	A grid on Excel that is used to work with data.	I plan out my money on a spreadsheet .
sum	The total when numbers are all added together.	I need to find out the total cost of some items, so I will use the SUM function .

IT | Spreadsheet | Knowledge Organiser

I can...

Format a spreadsheet using:

Borders

Background colour

Currency formatting

Conditional formatting

Use **formulas** involving:

Addition

Subtraction

Multiplication

Division

Use the **functions**:

COUNTIF

MODE

MAX

MIN

AVERAGE

SUM

COUNTA

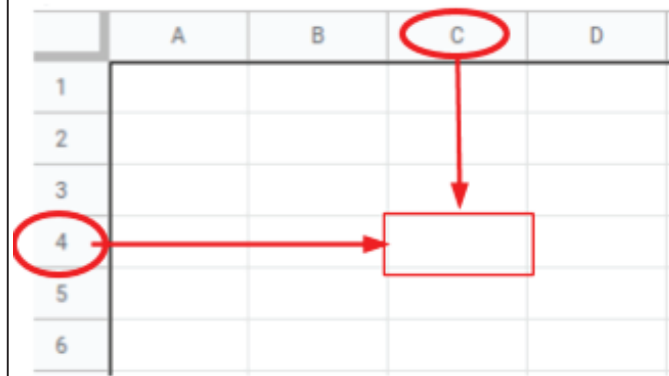
Insert a **graph** and change:

Chart title

Axis titles

Colour

This is cell C4



Number 1	Times	Number 2	3 x	wer
3	*	1	=C20*	E20

Formulas

Starts with =
To add: +
To subtract: -
To multiply: *
To divide: /

Functions

Starts with =
Use brackets ()
Write the first cell, and last cell in the range
Use colons :



Microsoft Excel

Big Data

Due to increase in internet usage, the volume of data is growing at a very fast rate. Big data is a collection of data so huge and complex that traditional management tools cannot store or process it efficiently. We see big data at work when Netflix recommends films. Because of the increasing amount of data being collected, there is a rising demand for data scientists and analysts.

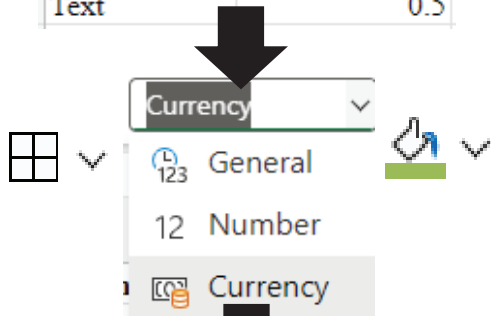
Functions

Name	What it does	Example
MAX	Finds biggest number	=MAX(A1:A8)
MIN	Finds smallest number	=MIN(B3:F3)
SUM	Adds up all the numbers	=SUM(A2:C9)
COUNTA	Counts the cells which aren't empty	=COUNTA(D2:D10)
AVERAGE	Finds the mean average	=AVERAGE(C3:H3)
MODE	Finds the modal (most common) number	=MODE(J2:J12)
COUNTIF	Counts the cells if they meet are certain condition	=COUNTIF(E3:E7, 200)

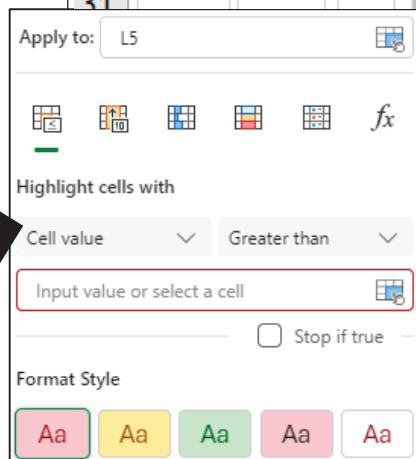
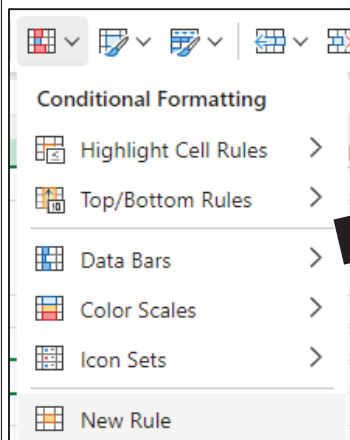
IT | Spreadsheet | Skills Guide

Formatting

Charges for voting	
Telephone	1.2
Text	0.5



Charges for voting	
Telephone	£ 1.20
Text	£ 0.50



Formulas

Add

A	B	C	D	E	F	G	H
16	5	Add	5				
17						=B16+F16	

Subtract

A	B	C	D	E	F	G	H
22	50	-	40				
23						=B22-F22	

Multiply

A	B	C	D	E	F	G	H
26	10	x	20				
27						=B26*F26	

Divide

A	B	C	D	E	F	G	H
30	100	Divide	2				
31						=B30/F30	

Functions

=

1. Type =

=SUM

2. Type the name of your function

=SUM(

3. Type (

4. Click and drag on the numbers you want

	D	E
16	£ 150.00	
17	£ 60.00	
18	£ 200.00	
19	£ 40.00	
20	=SUM(D16:D19)	

=COUNTA(E12:I15)

=MIN(B4:B15)

=MAX(B4:B15)

=AVERAGE(B4:B15)

=MODE(B4:B15)

=COUNTIF(E12:I15, "A")

=SUM(B6:B10)

Making graphs

Player	Goals
Alexander Isak	21
Bukayo Saka	16
Cole Palmer	22

Insert

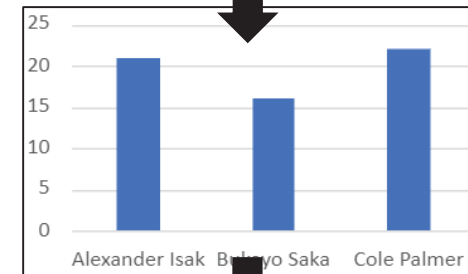
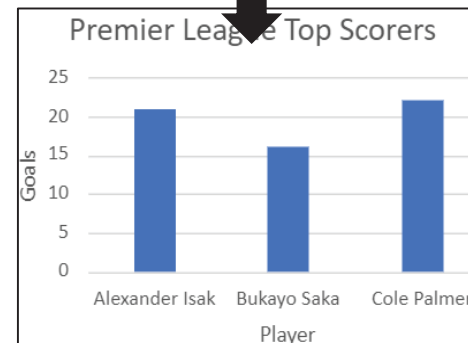


Chart Title Axis Titles



What is Puberty?

Year 7
Summer 1

Big Idea: Comfort
How do I look after myself?



How does Growing Up Change my Body?

What are Hormones?

What are Periods?

What is Self-Worth?

What does it Mean to be an Adult?

What is Puberty?

Key learning points

- Puberty is the process of growing into an adult
- It is natural and nothing to be worried about but causes anxiety because the outcome is uncertain
- People grow taller, they sweat more and their bodies develop

Key learning points

- Hormones are chemicals that change what your body does
- The two main ones in puberty are estrogen and testosterone
- Everyone has both hormones but women have more estrogen and men more testosterone

Key learning points

- Periods refer to the 3-7 days in a month that the lining of the uterus passes out of the body through the vagina
- They are normal and natural, nothing to be worried about
- Sanitary products will help with hygiene

Key learning points

- Self-worth is how you feel about yourself and what you are worth
- People's self-worth can be damaged by puberty because they worried about their body and what others think of them

Key learning points

- Being an adult is about a lot more than being physically mature, it's about your mind as well
- Adults are independent, assertive and self-reliant
- They are capable of handling their responsibilities

Key learning points

- Puberty is a difficult time because the outcome is uncertain and there are new things to deal with, but by knowing what's happening to us and how to live as an adult, we can help to make it a bit easier and calmer for ourselves

puberty



hormone



period



self-worth









adult



maturity



Lifeology | What is Puberty? | Topic Dictionary

<u>Image</u>	<u>Word*</u>	<u>Definition</u>	<u>In a sentence . . .</u>
	puberty	The period of your life when you grow from a child to an adult.	Every single human being goes through puberty during their teenage years.
	hormone	A chemical that makes your body do or change something.	Male and female bodies produce different hormones , and in different amounts to each other.
	period	The 3-7 days in the menstrual cycle when the contents of the uterus pass out of the body.	Having a period is completely natural, just like breathing or digesting the food you eat.
	self worth	What you think of yourself and how much you are worth.	Our self-worth isn't a fixed thing; it can change over time depending on what's happening in our lives.
	adult	A person whose mind and body are fully mature and developed.	There is no age at which you become an adult because it might take time for your mind to develop fully.
	maturity	How mature you are.	Different people have different levels of maturity !

*Key Lifeology words are in **bold**

Skills Guide: Lifeology Assessments

This is your chance to show off **as much of your knowledge as possible** from the **last five lessons**.

1. When the teacher instructs you, use **10 minutes** to **fill in the planning worksheet**. This is your chance to **look back through your book** and gather all the right answers. The sheet is for you to refer to during your assessment, so you don't need to use full sentences. The work only has to make sense to you! Look back at your **last assessment** and check the feedback here!
2. Complete the **assessment**. You will have **15 minutes** to produce a **piece of writing** to answer the question you've been studying for the last five weeks. Write like you're in an English lesson - **full sentences, proper spelling and grammar**, and **paragraphs**. Make sure to mention **as much as you can** from your **planning sheet**. The order you mention it in doesn't matter, **so long as it's all there**.
3. Use a **green pen** to **self-assess** your work. Compare the **assessment** you just did with the **success criteria** on the **feedback sheet**. Remember to **tick your work** wherever you're awarding a mark!

As a Year 7 Lifeology Student, I know...

By the end of Summer 1

1. Puberty is the process that all humans go through where we change physically and emotionally to become an adult.
2. During puberty, hormones are chemicals that make changes to your body, mainly estrogen and testosterone.
3. Periods are the shedding of the uterus lining through the vagina that occurs every month for on average 3-7 days.
4. Self worth is how you feel about yourself and what you are worth, but during puberty it can be damaged due to overthinking.
5. Being an adult involves maturing physically and mentally, to eventually become independent in ourselves.
6. Puberty is difficult due to uncertainty in changes to ourselves, but knowing about change to us and others reduces anxiety.

How do I Study for Exams?

Year 7
Summer 2

Big Idea: Character
How do I study for Exams?



What is Revision?

Key learning points

- Revision is the act of going over something to make sure you've learnt it
- Different methods of revision are: timetables, flashcards, mind maps, reading, notes
- You should revision where it is quite, calm, focused, warm, simple, no distractions, and full of light

revision



How do I make a Timetable?

Key learning points

- Great timetables are efficient which means to do things successfully without wasting time or energy
- They help provide structure to your day and help plan for what needs to be worked on
- Timetables should be: neat, colourful and simple

efficient



What are Mind Maps?

Key learning points

- Mind maps work to help us remember things as its similar to the way our brains store information
- Spaced learning is breaking up information into smaller pieces and spreading them out over a long time
- Separate information into different topics to focus on one at a time

spaced learning



What are Flashcards?

Key learning points

- Flashcards are cards containing small amounts of information
- They are versatile which means it can be used for many different things
- they are light, small and easy to use
- Best to include the most important information on a topic

versatile



How does my Brain Work?

Key learning points

- The brains is a storage unit of information, to organise this we create draws called "schemas"
- Our senses (touch, hear, smell, taste, see) are used by our brain to check the world around us
- To self-assess is to test yourself, to see what you know and what you don't

self-assess



How do I Study for Exams?







Key learning points

- Learning the best way to revise is important so you know what works for you
- As you grow up, you'll have to take exams for GCSE, college, and sometimes in your career so it's important to know how your own brain works so you can remember information

metacognition



Lifeology | How do I Study for Exams? | Topic Dictionary

<u>Image</u>	<u>Word*</u>	<u>Definition</u>	<u>In a sentence . . .</u>
	revision	The act of going over something to make sure you've learnt it.	The older you get in school, the more revision you will need to be doing.
	efficient	Able to do things successfully without wasting time or energy.	Finding a shortcut is great because it gives you a more efficient way of getting somewhere.
	Spaced learning	Breaking up your learning into smaller pieces, and spreading them out over a long time.	Spaced learning is very effective because it means you keep mixing things up and avoid getting bored.
	versatile	Something that can be used for many different things.	Being able to read is an example of a versatile skill because it's useful for every job in life.
	self-assess	To test yourself, to see what you know and what you don't.	If you don't self-assess yourself regularly, you won't be able to tell if you know enough to pass!
	metacognition	Thinking about how you think.	Thinking about metacognition is meta-metacognition - you're thinking about thinking about how to think.

*Key Lifeology words are in **bold**

Skills Guide: Lifeology Assessments

This is your chance to show off **as much of your knowledge as possible** from the **last five lessons**.

1. When the teacher instructs you, use **10 minutes** to **fill in the planning worksheet**. This is your chance to **look back through your book** and gather all the right answers. The sheet is for you to refer to during your assessment, so you don't need to use full sentences. The work only has to make sense to you! Look back at your **last assessment** and check the feedback here!
2. Complete the **assessment**. You will have **15 minutes** to produce a **piece of writing** to answer the question you've been studying for the last five weeks. Write like you're in an English lesson - **full sentences, proper spelling and grammar**, and **paragraphs**. Make sure to mention **as much as you can** from your **planning sheet**. The order you mention it in doesn't matter, **so long as it's all there**.
3. Use a **green pen** to **self-assess** your work. Compare the **assessment** you just did with the **success criteria** on the **feedback sheet**. Remember to **tick your work** wherever you're awarding a mark!

As a Year 7 Lifeology Student, I know...

By the end of Summer 2

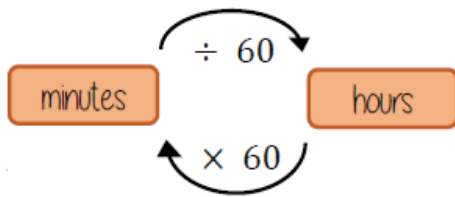
1. Revision is the act of going over something to learn information, there are different methods to revising to suit needs.
2. Timetables are used to be more efficient in organizing your time, providing structure to plan what needs to be worked.
3. Mind maps help us remember information, with spaced learning breaking content into small chunks spread over time.
4. Flashcards are small cards with important information, which are versatile as it can be used for different things for what you need.
5. Brains store information and organises it into schemas, self assessing allows you to test what you already know .
6. Learning what method works for you helps you become more effective with remembering new information.

Y7 Summer Term: Block 1 – Speed, Distance and Time

Previous: Perimeter and Area

Next: Properties of Number

I can convert between units of time



1 day – 24 hours
1 hour – 60 minutes
1 minute – 60 seconds

I can calculate speed, distance and time

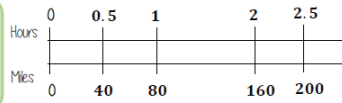


Speed, Distance, Time

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

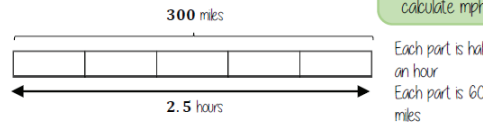
$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

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



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

Bar models can help to calculate mph



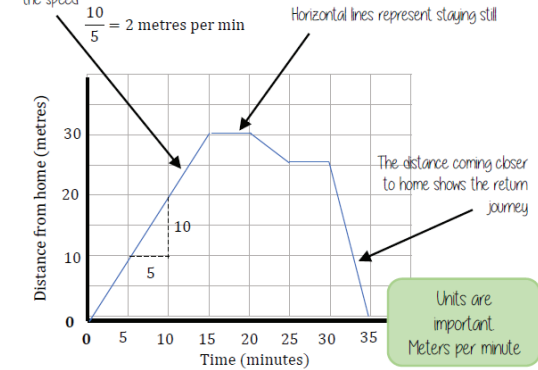
I can draw and interpret distance-time graphs



Distance – Time graphs

The steeper a gradient the faster the speed

Gradient = speed



I can solve problems with tables and timetables



Bus/ Train timetables

Harton	1005	1045	1130
Bridge	1024	1106	1147
Aville	1051	1133	1205
Ware	1117	1202	1233

Each column represents a journey, each row represents the time the 'bus' arrives at that location

TIME CALCULATIONS – use a number line

Two-way tables

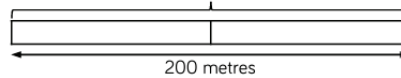
	H	T
H	HH	HT
T	TH	TT

Where rows and columns intersect is the outcome of that action

I can solve problems with speed, distance and time



Nijah runs 200 metres.
She runs the first 100 metres in 20 seconds.
She runs the next 100 metres in 30 seconds.
Brett says, "Nijah's average speed over 200 m is 25 metres per second".
Use the bar model to help you to write down a calculation to show that Brett is incorrect.



I can solve problems with time and the calendar



Time and the calendar



1 Year – the amount of time it takes Earth to go around the sun 365 (and a quarter) days
Leap Year – 366 days (every 4 years)



12 Months = one year = 52 weeks
31 days – Jan, March, May, July, Aug, Oct, Dec
30 days – April, June, Sept, Nov
28 days – Feb (29 leap year)
1 week – 7 days
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

Maths | Speed, Distance and Time | Topic Dictionary

Key Word	Definition	In a sentence
convert	To convert means to change a value from one unit or form into another.	2 metres can be converted into 200 centimetres.
density	Density tells us how much mass there is in a certain amount of space.	The metal block has more mass in the same size space, so it has a greater density than the wooden block.
mass	A measure of how much matter is in an object commonly measured by weight.	The mass of the textbook is 0.8 kg.
origin	The origin is the point where both axes meet on a graph.	The coordinate (0,0) is called the origin .
speed	Speed is how far something travels in a certain amount of time.	If a car travels 60 km in 1 hour, its speed is 60km/h.
substitute	Putting numbers where letters are - replacing numbers into a formula.	Substitute $x=4$ into the expression $2x+3$.
time	Time is how long something takes to happen.	Speed is calculated by dividing distance by time .
volume	The amount of 3D space a shape takes up.	The volume of a cube with side length 3 centimetres is 27 cubic centimetres.

Maths | Speed, Distance and Time | Skills Guide

Write 1.2 hours in hours and minutes.

Non-calculator

$1.2 \text{ hrs} = 1 \text{ hr} + 0.2 \text{ hrs}$

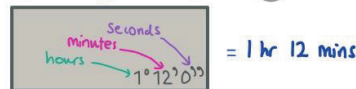
hours	1	0.1	0.2
Minutes	60	6	12

$1.2 \text{ hrs} = 1 \text{ hr and } 12 \text{ mins}$

Calculator

$1.2 \rightarrow \text{EXE} \rightarrow \text{FORMAT} \rightarrow \text{Sexagesimal} \rightarrow \text{OK}$

OR
 $1.2 \rightarrow \text{EXE} \rightarrow \text{SHIFT} \rightarrow \text{0} \text{ } \text{0} \text{ } \text{0} \text{ } \rightarrow \text{+} \rightarrow \text{EXE}$



A van is travelling at a constant speed of 50 mph.

How far will the van travel in 4 hours?

miles per hour

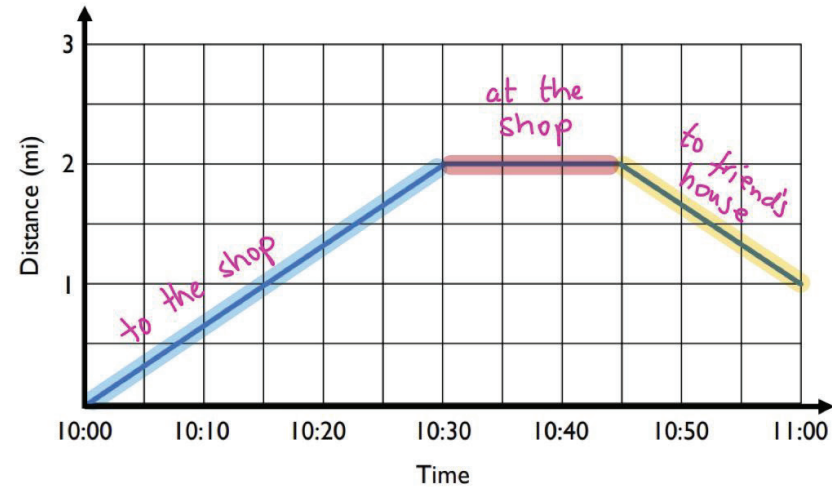
distance (miles)	50	200
time (hours)	1	4

In 4 hours the van will travel 200 miles

Jack travels from his home to the shop.

He then travels to his friend's house where he arrives at 11:00

The distance-time graph shows his journey.



How many minutes does Jack spend at the shop?

From 10:30 until 10:45

15 minutes

How far does Jack travel in total?

To the shop = 2 miles

To friend's house = 1 mile

$2 + 1 = 3$

3 miles

A factory assembles 40 cars every hour.

The factory operates for 10 hours every day.

How many cars are produced in one week?

cars	40	400	2800
time (hrs)	1	10	
days	X	1	7

① Fill the table with known information

② Which part of the table will give you the answer?

③ Complete the table as needed

Y7 Summer Term: Block 2 – Properties of Number

Previous: Speed, Distance and Time

Next: Add and Subtract Fractions

I can find multiples of numbers 😊 😐 😞

Multiples The "times table" of a given number

All the numbers in this lists below are multiples of 3.

3, 6, 9, 12, 15...

$3x, 6x, 9x \dots$

This list continues and doesn't end

Non example of a multiple

4.5 is not a multiple of 3 because it is 3×1.5

Not an integer

x could take any value and as the variable is a multiple of 3 the answer will also be a multiple of 3

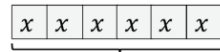
I can find factors of numbers 😊 😐 😞

Factors

Arrays can help represent factors 10×1 or 1×10
 5×2 or 2×5

Factors of 10
1, 2, 5, 10

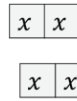
Factors and expressions



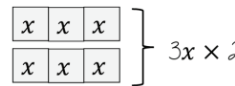
$6x \times 1$ OR $6 \times x$

The number itself is always a factor

Factors of $6x$
6, x , 1, $6x$, $2x$, $3x$, 2



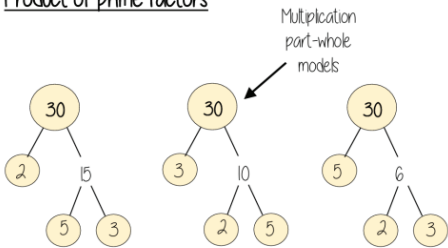
$2x \times 3$



$3x \times 2$

I can find product of prime factors 😊 😐 😞

Product of prime factors



Multiplication part-whole models

All three prime factor trees represent the same decomposition

Multiplication is commutative

$30 = 2 \times 3 \times 5$

Multiplication of prime factors

I can find the HCF 😊 😐 😞

Common factors and HCF

1 is a common factor of all numbers

Common factors are factors two or more numbers share

HCF – Highest common factor

HCF of 18 and 30

18: 1, 2, 3, 6, 9, 18

30: 1, 2, 3, 5, 6, 10, 15, 30

Common factors (factors of both numbers)
1, 2, 3, 6

HCF = 6

6 is the biggest factor they share

I know the prime numbers 😊 😐 😞

Prime numbers

- Integer
- Only has 2 factors
- and itself

2

The first prime number
The only even prime number

Learn or how-to quick recall...

2, 3, 5, 7, 11, 13, 17, 19, 23, 29...

I can find the LCM 😊 😐 😞

Common multiples and LCM

Common multiples are multiples two or more numbers share

LCM – Lowest common multiple

LCM of 9 and 12

9: 9, 18, 27, 36, 45, 54

12: 12, 24, 36, 48, 60

LCM = 36

The first time their multiples match



Comparing fractions

$\frac{3}{5}$ and $\frac{7}{10}$

Compare fractions using a LCM denominator

$\frac{6}{10}$ and $\frac{7}{10}$

Maths | Properties of Number | Topic Dictionary

Key Word	Definition	In a sentence
cube number	A number multiplied by itself twice	27 is a cube number .
factor	A number that divides exactly into another number	5 is a factor of 20.
highest common factor (HCF)	The largest factor shared by two numbers	The HCF of 12 and 18 is 6.
lowest common multiple (LCM)	The smallest multiple shared by numbers	The LCM of 4 and 6 is 12.
multiple	A number found by multiplying another number by an integer	24 is a multiple of 6.
power	How many times a number is multiplied by itself	2 to the power of 4 means $2 \times 2 \times 2 \times 2$.
prime factor	A factor that is also prime number	3 is a prime factor of 12.
prime factorisation	Writing a number as a multiplication of primes	Prime factorisation of 18 is $2 \times 3 \times 3$.
prime number	A number with exactly two factors: 1 and itself	13 is a prime number .
square number	A number multiplied by itself	36 is a square number .
square root	A number that multiplies by itself to give the original number	The square root of 49 is 7.

Maths | Properties of Number | Skills Guide

What is the **highest common factor** of 16 and 36?

Factors of 16: 1, 2, **4**, 8, 16
 Factors of 36: 1, 2, 3, **4**, 6, 9, 12, 18, 36

4

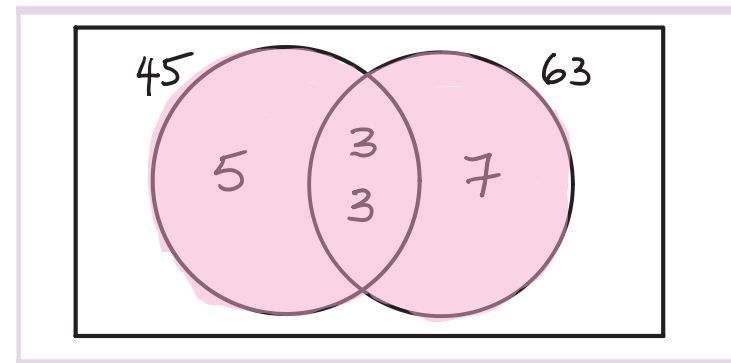
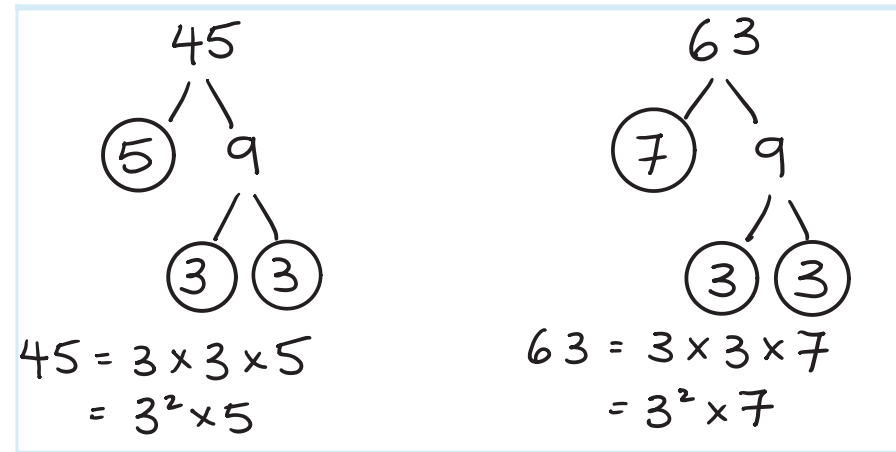
Explain why **$2x$** is a common factor of the three expressions below.

$4x^2$ $8xy$ $6wx$
 ↓ ↓ ↓
 $2x$ × $2x$ **$2x$** × $4y$ **$2x$** × $3w$

A red and a blue light flash together.
 The red light then flashes every 8 seconds.
 The blue light flashes every 6 seconds.
LCM question → look at 8 and 6 timestable
 After how many seconds will the lights flash together again?
 8, 16, **24**, 32, 40, 48, ...
 6, 12, 18, **24**, 30, ...
 After 24 seconds, the lights will flash together.

Find the lowest common multiple of 45 and 63

Prime factorisation and **Venn diagram** method:



LCM = $5 \times 3 \times 3 \times 7 = 315$

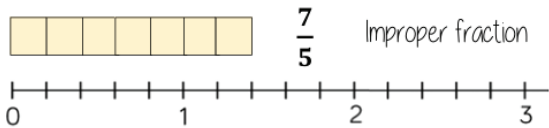
Y7 Summer Term : Block 3 – Add and Subtract Fractions

Previous: Properties of Number

Next: Angles and Polygons

I can convert between mixed number and improper fractions 😊 😐 😞

Mixed numbers and fractions



In this model 5 parts make up a whole

Fractions can be bigger than a whole

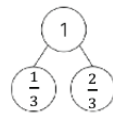
I can add and subtract fractions with a common denominator 😊 😐 😞

Add/Subtract fractions

Same denominator

$$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$$

Sequences



$$\frac{1}{3}, 1, 1\frac{2}{3}, 2\frac{1}{3}, 3, \dots$$

$$+\frac{2}{3} \quad +\frac{2}{3}$$

Represent this on a number line to help

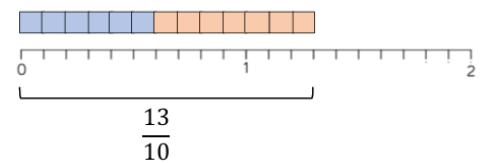
I can add and subtract fractions 😊 😐 😞

Add/Subtraction fractions (common multiples)

$$\frac{3}{5} + \frac{7}{10}$$

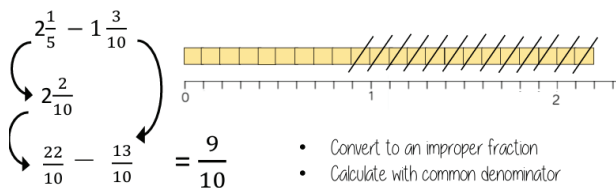
$$\frac{6}{10} + \frac{7}{10}$$

Addition/Subtraction needs a common denominator



I can add and subtract mixed number and improper fractions 😊 😐 😞

Odd/Subtraction fractions (improper and mixed)



Partitioning method

$$2\frac{1}{5} - 1\frac{3}{10} = 2\frac{2}{10} - 1\frac{3}{10} = 2\frac{2}{10} - 1 - \frac{3}{10} = 1\frac{2}{10} - \frac{3}{10} = \frac{9}{10}$$

I can convert between fractions and decimals 😊 😐 😞

Fractions and decimals

$$\frac{1}{10} = 0.1$$

$$\frac{1}{100} = 0.01$$

Example $\frac{6}{10} + 0.3 \rightarrow 0.6 + 0.3$

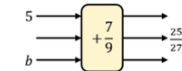
$$\frac{6}{10} + \frac{3}{10}$$

Remember to use equivalent fractions and common denominators

I can add and subtract with algebraic fractions (H) 😊 😐 😞

Fractions in algebraic contexts

$$k - \frac{5}{8} = 2$$



Apply inverse operations Form expressions with fractions

$$k = 2 + \frac{5}{8}$$

$$b + \frac{7}{9} \rightarrow b + \frac{7}{9}$$

$$p = 5 \quad m = 2$$

$$\frac{p}{8} + \frac{1}{m}$$

Substitution

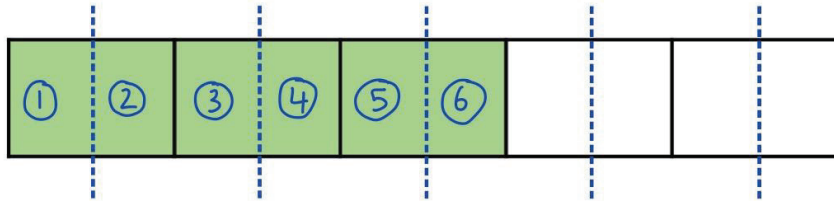
$$\frac{5}{8} + \frac{1}{2}$$

Maths | Add and Subtract Fractions | Topic Dictionary

Key Word	Definition	In a sentence
denominator	The bottom number in a fraction, representing the total number of equal parts.	In the fraction $\frac{7}{8}$, denominator is 8, which means the whole is divided into 8 equal parts.
equivalent	Having the same value, even if expressed in a different form.	The fractions $\frac{2}{4}$ and $\frac{1}{2}$ are equivalent because they represent the same proportion of a whole.
improper fraction	A fraction where the numerator is greater than or equal to the denominator.	The fraction $\frac{9}{4}$ is an improper fraction .
mixed number	A number that combines a whole number and a proper fraction.	The number $3\frac{1}{4}$ is a mixed number .
numerator	The top number in a fraction, representing the number of parts to be considered	In the fraction $\frac{3}{5}$, the numerator is 3, which means 3 parts out of 5 are being considered.
substitute	To replace a variable with a specific value.	If $x = 6$, the expression $\frac{x}{3}$ is equal to 2.

Maths | Add and Subtract Fractions | Skills Guide

$$\frac{3}{5} = \frac{\boxed{6}}{10}$$



You may use the bar model to help you.

that is why $\frac{3}{5} = \frac{6}{10}$ If you multiply any value by 1, the answer is always the original value. $\frac{2}{2} = 1$ $\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$

Jay drinks $7\frac{2}{5}$ litres of water in a week.

Amina drinks $5\frac{2}{3}$ litres of water in a week.

How much more water does Jay drink than Amina?

difference = subtraction

$$7\frac{2}{5} - 5\frac{2}{3}$$

Making the previous whole

$$7\frac{6}{15} - 5\frac{10}{15} = 1\frac{11}{15}$$

$$= 7 - 5\frac{4}{15} = 1\frac{11}{15}$$

partitioning the minuend

$$7\frac{6}{15} - 5\frac{10}{15}$$

$$= 7 - 5\frac{10}{15} = 1\frac{11}{15}$$

relationships

$$7\frac{6}{15} - 5\frac{10}{15}$$

$$= 7\frac{6}{15} + \frac{5}{15} - 6 = 1\frac{11}{15}$$

Answer = $1\frac{11}{15}$

Compare using $<$, $>$ or $=$

$$\frac{6}{10} < 0.4 + \frac{2}{5}$$

$$\frac{4}{10} + \frac{2}{5} \times \frac{2}{2}$$

$$\frac{4}{10} + \frac{4}{10} = \frac{8}{10}$$

$$3 - \frac{4}{5} > 2 + \frac{1}{8}$$

$$2\frac{1}{5} > 2\frac{1}{8}$$

Write as a single fraction.

① To add the denominators must be the same

$$\frac{2}{2} \times \frac{2x}{5} + \frac{3x}{10}$$

② Find the LCM of 5 and 10

③ Write the equivalent fractions

$$\frac{4x}{10} + \frac{3x}{10}$$

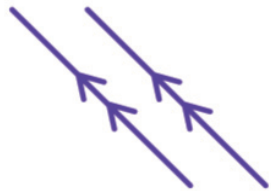
$$= \frac{7x}{10}$$

Y7 Summer Term: Block 4 - Angles and Polygons

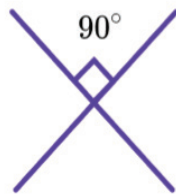
Previous: Add and Subtract Fractions

Next: Ratio

I understand what parallel and perpendicular lines are.



Parallel Lines

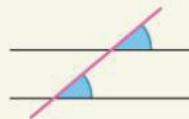


Perpendicular Lines

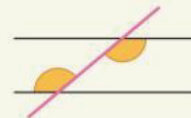
I can work out angles in parallel lines.



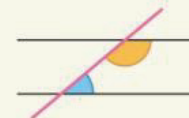
Angle Relationships (of 2 parallel lines and a transversal)



Corresponding Angles are equal



Alternate Angles are equal



Co-interior Angles sum up to 180°

I can work out angles in different polygons.



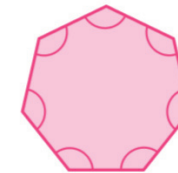
$$\text{Sum of Interior Angles} = (n - 2) \times 180$$

'n' is the number of sides the polygon has

E.g. What is the sum of the interior angles of 7 sided shape?

$$n = 7$$

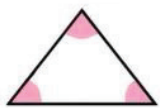
$$\begin{aligned} \text{Sum of Interior Angles} &= (7 - 2) \times 180^\circ \\ &= 900^\circ \end{aligned}$$



I can use simple angle facts to find unknown angles.

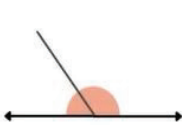


Triangle



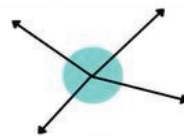
Angles in a triangle sum to 180°

Straight Lines



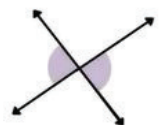
Adjacent angles on a straight line sum to 180°

At a Point



Angles at a point sum to 360°

Vertically Opposite



Vertically opposite angles are equal

I can categorise different angles.



ACUTE ANGLE
less than 90°



RIGHT ANGLE
exact 90°



OBTUSE ANGLE
greater than 90°
less than 180°



STRAIGHT ANGLE
exact 180°



REFLEX ANGLE
greater than 180°
less than 360°



FULL ANGLE
exact 360°

Maths | Angles and Polygons | Topic Dictionary

Key Word	Definition	In a sentence
adjacent	Next to each other.	The line is adjacent to the angle.
alternate angles	A pair of angles between a pair of lines on opposite sides of a transversal.	Alternate angles are equal.
co-interior angles	A pair of angles between a pair of lines on the same side of a transversal.	Co-interior angles add up to 180 degrees.
corresponding angles	A pair of angles in matching positions compares with a transversal.	Corresponding angles are equal.
interior angles	An angle on the inside of a shape.	Regular polygons have equal sides, therefore equal interior angles .
parallel	Always the same distance apart and never meeting.	A parallelogram has two pairs of parallel sides.
perpendicular	At right angles to.	To calculate area of a parallelogram, multiply the base and perpendicular height together.
transversal	A line that crosses at least two other lines.	A pair of angles are equal if they are between a pair of lines on opposite sides of a transversal .
vertex	A point where two line segments meet.	Point B is a vertex of triangle ABC.
vertically opposite angles	Angles opposite each other when two lines cross.	Vertically opposite angles are equal.

Maths | Angles and Polygons | Skills Guide

A triangle has the following three angles: a , $2a$ and $3a$.

Form and solve an equation to find the size of the **largest angle** in the triangle.

Angles in a triangle adds up to 180° .

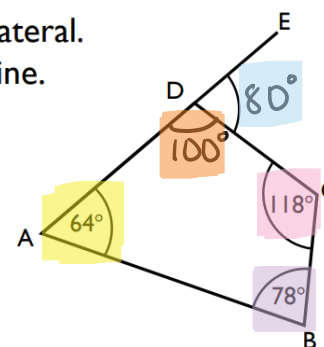
$$a + 2a + 3a = 180 \quad \leftarrow \text{collect like terms}$$

$$\div 6 \quad 6a = 180 \quad \div 6 \quad \leftarrow \text{inverse operations}$$

$$a = 30$$

$$3a = 3(30) = 90^\circ$$

ABCD is a quadrilateral.
ADE is a straight line.



Angles in a quadrilateral adds up to 360° .

Angles in a straight line adds up to 180° .

Work out the value of angle CDE.

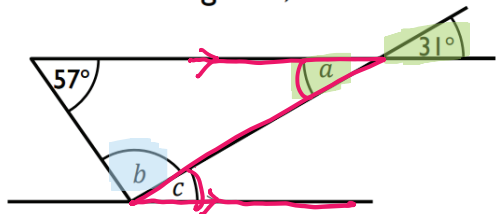
$$64 + 118 + 78 = 260$$

$$360 - 260 = 100$$

$$180 - 100 = 80$$

$$CDE = 80^\circ$$

Calculate the size of angles a , b and c .



$a = 31^\circ$ because vertically opposite angles are equal.

$$31 + 57 = 88 \quad 180 - 88 = 92$$

$b = 92^\circ$ because angles in a triangle add up to 180° .

$c = 31^\circ$ because alternate angles are equal

What is the size of each angle in a **regular hexagon**?

$$\text{Interior angle} = \frac{(n-2) \times 180}{n}$$

number of sides $\rightarrow n$

all sides and angles are the same

six sided shape

$$\frac{(6-2) \times 180}{6} = \frac{4 \times 180}{6} = \frac{720}{6} = 120^\circ$$

PE | Health and Fitness | Topic Dictionary

Key word	Definition	Question
obesity	A person with a large amount of body fat, which is caused by an imbalance between the number of calories consumed and the amount of energy expended	Why would be a bad thing to be considered obese ?
healthy weight	Being neither too overweight nor too underweight	Why would it be a good thing to be a healthy weight ?
blood pressure	The pressure that blood is under	Why is it better to have a lower blood pressure ?
calorie	A unit which measures heat or energy production in the body, normally expressed as Kcal	How many calories should an average adult female consume per day?
fatigue	Either physical or mental, fatigue is a feeling of extreme or severe tiredness due to a build-up of lactic acid or working for long periods of time	What impact would fatigue have on your performance?
maximal heart rate	Calculated by $220 - \text{age}$	What is the maximal heart rate for someone who is 16 years old?

Health Related Exercise Knowledge Organiser

Phases of a warmup:

1. Pulse raiser
2. Dynamic stretches
3. Sport specific/game related activity

Phases of a cooldown:

1. Gradual reduction in intensity
2. Stretching

As a year 7 sports person, I should....

1. Know the different components of fitness
2. Understand the importance certain components of fitness for different athletes
3. Know the difference muscular endurance and muscular strength
4. Know examples of how they can demonstrate components of fitness

	Definition	Example
Cardiovascular endurance	The ability of the heart, lungs and blood to transport oxygen	Completing a half marathon
Flexibility	The range of motion at a joint	A gymnast training to increase hip mobility to improve on their splits
Muscular endurance	The ability to use voluntary muscles repeatedly without tiring	A rower repeatedly pulling their oar against the water
Muscular strength	The amount of force a muscle can exert against a resistance	Pushing with all one's force in a rugby scrum
Agility	The ability to change direction quickly whilst maintaining control	A badminton player moving around the court from back to front and side to side quickly
Balance	The ability to maintain the body's centre of mass above the base of support	A sprinter holds a perfectly still sprint start position until the starting gun goes off
Coordination	The ability to use two or more body parts together	A trampolinist timing their arm and leg movements to perform the perfect tuck somersault
Power	The ability to perform strength performances quickly	A javelin thrower applies great force while moving their arm rapidly forward
Reaction time	The time taken to respond to a stimulus	A boxer receives a punch from their left and rapidly moves their head out of the way
Speed	The time taken to cover a distance	A tennis player moving from the baseline quickly to reach a drop shot

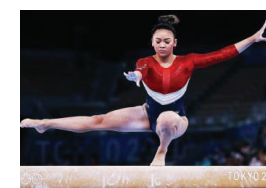
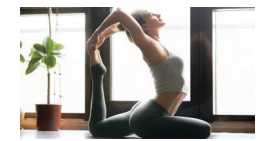
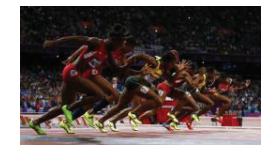


Table Tennis Knowledge Organiser

Applying Spin

- To apply top frontspin, you use the bat which should be angled downwards slightly and brushing over the ball when performing your shot.

- To apply backspin, you use the bat which should be angled upwards slightly brushing underneath the ball when performing your shot.

Rules

1. GAMES ARE PLAYED TO 11 POINTS
2. ALTERNATE SERVES EVERY TWO POINTS
3. TOSS THE BALL STRAIGHT UP WHEN SERVING
4. THE SERVE CAN LAND ANYWHERE IN SINGLES
5. DOUBLES SERVES MUST GO RIGHT COURT TO RIGHT COURT

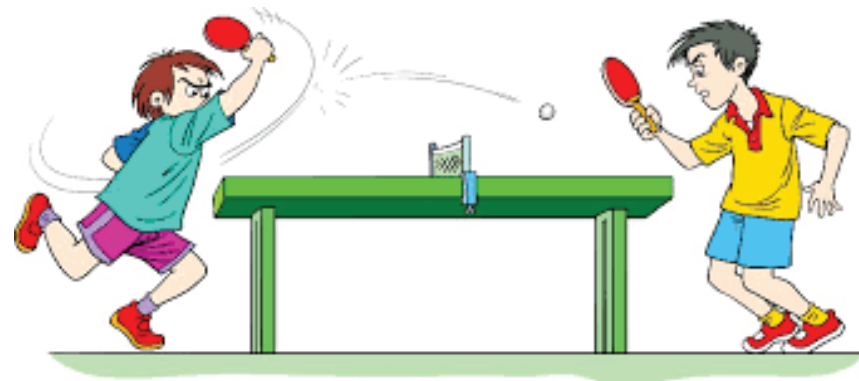
As a year 7 sports person, I should....

1. Know the basic rules of serving in table tennis

2. Understand how to perform the basic grips when holding a table tennis bat

3. Know how to put up and take down a table tennis table

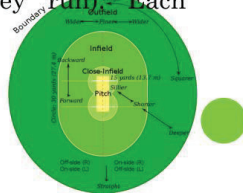
4. Be able to explain the importance of hitting the table tennis ball into different areas of the table



Cricket Knowledge Organiser

CRICKET – BASIC RULES

- The objective of each team is to score more 'runs' than the other team and to completely 'dismiss' the other team.
- Runs are scored by batsman hitting the ball with his bat so that he and his partner have time to run from one end of the pitch to the other before the fielding side can return the ball. To register a run, both runners must touch the ground behind the crease with either their bats or their bodies (the batsmen carry their bats as they run). Each completed run increments the score.



As a year 7 sports person, I should....

- | | |
|-----------------------------------------------------------------------------------------------------|--|
| 1. Know the basic rules of serving in cricket | |
| 2. Understand how to perform the basic grips when holding a Cricket bat | |
| 3. Know how to set up a cricket pitch | |
| 4. Be able to explain the importance of hitting the cricket ball into different areas of the pitch. | |

Positions:
 Bowler
 Batsman
 Fielder
 Backstop

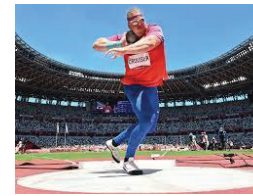
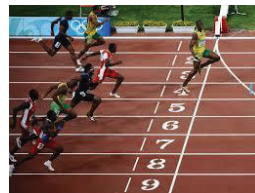
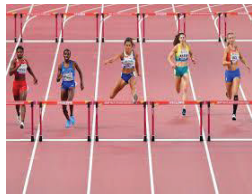


Athletics Knowledge Organiser



As a year 7 sports person, I should....

- | | |
|-----------------------------------------------------------------------------------------------|--|
| 1. Know all the athletic events there are | |
| 2. Understand how to perform a triple jump | |
| 3. Know how to put up and take down a badminton court | |
| 4. Be able to explain the importance of hitting the shuttle into different areas of the court | |



100m

Hurdles

Shot put



1500m

Athletics

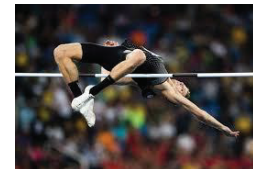
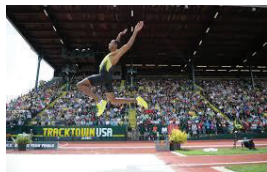
Javelin



Triple Jump

Long Jump

High jump



Softball Knowledge Organiser

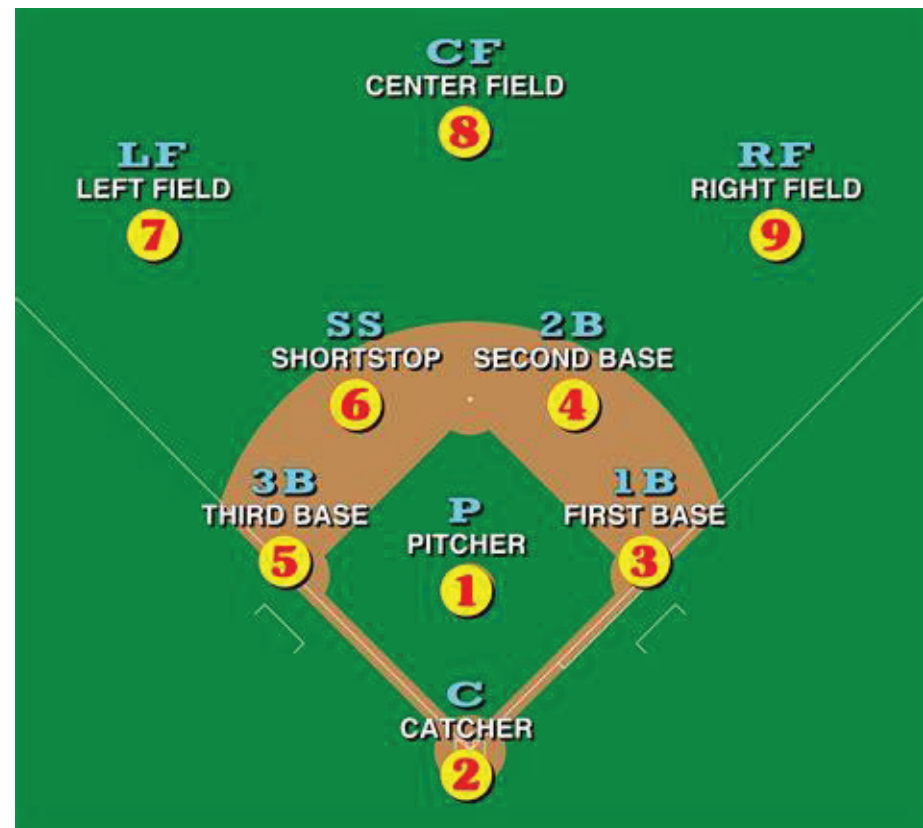


As a year 7 sports person, I should....

- | | |
|--------------------------------------------------------------------------|--|
| 1. Know the basic rules of serving in Softball | |
| 2. Understand how to perform the basic grips when holding a Softball Bat | |
| 3. Know how to set up a Softball match | |
| 4. Be able to explain the different types of the bat | |

Rules

1. The pitcher throws the ball towards the batter, who is standing in front of the catcher, for the batter to then hit the ball.
2. The batter then runs round the bases attempting to get all the way round bases to get a home run.
3. A home run would then get yourself a point.
4. Every player would have a go of batting and fielding.
5. The team with the most points after batting and fielding would win the game.



Skills Guide

DEFINE

I am able to:

- Define 5 key words from my dictionary, such as:
 - Strength
 - Cardiovascular endurance
 - Flexibility
 - Coordination
 - Balance

APPLY

I am able to:

- Give examples of types of athletes who would need high levels of a certain component of fitness
- Describe how you would test for different components of fitness
- Describe how some athletes would not need to focus on training some components of fitness
-

I am able to:











- Explain why a certain sportsperson would need to have high levels of a certain component of fitness
- Explain how someone would be able to train certain components of fitness's



Challenge:

Create a training program for a chosen athlete that will improve a component of fitness that is relevant to their sport

RE | Five Pillars Of Islam | Topic Dictionary

Image	Key Word	Definition	In a sentence
	Five Pillars of Islam	Fundamental practices in Islam, considered to be obligatory acts of worship for all Muslims.	The five pillars of Islam are the core beliefs and practices of Muslims.
	hajj	The greater Muslim pilgrimage to Mecca, which takes place in the last month of the year and which all Muslims are expected to make at least once during their lifetime if they can afford to do so.	The hajj is a holy pilgrimage to the Saudi city of Mecca
	Ka'aba	The Ka'aba , sometimes referred to as al-Ka'ba al-Musharrafah, is a stone building at the center of Islam's most important mosque and holiest site	Muslims turn in the direction of the Kaaba when praying
	Khums	Khums is an Islamic tax that means "a fifth" or 20% in Arabic.	If you have 5 kilos of rice, pay 1 kilo as Khums
	mosque	A Muslim place of worship.	Mohammed went to the mosque with an older cousin, to pray.
	pilgrimage	A pilgrimage is a journey to a holy place for religious or spiritual reasons	He wanted to go on a pilgrimage to Mecca.
	salah	Salah is the Arabic word for prayer, and is used to describe the five daily prayers that Muslims perform	The prayer times for salah vary by location, so it's important to follow the prayer times for your area
	sawm	Fasting from dawn until dusk during Ramadan, one of the Five Pillars of Islam	Sawm is the Muslim practice of not eating or drinking in the day during Ramadan
	Shahadah	The Muslim declaration of faith ('there is no god but Allah, and Muhammad is the messenger of Allah'), one of the Five Pillars of Islam	The Shahadah is a declaration of faith that is the key statement of belief for Muslims
	zakah	Zakat (or Zakāh) is one of the five pillars of Islam. Zakat is the Arabic word for "Giving to Charity"	Many give their zakah to less fortunate family members or those in their community.

Knowledge Organiser – Five Pillars of Islam

Importance of Five Pillars

1

Muslims have five duties which are called the Five Pillars of Islam.

Every Muslim tries to carry out these five pillars, and it helps them to feel that they are members of the worldwide Muslim community.

The 5 pillars are central to Muslim practice, and they have a great impact on daily life. These support Muslims in living the perfect life.

Muslims believe that the pillars support the main principles and beliefs of Islam, just as pillars are used to support a building. They can be seen as the key to living a perfect Muslim life.

They help to give Muslims an identity as one community who share faith and enable them to show their obedience and dedication to God.

Shahadah

1

It is important to Muslims because it expresses the core beliefs of Islam. It provides the foundation for the other four pillars, which tell a Muslim how to live according to the beliefs expressed in the Shahadah.

Shi'a Muslims add an extra phrase to the Shahadah: and Ali is the friend of God'. This shows their belief that Ali, Muhammad's cousin and son-in-law, was the true successor to Muhammad

Zakah

1

Zakah is one of the 5 Pillars of Islam. It means charity or almsgiving. Once a year – Muslims must give part of their savings away to those who are in need.

Zakah goes to: Muslims studying Islam; Travellers who need money; New Muslim converts; Schools, Hospitals, Libraries, Mosques; Prisoners of war; People in debt and People unable to afford food.

3

Salah - Prayer

1

Muslims believe that God created human beings to worship him, so the second pillar of Islam is prayer. Muslims must pray 5 times a day. Each time takes about 10 minutes.

The Salah are the five daily prayers which can be done anywhere. Each of the prayers performed at a specific time of the day; **Fajr** – just before sunrise; **Zuhr** – just after midday; **Asar** – late afternoon; **Maghrib**- just after sunset and **Isha** – Between sunset and midnight

2

Wherever they pray, Muslims observe "qiblah" , which means facing in the direction of the Ka'ba in Mecca. The Call to prayer or the Adhan announces the prayer times. It is sung by a member of the mosque. It includes the words of the Shahadah.

Sawm

1

This is Fasting in the Month of Ramadan. Muslims fast during daylight hours for the whole month. They get up everyday before sunrise in order to eat and drink enough to keep them going until sunset. Then the fast is broken and Muslims are allowed to eat until sunrise the next day.

Hajj

1

Hajj is the fifth pillar of Islam and it is a pilgrimage to Mecca in Saudi Arabia that should be made at least once during a Muslim's lifetime.

During the Hajj they walk around it 7 times anticlockwise. Muslims drink water from the Zamzam well and take some home to be used in funerals. This is important because it remembers Abraham's wife Hagar and the search for water for her son Ismael. Muslims drink water from the Zamzam well and take some home to be used in funerals. This is important because it remembers Prophet Ibrahim's wife Hagar and the search for water for her son Ismael. They also throw stone pebbles at pillars at the Jamarat which represents the temptations of Satan. The stones represent their rejection of Satan and the firmness of their faith. Muslims will stand up on the Mount of Arafat from lunchtime until sunset and they pray for forgiveness, repent their sins and listen to Islamic scholars speak. They then sleep there

4

As a Year 7 RE student I know ...

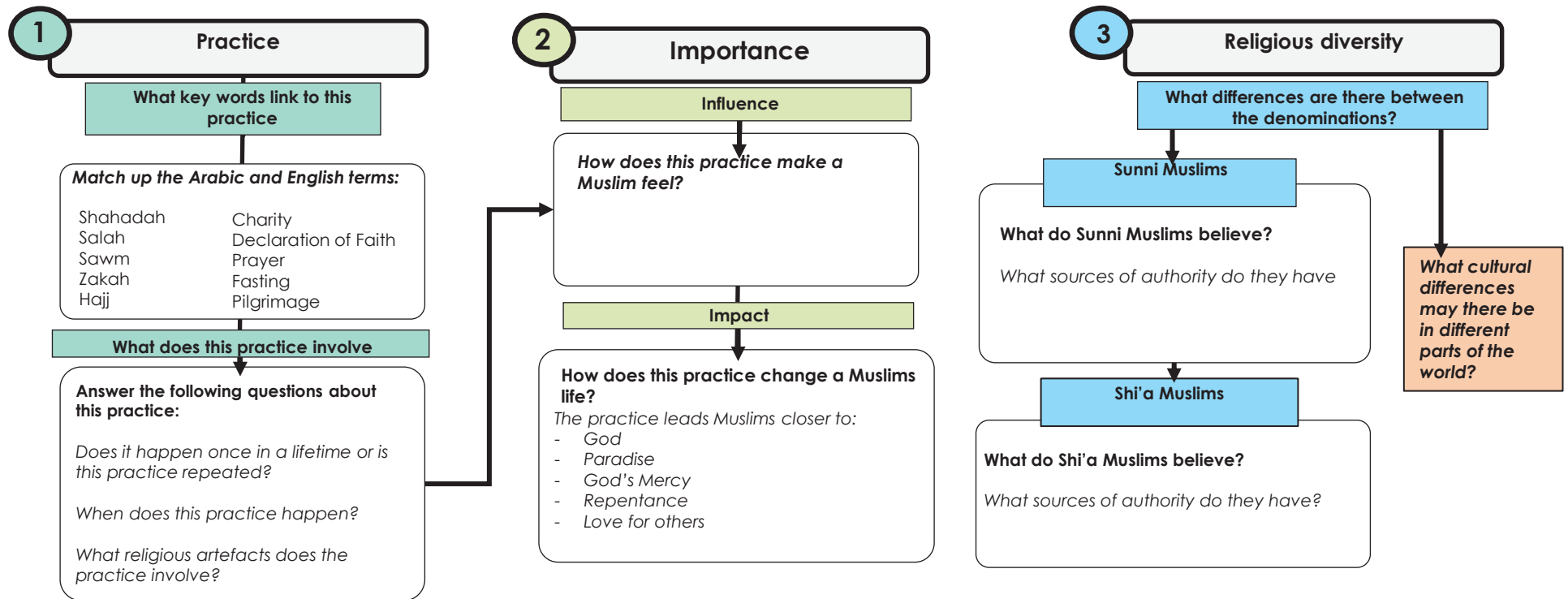
1. Key Islamic Practices

2. How and why Muslims perform Salah

3. Why Zakah is an important duty

4. How and why Muslims experience Hajj


Skills – Explaining the Five Pillars



Model Paragraph: "Charity is the most important Muslim Duty" Explain two different perspectives about the question

- 1** In Islam, charity is not just an option; it's a key part of the faith. One of the Five Pillars of Islam is called "Zakat," which is a form of charity. Every Muslim who has enough money is expected to give a small portion (usually 2.5%) of their savings to those in need. Some give Khums which means 'a fifth' (or 20 per cent) in Arabic. It is the sixth of the Ten Obligatory Acts of Shi'a Islam. This tax is paid on any profit earned by Shi'a Muslims. This helps reduce poverty and inequality in society, and it encourages Muslims to care for the less fortunate. Some people believe that charity is the most important duty because it helps build a caring community, teaches empathy, and shows the true spirit of Islam by putting others before yourself.
- 2** On the other hand, some people might argue that while charity is important, it isn't the only thing that Muslims must focus on. Islam has many other duties, such as praying five times a day, fasting during the month of Ramadan, and believing in one God (Allah). For some, the main focus is on living a good, righteous life by following all of the teachings of Islam, not just charity. So, while charity is extremely important, it's just one of the many ways a Muslim can show their faith and devotion to God.
- 3** In short, there are five pillars in Islam and charity is incredibly important in Islam, but different people may see it in different ways—either as the most important duty or as one important part of the overall faith.

RE | Covenants | Topic Dictionary

Image	Key Word	Definition	In a sentence
	circumcision	Circumcision is a surgery to remove the skin that covers the tip of the penis, also called the foreskin.	Many physicians believe that circumcision is neither a medical necessity nor a hazard.
	covenant	In Christianity, a covenant is a binding agreement between God and a person or group of people	As part of his covenant with Abraham, God has the obligation to keep Abraham's descendants as God's chosen people and be their God.
	Decalogue	The Decalogue, or Ten Commandments, is a set of laws in Christianity that are considered to be the foundation of morality	Christ abolished the purely Jewish law, but he left the Decalogue intact.
	nation	A large body of people united by common descent, history, culture, or language, inhabiting a particular country or territory	We are after all talking about the richest, most powerful nation on Earth.
	Old Testament	The first part of the Christian Bible, which is also the Hebrew Bible. They comprise the chief texts of the law, history, prophecy, and wisdom literature of the ancient people of Israel	Hearing her discuss the Old Testament , Exodus, the pharaohs and Joseph, the pope pronounced her a theologian.
	plague	In the Bible, plagues are an instrument of God's wrath, a punishment for unrighteousness	There have been two earthquakes and a plague of locusts
	prophets	A person regarded as an inspired teacher or proclaimer of the will of God.	This is what the prophets of doom have been waiting for.
	religious hope	The confident expectation of what God has promised, and its strength is in His faithfulness	"I hope to God (that) he turns up" is an example of religious hope .
	The Sabbath	a day of religious <u>observance</u> and <u>abstinence</u> from work, kept by Jewish people from Friday evening to Saturday evening, and by most Christians on Sunday.	Our family keeps/observes the Sabbath and. We are careful not to break the Sabbath.
	synagogue	The building where a Jewish assembly or congregation meets for religious worship and instruction	He gave one tenth of his income to the synagogue and was very religious

Knowledge Organiser – The Covenants

1

Biblical Timeline of Covenants

Edenic GE 2:16	Adamic GE 3:15	Noahic GE 8:15	Abrahamic GE 12:2	Mosaic EX 19:5	Palestinian DT 30:3	Davidic 2 SA 7:16	New Covenant HEB 8:8
1	2	3	4	5	6	7	8
Creation	The fall of Adam	After flood, government begins	Promise of land to Israel	The law given	God gives conditions to enter Promised Land	Promise David's throne forever	God Promised Final Redemption A new heart to be given to Israel

2

Adam And Eve

4

This story is found in Genesis which is the first book of the Old Testament. God made a covenant with Adam and Eve. He let them live in the Garden of Eden, where they were allowed to anything they wanted. The only rule was not to eat the fruit of one of the trees in the garden. After some time, Adam and Eve were tempted by a serpent and ate the forbidden fruit. As a punishment for breaking the covenant God kicked them out of the Garden of Eden.

2

Noah

4

Noah's covenant laid out in Genesis 8:20–9:17 is a covenant made with all of humanity, and it marks a new beginning for the world after the flood. A sacrifice ratifies this covenant (8:20–21), and God promises never again to use a flood to destroy all life.

2

Abraham

4

Abraham and his wife Sarah wanted to start a family, however, were unable to have a child. So, Abraham and God made a covenant. Abraham promised to always follow the will of God and God would make Abraham the father of a nation (many people). Then, God blessed with a son. Later, when God asked Abraham for a great sacrifice Abraham obeyed God. This covenant founded Judaism as Jewish people today believe they are descendants of Abraham and therefore God's chosen people (nation).

Moses

4

When Moses and his people reached Mount Sinai on the way to the Promised Land, God spoke to Moses. It was there that God made a covenant with Moses and the Jewish people that renewed the one he had made with Abraham. At the same time, God gave the Jews the Ten Commandments. The Israelites were to follow these to be blessed by God.

2

2

David

4

This is the covenant where God promises a descendant of David to reign on the throne over the people of God. It is a continuation of the earlier covenants in that it promises a Davidic king as the figure through whom God would secure the promises of land, descendants, and blessing

As a Year 7 RE student, I know ...

1. The chronology of Biblical Covenants	
2. The limits of old testament covenants	
3. The importance of the New Covenant for Christians	
4. What Christians learn from each covenant	

Jesus New Covenant

4

3

This story is found in the Gospels at the beginning of the New Testament. The New Covenant is the promise that God makes with mankind that He will forgive sin and restore communion with those whose hearts believe in His Son, Jesus Christ. Jesus is the mediator of the New Covenant, and His death on the cross is the basis of the promise. Jesus sacrificed his life in the cross to allow for the sins of all humanity to be forgiven by God the father. Christians believe that this is the covenant they have with God. If they believe in Jesus' sacrifice and resurrection their sins will be forgiven.

Skills – Biblical Literacy

Old Testament Covenants: Adam and Eve, Noah, Abraham, Moses



Literary Form (Genre)	All these covenants are found in the Old Testament, in the books of Genesis and Exodus. These are books of Law, where God teaches humans what laws humans have to follow.
Author and Audience	Moses is believed to be the author of Genesis, alongside the next four books of the Old Testament. The book of Genesis was first written for the Jewish people. These stories are shared by Judaism, Christianity and Islam but the details of the story vary between the three faiths.
Setting	All the stories are set a long time ago in lands that may now have different names. The story of Adam and Eve is set in the Garden of Eden (paradise). The story of Abraham is set in the land of Canaan. The story of Moses is set in Egypt.
Meaning	Each covenant has a unique story that shows the relationship between God and humanity. In the story of Adam and Eve God punished them for breaking their covenant. Later in the stories of Noah, Abraham and Moses God is shown to reward humans for their loyalty. God also helps the Israelites escape enslavement in Egypt as a part of the covenant God had with the Israelites (descendants of Abraham).
Our World Today	Covenants teach Christians that God will always want to have a relationship with them, even if they stray away from him. Each covenant includes a test which allows humans to prove that they also want to have a relationship with God.

Model paragraph:

How does Adam and Eve's Covenant influence Christians today?

In **Genesis 2:15-17**, we can see God's promise to Adam and Eve of paradise in the Garden of Eden. God gives Adam and Eve a law to follow "you may surely eat of every tree in the garden, but of the tree of knowledge of good and evil you shall not eat, for in the day you eat of it you shall surely die". This verse explains how the tree of knowledge of good and evil leads to death, this is because if someone is aware of good and bad, they have unlimited decisions in life, and sometimes they make the wrong ones. This leads to sin and sin leads to hell which influences people reading it to behave according to God's commands. This covenant is important for Christians, as it teaches them about the human imperfection.



What are we looking for?	When reading, ask yourself:
Literary Form	How is this story written? Does the story have a specific genre? What meaning can we get from this story?
Author and Audience	Who was the text written by? Why did the author write this story? Who was it written for?
Setting	What is the world this story is set in? What places, roles, people and customs are mentioned?
Meaning	What do you think the author is trying to say with this story? What is this story about: morals, humanity, religion, God?
Our World Today	What can this story teach us about our world today?

New Testament Covenant: Jesus

Literary Form (Genre)	This covenant is found in the New Testament in the books of Matthew, Mark, Luke and John. These are called the Four 'Gospels' which means 'Good News' in Ancient Greek.
Author and Audience	Christians believe that the Gospels were stories of Jesus' life given by the four disciples Matthew, Mark, Luke and John. Each of the books was written to share the gospel of salvation to different communities. Luke's gospel was written for a gentile (non- Jewish) audience whereas the other gospels focused on writing for a Jewish audience.
Setting	All the stories are set about 2,000 years ago during the life of Jesus. Two of the gospels begin with a story of Jesus' birth. The New Covenant is made by Jesus during the Last Supper. There, during a Passover meal with his disciples Jesus tells them about his sacrifice and the gift of salvation.
Meaning	By sharing bread and wine with his disciples Jesus teaches them that through his death Jesus is going to atone for the sins of humanity.
Our World Today	This covenant is celebrated by Christians today as it is believed this covenant between Jesus and humanity allows everyone the gift of salvation.

Assessment Questions (Year 7) – Test Yourself

What is RE?

1. Name the six major world religions.
2. Define value.
3. Define religion.
4. Explain the difference between an atheist and a theist.
5. What does monotheism mean?
6. State the three Abrahamic Faiths.
7. State the three Dharmic Faiths.
8. Give two examples of religious duties.
9. What does Agape mean to a Christian?
10. Explain two reasons why our school values are inclusive.

The Life of Jesus

1. What does incarnation mean?
2. What Christian festival celebrates the incarnation of Jesus?
3. What is the name of Jesus' mother?
4. Who baptised Jesus?
5. Give three examples of miracles from the Life of Jesus.
6. What is the resurrection?
7. What happened to Jesus on Good Friday?
8. What happened to Jesus on Easter Sunday.
9. What was the Great Commission?
10. Who witnessed Jesus' ascension?

Growth of the Church

1. What is a Christian?
2. How many denominations of Christianity are there?
3. What are the three largest denominations of Christianity?
4. What happened to the Christian Church in 1054?
5. What denomination was created as a result of the Reformation?
6. Which German priest is responsible for starting the Reformation?
7. What is evangelism?
8. Give two ways of evangelism.

The Life of the Prophet

1. What is a prophet?
2. Who is the first prophet according to Muslims?
3. Who is the last prophet according to Muslims?
4. How many prophets does Islam have in total?
5. State three important events in Prophet Muhammed's life.
6. Give the name of Prophet Muhammed's wife.
7. Explain what happened to Prophet Muhammed on the Night of Power?
8. What does the Arabic word Qur'an translate to?
9. Who tried to kill the Prophet before he fled Mecca?
10. Why are there no images of the prophet today?

Five Pillars of Islam

1. List the 5 Pillars of Islam.
2. Explain why they are called Pillars.
3. Are the Pillars a Sunni or Shi'a set of practices?
4. State the words of the Shahadah.
5. Name two objects Muslims use during prayer.
6. Explain one difference between how Sunni and Shi'a Muslims pray.
7. What percentage of a Muslim's yearly earnings must be donated?
8. Give two reasons Muslims fast?
9. What do Muslims celebrate on the Night of Power?
10. State two religious rituals performed during Hajj.

The Covenants

1. Define covenant.
2. Name three Old Testament covenants?
3. Give a reason there are multiple covenants in the Old Testament.
4. What does the Noahic covenant teach Christians about God's love for humanity?
5. What are the three things God promises to Abraham.
6. Who does God give the 10 Commandments to?
7. Why is the New Covenant important to Christians?
8. What are the symbols of the new covenant?

Science | Speed | Knowledge Organiser

Speed

- The unit used to measure **distance is metres, m.**
- The unit used to measure **time is seconds, s.**
- The unit to measure speed is **metres per second, m/s.**
- The equation that links speed, distance and time is:

$$\text{Speed} = \text{Distance} \div \text{Time}$$

Calculating Speed

Akeel jogs for 20 s. In that time, he moves 100 m. What is his speed?

Given: Time = 20 s
Distance = 100 m

Unknown: Speed = ?

Equation: Speed = Distance \div Time

Substitute: Speed = 100 \div 20

Solve: Speed = 5 m/s

Distance-Time Graphs

- A **distance-time graph** shows how an object's speed changes over time.
- The **horizontal line** on a distance-time graph means the speed is zero (the object is stationary).
- The **slope** on a distance-time graph means the object is moving.

Relative Motion

- **Relative motion** is the speed of a moving object from the viewpoint of another moving object.
- If two objects move in the **same direction, you subtract.**
- If two objects move in the **opposite direction, you add.**

Calculating Relative Motion

A red car and blue car are moving in the same direction. The red car is moving at 3 m/s and the blue car is moving 5 m/s. From the perspective of the red car, how fast is the blue car moving?

$$5 \text{ m/s} - 3 \text{ m/s} = 2 \text{ m/s}$$

As a Year 7 Scientist, I know...

- | | |
|----------------------------------------------------|--|
| 1. How to calculate speed. | |
| 2. How to draw a distance-time graph. | |
| 3. How to compare speeds on a distance-time graph. | |
| 4. What relative motion is. | |

Science | Speed | Topic Dictionary

Word	Definition	In a sentence...
average speed	When an object travels at different speeds throughout a journey, its average speed is the total distance divided by the total time taken.	The car travelled at different speeds on the motorway, but its average speed was 60 mph.
distance	The length of a path between two objects.	The distance between Belfast and Dublin is 110 km.
distance-time graph	A representation that shows how far an object has travelled in a certain time	The distance-time graph showed that the cyclist had travelled 20 miles in 1 hour.
gradient	A measure of the steepness of the line or curve on a graph.	The gradient of the graph showed that the car moved faster at the start of its journey.
horizontal line	A flat line on a graph that shows there is no change in a variable over time.	The horizontal line on the graph showed that the car was stationary for 10 seconds.
motion	The way something is moving.	The motion of the boat made him feel sick.
per	Each or to divide	Her speed was 10 metres per second.
prediction	The act of saying what you think will happen in the future.	I wouldn't like to make any predictions about the result of this match.
SI unit	A standard unit of measurement.	SI units are the same around the whole world.
speed	How much distance is covered per unit time.	The speed of the sprinter was 100 m/s.
stationary	When an object is not moving.	The train was stationary while the passengers got off.
straight line	A line on a graph that represents a constant change in a variable.	The straight line on the distance-time graph showed that the car was travelling at a constant speed.
steady speed	When the speed of an object does not change.	The car travelled at a steady speed on the motorway.
time	A unit of measurement of the period during which an action takes place.	The time it took for the plane to land was 120 seconds.

Science | Reproduction | Knowledge Organiser

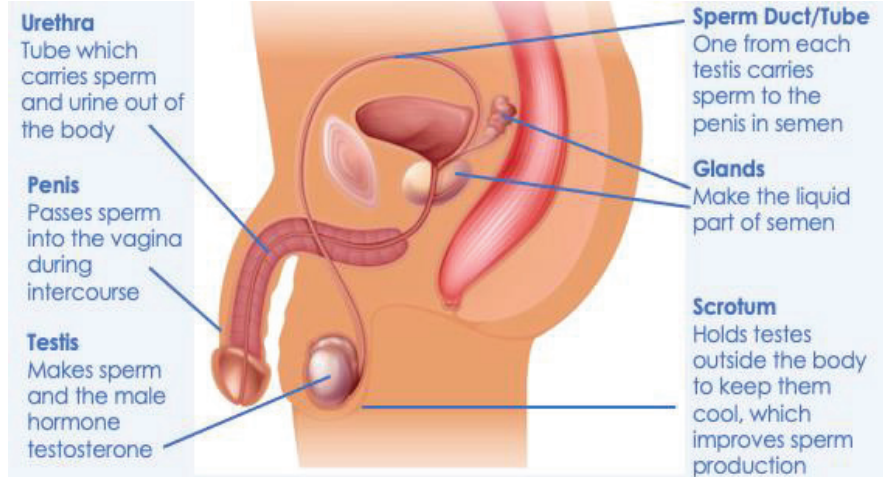
Reproduction

- Cells and organisms reproduce to make new cells or organisms.
- Reproduction can be sexual or asexual.
- **Asexual reproduction** is when an organism makes an exact copy of itself to make a new individual.
- Examples of organisms that reproduce asexually include: unicellular organisms, bacteria, fungi and plants.
- **Sexual reproduction** is when sex cells (**gametes**) from two individuals fuse to form a new individual.
- Animals and plants reproduce sexually.
- The male gametes in animals are **sperm** cells.
- The female gametes in animals are **egg** cells.

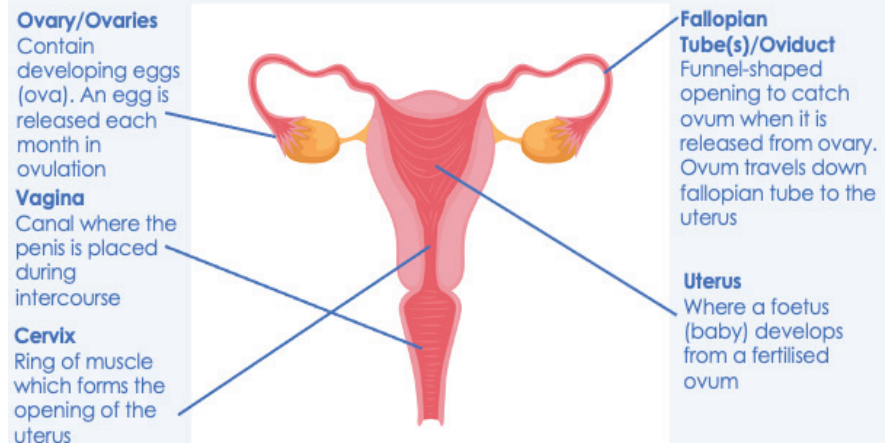
Puberty

- The body goes through changes during **puberty** or adolescence (e.g. body and pubic hair grow).
- This prepares the body for sexual maturity and the production of gametes.
- These changes are controlled by sex **hormones**.
- A hormone is a chemical messenger transported in the blood

Male Reproductive System



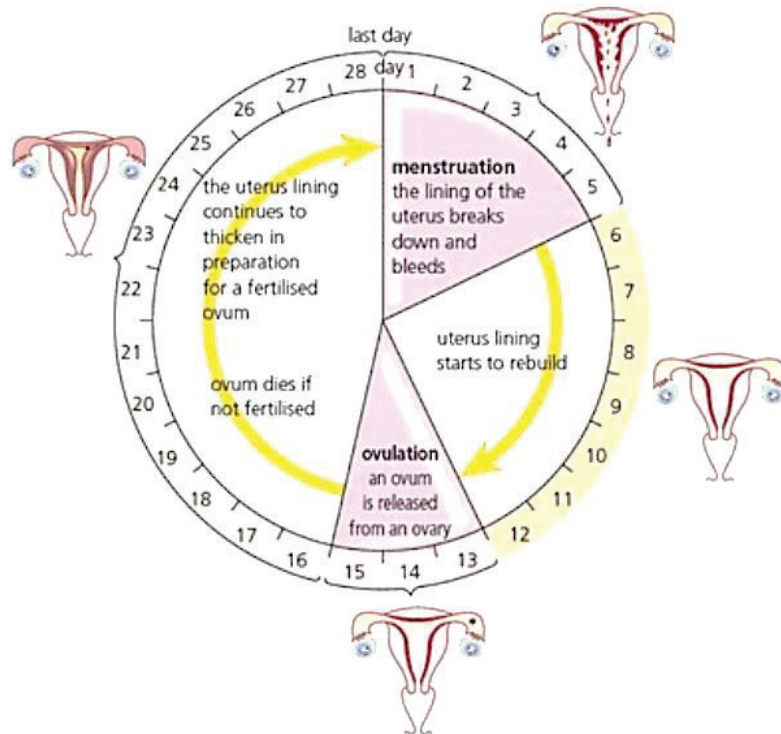
Female Reproductive System



Science | Reproduction | Knowledge Organiser

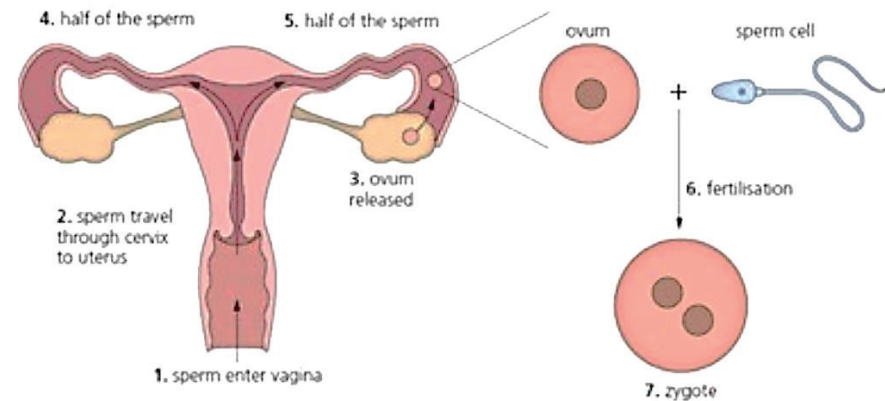
The Menstrual Cycle

- The female reproductive cycle is called the **menstrual cycle**.
- The menstrual cycle prepares a woman's body for pregnancy.
- The menstrual cycle is controlled by sex hormones.
- On average, one menstrual cycle lasts 28 days.
- **Ovulation** is when the egg is released.
- Ovulation occurs on day 14.
- The uterus lining builds up to allow the embryo to develop.
- If fertilisation does not take place, then the uterus lining is shed between days 1-5. This is called **menstruation**.



Fertilisation and Gestation

- **Fertilisation** is when the gametes meet and the nuclei fuse to make a new cell.
- After fertilisation, the cell multiplies to make an **embryo**.
- **Implantation** is when the embryo embeds into the uterus wall.
- After implantation, the embryo grows and develops into a **foetus** until it is ready to be born. This is called **gestation**.
- The **amniotic sac** contains fluid which protects the foetus from knocks and bumps.
- The **placenta** is where the exchange of substances between the mother and embryo occurs.
- The **umbilical cord** connects the foetus to the placenta.

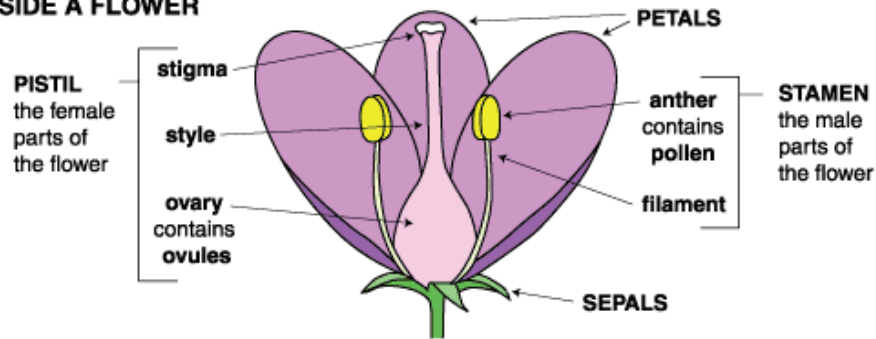


Science | Reproduction | Knowledge Organiser

Sexual Reproduction in Plants

- The male gamete is the **pollen** grain.
- Pollen is produced by the **anther**.
- The female gamete is the **egg** found in the **ovule**. The ovule is in the ovary.

INSIDE A FLOWER



Pollination and Germination

- **Pollination** is the transfer of pollen from the anther of one plant to the stigma of another plant.
- Pollination can be carried out by insects, animals or the wind.
- Fertilisation is when the pollen and egg join and their nuclei fuse. Fertilisation happens in the **ovule**.
- After fertilisation, the ovary develops into the fruit and the ovule develops into the seed.
- The seed contains the embryo which will grow into a new plant. The process of a plant growing from a seed is called **germination**.
- Germination requires water, oxygen and warmth.

Seed Dispersal

- **Seed dispersal** is needed so that the new plant grows far away from the parent plant so they don't compete for water and light.
- Seeds are dispersed by:
 - Animals externally (stuck to fur)
 - Animals internally (eaten)
 - Wind and explosion
 - Water

As a Year 7 Scientist, I know...

- | | |
|-----------------------------------------------------------------------------------|--|
| 1. The different types of reproduction. | |
| 2. What happens during puberty. | |
| 3. How to compare the male and female reproductive systems in plants and animals. | |
| 4. How to describe the menstrual cycle. | |
| 5. The difference between fertilisation and gestation. | |
| 6. The difference between pollination and germination. | |
| 7. How seeds are dispersed. | |

Science | Reproduction | Topic Dictionary

Word	Definition	In a sentence...
asexual reproduction	When an organism makes an exact copy of itself to make a new individual.	Potatoes are produced through asexual reproduction .
egg cell (ovum)	The gamete found in females, used for reproduction.	The egg cell is fertilised by the sperm cell
fertilisation	When the gametes meet and the nuclei fuse to make a new cell.	When the nuclei of a sperm cell and egg cell fuse together, we call that fertilisation .
gametes	The male or female sex cell that can fuse together in sexual reproduction to make a new individual.	The sperm cell and egg cell are gametes .
germination	The process of a plant growing from a seed.	My tomato seeds have germinated .
gestation	The duration of pregnancy, where a foetus grows and develops until it is ready to be born.	The gestation length for humans is 40 weeks.
hormone	Chemical substances that act as messengers in the body.	The hormone testosterone is made in the testes.
implantation	When the fertilised egg (embryo) embeds into the uterus wall.	After implantation the embryo will develop into a foetus.
menstruation	The first part of the female reproductive cycle when the uterus lining is shed from days 1-5.	Menstruation will happen if the egg is not fertilised.
ovulation	A part of the female reproductive cycle when an egg cell is released from the ovary. It happens on day 14 of the menstrual cycle.	Ovulation occurs in the middle of the cycle.
pollination	The transfer of pollen from the anther of one plant to the stigma of another plant.	Pollination leads to fertilisation.
reproduction	The process by which offspring are produced sexually or asexually.	Humans use sexual reproduction to make offspring.
sexual reproduction	When sex cells (gametes) from two individuals fuse to form a new individual.	Sexual reproduction involves two parents.
sperm	The cell involved sexual reproduction in animals, produced by males.	The male gametes in animals are sperm cells.

Science | Gas exchange | Knowledge Organiser

Aerobic respiration:

Occurs in the mitochondria of the cell.

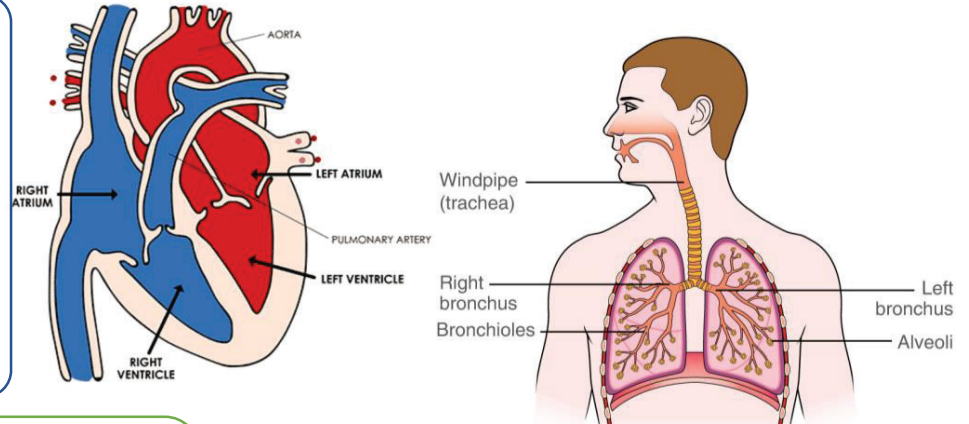
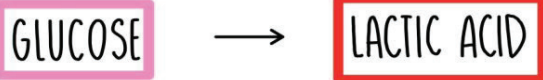
Releasing energy when glucose is broken down with oxygen



Anaerobic respiration:

Occurs in the cytoplasm of the cell.

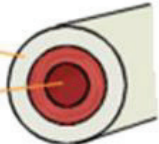
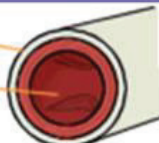

Releasing energy when glucose is broken down without oxygen. Releases less energy than aerobic respiration.



Response to exercise:

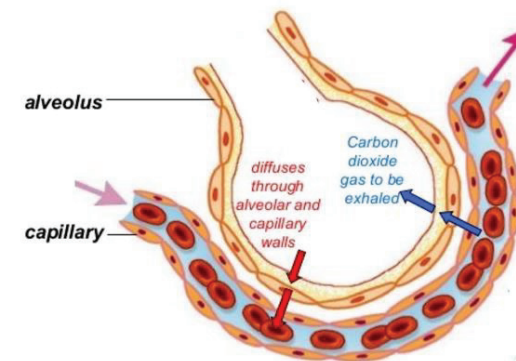
(1) Heart rate increases – to pump more blood around the body. (2) breathing rate and depth increases – to bring more oxygen in, to get rid of carbon dioxide. (3) skin starts to sweat – to cool down the body. (4) Blood diverted to muscles – to take more oxygen to working muscles.

Blood Vessels

Artery	<p>thick, elastic wall</p> <p>small lumen</p> 	Take blood away from the heart. Small lumen. Thick walls, made of muscle. Blood under high pressure
Vein	<p>thin wall</p> <p>large lumen</p> <p>valve</p> 	Take blood to the heart. Large lumen. Thin walls. Contain valves. Blood under low pressure.
Capillary	<p>single cell wall</p> 	Where materials are exchange. Walls are thin, to enable fast rate of diffusion.

Alveoli

- Efficient blood supply (lots of capillaries)
- Large SA, to allow fast rate of diffusion
- Thin cell membrane, to able fast rate of diffusion
- Well ventilated, to maintain concentration gradient

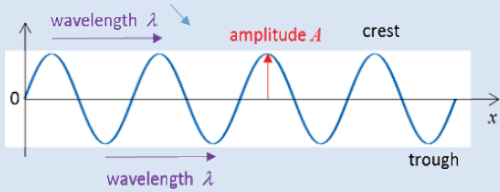


Science | Gas exchange | Topic Dictionary

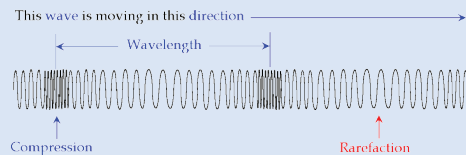
Word	Definition	In a sentence...
Diffusion	The movement of particles from an area of high concentration to an area of low concentration.	When my mother bakes, the reason I can smell it upstairs from my bedroom is because of diffusion .
Alveoli	Alveoli are the tiny air sacs found at the end of bronchioles in your lungs.	When we breathe in, oxygen moves from the air into the alveoli , and then into the blood.
Aerobic respiration	Aerobic respiration occurs with oxygen and releases more energy but more slowly.	Our cells make energy in the presence of oxygen by a process called aerobic respiration .
Capillaries	Capillaries are the smallest blood vessels in the body, and their function is to exchange oxygen, nutrients, and waste products between the blood and body cells.	When you are cold, your capillaries constrict to preserve heat energy.

Science | Waves | Knowledge Organiser

Transverse wave:



Longitudinal wave:



Key equations and numbers

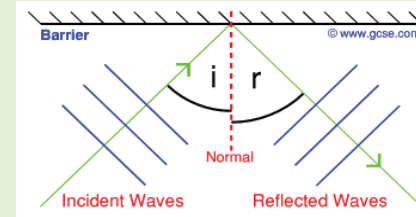
$$\text{Time period (s)} = \frac{1}{\text{frequency (Hz)}}$$

$$\text{wave speed (m/s)} = \text{frequency (Hz)} \times \text{wavelength (m)}$$

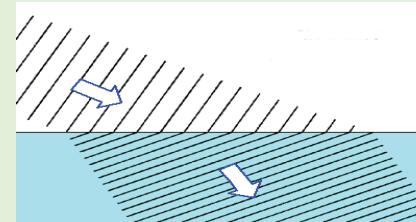
$$\text{speed of light in a vacuum} = 3 \times 10^8 \text{ m/s}$$

$$\text{human hearing range} = 20\text{Hz} - 20,000 \text{ Hz}$$

Reflection: Reflection can be modelled using a ripple tank and a flat barrier. If the wave hits the barrier at a non-zero angle then the wave will be reflected at the same angle it hit at.



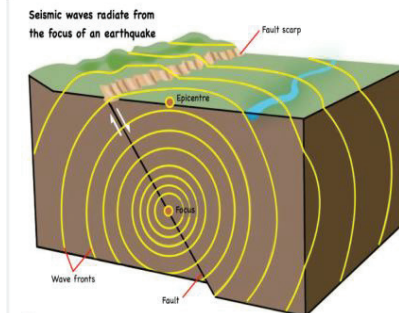
Refraction: Refraction is the apparent bending of a wave resulting from the wave hitting a boundary at an angle and being slowed, for example, light entering a glass block.



Sound: Sound is a longitudinal wave made up of high and low pressure waves in the air/other medium. A higher frequency sound wave will have a higher pitch and a low frequency sound wave will have a low pitch.

Ultrasound: Ultrasound is any sound with a frequency above 20,000 Hz. It can be used to image inside the human body, e.g. to see an unborn baby, without risking exposure to ionising radiation such as X-rays.

Seismic waves: seismic waves are what cause earthquakes. Primary seismic waves (p-waves) are longitudinal and secondary seismic waves (S-waves) are transverse.



Science | Waves | Topic Dictionary

Word	Definition	In a sentence...
Wave	A wave is an oscillation which transfer energy without the transfer of matter.	Sarah threw a stone in the pond and saw the water waves.
Wavelength (λ)	The length between two identical points on a wave form. Usually measured between two adjacent peaks. Measured in metres (m)	Radio waves have a large wavelength
Frequency (f)	The number of complete waves passing a point per second. Measured in Hertz (Hz)	She was singing at a high frequency
Wave speed	How quickly a wave is travelling. Measured in metres per second (m/s)	An earthquake's P-wave travels at a higher
Amplitude	The maximum displacement of the wave from the equilibrium point.	The sound produced from the speaker had a high amplitude.
Transverse	A wave where the oscillations are perpendicular to the direction of wave travel/energy transfer.	Light waves are examples of transverse waves
longitudinal	A wave where the oscillations are parallel to the direction of wave travel/energy transfer	Sound waves are examples of longitudinal waves
Perpendicular	At 90° to something/at a right angle to something	Transverse waves are waves where the oscillations (vibrations) occur perpendicular (at or right angles) to the direction of energy transfer.

Skills guide- Graphs

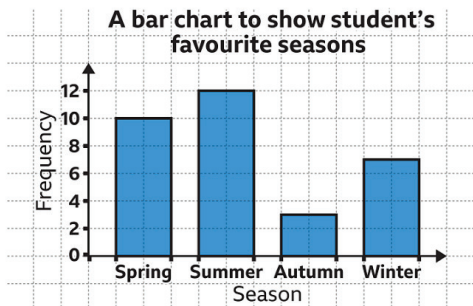
Bar graphs

Discrete data (**categorical**) can be plotted on a bar graph.

To create a bar chart:

1. Look for the largest frequency in your table.
2. Draw a **vertical axis** on your square paper or graph paper – remember to do this in pencil.
3. Choose an appropriate **scale** for this axis and label your axis up to the largest frequency.
4. Look at how many categories are needed for the horizontal axis.
5. Draw and label the **horizontal axis**, remembering to leave spaces for the gaps between the bars.
6. Draw each bar the correct height, based on the frequencies.
7. Check you have labelled each axis correctly and give your bar chart a title. 'A bar chart to show...'

Season	Spring	Summer	Autumn	Winter
Frequency	10	12	3	7



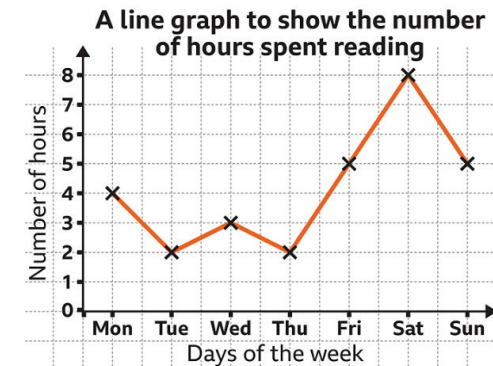
Line Graphs

Most data you meet in science is **continuous** and will require a line graph to represent.

To create a line graph:

1. Look for the largest frequency in your table.
2. Draw a **vertical axis** on your square paper or graph paper.
3. my **independent data** goes onto my x-axis and my **dependant data** goes on my y-axis.
4. Choose an appropriate scale for this axis and label your axis up to the largest frequency.
5. Draw and label the horizontal axis.
6. Plot each data point, based on the frequencies and time intervals.
7. Join each data point to the next, using straight lines.
8. Check you have labelled each axis correctly, and give your line graph a title. 'A line graph to show...'

Season	Spring	Summer	Autumn	Winter
Frequency	10	12	3	7



Skills guide- Calculations

Single step calculation – GUESS

G: given – identify the information you are given in the question

U: unknown – what is the unknown that you have been asked to calculate?

E: Equation – given the information given and that you have been asked to find, recall an equation which links them all.

S: substitute – substitute your information into the equation

S: solve – rearrange your equation if necessary and then use your calculator to solve

Example layout

$$\begin{aligned} V &= ? \\ R &= 12\Omega \\ I &= 0.2 \text{ A} \end{aligned}$$

$$V = IR$$

$$V = 0.2 \times 12$$

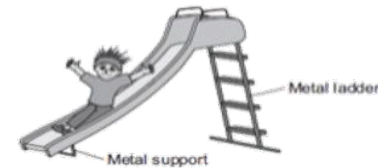
$$V = 2.4V$$

Worked example

In following the **GUESS** method, you may find that you do not have enough values to solve the equation. Typically, this means you need to do an additional calculation.

Example:

The figure below shows a slide in a children's playground.



Sergio has a mass of 30kg and goes down the slide.
 $G = 10 \text{ n/kg}$

The vertical distance from the top to the bottom of the slide is 3m.

Calculate the gravitational potential energy that Sergio has when at the top of the slide.

$$E_p = m \times g \times h$$

$$E_p = ?$$

$$m = 30\text{kg}$$

$$g = 10 \text{ N/Kg}$$

$$h = 3\text{m}$$

$$E_p = m \times g \times h$$

$$E_p = 30 \times 10 \times 3$$

$$E_p = 900 \text{ J}$$

Skills guide- Planning experiments

Plan

Hypothesis - an idea about how something works that can be tested using experiments.

Scientists ask questions to find out more about the world, like 'how can we get more energy from the sun?' and 'how can we cure diseases?'. To answer these questions scientists do experiments.

Three important types of variables are:

- **Independent variables** – the variable that is being changed during the experiment
- **Dependent variables** – the variable being tested or measured during the experiment
In an experiment.
- **Control variables** – the variables kept the same to ensure a fair test.

Worked example

Example 1

Big question 'How does water availability affect plant growth?'

Adding different amounts of water to a plant could affect its growth.



To investigate this, plant some seeds and water each plant with different amount over time.

- The **independent variable** is the volume of water given to each plant.
- The **dependent variable** is how high the plant grows.
- **Control variables** include the size of pots, the type of soil and the position in a room.

Example 2


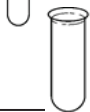





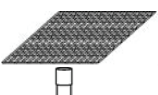
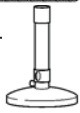

Big question

'How does the height a ball is dropped affect how high it bounces?'



- The **independent variable** is the height of the drop.
- The **dependent variable** is how high the ball bounces.
- **Control variables** include the type of ball, the surface that it is dropped onto and the size of the ball.

Skills guide- Practical skills









Apparatus	Name	What is it used for?
	Test tube	Used to hold and mix liquids
	Boiling tube	Used to heat substances when using a Bunsen burner
	Measuring beaker	Used to hold, mix and heat liquids
	Conical flask	Used to hold and mix chemicals. Small neck is to help mixing without spilling
	Funnel	Used to transfer liquids into containers with small openings. Also, used for filtration.
	Measuring cylinder	Used to measure precise volumes of liquid
	Tripod	Used to support or hold flasks and beakers during experiments
	Gauze	Used to support a container, such as a beaker on a tripod
	Bunsen burner	Used to heat, sterilise and combust chemicals
	Heat proof mat	Used to prevent damage to the table when using a Bunsen burner

Hazard symbols

Hazard symbols are used on containers.

They are there to:

- indicate the dangers associated with the substance inside
- **Hazard symbols** are designed to provide a warning, even if a person cannot understand the writing that goes with them.

Hazard Symbols	
	Harmful or Irritant
	Corrosive
	Flammable
	Toxic
	Radioactive
	Explosive
	Biohazard
	Wear Goggles

Science | Periodic Table |

The Periodic Table of Elements

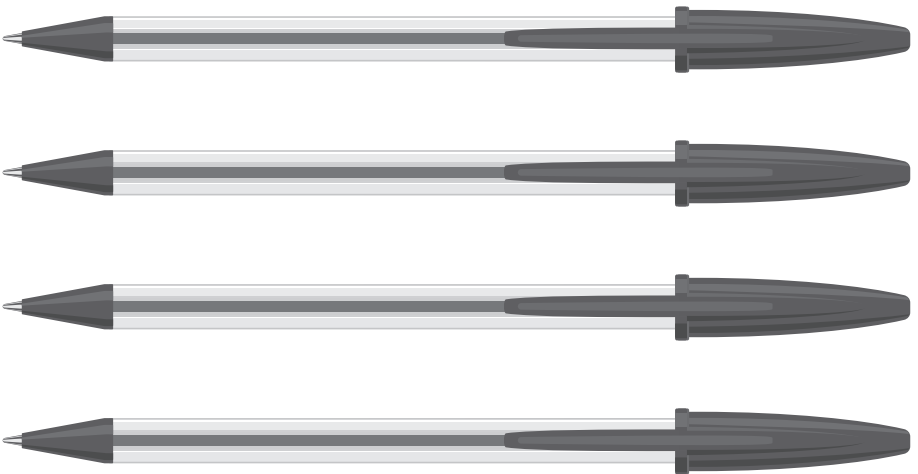
1	2											3	4	5	6	7	0	
																		4 He helium 2
		Key relative atomic mass atomic symbol name atomic (proton) number																
		<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 1 H hydrogen 1 </div>																
7 Li lithium 3	9 Be beryllium 4									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

* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted.

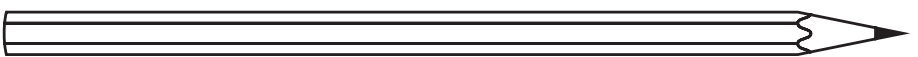
Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.

Tools for Learning

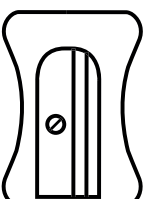
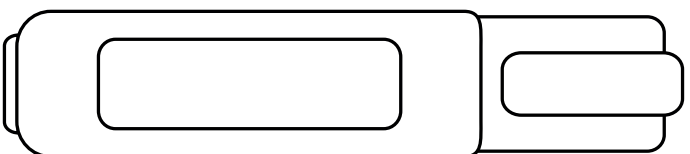
All equipment is available to purchase from the Library



Black or Blue,
Green & Purple Pens



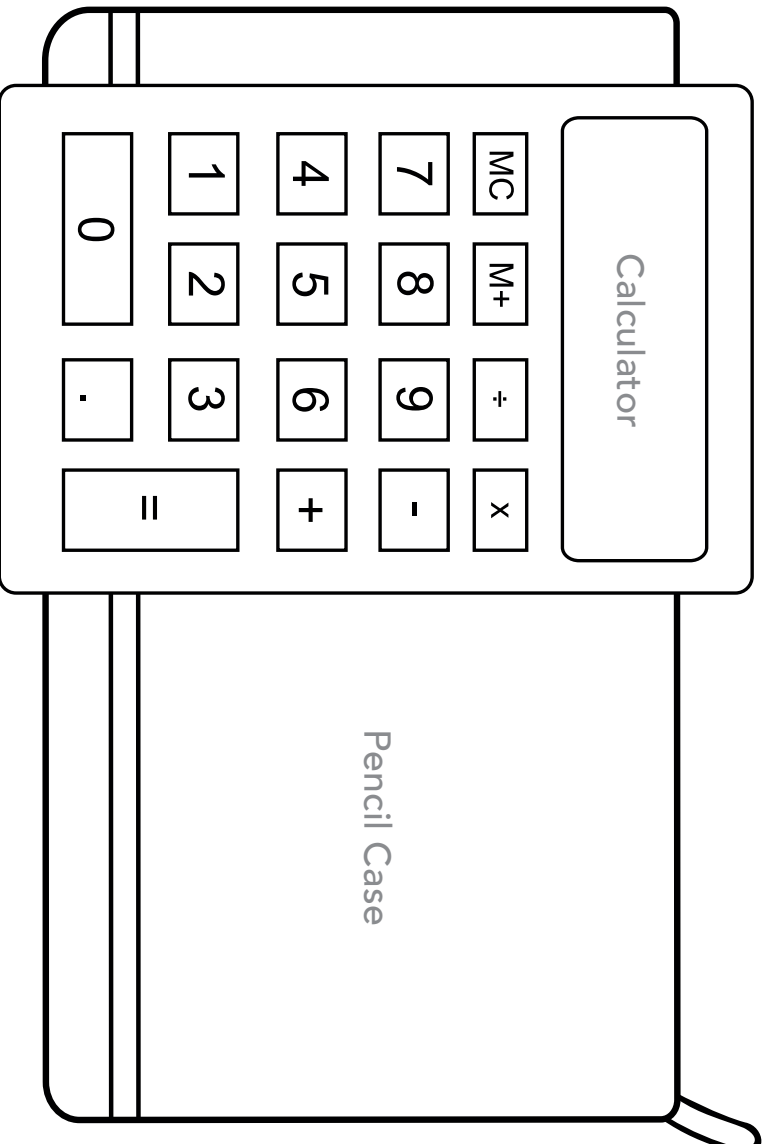
Pencil &
Highlighter



Pencil
Sharpener



Eraser



Calculator

Pencil Case



15cm or 30cm Ruler

anthem

