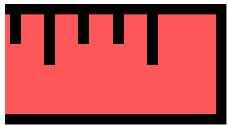




HOME-LEARNING

YEAR 9



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!

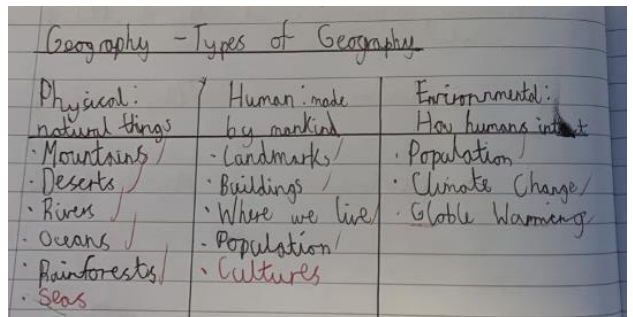
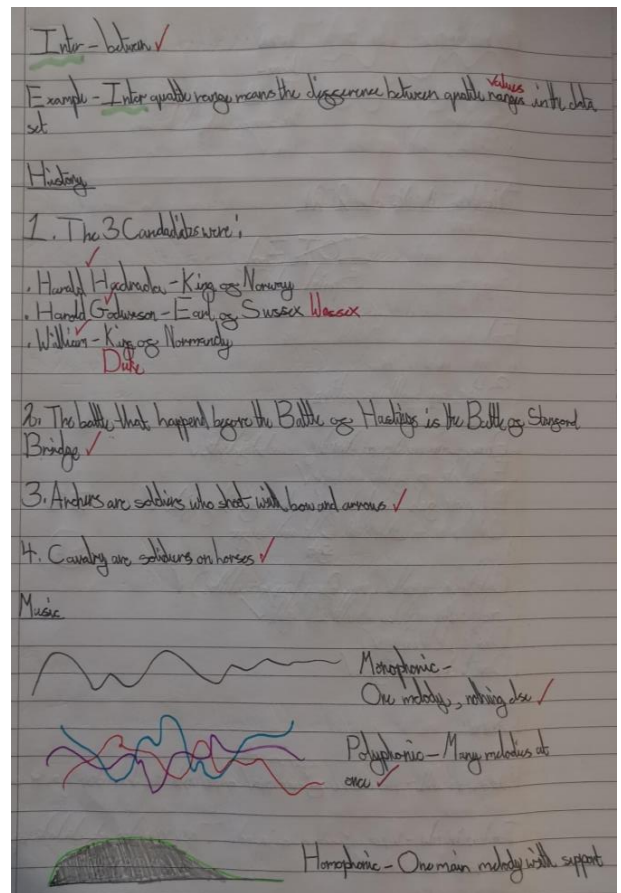
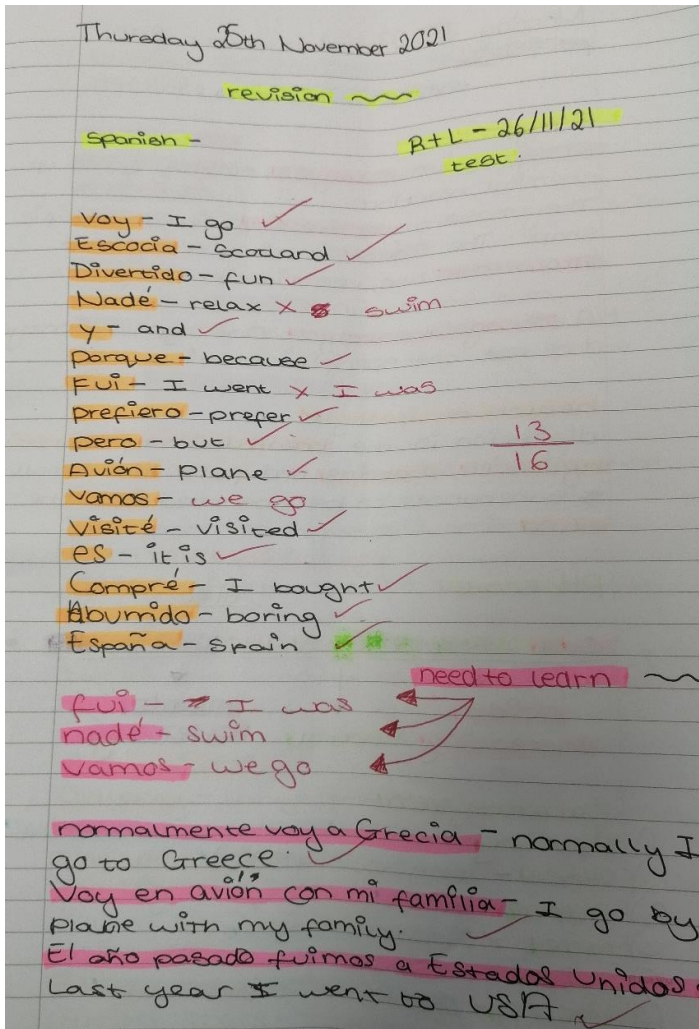


# What does effective home-learning look like?

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 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.



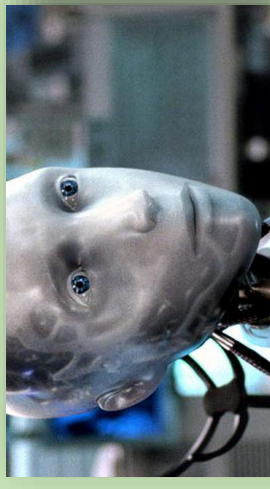
## The God of Dreams...



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?.....

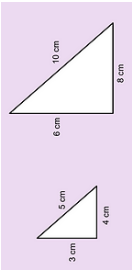

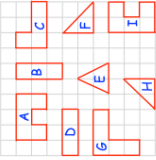
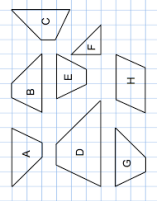

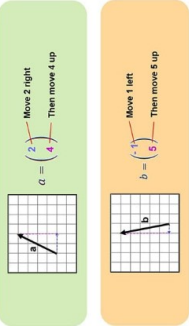


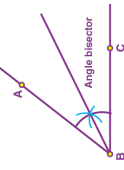




Perhaps one of the biggest questions we can ask is, what makes us human? **Isaac Asimov**, a Russian Science Fiction writer, asked this question by writing about robots. The robot in the story 'I, Robot' begins to ask questions about its own creation and existence. Asimov began to think about how robots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



# Mathematics

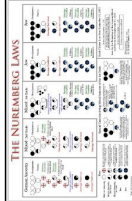
Your Maths Home Learning has two parts:

- 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.



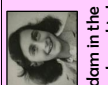
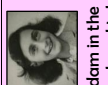
Week	Key Word	Definition	Task	Corbett Code
1	Similar	<p>Shapes are SIMILAR when they are the same shape but different sizes proportionally.</p> <p>Example: All the sides of the larger triangle are <b>double</b> the lengths of the smaller triangle, so these triangles are similar</p> 	<p>Draw a 4cm by 2cm rectangle</p> <p>Now draw two more SIMILAR rectangles</p>	 291
2	Congruent	<p>Shapes are CONGRUENT when they are the same shape AND size</p> <p>Example: Shapes A and I are congruent</p> 	<p>Find any pairs of congruent shapes</p> 	 Scan here 66
3	Vector	<p>Vectors describe movement in magnitude and direction</p> 	<p>Describe the movement of A and B, use the squares and directions</p> 	 Scan here 353a
4	Bisector	<p>A line that divides a line or angle into two equal parts</p> 	<p>Draw an angle of 60o and draw its bisector (label each smaller angle)</p>	 72 Scan here
5	Loci	<p>The path of a point that moves according to a certain rule is a locus. The plural of locus is loci.</p> <p>Bisectors and Bearings are examples of Loci</p>	<p>Watch the video and note down how the boy navigates using Bearings</p> 	 75
6	Enlargement	<p>An enlargement increases or decreases the size of the shape (object). The new shape (image) is a similar shape.</p> <p>⇒ The increase in size from one shape to another is called a scale factor.</p> <p>⇒ The position of the enlarged shape is determined by a point called the centre of enlargement.</p>	<p>Draw a 4cm x 2cm rectangle and enlarge it by a scale factor of 2</p> <p>Extension: Compare this to your answers from SIMILAR week earlier in the term, what do you notice?</p>	 104 Scan here



**Overview**

<p><b>Overview</b></p> <p>The <b>Holocaust</b> was a <b>genocide</b> that took place during World War II, in which up to 17 million people were systematically exterminated by Nazi Germany and its collaborators.</p> <p>Around 6 million Jews were killed, in addition to Romani peoples, ethnic Poles and Slavs, homosexual men, and many other groups. The Holocaust happened after several phases of anti-Semitism in Nazi Germany.</p>	<p><b>Removal of Rights</b></p> <p>The <b>Nuremberg Laws</b> (1935) meant that Jews were fired from jobs, forced to wear a yellow Star of David, stripped of German citizenship, and banned from German schools, amongst many other measures.</p> 	<p><b>Segregation</b></p> <p>Jews were forced out of their homes and into <b>ghettos</b>, which were extremely filthy, with poor sanitation, and were overcrowded. Food supplies were low, and so many people starved to death.</p> 	<p><b>Extermination</b></p> <p>Victims were sent to <b>concentration camps</b>, where many were forced to work in hellish conditions, where many died. Others were sent to the gas chambers. Later, camps opened for the sole purpose of extermination.</p>
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**Key People**

	<p><b>Adolf Hitler</b> (1889-1945)</p> <p>Adolf <b>Hitler</b> was a German politician who was the leader of the Nazi party, Chancellor of Germany from 1933-1945, and the <b>Fuhrer</b> of Germany from 1934-1945. As Germany was unstable following World War I, Hitler began to gain a loyal following through his popular ideas, powerful speeches and charisma. He believed that the superior <b>'Aryan' race</b> was under threat from 'inferior' Jews, disabled people, and other minorities. When he gained power in 1933, Hitler immediately began implementing policies to ensure an 'ethnic cleansing' of Germany - making him the chief initiator of the Holocaust. Seeking 'Lebensraum' (living space) for Germans, he also ordered the invasion of Poland in Sep 1939 which triggered World War II, the deadliest conflict in history. He committed suicide on 30th Apr 1945, with his wife, as the war was lost.</p>	<p><b>Heinrich Himmler</b> (1900-1945)</p> <p>Heinrich Himmler was the 'Reichsfuhrer' (Chief of SS police) throughout Hitler's reign, and was considered as his deputy. He was responsible for the formation of both the <b>Nazi death squads</b> and the <b>extermination camps</b>. A committed anti-Semite himself, it is believed that many ideas involving the Holocaust were actually Himmler's. Realising the war was lost, Himmler tried to negotiate with the Allies without Hitler's knowledge. He committed suicide in British custody.</p> 	<p><b>Anne Frank</b> (1929-1945)</p> <p>Anne Frank was a German-born Jewish girl, who wrote a diary about the time that her family fled Germany and hid in an attic, in Amsterdam in the Netherlands. After years in hiding, they were arrested, and taken to concentration camps. Anne died of Typhus in <b>Bergen-Belsen</b>, only weeks before the concentration camps were liberated. The only survivor from her family, Otto, (her father) published her diary after her death. It has now become one of the most well-read texts in history.</p> 	<p><b>Oskar Schindler</b> (1908-1974)</p> <p>Oskar Schindler was an industrialist and member of the Nazi party, who is credited with saving 1,200 Jews during the Holocaust. He initially employed Jews in the interests of profit, but soon developed relationships with them, and showed initiative, courage, and dedication to save them. As time went on, he had to give Nazi officials increasing bribes to keep his workers safe.</p> 
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Important Events and Life in the Concentration Camps	
<p><b>Germany is defeated in World War I</b></p> 	<p>After WWI, many Germans were angry; many did not approve of the <b>Treaty of Versailles</b>, which placed blame with Germany. The country was also poor in the post-war era, going through an <b>economic depression</b>.</p>
<p><b>Hitler Rises to Power</b></p> 	<p>Poor and disheartened post-war Germany provided a perfect platform for Hitler to grasp power, promising to make Germany strong again. With strong leadership and oratory (speaking) skills, he rose to become <b>Chancellor of Germany</b>.</p>
<p><b>The Warsaw Ghetto</b></p> 	<p>The <b>Warsaw Ghetto</b> was the largest of all of the Jewish ghettos in German-occupied Europe during WWII. 400,000 Jews were imprisoned in only 1.3sq mi. of space. 392,000 died, either in the ghetto or after being transported to camps.</p>
<p><b>Prisoners Arrive at Auschwitz</b></p> 	<p><b>Auschwitz</b> was first constructed to house Polish political prisoners, who began to arrive in May 1940. From early 1942, Auschwitz II became a major extermination site. 1.3 million people were sent there, of whom 1.1 million died.</p>
<p><b>The Final Solution</b></p> 	<p>The <b>'Final Solution'</b> was Nazi Germany's plan for the genocide of all Jews. This resulted in the deadliest phase in which 2/3 of the Jews across Europe were killed.</p>
<p><b>Camps Liberated</b></p> 	<p>As the <b>Allies</b> advanced across Europe, they found camps of sick, starving prisoners. The first camp <b>liberated</b> was <b>Meidanech</b> in July 1944. Auschwitz wasn't until January 1945.</p>
<p><b>Hitler's Suicide</b></p> 	<p>With the Germans facing defeat, Hitler married his long-time love Eva Braun on 29th April. The next day, they committed suicide, reportedly by gunshot, although historians are unsure.</p>
<p><b>Germany Surrenders</b></p> 	<p>The Allies had gradually forced the surrender of <b>Axis troops</b> across Europe in April and early May, 1945. On 7th May, Germany officially surrendered to the Allies, ending European fighting in WWII.</p>
<p><b>Deportation and Transportation</b></p> 	<p>Prisoners were treated like cattle, herded onto crowded trains and locked inside for days as they travelled. Most had no light, food or drink, and only a bucket to use as a toilet.</p>
<p><b>Clothes</b></p> 	<p>After being separated from their families, during registration prisoners had their clothes stripped, their heads shaved, and were given a striped uniform and striped cap to wear.</p>
<p><b>Food</b></p> 	<p>Prisoners, received very little, if any, food. Watery soup was a common lunch meal, with stale bread sometimes provided for dinner.</p>
<p><b>Work</b></p> 	<p>Most prisoners worked outside doing heavy duty jobs such as factory or construction work. They often had to walk miles to work. Due to the insufficient food they were given, and widespread disease, many became too weak to work. They were then shot by <b>SS soldiers</b>.</p>

## Timeline

1933 – Adolf Hitler comes to power.	1935 – The Nuremberg laws took away the rights of Jews.	1939 – The Germans occupy Poland, and force Jews to leave their homes. WWII begins.	1940 – Jews put into concentration camps. Mass murder begins.	1941 – Germany attacks the Soviet Union, Jews across Western Europe are forced into ghettos.	1942 – Nazis discuss the 'Final Solution' of killing all European Jews.	1944 – Nazis take over Hungary and begin deporting 12,000 Jews a day.	1945 – The Nazis are defeated by the Allies to end WWII. The concentration camps are liberated.
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### Key Terms

**Aryan Race:** Adolf Hitler thought that people of Northern European descent were a superior (better) race to all others known as the Aryan Race.

**Auschwitz:** The largest of the German Nazi concentration camps and extermination centers. Over 1.1 million men, women and children lost their lives here

**Axis troops:** ...A military group including Nazi Germany, Italy and Japan who fought against the Allies (which included Britain) in the Second World War.

**Bergen-Belsen:** A Nazi concentration camp in northern Germany. It was originally established as a prisoner of war camp.

**Concentration camps:** A place where people are concentrated and imprisoned without trial. Inmates are usually exploited for their labour and kept under harsh conditions.

**Extermination camps:** Extermination camps were used by the Nazis from 1941 to 1945 to murder Jews and other groups including Roma and Sinti.

**Genocide:** The deliberate killing of a large number of people from a particular nation or ethnic group with the aim of destroying that nation or group.

**Ghettos:** Ghettos were often enclosed districts that isolated Jews by separating Jewish communities from the non-Jewish population. Conditions in ghettos were terrible with a lack of food and high levels of disease.

**Holocaust:** The mass murder of Jewish people under the German Nazi regime during the period 1941-5. More than 6 million European Jews, as well as members of other persecuted groups such as Romani, gay people, and disabled people, were murdered at concentration camps such as Auschwitz.

**Nazi death squads:** Carried out mass shootings of Jews in Eastern Europe.

**Nuremberg Laws (1935):** Antisemitic (against Jews) and racist laws that were introduced in Nazi Germany to separate Jews from other German citizens.

**SS soldiers:** The black-uniformed soldiers of the Nazi Party. SS soldiers were used as guards at concentration and extermination camps.

**The "Final Solution":** The "Final Solution to the Jewish question" was the official codename for the murder of all Jews within reach in Europe.

**The Allies:** The countries that fought with Britain in the First and Second World Wars.

**Warsaw Ghetto:** The largest of the Nazi ghettos during World War II. It was established in November 1940.

### Tasks

#### Task 1

Look at the "Overview" section on the page above. Create a flowchart to show how anti-Semitic policies (actions against Jews) developed between 1933-1945.

#### Task 2

Look at the 'Important Events and Life in a Concentration Camp section' section on the page above. Choose the part you find the most shocking and, using the descriptions and facts, explain why you are most shocked by this event.

#### Task 3

Create a 10-question quiz based on your knowledge organiser. Use this quiz to test someone you know. If they don't know the answer, teach them!

#### Task 4

Go to the video *Survivor Testimony* near the bottom of the page. After you have watched this complete the 'Test your knowledge and inference skills' 3 questions. You can red pen your inferences by clicking 'show answer'.

<https://www.bbc.co.uk/bitesize/topics/zk94jxs/articles/ztt48dp3>



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#### Task 5

Read through **BBC Bitesize** – *The Holocaust* and complete the 10-question quiz at the end to test your knowledge.

<https://www.bbc.co.uk/bitesize/guides/zggmdp3/revision/1>



SCAN ME



# ELEMENTS OF MUSIC 2

## Melody:

**Ostinato:** Identical repeated patterns of notes or rhythms

**Sequence:** Repeated patterns of notes at a higher or lower pitch

**Conjunct/Smooth:** notes move by **step**.... C,D,E

**Disjunct/Leaps:** notes move by **leap**.... C, F#, C#, G#

**Range:** The distance from the lowest to the highest notes, e.g. a wide range

## DYNAMICS:

***p***

Piano means Quiet



***Crescendo***

Get Louder



***Decrescendo***

Get Quieter

***f***

***Forte*** means Loud

The more ***p*** s then the quieter it should be

The more ***f*** s then the louder it should be

***M*** is ***mezzo***, which is Italian for half/middle/medium ... so ***mf*** = a 'bit' loud and ***mp*** = a 'bit' quiet.

## Form:

**How the music is broken up into sections (we use letters to label each section)**

Section A, Section B, Section C, Section D

**Different forms include:**

**Binary Form (A B)**

**Ternary Form (A B A)**

**Rondo Form (A B A C A)** – a repeated main section (A)

**Verse-Chorus structure** - Very similar to **Rondo** form (the chorus repeats)

## Tempo:

**BPM** = Beats per minute

**Presto:** Very Fast

**Allegro:** Fast

**Accel:** Get Faster

**Andante:** Walking Pace

**Rit / Rall:** Get Slower

**Adagio:** Slow

**Rubato:** Change speed to create expression

QR code for Task 5



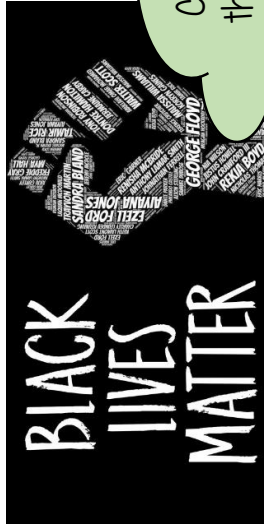
QR code for Task 6



## Tasks:

1. Learn the words in the **melody** box. Test yourself and write any words you can't remember in **red pen**. Then test yourself on these words.
2. Learn the words in the **dynamics** box. Repeat the red pen process above.
3. Learn the words in the **form** box. Repeat the red pen process above.
4. Learn the words in the **tempo** box.
5. Use the QR code in the tempo box to complete a 10 mark quiz.
6. Use the QR code in the **bottom right corner** to listen to a **Youtube clip**. See if you can choose a **minimum of 1 word** from the **melody, dynamics and tempo** boxes to describe the music.

# EQUALITY & JUSTICE



## KEY WORDS

As we study think about...

Does religion challenge racism?

Who else has made an impact by challenging injustice?

How can we address current unfairness?

How can Britain make up for its slave trade history?

Can you ever understand fully the experiences of someone of a different race? How?

Should we remove memorials to people who have been unjust?

What can you do to challenge injustice?

<b>GEORGE FLOYD</b>	Died in May, 2020. His death by a police officer was filmed and shown globally. It sparked worldwide condemnation and protest.	<b>WILLIAM WILBERFORCE</b>	A Christian politician who led the fight to end slavery
<b>PROTEST</b>	A statement or action expressing disapproval of something	<b>EQUALITY</b>	The state of treating people as equals. fairly and without prejudice
<b>REPARATION</b>	Making amends for a past wrong	<b>QUAKERS</b>	A Christian group who advocate non-violence and equality
<b>WHITE PRIVILEGE</b>	A system whereby white people have an advantage over other ethnic groups	<b>DISCRIMINATION</b>	Treating someone unfairly based on a difference eg. race. religion. gender
<b>RACISM</b>	Treating someone unfairly because of their race	<b>JUSTICE</b>	Receiving fair reward or punishment for an action

SOME TASKS FOR YOU TO COMPLETE

Draw a symbol for each key word

Create a mind map on the facts and effects of racism

Create a key word quiz or flash cards

Write your answers to 5 reflection questions

Investigate an organisation that campaigns for fairness

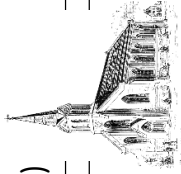
Write a persuasive argument against racism (using religious quotes)

Research a news event about racism or unfairness

## STATISTICS

A person of BAME background is:

- 3 times more likely to be arrested than a white person
- Less likely to hold a top management job (only 1.5% of top managers are BAME)
- More likely to be a victim of a hate crime (43% increase in hate crimes in 2015)



## THE CHURCH & SLAVERY

- The Church of England profited from slavery through donations and shares in businesses involved in the trade
- Many prominent Christians were slave owners

## BUT

- William Wilberforce and other Christians challenged the trade and brought it to an end
- Jesus taught love, freedom and equality for all people regardless of race

“We are not in the business of revenge, we are in the business of justice!”

Revd. Al Sharpton  
BLM campaigner



Does the way we treat refugees show fairness and justice?

Do our shopping habits encourage modern day slavery?



## THE EFFECTS OF RACISM

- Loss of confidence in yourself and others
- Wasted talent and opportunities
- Broken communities
- Anger, frustration and resentment
- Depression and feelings of low self-worth which may lead to suicidal thoughts

## HIDDEN HISTORY

Investigate the life of someone who has fought for equality without recognition. e.g.



Mary Seacole



Emily Davison



Steve Biko

“There is neither... slave nor free, neither male nor female, for you are all one in Christ”

The Bible







## Computing Department Knowledge Organiser: Year 9 Digital Graphics

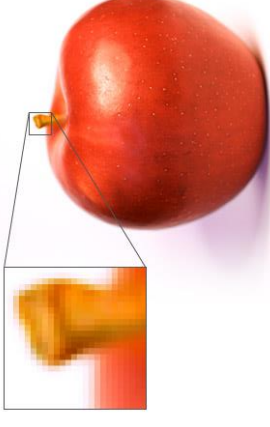
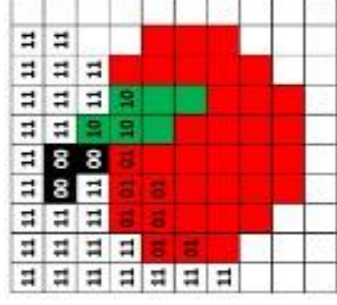
### Digital Graphics

Digital graphics feature in many areas of our lives and play a very important part in today's world. Digital graphics combine text and images to present an idea or to communicate messages in an eye-catching and effective way.

### Bitmap Graphics

Bitmap graphics are made from tiny individual squares of colour called pixels. Each pixel is assigned a binary value which represents a colour. They can be edited by changing the colour values of the individual pixels. Bitmap graphics lose quality when enlarged. They are used graphics for digital camera images, scanned images, magazine covers and photographs.

### Example



### BITMAP

### Vector Graphics


Vector graphics are made from scalable shapes such as straight lines and curves using coordinates and geometry. They can be edited through moving, enlarging and rotating of the individual shapes. Vector graphics can be enlarged without losing any quality. They are used in animated movies, AutoShapes in Microsoft Office and for graphics that may require rescaling such as logos.

### Example




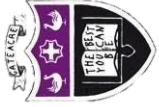
### VECTOR



Resolution	
<p>Resolution refers to the density of pixels which have been used in the creation of a bitmap image. The higher the resolution the better quality of the image and the greater the file size. It measured in dots per inch (DPI). A graphic which is designed to be viewed on digital devices should be created with DPI of 72 whereas a graphic designed to be printed as a magazine advert or birthday card should be created with a DPI of 300.</p>	

Colour Depth	
	<p>Colour depth refers to the number of bits which are used to record the colour of each pixel in a bitmap image.</p> <ul style="list-style-type: none"><li>• An image with a colour depth of 1-bit means each pixel could be either black or white.</li><li>• An 8-bit image means that each pixel can consist of any one out of 256 colours (2 to the power of 8).</li><li>• A 24-bit image known as a "True colour" image means that each pixel can consist of any one out of 16.7 million colours.</li></ul>



# Computing Department Knowledge Organiser: Year 9 Digital Graphics

## Compression

The file size of high quality graphics can be reduced using data compression. There are two main types, lossy and lossless.

### Lossy Compression

- Image data is permanently deleted
- Similar colours are made the same
- Reduction in the number of colours used
- Loss of quality is normally unnoticeable
- Can reduce the file size of JPG images

### Lossless Compression

- Similar image data is grouped into one reference
- No reduction in the quality of images
- Can reduce the file size of TIFF and PNG images



## File Formats

The most commonly used graphics file formats are:

- JPG
- PNG
- GIF
- TIFF

Format	Advantages	Disadvantages
JPG	Millions of colours, lossy compression and usually file size is small.	Quality of image reduced after compression. File size can be large.
PNG	Lossless compression so no reduction in quality when compressed. Transparent background.	Limited to 256 colours. Large file size so not ideal for web use.
GIF	Small file size.	
TIFF	Lossless compression so no reduction in quality when compressed. Very high quality.	



# Preparing for GCSE DRAMA!

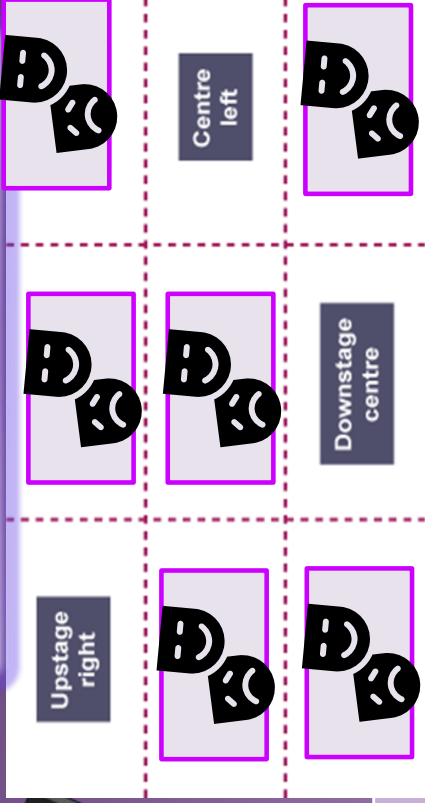
The scheme in focus during this half term is:

Script exploration/ DESIGN

## New Skill/Technique Retrieval

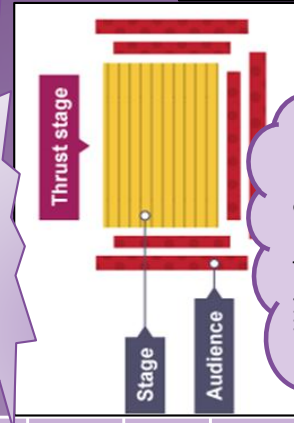
Knowledge/ skill	Definition
<b>Mime</b>	The theatrical technique of expressing an idea or mood or portraying a character entirely by gesture and bodily movement without the use of words.
<b>Characterisation</b>	Developing and portraying a personality through voice and movement.
<b>Verbatim</b>	A form of documented theatre in which plays are constructed from the precise words spoken by people interviewed about a particular event or topic.
<b>Subtext</b>	This is content underneath the dialogue. Under dialogue, there can be conflict, anger, competition, pride, showing off, or other implicit ideas and emotions. Subtext is the unspoken thoughts and motives of characters — what they really think and believe.
<b>Monologue</b>	A speech by one actor, performed to the audience — tells the audience what the character is thinking, feeling and the situation they may be in.
<b>Thought tunnel/ conscience alley</b>	Provides the opportunity to explore a decision, problem or dilemma. A useful strategy for exploring any kind of dilemma faced by a character. The class forms two lines facing each other.
<b>Theatre in education</b>	Theatre in Education (TIE) is a process that uses interactive theatre/drama practices to help aid the educational process
<b>Vocal Skills</b>	When an actor changes the tone/pitch of their voice to suit the character they are playing
<b>Direct address</b>	Speaking directly to the audience to break the fourth wall and destroy any illusion of reality.
<b>Movement</b>	Where we move to on and around the stage avoiding the blocking another actor.
<b>Alienation effect</b>	It involves the use of techniques designed to distance the audience from emotional involvement in the play through jolting reminders of the artificiality of the theatrical performance.
<b>Transition</b>	This is the process in which something changes from one state to another
<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.

## Stage positioning

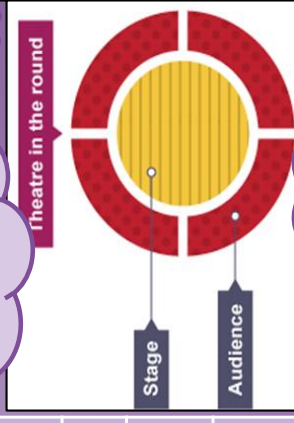


**Audience**

## Stage Types

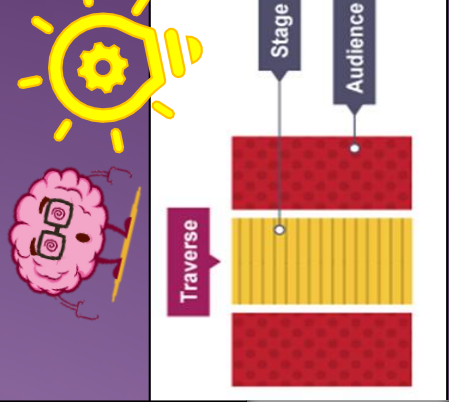
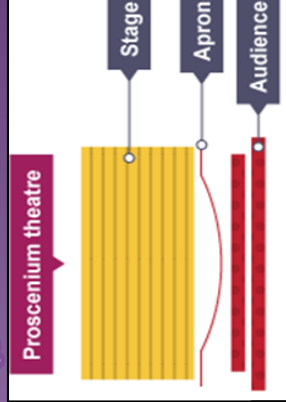


Write down 3 interesting facts about it and share with your family!



Scan the QR code and complete the tasks!

**Task 1:**  
Research Shakespeare's 'The Globe Theatre'.



# Setting you up for GCSE Drama Success – the knowledge in this table is KEY for Section A of Component 1 of the GCSE course! Join our **Cloud 9 Crew!**

## Role and responsibilities

<b>Playwright</b>	This is the name given to the person who writes the play.
<b>Performer</b>	A performer is an actor or entertainer who realises a role or performance in front of an audience.
<b>Understudy</b>	An actor who studies another's role so that they can take over when needed.
<b>Lighting designer</b>	The lighting designer is responsible for designing the lighting states and, if required, special lighting effects for a performance. The final design will result in a lighting plot which is a list of the lighting states and their cues.
<b>Sound designer</b>	The sound designer is responsible for designing the sound required for a performance. This may include underscoring, intro and outro music as well as specific effects. The final design will result in a sound plot which is a list of the sounds required and their cues.
<b>Set designer</b>	The set designer is responsible for the design of the set for a performance. They will work closely with the director and other designers so that there is unity between all the designs and the needs of the performance.
<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>Puppet designer</b>	The person who designs the puppets for a performance.
<b>Technician</b>	A person who works backstage either setting up technical equipment such as microphones or rigging lights before a production or operating technical equipment during a performance.
<b>Director</b>	A director is in charge of the artistic elements of a production. A director will often have the initial creative idea ('concept') for a production, will work with the actors in rehearsal, and will collaborate with designers and the technical team to realise this idea in performance.
<b>Stage manager</b>	The Stage Manager is in charge of all aspects of backstage, including the backstage crew. They will oversee everything that happens backstage before, during and after a performance. During the rehearsal period, the Stage Manager and their team will make sure that all props are found or made, scene changes are rehearsed and smooth, and all other aspects of backstage are prepared. They are also in charge of the rehearsal schedule.
<b>Theatre manager</b>	This is the person who is responsible for and manages the front-of-house team who deal with the audience during the production (for example, the box office manager, ushers and similar staff).

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Scan the QR Code and watch the video: 	Scan the QR code and catch up on The Drama Mega-Scene issues! 	Sketch out the different stage types and match them with the right title. 	Scan the QR code to take you to the Script Exploration section of BBC Bitesize: 	Scan the QR Code and explore the Bitesize AQA Drama GCSE space 	What stage position are our pesky drama faces covering? Create your own 'Stage Position Puzzle' and test your family! 

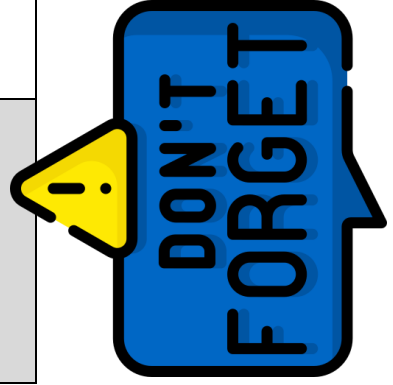


# Spanish

Go to [languagenut.com](https://www.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 shopping vocabulary.
Tuesday 25 <sup>th</sup> April	Complete assigned tasks practising shops vocabulary.
Tuesday 2 <sup>nd</sup> May	Complete assigned task practising directions vocabulary.
Tuesday 9 <sup>th</sup> May	Complete assigned reading tasks on invitations.
Tuesday 16 <sup>th</sup> May	Complete assigned translation task on celebrations.
Tuesday 23 <sup>rd</sup> May	Complete assigned writing task on celebrations.



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

**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

**Dashes:** A pair of dashes that can be used either side of a subordinate clause to show your opinion and can also create humour

**Imperatives:** A polite command to encourage your audience to agree with your opinion or visit the place you are writing about

**Facts, statistics & opinions:** A mix of statements that are true and supported by percentages or numbers and your personal thoughts about a place  
**2Ad (double adjective) sentence:** A sentence that includes 2 ambitious descriptive words separated by a comma

**Sensory Imagery:** A description that includes the 5 senses; smell, taste, sight, touch and sound  
**-ing sentence starters:** Sentence that begin with a verb ending in -ing to enable the reader to imagine the journey that you are taking them on

## **Y9 Persuasive Writing Knowledge Organiser Travel Writing**

### **Key features of a travel blog:**

- It should be written in first person
- It should be written in the past tense
- Language can be adapted to match the members of your audience
- The purpose will be to give your experience and opinion and persuade the audience to agree or to see your point of view
- Laid out in 5 paragraphs. Take a new paragraph for each new topic.
- You should adopt a lively and engaging tone
- It should take your reader on a journey through the city of Liverpool
- Each paragraph should state the place you have visited, who it is suitable for and why, what you did and why you enjoyed it.

## Helpful Information for Home-Learning Tasks

**Blog** – An online text which enables people to share their experiences with a wide audience.

**Phileas Fogg** – Protagonist in the novel *Around the World in 80 Days*.

**The Liver Birds** – 2 copper statues that are perched on top of The Royal Liver Buildings and stand 18ft tall. They look out over the city of Liverpool and the River Mersey.





## Y9 Home Learning Tasks – Travel Writing

### Week 1 – Phileas Fogg

Imagine you are Phileas Fogg. Write a letter to a loved one at home, describing your journey so far. Detail the methods of transport, the weather, the place, the people and anything else you can think of.

### Week 2 – Research

Ask somebody in your house about their favourite place that they have visited and ask them to explain what makes it so special. Write up your findings.

### Week 3 – Paris

Using the internet or your mobile phone, research another place of interest to visit in Paris that you can write about in your guide. The *Stade de France* or the *Palace of Versailles* are two ideas.

### Week 4 – Anecdote

Write two of your own **anecdotes** about a place in Liverpool that you have visited. You must use a **pair of dashes** and create a humorous tone. The first must be a positive anecdote and the second will be negative (but not offensive). They do not have to be true events but they must be realistic.

### Week 5 – Writing a Blog

Using the internet or your mobile phone, research 10 tips on how to write an engaging blog. E.g. Use humour.

### Week 6 – The Liver Birds

Imagine you are Bertie or Bella, looking out over the city of Liverpool and the River Mersey. Write a short description of what you can **see**, **hear**, **taste**, **feel** and **smell**.



### Week 7 – Facts/Opinions

Write 3 proven facts about the city of Liverpool.

Write 3 opinions about the city of Liverpool.

## AP2 Revision: Travel Writing

### 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

**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

**Dashes:** A pair of dashes that can be used either side of a subordinate clause to show your opinion and can also create humour

**Imperatives:** A polite command to encourage your audience to agree with your opinion or visit the place you are writing about

**Facts, statistics & opinions:** A mix of statements that are true and supported by percentages or numbers and your personal thoughts about a place

**2Ad (double adjective) sentence:** A sentence that includes 2 ambitious descriptive words separated by a comma

**Sensory Imagery:** A description that includes the 5 senses; smell, taste, sight, touch and sound

**-ing sentence starters:** Sentence that begin with a verb ending in -ing to enable the reader to imagine the journey that you are taking them on

### **Key term:**

**Travel Blog** – An online text which enables people to share their experiences with a wide audience.

### **Key features of a travel blog:**

- It should be written in first person
- It should be written in the past tense
- Language can be adapted to match the members of your audience
- The purpose will be to give your experience and opinion and persuade the audience to agree or to see your point of view
- Laid out in 5 paragraphs. Take a new paragraph for each new topic.
- You should adopt a lively and engaging tone
- It should take your reader on a journey through the city of Liverpool
- Each paragraph should state the place you have visited, who it is suitable for and why, what you did and why you enjoyed it.

## **AP2 Travel Writing Revision Tasks**



**Task 1:** Write a detailed description of New York using the 5 senses and start your paragraph with an -ing verb.

*For example: Approaching Times Square I was mesmerised by...*

Extract from Bill Bryson's Notes from a Small Island

One weekend I took a train to Liverpool. They were having a festival of litter when I arrived.

Citizens had taken time off from their busy activities to add crisp packets, empty cigarette boxes, and carrier bags to the otherwise bland and neglected landscape.

**Task 2:** Read the extract above about Bryson's trip to Liverpool.

What impression is created? Use key words and techniques from the extract to support your ideas.

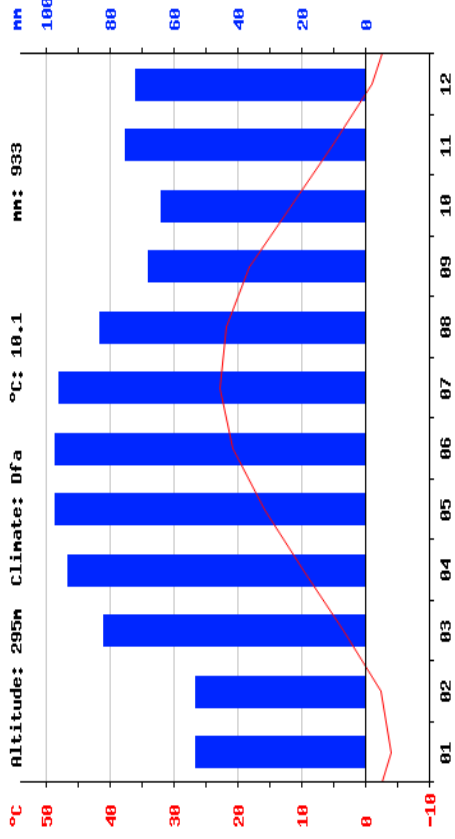
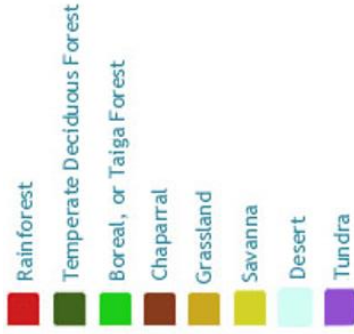
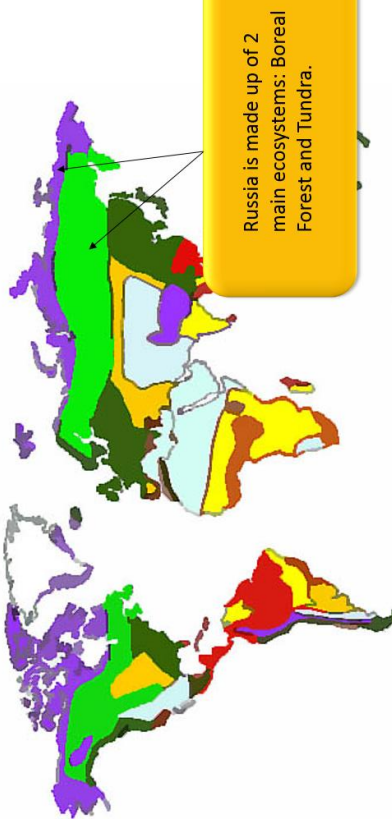
Sentence starter: *Bryson creates a \_\_\_\_\_ impression of Liverpool through language choices such as " \_\_\_\_\_". This suggests...*

**Task 3:** Write a blog about your favourite place that you have visited (It does not have to be abroad!)

Use description and persuasive techniques. Don't forget your catchy headline!

Consider

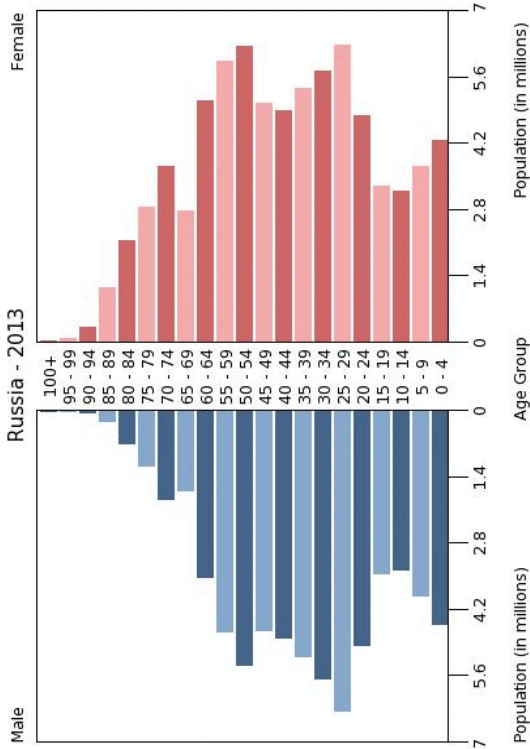
- Where did you go?
- What was there to see and do?
- What was most memorable about the trip?
- How can you make your blog entry entertaining?
- Feelings throughout and after the visit.



**Physical Geography:** the study of the natural features of the Earth's surface e.g. mountains and oceans.  
**Human Geography:** the study of people and human activity e.g. cities and population.  
**Environmental Geography:** the interaction between humans and the physical world.

<b>Tundra</b>	Alaska, Canada, Siberia, Russia	Low precipitation (less than 250mm)	Below 0.C most of year. Can reach 15.C in summer.	Few plants, mostly lichens& mosses. Trees stunted.	Polar Bear, Caribou, Arctic Hare.
<b>Boreal Forest</b>	Russia	Total annual rainfall 500mm	Temperatures range between -10.C and 15.C	Evergreen trees with needles (less transpiration) & thick bark (protection from cold), shallow roots	Deer, wolves, black bears

## YEAR 9 RUSSIA KNOWLEDGE ORGANISER



- Task 1: Revise the key definitions for physical, human and environmental geography. Cover and try to write your own definitions.
- Task 2: Look over the key characteristics of Tundra and Boreal Forest. Memorise the key facts. Cover and write down as much as you can remember, then using red pen and anything you have forgotten.
- Task 3: Create some diagrams/sketches to try to help you remember the key characteristics of Tundra and Boreal Forests, focusing in on the last two columns of vegetation and animals.
- Task 4: Looking at the climate graph for Russia pick 2 months and explain what the weather might be like. Focus on rainfall and temperature- use the graph to quote data making sure you use the correct units e.g. mm.
- Task 5: Extension. Ask your geography teacher for a world map (they will have a pile of world maps in their room) and mark on the 7 continents and 5 main oceans, then mark on Russia and the countries that touch their border. Then shade in pencil crayon the areas of Tundra and Boreal Forest using the map above to help you.
- Task 6: Extension. Find out what a population pyramid is using Google and then using the example on the left explain what the graph shows- quote data/numbers. Pick out any patterns/anomalies.





# DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

YEAR 9

## Topic: Wooden Storage Box



### My Tool Box



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



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



**Band facer/Belt Sander**  
Used to sand rough material smooth.



**Screwdriver**- Used when driving screws into wood.



**Scroll-Saw/Hegner-Saw**-  
Used to cut complicated shapes in thin material.



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



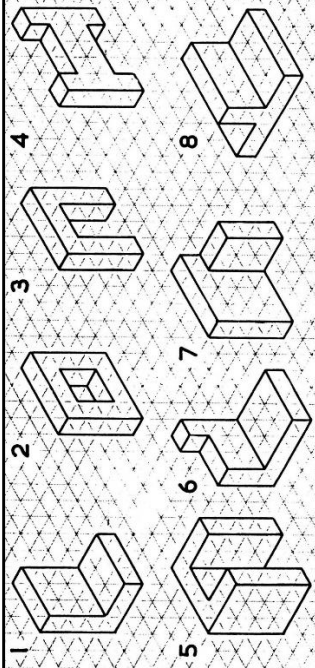
**Pin Hammer** – Used to knock panel pins and small nail into wood.

### Focused topics

**Product analysis** is a form of primary research and involves looking at existing products, working out how they were made and seeing what features might be useful to any possible new design. Product analysis can often be referred to as **ACCESS FM**.

<b>A</b>	is for	<b>Aesthetics</b>	
<b>C</b>	is for	<b>Cost</b>	
<b>C</b>	is for	<b>Customer</b>	
<b>E</b>	is for	<b>Environment</b>	
<b>S</b>	is for	<b>Size</b>	
<b>S</b>	is for	<b>Safety</b>	
<b>F</b>	is for	<b>Function</b>	
<b>M</b>	is for	<b>Material</b>	

**Isometric drawing** is way of presenting designs/drawings in three dimensions.



### Key Terms

**Aesthetics**- how humans perceive and judge objects according to their attractiveness

**Computer aided design (CAD)** The process of creating a 2D or 3D design using computer software.

**Composite material** - materials composed of two or more component parts.

**Medium-density fibreboard (MDF)** – an engineered wood product made from wood fibres and resin binder (glue)

**Plywood** – is a composite material. It is composed of individual plies/veneers of wood. It is very strong due to the way the plies are put together. The grain of each ply is positioned at ninety degrees to the pieces of ply above and below it.

**Standard component** – an individual part or component, manufactured in thousands or millions, to the same specification

### 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 on here.

**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 technical drawing- Exploded drawing



**More information about smart, modern and composite materials:**





# ART KNOWLEDGE ORGANISER

**YEAR 9**  
**Term 3-**  
**Celebrities in Art.**

## Topic: Celebrities in Art (Responding to the work of Argadol)

### History/Context:

During this term, you'll be exploring the theme of 'Celebrities' and looking at the work by French Pop Artist 'Argadol' and the work by American Pop Artist Mark Andrew Allen. Through your own drawings and research on both of these artists work you will be creating your own artwork inspired by a Liverpool celebrity and Liverpool landmarks.

Argadol is known for his bright, bold portraits of icons and superheroes. Argadol creates his artwork using media and will fill up the entire composition and background with messages, symbols and other pop culture references. Argadol has a unique style and uses spray and acrylic paint, stencils, collage and paint pens in his work. Argadol loves music, in particular classic rock. His dream was to be a musician. Music still plays a crucial role in his art. He will always paint while listening to music. Argadol tries to show deep messages in his artwork. All his artworks have black borders and black drips, to signify the dark side of society, showing that everything isn't as it can appear. Mark Andrew Allen is heavily influenced by Pop Art, Society and Popular Culture. He loves to create artwork which is mainly inspired by American cities and capture the culture of that city. Mark Andrew Allen loves to use bold colours in his work and combine different techniques together for example paint, collage and digital techniques. He blends urban street art with his background of typography and mixed media collage. Mark Andrew Allen was inspired by so many different artists including Robert Rauschenberg, Jasper Johns, Andy Warhol, Jackson Pollock and Roy Lichtenstein. He has met many of the artists who inspire him.

### Home Learning tasks:

**Week 1:** Practice key literacy vocab 1-5 - look, cover, write, check, correct x 3. Read the sentences again and check for understanding.

**Week 2:** Practice key phrases 6 -12 - look, cover, write, check, correct x3. Read the sentences again and check for understanding.

**Week 3:** Produce a creative mind map and add as many words as you can to describe the work of Argadol and Mark Allen and how they are inspired by Iconic celebrities Landmarks and Identity. Add your key literacy words and maybe some small drawings.

**Weeks 4 and 5:** Research the work of both Argadol and Mark Andrew Allen. Try to find out a little bit about how they created their work and what inspires them. Create a page of patterns and symbols inspired by the work of Mark Andrew Allen and Argadol. The images below may help you.

**Week 6:** Create a research page about your favourite celebrity. This could be a footballer, musician, artist, author, film star etc. On your research page display information about them and find relevant images which describe and capture their identity. Draw symbols and patterns in the style of either Mark Andrew Allen or Argadol to capture your celebrity's identity.

### Key Literacy Vocabulary:

**CELEBRITY:** A famous person, usually in entertainment or sport.

**CONTEMPORARY:** Current or present day.

**POLITICAL MESSAGES;** A message for political reasons. This could be related to a political idea or party.

**CONSUMERISM:** The consumption or use of goods and or services which are paid for.

**ICONIC:** Widely recognised and established.

**POP ART:** Art in which common place/everyday objects are used to create artwork, using bold colours and strong black outlines.

**STREET ART:** Art which is created by artists who experience and want to portray city life.

**URBAN:** Characteristics of city life, for example sky scrapers, traffic, busy people, poverty, wealth from banking, nightlife, shops etc.

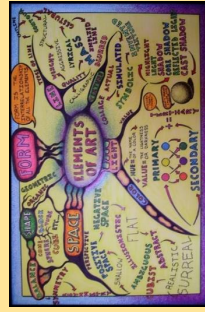
**MIXED MEDIA:** A variety of materials, techniques and processes used to create artwork.

**INSPIRED:** An influence which motivates an artist to work in a particular way.

**SYMBOLS:** Images/Ideas/Words which mean something other than what it is.

**IDENTITY:** The qualities, beliefs personality traits which characterize a person or group.

### Week 3: Mind Map



Use this example to help your layout of your mind map. Put Argadol's and Mark Andrew Allen's name in the middle of your mind map.



You can see examples of Argadol's and Mark Andrew Allen's artwork on these websites.

### Weeks 4 and 5: Artist Research



You can find out how Argadol and Mark Andrew Allen create their artwork on these websites.

### Week 6: Patterns



To help you create your Pattern page



Example of a celebrity Collage/information page.





### 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, using a pencil:

1. Define the differences between eukaryotic cells and prokaryotic cells.
2. Draw and label an example of a prokaryotic cell

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

In your book, complete the following:

- Read through the investigation method for how pH affects the rate of reaction of amylase.
- Write the method into your book

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

In your book, complete the following:

- Draw each of the blood vessels in your book.
- For all 3 describe who each are adapted for their function (how are they specialised to complete their job).

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

Draw a diagram of how enzymes work within the body (lock and key) and name the 3 main enzymes involved in digestion in humans.



# Cell Biology Knowledge Organiser – Foundation and Higher

## Required Practical

### Microscopy Required Practical

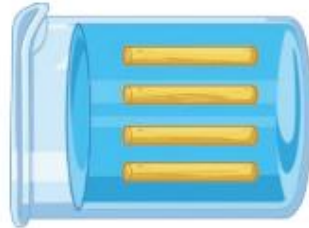
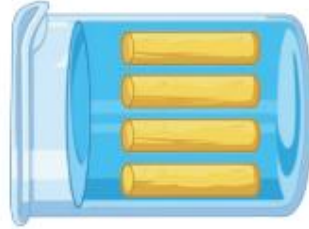
- Includes preparing a slide, using a light microscope, drawing any observations – use a pencil and label important observations.



### Osmosis and Potato Practical

- Independent variable – concentration.
- Dependent variable – change in mass.
- Control variable – volume of solution, temperature, time, surface area of the potato.

The potato in the sugar solution will lose water and so will have less mass at the end; the potato in the pure water solution will gain water.



## Specialised Cells

When a cell changes to become a specialised cell, it is called differentiation.

Specialised Cell	Function	Adaptation
sperm	To get the male DNA to the female DNA.	Streamlined head, long tail, lots of mitochondria to provide energy.
nerve	To send electrical impulses around the body.	Long to cover more distance. Has branched connections to connect in a network.
muscle	To contract quickly.	Long and contain lots of mitochondria for energy.
root hair	To absorb water from the soil.	A large surface area to absorb more water.
phloem	Transports substances around the plant.	Pores to allow cell sap to flow. Cells are long and joined end-to-end.
xylem	Transports water through the plant.	Hollow in the centre. Tubes are joined end-to-end.

## Equations and Maths

### Equation

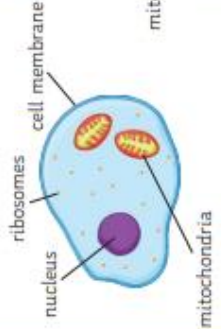


### Maths Skills

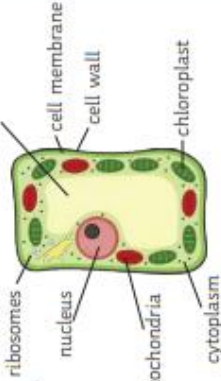
Conversions:  
 Micrometres to millimetres: divide by 1000.  
 Standard Form:  
 $0.003 = 3 \times 10^{-3}$   
 $5.6 \times 10^{-5} = 0.0056$

## Prokaryotic and Eukaryotic Cells

### Animal Cells



### Plant Cells

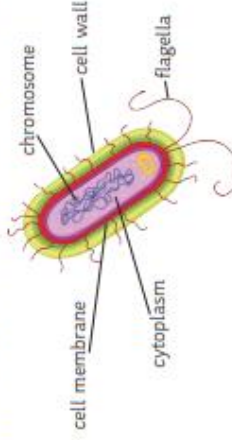


Plant and animal cells have similarities and differences:

	Animal	Plant
nucleus	✓	✓
cytoplasm	✓	✓
chloroplast	✗	✓
cell membrane	✓	✓
permanent vacuole	✗	✓
mitochondria	✓	✓
ribosomes	✓	✓
cell wall	✗	✓

### Bacterial Cells

Bacterial cells do not have a true nucleus, they just have a single strand of DNA that floats in the cytoplasm. They contain a plasmid.



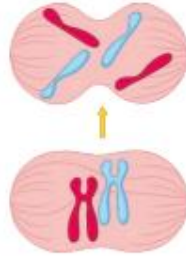
**Chromosomes and Mitosis**

In the nucleus of a human cell there are 23 pairs of **chromosomes**. Chromosomes contain a double helix of **DNA**. Chromosomes have a large number of genes.



The **cell cycle** makes new cells.

Mitosis: DNA has to be **copied/replicated** before the cell carries out mitosis.



**Key Vocabulary**

- active transport
- alveoli
- chromosome
- diffusion
- eukaryotic
- gas exchange
- mitosis
- multicellular
- osmosis
- prokaryotic
- undifferentiated
- replicated
- specialised
- villi

**Stem Cells**

**Embryonic stem cells** are **undifferentiated** cells, they have the potential to turn into any kind of cell.



**Adult stem cells** are found in the bone marrow, they can only turn into some types of cells e.g. blood cells.

**Uses of stem cells:**

- Replacing faulty blood cells;
- making insulin producing cells;
- making nerve cells.

Some people are against stem cell research.

For Stem Cell Research	Against Stem Cell Research
Curing patients with stem cells - more important than the rights of embryos.	Embryos are human life.
They are just using unwanted embryos from fertility clinics, which would normally be destroyed.	Scientists should find other sources of stem cells.

**Stem Cells in Plants**

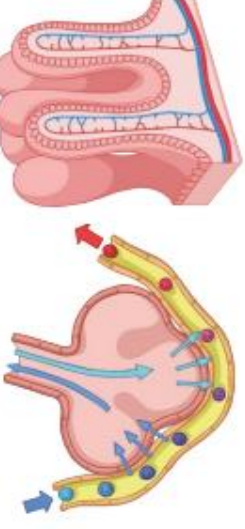
In plants, stem cells are found in the **meristem**. These stem cells are able to produce clones of the plant. They can be used to grow crops with specific features for a farmer, e.g. **disease resistant**.

**Exchange - Humans**

**Multicellular** organisms have a large surface area to volume ratio so that all the substances can be exchanged.

**Gas exchange: Lungs**

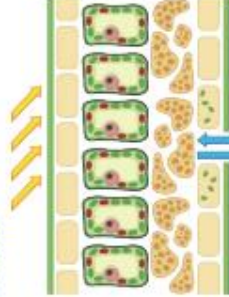
The alveoli are where gas exchange takes place. They have a large surface area, moist lining, thin walls and a good blood supply.



**Villi: Small Intestine**

Millions of villi line the small intestine increasing the surface area to absorb more digested food. They are a single layer of cells with a good blood supply.

**Exchange in Plants**



The surface of the leaf is flattened to increase the surface area for more gas exchange by diffusion. Oxygen and water vapour diffuse out of the stomata. Guard cells open and close the stomata, controlling water loss.

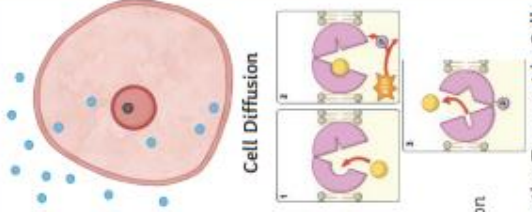
**Key Processes**

**Diffusion** is the spreading out of particles from an area of higher concentration to an area of lower concentration.

**Cell membranes** are semi-permeable, only small molecules can get through.

**Osmosis** is the movement of water molecules across a partially permeable membrane from a region of higher concentration to a region of lower concentration.

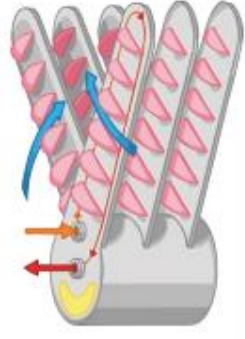
**Active transport** is the movement of substances against the concentration gradient. This process requires energy from respiration.



**Active Transport in Cells**

**Exchange in Fish**






Fish have a large surface area for gas exchange. These are called **gills**. Water enters the fish through the mouth and goes out through the gills. The oxygen is transported from the water to the blood by **diffusion**. Carbon dioxide diffuses from the blood to the water. Each gill has **gill filaments** which give the gills a large surface area. **Lamellae** cover each gill filament to further increase the surface area for more gas exchange. They have a **thin surface layer** and **capillaries** for good blood supply which helps with diffusion.





# AQA GCSE Biology (Combined Science) Unit 2: Organisation

## Principles of Organisation

				
<b>cell</b>	<b>tissue</b>	<b>organ</b>	<b>organ system</b>	<b>organism</b>
Cells are the basic building blocks of all living things.	A group of cells with a similar structure and function is called a tissue.	An organ is a combination of tissues carrying out a specific function.	Organs work together within an organ system.	Organ systems work together to form whole living organisms.

## Food Tests (Required Practical)

What are you testing for?	Which indicator do you use?	What does a positive result look like?
<b>sugar</b>	Benedict's reagent	Once heated, the solution will change from blue-green to yellow-red.
<b>starch</b>	iodine	Blue-black colour indicates starch is present.
<b>protein</b>	biuret	The solution will change from blue to pink-purple.
<b>lipid</b>	sudan III	The lipids will separate and the top layer will turn bright red.

## Effect of pH on the Rate of Reaction of Amylase (Required Practical)

**Iodine** is used to test for the presence of starch. If starch is present, the colour will change to blue-black.

The **independent variable** in the investigation is the pH of the buffer solution.

The **dependent variable** in the investigation is the time taken for the reaction to complete (how long it takes for all the starch to be digested by the amylase).

**Method:**

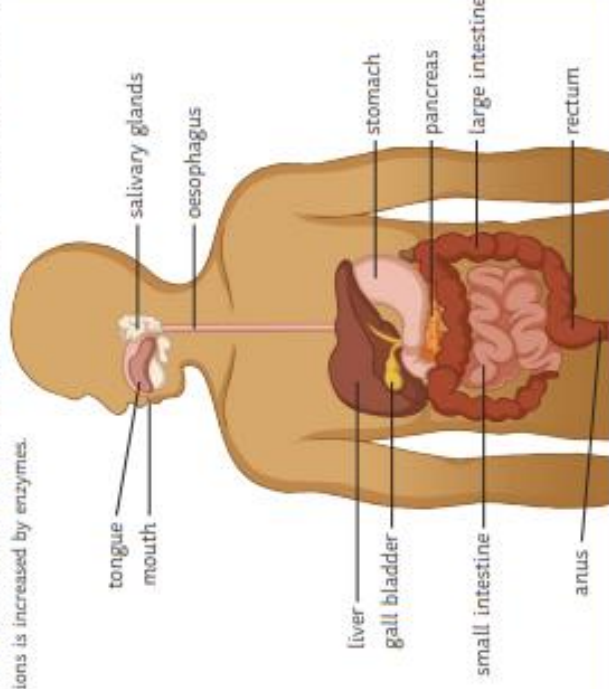
- Use the marker pen to label a test tube with the first value of pH buffer solution (pH 4) and stand it in the test tube rack.
- Into each well of the spotting tiles, place a drop of iodine.
- Using a measuring cylinder, measure 2cm<sup>3</sup> of amylase and pour into the test tube.
- Using a syringe, measure 1cm<sup>3</sup> of the buffer solution and pour into the test tube.
- Leave this to stand for five minutes and then use the thermometer to measure the temperature. Make a note of the temperature.



- Add 2cm<sup>3</sup> of starch solution into the test tube, using a different measuring cylinder to measure, and begin a timer (leave the timer to run continuously).
- After 10 seconds, use a pipette to extract some of the amylase/starch solution, and place one drop into the first well of the spotting tile. Squirt the remaining solution back into the test tube.
- Continue to place one drop into the next well of the spotting tile, every 10 seconds, until the iodine remains orange.
- Record the time taken for the starch to be completely digested by the amylase by counting the wells that were tested positive for starch (indicated by the blue/black colour change of the iodine). Each well represents 10 seconds of time.
- Repeat steps 1 to 8 for pH values 7 and 10.

## The Digestive System

The purpose of the digestive system is to break down large molecules into smaller, soluble molecules, which are then absorbed into the bloodstream. The rate of these reactions is increased by enzymes.



## AQA GCSE Biology (Combined Science) Unit 2: Organisation

### Enzymes



An enzyme is a biological **catalyst**; enzymes speed up chemical reactions without being changed or used up.

This happens because the enzyme lowers the **activation energy** required for the reaction to occur. Enzymes are made up of chains of amino acids folded into a globular shape.

Enzymes have an **active site** which the **substrate** (reactants) fits into. Enzymes are very specific and will only catalyse one specific reaction. If the reactants are not the complementary shape, the enzyme will not work for that reaction. Enzymes also work optimally at specific conditions of pH and temperature. In extremes of pH or temperature, the enzyme will **denature**. This means that the bonds holding together the 3D shape of the active site will break and the active shape will deform. The substrate will not be able to fit into the active site anymore and the enzyme cannot function.

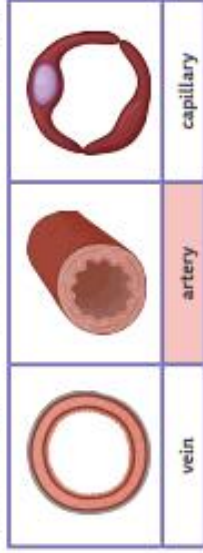
Enzyme	Reactant	Product
amylase	starch	sugars (glucose)
protease	protein	amino acids
lipase	lipid	glycerol and fatty acids

The products of digestion are used to build new carbohydrates and proteins and some of the glucose is used for respiration.

**Bile** is produced in the **liver** and stored in the gall bladder. It is an **alkaline** substance which **neutralises** the hydrochloric acid in the stomach. It also works to **emulsify** fats into small droplets. The fat droplets have a higher **surface area** and so the rate of their digestion by lipase is increased.

### The Heart and Blood Vessels

The **heart** is a large muscular organ which **pumps blood** carrying oxygen or waste products around the body. The **lungs** are the site of **gas exchange** where oxygen from the air is exchanged for waste carbon dioxide in the blood. Oxygen is used in the **respiration** reaction to release energy for the cells and carbon dioxide is made as a waste product during the reaction.



The three types of blood vessels, shown above, are each adapted to carry out their specific function.

**Capillaries** are narrow vessels which form networks to closely supply cells and organs between the veins and arteries. The walls of the capillaries are only **one cell thick**, which provides a short **diffusion pathway** to increase the rate at which substances are transferred.

The table below compares the structure and function of arteries and veins:

	Artery	Vein
direction of blood flow	away from the heart	towards the heart
oxygenated or deoxygenated blood?	oxygenated (except the pulmonary artery)	deoxygenated (except the pulmonary vein)
pressure	high	low (negative)
wall structure	thick, elastic, muscular, connective tissue for strength	thin, less muscular, less connective tissue
lumen (channel inside the vessel)	narrow	wide (with valves)

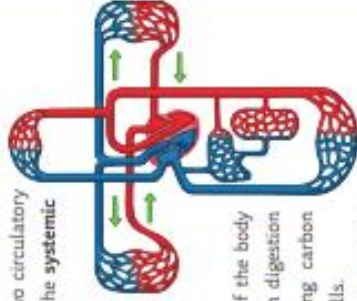
### The Heart as a Double Pump

The heart works as a **double pump** for two circulatory systems; the **pulmonary** circulation and the **systemic** circulation.

The pulmonary circulation serves the lungs and bring deoxygenated blood to exchange waste carbon dioxide gas for oxygen at the **alveoli**.

The systemic circulation serves the rest of the body and transports oxygen and nutrients from digestion to the cells of the body, whilst carrying carbon dioxide and other waste away from the cells.

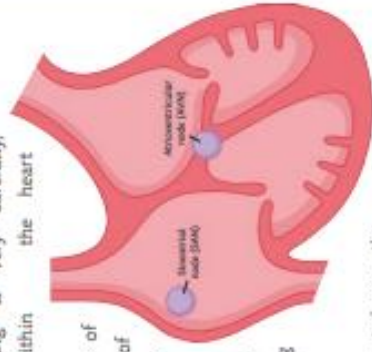
The systemic circulation flows through the whole body. This means the blood is flowing at a much higher pressure than in the pulmonary circuit.



### The Heart as Pacemaker

The rate of the heart beating is very carefully, and automatically, controlled within the heart itself.

Located in the muscular walls of the heart are small groups of cells which act as pacemakers. They produce electrical impulses which stimulate the surrounding muscle to contract, squeezing the chambers of the heart and pumping the blood.



The **sino-atrial node (SAN)** is located near the right atrium and it stimulates the atria to contract.

The **atrio-ventricular node (AVN)** is located in between the ventricles and stimulates them to contract.



# Cricket, anyone?

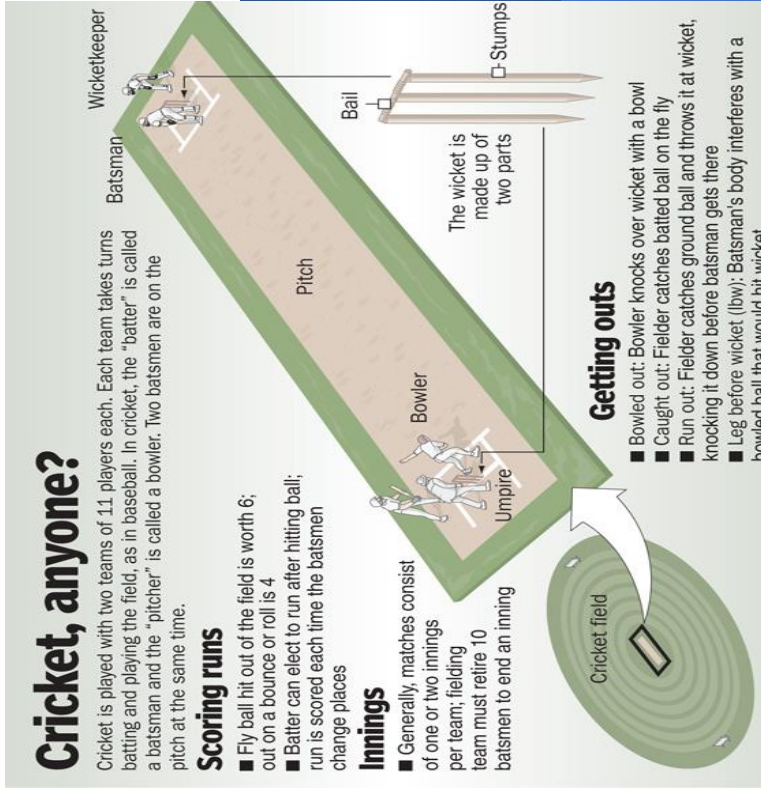
Cricket is played with two teams of 11 players each. Each team takes turns batting and playing the field, as in baseball. In cricket, the "batter" is called a batsman and the "pitcher" is called a bowler. Two batsmen are on the pitch at the same time.

## 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 ball
- 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

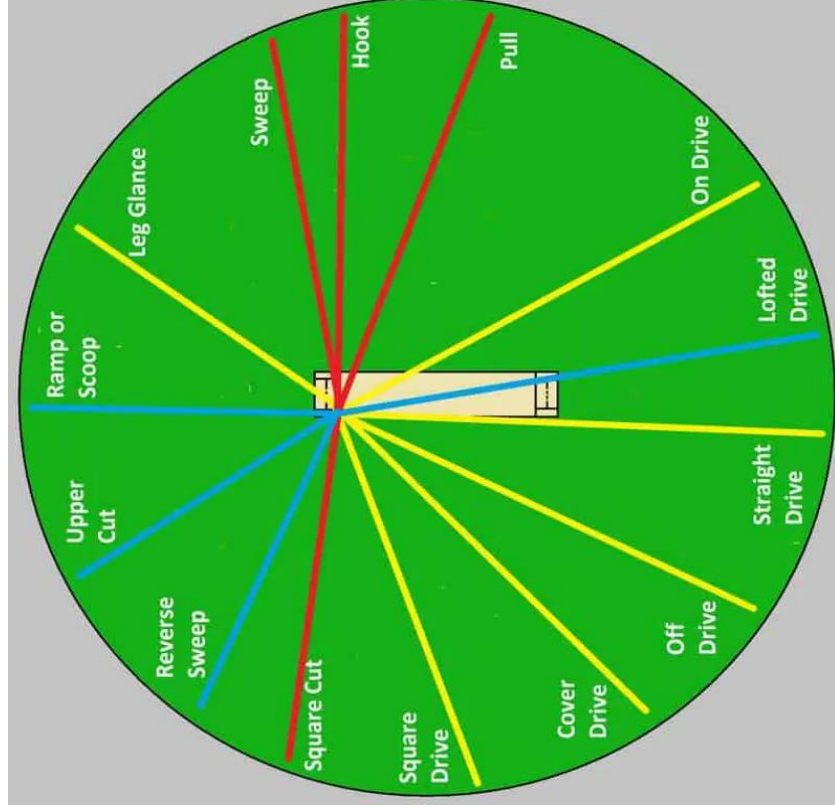
Task 2, 3 and 4 is all self assessment and you have the answers yourselves (try to beat your first attempt)

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





# Cricket shots for a right handed player



## Task 6

Draw the lines of the diagram and write a list of all the shot names. Then self assess your knowledge by matching up the shot names with the lines.

Scan to watch the visual demonstrations of the shots



Components of fitness	How it is used
Power	To be able to bat the ball with force to score 6 points
Reaction time	To react to the ball being thrown towards your wickets. This may require you to react to any spin and bounces from the ground.
Coordination	Hand eye coordination is needed as you are using your hands to hit the ball but looking at the ball and the free spaces with your eyes
Flexibility	You need flexibility to adjust your wrist action for the variety of shots you having to do.

PERFECT  
PRACTICE  
MAKES  
PERFECT



*SCAN ME*

Learning to Learn



*SCAN ME*

The 'Listen' Project #1