# Knowledge Organiser

## Year 9

# Cycle 2

Name:

Tutor Group:

## What is a Knowledge Organiser and why are they important?

A knowledge organiser is designed to summarise the key information, concepts, and vocabulary for a specific topic or unit of work in each subject. Its purpose is to help students:

- o Understand what they are expected to learn.
- o Make connections between ideas.
- o Retain and recall essential knowledge more effectively.
- o Support independent study and revision

Your Knowledge Organiser contains the essential knowledge that we expect every student to know. Regular use of the Knowledge Organiser helps you to recap, revise and revisit what you have learnt in lessons. This can be part of your homework in some subjects or as independent revision The aim is to help remember this knowledge in the long term and to help strengthen your memory.

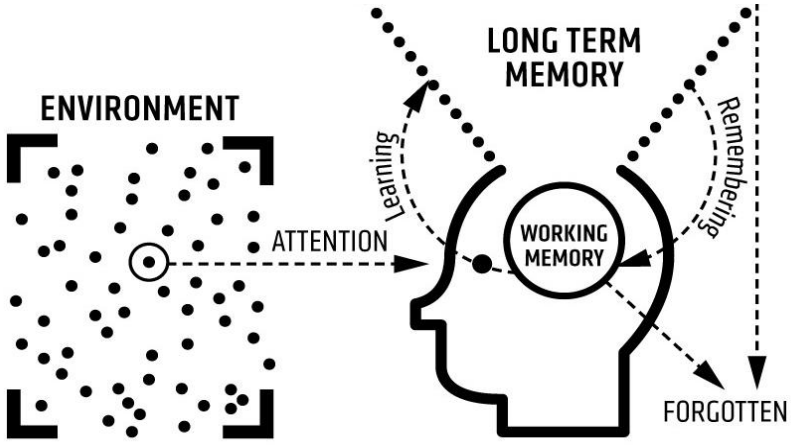
Each cycle there is an assessment in every subject and you will be assessed on the knowledge from your Knowledge Organiser; the more you revisit information the more likely it will be remembered for lessons, assessments and exams.

### How we learn anything

We learn by focusing our attention on something. If we are distracted by other things in our environment (eg mobile phones, listening to music) it will affect how much/what we learn.

Information we pay attention to goes into our working memory, but our working memory is not very good and we quickly and easily forget things.

Learning happens when we think about, process or practise doing something so that it is stored in our long-term memory. Even then it can still be forgotten if we do not regularly think about it and go over it. *We remember what we think about*. Using your Knowledge Organiser outside of lessons helps you to remember things in the long-term.



# Homework in Year 7-9

**The purpose of homework**

Homework plays a crucial role in reinforcing what you learn in the classroom, helping you to develop a deeper understanding of the material. It encourages independent learning, time management, and responsibility: skills that are essential for success both in school and in life.

Homework fosters a strong work ethic and a sense of discipline, preparing you for future academic and professional challenges. Homework is not just about completing tasks, it is about building lifelong learning habits. Learning is defined as a change in the long-term memory. You attend 5 hours of lessons per day, which is a lot of new information being taken in. Without additional opportunities to practise remembering, much of that information would be quickly forgotten.

**Homework expectations**

In Years 7-9 we expect every student to complete a maximum of 1 hour of homework a day, 4 days a week in the following subjects: English, Maths, Science, History, Geography, French/Spanish and RPE using the following timetable:

| | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
|---|---|---|---|---|---|
| **Week A** | English<br>Maths<br>Science | English<br>Maths<br>Science | English<br>Maths<br>Science | History<br>Geography | No homework |
| **Week B** | English<br>Maths<br>Science | English<br>Maths<br>Science | English<br>Maths<br>Science | French or Spanish<br>RPE | No homework |

Whilst homework is not formally set weekly/fortnightly in other subjects, you may still be provided with tasks to help further your learning, which we would strongly encourage you to complete. You should regularly review the Knowledge Organiser for all subjects to help your learning.

**How do I do my Homework?**

There are two types of homework that you will complete: Sparx Online (English, Maths and Science) and Knowledge Organiser homework (History, Geography, RPE and French/Spanish).

| Platform | Subject | What to do | Reason we do it | How checked |
|---|---|---|---|---|
| Sparx | Sparx Maths | Homework is completed online. Complete the maths questions set weekly. Each student is set around 1 hour of questions per week. Book work codes must be written down in homework books. | Sparx Maths provides additional practice on topics that have been recently covered in class. This allows students to revisit and help embed mathematical procedures that may otherwise be forgotten. | Weekly check by teacher using online platform. Parents kept informed of progress by email. |
| | Sparx Reader (English) | Homework is completed online. Students read a book of their choice in sections and are asked comprehension questions at the end of each section. Students must earn a set number of Sparx Reader Points (SPR) to complete the homework. This should usually take around 1 hour per week. | We know that reading is essential for students to be able to access the curriculum, yet 1 in 4 students come to us in Year 7 at least one year below their chronological reading age. Sparx Reader encourages students to build positive reading habits and strengthen fluency and comprehension. | |
| | Sparx Science | Homework is completed online. Complete the science questions set weekly. Each student is set around 1 hour of questions per week. | Sparx Science provides questions to ensure students regularly revisit the key concepts that are required in Science. | |
| Knowledge Organisers | History<br>Geography<br>RPE<br>French/Spanish | Using the Knowledge Organiser, complete the questions/tasks for the relevant subjects set according to the date | The Knowledge Organisers contain questions that directly relate to the content that students have learned in lessons. Regular review ensures that students embed the learning in the long-term memory. In French/Spanish students will practise learning and using key vocabulary. | Fortnightly check by teacher in lessons. Teachers will check the blue homework exercise books (provided for students) for completion of the questions. |

For Thursday homework in your blue knowledge book you will always write the date, subject heading and ensure that they are underlined with a ruler.

# Knowledge Organiser Contents Page

**18th December**
**DO ALL TASKS**

| **Dictatorships consolidation** | **Dictatorships consolidation** |
| --- | --- |
| **Focus –**<br><br>**Task:** Look back through your work on the dictatorships. Create a glossary of 10 keywords, defined for the topic in your homework book. | **Focus – chronology**<br><br>**Task:** Look back through your work on dictatorships. Create a timeline of the key events that took place in your homework book.<br><br>**Criteria:**<br>- Create a timeline with a labelled start and end date<br>- Describe 8 events, including the date and specific information about what happened<br><br>**Challenge:** Add drawings to make your timeline memorable! |

**15th Jan**
**Do all tasks**

| **Topic: WW2**<br>**What was the policy of appeasement and why did WW2 begin?** | **Topic - The Holocaust** |
|---|---|
| After World War I ended in 1918, many countries in Europe wanted to avoid another war. Britain and France believed that keeping peace was the most important goal. During the 1930s, Germany's new leader, Adolf Hitler, began breaking the rules of the Treaty of Versailles — the peace agreement that had limited Germany's army and territory.<br>Hitler rebuilt Germany's military and started taking back land that Germany had lost after World War I. Instead of stopping him, Britain and France followed a policy called *appeasement*. This meant giving in to some of Hitler's demands in the hope that he would be satisfied and peace would be kept. For example, in 1938, Britain and France allowed Germany to take over part of Czechoslovakia called the Sudetenland.<br>However, appeasement did not stop Hitler. In March 1939, Germany took over the rest of Czechoslovakia, and in September that year, it invaded Poland. This time, Britain and France decided enough was enough. They declared war on Germany on September 3, 1939 — and World War II had begun.<br>Many historians now believe that appeasement gave Hitler the confidence to become more aggressive, making war more likely rather than preventing it. | The Holocaust was the systematic, state-organised murder of around six million Jewish people by Nazi Germany and its helpers during World War II. It took place between 1941 and 1945 under Adolf Hitler's rule. The Nazis believed that some groups of people, especially Jews, were "inferior" and blamed them for Germany's problems. This racist belief, called antisemitism, was at the heart of Nazi ideas.<br>When the Nazis came to power in 1933, they began passing laws that took away Jewish people's rights. Jews were forced out of schools, jobs, and public life. When war began in 1939, conditions grew far worse. Jewish people were forced into overcrowded ghettos, where many starved or died of disease.<br>From 1941 onwards, the Nazis began the "Final Solution" — their plan to kill every Jewish person in Europe. Millions were sent by train to extermination camps such as Auschwitz-Birkenau, Treblinka, and Sobibor. Many were murdered in gas chambers, while others died through starvation, forced labour, or brutal treatment.<br>The Holocaust also targeted Roma (Gypsies), disabled people, and others the Nazis considered "undesirable." When the war ended in 1945, the world learned the full horror of what had happened. Today, the Holocaust is remembered to honour the victims and to remind future generations of the need to stand up against hatred and prejudice. |
| **Homework questions**<br>1. What was the main aim of the policy of appeasement?<br>2. Which countries followed this policy in the 1930s?<br>3. What event finally caused World War II to begin?<br>4. Why do some historians think appeasement failed? | **Homework Questions**<br>1. Who were the main victims of the Holocaust?<br>2. What beliefs led the Nazis to commit these crimes?<br>3. How did the Nazis carry out the Holocaust?<br>4. Why is it important to remember the Holocaust today? |

**29TH Jan**
**Do all tasks**

## Topic – Escalation of antisemitism in Nazi Germany

**Context** -

**1933: The Boycott of the Jewish Shops -** SA stood in front of Jewish shops, discouraging people to enter. They painted the star of David on shop doors and windows, and led acts of physical violence. But, most Germans ignored the boycott and it was a Saturday (Jewish Sabbath) so most Jewish shops were closed.

**1935: The Nuremberg Laws -** Nazi government passed two laws which became known as the Nuremberg Laws.
– The Reich Citizenship Law: only those of German blood could be German citizens. Jews lost their citizenship, right to vote and hold government office.
- The Law to protect German Blood and Honour: This forbade marriage or sexual relations between Jews and German citizens.

**1938: Kristallnacht -**Goebbels organised anti- Jewish demonstrations which involved attacks on Jewish property, shops, homes and synagogues. Windows were smashed, resulting in the night being called 'the night of broken glass.' 100 Jews were killed, 20,000 sent to concentration camps and 7,500 Jewish businesses destroyed.

**Homework questions**

1. What is a boycott?
2. How did the Nuremberg Laws impact Jews?
3. What happened on the Night of Broken Glass?
4. Summarise how the treatment of Jews in Germany changed between 1933 – 1938.

## Topic – Jewish Ghettos

**Context -**

•Ghettos were often enclosed districts that isolated Jews by separating Jewish communities from the non-Jewish population and from other Jewish communities.
•After the Nazis occupied Poland in 1939, they began segregating Jews in ghettos, usually in the most run-down area of a city.
•In larger centres, ghettos were shut in by walls, fences or barbed wire. No one could leave or enter without a special permit.
•Each community was ordered to set up a Judenrat (Jewish Council), which would be responsible for enforcing German orders.

By mid-1941, nearly all Jews in occupied Poland had been forced into these overcrowded districts. In the Warsaw ghetto, by far the largest, 490,000 Jews and a few hundred Roma and Sinti (Gypsies) struggled to survive, enduring extreme hardship.

•The living conditions in the ghetto were very difficult. Density of population was extreme, there were 146,000 people per km which meant 8 to 10 people per room on average.
•Jews were allowed to bring only the absolute minimum with them – usually personal belongings and bedclothes. That meant instant poverty .
•The Nazis deliberately limited food supplies to the absolute minimum which caused near starvation amongst the population.
•Smuggling food, mainly by children, from the 'Aryan side' was the only option of providing the ghetto with supplies.
•Malnutrition, overpopulation and lack of medical care brought typhus and tuberculosis.
•It is estimated that 500,000 Jews died in the ghettos of disease and starvation.

**Homework Questions**

1. Summarise what a ghettos was.
2. What were conditions like in the Jewish ghettos?

**12th Feb**
**Do all tasks**

| Topic - The Final Solution | Topic - Auschwitz |
|---|---|
| The “Final Solution” was the name used by Nazi Germany for their plan to kill all Jewish people in Europe during World War II. Before the war, Jewish families lived in almost every European country. When the Nazis came to power in 1933, they began to pass laws that took away Jewish people’s rights, jobs, and homes. After World War II began in 1939, their actions became much more violent and organised.<br>At first, Jewish people were forced to move into crowded ghettos — walled parts of cities where food and medicine were very limited. Later, from 1941 onwards, the Nazis began to carry out mass shootings and to build extermination camps designed for murder on a massive scale. These camps included Auschwitz-Birkenau, Treblinka, Sobibor, and Belzec.<br>Millions of Jewish men, women, and children were deported by train to these camps. Many were killed in gas chambers soon after arriving, while others were forced to work in brutal conditions. The Nazis also targeted Roma (Gypsies), disabled people, and others they considered “undesirable.”<br>By the end of the war in 1945, around six million Jewish people had been murdered. The Final Solution is remembered today as one of the darkest chapters in human history and a warning about the dangers of prejudice, hatred, and discrimination. | Auschwitz was the largest concentration and extermination camp run by Nazi Germany during World War II. It was built in southern Poland after the Nazis invaded the country in 1939. The camp opened in 1940 and eventually grew into a huge complex of three main camps: Auschwitz I, Auschwitz II-Birkenau, and Auschwitz III-Monowitz, along with many smaller ones nearby.<br>Auschwitz became the main site of the Nazis’ plan to murder Europe’s Jewish people, known as the Holocaust. Over 1.1 million people were killed there — most of them Jewish men, women, and children. Others included Polish political prisoners, Roma (Gypsies), Soviet prisoners of war, and people from many European countries.<br>When prisoners arrived, most were sent straight to gas chambers disguised as showers. Others were forced to work in terrible conditions, building roads, working in factories, or doing hard labour. Many died from starvation, disease, and exhaustion.<br>Despite the danger, some prisoners tried to resist by secretly sharing news, hiding evidence, or even planning uprisings. The camp was finally liberated by Soviet soldiers on January 27, 1945.<br>Today, Auschwitz is preserved as a memorial and museum. It reminds the world of the horrors of the Holocaust and the importance of standing up against hatred and discrimination. |
| **Homework questions**<br><br>1. What did the Nazis mean by the term “Final Solution”?<br>2. How were Jewish people treated before the plan began?<br>3. What happened to people sent to extermination camps?<br>4. Why is it important to remember the Final Solution today? | **Homework Questions**<br>1. Where was Auschwitz located?<br>2. Who were the main victims imprisoned and killed there?<br>3. What happened to prisoners when they first arrived?<br>4. Why is Auschwitz remembered today? |

**5th March**
**Do all tasks**

## Topic - Resistance at Auschwitz

**Context:**

OCTOBER 07, 1944 - Prisoner Revolt at Auschwitz-Birkenau

On October 7, 1944, prisoners assigned to Crematorium IV at the Auschwitz-Birkenau killing center rebel after learning that they were going to be killed.

For months, young Jewish women, like Ester Wajcblum, Ella Gärtner, and Regina Safirsztain, had been smuggling small amounts of gunpowder from the Weichsel-Union-Metallwerke, a munitions factory within the Auschwitz complex, to men and women in the camp's resistance movement, like Róza Robota, a young Jewish woman who worked in the clothing detail at Birkenau. Under constant guard, the women in the factory took small amounts of the gunpowder, wrapped it in bits of cloth or paper, hid it on their bodies, and then passed it along the smuggling chain. Once she received the gunpowder, Róza Robota then passed it to her co-conspirators in the Sonderkommando, the special squad of prisoners forced to work in the camp's crematoria. Using this gunpowder, the leaders of the Sonderkommando planned to destroy the gas chambers and crematoria, and launch the uprising.

On October 7, 1944, having learned that the SS was going to liquidate much of the squad, the members of the Sonderkommando at Crematorium IV rose in revolt. The Germans crushed the revolt. Nearly 250 prisoners died during the fighting and guards shot another 200 after the mutiny was suppressed. Several days later, the SS identified four Jewish female prisoners who had been involved in supplying explosives to blow up the crematorium. All four women were executed.

**Homework questions**

1. What is resistance?
2. Summarise how Jews resisted at Auschwitz.
3. Why is it important to learn about resistance?

## Topic - WW2 - Where did the fighting take place?

World War II was fought across many parts of the world between 1939 and 1945. Some of the most important battles took place in Europe, Africa, and the Pacific Ocean. In Europe, the war began when Germany invaded Poland in 1939. Soon after, German forces attacked France, Belgium, and the Netherlands. The Battle of Britain in 1940 was fought in the skies over England, where the Royal Air Force defended the country from German bombing raids.

In Eastern Europe, the Battle of Stalingrad in 1942–43 was one of the largest and bloodiest battles in history. The Soviet Union defeated the German army there, marking a major turning point in the war. In Western Europe, the D-Day landings in Normandy, France, on June 6, 1944, began the Allies' push to free Europe from Nazi control.

In North Africa, battles like El Alamein in 1942 saw British forces fight against German and Italian troops for control of the desert and the Suez Canal. Meanwhile, in the Pacific, the United States fought Japan in huge naval battles, such as Midway in 1942 and Iwo Jima in 1945. These victories helped bring the war closer to an end. By 1945, battles across these regions had brought the Allies to victory — but at an enormous human cost.

**Homework Questions**

1. Which three main regions of the world saw the biggest battles in World War II?
2. What made the Battle of Stalingrad an important turning point?
3. Why was the Battle of Britain fought in the air?
4. Which countries fought in the North African campaign?.

**26th March**
**Do all tasks**

## Topic - Who were the code-breakers?

**Context -**

Alan Turing was a brilliant mathematician. He was already working part-time for the British Government's Code and Cypher School before the Second World War broke out. In 1939, Turing took up a full-time role at Bletchley Park in Buckinghamshire – where top secret work was carried out to decipher the military codes used by Germany and its allies.

The main focus of Turing's work at Bletchley was in cracking the 'Enigma' code. The Enigma was a type of enciphering machine used by the German armed forces to send messages securely.

Turing played a key role in this, inventing a machine known as the Bombe. This device helped to significantly reduce the work of the code-breakers.

In 1952, Alan Turing was arrested for homosexuality – which was then illegal in Britain. He was found guilty of 'gross indecency'. In 1954, he was found dead from cyanide poisoning. An inquest ruled that it was suicide.

The legacy of Alan Turing's life and work did not fully come to light until long after his death. Turing's role in cracking the Enigma code was kept secret until the 1970s, and the full story was not known until the 1990s. It has been estimated that the efforts of Turing and his fellow code-breakers shortened the war by several years. What is certain is that they saved countless lives and helped to determine the course and outcome of the conflict.

**Homework questions**

1. Who was Alan Turing?
2. What was the Enigma Code?
3. Why was Alan Turing's work significant for the war effort?

## Topic - Operation Overlord

**Context -**

On 6 June 1944 – 'D-Day' – Allied forces launched the largest amphibious invasion in the history of warfare.

Codenamed Operation 'Overlord', the Allied landings on the beaches of Normandy marked the start of a long and costly campaign to liberate north-west Europe from Nazi occupation.

On the morning of D-Day, ground troops landed across five assault beaches – Utah, Omaha, Gold, Juno and Sword.

By the end of the day, the Allies had established themselves on shore and could begin the advance into France.

The invasion of northern France in 1944 was the most significant victory of the Western Allies in the Second World War. American, British and Canadian forces established a foothold on the shores of Normandy, and, after a protracted and costly campaign to reinforce their gains, broke out into the French interior and began a headlong advance. The German Army suffered a catastrophe greater than that of Stalingrad, the defeat in North Africa or even the massive Soviet summer offensive of 1944.

The key objective for D-Day - beyond establishing a firm foothold ashore - was the capture of the city of Caen, which lay south of the British assault area. Caen was a strategically important road junction, beyond which lay open country suitable for the deployment of armoured formations and the construction of airfields. In the event, the city was not fully occupied until mid-July.

**Homework Questions**

1. What was Operation Overlord?
2. Why was this a significant event?
3. What was the objective of D-Day?

# Year 9 Cycle 2 Geography Knowledge Organiser – UK Landscapes: Coasts

**Thursday 18th December 2025**

## Lesson 1 – UK Landscapes

**Key Terms:**

**Relief:** The physical features of a landscape. This includes the height above sea level, steepness of slopes and shapes of different features.

**Upland:** An area of high or hilly land.

**Lowland:** An area where the land is at, near, or below the level of the sea.

**Content:**

Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.

**North and West** have highland areas +600m: These are made of igneous and metamorphic rock: e.g. **Dartmoor** and **Pennines, Grampians**

**Southeast** are **lowlands** areas -200m: Flat or rolling hills. Made from sedimentary rock.

**Questions:**

1. What does relief mean?
2. What does upland and lowland mean?
3. Where are upland areas in the UK?
4. Where are lowland areas in the UK?

## Lesson 2 – Waves

**Key Terms:**

**Waves:** Created by wind blowing over the surface of the sea.

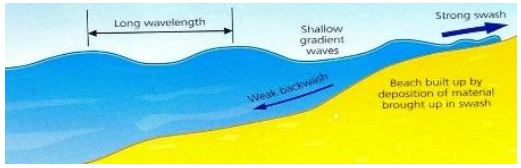
**Fetch:** The distance the wave has travelled.

**Swash:** Movement of water up the beach.

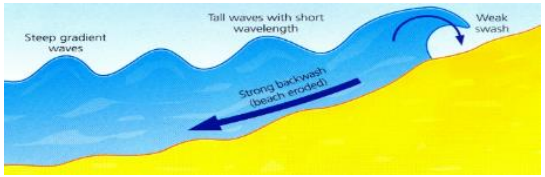
**Backwash:** Movement of water down the beach.

**Content:**

**Constructive Wave:** This wave has a swash that is stronger than the backwash. This therefore builds up the coast.




**Destructive Wave:** This wave has a backwash that is stronger than the swash. This therefore erodes the coast.




5. What is swash?
6. What is backwash?
7. What are constructive waves?
8. What are destructive waves?

## Lesson 3 – Erosion

**Key Terms:**

**Erosion:** The break down and transport of rocks – smooth, round and sorted.

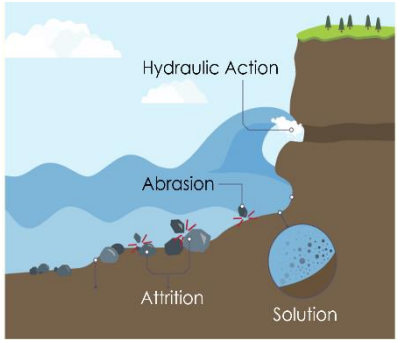
**Content:**

**Hydraulic Action:** Water enters cracks in the cliff, **air compresses**, causing the crack to expand.

**Abrasion:** Rocks hurled at the base of a cliff like a sandpapering action that cause it to become smoother.

**Attrition:** Rocks that bash together to become **smaller and smoother**.

**Solution:** A chemical reaction that **dissolves rocks**.




9. What is erosion?
10. What is hydraulic action?
11. What is abrasion?
12. What is attrition?

# Year 9 Cycle 2 Geography Knowledge Organiser – UK Landscapes: Coasts

**Thursday 15th January 2026**

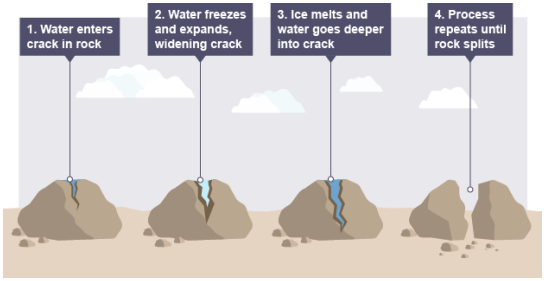
## Lesson 4 – Weathering

**Key Terms:**
**Weathering:** The breakdown of rocks where they are (in situ).

**Physical/Mechanical:** Breakdown of rock without changing its chemical composition.
**Chemical:** Chemicals (acids) react with the rocks (limestone). e.g. as carbonation
**Biological:** Breakdown of rock by plants and animals e.g. roots pushing rocks apart.

**Content:**
There are 3 types of weathering – Physical/mechanical, chemical and biological.

**Freeze-thaw weathering:** This physical type of weathering occurs when rocks are **porous** (contain holes) or **permeable** (allow water to pass through).




**Questions:**
1. What is weathering?
2. What are the 3 different types of weathering?
3. What is freeze-thaw weathering?
4. Draw a diagram of freeze thaw weathering

## Lesson 5 – Mass Movement

**Key Terms:**
**Mass movement:** When a large movement of soil and rock debris that moves **down slopes** in response to the pull of **gravity** in a vertical direction.

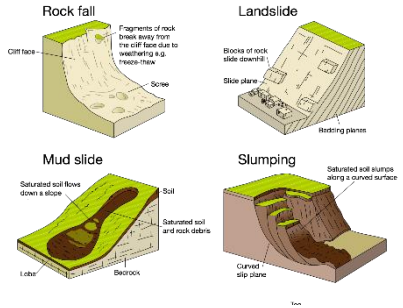
**Saturated:** The ground is full of water and can no longer absorb anymore.

**Content:**
**Rockfall:** Fragments of rock beak away from the cliff face, often due to freeze-thaw weathering.

**Landslide:** Blocks of rock slide down.

**Slumping/ Rotational Slip:** Slump of saturated soil and weak rock along a curved surface.

**Mudflow:** Saturated soil and weak rock flows down a slope.




5. What is mass movement?
6. What is rockfall?
7. What is a landslide?
8. What is slumping?

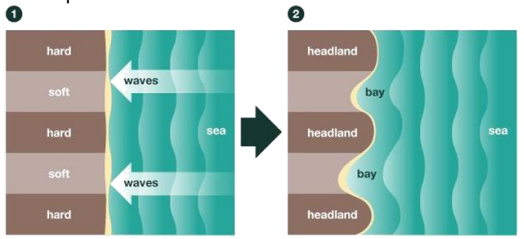
## Lesson 6 – Headlands & Bays

**Key Terms:**
**Discordant Coastline:** A type of coastline where different kinds of rocks run at right angles to the sea. Some rocks are hard, like granite, and some are soft, like clay.

**Headland:** A rocky coastal highpoint of land made of rock that is resistant to erosion.

**Bay:** An area of less resistant rock where the land has been eroded by the sea.

**Content:**
**Formation of a headland and bay:**
1. Alternating bands of hard and soft rock eroding at different rates.
2. The more resistant (hard) rock such as limestone is eroded slowly creating headlands.
3. The weaker (soft) rock such as clay erodes more easily and quicker creating bays.
4. Bays are sheltered areas and so deposition takes place to form beaches.




9. What is a discordant coastline?
10. What is a headland?
11. What is a bay?
12. How is a headland and bay formed?

# Year 9 Cycle 2 Geography Knowledge Organiser – UK Landscapes: Coasts

**Thursday 29th January 2026**

## Lesson 7 – Cliffs and wave cut platforms

**Key Terms:**

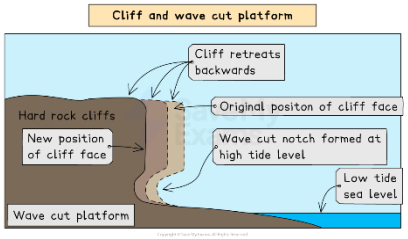
**Cliff:** A steep high rock face formed by weathering and erosion.

**Wave cut platform:** A rocky, level shelf at or around sea level representing the base of old, retreated cliffs.

**Content:**

**Formation of Cliffs and Wave Cut Platforms:**

1. The sea erodes the cliff through **processes** such **as hydraulic action and abrasion.**
2. This forms a **wave-cut notch** between high and low water.
3. Over time the **cliff is undercut** and eventually **collapses** due to the force of gravity.
4. The process is repeated with the cliff **retreating over time.**
5. At the base of the cliff a **wave-cut platform** is formed.
6. This is an area of **flat rock that extends into the sea** and is exposed at **low tide.**




**Questions:**

1. What is a cliff?
2. What is a wave cut platform?
3. How is a wave cut platform formed?
4. Draw a diagram of a wave cut platform

## Lesson 8 – Cave, Arch, Stack & Stump (CASS)

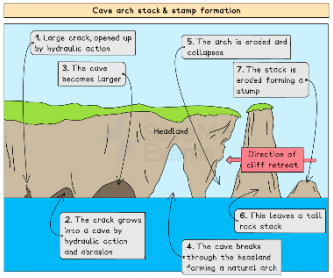
**Key Terms:**

**Wave refraction:** When waves bend as the approach the shore. If part of the wave reaches shallow water first (like near a headland), it slows down. But the rest of the wave in deeper water keeps moving faster. This makes the wave bend.

**Content:**

**Formation of Cave, Arch, Stack and Stump:**

1. **Wave refraction** causes the waves to **erode** a headland from **both sides**.
2. **Hydraulic action** and **abrasion** erode a **crack**/ fault in the cliff.
3. This process continues to create a **cave**.
4. The waves continue to erode from both sides forming an **arch**.
5. The arch is **unsupported and weathered** from the top so the roof of the **arch collapses**, due to gravity.
6. This leaves a **stack,** and this is weathered and eroded and forms a **stump**.




**Questions:**

5. What is wave refraction?
6. What types of erosion create a CASS?
7. What creates an arch?
8. Why does an arch collapse?

## Lesson 9 – Longshore Drift

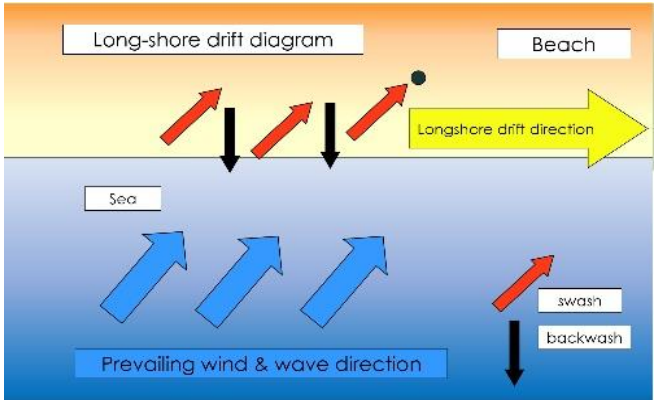
**Key Terms:**

**Transportation:** The movement of eroded material.

**Prevailing wind:** The direction wind comes from most of the time.

**Content:**

**Longshore drift** is the movement of sediment along the coastline by waves **approaching** the beach at an **angle**, due to **prevailing winds** and moving **back down** the beach at a **right angle** due to **gravity.**



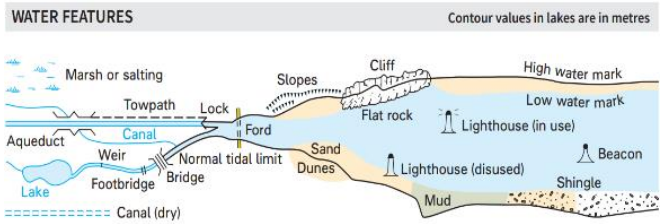

**Questions:**

9. What is transportation?
10. What is the prevailing wind?
11. Explain the process of longshore drift
12. Draw a diagram of longshore drift

# Year 9 Cycle 2 Geography Knowledge Organiser – UK Landscapes: Coasts

| Thursday 12th February 2026 | | |
|---|---|---|
| **Lesson 10 – Deposition, beaches and sand dunes** | **Lesson 11 – Spits and bars** | **Lesson 12 – Dorset Coastline** |
| **Key Terms:**<br>**Deposition:** When material being transported by the sea is dropped due to the sea losing energy.<br><br>**Beach:** A narrow strip of land separating a body of water from inland areas.<br><br>**Sand dune:** Coastal sand hill above the high tide mark, shaped by wind action and covered with grasses and shrubs. | **Key Terms:**<br>**Spit:** Depositional landform formed when a finger of sediment extends from the shore out to sea, often at a river mouth. | **Key Terms:**<br>**Coastal landforms:** Features of the coastline created by erosion of material or the transportation and deposition of sediment.<br><br>**Dorset:** A county in the southwest of England and the coast stretches from Lyme Regis in the west to Bournemouth in the east. |
| **Content:**<br>**Deposition** happens when there is a **low/little energy** environment, **sheltered** bays, waves are not very powerful (**constructive**), large supply of sediment or **sea defences**.<br><br>**Sandy beach:** Gentle sloping, wide & flat, made by constructive waves, sometimes has dunes.<br><br>**Pebble beach:** Steep sloping, narrow, made by destructive waves.<br><br>**Sand dune formation:**<br>**Embryo dune** forms when material is **deposited** around an **obstacle**. **Vegetation** starts to grow, and **roots binds the sand together**. Dunes grow and more vegetation grows. | **Content:**<br>**Formation of a spit:**<br>1. **Prevailing wind** comes from an angle (SW).<br>2. The **waves** approach at an **angle.**<br>3. This causes **longshore drift.**<br>4. There is a **change in the angle** of the coast/ or river mouth.<br>5. The **spit grows** into the river mouth.<br>6. The curved end is caused by **wave refraction.**<br>7. A **saltmarsh** forms behind as the water has no energy.<br>8. The **spit will not reach** the other side as there is a river.<br><br>A **bar** is a **spit** that grows across a bay and **connects two headlands**. It creates a **lagoon**. | **Content:**<br>**Chesil Beach** (deposition) – 18km long, made of pebbles and shingles.<br>**Durdle Door** (erosion) – Excellent example of an arch.<br>**Lulworth Cove** (erosion) – Small circular bay with a narrow opening. Formed along a concordant coastline.<br>**Kimmeridge Bay** (erosion) – Made of soft clay. Eroded backwards leaving behind a wave cut platform.<br>**Swanage Bay** (erosion) – A classic bay between two headlands.<br>**Old Harry Rocks** (erosion) – Classic Sea stack at the end of a classic headland erosion.<br>**Studland Heath** (deposition) – A well-known sand dune system and spit. Heaven for many rare birds and wildlife. |
| **Questions:**<br>1. What is deposition?<br>2. What are the two different types of beaches?<br>3. What is a sand dune?<br>4. How is a sand dune formed? | 5. What is a spit?<br>6. How is a spit formed?<br>7. Why won't a spit reach the other side?<br>8. What is a bar? | 9. What are coastal landforms?<br>10. Where is Dorset?<br>11. Which landforms are created by erosion?<br>12. Which landforms are created by deposition? |

# Year 9 Cycle 2 Geography Knowledge Organiser – UK Landscapes: Coasts

| Thursday 5th March 2026 | | |
|---|---|---|
| **Lesson 13 – Coastal management** | **Lesson 14 – Holderness Coastline** | **Lesson 15 – Coastal map work** |
| **Key Terms:**<br>**Hard Engineering:** The use of concrete and artificial structures to defend land against natural erosion.<br><br>**Soft Engineering:** Managing erosion by working with natural processes to help restore beaches. | **Key Terms:**<br>**Holderness:** North East coast, Yorkshire. 61 km stretch of coastline, from Flamborough Head (headland in the north; hard resistant chalk) to Spurn Point (spit) in the south. | **Key Terms:**<br>**Grid References:** Map references indicating a location using vertical and horizontal lines identified by numbers.<br><br>**Contour Lines:** Lines that join points of equal height on an OS map. |
| **Content:**<br>• **Curved Sea Wall** (£5,000-10,000 per m) Effective at stopping the sea (+). Can look unnatural (-).<br>• **Groynes** (£150,000 each) Create a wider beach, which can be popular with tourists (+). Starve beaches further along the coast (-).<br>• **Rock Armour/Riprap** (£200,000 per 100m) Relatively cheap and easy to maintain (+). Often do not fit in with the local geology (-).<br>• **Gabions** (£50,000 per 100m) Can improve drainage of cliffs (+). Cages last 5-10 years (-).<br>• **Beach Nourishment and re-profiling** (£500,000 per 100m) Blend in with existing beach (+). Needs constant maintenance (-).<br>• **Sand Dune Regeneration** (£200-£2,000 per 100m) Maintains a natural coastal environment (+). Time consuming to plant and fence areas off (-).<br>• **Managed Retreat** (Highly variable) ADV: Allows some land to flood (+). Expensive to pay compensation (-). | **Content:**<br>Fastest eroding coastline in Europe. Softer rock is boulder clay; harder rock is loose unconsolidated clay. On average, **1.8m** of coastline **lost to erosion annually**. Longshore drift moves sediment from north to south.<br><br>**Mappleton:** Large rock groyne resulting in a wider beach which reduces the rate of erosion and protects the village (cost £2 million in 1991).<br>**Bridlington:** A 4.7km sea wall plus groynes.<br>**Eastern side of Spurn Head spit**: Protected with groynes and rock armour/riprap.<br><br>Groynes create **downdrift starvation** as longshore drift is interrupted and beaches to the south become narrower and erode more rapidly –<br>**Skipsea:** Houses have collapsed onto the beach.<br>**Easington:** The Gas terminal (accounts for 25% of British gas) is 25m from the cliff and sea defences have been very expensive. | **Content:**<br>**Grid references golden rules:**<br>1. Bottom left-hand corner,<br>2. Along the corridor and up the stairs.<br><br>**Height on a map:** Height on an OS map is shown through faint orange contour lines. They mark 10m changes in height above sea level.<br><br>**Contour lines close together:** The land is steep.<br><br>**Contour lines far apart:** The land is flat.<br><br>  |
| **Questions:**<br>1. What is hard engineering?<br>2. What is the advantage of groynes?<br>3. What is soft engineering?<br>4. What is the disadvantage of managed retreat? | 5. Where is Holderness?<br>6. Why is Holderness eroding so quickly?<br>7. What have they done at Mappleton?<br>8. What is the problem at Skipsea? | 9. What are gird references?<br>10. What are the 2 golden rules of grid references?<br>11. What do contour lines close together mean?<br>12. What do contour lines far apart mean? |

# Year 9 French

# Cycle 2

**<u>Instructions</u>**

- **Look at the list of 12 words/phrases and practice saying them**
- **Cover the English side and try to say them to yourself, then write them down.**
- **Check your answers**
- **Repeat until you can remember all 12**
- **Complete the gapfill using the correct word from the list. Enter your answers into your homework book to be checked in class**

*Challenge : Can you cover up the French side and remember all 12 including the spellings ?*

You have **two** weeks to revise each vocabulary list at home.

You will then be tested in class on how well you know all 12 words/phrases.

*Still got time left ? Look at the back of this booklet for some MFL challenges to complete at home and show your teacher.*

*Bon Courage !*

## Test 1 – Quelle est ta fête préférée ?

| FRANCAIS | ANGLAIS |
|---|---|
| 1. **Ma fête préférée est le jour de Noël** | My favourite festival is Christmas Day |
| 2. **J'ai toujours aimé le jour de l'an** | I have always liked New Years Day |
| 3. **Je n'ai jamais aimé le 1er Avril** | I have never liked April Fool's Day |
| 4. **J'ai toujours aimé Eid- d'habitude on mange un repas spécial** | I have always liked Eid- usually we eat a special meal |
| 5. **Ma fête préférée est la Saint Valentin- pour célébrer on s'offre des cadeaux** | My favourite festival is Valentines Day- to celebrate we give presents |
| 6. **Selon moi c'est assez romantique** | According to me it is quite romantic |
| 7. **Selon moi c'est trop traditionnel** | According to me it is too traditional |
| 8. **J'ai toujours aimé Diwali – d'habitude on regarde les feux d'artifice** | I have always like Diwali – usually we watch fireworks |
| 9. **Pour célébrer on prend des photos – c'est vraiment joyeux** | To celebrate we take photos - it is really happy |
| 10. **Je n'ai jamais aimé Pâques – selon moi c'est barbant** | I have never liked Easter – according to me it is boring |
| 11. **Ma fête préférée est Hanoucca – pour célébrer on va à la synagogue** | My favourite festival is Hanukkah – to celebrate we go to the synagogue |
| 12. **On mange du chocolat – selon moi c'est inoubliable** | We eat chocolate – according to me it is unforgettable |

Gapfill (Complete in your homework book)

1. **__ ___ _____ ____ la fête des rois** = I have never liked twelfth night
2. **J'ai _____ _____ _____ =** I have always liked Eid
3. **selon moi __ ___ _____** = According to me it is quite boring
4. **_____ ___ __ _____ formidable=** According to me it is great
5. **__ _____ _____ ____ le 1er Avril** = My favourite festival is April Fool's Day
6. **pour _____ ___ ___ __ l'église** = To celebrate we go to the church
7. **_____ on regarde des feux d'artifice=** Usually we watch fireworks
8. _____ ___ _____ _____ _____ = According to me it is really happy

## Test 2 – ton anniversaire LC2

| FRANCAIS | ANGLAIS |
|---|---|
| 1. **Récemment j'ai célébré mon anniversaire** | Recently I celebrated my birthday |
| 2. **Hier j'ai fêté l'anniversaire de ma soeur** | Yesterday I celebrated my sister's birthday |
| 3. **Il y a deux ans on a célébré le mariage de mes grandparents** | Two years ago we celebrated my Grandparents' marriage |
| 4. **On a fête la naissance de ma cousine** | We celebrated my cousin's birth |
| 5. **J'ai mange un gâteau** | I ate a cake |
| 6. **On a lancé des confettis – c'était formidable** | We threw confetti -it was great |
| 7. **On a invité beaucoup de gens – c'était fou** | We invited lots of people – it was mad |
| 8. **J'ai pris beaucoup de photos – c' était fatigant** | I took lots of photos- it was tiring |
| 9. **On a célébré le PACs de mon oncle et ma tante** | We celebrated my aunt and uncle's civil partnership |
| 10. **L'année dernière j'ai fêté l'anniversaire de mon beau-père** | Last year I celebrated my step-dad's birthday |
| 11. **On a porté des beaux vêtements – c'était passionant** | We wore beautiful clothes – it was exciting |
| 12. **Aussi on a donné des cadeaux – c'était Joyeux** | Also we gave presents – it was happy |

Gapfill (Complete in your homework book)

1. **Récemment** ___ _____ _____ __ ___ _____ = Recently I celebrated my cousin's birthday

2. __ __ _____ **la naissance de ma soeur** = We celebrated my sister's birth

3. __ _ _____ __ _____ = we ate chocolate

4. ___ _____ _____ __ ___ = I took lots of photos

5. _____ _____= It was mad

6. _____ _____ = it was exciting

7__ __ _____ __ _____ __ __ _____= We celebrated my aunt's wedding

8___ __ _____ ___ _____ = Yesterday I celebrated my birthday

## Test 3 – Que fais-tu normalement ? – LC2

| FRANCAIS | ANGLAIS |
|---|---|
| 1. **Avant d'aller au collège je me lave** | Before going to school I wash myself |
| 2. **D'abord je bois un café** | Firstly I drink a coffee |
| 3. **Le matin je prends le petit déjeuner** | In the morning I have breakfast |
| 4. **D'habitude je lis mes messages** | Usually I read my messages |
| 5. **Mais pendant les grandes vacances je vais me lever tard** | But during the summer holidays I'm going to get up late |
| 6. **Je vais faire du sport car ce sera plus amusant** | I'm going to do sport because it will be more fun |
| 7. **Je vais regarder la télé car ce sera moins fatigant** | I'm going to watch TV beause it will be less tiring |
| 8. **Le weekend prochain je vais me reposer** | Next weekend I'm going to relax |
| 9. **D'habitude je fais mes devoirs mais demain je vais rester au lit** | Usually I do my homework but tomorrow I'm going to stay in bed |
| 10. **Pendant la semaine je vais au collège cependant le weekend prochain je vais rencontrer mes amis** | During the week I go to school however next weekend I'm going to meet my friends |
| 11. **Car ce sera plus sociable** | Because it will be more sociable |
| 12. **Je vais écouter de la musique car ce sera moins stressant** | I'm going to listen to music because it will be less stressful |

Gapfill (Complete in your homework book)

1. **____ _____ __ _________ je me lêve tôt** = Before going to school I get up early
2. **__ _____ __ _____ un thé** = In the morning I drink a tea
3. **__ ____ _____ __ _____** = I'm going to stay in bed
4. **__ ___ _____ _____ _________ =** because it will be less tiring
5. **_____ __ _____ _____ je vais me reposer** =During the summer holidays I'm going to relax
6. **Le weekend prochain __ ____ _____ __ _____** = Next weekend I'm going to do sport
7. **__ ____ _____ ___ _________** = because it will be more sociable
8. _____ __ ___ _____ = Usually I wash myself

## Test 4 –Tu étais malade? LC2

| FRANCAIS | ANGLAIS |
|---|---|
| **1. Hier j'étais malade.** | Yesterday I was ill |
| **2. Lundi dernier j'ai eu un accident** | Last Monday I had an accident |
| **3. Malheureusement quand j'étais en train de traverser la rue j'ai eu mal au dos** | Unfortunately when I was in the middle of crossing the road I had a bad back |
| **4. Je me suis cassé le bras** | I broke my arm |
| **5. Je me suis cassée la jambe** | I broke my leg |
| **6. Donc je dois rester au lit** | So I have to stay in bed |
| **7. Mais maintenant je prends des medicaments** | But now I'm taking medecine |
| **8. Le weekend dernier j'ai eu un accident mais maintenant je me sens mieux** | Last weekend I had an accident but now I feel better |
| **9. J'ai eu mal à la tête alors maintenant je suis fatigué(e)** | I had a headache so now I am tired |
| **10. Mardi dernier j'étais malade – je me suis cassé le pied** | Last Tuesday I was ill – I broke my foot |
| **11. Malheureusement j'ai eu mal au coeur alors maintenant je vais chez le médecin** | Unfortunately I felt sick so now I'm going to the doctor |
| **12. Hier j'ai eu mal au dos donc je dois me reposer** | Yesterday I had a bad back so today I have to relax |

Gapfill (Complete in your homework book)

1. **_____ _____ ____ ___ _____** = Yesterday I had an accident
2. **_____ _____ _____ _____** = Last Monday I was ill
3. **Quand __ _ _ _ étudier an classe =** When I was in the middle of studying in class
4. **___ __ ___ ___ _____ =** I had a bad back
5. **____ _____ __ ____ _____ =** so now I am tired
6. **_____ _____ j'étais malade =** Last Tuesday I was ill
7. **_____ je me suis cassé le pied=** Unfortunately I broke my foot
8. **___ ___ ___ __ _____=** I felt sick

# MFL challenges

**These are some ideas for tasks to complete at home – they are totally optional but bring them in to show your teacher!**

1. Write a detailed description of a family celebration in the past – in French

2. Create a poster to advertise a festival in your area (in French)

3. Write a description of your daily routine in French – include pictures to help you remember the vocab

4. Watch your favourite film in French or with French subtitles

5. Use SB4 to help you write the most imaginative / unusual excuse for not doing your homework

6. Find a song you like by a French speaking artist

7. Research Francophone flags and make a poster with 5 different flags

8. Research a Francophone festival or landmark that interests you and present in a poster / presentation.

# Year 9 Spanish

## Cycle 2

**<u>Instructions</u>**

- **Look at the list of 12 words/phrases and practice saying them**
- **Cover the English side and try to say them to yourself, then write them down.**
- **Check your answers**
- **Repeat until you can remember all 12**
- **Complete the gapfill using the correct word from the list. Enter your answers into your homework book to be checked in class**

*Challenge : Can you cover up the Spanish side and remember all 12 including the spellings ?*

You have **two** weeks to revise each vocabulary list at home.

You will then be tested in class on how well you know all 12 words/phrases.

*Still got time left ? Look at the back of this booklet for some MFL challenges to complete at home and show your teacher.*

*Buena Suerte!*

## Test 1 Por qué te llevas bien con... LC2

| Español | Inglés |
|---|---|
| 1. **Me encanta mi novio porque es muy alegre** | I love my boyfriend because he is very cheerful |
| 2. **Me llevo bien con mi novia porque es bastante graciosa** | I get on well with my girlfriend because she is quite funny |
| 3. **Me peleo con mi hermano porque es tonto** | I fight with my brother because he is silly |
| 4. **Me divierto con mi profesora de teatro porque es optimista** | I have fun with my drama teacher because she is optimistic |
| 5. **Me gusta mi amiga poraue siempre me apoya** | I like my friend because she always supports me |
| 6. **Un buen amigo es alguien que te escucha** | A good friend is someone who listens to you |
| 7. **Mi hermana siempre me acepta como soy** | My sister always accepts me as I am |
| 8. **Mi pareja nunca me escucha** | My partner never listens to me |
| 9. **Mi amigo siempre me hace reír** | My friend always makes me laugh |
| 10. **Un buen amigo es alguien que te conoce bien** | A good friend is someone who knows you well |
| 11. **Me llevo bien con mi padrastro porque es sensible** | I get on well with my stepfather because he is sensitive |
| 12. **Me divierto con mi madrastra porque siempre me ayuda** | I have fun with my stepmother because she always helps me |

Gapfill (Complete in your homework book)

1. **__ _____ __ _____**= I love my sister

**2. __ _____ _____ __ _____ =** My friend always supports me

3. **__ _____ _____ me crítica =** My teacher never criticises me

4. **__ _____ __ _____ __ _____** = I like my Spanish teacher

5. **__ _____ _____ __ _____ que te escucha =** A good friend is someone who listens to you

6. **Mi hermano _____ __ _____ ___ _____ =**My brother accepts me as I am

7. **Mi novia __ _____ _____** = My girlfriend is quite optimistic

8. **__ _____ __ __ _____** = I fight with my teacher

# Test 2 – Tu influencer preferido – LC2

| Español | Inglés |
|---|---|
| **1. Sigo a Rigoberta Menchu porque lucha contra la discriminación** | I follow Rigoberto Menchu because she fights against discrimination |
| **2. Sigo a Rashford porque creo que lucha por la política** | I follow Rashford because I think he fights for politics |
| **3. Sigo a Shakira porque es musical** | I follow Shakira because she is musical |
| **4. Diría que será ric@** | I would say that he/she will be rich |
| **5. Para mí lucha contra las drogas** | In my opinion he/she fights against drugs |
| **6. Creo que era artística** | I believe she was artistic |
| **7. Para mí es único** | In my opinion he is unique |
| **8. Lucha por las víctimas** | He/she fights for the victims |
| **9. Diría que lucha por la identidad** | I would say that he/she fights for identity |
| **10. Creo que es heterosexual / gay / bisexual** | I believe that he/she is heterosexual / gay / bisexual |
| **11. Sigo a Frida Kahlo porque era conocida por su arte** | I follow Frida Kahlo because she was known for her art |
| **12. Sigo a Lionel Messi porque para mí es latino y especial** | I follow Lionel Messi because in my opinion he is latinamerican and special |

Gapfill (Complete in your homework book)

1. ___ _ _____ _____ __ _____= I follow Shakira because she is artistic
2. _____ __ **el deporte** = she/he fights for sport
3. ____ _____ __ _____= he/she fights against discrimination
4. ____ ___ ____ _____=in my opinion he/she is musical
5. _____ ___ ___ _____ = I think he/she was rich
6. ____ ___ _____ _____ = I would say that he/she will be unique
7. _____ ___ ___ _____**=** He/she fights for the victims
8. ____ __ **Rigoberto Menchu** ____ _____ ___ ___ _____ I follow Rigoberto Menchu because she fights for politics

## Test 3 – modelos a seguir

| Español | Inglés |
|---|---|
| **1. Mi modelo a seguir es Rosalía y es un gran cantante** | My role model is Rosalía and she is a great singer |
| **2. Mi modelo a seguir es chileno y es un gran escritor** | My role model is Chilean and is a great author |
| **3. Mi modelo a seguir es francesa y es una gran mamá** | My role model is French and she is a great mum |
| **4. Mi modelo a seguir era española y era un gran deportista** | My role model was Spanish and he was a great sportsperson |
| **5. Mi modelo a seguir era vegana y era una gran estrella** | My role model was a vegan and she was a big star |
| **6. Es un gran influencer** | He/she is a great influencer |
| **7. Es un gran modelo** | He/she is a great model |
| **8. Era un gran carácter** | He/she was a great character |
| **9. Era un gran actor/actriz** | He/she was a great actor/ actress |
| **10. Es un gran músico** | He is a great musician |
| **11. Es un gran papá** | He is a great dad |
| **12. Era un crack** | He/she was a legend |

Gapfill (Complete in your homework book)

1. **__ _____ __ _____ es Carlitos Alcaráz** = My role model is Carlitos Alcaráz
2. **Mi modelo a seguir ____ _____** = My role model was Chilean
3. **__ ____ ____ _____** = He/she is a great model
4. **___ __ ___ _____ =** he was a great sportsperson
5. **___ _____ __ _____ __ _____ =** My role model is French
6. ___ _____ _____ _____ = He is a great musician
7. ___ __ _____ = He/she is a legend
8. __ ____ _____ _____ = he/she is a great singer

## Test 4 – planes para el futuro

| Español | Inglés |
|---|---|
| **1. Para ser famos@ voy a actuar en una obra** | In order to be famous I'm going to act in a play |
| **2. Para ser conocid@ vamos a dirigir una película** | In order to be well known we're going to direct a film |
| **3. Para tener éxito voy a tocar un instrumento** | In order to be successful I'm going to play an instrument |
| **4. Para tener respeto van a influir la moda** | In order to have respect they are going to influence fashion |
| **5. Para tener éxito va a grabar un video** | In order to have success he/she is going to record a video |
| **6. Para tener respeto vas a cantar en un concierto** | In order to have respect you are going to sing in a concert |
| **7. Para ser famos@ voy a casarme con una estrella** | In order to be famous I'm going to marry a star |
| **8. Para ser concocid@ vamos a tener un voz** | In order to be well known we're going to have a voice |
| **9. Para tener éxito vamos a jugar a muchos deportes** | In order to have success we are going to play a lot of sports |
| **10. Para ser conocid@ vas a viajar por el mundo** | In order to be well known you are going to travel the world |
| **11. Para tener éxito voy a pasarlo bien** | In order to have success I'm going to have a good time |
| **12. Voy a ganar un premio nobel** | I'm going to win a Nobel prize |

Gapfill (Complete in your homework book)

1. **____ ___ _____ voy a leer=** In order to be famous I'm going to read
2. **Para _____ ___ van a bailar** = To have success they're going to dance
3. **_____ __ _____ __ _____** = We are going to record a video
4. **___ ____ _____ __ _ _____ _ ___**=in order to be famous I'm going to influence fashion
5. **____ _ _____ _____** = We're going to have a good time
6. **____ ___ _____ _____ ___ viajar** = In order to be famous they are going to travel
7. **___ __ _____ __ __ _____** = You are going to sing in a concert
8. **____ __ _____ ____ _____ _____=** They are going to play lots of sports

# MFL challenges

**These are some ideas for tasks to complete at home – they are totally optional but bring them in to show your teacher!**

1. Create a poster showing all the qualities a good friend has – use Spanish to label

2. Write a description of someone you follow and list the reasons why in Spanish

3. Research one of the Spanish speaking role models from SB3 – find out as much as you can about why they are famous

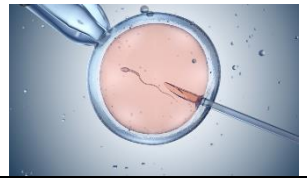
4. Choose 4 English speaking people who you think are important role models – research why they are famous

5. Decide who your own role model is. Think of reasons why they are important to you.

6. Find a song you like by a Spanish speaking artist

7. Research flags from Spanish speaking countries and make a poster with 5 different flags

8. Research a Spanish/Latin American festival or landmark that interests you and present in a poster / presentation.

| 11th Dec | | 8th Jan | |
|---|---|---|---|
| **Lesson 1 – What Is Morality?** | **Lesson 2 – Where Do We Get Our Ideas Of Right And Wrong From?** | **Lesson 3 – What Is Medical Technology?** | **Lesson 4 – What Is IVF?** |
| **Key Terms:**<br>**Morality:** your sense of right and wrong; moral decisions are based on right or wrong actions.<br><br>**Absolute Morality:** the belief that if an action is right or wrong, it is always right or wrong no matter what the circumstances.<br><br>**Relative Morality:** the belief that right or wrong depends on the circumstances and consequences in different situations. | **Key Terms:**<br>**Conscience:** The inner sense of something that is wrong and right.<br><br>  | **Key Terms:**<br>**Medical Technology:** technologies that diagnose, treat and/or improve a person's health and wellbeing.<br><br>**Sanctity of Life:** the belief that life is precious or sacred.<br><br>**Quality of Life:** the extent to which life is meaningful and pleasurable | **Key Terms:**<br>**IVF:** In-vitro fertilisation. A process of taking eggs from a woman's womb, fertilising the eggs with sperm and then planting the fertilised eggs back into the womb.<br><br>**Conception:** The moment the egg and sperm meet and begin to fuse.<br><br>  |
| **Content:**<br>There are many different sources which lead us into making moral decisions.<br>One source that may affect our decision is external authority such as parents. A second source is our conscience which is 'inbuilt.' | **Content:**<br>Some people believe that it is our conscience which tells us what is right and wrong.<br>Religious believers may think we get our ideas of right and wrong from other external sources. For example, a holy book. | **Content:**<br>There are different opinions as to whether we should use medical technology to create and/or extend people's lives. People's views on medical technology may be influenced by their beliefs in the sanctity or quality of life. | **Content:**<br>IVF involves the removal of an egg from a woman's ovaries, fertilising it in a laboratory, and then implanting the fertilised egg back into the womb. The technology of IVF raises some moral questions, especially for some religious believers. |
| **Questions:**<br>1. What is morality?<br>2. What is a moral decision?<br>3. What is the difference between absolute and relative morality? | **Questions:**<br>1. Where does our understanding of right and wrong come from?<br>2. How might religious belief affect someone's morality? | **Questions:**<br>1. What is medical technology?<br>2. What is the difference between Sanctity and Quality of Life? | **Questions:**<br>1. What is IVF?<br>2. What are the benefits and criticisms of using IVF?<br>3. What are some religious opinions on the use of IVF? |

| 22nd Jan | | 5th Feb | |
|---|---|---|---|
| **Lesson 5 – Are Religion and Science Incompatible?** | **Lesson 6 – Why Is Stem Cell Research A Controversial Issue?** | **Lesson 7 – What Is Human Genetic Engineering?** | **Lesson 8 – What Are The Different Religious Opinions On Abortion?** |
| **Key Terms:**<br>**Incompatible:** Incapable of living or existing together in peace or harmony.<br>  | **Key Terms:**<br>**Stem Cell:** The only cells in your body that make different cell types, like blood, bone and muscle cells. They also repair damaged tissue.<br><br>**Controversial:** Causing disagreement or discussion.<br><br>**Embryonic:** an early stage in the development of a plant or animal. | **Key Terms:**<br>**Genetic Engineering:** Changing the genetic make-up of a living organism.<br><br>**Saviour Sibling:** A child who is born to provide an organ, bone marrow or cell transplant, to a sibling that is affected with a fatal disease. | **Key Terms:**<br>**Abortion:**<br>the deliberate termination of a human pregnancy.<br><br>**Pro-life:** the belief that all human beings, including those in the womb, have a right to life.<br><br>**Pro-choice:** supporting the legal right of a woman to choose whether or not she will have an abortion. |
| **Content:**<br>Some people claim that science, with its emphasis on facts, evidence and experiments is not compatible with religion, with its emphasis on faith and belief. They believe that the scientific worldview involves being willing to change your ideas if the evidence proves something new, whereas the religious worldview uses fixed ideas that aren't allowed to be contradicted. | **Content:**<br>Stem cells are unique compared to other cells in the body because they have the ability to develop into many different cell types. Stem cell's versatility makes them incredibly valuable for medical research and treatments, as they can potentially regenerate damaged tissues or organs. | **Content:**<br>Genetic engineering can make changes to the genes in the embryo – they could stop children being born with genetic diseases e.g. Cystic fibrosis.<br>Stem cells from a brother or sister can be transplanted to cure certain diseases. They are collected from the embryo's umbilical cord, bone marrow or other tissue. | **Content:**<br>There are 'pro-choice' and 'pro-life' movements around the issue of abortion. The 'pro-choice' stance is taken by people who believe that the pregnant person's right to choose is more important than the foetus. The 'pro-life' stance is taken by people who believe that human life begins at conception and that no foetus should be denied the right to life. |
| **Questions:**<br>1. What does 'incompatible' mean?<br>2. Why do some people argue that Science and religion are incompatible? | **Questions:**<br>1. What is meant by 'stem cell research?'<br>2. Why are some religious believers against stem cell research? | **Questions:**<br>1. What is human genetic engineering?<br>2. What are 'saviour siblings?'<br>3. Is it acceptable to have a child to save another? | **Questions:**<br>1. What is abortion?<br>2. What's the difference between a 'pro-life' and 'pro-choice' view on abortion? |

| 26th Feb | 12th March |
| --- | --- |
| Create four **short summaries** (3–4 bullet points each). Include:<br>1. **Morality (absolute vs relative)**<br>2. **Sources of Morality (parents, conscience, holy books)**<br>3. **Medical Technology (sanctity & quality of life)**<br>4. **IVF (process + ethical issues)** | Create four **short summaries** (3–4 bullet points each). Include:<br>**1. Religion and Science (why some say they conflict)**<br>**2. Stem Cell Research (uses + controversy)**<br>**3. Genetic Engineering & Saviour Siblings (how & why used)**<br>**4. Abortion (pro-choice vs pro-life beliefs)** |

# 3D Design - Knowledge Organiser: Pewter Casting Project

## A. 3D DESIGN KEY WORDS

Health & Safety
Workshop Rules
Goggles
Safety ruler
Bench vice
Craft Knife
Corrugated Cardboard
Template
Spru5
Roller
Cutting Mat
Coping saw
MDF
Hand files
Wet and dry paper
Pillar drill
Pewter
Alloy
Melting point
Mould
Glass paper
Forge
Buffing machine
Mood board
Line
Contrast
Geometric
Natural
Font
Typography


## B. KEY KNOWLEDGE 1

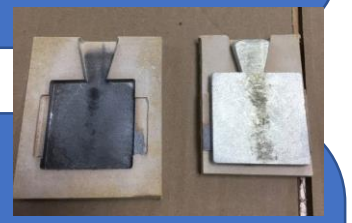
**Health and Safety in the workshop:**

1. Only enter workshop when told to do so.
2. Place your bags in designated area
3. Walk don't run
4. Keep work area and floor clear
5. Follow instructions.
6. Wear eye protection when told to do so.
7. Always wear an apron during practical.
8. Always tie your hair back whilst using tools and machinery.
9. Wear sensible shoes to protect your feet.
10. Remove all jewellery whilst doing practical work.
11. Only use tools and machinery that you have been taught how to use.
12. Report any broken equipment to the teacher.

What do the following symbols mean?

## C. KEY KNOWLEDGE 2 Critcal studies and modelling

Why do we use the work of others to inspire our own designs?
What is a mood board?
What kind of paper do we use to copy parts of an artists work?
Describe the following words: geometric/typography/minimalistic/natural/naïve?
What tools do we use to create the cardboard models.
State 3 ways to stay safe when using craft knives.



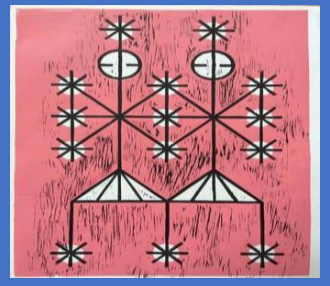
## D. KEY KNOWLEDGE 3. Cutting, shaping casting.

A template of the final design is used to trace round onto MDF
The MDF is safely secured in a vice and cut using a coping saw
The edges are smoothed with glass paper
A sprue is cut which is wide enough for the pewter to be poured in
The mould is clamped tightly between two blocks
The pewter is melted in a forge and poured into the mould.

An alloy is a mixture of two or more elemental metals
Pewter consists of tin, antimony and copper

## E. EXPERT MODELLING

JOHN PEDDER



HIILKE MACINTYRE

CECIL TOUCHON

## F. WIDER THINKING

https://www.youtube.com/watch?v=pqTDxf7x8ew

## A. Visual Elements Keywords

| | |
|---|---|
| Line | Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length. |
| Shape | A shape is an area enclosed by a line. Shapes can be geometric or irregular. |
| Form | Form is a three dimensional shape, such as a cube, sphere or cone. |
| Tone | This refers to the lightness or darkness of something. This could be a shade, or how dark or light a colour appears. |
| Texture | This is to do with the surface quality of something. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture. |
| Pattern | A design that is created by repeating lines, shapes, tones or colours. |
| Colour | Red, yellow and blue are primary colours, which means they can't be mixed using any other colours. |

## B. Key Knowledge 1: Key Terms

**Collage:** (also known as Photomontage) Collage is a technique named after the French word 'coller' meaning 'to glue'. It is a process in which pieces of paper, photographs or fabrics are arranged and stuck down onto a surface. **Digital Editing:** Image editing refers to modifying or improving digital or traditional photographic images using different techniques, too enhance or manipulate an image. **Identity:** Identity is the appearance, beliefs, personality traits, or expressions that characterise a person or group. **Mood board:** A mood board is a type of visual presentation or 'collage' consisting of images, text, and samples of objects in a composition. It can be based on a set topic or can be any material chosen at random. A mood board can be used to convey a general idea or feeling about a particular topic. They may be physical or digital, and can be effective presentation tools. **Self Expression**: to convey your personality, opinions or emotions ( through art). **Symbol:** In art, a symbol is something recognizable that stands for or represents something else. **Symbolism:** Symbolism is the art of using an object, image, colour or word to represent an idea. Symbolism was both an artistic and a literary movement that suggested ideas through symbols and emphasized the meaning behind the forms, lines, shapes, and colour.

## E. Expert Modelling:

Vanitas Still Life
Pieter Claesz 1625

Frida Kahlo
'Self Portrait, 1940

Glen Ligon
'Self Portrait' 2004

Kehinde Wiley
'Barack Obama'2018

The Singh Twins
'mixed media' 2017

Kervin Brisseaux
Digital Illustration 2022

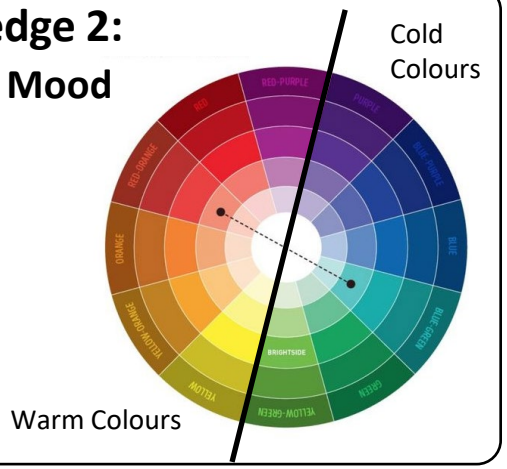


**ART & DESIGN**
**Project – YEAR 9 SELF EXPRESSION & SYMBOLISM**
**Threshold Concept #7 Artists use self expression and symbols to convey identity and ideas**

## C. Key Knowledge 2:

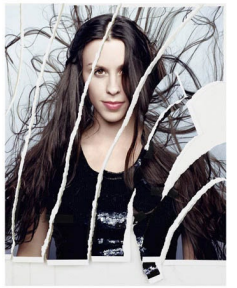
### Colour Theory - Mood

Warm colours like red, yellow and orange evoke higher human emotions, such as love, passion, happiness, and anger. Cool colours, like blue, green and purple are linked to calmness, sadness and indifference. Colours can trigger these mental states and emotions.




## D. Key Knowledge 2: RANKIN Destroy

Rankin "destroy" project was **a charity fund raising project**. Rankin asked 70 musicians and visual artists to destroy their own portrait photographs originally taken by Rankin. The series of portrait photographs were radically modified to destroy the image by their subjects.

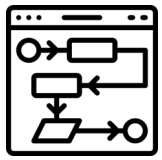


## F. Wider thinking / further reading:

Use this QR code to read about Rankin's Destroy Project and watch the videos on the making of the work.

# Computer Science Knowledge Organiser KS3: TERM 2

**Learn these key terms:** You can do this by using the look / cover / write technique or by writing them into a sentence

| Keyword | Meaning | Word used in a sentence | Picture link |
|---|---|---|---|
| Algorithm | Step by step instructions that can be followed in order to solve a problem or to complete a task | Spotify uses an algorithm to predict the probability a user will like a band from the others that they have chosen to listen to |  |
| Sequence | **Sequence**, the order that commands are executed by a **computer**, allows us to carry out tasks that have multiple steps. | My program is written in the correct sequence. |  |
| Selection | A **selection** is used to make **choices** depending on information. An algorithm can be made smarter by using IF, THEN, and ELSE functions | I used selection in my code to make someone choose if they wanted to play the game or not. |  |
| Iteration | **Iteration** in **programming** means repeating steps, or instructions , over and over again. This is often called a 'loop'. | I can use iteration to make my code less cluttered. |  |
| Psuedocode | A way of writing an algorithm in the style of a programming language but using plain English | I use pseudocode to help me to plan my program. |  |
| Variable | A value that changes in your program | An examples of variables in my favourite game Mario are time, coins and lives. These values all change. |  |
| Constant | A value that will always stay the same in your program | Pi is a constant value as it is always 3.1415. | π |

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|---|---|---|---|---|---|
| Year 9 Cycle 1 Knowledge Organiser | **What is Peer Pressure?**<br><br>**Peer pressure** (or social pressure) is the direct influence on people by peers, or the effect on an individual who gets encouraged to follow their **peers** by changing their attitudes, values or behaviours to conform to those of the influencing group or individual.<br><br>**Performing Skills**<br><br>**Characterisation**<br>The act of changing voice, body language, movement, gesture etc when in role is called characterisation. The performer must use their skills to portray a character consistently throughout their performance.<br>**Hot seating**<br>This is a strategy in which a character or characters, played by the teacher or a student, are interviewed by the rest of the group<br>**Improvisation**<br>This can be in the form of spontaneous or prepared (devised) drama. The performer can use of movement and speech to create a character or object in a particular situation; acting done without a script.<br>**Realism**<br>An attempt in theatre to represent everyday life and characters as they are or appear to be. | **Christopher Craig and Derek Bentley FACTFILE**<br>**2nd November 1952**. Derek Bentley (aged 19) and Christopher Craig (aged 16) broke into a London warehouse. Craig was armed with a revolver. The 2 were seen entering the premises and the police were called. Bentley and Craig then went on to the flat roof of a Warehouse in Croydon and hid behind a lift-housing.<br>Detective Sergeant Frederick Fairfax climbed on to the roof, and managed to grab Bentley. Craig shouted defiantly at the detective and Bentley managed to break Fairfax's grip. At this point, Bentley is supposed to have shouted "***Let him have it Chris***". Craig then fired the gun grazing the police officer's shoulder. Despite being wounded Fairfax continued after Bentley and managed to finally arrest him. Bentley told Fairfax that Craig had a Colt .45 and plenty of ammunition.<br>Police were sent on to the roof. The first policeman to appear on to the roof was Police Constable Sidney George Miles (age 42). He was immediately shot dead by Craig. After exhausting his supply of bullets, Craig leapt from the roof on to the road (30 feet below). He landed badly, fracturing his spine and left wrist. Craig was then arrested. | **Key Characteristics on Craig and Bentley**<br><br>**Derek Bentley** was illiterate and is alleged to have had a mental age of 11. He also suffered from epilepsy as a result of a head injury received during the war.<br>  <br>**Christopher Craig** was<br>  | **Performing Skills**<br><br>**Cross cutting**<br>Also called split-screen. This is a term used to describe two or more scenes which are performed on stage at the same time.<br>**Multi-roling**<br>This is when a performer plays more than one character onstage. The differences in character are marked by changing voice, movement, gesture and body language but the audience can clearly see that the same actor has taken on more than one role.<br>**Role**<br>The character portrayed by a performer in a drama.<br>**Design Skills**<br>**Costume**<br>What a performer wears to evoke the appearance of a particular character. Costumes maybe realistic or stylised. They may be 'period' – appropriate to the historical setting of the play – or deliberately modern in look, even when the play is set in a past era, depending on the performance style of the production.<br>**Props**<br>An object used on stage by performers. A *prop* is considered to be anything movable or portable on a stage or a set. | **Performing Skills**<br><br>**Marking the Moment**<br>Marking the moment is a dramatic technique used to highlight a key moment in a scene or improvisation. This can be done in a number of different ways: for example through slow-motion, a still image, narration, thought-tracking, music or lighting.<br><br>Marking the moment can happen when a scene has been created, and the group decides it's a significant moment in the drama, and they want to show this in some way. This is when something is needed to emphasize the moment.<br>**Effective ways to mark the moment** is to add a still image and to apply a thought tracks, use slow motion or deliver a monologue commenting on the action taking place and how the characters are feeling about the situation. Using the lighting design element of using a spotlight to focus attention on one area of the stage or to use a particular colour to the stage at a particular moment during a performance. |

| | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|---|---|---|---|---|---|
| **Subject name and topic** | **Creating mood and atmosphere**<br><br>Lighting can help to create mood and atmosphere on stage. For example, to create a cold, damp jail cell, a lighting designer might use a cool, blue light with a low intensity.<br><br>Lighting design is particularly effective in focusing the audience's attention. By lighting different areas of the stage, a lighting designer is able to guide the audience's eye.<br><br>**The Colours and their meanings in Drama:**<br><br>Blue = To show spirituality, faith, loyalty contentment, tranquillity, stability, peace, harmony, confidence, water, cold, depressions.<br><br>Yellow = To show knowledge, wisdom, joy, relaxation, optimism, happiness, hope, cowardice and dishonesty.<br><br>Red = To show rage, love, anger, energy, strength, aggression, speed, danger, heart, power, blood, fire, violence. | **Performing Skills**<br><br>**Chorus**<br>A group of performers who sing, move, or recite in unison/as one.<br>**Still Image**<br>This is a frozen picture which communicates meaning. It can provide insight into character relationships with a clear focus upon use of space, levels, body language and facial expression.<br>**Thought Tracking**<br>This is when a character steps out of a scene to address the audience about how they're feeling.<br>Sharing thoughts in this way provides deeper insight into the character for an audience<br>**Proxemics**<br>This explores 'spatial relationships', between different performers or a performer and elements of the set.<br>**Drama Technique of Writing in Role**<br><br>**Writing** in **Role** is a drama technique that asks the student to **write** from a character's perspective, typically in a familiar format like a diary entry; a letter, email, or text; a newspaper headline; or a letter to an editor. | **Bentley must not die!** Bentley was hanged at 0900 hours after last-minute appeals for clemency were rejected. Bentley was sentenced to death on 11 December for killing Pc Miles during a bungled break-in at warehouse in Croydon. The court was told his co-defendant,Craig, fired the fatal shot but because he was still a juvenile in the eyes of the law he escaped the death sentence and was ordered to be detained at Her Majesty's pleasure.<br><br>A large crowd began gathering outside Wandsworth jail from early this morning. Some sang the hymn Abide With Me and others began booing when a prison warder came out carrying a glass-covered board containing the execution notice. Bentley's sentence was sealed when the Home Secretary, said he could not see any reason for intervening in the case. A deputation of MPs had gone to see the home secretary with a petition (signed by about 200 members) They urged him to ask the Queen. They pointed out Craig was the ringleader of the two and that Bentley's mental age was probably younger than his partner - a fact that had not been disclosed to the jury. But the he could not see any grounds for modifying the sentence. | **Revision for Knowledge Organiser test:**<br><br>Revise areas on Performance and Design skills.<br><br>You may choose to look over all the performance skills and use the following to support you with your revision:<br><br>LOOK<br>COVER<br>WRITE<br>CHECK<br><br>Draw a mind map of how colour symbolism is used in drama to represent the three colours explored in marking the moment.<br><br>Ensure you have knowledge of the story and characters. Remember how you used the performance and design techniques to bring the story of Craig and Bentley to life<br><br>Create flash cards that include your performance/design skills explain their definitions and add examples of how you explored different aspects of the story to life. | **Quick recap of key Performing Skills**<br>**Characterisation**<br>The act of changing voice, body language, movement, gesture etc when in role is called characterisation.<br>**Hot seating**<br>This is a strategy in which a character is interviewed.<br>**Improvisation**<br>This can be in the form of spontaneous or prepared (devised) drama.<br>**Realism**<br>An attempt in theatre to represent everyday life.<br>**Cross cutting**<br>This is a term used to describe two or more scenes which are performed on stage.<br>**Multi-rolling**<br>This is when a performer plays more than one character onstage.<br>**Role**<br>The character portrayed by a performer in a drama.<br>**Chorus**<br>A group of performers move, or recite in unison/as one.<br>**Still Image**<br>This is a frozen picture which communicates meaning.<br>**Thought Tracking**<br>This is when a character shares their thoughts.<br>**Proxemics**<br>Explores 'spatial relationships', between different performers. |

Start with Week 1. Each week, complete the colour block. Write each word out 3 times and each definition once. Check it all with a purple pen. Tick what is correct, fix what is wrong. Then complete the weekly SPaG (spelling, punctuation and grammar) task.

**Coombeshead Academy** *Inspiring Excellence* English Learning Area

| wk | keyword | definition | example |
|---|---|---|---|
| Week 1 | **Context** | The wider circumstances in which something exists. | Taking a comment out of context can impact its true meaning. |
| | **Viewpoint** | A person's opinion or point of view. | From her viewpoint, the movie was enjoyable. |
| | **Perspective** | The background factors which impact a person's viewpoint. | From a teacher's perspective, homework is beneficial. |
| | **Reasoning** | Thinking about something in a logical, sensible way. | What is the reasoning behind your behaviour? |
| | **Non-fiction** | Informative writing based on true events. | My favourite type of non-fiction text is sports articles. |
| Week2 | Summary | The main points of something. | Give me a summary of your school day. |
| | **Inference** | Using evidence to 'figure out' what is being said. | He inferred she'd had a good day from the smile on her face. |
| | **Statement** | A definite or clear expression of something in speech or writing | What statement is your writing making? |
| | **Compare** | To note the similarity or dissimilarity between things. | He compared his homework to his friend's, which was far better. |

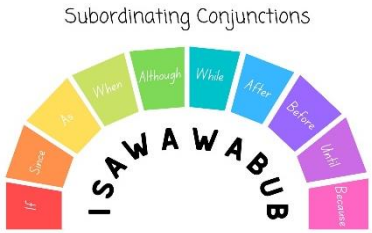
**Week 1**

**Week 1 SPaG task**

For each of the following sentences, identify the main clause and the subordinate clause.

1. Outside the window, rain began to fall.
2. He shared his sweets with his friend as it was their birthday.
3. She went to bed after brushing her teeth.
4. Before going home, Ben went to the park.
5. After we went to the cinema, we went out for dinner.

Subordinate clauses begin with subordinating conjunctions. Use this to help you!




**Week2**

**Week 2 SPaG task**

**Apostrophes are used to show omission (when words are contracted and letters removed e.g. do not becomes don't) or possession (to show when something belongs to someone). Put apostrophes in the correct places in the sentences below.**

1. **My dogs new toy is broken already!**
2. **I cant wait to go to the park later.**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Implicit** | When something is suggested, not directly expressed. | The implicit negativity between the friends made him uncomfortable. | | | 3. Its over there.<br>4. Dans haircut looks really cool.<br>5. Im excited to go to my friends house. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Week 3** | **Analyse** | Examine how a writer uses language and structure to create a particular effect. | After analysing the text, I learnt how the narrator feels. | | **Week 3** | **Week 3 SPaG Task**<br><br>**A comma splice is when two sentences are incorrectly joined by a comma. The below passage contains 3 comma splices. Identify them and correct the commas into the required punctuation marks.**<br><br>**At the weekend I went out with my family, we went to the zoo. We saw monkeys, crocodiles and lots of insects, they were all so interesting to see and learn about. However my favourite animal was the elephant, he was so majestic and intelligent.**<br><br>  <br><br>"He's in a comma." |
| | **Effect** | How the reader thinks/feels as a result of the writer's use of language or structure. | The effect of the simile is a sense of comfort. | | | |
| | Methods | The things a writer purposely uses to achieve a particular effect. | The writer uses methods such as metaphors in their story. | | | |
| | **Explicit** | Something stated clearly, leaving no room for confusion or doubt. | She made her feelings explicit by shouting. | | | |
| | Opinion | A judgement made about something. | What is your opinion on the latest Netflix series? | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Week 4 | **Critically** | To analyse the merits and faults of a piece of work. | She thought critically about his offer. | | Week 4 | **Week 4 SPaG Task**<br><br>**Correct the spelling errors in the following words.**<br><br>1. proberly<br>2. allways<br>3. beutiful<br>4. intresting<br>5. definately<br>6. permenently<br>7. diffrent<br>8. wierd<br>9. suprise<br>10. seperate<br><br>  |
| | **Evaluate** | To assess something, such as its effectiveness. | After evaluating the evidence, he deemed it unnecessary. | | | |
| | **Examine** | Inspect something thoroughly. | Examination allowed them to figure out what was wrong with the animal. | | | |
| | **Explore** | Discuss in detail. | He explored the writer's use of repetition in the text. | | | |
| | **Describe** | Give a detailed account of. | The writer describes his characters in full detail. | | | |

| | | | |
|---|---|---|---|
| Week 5 | **Perceptive** | Showing insight. | He was very perceptive to his friend's moods. |
| | **Cohesion** | Forming a united whole. | The conclusion of the story added to the cohesion of it. |
| | **Coherent** | Logical and consistent. | Her argument on why the legal driving age should be made higher was very coherent. |
| | **Structure** | The arrangement of ideas within a text. | The structure of the text emphasises the tension within it. |
| | **Influence** | To be able to have an effect on something. | His writing to the local council helped influence their decision. |
| Week 6 | **Tone** | The mood of the text. | The language choices made by the writer created a serious tone. |
| | **Semantic field** | A group of words related by their meanings. | The words "blood", "battle" and "bullets" form a semantic field of war. |
| | List | Connected items written consecutively. | The writer used a list to give the impression that they had a long day. |
| | **Alliteration** | Words beginning with the same letter or letter sound close together in a text. | Alliteration of the 'b' sound creates a powerful, aggressive sound. |
| | **Repetition** | Purposely repeating a word or phrase for effect. | Repetition of the word 'unfair' made her point clear. |

**Week 5**

Week 5 SPaG Task

Identify the word classes of the highlighted words in the sentences below.

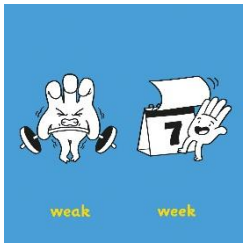
1. He quickly ran to the bus stop; he didn't want to miss the bus.
2. The wind rattled the old shutters.
3. The classroom was missing some tables and chairs.
4. I played football yesterday.
5. I don't like eating sweets; they are too sugary.


**Week 6**

Week 6 SPaG Task

Add in the correct homophone into these sentences – there, their or they're.

1. _____ was no one else at the bus stop this morning.
2. _____ new shoes are really cool.
3. _____ going to visit their grandparent's this weekend.
4. _____ was no one at _____ house when I knocked earlier.
5. _____ going to regret not coming out with us; we had so much fun.



| | | | |
|---|---|---|---|
| Week 7 | **Extended metaphor** | A metaphor that is introduced then further developed throughout the text. | The extended metaphor of the sea being compared to an angry dog was effective. |
| | **Juxtaposition** | Placing two opposing items/images together in a text to highlight the contrast between them. | His actions were in juxtaposition to his thoughts. |
| | **Statistics** | Numerical data used to prove ideas or points. | Statistics have shown that use of social media can cause mood swings in young children. |
| | Facts | Something that can be proven to be true. | His knowledge of political facts helped him to convince his audience. |
| | **Anecdote** | A short interesting story about a real person or incident. | She shared a relatable anecdote about growing up with siblings. |
| Week 8 | **Analogy** | A comparison between one thing and another, for the purpose of explanation. | A popular analogy is 'like finding a needle in a haystack' to describe something difficult. |
| | **Hyperbole** | Exaggerates statements not meant to be taken literally. | Her use of hyperbole added a comedic tone but was very convincing. |
| | **Hypothetical** | An idea presented as a possibility, not real life. | His hypothetical scenario made the audience wish it were reality. |
| | **Oxymoron** | Using contradictory terms in conjunction. | A popular oxymoron is the word 'bittersweet'. |



**Week 7**

Week 7 SPaG Task

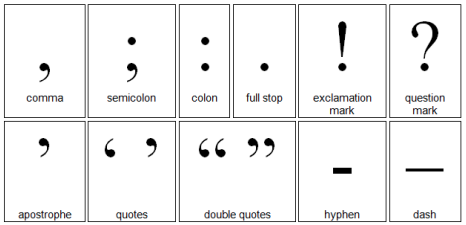
Add a subordinate clause to the beginning, middle or end of these main clauses to create complex sentences.

1. The rain fell
2. He walked home
3. The night darkened
4. She won the race
5. We waited for the bus

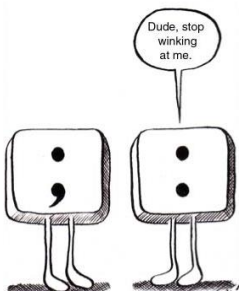
**Week 8**

Week 8 SPaG Task

Accurately punctuate the following text.

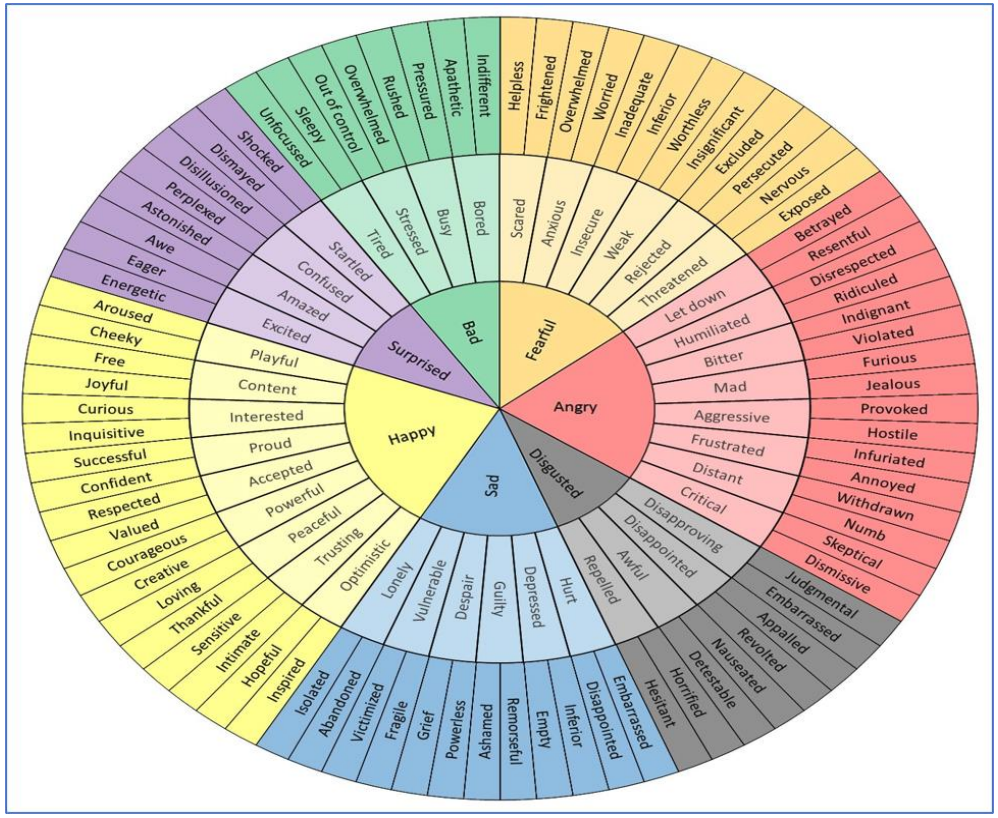



A few miles south of Soledad the Salinas River drops in close to the hillside bank and runs deep and green The water is warm too for it has slipped twinkling over the yellow sands in the sunlight before reaching the narrow pool On one side of the river the golden foothill slopes curve up to the strong and rocky Gabilan mountains but on the valley side the water is lined with trees willows fresh and green with every spring carrying in their lower leaf junctures the debris of the winter's flooding and sycamores with mottled white recumbent limbs and branches that arch over the pool

| | | | | | | |
|---|---|---|---|---|---|---|
| | Quotes from an expert | Using expert statements to prove a point. | To quote an expert, Dr Johnson at the University of Exeter said, "this is the clearest data to prove climate change is real". | | | |
| Week 9 | **Register** | The level of formality required, depending on context. | Ensure your register matches the type of text you are writing. | | Week 9 | Week 9 SPaG Task<br><br>Identify the adverbial phrases in the following sentences.<br><br>1. I ate my breakfast in the morning.<br>2. I played netball with my friends.<br>3. When we played football, we lost the ball behind the shed.<br>4. Everywhere we looked there were signs of Spring.<br>5. We stayed at home due to the rain.<br><br>  |
| | **Formal** | Using more sophisticated, grammatically correct language. | You must use formal language in any non-fiction writing. | | | |
| | **Informal** | Using more casual, everyday language. | Informal language is widely used when conversing with friends. | | | |
| | **Article** | A piece of formal writing included in a newspaper or magazine. | The newspaper article detailed the events of a crime that occurred last night. | | | |
| | **Speech** | A formal address delivered to an audience. | Her speech detailed her opinions on a new school uniform. | | | |
| Week 10 | **Letter** | A formal written communication. | He wrote a letter to the local MP to express his views on local issues. | | Week 10 | Week 10 SPaG Task<br><br>Semi-colons can be used in place of a full stop to join two main clauses that are closely linked. Put a semi-colon in the correct place in the following:<br><br>1. Dad is looking old his hair is getting thinner.<br>2. I was late for school today there was traffic.<br>3. I can't wait for break I am so hungry.<br>4. I need to go shopping I have run out of food.<br>5. Someone needs to help me I am carrying too much.<br><br>  |
| | **Essay** | A formal piece of writing in which the author gives and evidences their argument on a topic. | Her essay about Macbeth's ambition was excellently written. | | | |
| | **Leaflet** | A printed sheet of paper containing information. | The guides were handing out leaflets at the door of the museum. | | | |
| | **Blog** | A regularly updated webpage, usually run by an individual about their own experiences or ideas. | Her latest blog post detailed her thoughts on the recent general election. | | | |
| | Literary non-fiction | Non-fiction writing which gives a story-telling elements to real events. | 'Touching the Void' is an example of literary non-fiction. | | | |

# Inspiring Excellence- Developing Independent Writing Skills

- Find a newspaper article – can you identify the viewpoint and perspective of the writer? Can you identify the tone?
- Write your own piece of non-fiction – an article, a letter, a diary, etc. Can you make your viewpoint clear? Is your perspective clear, or can you try to write in a different perspective? Try to match your tone to the non-fiction type.




Practise your **SPaG**! by doing the following:

- Practise your **spellings**.
- Think of **synonyms** for words you use a lot.
- List all types of **punctuation** and know when to use them (EG: semi-colon; brackets; speech marks; colon; dash; etc…)
- Vary your **sentence types** (simple, compound, complex, and minor!)
- Use **connectives** to link paragraphs.
- Use TiP ToP to **paragraph** correctly!

## Week 1 & 2
### Why we need food & the Eatwell guide

The body needs food for:

- Growth and repair of cells
- Energy
- Warmth
- Protection from illness
- Keeping the body working properly

Your diet should include:

- A variety of foods to make sure you get all of the nutrients to stay healthy.
- No single food can supply all of the nutrients that you need

Foods are vital for our survival and are made up of different things called nutrients. Each nutrient has its own function in the body

- Protein - growth and repair of cells, maintenance of the body and to provide energy.
- Fat - provide energy, to keep the body warm, to protect internal organs and provide fat soluble vitamins and essential fats
- Carbohydrates - needed for energy
- Vitamins & minerals - needed to protect the body and prevent illness and disease

<u>The Eatwell guide</u>:


<u>Questions:</u>

1. Why should you eat a variety of foods?
2. List the 5 main nutrients needed by the body and give a function of each
3. How much water should we drink a day?
4. List the sections of the Eatwell Guide including foods you would find in each section

## Week 3 & 4
### Protein

Protein is needed for growth, repair, maintenance and a secondary source of energy

Some people will need more protein than others e.g. children, teenagers and pregnant women because of puberty and the growth of a child.

Proteins are made from amino acids and there are 20 of them. Essential amino acids must be provided by food because the body cannot make them. 10 are essential for children and 8 are essential for adults.

| HBV - Contain all of the essential amino acids coming mainly from animals | LBV - Missing 1 or more essential amino acid. Mainly come from plant foods e.g. peas, beans |
|---|---|
| Meat, chicken, pork, beef bacon, sausages<br>Fish and seafood<br>Milk<br>Yoghurt<br>Eggs<br>Soya beans<br>Quinoa | Cereals, e.g. wheat, rice, oats, barley<br>Cereal products e.g. bread, pasta, rice<br>Sweetcorn<br>Peas, beans, lentils<br>Nuts and nut products e.g. peanut butter<br>Seeds |

Complimentary proteins

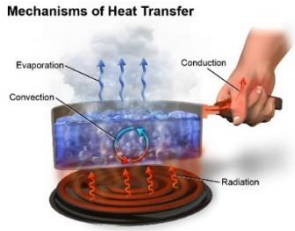
- When 2 or more LBV proteins are combined they can make a HBV protein e.g. beans on toast

<u>Deficiency and excess:</u>

Kwashiorkor is a deficiency that mostly occurs in children. They will have poor growth rates, suffer hair loss and persistent infections. Too much protein can be harmful to the kidneys and liver

<u>Questions:</u>

1. What is the 4 letter word to remember the functions of protein
2. Which groups of people need more protein in their diet?
3. What are proteins made from and how many are there?
4. Can the body make all of the amino acids?

| **Week 5 & 6**<br>Modifying diets | **Week 7 & 8**<br>Carbohydrate |
|---|---|
| <u>Balanced diet definition:</u><br>This means eating a wide variety of foods in the right proportions, and consuming the right amount of food and drink to achieve and maintain a healthy body weight.<br><br>The Eatwell guide shows how eating different foods can make a healthy and balanced diet. It divides food into groups and shows how much of each food group is needed for a healthy diet.<br>The groups of the Eatwell Guide are:<br>1. Fruit and vegetables<br>2. Starchy carbohydrates<br>3. Protein<br>4. Dairy and alternatives<br>5. Oils and spreads<br><br><u>8 tips for a healthy diet</u><br>1. Base your meals on higher fibre starchy carbohydrates.<br>2. Eat lots of fruit and veg.<br>3. Eat more fish, including a portion of oily fish.<br>4. Cut down on saturated fat and sugar.<br>5. Eat less salt: no more than 6g a day for adults.<br>6. Get active and be a healthy weight.<br>7. Do not get thirsty.<br>8. Do not skip breakfast.<br><br>The 3 main macronutrients needed by the body are:<br>• Carbohydrate = Energy<br>• Protein = GERM<br>• Fat = PIE<br><br><u>Question:</u><br>1. Discuss the healthy eating guidelines and their importance when planning meals for an elderly person.<br>2. What are the main things that need to be reduced in the diet to make sure it is healthy and balanced? | Heat is transferred to foods by 3 different methods:<br>• Conduction - heat travels through solid materials like metal as well as food.<br>• Convection - heat travels through air or water.<br>• Radiation - heat rays directly warm and cook food.<br><br>  <br><br><br>Nutritional needs depend on: Gender, Age, Lifestyle, Activity level, Health condition(s), Weight<br><br>People can be classified into:<br><u>BABIES</u><br>**Special diet needs**: milk for the 1st 6 months. High energy needs. No added salt or sugar.<br>**Need more**: Food high in iron & vitamin C 6 months+<br><br><u>CHILDREN</u><br>**Special diet needs:** regular, smaller meals and snacks. High energy needs. Reduced salt and sugar. Eatwell Guide between 2-5 years<br>**Need more:** Calcium and Vitamin D. Iron and Vitamin C<br><br><u>TEENAGERS</u><br>**Special diet needs:** Eatwell Guide. Teenagers have growth spurts and high energy needs. Increased appetites mean larger portions.<br>**Need more:** Protein, Calcium & Vitamin D, C & Iron<br><br><u>ADULTS</u><br>**Special diet needs:** Lower energy needs. Eatwell guide. Avoid foods high in sugar and fat.<br>**Need more:** Calcium and Vitamin D, Iron and Vitamin C<br><br><u>PREGNANT AND LACTATING WOMEN</u><br>**Special diet needs**: Healthy balanced diet. Plenty of water. Higher energy needs for last 3 months of pregnancy<br>**Need more:** Folic acid, Protein, Calcium and Vitamin D, C & Iron<br><br><u>THE ELDERLY</u><br>**Special diet needs:** Bodies typically slow down, so less energy is needed. Don't absorb nutrients as easily. Plenty of watery drinks<br>**Need more:** Fibre, Calcium, Vitamin D & C, Iron<br><br>Questions:<br>1. Explain which heat transfer methods would be used and where when making a stir fry<br>2. Design a meal for an active teenager and explain which nutrients will be found in the main |

## Week 1 & 2
Nutrition recall

**8 tips for a healthy diet**

1. Base your meals on higher fibre starchy carbohydrates.
2. Eat lots of fruit and veg.
3. Eat more fish, including a portion of oily fish.
4. Cut down on saturated fat and sugar.
5. Eat less salt: no more than 6g a day for adults.
6. Get active and be a healthy weight.
7. Do not get thirsty.
8. Do not skip breakfast.

VITAMINS AND THEIR FUNCTIONS

| | Function (what does it do?) | Source (foods found in) |
|---|---|---|
| A | • Healthy skin<br>• Helps us see in the dark | • Animals – liver and milk<br>• Plants – carrots and red peppers |
| B | • Releases energy from food | • Bread, fish, broccoli, liver, milk, peas, rice |
| C | • Keeps connective tissue healthy<br>• Helps absorb iron | • Oranges, blackcurrants, broccoli, red and green peppers |
| D | • Helps the body absorb calcium | • Butter, eggs, milk, oily fish |

MINERALS AND THEIR FUNCTIONS

| | Function (what does it do?) | Source (foods found in) |
|---|---|---|
| Calcium | Build strong bones and teeth | Yoghurt, cheese, milk, tofu |
| Sodium (salt) | Keeps the correct water balance in the body | Cheese, ready meals, salted nuts, bacon |
| Iron | Keeps red blood cells healthy | Dark green vegetables, beans, fish, egg yolk, red meat |

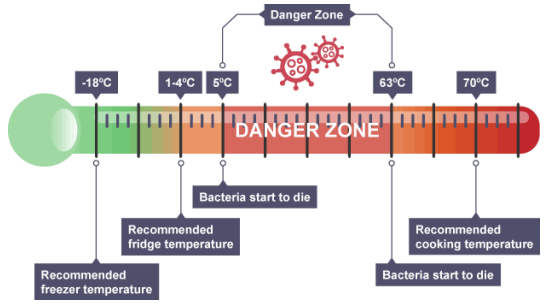
**Questions:**

1. What colour is each section of the Eatwell guide?
2. What should we cut down on eating too much of?
3. What do the letters GERM stand for in proteins function in the body?
4. What do the letter PIE stand for in fats functions in the body?

## Week 3 & 4
Food safety 1

Food safety advice when handling food:


**How do bacteria grow?**
Bacteria double every 10-20 minutes in the right conditions (asexual) e.g. 1 becomes 2, then 4, then 8 …… through binary fission




**Definitions**:

- Food poisoning is an illness caused by eating contaminated food. It's not usually serious and most people get better within a few days without treatment. In most cases, food is contaminated by bacteria.
- High-risk foods: ready-to-eat foods high in moisture and protein

**Food poisoning bacteria and symptoms**

| Name | Foods it can come from |
|---|---|
| Salmonella | Undercooked poultry, Eggs, Unpasteurised milk |
| Listeria | Soft cheeses, pate |
| Campylobacter | Poultry, milk and milk products |
| E-coli | Undercooked meat – especially burgers, Unwashed contaminated fruit |

**Symptoms of food poisoning:**

- Vomiting
- Diarrhoea
- Nausea
- Stomach pains
- Dehydration

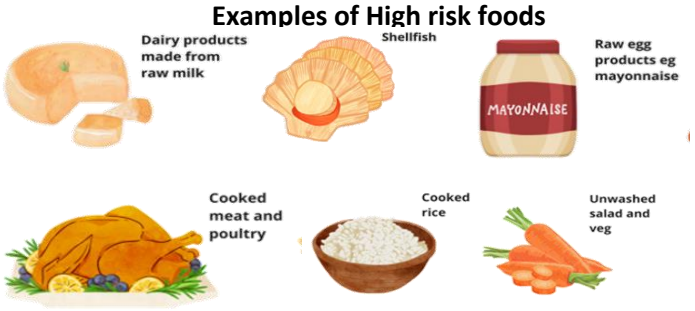
**Questions:**

1. What are the 5 main things that bacteria need to grow?
2. What are the main symptoms of food poisoning?
3. How could you control or stop bacterial growth?

## Week 5 & 6
Food safety applied

**Definition**:
Food poisoning is an illness caused by eating contaminated food. It's not usually serious and most people get better within a few days without treatment. In most cases, food is contaminated by bacteria.

High-risk foods: ready-to-eat foods high in moisture and protein




Using your knowledge of food safety from years 7, 8 and 9 and this knowledge organiser, answer the following questions:

1. Explain how the ingredients used to make a chicken curry should be stored. You can't repeat answers

| Ingredient | Storage instruction |
|---|---|
| Raw mince | |
| Left over coconut milk | |
| Cooked curry | |

2. Give 2 food safety rules that must be used for each of the following and explain why the rule is important.
3. Which type of food poisoning could you get from eating raw/undercooked chicken?
4. Name 3 high-risk foods

## Week 7 & 8
Revision for assessment

You need to use all of the information from the knowledge organiser to revise for the end of rotation assessment. Use the following questions to help.

You don't need to answer them all in your book but you should be able to answer them. See which ones you can/can't answer.

1. Why should you eat a variety of foods?
2. List the 5 main nutrients needed by the body and give a function of each
3. How much water should we drink a day?
4. List the sections of the Eatwell Guide including foods you would find in each section
5. What is the 4 letter word to remember the functions of protein
6. Which groups of people need more protein in their diet?
7. What are proteins made from and how many are there?
8. Can the body make all of the amino acids?
9. What are 3 of the main functions of fat in the body?
10. Name 3 sources of animal fat & 3 sources of vegetable fat
11. Which type of fat should we be eating less of and which should we eat more of?
12. What is the main function of carbohydrate in the body?
13. What are the 3 main groups of carbohydrate?
14. What percentage of our energy should come from carbohydrates?
15. What problems do you think eating too many free sugars could cause in the body?
16. Explain the difference between a macronutrient and micronutrient?
17. Are macronutrients more important than micronutrients in the body?
18. Which vitamin helps the body absorb calcium?
19. Which vitamin helps the body absorb iron?
20. Why do teenagers need extra protein in their diets?
21. Which foods should adults avoid to prevent weight gain?
22. What type of drinks are suitable for pregnant women?
23. Why does the elderly need less energy than younger adults?

# Life Skills Knowledge Organiser Year 9 Cycle 2

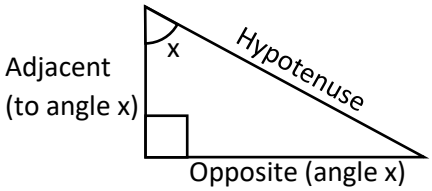
| Lesson 1 and 2– Unifrog | Lesson 3 and 4 – Life After GCSE |
|---|---|
| **Where to access support**<br>https://www.unifrog.org/sign-in | **Where to access support**<br>https://nextstepssw.ac.uk/careers<br>https://nationalcareers.service.gov.uk/ |
| **Content:**<br>Aspirations- Your hopes or ambitions of achieving something.<br>**Searching the Careers library on Unifrog**<br>https://www.unifrog.org/sign-in<br><br>Enter your school email and click re-set password- A link will be sent to your school email to re-set your password.<br>Log in to Unifrog and begin exploring different jobs and careers using the **Careers Library**<br>Each profile will have all the information you need to see whether a job or career area is right for you!<br><br>- Day-to-day tasks<br>- Skills needed to do the job<br>- Career progression<br>- Rate of growth in the industry or career area<br>- Qualifications needed<br>- Working hours and salary | **Content:**<br>**A levels**<br>Description: Study a subject you took at GCSE in greater depth or choose a new one. You could take 3 broad subjects you are interested in to keep your career options open or choose ones you need for a specific career.<br>Duration: 2 years<br>**Apprenticeships**<br>Description: Intermediate, advanced higher and degree apprenticeships Which You'll get training that is relevant to your job and be paid a salary.<br>Location: You'll spend 80% of your time in the workplace and 20% off-the-job with some study in a college, training centre or Institute of Technology<br>Duration: A minimum of 1 year<br>**Technical and vocational qualifications**<br>Description: Qualifications which teach you how to do tasks specifically related to the industry and role you want to be involved in.<br>Duration: Course dependent<br>Assessment: Can include coursework, skills tests and exams<br>**Traineeships**<br>Description: A course that includes a work placement that will get you ready for an apprenticeship or a job. You'll get work experience and some help to apply for your next steps. You can also improve your maths and English skills. You'll get work experience and some help to apply for whatever you do next.<br>Duration: 6 weeks to 1 year |
| **Questions**<br>1. What is the name of the career's website?<br>2. Why is it useful to research possible careers?<br>3. Why is it important that we revisit these ideas each year?<br>4. What career path would you like to take?<br>5. What qualifications do you need to achieve this career goal? | **Questions**<br>1. What is an A-level and where can you study them?<br>2. Do you get paid to be an apprentice?<br>3. What is a technical qualification?<br>4. How are you assessed in a technical qualification?<br>5. What subjects will you get help with in a traineeship? |

| Lesson 5 and 6 – Identity Theft | Lesson 7 and 8 – Employment Rights |
|---|---|
| **Where to access support**<br>https://stopthinkfraud.campaign.gov.uk | **Where to access support**<br>https://www.citizensadvice.org.uk/work/ |
| **Content:**<br>Identity Fraud: Identity fraud is when a fraudster uses someone else's identity (or creates a fake identity) to access a product or service so they get out of paying for it themselves.<br><br>**What information is a fraudster looking for?**<br>Name<br>Date of Birth<br>Address<br>Qualifications<br>What school you go to<br>Interests and hobbies<br>Friends and family<br>Religious heritage<br><br>Everyone should be careful what they share on social media and that there are lots of ways to protect personal information, from thinking carefully about what is appropriate to publicly share (with strangers), to making sure that electronic devices are protected using anti-virus software and strong passwords, to not accessing personal information on public Wi-Fi networks (for example doing online banking using a café's free Wi-Fi). | **Content:**<br>Employers have a responsibility to provide some basic conditions for their employees. These are:<br>- Pay<br>- Career development<br>- Compassionate leave<br>- Holidays<br>- Health and safety<br>- Equality in terms of: gender, race, religion, disability<br>sexual orientation, age<br>- Contracts<br><br>**Contracts**- Employers must ensure that all employees have a contract of employment. This is in the interests of both employers and employees.<br>The contract of employment is a legal document that can be used to resolve disputes between the employer and employee. It outlines information on pay, responsibilities, terms (such as start date), entitlements (sick pay, holiday) and hours of employment.<br><br>**Disciplinary Process**- A process employers use to tell employees that their performance or conduct isn't up to expected standards. |
| **Questions**<br>1. What is identity fraud?<br>2. Give three examples of information a fraudster may look for.<br>3. Give three ways you can protect yourself from identity fraud. | **Questions**<br>1. Give three basic conditions an employee must offer<br>2. What is a work contract?<br>3. When might you need to use your contract?<br>4. What is a disciplinary process? |

| Lesson 9 and 10– Debt and Online Risk | |
|---|---|
| **Where to access support**<br>https://www.citizensadvice.org.uk/debt-and-money/help-with-debt/ | |
| **Content:**<br><br>**Debt-** a sum of money that is owed or due.<br>**Loan**-is an agreement in which one party lends money to another.<br>**Cyber Crime-** A type of crime that is committed using information technologies such as a computer and a network.<br>**Fraud**- Illegal deception intended for financial or personal reward.<br>**Identity fraud**- when a fraudster uses someone else's identity (or creates a fake identity) to access a product or service so they don't have to pay for it themselves.<br>**Internet fraud (Online Scam) -** A type of cybercrime fraud or deception which makes use of the Internet and could involve hiding of information or providing incorrect information for the purpose of tricking victims out of money/ property.<br>**Money Mule**- A person who (intentionally or unintentionally) transfers money acquired illegally, usually through their own bank account, on behalf of others.<br>**Phishing**- Social engineering technique: An attempt to gain personal information (or persuade someone to do something) through the use of email communications. A more sophisticated and targeted version of this is sometimes referred to as 'Spear Phishing'. | |
| **Questions**<br>1. What is debt?<br>2. How might someone get into debt?<br>3. What is the difference between crime and cyber-crime?<br>4. What is phishing?<br>5. Who is vulnerable to being scammed online? | |

# Your Maths Homework is to complete your sparx

## Y9C2 Key knowledge

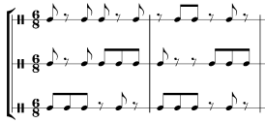
| Item | Description |
|---|---|
| **The sides of a right angled triangle** | Hypotenuse (H)<br>Adjacent (A)<br>Opposite (O)<br>  |
| **SOHCAHTOA** | $sin(x) = \frac{O}{H}$ $cos(x) = \frac{A}{H}$ $tan(x) = \frac{O}{A}$ |
| **Coordinate** | A place. Written as $(x, y)$ |
| **Vector** | A movement.<br>Written as $\begin{pmatrix} x \\ y \end{pmatrix}$<br>A quantity that has size and direction |
| **Scalar** | A quantity that just has size (ordinary numbers are scalars) |
| **Percentage multiplier** | A decimal value that increases or decreases and amount by a percentage.<br>**Multiplier** / **Effect**<br>$\times 1.04$ — Increases by 4% (100% + 4% = 104%)<br>$\times 1.4$ — Increases by 40% (100% + 40% = 140%)<br>$\times 0.6$ — Decreases by 40% (100% - 40% = 60%) |
| **The repeated percentage change formula** | $new\ value = starting\ value \times multiplier^{time\ period}$<br>Also known as the compound interest formula |
| **Interest** | Money paid regularly at a particular rate for the use of money lent, or for delaying the repayment of a debt. Usually given as a percentage. |
| **Compound interest** | Interest that is calculated on the original amount and the interest already paid (or charged). |
| **Simple interest** | Interest that is only calculated on the original amount. |
| **Depreciation** | A decrease in value. Eg. The value of the car depreciated (decreased). |

# AFRICAN MUSIC

African instruments are often made from plants and animal products such as hide and bone. African musicians are very fond of **PERCUSSION** instruments and use a wide variety of drums (called **MEMBRANOPHONES**) Drums are traditionally used as an accompaniment to singing, dancing, working and communicating between villages. Drummers are typically the most respected members of their community.

## Characteristic Rhythms and Metres, Traditional Rhythm Patterns & Repetition and Ostinato

**REPETITION** and **CYCLIC RHYTHMS** used to organise music. A repeated rhythm pattern (**OSTINATO** or **TIMELINE**) is used as a basis for **IMPROVISATION** to "hold the piece together". Use of **SYNCOPATION, POLYRHYTHMS** (shown below right)**, CYCLIC RHYTHMS** and **CROSS-RHYTHMS** (shown below left). **MASTER DRUMMER** can give musical 'cues' to performers to change rhythms during a performance and can also choose to **ACCENT** different beats within a **RHYTHM CYCLE**.



## Pitch & Melody and Harmony & Tonality

Most African melodies are based on a "limited number of pitches" - four, five, six or seven note **SCALES** and are normally short and simple, often expanded by **REPETITION** and **IMPROVISATION**. The pitch in African drumming is largely determined by the tuning of the drums. African singers often create vocal harmony by singing in thirds, fourths or fifths. **UNISON** and **PARALLEL OCTAVE** harmony is also common. The basic form of African Vocal Music is **CHORAL SINGING** known as **CALL AND RESPONSE** where one singer (**SOLOIST**) or small group of singers sings a line and the whole group (**CHORUS**) makes a reply (often a fixed **REFRAIN**) – like a "musical conversation" – in alternation with the "lead singer". The soloist often **IMPROVISES**. African singers often "shout words" (**VOCABLES**) and male and female singers enjoy using their highest **VOCAL REGISTER** known as **FALSETTO**. African singing can be accompanied by instruments but can also be unaccompanied (**A CAPPELLA**).

## Ornamentation

The **MASTER DRUMMER** can elaborate and decorate his solo drum part with **ACCENTS** and playing in a technically demanding style to "show off" to the rest of the drum ensemble and audience.

## Texture

In West Africa, drum ensembles have 3-5 players each with a distinctive method of striking their drum and playing interlocking rhythms. This creates a **THICK** and complex **POLYPHONIC** texture.

## Dynamics

Since African Drumming is often performed outside and at social gatherings and celebrations, the dynamics are generally **LOUD (FORTE – *f*)** or **VERY LOUD (FORTISSIMO – *ff*)**, but like changes in tempo, can be indicated by the **MASTER DRUMMER**.

## Tempo

**FAST** – designed for dancing and social gatherings – tempo will match the dance steps. The **MASTER DRUMMER** can both establish the tempo as well as speed up **(ACCELERANDO)** or slow down **(DECELERANDO)** or even set a new tempo with musical 'cues'.

## Ensemble

A **MASTER DRUMMER** often leads giving signals to the rest of the group to change rhythms or sections of the piece and can also control the **TEMPO**. He often **IMPROVISES** highly complicated rhythms and can indicate the ending of a piece of music as well as playing the "**CALL"** to **CALL AND RESPNOSE SECTION**S which are 'responded' by the drum ensemble.

## Form & Structure and Phrasing

The structure of a piece of African drumming depends on the **MASTER DRUMMER** and has no fixed or determined length, entirely dependent on the rhythms used.

## Origins and Cultural Context of the Traditional Music

African Drumming is 'traditional' and handed down via the **ORAL TRADITION** (not written down). Not performed 'at a concert', rather everyone joins in by dancing or playing an instrument, singing or clapping. Combines other art forms and heard at special occasions and celebrations. Many Africans believe that music serves as a link to the spirit world.

## Musical Characteristics of Folk Music

Traditional drums such as the **DJEMBE**, **TALKING DRUM** and **DUNDUN** remain popular in African music today, often combined with a number of percussion instruments, stringed instruments and woodwind instruments. **RHYTHM** remains a key feature of African drumming.

## Impact of Modern Technology on Traditional Music

African music has been a major influence on the development of popular music contributing rhythms, structures, melodic features and the use of improvisation to such styles as blues, gospel and jazz, brought over to America by slaves. High quality recordings of traditional African music are now possible with advanced recording techniques

## Artists, Bands & Performers of African Drumming

**Bolokada Conde**

**Ladysmith Black Mambazo**

**TALKING DRUM**

**DUNDUN**

Other percussion instruments such as clappers, maracas, scrapers, gongs and xylophones (called **BALAFONS**) produce their sound by vibration and are known as **IDIOPHONES**.

## Instrumentation – Typical Instruments, Timbres and Sonorities

BALAFON MBIRA FLUTE GOURD MARACAS KORA

Stringed instruments (**CHORDOPHONES**) such as bows, lyres, zithers, harps and the **KORA** are popular as well as some woodwind instruments (**AEROPHONES**) such as whistles, flutes, reed pipes, trumpets and horns.

# Indian Music

A **RAGA** performance is not worked out beforehand and relies on a **RAGA** (scale) and **TALA** (rhythm) to which considerable **IMPROVISATON** and **ORNAMENTATION** are added by the performers. Some performances are very long and can last all night!

## Characteristic Rhythms and Metres, Traditional Rhythm Patterns & Repetition and Ostinato

Based on **TALAS** (cyclic/repeating rhythm patterns) played by the **TABLA**. One single **TALA** used for a piece. Each **TALA** has a certain number of beats (regular and irregular **TALAS** are used). The most popular **TALA** is called **TINTAL** – 16 beats per cycle. Over 300 **TALAS**. **HAND CLAPS** and **WAVES** are used to mark certain beats.

## Pitch & Melody and Harmony & Tonality

Melodies based on **RAGAS** (scale/mode) – patterns of notes with strict rules about usage. **RAGAS** (scales) associated with a particular time of day or night or season and have different **MOODS**. Some **RAGAS** (scales) vary in ascent and descent *e.g. Raga Vibhas (morning Raga); Raga Behag (evening Raga)*. **RAGAS** are written down used **SARGAM** notation.

## Dynamics

Generally increase throughout a Raga performance starting of softly (***p***) during the **ALAP** and **JHOR** with a gradual **CRESCENDO** in the **JHALA** and very loud at the end.

## Texture

There are three basic layers to the texture of Indian Classical Music: **MELODY** (Voice, Sitar, Sarangi, Bansuri, Esraj or Sarod performing the melodic form of the Raga); **DRONE** (Tanpura or Harmonium performing long sustained noted); **RHYTHM** (Tabla performing the rhythmic Tala). The opening three sections of a Raga performance all have a **2-PART TEXTURE** (melody and drone), the final Gat (or Bandish) section when the Tabla enters performing the Tala has a **3-PART TEXTURE**.

## Tempo

**ALAP** – slow and free unmetred rhythm with no recognisable beat or pulse. **JHOR** – speeds up and becomes more rhythmic. **JHALA** – further increase in tempo and greater sense of metre. **GAT** – very fast tempo with complex rhythms. **TEMPO RUBATO** sometimes added by performers during performance.

## Ensemble

Indian Classical musicians must work together in order to interpret the music and perform effectively as one including starting and stopping together, agreeing tempo and dynamic changes, similar interpretation of expression and articulation *(accents, staccato)* as well as balance between parts.

## Form & Structure

**FOUR** sections (no breaks)
**ALAP** – melody and drone, free unmetred, slow, soft.
**JHOR (JOR)** – melody and drone, increase in speed, more rhythmic
**JHALA** – melody and drone, more speed and improvisation
**GAT (BANDISH)** – Tabla enters, tempo and dynamics increase.

## Origins and Cultural Context of the Traditional Music

Around 1700 BC. Developed in temples and royal palaces. Ragas and Talas learnt by the **ORAL TRADITION**. Master-Student tradition. Spirituality (Hinduism) an important part.

## Musical Characteristics of Folk Music

A **RAGA** performance based on one **RAGA** and one **TALA** with freedom for **IMPROVISATION** and **ORNAMENTATION** during performance. No fixed length.

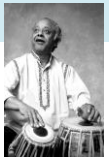
## Impact of Modern Technology on Traditional Music

Available via the internet (YouTube®) and heard at cinema, radio and live concerts. Indian instruments now heard in jazz, pop and rock (live or sampled)

## Artists, Bands & Performers of Indian Classical Music

**Ravi Shankar**

**Anoushka Shankar**



**Alla Rakha**

## Instrumentation – Typical Instruments, Timbres and Sonorities

**SITAR**

**TANPURA**

**SAROD**

**SARANGI**

**ESRAJ**

**HARMONIUM**

**BANSURI**

**SINGER**

**TABLA**

# Offbeat

*Exploring Reggae and Syncopation*

## A. How did Reggae develop?

**REGGAE** is one of the traditional musical styles from **JAMAICA**. It developed from :

**REGGAE**

| MENTO | SKA | ROCK STEADY |
|---|---|---|
| A form of Jamaican **FOLK MUSIC** like **CALYPSO** popular in the 1950's. | Fast dance music that emerged in the 1950's fusing American R&B with **MENTO** rhythms and featuring **ELECTRIC GUITARS, JAZZY HORN SECTIONS** and characteristic **OFFBEAT RHYTHMS.** | A more vocal style of dance music which used **RIFFS**, **SIMPLE HARMONIES, OFFBEAT RHYTHMS** and a strong **BASS LINE**. |

Reggae was first heard in the UK in the 1950's when immigrants began to settle. During the 1960's, people began importing singles from Jamaica to sell in UK shops. Now, Reggae is known as the national music of Jamaica.

## B. Where is Jamaica?


## C. What are Reggae Songs About?

Reggae is closely associated with **RASTAFARIANISM** (a religious movement worshipping Haile Selassie as the Messiah and that black people are the chosen people and will eventually return to their African homeland). The **LYRICS** of Reggae songs are strongly influenced by Rastafarianism and are often political including themes such as **LOVE, BROTHERHOOD, PEACE, POVERTY, ANTI-RACISM, OPTIMISM** and **FREEDOM**.

## D. Offbeat Rhythms & Syncopation

**OFFBEAT RHYTHMS –** Rhythms that emphasise or stress the **WEAK BEATS OF A BAR**. In music that is in 4/4 time, the first beat of the bar is the strongest, the third the next strongest and the second and fourth are weaker. Emphasising the second and fourth beats of the bar gives a "missing beat feel" to the rhythm and makes the music sound **OFFBEAT,** often emphasised by the **BASS DRUM** or a **RIM SHOT** (hitting the edge of a **SNARE DRUM**) in much Reggae music.

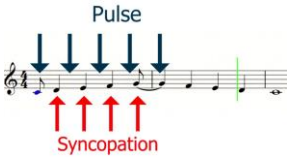
ONBEAT RHYTHM GRID

| Pulse/ Beat | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| "Onbeat" rhythms (strong beats) | ♩ | 𝄽 | ♩ | 𝄽 | ♩ | 𝄽 | ♩ | 𝄽 |

OFFBEAT RHYTHM GRID

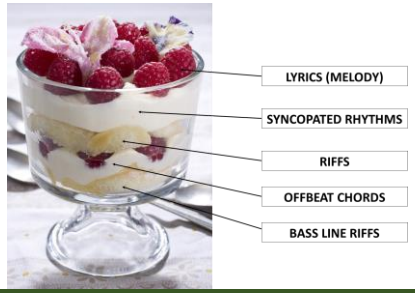
| Pulse/ Beat | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| "Offbeat" rhythms (weak beats) | 𝄽 | ♩ | 𝄽 | ♩ | 𝄽 | ♩ | 𝄽 | ♩ |

**SYNCOPATION –** A way of changing a rhythm by making some notes a bit early, often so they cross over the main beat of the music giving the music a further **OFFBEAT** feel – another common feature of Reggae music.




## E. Musical Features of Reggae

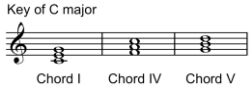
**OFFBEAT RHYTHMS AND CHORDS** (see D)
**SYNCOPATED RHYTHMS AND MELODIES** (see D)
**SUNG LYRICS** (see C)
**LEAD SINGER** often with **BACKING SINGERS** sometimes singing in **CALL AND RESPONSE** (see F3) accompanied by a Reggae band which often features: **BRASS INSTRUMENTS** and **SAXOPHONES, ELECTRIC GUITARS, BASS GUITAR, KEYBOARDS, DRUMS AND PERCUSSION INSTRUMENTS.**
**VOCAL AND INSTRUMENTAL IMPROVISATIONS** (see F2)
**MELODIC RIFFS** (see F5)
**SLOW, RELAXED** ('chilled!') **TEMPO**
**4/4 METRE/TIME SIGNATURE**
Most Reggae songs are structured in **VERSE AND CHORUS/POPULAR SONG FORM**.
**SIMPLE HARMONIES** (see F4)




**THICK TEXTURAL LAYERS** (see F9) "The Reggae Trifle" is an example of how many Reggae songs are 'layered'.

## F. Reggae Key Words

1. **MELODY** – The main 'tune' of a piece of music, often sung by the **LEAD SINGER**.
2. **IMPROVISATION** – Previously unprepared performance.
3. **CALL AND RESPONSE** – Similar to a "Question and Answer" often the call sung by the lead singer and answered by the backing singers or instruments (the response) – musical dialogue.
4. **SIMPLE HARMONIES** – using a limited number of **CHORDS,** mainly **PRIMARY TRIADS** such as the **TONIC, DOMINANT** and **SUBDOMINANT** chords.




5. **RIFF** – A repeated musical pattern. Often the **BASS GUITAR** plays repeated **MELODIC BASS RIFFS** in Reggae songs.
6. **BASS/BASS LINE** – The lowest pitched part of a piece of music often played by the **BASS GUITAR** in Reggae which plays an important role.
7. **CHORD** – 2 or more notes played together in **HARMONY**.
8. **RHYTHM** – A series of long and short sounds.
9. **TEXTURE** – Layers of sound combined to make music.

## G. Who was Bob Marley?

**BOB MARLEY** was a famous reggae singer, **SONGWRITER**, and musician who first became famous in his band The Wailers, and later as a **SOLO ARTIST**. He was born Nesta Robert Marley on February 6th, 1945 in Nine Mile, Saint Ann, Jamaica. Although he grew up in poverty, he surrounded himself with music and met some of the future members of The Wailers. Bob Marley became involved in the Rastafarian movement and this influenced his music style greatly. Bob Marley and The Wailers worked with several famous musicians before becoming famous on their own. His career flourished and he became a cultural icon. He was the first international superstar to have been born in poverty in a Third-World country.

# Year 9 Cycle 2 Sport and PE Knowledge Organiser

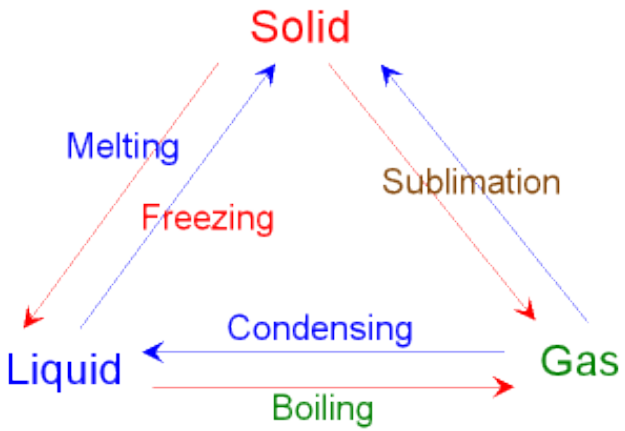
| Week 1 and 2 | Week 3 and 4 | Week 5 and 6 | Week 7 and 8 | Week 9 and 10 | Week 11 & 12 |
|---|---|---|---|---|---|
| **Training methods** | **Training methods** | **Training methods** | **Principles of training** | **Principles of training** | **Training intensities** |
| Continuous training – steady-state low-moderate intensity with no rest breaks for a min of 20 minutes. Improves Cardiovascular endurance and muscular endurance.<br><br>Fartlek training – a form of continuous training involving different intensities (speeds) and terrains (roads/fields, flat/hills). Improves cardiovascular endurance, muscular endurance and speed.<br><br>Interval Training (also known as HIIT) – periods of exercise followed by periods of rest used by both aerobic and anaerobic performers. Improves speed, muscular endurance and cardiovascular endurance<br><br>  | Circuit Training – a series of exercise stations arranged in a specific order to usually alternate muscle groups. Can also improve skill and develops a range of components of fitness.<br><br>  <br>Weight Training – a series of exercises organised into repetitions with an intensity and recovery time specific to the individual. Targets specific muscles.<br><br>High reps/low weight improves muscular endurance<br><br>Low reps/High weight improves strength/power<br><br>  | Plyometrics – a series of explosive exercises (jumping, bounding) to improve the speed at which a muscle contract. Used by performers who sprint, jump or throw to improve power.<br><br>  <br><br>Static stretching– Stretch as far as you can and hold this (isometric contraction) for up to 30 seconds. Improves flexibility<br><br>Can you identify which training methods are suitable for a range of sports/performers? e.g. continuous training for a long distance runner<br><br>  | When planning a training programme, you need incorporate the basic principles of training. One of these principles is called the FITT principle.<br><br>**The FITT Principle:**<br>Each letter in the FITT is a different way in which you can adapt your training. Through **Frequency** *(how much),* **Intensity** *(how hard),* **Time** *(how long)* **and Type** *(what type).*<br><br>**F – FREQUENCY** – The number of training sessions you complete over a period of time.<br>**I – INTENSITY** – How hard you train. This can be done through heart rate or reps per exercise.<br>**T – TIME** – How long you train for. Aim for 15 to 60 mins. This can depend on the intensity of the exercise.<br>**T – TYPE** – Appropriate types of training should be used depending on your needs and goals. | When planning a training programme, you need incorporate the basic principles of training. One of these principles is called the SPORT principle.<br><br>**The SPORT Principle:**<br><br>**S – SPECIFIC -** training must be **relevant** to the **individual** and their **sport.**<br><br>**P – PROGRESSIVE –** This means the training needs to get harder over time.<br><br>**O – OVERLOAD –** This can be used through the FITT principle. You can overload through frequency, intensity, time and type.<br><br>**R – REVERSIBILTY -** systems **reverse** or de-adapt if training stops or is significantly reduced or injury prevents training from taking place.<br><br>**T – TEDIUM –** Training needs to be varied to stop boredom from taking place. | To maximise the chance of improving your fitness you should train within your target zones.<br><br>**Your 'Aerobic Training zone' is 60 – 80% of your MHR**<br><br>**Your 'Anaerobic Training Zone' is 80 – 90% of your Maximal Heart R**ate (MHR)<br><br>To calculate your MHR (maximum heart rate) you need to:<br>220 – Age =<br><br>Try working out your MHR and what your heart rate needs to be to work in the two zones above (to work out 60% times your MHR by 0.6)<br><br>  |

| Lessons 1 & 2<br>Communicable diseases | Lessons 3, 4 & 5<br>Bacterial, fungal, viral and protist diseases | Lessons 6 & 7<br>Protection against disease and defence mechanisms |
|---|---|---|
| **Definition of disease:**<br>A disorder of structure or function in a human, animal, or plant.<br><br>**Communicable disease**: An **infectious** disease or **transmissible** disease, illnesses caused by pathogens.<br>**Non-communicable disease**: A medical condition that is **not** infectious or cannot be passed on from one person to the next.<br><br>**Pathogen**: Disease causing microorganism<br><br>There are **4 types of microorganism**: protists, virus, bacteria and fungi. Not all microorganisms are pathogens as they do not all cause disease.<br><br>Viral pathogens invade cells and kill them by bursting them.<br>Bacterial pathogens produce toxins.<br><br>Pathogens can spread through the air, direct contact or through water.<br><br>We can reduce the spread of pathogens by destroying vectors, quarantine, vaccination and simply hygiene measures. | **Bacterial diseases**<br>Gonorrhoea: Transmitted by unprotected sex. Can be treated with antibiotics but this is becoming more challenging because strains are becoming resistant.<br>Salmonella: Transmitted by eating contaminated food. Can be prevented with good hygiene but there is no treatment available.<br>**Viral diseases**<br>Measles: Symptoms include a rash, can be fatal. Prevented by the MMR vaccination.<br>HIV/AIDS: Transmitted by exchange of body fluid such as through sharing needles or unprotected sex. Can be treated by antiretroviral drugs.<br>Tobacco mosaic virus (TMV): Plant disease, identified by a mosaic pattern on leaves. Growth is affected. Can be treated by removing affected parts of the plant.<br>**Fungal diseases**<br>Rose black spot: An example of a plant disease. Purple or black spots develop on leaves of affected plants. Growth is affected because the rate of photosynthesis is decreased.<br>**Protist disease**<br>Malaria: Caused by the plasmodium protist which is carried by mosquito. Transmitted when the infected mosquito bites to feed. Prevention includes nets, repellent, antimalarial drugs. Malarial drugs are available to treat the disease. | First lines of defence against pathogens include<br>Skin: Acts as a barrier to pathogens and secretes antimicrobial substances to kill pathogens.<br>Nose: Contains hair and mucus which trap particles<br>Trachea and bronchi: Produce mucus to trap particles, have cilia to waft the mucus up to throat to be swallowed.<br>Stomach: Produces HCl to kill pathogens which enter the stomach<br>Blood clotting: If the skin is cut a clot will form which seals the gap and stops pathogens entering the blood.<br><br>There are 2 types of white blood cells found in the blood:<br>• Lymphocytes: Produce antibodies and antitoxins<br>• Phagocytes: Perform phagocytosis<br><br>**Phagocytosis**: Pathogens are engulfed and digested by phagocytes to make them harmless.<br><br>**Antibodies and antitoxins**: Antibodies destroy specific pathogens. There are different antibodies for different pathogens.<br>Antitoxins bind to toxins made by bacteria to make them harmless. There are specific antitoxins for specific toxins. |

| Lessons 8 & 9<br>Vaccinations | Lessons 10 & 11<br>Antibiotics and their discovery | Lessons 12 & 13<br>Painkillers and drug development including drug trials |
|---|---|---|
| **Immune**: The ability of an organism to resist a particular infection or toxin.<br><br>You can develop immunity in 2 ways, being infected, having the disease and recovering or having a vaccination for a disease.<br><br>**Vaccinations** contain a small part of the dead or weakened pathogen.<br><br>Vaccinations teach the **lymphocytes** how to make antibodies to kill certain pathogens without the risk of becoming ill.<br><br>Edward Jenner was the first person to develop a vaccination. He used cow pox to create a vaccination for small pox.<br><br>**Herd immunity:** When a large proportion of a population is immune to a pathogen it can protect those that are at risk and reduces spread of the pathogen. | **Antibiotics** are a type of medicine that are used to kill infective bacterial pathogens inside the body.<br><br>Specific bacteria need <u>specific</u> antibiotics to kill them.<br><br>Antibiotics <u>do not</u> kill viruses they are only effective against bacteria.<br><br>**Antibiotic resistance** is when a bacterial pathogen mutated and changes so that it is no longer killed by an antibiotic.<br><br>Alexander Fleming discovered penicillin, the first antibiotic. He found a fungi could produce a substance which could kill bacteria. | **Drug**: A chemical that produces a change within the body. Can be addictive. Can lead to withdrawal symptoms when someone stops taking a drug that they are addicted to.<br><br>Traditionally drugs came from microorganisms and plants e.g. willow (Aspirin) Foxgloves (heart medication).<br><br>Painkillers are a group of medicines that relieve symptoms of a disease but they do not kill the pathogen that causes the disease.<br><br>When a drug is discovered it need to undergo extensive testing for the following:<br>• Toxicity: How harmful the drug is<br>• Efficacy: Checking if the drug woks and has the desired effect<br>• Dose: The concentration of the drug and how often it should be taken.<br><br>**Placebo**: A blank version of the drug used in a trial.<br>**Double blind drugs trial**: Only the scientists know who have been given the real drug and who has received a placebo. The doctors and patients are not told. |

Revision Guide: Foundation pages 113-122, Higher pages 112-122

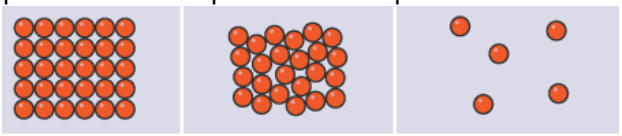
## Lessons 1
## States of Matter




**Solids**: have a fixed shape and cannot flow, because their particles cannot move from place to place cannot be compressed (squashed), because their particles are close together and have no space to move into

**Liquids**: flow and take the shape of their container, because their particles can move around each other cannot be compressed, because their particles are close together and have no space to move into

**Gases**: flow and completely fill their container, because their particles can move quickly in all directions can be compressed, because their particles are far apart and have space to move into.

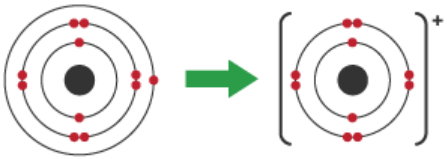


## Lessons 2
## Ions

An **ion** is an atom or group of atoms with a positive or negative charge. Ions form when atoms lose or gain electrons to obtain a full outer shell:

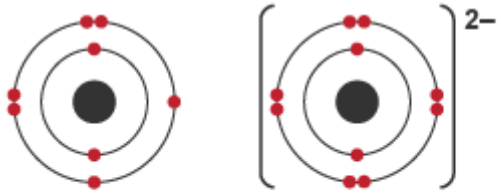
- metal atoms and hydrogen lose electrons to form positively charged ions
- non-metal atoms gain electrons to form negatively charged ions

For elements in groups 1, 2 and 3, the number of electrons lost is the same as the group number.



| Sodium atom | Sodium ion |
|---|---|
| Na 2.8.1 | $Na^+$ 2.8 |

For elements in groups 6 and 7, the charge on the ion is equal to (8 minus group number).

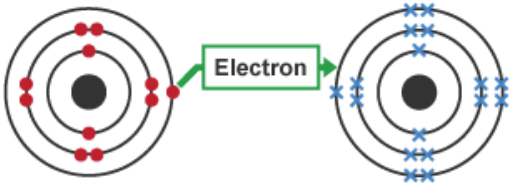



| Oxygen atom | Oxide ion |
|---|---|
| O 2.6 | $O^{2-}$ 2.8 |

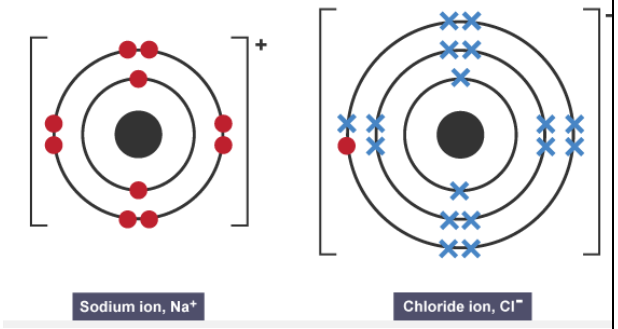
## Lessons 3
## Ionic Bonding

Positive and negative ions form when a metal reacts with a non-metal, by transferring electrons. The oppositely charged ions are strongly attracted to each other, forming ionic bonds.

A dot and cross diagram models the transfer of electrons from metal atoms to non-metal atoms. The electrons from one atom are shown as dots, and the electrons from the other atom are shown as crosses.

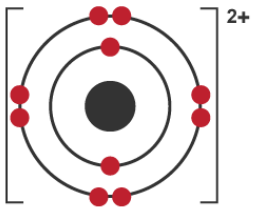


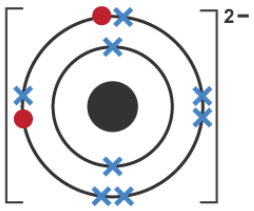

Ionic bonding in sodium chloride



Revision Guide: Foundation pages 113-122, Higher pages 112-122

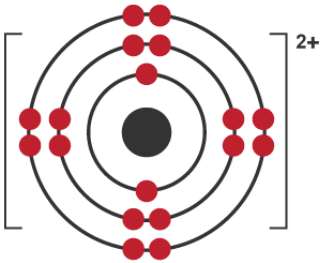
## Lessons 3 Ionic Bonding continued..

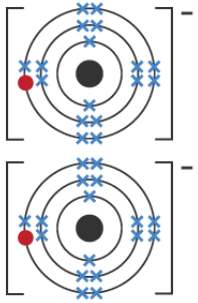



Magnesium ion, $Mg^{2+}$ | Oxide ion, $O^{2-}$

Ionic bonding in magnesium oxide



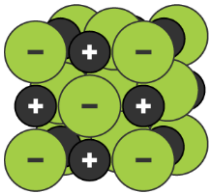

Calcium ion, $Ca^{2+}$ | Two chloride ions, $Cl^-$

. Ionic bonding in calcium chloride

Example of ion charges and groups

| Group | Element | Ion charge | Ion symbol |
|---|---|---|---|
| 1 | Na | + | $Na^+$ |
| 2 | Mg | 2+ | $Mg^{2+}$ |
| 6 | O | 2- | $O^{2-}$ |
| 7 | Cl | - | $Cl^-$ |

## Lesson 4 Properties of Ionic Compounds



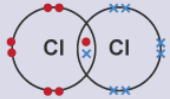
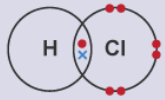
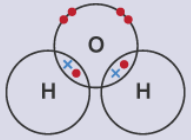
An ionic compound is a **giant structure** of ions. The ions have a regular, repeating arrangement called an ionic lattice. The lattice is formed because the ions attract each other and form a regular pattern with oppositely charged ions next to each other.
Ionic compounds have **high melting and boiling points**, so they are in the **solid state** at room temperature.
Ionic compounds are held together by electrostatic forces between the oppositely charged ions. As the ionic lattice contains such a large number of ions, a lot of energy is needed to overcome this ionic bonding so ionic compounds have high melting and boiling points. The higher the charge of the ion the stronger the force between them so they have a higher melting point.

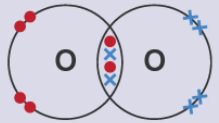
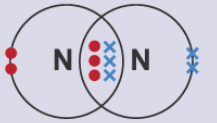
**Conducting electricity**

A substance can conduct electricity if: it contains charged particles, such as ions, and these particles are free to move from place to place
An ionic compound can conduct electricity when: it has **melted to form a liquid**, or it has **dissolved in water to form an aqueous solution.** Both these processes allow **ions to move** from place to place. Ionic compounds **cannot conduct electricity in the solid state** because their **ions are held in fixed** positions and cannot move.

## Lesson 5 Covalent Bonding

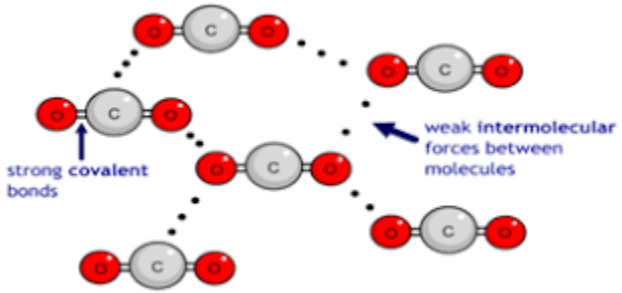
A **covalent bond** is formed when two atoms share a pair of electrons. Covalent bonding occurs in most non-metal elements.
Most covalently bonded substances consist of small molecules. A **molecule** is a group of two or more atoms joined together by covalent bonds.

| Name | Formula | Dot and cross diagram | Structure |
|---|---|---|---|
| Chlorine | $Cl_2$ |  | Cl—Cl |
| Hydrogen chloride | HCl |  | H—Cl |
| Water | $H_2O$ |  |  |

| Name | Formula | Dot and cross diagram | Structure |
|---|---|---|---|
| Oxygen | $O_2$ |  | O=O |
| Nitrogen | $N_2$ |  | N≡N |

## Lesson 6 Properties of Simple Covalent Molecules

**Properties:** A substance with small molecules has strong covalent bonds that hold the atoms together in its molecules. There are **weak forces** between molecules and their neighbours. Relatively little energy is needed to overcome the **intermolecular forces**, so small molecular substances have **low melting and boiling points.**
Many are in the liquid or gas state at room temperature. Small molecules have no overall electric charge, so they **cannot conduct electricity**, even when liquid or dissolved in water.

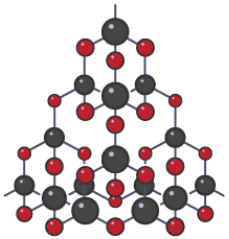


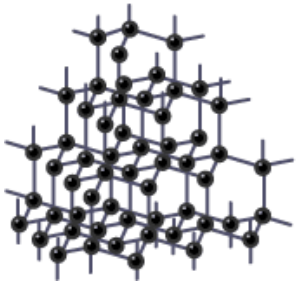

| Substance | Melting point | Boiling point | State at 20°C |
|---|---|---|---|
| $O_2$ | -218°C | -183°C | Gas |
| $H_2O$ | 0°C | 100°C | Liquid |

## Lesson 6 continued Properties and Structure of Giant Covalent Substances

**Giant covalent substances** have **many atoms** joined together by **covalent bonds**.

**Silicon dioxide** (often called silica) is the main compound found in sand. It contains many silicon and oxygen atoms. All the atoms in its structure are linked to each other by strong covalent bonds. The atoms are joined to each other in a regular arrangement, forming a giant covalent structure. There is no set number of atoms joined together in this type of structure. It has a very **high melting points and boiling points** and **solid** at room temperature. This is because large amounts of energy are needed to overcome their strong covalent bonds to make them melt or boil. It has no charged particles that are free to move. This means that most **cannot conduct electricity.**



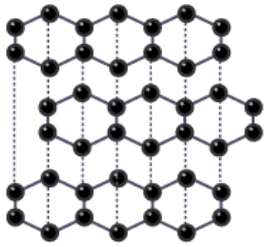


**Diamond** - each **carbon** atom is joined to **four** other carbon atoms by strong covalent bonds the carbon atoms form a regular tetrahedral network structure there are **no free electrons.**

## Lesson 6 continued Properties and Structure of Giant Covalent Substances

**Properties and uses of Diamond**
The rigid network of carbon atoms, held together by strong covalent bonds, makes diamond very hard. This makes it useful for cutting tools, such as diamond-tipped glass cutters and oil rig drills. Like silica, diamond has a very high melting point and it does not conduct electricity.

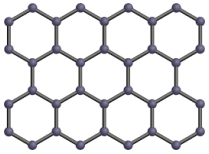
**Graphite** – dotted lines represent the **weak forces** between the layers in graphite and the solid lines represent the **strong covalent bonds**. Each carbon atom forms **three** covalent bonds with other carbon atoms, the carbon atoms form layers of hexagonal rings, there are no covalent bonds between the layers, there is one non-bonded - or delocalised - electron from each atom.



**Properties and uses** - Graphite has delocalised electrons, just like metals. These **electrons are free to move between the layers in graphite**, so graphite can **conduct electricity**. This makes graphite useful for electrodes in batteries and for electrolysis. The forces between the layers in graphite are weak. This means that the layers can **slide** over each other. This makes graphite slippery, so it is useful as a lubricant.

## Lesson 7 Fullerene and Polymers

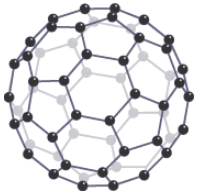
**Graphene** is a single layer of graphite. The strong covalent bonds between the **carbon** atoms mean



that graphene: has a very **high melting point, is very strong**, like graphite, graphene **conducts electricity** well because it has delocalised electrons that are free to move across its surface. These properties make graphene useful in electronics and for making composites.

Graphene has a giant covalent structure, but fullerenes have large molecules. **Fullerenes** are molecules of carbon atoms with hollow shapes. Their structures are based on hexagonal rings of carbon atoms joined by covalent bonds. Some fullerenes include rings with five or seven carbon atoms. Two examples of fullerenes are **buckminsterfullerene and nanotubes**.

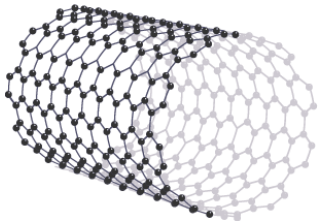
Buckminsterfullerene was the first fullerene to be



discovered. Its molecules are made up of 60 carbon atoms joined together by strong covalent bonds. Molecules of C60 are spherical. There are weak intermolecular forces between molecules of buckminsterfullerene. These need little energy to overcome, so buckminsterfullerene is slippery and has a low melting point.

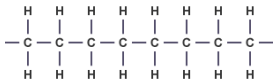
## Lesson 7 Fullerene and Polymers continued…..

A **nanotube** is like a layer of graphene, rolled into a cylinder. The length of a nanotube is very long compared to its width, so nanotubes have high length to diameter ratios. Nanotubes have high tensile



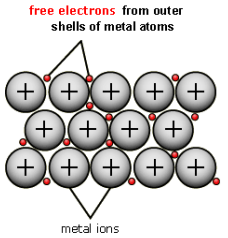
strength, so they are strong in tension and resist being stretched. Like graphene, nanotubes are strong and **conduct electricity** because they have **delocalised electrons**. These properties make nanotubes useful for nanotechnology, electronic s and specialised materials.

**Polymers** have very **large molecules**. The atoms in a polymer molecule are joined together by **strong covalent bonds in long chains**. There are variable numbers of atoms in the chains of a given polymer. One example of a polymer is poly(ethene). The intermolecular forces between polymer molecules are strong compared to the intermolecular forces between small molecules. This means that polymers melt at higher temperatures than substances with small molecules. They are solids at room temperature.



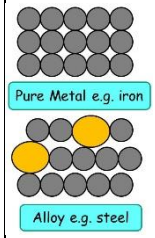
**A short section** of a poly(ethene) molecule. Poly(ethene) molecules contain thousands of carbon atoms joined together in a chain.

## Lesson 8 Metallic Bonding

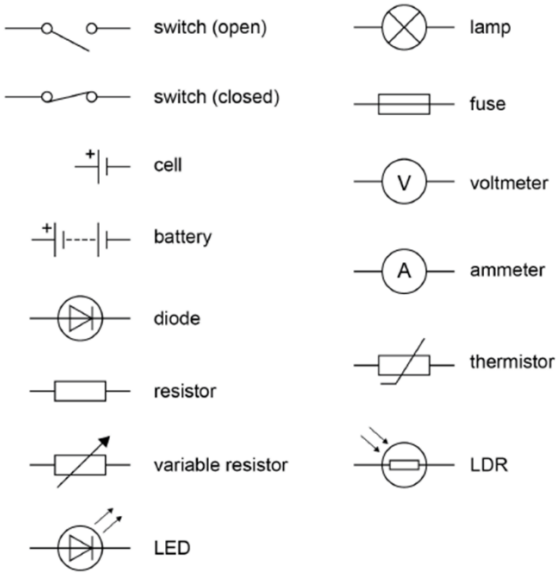
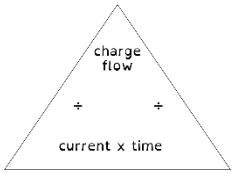
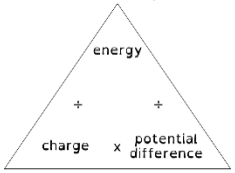
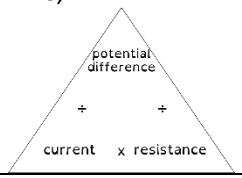
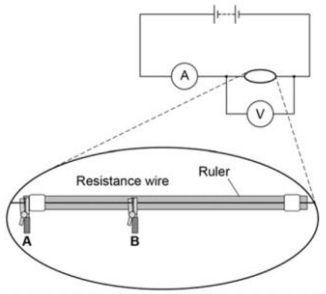



**Metallic bonding.** Metals consist of giant structures of **atoms arranged in a regular pattern**. The **electrons from the outer shells** of the metal atoms are delocalised, and are free to move through the whole structure. This sharing of delocalised electrons results in strong metallic bonding.

**Properties of metals:** They are **electrical conductors** because their delocalised electrons carry electrical charge through the metal, they are good **conductors of thermal energy** because their delocalised electrons transfer energy. They have high melting points and boiling points, because the metallic bonding in the giant structure of a metal is very strong - large amounts of energy are needed to overcome the metallic bonds in melting and boiling




An **alloy** is a **mixture of two or more elements**, where at least one element is a **metal**. In a pure metal, the force needed to make the layers slide over each other is small. This explains why many **pure metals are soft**. In an alloy, there are atoms of different sizes. The smaller or bigger atoms distort the layers of atoms in the pure metal. This means that a greater force is required for the layers to slide over each other. The **alloy is harder and stronger than the pure metal.**

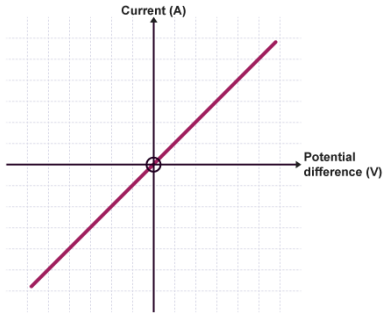
| Lesson 1<br>Introduction to circuits | Lessons 2 & 3<br>Current, p.d. and resistance | Lesson 4<br>Required Practical – Resistance and the length of a wire |
|---|---|---|
|  <br>• **Charge** is a property of materials.<br>• It can be positive or negative and is measured in coulombs. Electrons have a negative charge.<br>• Metals have a "sea" of delocalised/free "conduction electrons".<br>• These electrons can move through the material, causing a current.<br>• **Insulators** do not have free electrons. | *charge flow = current x time*<br>Charge in Coulombs, C<br>Current in Amperes, A<br>Time in seconds, s<br>  <br>*energy transferred = charge x potential difference*<br>Energy transferred in Joules, J<br>Charge in Coulombs, C<br>Potential difference in Volts, V<br>  <br>*potential difference = current × resistance*<br>Potential difference in Volts, V<br>Current in Amperes, A<br>Resistance in Ohms, Ω<br>  | • **Resistance** is a measure of how hard or easy it is for a current to flow.<br>• The more resistance:<br>  • The lower the current will be for a given p.d.<br>  • The higher the p.d. will be needed for a particular current to flow.<br>• You will investigate **the relationship between the length of a wire and its resistance.**<br>  <br>• **<u>Independent variable</u>**: Length of wire in metres<br>• **<u>Dependent variable</u>**: Resistance of wire in Ω<br>• **<u>Control variable</u>**: Current, temperature, material of wire |

Revision Guide: Foundation pages 180-192, Higher pages 179-190

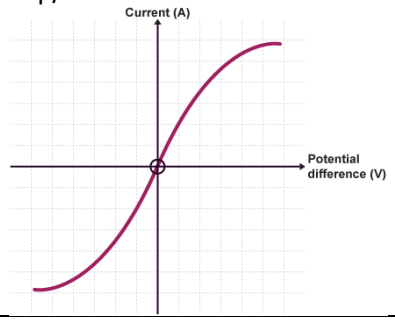
## Lessons 5 & 6
## Required Practical – I-V Characteristics

- You will investigate **the relationship between current and potential difference for circuit components**
- **Ohm's law** states that the current through a resistor is directly proportional to the potential difference across it, at constant temperature.
- A graph is **directly proportional** if a line of best fit is a straight line through the origin.

Resistor:

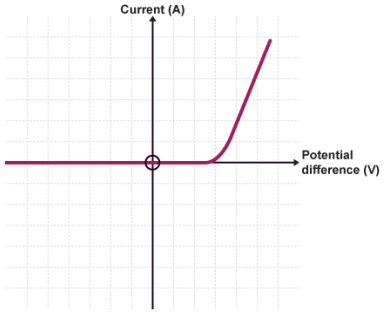



Filament lamp/bulb:



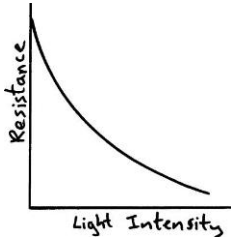

## Lesson 7
## Non-ohmic components

Diode/LED:

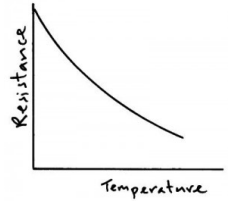



- Some components have a resistance that depends on an environmental factor.

LDR:

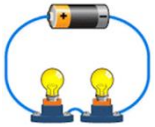



Thermistor:

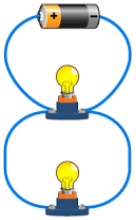



## Lessons 8 & 9
## Series and Parallel circuits

- In a series circuit, you have one component after another. All of the components are connected together by the same 'loop' of wire.



- A parallel circuit is one where components are connected in separate loops – sometimes called branches.
- Each component is placed along a different path.

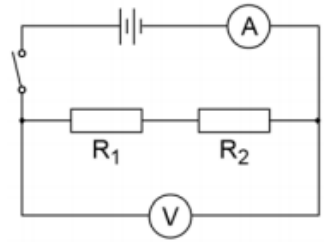


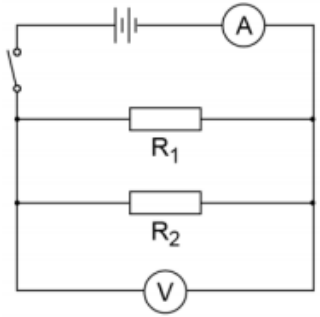
| | **Series** | **Parallel** |
|---|---|---|
| Current | Same everywhere | Shared between branches |
| P.d. | Shared between components | Same in each branch (and equal to p.d. of the supply) |
| Resistance | Sum of individual resistances | Less than the resistance of any one resistance |

Revision Guide: Foundation pages 180-192, Higher pages 179-190

## Lesson 10
## Required Practical – Resistance in series and parallel

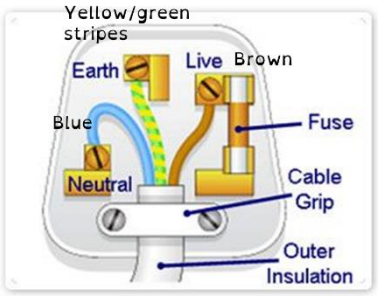
- You will investigate how **combinations of resistors in series and parallel behave**




- In series, current must flow through both resistors. It is harder to flow through both than to flow through either resistor individually, so the resistance increases.
- **In series**: $R_{total} = R_1 + R_2$
- In parallel, current can flow through both resistors at the same time. More current flows in the circuit than if only one of the resistors was there. As the p.d. remains constant, this means the total resistance must have decreased.

## Lessons 11 & 12
## The 3-pin plug and mains electricity

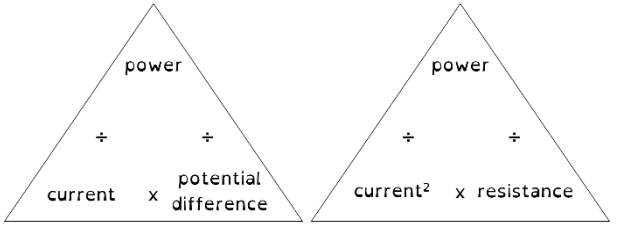



| Name of wire | Colour | Job |
|---|---|---|
| Live | Brown | Supplies the alternating potential difference |
| Neutral | Blue | Completes the circuit |
| Earth | Green/Yellow stripes | Safety (can prevent shocks or fires) |

- **A fuse** is a thin wire in a glass tube designed to melt at a specific current.
- **Earthing** means connecting the metal case of an appliance directly to the earth using a low resistance cable.
- The **UK mains supply** is an **alternating current** supplied at a p.d. of **230 V** and a frequency of **50 Hz**.

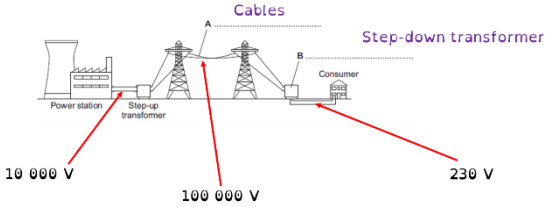
## Lessons 13 & 14
## Electrical power and The National Grid

power = potential difference x current
power = current2 x resistance




Power in Watts, W

- The National Grid is the system of cables and transformers that bring electricity to homes and businesses.




- Transformers increase (step up) or decrease (step down) the potential difference of the electricity supply.
- If the potential difference goes up the current goes down. (As power = current x p.d.)
- If the current goes down, less energy is lost as heat in the wires.
- (As power = current$^2$ x resistance, half the current means ¼ the energy lost!)