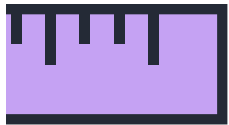
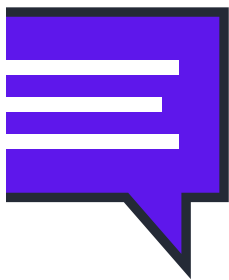


HOME-LEARNING

**YEAR 7**



**HALF TERM 5**



"THE BEAUTIFUL THING ABOUT LEARNING IS THAT  
NO ONE CAN TAKE IT AWAY FROM YOU."

B.B. KING



## **Core Values**

Our school community is built on three important values which underpin all we do. We believe that great learning comes from:

### **Politeness**

- We treat every person and thing as we want to be treated
- We are respectful, polite and courteous at all times
- We help others at all times

### **Hard-work**

- We never give up
- We remain positive so that we have the strength to persevere with even the hardest work
- We do what it takes, for as long as it takes

### **Honesty**

- We are true to ourselves and others and we do not make excuses
- We look to ourselves to see what needs to be done.

## What is learning?

A big part of learning is about getting knowledge to go into your long-term memory and then using this knowledge. Our brains will only remember knowledge in the long term if we think really hard about it. Just reading, or highlighting does not make our brains work hard enough. We must **practise** remembering things – this will feel difficult at the time but worth it in the end.

## What is a knowledge organiser?

A knowledge organiser is a document that contains key facts and information. A knowledge organiser will not include every possible fact on a topic; it will include facts needed to understand the main points. Knowledge organisers make knowledge clear. So, even if a learner misses a lesson, they have a constant point of reference.

## Why are knowledge organisers good for learning?

Research shows that our brains remember things more efficiently when we know the ‘bigger picture’ and can see the way that ‘nuggets’ of knowledge link. Making links helps information move into our long-term memory. A knowledge organiser shows linked facts on a single topic.

Knowledge organisers can be used for retrieval practice (practising remembering things). Regular retrieval of knowledge helps us remember more effectively with our long-term memory. Developing our long-term memory is a vital first step. Without knowledge we have nothing to work with, nothing to think about! Retaining knowledge over time is essential.

To help us understand learning better, Gateacre students and staff have created a series of videos that explain how memory works and what we can do to make it stronger. Follow the QR code or the [Learning to Learn](#) link to view them.



## How can you best use your knowledge organiser?

There are many ways you can use a knowledge organiser. The most important thing to say, however, is ‘use it’. Owning one does not make you remember facts... **you must practise** if you are to improve at anything! There will be mistakes – this is how you learn. Ultimately, the best way to remember things is to try and remember facts that you can’t quite remember instantly... practice, practice and practice.

Here are some ways you could try to improve your **long-term memory** – they are all based on making you **think**, getting you to **test your memory**. That way your memory will get stronger:

### Hide and seek

Read through a small section of your knowledge organiser (three or four key words), cover the facts and try to write out as much as you can remember. Check your answers and correct them if needed. Then choose your next words or check ones you have already done again.

### Quiz

Test your memory by asking someone to quiz you on facts from your knowledge organiser. Write down your answers and see how many you get right. Correct any facts you get wrong.

### Teach it!

Teach and explain to someone your key facts – you could even test them!

### Back to front

Write down a fact from memory and then compose a question that would lead to that answer.

### Sketch it

Draw pictures /diagrams to represent each of the facts or dates (time lines, flow diagrams, or labelled pictures are great ways of remembering parts of a system or orders of events).

### Repackage it (from memory)

Create a mind map that brings different facts together under one title. Check that your key words are spelt correctly... or, take a key word and create a sentence that uses it.

Take pride in how you present your work. Each page should be clearly labelled with an underlined date. There should be at least one page of work.

Always check your answers and correct anything you got wrong.... You are allowed to get things wrong... That is how you learn! Getting yourself to think is the key!

Do not just copy a knowledge organiser out – that would not help learning and would only waste your time! Make sure you are having to think!

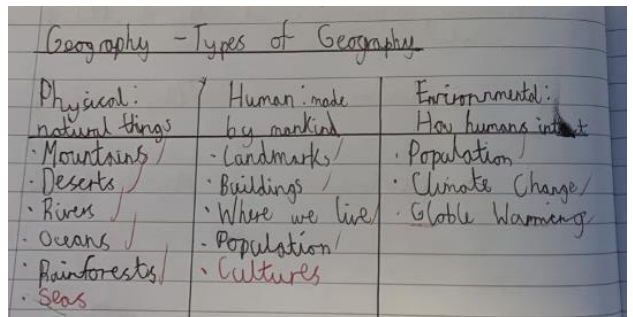
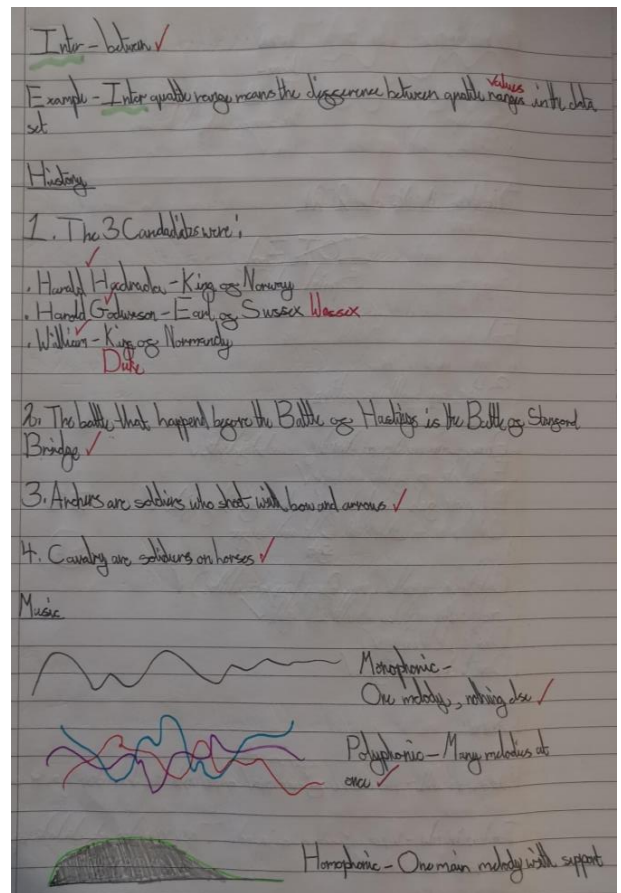
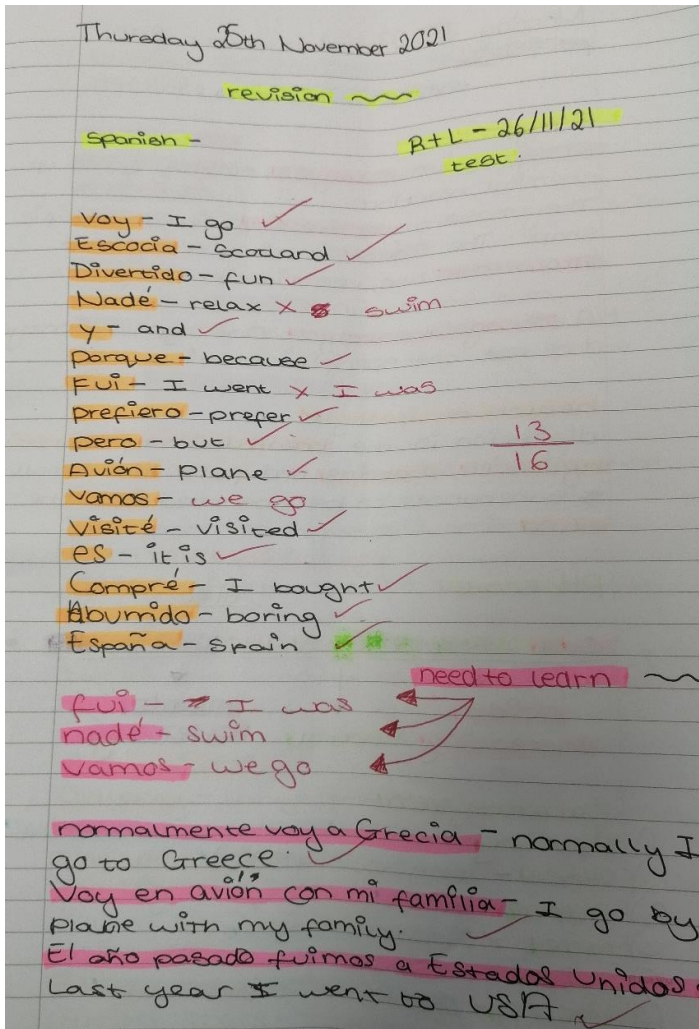


# What does effective home-learning look like?

Here are some essential points to remember and some examples to see.

- Long term memories are created when you have to **think**. Simply copying does not help you remember. Testing yourself will make you **think** and remember
- The process of reflection and self-assessment is important if you are to fix mistakes. Do not worry about getting things wrong as long as you check, fix it and try again

All these learners have **read, thought, tested themselves** and then **checked** their work. They will start to develop long term memory which they can then use in the future.



MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Maths	Computing	English	Art	
History	Drama	Geography	Science	
Music/RS	Spanish	DT	Active Lifestyles	

Where subjects share a slot, it is for **you** to decide which one **you** know less about - which one should **you** revise? **You** decide which one to focus on.

Literacy: Do take time to engage with the **Listen Project**. Developing our vocabulary is immensely important if we are to develop as learners. The **listen Project** is an opportunity to listen to interesting ideas, facts and make our vocabulary better. You can do this short activity at any point within the week.

The 'Listen' Project #1



SCAN ME

Remember, you can always do more. Challenge yourself to be the best you can be!

# How to use the 'Listen' Project

## Start Here

Being read to is a vital part of learning - hearing words that we are unfamiliar with, ideas that we don't understand yet and thoughts we haven't had a chance to think.

Even simple stories create links from one idea to the next. The fairy tales we heard when we were babies give us the first step to understanding the adventure stories we read in school.

**Take time out and listen...**

**Step 1 - Click the link and listen.**

You can follow the text as you are read to or just listen.

**Step 2 - Check the text.**

Have a look at the texts. There are three pieces of writing.

The first piece may appear to be very simple, maybe even too young for you. These stories are some of the first we hear and often start our journey to understanding more complicated ideas.

The second text may be something you recognise or have read yourself. Is there a link to the first story?

The third is the most complex and may even leave you with a lot of questions.

**Step 3 - What's the connection?**

The final step is to think about what links these texts and stories together?

Where have you thought about these ideas before?

Do you think about any of these ideas in school?

You can go back and listen to the texts being read as many times as you like.



*SCAN ME*

## The Dreamtime

At the beginning of the Dreamtime, the earth was flat and dry and empty. There were no trees, no rivers, no animals and no grass. It was a dry and flat land.

One day, **Goorialla**, the rainbow serpent woke from his sleep and set off to find his tribe. He crossed Australia from east to west and north to south, stopping to listen for his people. He crossed every part of the dry, flat Australia but found nothing. After searching for a long time, he grew tired and lay down to sleep.

The land he lay down to sleep on was not the same land he had set out to search for his people on, though. As he had looked for his people, his big, long body had cut great gouges into the land. **Goorialla** lay in the sand all alone until he decided to create more life in the world. He called "Frogs, come out!" and frogs rose out of the ground with their bellies full of the water they stored. He tickled the frogs until the water burst from their mouth and filled the gouges in the land. These gouges made the rivers and streams we see today.

As the water flowed over the land, grass and trees began to grow and fill the land with colour.

## The God of Dreams.....

### Who was Morpheus?

**Morpheus** was one of the primeval gods, descended from Nyx, the dark goddess of night who was the mother of everything mysterious and anything that was inexplicable, such as death, disease, dreams, ghosts, dreams, witchcraft and enchantments. Morpheus was the eldest son of Hypnos the God of sleep and the leader of the Oneroi. The brothers were triplets and all gods of dreams. Morpheus and the Oneroi are always depicted with wings that conveyed they were gifted with magic and the power of flight. Each of the Oneroi had a specific area of responsibility in relation to dreams and dreaming:

**Morpheus** had the ability to take on the appearance of a mortal in dreams. He was the god who relayed messages from the gods and prophecies of the future. He took particular care with the dreams of kings and heroes

**Phantasos** had the ability to appear in dreams in the form of inanimate objects such as rocks, water, trees. He specialized in strange phenomenon and fantasy

**Phobetor** (known as Icelus to the gods) was the god to be feared who specialized in bringing nightmares and had the ability to appear in the guise of animals and monsters

### Morpheus and the Gates of Horn and Ivory

The Oneroi resided in the 'land of dreams' that was located in the Underworld. Morpheus and his brothers shared the cavernous palace of Hypnos from which they emerged each night like a flock of bats. The nightly route of Morpheus and his brothers passed through one of two gates. One of the gates was made from horn, the second gate was made from ivory. Morpheus would pass through the gates of horn carrying prophetic or true god-sent dreams. Phantasos and Phobetor (Icelus) passed through the gates of ivory carrying false dreams, without true meaning.

## Do Robots Dream of Electric Sheep?

Cutie remained motionless before the port, like a steel statue. His head did not turn as he spoke, "Which particular dot of light do you claim to come from?" Powell searched,

"There it is. The very bright one in the corner. We call it Earth." He grinned, "Good old Earth. There are three billions of us there, Cutie - and in about two weeks I'll be back there with them." And then, surprisingly enough, Cutie hummed abstractedly. There was no tune to it, but it possessed a curious twanging quality as of plucked strings. It ceased as suddenly as it had begun, "But where do I come in, Powell? You haven't explained my existence."

"The rest is simple. When these stations were first established to feed solar energy to the planets, they were run by humans.

However, the heat, the hard solar radiations, and the electron storms made the post a difficult one. Robots were developed to replace human labor and now only two human executives are required for each station. We are trying to replace even those, and that's where you come in. You're the highest type of robot ever developed and if you show the ability to run this station

independently, no human need ever come here again except to bring parts for repairs." His hand went up and the metal visor-lid snapped back into place. Powell returned to the table and polished an apple upon his sleeve before biting into it.

The red glow of the robot's eyes held him. "Do you expect me," said Cutie slowly, "to believe any such complicated, implausible hypothesis as you have just outlined? What do you take me for?" Powell sputtered apple fragments onto the table and turned red.

"Why, damn you, it wasn't a hypothesis. Those were facts."

Cutie sounded grim,

"Globes of energy millions of miles across! Worlds with three billion humans on them! Infinite emptiness! Sorry, Powell, but I don't believe it. I'll puzzle this thing out for myself. Good-bye."



## Dreamtime

Many of the Aboriginal people or Australia have a beautiful and complicated understanding of the way the world began. The time before humans is called the Dreamtime and features spirits, gods and creatures who formed the world that exists now.

**Goorialla** is the Rainbow Serpent who formed much of the landscape that we see now with the movement of its body. Aboriginal art is often based around images of the Dreamtime and the creation of the world.



## The God of Dreams...



The ancient Greeks had a complicated relationship with dreams and sleep, often viewing sleep as a dangerous time when people were vulnerable to the influence of the gods. **Morpheus**, the god of sleep and dreaming, is often depicted as a dark character who brings messages and visions!

## Do Robots Dream?.....

Perhaps one of the biggest questions we can ask is, what makes us human? **Isaac Asimov**, a Russian Science Fiction writer, asked this question by writing about robots. The robot in the story 'I, Robot' begins to ask questions about its own creation and existence. Asimov began to think about how robots may one day dream like humans.









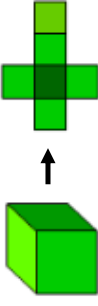

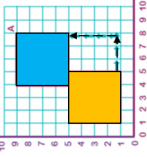
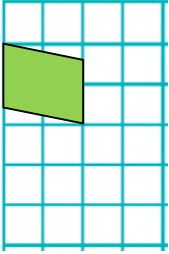




# Mathematics

Your Maths Home Learning has two parts:

Part 1 is: Copy the definition of the key word and diagrams into your Home Learning Book, then use these to complete the task

Part 2 is: Scan the Corbett Code (or look up the video number) for extra practice.

Week	Key Word	Definition	Task	Corbett Code
1	Face	A face is a <u>flat or curved surface</u> on a 3D shape. e.g. A cube has six faces. A cylinder has three faces and a sphere has just one face.	How many faces does an ordinary die have? How many faces does the pyramid of Giza have?  	 Scan here 5
2	Edge	An edge is where <u>two faces meet</u> . e.g. A cube has 12 edges. A cylinder has two edges and a sphere has no edges.	How many edges does an ordinary die have? How many edges does a can of beans have?  	 Scan here 5
3	Vertex	A vertex is a <u>corner where edges meet</u> . The plural is vertices. e.g. A cube has eight vertices. A cone has one vertex and a sphere has no vertices.	How many vertices does an ordinary die have? How many vertices does a Toblerone have? 	 Scan here 5
4	Net	The net of a 3D shape is <u>what it looks like if it is opened out flat</u> . A net can be folded up to make a 3D shape. 	Think of two 3D shapes and draw the net of them in your book. e.g. A cone or a triangular prism (Toblerone)	 Scan here 4
5	Translation	Translation means to move a shape into a different position (Up, down, left or right), without changing the shape in any way. e.g. The following square has been moved <u>3 the right and 4 up</u> . 	Translate the following shape 3 left and 2 down. 	 Scan here 325
6	Vector	A vector is something that has <u>size and a direction</u> . e.g. '2 miles up' is a vector, it has size (2 miles) and direction (up) 'west' is not a vector as it only has direction.	which of the following is a vector 1) 3 kilometres west      2) 10 yards 3) 20 mm                      4) 9 km due South-West	 Scan here 325



Topic: What did power look like in the Medieval Period?

Overview

Medieval monarchs had an immense amount of power and influence. We will examine the lives of three powerful figures from the Middle Ages and decide who seemed to demonstrate this power the most.



Eleanor of Aquitaine

Who traditionally held power in the Middle Ages?



Traditional role of a Noble woman in the Middle Ages



Eleanor's Early Life: Attractive, well educated and cultured woman, Eleanor was the most sought after bride in medieval Europe.

Aquitaine was an enormous territory stretching across the south west of France.

At 14 she was married off to King Louis VII, he lacked charm and was not a good match for intelligent Eleanor.

Unlike many medieval Queens, Eleanor travelled with her husband, going on Crusade with him in 1147.

Eleanor's presence was blamed for the defects Louis suffered and their marriage was annulled in 1152.

What kind of power did Eleanor of Aquitaine hold?

The Great Revolt: 1172 Eleanor is back in Aquitaine taking back some control over her lands. But humiliated as Henry II still controlled the taxes and the army.

Her 4 surviving sons were also angry, Henry II was blamed for the murder of Thomas Becket and they were greedy for land of their own.

Henry the young King and his brothers joined with King Louis VII of France to plot to overthrow their father, Eleanor also joined the rebellion.

Eleanor was captured and the revolt spread without her, many towns in England were destroyed as barons joined the rebellion.

After 18 months (Sept 1174) the revolt was crushed, Henry's sons swore to be loyal to him, Eleanor was imprisoned for 14 years.

The Angevin Empire

8 weeks after her arrival in England Eleanor married Henry of Aquitaine, the becomes King of England in 1154.

The Angevin Empire = the combined lands ruled by the Royal couple. This included England and in France: Aquitaine, Normandy, Anjou and Maine.

As the King's wife Eleanor was expected to provide male heirs. She had 8 children between 1153 and 1167, including 5 sons. This gained her the respect of contemporaries.

After 1168 Eleanor is mentioned in the Charters of Aquitaine suggesting she was beginning to have a small political role again. Taxes from Aquitaine still went to Henry though.

Eleanor, Richard and John

In 1189 Eleanor's son Richard became king on the death of Henry II. Eleanor was released from prison. For much of Richard's reign Eleanor ruled England in his name whilst he put down rebellion in Normandy and went on Crusade.

Eleanor allowed many of Henry's harsh forest laws and arranged marriages for usability purposes to royal men. Eleanor's youngest son John allied with the King of France and tried to capture Richard's lands there. Thanks to Eleanor, John backed down.

When Richard was captured in Austria, Eleanor again stopped John rebelling and raised money to pay Richard's ransom.

In 1199, Richard was killed and John became King. John was unpopular and Eleanor tried to support his rule, even leading an army against John's enemies in France age 75.

Mansa Musa

- The ruler of the Kingdom of Mali who is remembered as being the richest man in history, if his wealth was measured in today's money he would have \$400 billion.
Became rich and powerful through the trade of salt, spices, copper and gold.
When he travelled to Mecca in 1324, he did so in splendour with a caravan of 60,000 men.
When the caravan arrived in Cairo, he spent and gave out so much gold during his three-month stay that he caused the price of gold to plummet for 10 years, wrecking the economy!
He encouraged the arts and architecture, he also funded literature and built schools, libraries and mosques. Timbuktu became a centre of education and people travelled from around the world to study at what would become the Sankore University.
After Mansa Musa died in 1337, aged 57, the empire was inherited by his sons who could not hold the empire together. The smaller states broke off and the empire crumbled.



Edward I



Edward and Parliament

- Edward became heavily involved in making and reforming laws (more than any king before him) using Magna Carta.
In 1275 he called his 1st parliament. He called barons, churchmen and elected 2 representatives from each county, city and town to listen to his plans for a new tax.
Burgesses (normal people) were not called to parliament again until 1295 in the model parliament near London. It became more male Burgesses and knights to attend.
Edward used the money raised in these 12 years. Each time parliament granted a tax, they could demand something from the king.

Edward and the Jews

- Jewish peoples main source of income was lending money making them very important.
Jewish people given protection of the crown which meant they had different courts.
There was growing anti-Semitism as lots of Christians ended up in debt to Jews.
1275 Edward banned Jewish people from lending money.
1290 Edward issued the Edict of Expulsion which removed all Jewish people from England.

Edward and Wales

- Wales under the control of Llewelyn ap Gruffudd who agreed peace with England.
In 1280, the two countries were at war, Edward sent huge army and crushed the Welsh rebels making them surrender to the English and follow English laws.
Edward appointed Englishmen to important positions and built the 'ring of iron' - castles at Conwy, Caernarfon, Beaumaris and Berwick to control the country.

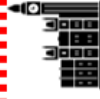
Edward and Scotland

- Edward's 16 year old son to marry Margaret of Scotland. However, Margaret died causing dispute over who should rule Scotland.
Edward chose John Balliol who did not follow Edwards orders.
In 1296, Edward conquered Scotland, earning him the nickname 'Hammer of the Scots'. Edward was also at war with France. This allowed Robert Bruce and William Wallace to rebel in Scotland. When Edward died, Scotland was not under English control.

1272 Edward I becomes king after Henry III



1275 Edward I calls his first parliament



1275 Edward I bans Jews from lending money



1280 England at war with Wales



1290 Edict of Expulsion



1307 Edward I dies



Overview

Edward and Parliament

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**What did power look like in the Middle Ages?**



<b>Eleanor of Aquitaine</b>	Eleanor of Aquitaine was <b>Duchess of Aquitaine in her own right from 1137 to 1204, Queen of France from 1137 to 1152 as the wife of King Louis VII, and Queen of England from 1154 to 1189 as the wife of King Henry II.</b>
<b>Angevin Empire</b>	The House of Plantagenet ruled this area during the 12th and 13th centuries. It covered roughly all of present-day England, half of France, and parts of Ireland and Wales.
<b>King John</b>	The youngest son of Henry II and Eleanor of Aquitaine. Ruled England between 1199 and 1216.
<b>Magna Carta</b>	King John was forced to sign this document by his Barons in 1215. It granted them improved rights and freedoms.
<b>Mansa Musa</b>	Ruled the Mali Empire between 1312 and 1337. Considered to be the richest man in history due to the Mali Empire's wealth.
<b>Mali Empire</b>	A large empire in West Africa which existed between c1240 and 1645.
<b>Edward I</b>	King of England between 1272 and 1307. Known as Edward Longshanks and 'The Hammer of the Scots', Edward led campaigns against Wales and Scotland and is famous for his castle building in North Wales.
<b>Parliament</b>	Began in 1258, this was a meeting between representatives from across the country called together by the King to agree on matters such as taxes. Gradually its power to make laws increased.
<b>Edict of Expulsion</b>	<b>A royal decree issued by Edward I on 18 July 1290 expelling all Jews from the Kingdom of England</b> , the first time a European state is known to have permanently banned their presence. Edward approved this to secure money from Parliament.

**Tasks**

**Task 1**

Look at the "Overview" section on the page above. Explain why each of the three figures was historically significant (what impact did their lives, decisions and actions have on history) .

**Task 2**

Complete your own research on the Mali Empire (1240 – 1645). Why did it become so wealthy and powerful and why did it decline in the 1600s?

[Mali and Mansa Musa - Precolonial Africa - KS3 History - homework help for year 7, 8 and 9. - BBC Bitesize](#)

**Task 3**

Complete further research into Eleanor of Aquitaine's life. Can you identify three reasons why would she be considered an unusual figure in the Middle Ages – was she a typical medieval queen?

[BBC - History - Eleanor of Aquitaine](#)

**Task 4**

Research the history of the UK Parliament from 1258 to 1399. Why was Parliament formed? What role did it originally play in the government of England? How and why did it's powers change?

[Magna Carta \(1215\) to Henry IV \(1399\) - UK Parliament](#)

Task 6:  
Instruments of  
the Orchestra



# INSTRUMENTS



Task 6:  
Instruments of the  
Orchestra test

Family	Instrument Names	
<b>Strings</b>	Violin; Viola; Cello; Double bass; Harp Acoustic Guitar; Electric guitar; Bass Guitar	
<b>Woodwind</b>	Flute Oboe Saxophone	Clarinet Bassoon
<b>Brass</b>	Trumpet Trombone	French Horn Tuba
<b>Percussion</b>	Timpani (Kettle Drums) Drum Kit Xylophone (wooden) Glockenspiel (metal)    Piano	
<b>Voice</b>	<b>Female</b> Soprano (high) Alto (low)	<b>Male</b> Tenor (high) Bass (low)
<b>Electronic</b>	Electronic Keyboard Synthesiser (can sound like different instruments) Computer Software	
<b>Keyboard</b>	Piano Harpsichord Synthesizer Electronic Organ (Hammond) Church Organ	

## Key terms:

- Arco:** Instruction for a string player to use the bow
- Pizzicato:** Instruction for a string player to pluck the strings (do not use the bow)
- Mouthpiece:** the part of a brass or woodwind instrument you blow into.
- Slide:** the part of a trombone that moves in and out
- Valve:** the part of a brass instrument that helps to change note. The trumpet has three.
- Reed:** The thin piece of wood that makes the sound on many woodwind instruments
- Orchestra:** A large **ensemble** (group) of instruments
- Conductor:** The person who controls the orchestra
- Legato:** Instruction to play the notes smoothly
- Staccato:** Instruction to play the notes short/spikey
- Range:** What notes an instrument can play – the lowest note to the highest.

**Task 1:** Learn the Instrument names and families for **strings, woodwind, brass and percussion**.

**Task 2:** Learn the Instrument names and families for **voice, electronic and keyboard**.

**Task 3:** Learn the key terms above.

**Task 4:** Draw a diagram of the orchestra **without the instruments**. After revising where they sit, complete the diagram **from memory – no peeking!**  
**Self-assess** - fill any gaps **in red pen**.

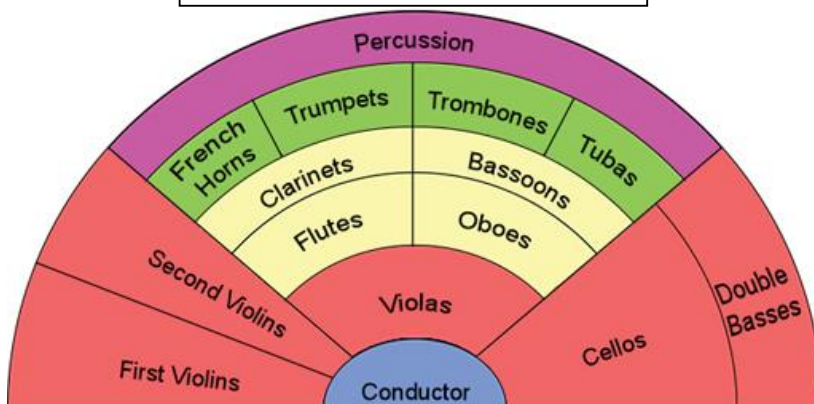
**Task 5:** Create a 10 mark quiz based on the orchestral instruments (where they sit or which family they are from). Get someone to test you!

**Task 6:** Watch *The Instruments of the Orchestra* clip (<https://www.youtube.com/watch?v=EfedK-dqXWc>). Then, complete this *Listening Test* (<https://www.youtube.com/watch?v=oHUIz76Z74c>).

QR codes for the Youtube clips are at the top.

**Task 7:** Go through your Home Learning work on Instruments. Make a quiz of any words you found tricky. Get someone to test you!

Where the orchestral instruments sit:

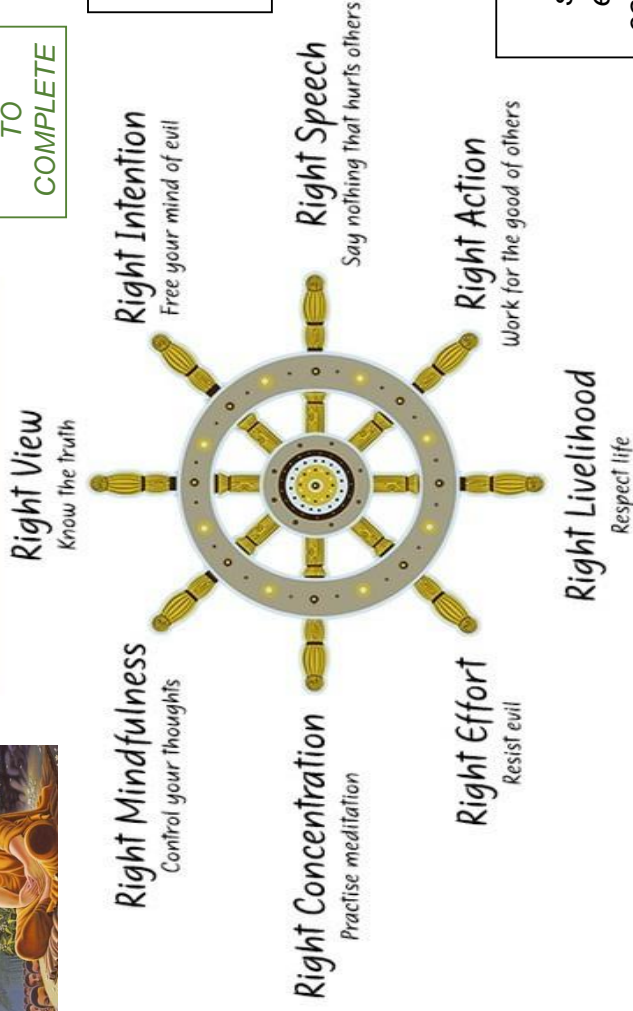


## THE LIFE OF BUDDHA

He was born Siddhartha Gautama, the son of a wealthy Indian king. He wanted for nothing. When he became a young adult he ventured out of the palace for the first time in his life. Here he saw the four sights. He saw an **old man**, a **sick man** and a **dead man**, none of which he had seen before. He was profoundly disturbed that human beings suffered like this, and he returned to the palace where he met a **holy man (the fourth sight)** who told him to leave his home and find **enlightenment** (a knowledge of all things). Siddhartha left and began his search, first practising self denial for many years. After time, he realised that this was not the answer and one day as he meditated beneath the Bodhi Tree he found enlightenment (awakening). The rest of his life was spent teaching others how to find enlightenment themselves



## The Noble Eightfold Path



SOME TASKS FOR YOU TO COMPLETE

Create key word flash cards or a quiz

Create a flowchart of the Noble Truths

Draw a symbol for each key word

Create a symbol and example for each part of the Noble Path

## THE FOUR NOBLE TRUTHS

The Buddha taught that there are 4 truths-:

1. Suffering exists (*Dukkha*)
2. Suffering has a cause, mainly greed and craving (*Trishna*)
3. There is an end to suffering (*Nirvana*). This is a release.
4. A person can reach Nirvana by following the **Eightfold Path** and through meditation. Meditation is a way of clearing your mind of negative thoughts (e.g. anger, hatred) and replacing them with positive ones

ENLIGHTENMENT	A state of awareness and knowledge of all things
KATHINA	A festival celebrating community in which monks are given new robes
MEDITATION	A method of clearing the mind of negative thoughts and seeking enlightenment
NIRVANA	A state of freedom from suffering
PRECEPT	A rule or teaching of Buddha that guides a right life
SIDDHARTHA GAUTAMA	Buddha's name before he became enlightened

## KEY WORDS



Write your answers to 3 reflection questions

Find a quiet space and meditate

Create a key facts summary of Buddhism

# BUDDHISM



As we study think about...

How do these beliefs help Buddhists?

How do the beliefs and actions make them feel?

What links can you make with your life?

What symbols/images do they use?

How does their history influence modern life?

How do they express their beliefs in everyday life?

How do Buddhists express their religious identity?

## BUDDHISM BASIC FACTS

Buddhism began in North India during the 6th century AD



The founder of Buddhism was Siddhartha Gautama.

The Buddha is not a god but a teacher.

Buddhists do not believe in a god, but in a universal consciousness

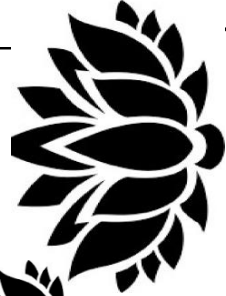
It is the fourth largest religion in the world.

Buddhists believe in **karma** (our good actions in this life influence our future lives and experiences)



## BUDDHISM MYTH:

Buddha was not chubby! As he lived a life of moderation he was likely to be slim. The 'laughing Buddha' (the fat one) is a Chinese monk who was believed to be an incarnation of a future Buddha



## A Simple Guide to Meditation

\*\*\*\*\*

Choose a quiet place

Sit comfortably with your back straight but relaxed

Focus your awareness on your breathing

Count 1-2-3-4-5-4-3-2-1 as you breathe in and out

If your mind wanders watch your thoughts as if they are bubbles, floating away then return your attention to your breathing

## BUDDHIST FOOD RULES:

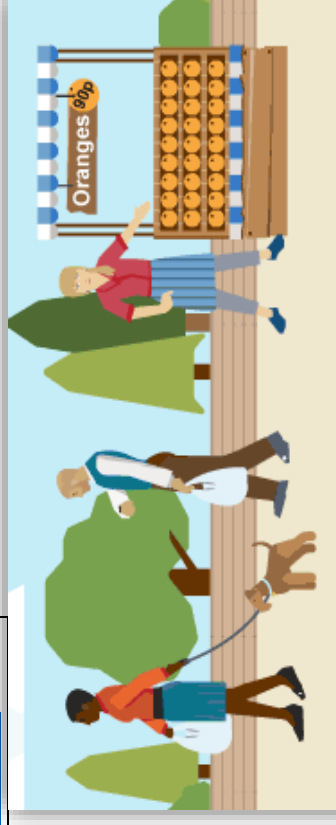
- Vegetarianism is encouraged but not compulsory. Some meats (e.g. snake, tiger, dog, etc are forbidden)
- Many Buddhists avoid artificial stimulants like alcohol and caffeine
- Buddhists should avoid 5 pungent herbs: onions, garlic, scallions, leeks and chives



## Computing Department Knowledge Organiser: Year 7 Spreadsheets

### Why do we use Spreadsheets?

- Spreadsheets are used to store information and data.
- Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns/trends.
- Charts/Graphs can be used to clearly display the information in a spreadsheet
- How to use spreadsheets. Use this QR code to learn and test yourself on the BBC Bitesize website [www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1](http://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1)



### How spreadsheets work – what software do we need?

- The most popular spreadsheet program is Microsoft Office Excel.
- You can use the online version of Excel for free or download it for free with your Gateacre school log in at: [www.office365.com](http://www.office365.com)

### What can spreadsheets be used for?

- Spreadsheets are used by many businesses around the world. Some examples:
- Budget tracker e.g. working out the costs for a school prom
- Stock tracking of a business such as a market stall selling fruit and vegetables (see example image on the right)
- A teacher may also use it to keep a record of grades.

	A	B	C	D	E
1	Produce	Unit	Number sold	Price	Sales
2	Apples	kg	7	£0.70	£4.90
3	Potatoes	25kg	8	£6.00	£48.00
4	Oranges	kg	6	£0.90	£5.40
5	Carrots	25kg	8	£8.50	£68.00
6	Sprouts	kg	4	£1.40	£5.60
7	Cabbage	kg	6	£0.70	£4.20
8	Onions	kg	9	£0.56	£5.04
9				Total	£141.14





## Computing Department Knowledge Organiser: Year 7 Spreadsheets

### What if?

- Modelling gives you the chance to test certain scenarios out before they happen.
- These are commonly known as ‘what if’ questions. Look at the examples for ticket sales on the right, you can work out your overall costs and prize fund.
- You can use the BBC Bitesize website to revise and test yourself on ‘What if?’
- [www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1](http://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1)



### Modelling with spreadsheets

- In computing, modelling is used to look at large amounts of data to help with scientific or engineering projects. A computer model is a representation of a real-life system or situation.
- Simple models can be built in a spreadsheet. A spreadsheet model could be used to plan a school prom. To make sure it came in on budget the spending on food, drinks, entertainment, and the price of tickets could be varied.

### Spreadsheets Key words

<b>Axis labels on charts</b>	A label for a chart or graph's horizontal or vertical axis that explains what the value relates to.
<b>Cell</b>	An individual spreadsheet box where you enter data.
<b>Cell reference</b>	Names of individual cells (B3 for example).
<b>Column</b>	Cells that go down the spreadsheet page.
<b>Computer model</b>	Predicts and investigates how real-life devices might behave in different situations.
<b>Data</b>	Values, typically letters or numbers.
<b>Formatting cells</b>	The appearance of a document, including the fonts, colours, size and rotation.
<b>Formula</b>	Makes automatic calculations that update when the data does.
<b>Function</b>	Makes more complex calculations.
<b>Row</b>	Cells that go across the spreadsheet page.
<b>Sort / Filter</b>	Sorting data organises it alphabetically or numerically. Filtering data makes it easy for us to find a piece of data.



## Computing Department Knowledge Organiser: Year 7 Spreadsheets

Formulas	Functions
<b>Formulas and functions are extremely useful features. They make automatic calculations that update when the data changes.</b>	
<ul style="list-style-type: none"><li>• Formulas are usually simple calculations, e.g. adding two or more numbers together.</li><li>• They always start with an equals sign (=).</li><li>• There are a number of symbols used in formulas or calculations.</li><li>• These are the most common ones:<ul style="list-style-type: none"><li>○ '+' add</li><li>○ '-' subtract</li><li>○ '*' multiply</li><li>○ '/' divide</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Functions make more complex calculations.</li><li>• Like formulas, all functions start with an equals sign (=) followed by the function's name, e.g. =SUM, =MIN, =MAX, etc.</li><li>• Simple and regularly used functions include:<ul style="list-style-type: none"><li>○ SUM – adds values in selected cells</li><li>○ MIN – finds smallest value</li><li>○ MAX – finds largest value</li><li>○ AVERAGE – finds the average value</li><li>○ COUNT – counts how many of the selected cells have numbers in them</li></ul></li></ul>
<b>Advanced functions</b>	
<ul style="list-style-type: none"><li>• IF – change the value of a cell if something is true, e.g. if a customer's total bill is over £100, deduct 10% from their bill.</li><li>• COUNTIF – adds up cells that meet a certain rule, e.g. count the number of students that achieved level 6.</li></ul>	
<b>Tasks</b>	
<ul style="list-style-type: none"><li>• <b>Task 1</b> - Why do we use Spreadsheets?</li><li>• <b>Task 2</b> - What software do you need to create a spreadsheet?</li><li>• <b>Task 3</b> - What can spreadsheets be used for? Give some examples in your answer.</li><li>• <b>Task 4</b> - Describe what 'what if' means in spreadsheet?</li><li>• <b>Task 5</b> - What does 'modelling with spreadsheets' mean? Give some examples.</li><li>• <b>Task 6</b> - What does a formula do? Give some examples of the most common formula used in your answer.</li><li>• <b>Task 7</b> – What does a function do? Give some examples of different functions in your answer.</li><li>• <b>Task 8</b> - Identify and describe two advanced functions?</li></ul>	

# THE 4 P'S

PACE

PITCH

PAUSE

PROJECTION

The next scheme is:

## Melodrama/Silent Movies

DO NOT put your feet up on the chair in front of you

Turn OFF your phone

DO NOT talk/shout whilst watching a performance/show



DO NOT leave any rubbish behind

DO NOT get out of your seat unless you have asked a member of staff

Scan the QR code to be taken to a video which explains what you need to know about Melodrama!



**Week 1 task:** Write down notes of information you learn from the video!

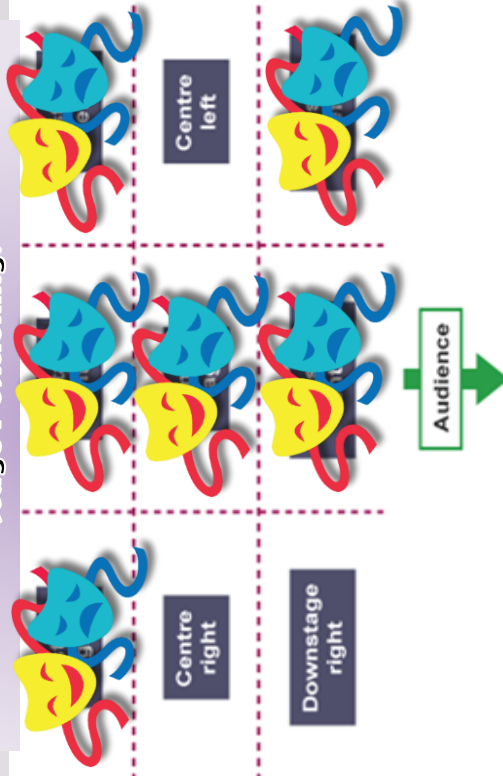
# THEATRE ETIQUETTE

BUT DO ENJOY YOURSELVES!

## New Skill/Technique/Knowledge Retrieval

Knowledge/skill	Definition
<b>Costume designer</b>	The person who designs the costumes for a performance. The costume department of a theatre is often called the wardrobe.
<b>Gesture</b>	In acting gesture is defined as a sign that communicates a character's action, state of mind and relationship with other characters to an audience.
<b>Body as a prop</b>	Using your body to create props and objects on stage.
<b>Levels</b>	Using different heights or levels onstage creates visual interest. It can also help to ensure that the audience see all of the action. Levels can be used to suggest status - meaning the power or authority one character has over another and can also be used to suggest various locations.
<b>Improvisation</b>	A very spontaneous performance without specific or scripted preparation.
<b>Stimuli</b>	The starting point, idea or inspiration or your devised drama. It is what you base your drama around.
<b>Movement</b>	Where we move to on and around the stage avoiding the blocking another actor.
<b>Physical Theatre</b>	Physical theatre is a well-known genre of theatrical performance that encompasses storytelling primarily through physical movement.
<b>Gait</b>	The way an actor walks
<b>Mime</b>	Performing with no dialogue. Very physical type of performance.
<b>Narration</b>	A commentary delivered to accompany a performance.
<b>Slow Motion</b>	Performing in manner whereby the action appears much slower than in real life.
<b>Body language</b>	communication by movement or position, particularly facial expressions, gestures and the relative positions of a speaker and listener.

### Stage Positioning!



## Tasks

### Week 2

What stage positions are the drama faces covering? Draw the position diagram in your books and see if you can get them all right!

### Week 3

Create a costume for a silent movie/melodramatic character who is very wealthy!

### Week 4

Sketch out the stage types and try and match the title of them to each one!

### Week 5

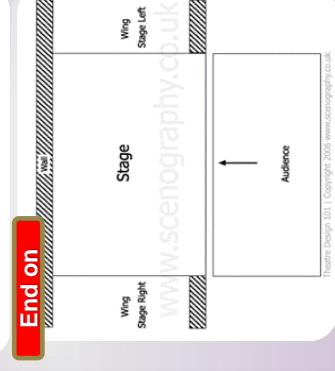
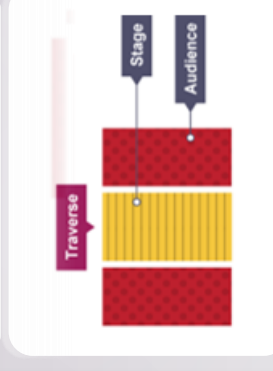
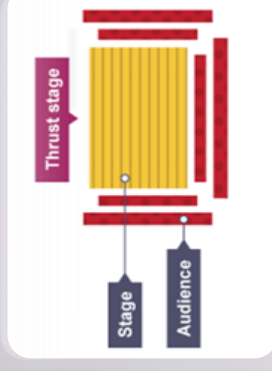
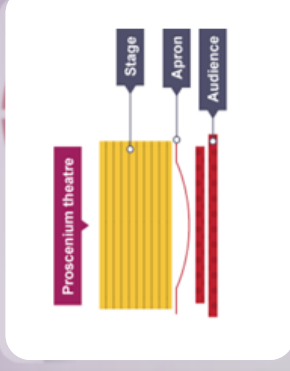
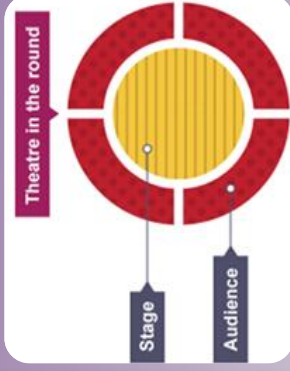
Search on YouTube for Silent Movies. There are some great ones on there! Watch some to gain more of an understanding for the scheme.

### Week 6

Complete a research task on Charlie Chapman. Present your information to your family.



## Stage Types



Some key information to take note of as we as costume is a huge part of Melodrama/Silent Movies

## COSTUME DESIGN

### USE THE ANAGRAM

**C**olour - How does colour reflect/symbolise personality or social status?

**C**ondition - The state of something with regard to its appearance, quality, or working order.

**C**ut - The way or style in which a garment is cut. e.g. "the elegant cut of his dinner jacket"

**O**rnamentation - Decorative elements added to something to enhance its appearance.

**S**tyle - A distinctive appearance.

**T**exture - The feel, appearance, or consistency e.g. we naturally associate smooth silky fabrics with the rich, and rough, hairy ones with the poor.

**U**n(fit) - Be of the right shape and size (or not).

**M**aterial - Cloth or fabric; the matter from which a thing is or can be made.

**E**xpressing...? - What it expresses/tells us about the character

Other aspects of costume design that should be considered:

Hair, wigs, stage make up, accessories, jewellery, personal props, masks, suitability of movement (i.e. if the piece is highly physical, will the costume help or hinder the performer's physical movement?)

Remember also, all research and designs should initially begin with a moodboard - an arrangement of images, materials, pieces of text, etc. intended to evoke or project a particular style or concept.

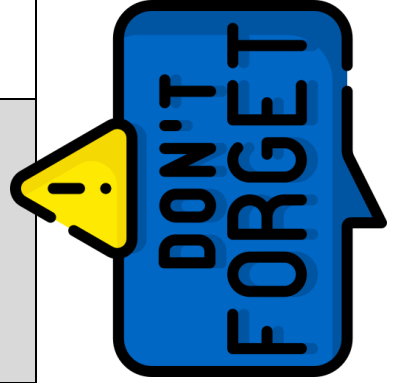


# Spanish

Go to [languagenut.com](https://languagenut.com) or download the app from the app store/google play store.  
Log in with the username and password given to you by your teacher.  
Your weekly task will appear in the "assignments" section.



Tuesday 18 <sup>th</sup> April	Complete the assigned tasks practising school subject vocabulary.
Tuesday 25 <sup>th</sup> April	Complete assigned tasks practising school descriptions vocabulary.
Tuesday 2 <sup>nd</sup> May	Complete assigned task practising school subject opinions vocabulary.
Tuesday 9 <sup>th</sup> May	Complete assigned reading tasks on school.
Tuesday 16 <sup>th</sup> May	Complete assigned translation task on school.
Tuesday 23 <sup>rd</sup> May	Complete assigned writing task on school.



If you're accessing Languagenut from a tablet or computer, you can browse through other sections and practise other skills.  
Click "high school" and either "vocab practice", "exam skills" or "sentences and chunks" and practise away!  
You get points for each activity you complete and the Top 10 students in the school with the most points at the end of each month will get a prize off Mrs. Foy!

## Persuasive Devices

**Pronouns** - "We/us/our" to create a feeling of belonging and shared responsibility; "You/your" to invoke a feeling of personal responsibility and the sense that the speaker is directly connecting to each listener

**Rhetorical questions:** Questions that do not need an answer; used to make the listener think

**Emotive language:** Language that makes the listener feel a certain way e.g. guilt, anger

**Triples (rule of 3):** A list of three things or the same thing repeated three times for emphasis

**Anaphora:** The repetition of a word or phrase at the beginning of successive clauses

**Imagery** - Use of metaphor, simile or personification to illustrate an idea or make it more powerful.

**Anecdotes** - Personal stories given as examples, to make issues seem real, personal and relatable.



## **Y7 Letter Writing Knowledge Organiser Inspirational People**

### Key Words and Definitions

**Inspire** - To give someone the urge or ability to do or feel something, especially to do something creative or brave.

**Resilience** – To be able to withstand or recover quickly from a difficult situation.

**Sanguine** – Optimistic or positive, especially in a difficult situation.

**Philanthropy** - The practice of performing charitable acts to people who need it without wanting anything in return or a love of humanity.

**Empathy** - the ability to share someone else's feelings or experiences by imagining what it would like to be in that person's situation.

**Defining moment** - A point in your life when you're urged to make a pivotal decision, or when you experience something that fundamentally changes you.

**Stereotype** - An opinion that is held in common by members of a group that represents a prejudiced attitude,.

**Heroic** – To be admirably brave or determined

### **Key features of a letter:**

- Designed to be read by both a specific person and wider audience
- The purpose will be to give your gratitude to the person who has inspired you and persuade the audience of the newspaper to agree.
- A letter must contain both your address and that of the newspaper's office.
- It is laid out in paragraphs. Take a new paragraph for each new topic.
- You must include a range of persuasive devices and key word.
- You must use the appropriate salutations – e.g. Dear Mr Smith/Yours sincerely

## **Y7 Home Learning Tasks – Inspirational People**

### **Week 1 – Sporting Heroes**

This week you have studied Serena Williams. Research and write down 10 bullet points about another sports star who has proved to be an inspiration.

### **Week 2 – Poster of Hope**

Create a poster encouraging people to have hope. Use at least 3 persuasive features.

### **Week 4 – Defining Moment**

Write down a defining moment in your life and explain what effect it has had on you and why.

### **Week 3 – Your Philanthropy**

You have been studying the good work that Dolly Parton has done with her fortune. Imagine you win the lottery and decide to set up a charity to support a cause close to your heart. Write a paragraph explaining:

- What cause will your charity support?
- Why have you chosen this particular cause?
- What do you hope it will achieve?

### **Week 5 – Cross-curricular**

Write down the names of any person who you have learnt about in other lessons this term and who you would consider to be inspirational. Note down why they have inspired you.

### **Week 6 – Inspirational Quotes**

Using the internet or your mobile phone, research 5 inspirational quotes from famous people.

You could find one from:

- An actor
- A scientist
- An author/poet
- A sports star
- A musician

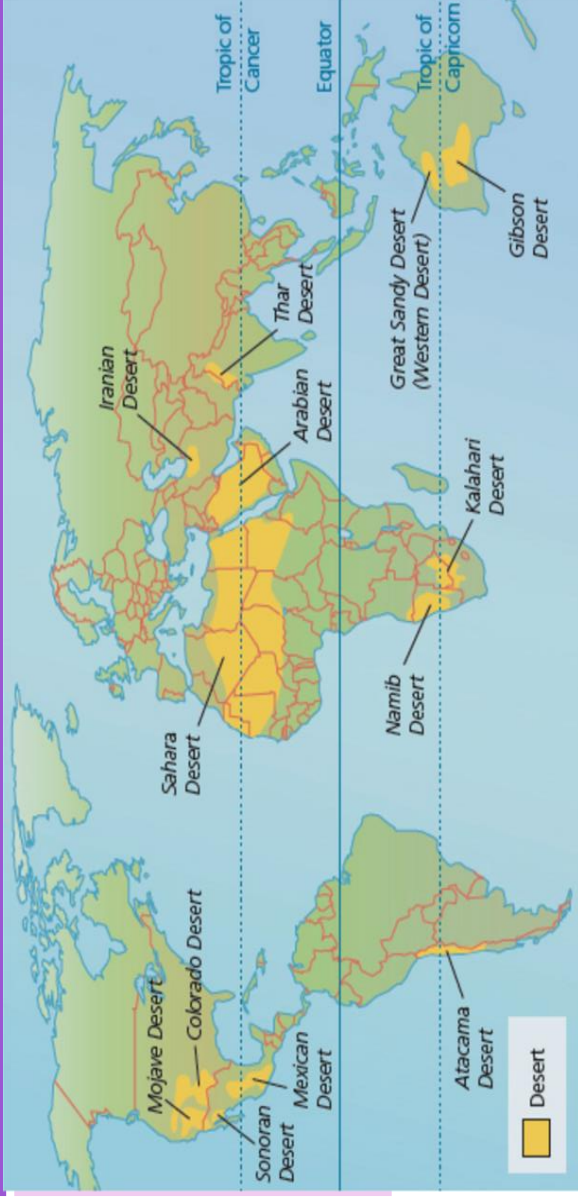
### **Week 7 – Twitter Post**

Adopt the persona of two of the people we have studied in the unit.

Write an inspiring tweet for each one.



## Where are arid environments located?

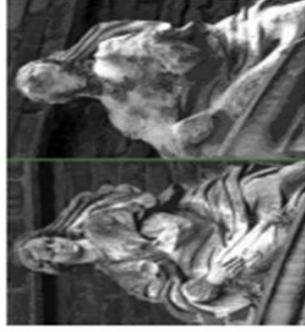
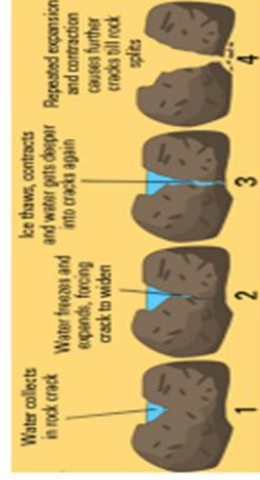


## Weathering

- **Rocks on the earth's surface are broken down in their place of origin – i.e. In situ.**

There are 3 types of weathering;

- **Physical / Mechanical**: Disintegration of rock without a chemical change e.g. freeze-thaw/exfoliation.



- **Chemical**: The decomposition of the rocks is caused by a chemical reaction within the rock. E.g. acidic rainwater / alkaline seawater and limestone.

- **Biological**: Rocks are broken down by the action of plants and animals e.g. plants roots break apart rocks, animals burrow into banks and some plants can release chemicals that can dissolve rocks slowly over time.

## Tasks- if you complete all 7, revisit some or all from memory

Task 1: Learn the names of the Earth's main deserts.

Task 2: Learn the location of the Earth's main deserts using the map.

Task 3: Read over the 3 types of weathering and then cover and write down what you can remember.

Task 4: Draw 4 small diagrams that help you remember the key processes of weathering.

Task 5: Read the bullet points on what are arid environments and create 5 questions with answers based on the information.

Task 6: Extension- find out how plants are adapted to survive in a desert. Choose one to investigate and draw a labelled diagram to highlight its adaptations.

Task 7 Extension- find out how animals are adapted to survive in a desert. Choose one to investigate and draw a labelled diagram to highlight its adaptations.

Task 8: If completed tasks, redo 1,2,3 and answer your questions from task 5.

## Year 7 Geography Arid Environments K0

### What are arid environments?

- Arid environments (deserts) are usually found near to the Equator in between the Tropics of Cancer and Capricorn.
- Typical environments are mainly hot and dry.
- Arid environments: receive under 250mm of rain per year.
- Largest hot desert is the Sahara which is located in the continent of Africa. Stretches over many countries such as Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Sudan and Niger.
- Antarctica is classed as a desert because it gets less than 200mm of rainfall.





# DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

YEAR 7 DT

## Topic: Keeping your desk tidy

### My Tool Box



**Tenon Saw** – Used to cut straight lines in wood.



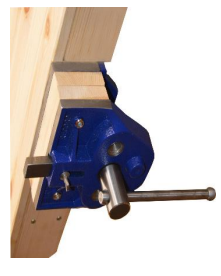
**Hand file** – Used to smooth out different materials



**Try Square** – Used to mark out right angles.



**Bench hook** – Used to hold work in place when cutting



**Wood Vice** – Used to secure material while working on it (cutting, filing sanding etc.)



**Pillar/Bench Drill** – Used to drill holes into different materials.



**Machine vice** – Used to hold workpiece securely during drilling.



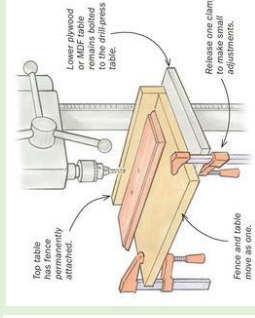
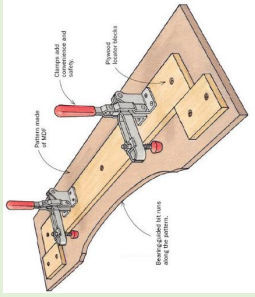
**Belt Sander** – Used to sand/smooth down different materials

### Focused Topics

#### PPE equipment and signage

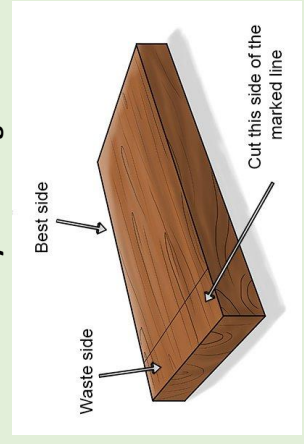


#### Drill jigs



A jig is a device used to hold a piece of material and guide tools. They are used to ensure the process can be repeated accurately and to a high quality.

#### Correct way of cutting timber



When cutting from a long length of wood we should always mark one first, cut to length on the waste side of the line allowing for the kerf of the saw. Then mark the second section and repeat the process.

### Key Terms

**Softwood** - the wood from a conifer (such as pine, fir, or spruce)

**Manufactured Board** – timber sheets which are produced by gluing wood layers or fibers together (such as MDF, Plywood and Chipboard)

**Drill jig** - a tool made to help place a material in the same place repeatedly when drilling.

**Template** - a shaped piece of material used as a pattern to mark around

**Kerf** - the width of material that is removed by a cutting process

### Tasks

**Task 1:** Learn the tool names and their use.

**Task 2:** Learn the key words and the definition.

**Task 3:** Create 6 questions that can be answered from the information in the focused topic column.

**Task 4:** Draw two tools and write what they are for.

**Task 5:** Create a quiz based on task 1, 2 or 3. Get someone to test you.

**Task 6:** Create a mind map for the information you remember and red pen anything you've forgotten.

**Task 7:** Teach it. Create a task that can be used to teach some of the information from here.

#### To go further:

Introduction to isometric crating:



More information about natural and manufactured timbers:





# ART KNOWLEDGE ORGANISER

YEAR 7  
Term 3a

## Topic: Pop Art (producing outcomes)

### History/Context:

During this term, you will continue to look at the work of Pop Artists and create your own pieces of art work, applying the key trends of this art movement to painting, printmaking, mixed media and cardboard relief techniques. You will demonstrate the skills you have learned throughout the year when responding to this art movement in the outcomes you create.

Pop Art is one of the most instantly recognizable forms of Art. It was characterized by a bold, bright predominantly primary colour palette (red, yellow, blue), with the use of black outlines and white space. This art movement was governed by, popular commercial culture, everyday recognizable imagery/objects, branded products and celebrities. During this term you will respond to the Pop Art theme using:

**Printmaking:** This is an art technique, which allows you to transfer an image from one surface to another using printing inks and rollers. You will explore how Andy Warhol used **silkscreen printing**, a process where inks transferred onto paper through a mesh screen with a stencil and how Roy Lichtenstein used **lithography**, or printing from a metal plate, to achieve his signature visual style.

**Mixed media and collage:** Pop artists often use more than one material in their artwork. They also collected found images and applied collage with scissors and glue, for example Peter Blake and Robert Rauschenberg, both used mixed media and collage techniques in their work. Both artists were inspired by Popular Culture and significant events.

**Cardboard relief techniques:** This is a technique which combines sculpture and relief techniques. Artwork usually comes from a flat surface and creates a 3D effect. You will be creating a low-level cardboard relief inspired by fast food and Pop Art.

### Home Learning tasks:

**Week 1:** Practice key phrases 1-12 - look, cover, write, check, correct x3. Read the sentences again and check for understanding

**Week 2:** Watch the Video of Roy Lichtenstein's 'work in Life'. See QR code below. Produce a mind map of key elements from this.

**Week 3:** Create a piece of artwork using the everyday object 'a Coca-Cola can'. Consider the key elements of the Pop Art movement:

- Bold opaque colour, primary and secondary
- A black outline
- The cola can
- Pop art patterns
- Layers
- Onomatopoeia: Select a word which links with the sound of a fizzy drink.

**Weeks 4 and 5:** Create your own pop-art portrait, this task will need to be split over 2 home learning sessions as it will take 40 minutes. Start in this session by drawing the outline of your face, look in a mirror and draw in your book the key features of your face. Keep this as an outline.

**Week 6:** This week you should now consider adding colour and pop-art inspired patterns to begin to make your portrait more 'pop-art'. Think carefully about a colour palette and use a variety of materials if you have them.

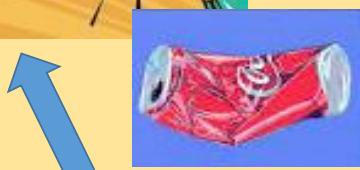
### Key Literacy Vocabulary:

- 1. Composition:** the arrangement or placement of visual elements in an individual piece of artwork. 'Putting a piece of art together', where you place things.
- 2. Construct:** To build, create or make something.
- 3. Pattern:** a regularly repeated arrangement. A design made from repeated lines, shapes, or colours.
- 4. Opaque:** you cannot see through the colour. No light passes through.
- 5. Primary colour:** The basic colours that can be mixed together to make secondary colours. These are Red Yellow and blue.
- 6. Secondary colour:** A colour which results in mixing the two primary colours:
  - Red + Yellow = Orange
  - Red + Blue = Purple
  - Blue + Yellow = Green
- 7. Outline:** The line created on the outside of a shape image or lettering. It helps define something from the background.
- 8. Mixed-media:** the use of two or more art materials in one piece of artwork, for example: paint, colour pencil and collage.
- 9. Collage:** A creative composition of materials and objects pasted over a surface creating artistic effects.
- 10. Onomatopoeia:** a word that names a sound, for example: bang, zoom, whizz.
- 11. Cardboard relief:** Layers of card constructed to create 3D effects.
- 12. Printmaking:** The process of creating artwork using printing inks which are applied to a surface using rollers then transferred onto either paper, fabric, card or metal.

**Week 2:** scan this QR code to watch the video discussing Roy Lichtenstein.



**Week 3:** Create a piece of Artwork that with a coca-cola can. Think of a sound the drink makes when you open the can. Add an 'Onomatopoeia' word: like this example 'Pop' for a champagne bottle. What word will you use?



**Weeks 4 & 5:** Create a 'pop-art' portrait. Start in Week 4 with a basic outline of your face, then add colours and pop art style patterns in Week 5. Watch the video below for some inspiration.





### Thursday 18<sup>th</sup> April 2024

In your book, using a pencil:

1. Draw and label an animal cell and a plant cell.
2. Label the organelles on both cells.
3. Write the function (job) of each of the organelles

**Have you completed your 4 daily goals?**

**Complete 4 daily goals each week to ensure success in**

**Science! 😊**

### Thursday 25<sup>th</sup> April 2024

In your book, complete the following:

- Draw each specialised cell from the knowledge organiser.
- Write a sentence detailing how each cell is specialised for its function (job)

### Thursday 2<sup>nd</sup> May 2024

In your book, complete the following:

- Turn to the page titled 'cells questions'
- Answer questions 1 – 20 in full sentences.
- Self-assess your answers using the answers on the following page

### Thursday 9<sup>th</sup> May 2024

In your book, complete the following:

- Draw a wave diagram and label the amplitude and wavelength.
- Underneath your diagram write a definition for both amplitude and wavelength.

### Thursday 16<sup>th</sup> May 2024

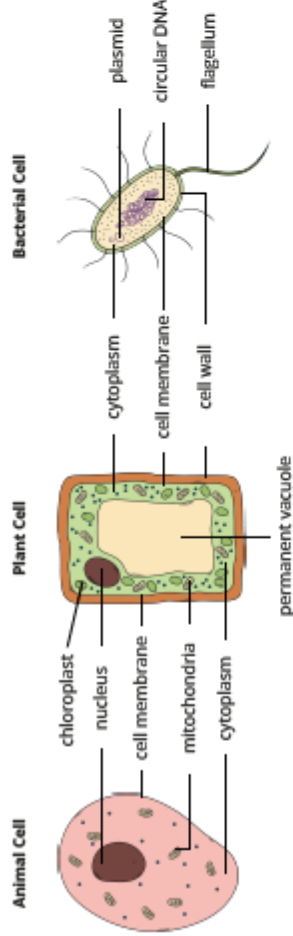
In your book, complete the following:

- Create a poster about ultrasounds. It must include how sound waves are used to create an image, the advantages and disadvantages and their uses.

### Thursday 23<sup>rd</sup> May 2024

In your book list the organ systems in the human body and describe the function (job) of each system.

## KS3 Cells and Organisation Knowledge Organiser



The components of a cell each have different functions.

Sub-Cellular Structure	Function
nucleus	Controls the activities of the cell. It contains genetic material (DNA), which is packaged into structures called chromosomes.
circular DNA	The DNA of bacteria found free in the cytoplasm.
mitochondria	Contain the enzymes needed for aerobic respiration, which releases energy for the cell.
chloroplasts	Contain a pigment called chlorophyll, which absorbs light to provide energy for photosynthesis.
cell wall	Helps to strengthen the cell and provides support for the plant.
cell membrane	Controls the movement of substances into and out of the cell.
cytoplasm	A jelly-like substance that fills the cell, where most chemical reactions occur.
flagellum	A tail-like structure that allows bacteria to move around.
permanent vacuole	Filled with cell sap to keep the cell rigid to support the plant.
plasmids	Plasmids are small rings of DNA that code for specific features, such as antibiotic resistance.

Different cell types contain different sub-cellular structures.

Sub-Cellular Structure	Animal Cell	Plant Cell	Bacterial Cell
nucleus	✓	✓	x
circular DNA	x	x	✓
mitochondria	✓	✓	x
chloroplasts	x	✓	x
cell wall	x	✓	✓
cell membrane	✓	✓	✓
cytoplasm	✓	✓	✓
flagellum	x	x	✓
permanent vacuole	x	✓	x
plasmids	x	x	✓

Levels of Organisation



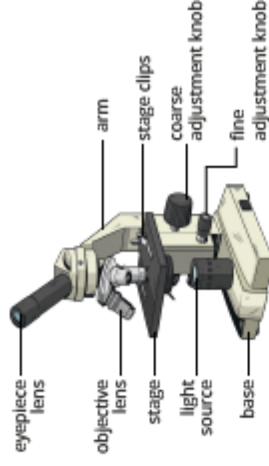
A **cell** is the smallest unit of a living organism. It contains structures needed to carry out life processes.

A **tissue** is a group of cells of the same type.

An **organ** is a group of different tissues working together to carry out a job.

An **organ system** is a group of different organs working together to perform a particular function.

Parts of a Light Microscope



Using a Light Microscope










- Plug in the microscope and turn on the light.
- Place the slide on the stage and hold it in place with the stage clips.
- Turn to the objective lens with the lowest magnification.
- Look down the eyepiece lens and use the adjustment knobs to focus the specimen.
- Increase the magnification by turning to a higher power objective lens, then use the fine adjustment knob to bring the cells back into focus.

Organ System Functions

Organ System	Function
musculoskeletal system	Muscles and bones working together support and move the body.
reproductive system	Produces sperm (males) and eggs (females). In females, this is where the foetus develops.
respiratory system	Takes in oxygen from the air and removes carbon dioxide from blood.
immune system	Protects the body against infections.
digestive system	Breaks down and absorbs food molecules.
circulatory system	Transports substances around the body.

**Specialised Cells**

Each function carried out by the organism is performed by different cells. Each type of cell has slightly different features.

Name	Diagram	Functions	Adaptions
root hair cell		To absorb water and minerals from the soil.	Long protrusion fits between grains of soil and provides a large surface area for the absorption of water and minerals into the cell.
palisade cell		To carry out photosynthesis and make food for the plant.	Lots of chloroplasts to absorb light energy for photosynthesis. Its tall, long shape gives the cell a large surface area to maximise the absorption of light.
sperm cell		To travel to and fuse with an egg cell for fertilisation.	Long tail for movement to the egg and lots of mitochondria to release energy to allow the sperm to move.
muscle cell		To help the body to move.	Contains bands of protein that change shape to contract and relax the muscle. Lots of mitochondria to provide energy for muscle contraction.
nerve cell		To carry nerve impulses around the body.	Long fibres carry electrical impulses up and down the body and branching dendrites at each end connect to other nerves or muscles.
ciliated epithelial cell		To move mucus away from the lungs.	Tiny hairs called cilia to help waft mucus along the airways. Lots of mitochondria release energy for the cilia to move.
red blood cell		To transport oxygen around the body.	Biconcave shape increases the surface area for the diffusion of oxygen. No nucleus so that there is more room for haemoglobin, which binds oxygen molecules.
white blood cell		To fight pathogens which cause disease.	Some can change shape to squeeze out of blood vessels and engulf pathogens. Some can produce antibodies or antitoxins.
egg cell		To be fertilised by the sperm cell.	The cytoplasm contains nutrients for the developing embryo. The membrane changes after fertilisation to stop any more sperm getting in.

**The Skeleton**

The skeleton has several functions:

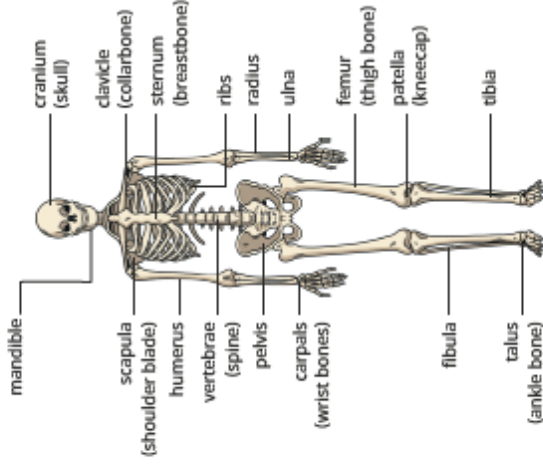
**Support** - The skeleton provides a frame to hold your body upright and keep your organs in place.

**Protection** - Bones are hard and strong to protect important organs such as the heart and the brain.

**Movement** - Your bones and muscles work together to allow your body to move.

**Making blood cells** - Some bones contain a soft tissue called bone marrow. Red blood cells and white blood cells are made in the bone marrow.

The adult body contains around 206 bones. Some are shown below:



**Joints**

**Joints** are found where bones meet. Sometimes these joints are fixed but most joints are flexible to allow the body to move.

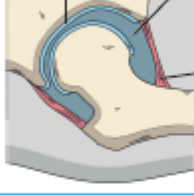
A **hinge joint** allows backwards and forwards movements. Knees and elbows are hinge joints.



A **ball and socket joint** allows movement in all directions. Shoulders and hips are ball and socket joints.



**Cartilage** is a strong, smooth tissue that covers the ends of the bones to protect them from damage.

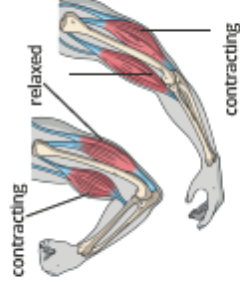


**Ligaments** hold the bones together. **Fluid** in the joints keeps the cartilage slippery to reduce friction.

**Muscles**

Muscles can't push, they can only pull.

A pair of muscles that work together are called **antagonistic muscles**.



This combination of muscles, bones and joints making our bodies move is called **biomechanics**.

## Cells Questions

1. State the 5 sub-cellular organelles in an animal cell
2. State the 8 sub-cellular organelles in a plant cell
3. State the function of the mitochondria of a cell
4. Define "diffusion"
5. What do we mean by dynamic equilibrium?
6. Which substances diffuse into and out of cells?
7. State three adaptations of red blood cells
8. State two adaptations of muscle cells
9. State the function of ciliated epithelial cells
10. State an adaptation of a palisade cell
11. State the function of the cell wall of a cell
12. State the function of the cell membrane of a cell
13. State the function of the cytoplasm of a cell
14. State the function of the nucleus of a cell
15. State two functions of the vacuole of a cell
16. Define "eukaryotic cell"
17. What are the main parts of a light microscope?
18. Why is Robert Hooke associated with microscopes?
19. How do we calculate the total magnification of a light microscope?
20. What do we call living things made of only one cell?

## Cells Answers

1. Nucleus, cell membrane, ribosomes, cytoplasm, mitochondria
2. Nucleus, cell membrane, ribosomes, cytoplasm, mitochondria, cell wall, chloroplast and vacuole
3. Where aerobic respiration occurs in a cell
4. The movement of particles from a high concentration to a low concentration
5. dynamic equilibrium means that molecules still move across a cell membrane but the concentrations remain equal on each side.
6. Oxygen, glucose, carbon dioxide and water diffuse into and out of cells.
7. Red Blood Cells have a large surface area, no nucleus and lots of hemoglobin.
8. Muscle cells have protein fibers to contract and relax and lots of mitochondria to provide energy from aerobic respiration.
9. Ciliated epithelial cells move mucus out of airways.
10. Palisade cells have lots of chloroplasts for photosynthesis
11. Provides support for the cell
12. Controls what enters and leaves the cell
13. Where chemical reactions occur in a cell
14. Contains DNA and controls the function of the cell
15. Stores minerals and sugars and gives structure
16. DNA contained in a nucleus
17. The base, diaphragm, objective lens, eyepiece lens, coarse focus, fine focus, stage.
18. Robert Hooke produced the first sketches of microscope images in his book "Micrografia". He also came up with the term "cells".
19. You calculate total magnification by multiplying eyepiece magnification by objective magnification.
20. Unicellular organisms consist of only one cell.

Sound is caused by vibrations.

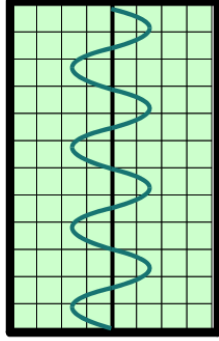
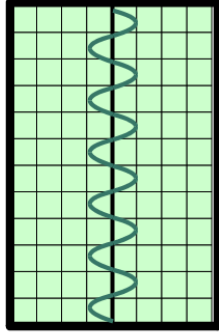
Sound needs a substance to travel through.

This means sound cannot travel through a vacuum, like space.  
In space, no-one can hear you shout.

Sounds waves travel faster through a solid than a liquid like water, but faster through a liquid than a gas like air.

Sounds travels more slowly than light.

The frequency of a wave is how many peaks pass by a fixed point per second.  
Measured in units called Hertz, Hz.

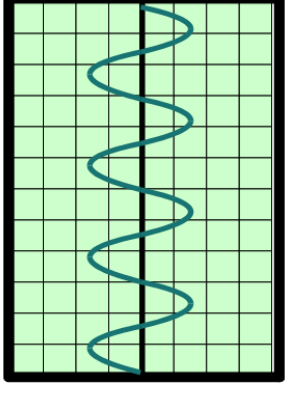
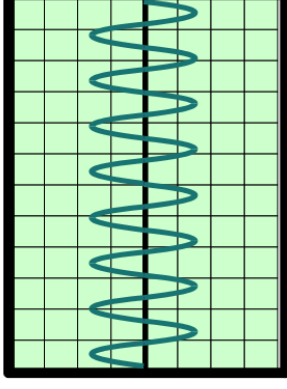


✓ A quiet sound.

✓ A louder sound.

The larger the amplitude of the wave on the trace, louder the sound.

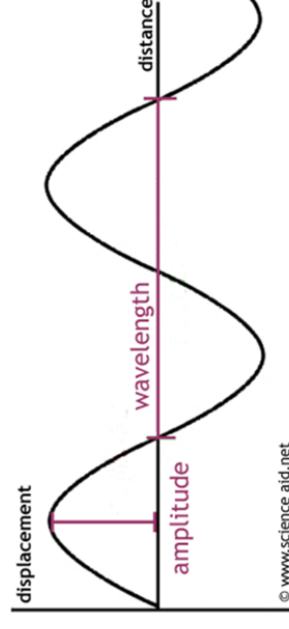
The bigger the waves you can see, the louder the sound.



✓ A high pitch sound. ✓ A low pitch sound.

The longer the wavelength of the wave on the trace, the lower the frequency of the sound.

The more waves you can see, the higher the pitch/frequency.



Reflected sounds are called echoes.



Too much wax in your ear canal (or compacted wax from using cotton buds), can press on your ear drum and reduce the vibrations felt.

Constant loud noises can be extremely damaging to your hearing. Persistent levels above 90dB can result in hearing damage. Levels can be measured in decibels – more than 130dB will cause pain. Above 140dB even short exposure can result in hearing loss.

Tinnitus - noises 'in the ears' and/or 'in the head' with no external source

Loud bangs / accidents / infections can damage the ear drum (although it may repair itself)

Middle ear can get infected (antibiotics may help)

As people age the tiny bones in the inner ear can fuse together, preventing amplification of the vibrations so hearing worsens

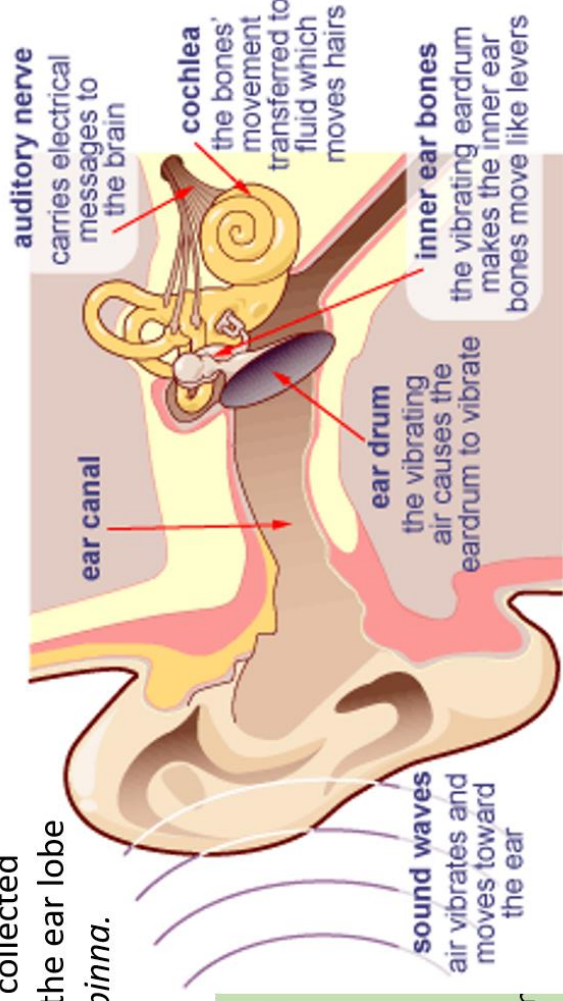
Nerve cells in the cochlea sometimes fail, so the messages are not sent to the brain

Cochlea can be affected by loud noise (constant loud noises can cause hearing loss, and there is no treatment for this)

The auditory nerve takes the signals to the brain.

The waves travel along the ear canal.

Sound waves are collected by the ear lobe or *pinna*.



The cochlea turns the vibrations into electrical signals.

The small bones [ossicles] amplify the vibrations.

The waves make the ear drum vibrate.

Ultrasound is sound waves with frequencies higher than humans can hear.

Ultrasound is used to detect objects and measure distances, e.g. in submarines. Animals such as bats and porpoises use ultrasound for locating prey and obstacles.

Ultrasound can be used in medicine. Scanning the body with ultrasound waves can build up a picture of the body's organs, including the heart, lungs and liver.

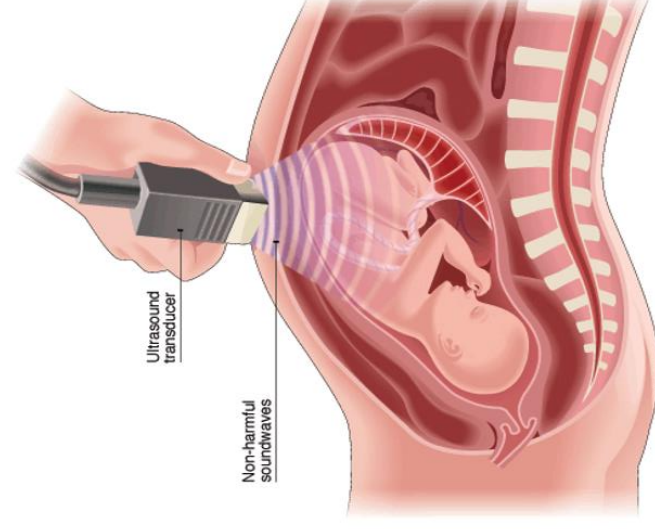
Ultrasound waves can break down kidney stones so they can be removed from the body naturally. This avoids the need for painful surgery.

Ultrasound can be used:

- to measure the speed of blood flow
- to detect gallstones and tumours
- for pre-natal scanning because there is less risk to mother or baby than using X-rays.

Ultrasound has two main advantages over X-ray imaging:

- It's able to produce images of soft tissue.
- It doesn't damage living cells.



# Cricket, anyone?

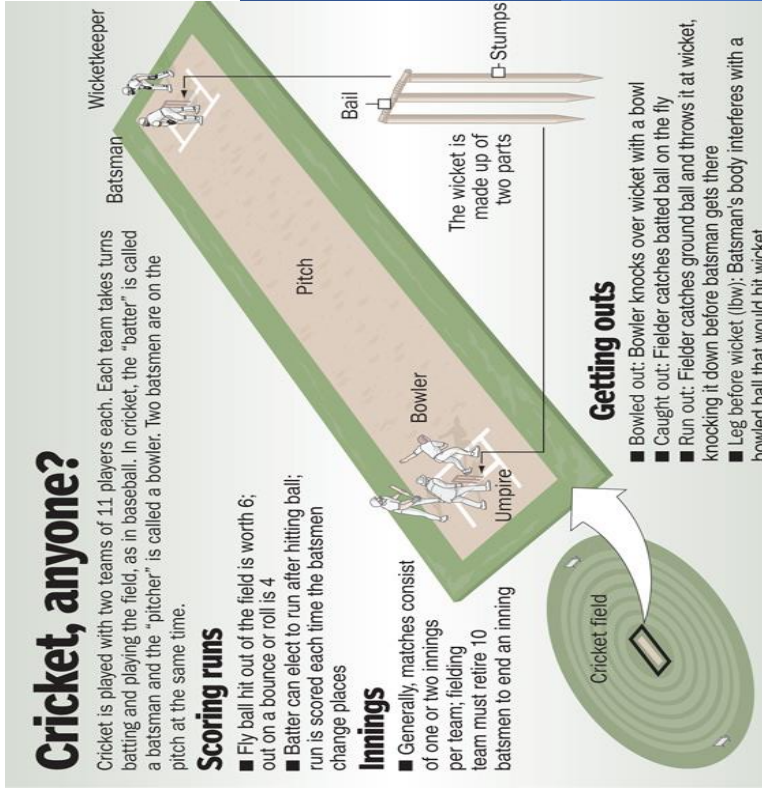
Cricket is played with two teams of 11 players each. Each team takes turns batting and playing the field, as in baseball. In cricket, the "batter" is called a batsman and the "pitcher" is called a bowler. Two batsmen are on the pitch at the same time.

## Scoring runs

- Fly ball hit out of the field is worth 6; out on a bounce or roll is 4
- Batter can elect to run after hitting ball; run is scored each time the batsmen change places

## Innings

- Generally, matches consist of one or two innings per team; fielding team must retire 10 batsmen to end an inning



## Getting outs

- Bowled out: Bowler knocks over wicket with a bowl
- Caught out: Fielder catches batted ball on the fly
- Run out: Fielder catches ground ball and throws it at wicket, knocking it down before batsman gets there
- Leg before wicket (lbw): Batsman's body interferes with a bowled ball that would hit wicket

### Task 4 Outs

Read over the "Getting outs" subheading on the image. Write down all 4 definitions of ways of getting out and cover up the explanations. Self assess yourself by writing up the correct explanation with the definition.

### Task 5 Scoring runs True or False

- 1) If the ball doesn't hit the ground it is 6 points.
- 2) You get 1 point if the ball is caught.
- 3) You get 4 points if the ball goes out the boundary after hitting the ground.

## Cricket bowl



## Equipment



### Task 1

- 1) How many bowlers are on the field at one time.
- 2) How many batsmen are on the pitch at the same time?
- 3) How many players should be on each team?

### Task 2

Scan the safety equipment QR code and read through the table. Write out all the equipment you need and cover up the "purpose box" and based on memory write up the purpose for each equipment.

### Task 3

You are going to do the same again however, this time you are going to cover the equipment list up and match the equipment with the purpose and the "worn on"

## Batting:

1. Grip the cricket bat properly. If you're right-handed, place your left hand on top of the handle with the right hand under it; left-handers place the opposite way.
2. Proper stance. If you're right-handed, stand sideways in the crease (the "safe" area in front of the wicket) with your left shoulder towards the bowler (who "pitches" the ball); left-handed batters do the opposite.
3. Weight movement. Shift your weight from your back foot onto your forefoot to meet the ball.
4. Swing the bat properly. When the ball is pitched, swing the bat backwards in a straight line. The back-swing provides the power for the shot; a good swing clears the top of the wicket.

## Answers (rotate)

- ### Task 1
1. One
  2. Two
  3. 11

Task 2, 3 and 4 is all self assessment and you have the answers yourselves (try to beat your first attempt)

- ### Task 5
1. True
  2. False
  3. True



PERFECT  
PRACTICE  
MAKES  
PERFECT



Learning to Learn



The 'Listen' Project #1