



10

Name: \_\_\_\_\_

Form: \_\_\_\_\_

# Knowledge Organiser

## Autumn Term

# 2022/23

# Year 10



## Contents

7. On TRACK  
16. Tier 2 Vocabulary  
18. English  
27. Maths  
32. Biology  
35. Chemistry  
40. Physics  
44. Religious Studies  
48. History  
52. Geography  
56. Spanish  
60. French  
64. German

## A Knowledge Rich Curriculum at Great Sankey High School

Research around memory suggests that if knowledge is studied once and not revisited or revised, it is not stored in the long-term memory. This means that after one lesson, or revising for one test, the knowledge will not be retained unless it is studied again. To ensure that knowledge is embedded in the long term memory it must be revisited frequently. Ensuring knowledge is embedded aids understanding, and in turn makes future learning more successful. To quote Daniel Willingham's learning theory,

***"Thinking well requires factual knowledge that is stored in our long-term memory"***

As part of home learning, students should be revising what they have been taught recently but also content they were taught previously. Therefore, as part of our strategy to embed learning over time we have developed knowledge organisers across years 7 -11. These will provide key content and knowledge allowing students to pre-learn and re-learn, a vital part of processing all the information required to be successful. This knowledge will form the backbone of assessments in school.

## How to use your knowledge organiser

Knowledge organisers will be used in subject lessons, homework activities and form time and therefore you need to bring your knowledge organiser to school every day.

Ensuring that knowledge is retained into your long-term memory and you are ready for tests takes work!



To encourage students to build good study habits, students will be assigned homework quizzes on a week A through the Google Classroom. Students will be expected to use revision strategies such as read, cover, write, check to learn key knowledge and will then complete the quizzes to demonstrate their learning. Completion of these quizzes is an essential homework activity and will be closely monitored by the pastoral team.



## Other methods that you may wish to try at home are listed below:

- Create mind maps.
- Create flashcards.
- Get sticky with your learning: write out key points from the KO as you read over it on post-it notes.
- Write your own basic recall quizzing questions around the keywords, definitions and key facts that you need to know. Test yourself with these questions and then leave it overnight to answer them the next day.
- Write your own challenging questions using the following command words – explain, compare, evaluate. Then create a model answer for these questions.
- Put the key words from your KO into new sentences.
- Make mnemonics to remember the order of particular concepts.
- Draw a comic strip, storyboard or a timeline describing any series of events that have a chronological order.
- Write yourself or a partner some quiz questions. Quiz each other or swap your questions to see if you can answer each other's questions.
- Think about the big picture – why is knowing specific information important to you/other people/society/companies/science/technology? The more links that you can make, the more meaningful you make your learning and the more likely it is that you will remember it. Think about the big picture – are there any links in the content on your KO to anything that you have watched on TV, read about or heard in the news?
- Give yourself spelling tests.
- Definition tests.
- Draw diagrams of key processes or theories.
- Draw images and annotate/label them with extra information.
- Create fact files.
- Create flowcharts for descriptions or explanations that have a chronological order.
- Summarise in your own words each section.
- Get your parents/carers to test you.
- Pick out key words and write definitions.
- Pre-learning (read a section of your knowledge organiser prior to the lesson).
- Learn key quotes (if applicable). Consider what you may say about these quotes e.g. what the author is trying to make you think/feel, their choice of language, what can be inferred from it.
- Write a letter/blog/article to someone explaining a key idea or concept.
- Prepare to overcome any hurdles: write down any questions or any areas of the KO that you feel you need to speak to your teacher about.
- Use the guidance that may have been given with a specific KO to help you learn the information and use it.

***“Don’t practise until  
you get it right.  
Practise until you  
can’t get it wrong.”***





## My Timetable

### Week A

	Monday	Tuesday	Wednesday	Thursday	Friday
PDR					
Lesson 1					
Lesson 2					
Lesson 3					
PDR					
Lesson 4					
Lesson 5					

### Week B

	Monday	Tuesday	Wednesday	Thursday	Friday
PDR					
Lesson 1					
Lesson 2					
Lesson 3					
PDR					
Lesson 4					
Lesson 5					





Organisation and Planning Sheet

Date Set	Subject	Task	Due Date	Tick When Complete

Date Set	Subject	Task	Due Date	Tick When Complete



Communication Log

Date message sent	Message	Date Message Read	Signature

Date message sent	Message	Date Message Read	Signature



## On TRACK student Target Setting and Review

We empower our students to Dare for Greatness and have two simple questions for students to reflect on:

1. Tomorrow's Aspiration: What do you want to achieve?
2. Today's Question: Are you On TRACK?

### 1. Tomorrow's Aspiration: What do you want to achieve?

What is your career aspiration? What do you want to achieve when you leave GSHS? What do you want to achieve by the end of this academic year? What do you want to achieve this term?

### 2. Today's Question: Are you On TRACK?

Each week you are to read the aspects detailed carefully for that specific GSHS Learning Habit. If you consistently display the aspects detailed for that Learning Habit, tick the aspect. Based upon this review, set yourself a target and actions you will take to achieve your target. You will then evaluate if you successfully achieved your target and determine if you are On TRACK.



HT1 Week 1 Time management	HT1 Week 2 Ready to Learn
<ul style="list-style-type: none"><li>Students who wish to be successful have outstanding attendance and are on time each morning and to lessons throughout the day to maximise learning time.</li><li>Students who wish to be successful always meet deadlines, with all homework, tasks or assignments completed to a standard reflecting their ability.</li></ul>	<ul style="list-style-type: none"><li>Students who wish to be successful always demonstrate a positive attitude to learning, are always on-task in every lesson and behave in a purposeful and respectful manner outside of lessons.</li><li>Students who wish to be successful always contribute positively to lessons, try their best and always produce work to a standard reflecting their ability level.</li></ul>
My target for the week is to...	My target for the week is to...
To achieve my target for the week I will...	To achieve my target for the week I will...
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...



HT1 Week 3 Act on Instruction	HT1 Week 4 Correct Uniform and Equipment
<ul style="list-style-type: none"><li>Students who wish to be successful always respond positively and act on instructions from staff.</li><li>Students who wish to be successful do not answer back, ignore or challenge the member of staff's instruction as they trust that this instruction is to help them to be successful and to meet our expectations</li><li>Students who wish to be successful always act on the feedback provided to classwork or homework by staff and use their DIRT time effectively to improve.</li></ul>	<ul style="list-style-type: none"><li>Students who wish to be successful always wear the correct uniform and with a sense of pride. In line with our school values, it is important that our students take pride in themselves and in our school community.</li><li>Students who wish to be successful are always equipped for the day ahead.</li></ul>
My target for the week is to...	My target for the week is to...
To achieve my target for the week I will...	To achieve my target for the week I will...
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...



### HT 1 Week 5

#### Kind and Respectful

- Students who wish to be successful always demonstrate kind and respectful behaviour to other students, staff and their learning environment.
- In line with our school value of mutual respect, we expect all members of our school community to be polite, tolerant of others and celebrate diversity.

My target for the week is to...

To achieve my target for the week I will...

Did I achieve my target?  
If yes, how easy / challenging was it?  
If not, why not? What do I need to improve?  
Next steps...

### HT1 Week 6

#### Mid-term Review - Tomorrow's Aspiration supported by Today's Question; are you On TRACK?

My key achievements this term have been...

To improve further and ensure I am On TRACK I need to...

To achieve this I will...



HT2 Week 1 Time management	HT2 Week 2 Ready to Learn
<ul style="list-style-type: none"><li>Students who wish to be successful have outstanding attendance and are on time each morning and to lessons throughout the day to maximise learning time.</li><li>Students who wish to be successful always meet deadlines, with all homework, tasks or assignments completed to a standard reflecting their ability.</li></ul>	<ul style="list-style-type: none"><li>Students who wish to be successful always demonstrate a positive attitude to learning, are always on-task in every lesson and behave in a purposeful and respectful manner outside of lessons.</li><li>Students who wish to be successful always contribute positively to lessons, try their best and always produce work to a standard reflecting their ability level.</li></ul>
My target for the week is to...	My target for the week is to...
To achieve my target for the week I will...	To achieve my target for the week I will...
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...



HT2 Week 3 Act on Instruction	HT2 Week 4 Correct Uniform and Equipment
<ul style="list-style-type: none"><li>Students who wish to be successful always respond positively and act on instructions from staff.</li><li>Students who wish to be successful do not answer back, ignore or challenge the member of staff's instruction as they trust that this instruction is to help them to be successful and to meet our expectations</li><li>Students who wish to be successful always act on the feedback provided to classwork or homework by staff and use their DIRT time effectively to improve.</li></ul>	<ul style="list-style-type: none"><li>Students who wish to be successful always wear the correct uniform and with a sense of pride. In line with our school values, it is important that our students take pride in themselves and in our school community.</li><li>Students who wish to be successful are always equipped for the day ahead.</li></ul>
My target for the week is to...	My target for the week is to...
To achieve my target for the week I will...	To achieve my target for the week I will...
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps...





## HT 2 Week 5

### Kind and Respectful

- Students who wish to be successful always demonstrate kind and respectful behaviour to other students, staff and their learning environment.
- In line with our school value of mutual respect, we expect all members of our school community to be polite, tolerant of others and celebrate diversity.

My target for the week is to...

To achieve my target for the week I will...

Did I achieve my target?  
If yes, how easy / challenging was it?  
If not, why not? What do I need to improve?  
Next steps...

## HT2 Week 6

### Mid-term Review - Tomorrow's Aspiration supported by Today's Question; are you On TRACK?

My key achievements this term have been...

To improve further and ensure I am On TRACK I need to...

To achieve this I will...

# Portable Knowledge in STEM at KS4



STEM stands for **Science**, **Technology**, **Engineering** and **Maths**, and it is important that you can see connections between each of these subjects. In the real world there are very few challenges that only require one set of skills. For example, you wouldn't be able to design a new app, video game or computer program without an understanding of all of the STEM concepts. This section of the knowledge organiser will show you how different STEM subjects have things in common, including examples of how you might use them, and how some things may actually appear slightly different from one subject to the next. As Geography is a Natural Science we can include that too.

EXAMPLE	SCIENCE	TECHNOLOGY & ENGINEERING	MATHS	GEOGRAPHY
Tally chart	Can be used to record the number of pupils in different height ranges in biology.	Can be used when choosing a final design choice from a selection of draft designs.	Can be used to record the number of pupils (usually labelled frequency) with different eye colours or what their favourite subject is.	Can be used to record the number of people visiting honeypot sites when studying tourism such as visitor numbers in Jamaica over a 5 year period.
Pie chart	Can be used to display the % of different hydrocarbons in crude oil or % of different gases in the atmosphere in chemistry.	Can be used to display results of a tally chart.	Can be used to display the proportion or % of pupils who travel to school in different way.	Can be used to record the amount of people working in different job sectors over time in the UK in comparison to other countries.
Bar chart	Can be used to display the number of people with different blood groups in biology.	Can be used to display results of a tally chart.	Can be used to display the number of pupils with a different favourite sweet.	In geography the term histogram and bar chart are interchangeable and are used to display data such as the percentage of forest lost in a range of countries.
Histogram	This is similar to a bar chart but the bars touch each other and they represent continuous data that is grouped, for example number of pupils in different height ranges in biology.	Can be used to display research data. Can also be used to represent time on a "Gant" chart.	In maths this can be used to show the distribution of a data set such as the ages within a population. In most cases, a histogram has different class widths meaning the area of each bar is the frequency for it.	A range of different bar charts and histograms are used when writing up fieldwork.
Line graph	Can be used to display the time taken for salt to dissolve at different temperatures in chemistry.	Can be used to represent trend data during research pieces.	In maths these are sometimes called scatter graphs or timeseries graphs. They can be used to display house prices and/or the trend in a data set over time.	Can be used when studying climate graphs. Line graphs are also used when analysing climate data over a period of time.
Line of best fit	In biology a line of best fit can be point to point, but in chemistry they are most often a straight line. In all 3 sciences they could be a curve depending on distribution of the points. For example the extension of a spring in physics.	x	In maths you might be asked to add a line of best fit to a scatter graph. It is always a straight line drawn with a ruler and can be used on graphs to show correlation between hours of revision and score in test. In GCSE Statistics, we use correlation coefficients and linear regression equations to analyse this in detail.	In geography lines of best fit are used to look for negative and positive correlations when comparing data usually in physical geography modules. It is always a straight line drawn with a ruler through as many points as possible.

# Portable Knowledge in STEM at KS4



Hopefully this section of the knowledge organiser will help you spot where things crossover from one STEM subject to another as you move from lesson to lesson. REMEMBER some things are exactly the same, some are very similar but might be called different things, and some things are different altogether! .....and don't forget STEM stands for **Science, Technology, Engineering and Maths**

EXAMPLE	SCIENCE	TECHNOLOGY & ENGINEERING	MATHS	GEOGRAPHY
Range	Range around a mean can be used with data for heart rate after exercise in biology, amount of hydrogen gas produced in a chemical reaction in chemistry and number of times a ball bounces in physics.	x	The range is a measure of the spread of a data set. It can be used to compare data with a smaller range meaning it is more consistent such as comparing times athletes run 100m over 10 races.	Range is used in the geographical skills section of course. Range can be used when looking at rainfall and temperature data for different locations or when using development indicators such as literacy rate, life expectancy etc.
Mean, Median and Mode	Mean, median and mode can be used to analyse any sets of data with a range of results.	x	Mean, median and mode can be used to analyse any sets of data in conjunction with the range.	Mean, median and mode are used in the geographical skills section of the course and can be used to analyse any sets of data with a range of results.
Continuous data	These are data values that can take any value and are grouped/rounded. In biology an example would be bubbles of oxygen produced during photosynthesis.	x	These are data values that can take any value and are grouped/rounded. Data could be length, time, capacity or mass.	This is where you have any value in your data. An example would be mm of rainfall.
Discrete data	In science this is sometimes called discontinuous data. An example would be blood group or eye colour in biology.	x	These are specific data values and can be quantitative (numerical) and qualitative (word or category). Examples include type of colour, the result from rolling a dice or the number of pets people have.	Discrete data in geography includes both primary and secondary data. Fieldwork data could include rock sample sizes and how they change from the source to the mouth of a river.
Using co-ordinates	x	Used by a CNC machine to position the cutter when machining a piece of material. Marking out a series of holes from dimensions on a drawing.	4 and 6 figure grid references are used when plotting in 4 quadrants and used in transformations.	Both 4 and 6 figure references are used across all topics in geography to locate places from a map.
Taking measurements that are accurate and precise	Accurate data is close to the true value and precise data gives similar results if you repeat the measurement. In science there are far too many examples to mention!	Used when marking out materials prior to cutting and quality during checking when manufacturing a component.	Being able to read a variety of scales is a key skill for plotting and drawing graphs or measuring angles and lines. It is important in constructions and scale drawings to be within 0.1 cm or 1°	Measurements and accuracy are really important when studying map skills, especially when looking at scale and distance.

Year 10 Term 1		Definition Sentence	Contextual Sentence
1	<b>classical</b>	Representing a high standard within a traditional form or style.	The orchestra played a selection of classical music.
2	<b>comprehensive</b>	Including with all or nearly all elements or aspects of something.	We have a comprehensive selection of art materials.
3	<b>comprise</b>	Consist of; be made up of.	The play comprises three acts.
4	<b>confirmed</b>	Fixed in habit and unlikely to change. Stated that a report or fact is true.	She was a confirmed fan of the band. The phonecall confirmed he had won.
5	<b>contrary</b>	Opposite in nature, direction, or meaning.	Contrary to popular belief, many cats dislike milk.
6	<b>converted</b>	Changed the form, character, or function of something.	The school converted a classroom to a new office area.
7	<b>couple</b>	Two people or things of the same sort considered together. To link or combine something with something else.	A couple of pupils helped tidy the room. You must couple the wire to the battery.
8	<b>decades</b>	Periods of ten years.	Music has changed over the decades.
9	<b>definite</b>	Clearly stated or decided; not vague.	She has very definite ideas about what kind of a job she wants.
10	<b>deny</b>	Refuse to give something to someone; to refuse to admit the truth or existence of.	You can't deny that she's a good singer.
11	<b>differentiation</b>	The process of making two or more things (or people) different.	Mix the paints carefully to allow a gradual differentiation in colour.

12	<b>disposal</b>	The action or process of getting rid of something.	The disposal of radioactive waste is a problem.
13	<b>dynamic</b>	Constant change, activity, or progress; energetic.	This was a dynamic period in history.
14	<b>eliminate</b>	To completely remove or get rid of something.	Try to eliminate fatty foods from your diet.
15	<b>empirical</b>	Based on observation or experience	We now have empirical evidence that the moon is covered with dust.
16	<b>equipment</b>	The necessary items for a particular purpose.	Collect the sports equipment from the gym at the end of the day.
17	<b>extract</b>	Remove/take out, especially by using effort or force. A short passage taken from a text, film, or piece of music.	They extract coal from open pits and underground mines. This extract is taken from his new novel.
18	<b>file</b>	A folder/box for holding loose papers together and in order for easy reference. To march or walk in a single line.	It is good to keep revision notes organised in a file. In silence, they started to file into the room for the exam.
19	<b>finite</b>	Limited in size or extent.	Every computer has a finite amount of memory.
20	<b>foundation</b>	An underlying basis or principle. The lowest part of a building, typically below ground level.	Good research should be the foundation of your report. The foundation of the house was completed last week.
21	<b>global</b>	Relating to the whole world; the whole of something/of a group of things.	The probable result of global warming will be a rise in sea levels.
22	<b>grade</b>	A particular level of rank, quality or value.	You should get a good grade next year.

# Tier 2 Vocabulary

23	<b>guarantee</b>	A formal assurance that certain conditions will be met; a promise with certainty.	The computer comes with a three-year guarantee.
24	<b>hierarchical</b>	Of the nature of a hierarchy; arranged in order of rank.	The Roman Empire had a very hierarchical structure.
25	<b>identical</b>	Exactly the same as.	All the chairs in the room were identical.
26	<b>ideology</b>	A system of ideas and ideals.	The ideology of reincarnation is one of second chances.
27	<b>inferred</b>	To conclude something from evidence and reasoning rather than from pure fact.	His cold personality can be inferred from the description given in chapter one.
28	<b>innovation</b>	A new idea, method, or device	The company is very interested in product design and innovation.
29	<b>insert</b>	To place, fit, or push something into something else.	Insert the cable into the slot on the side of the phone.
30	<b>intervention</b>	Interfering with an outcome - especially of a condition / process to prevent harm or improve something.	Military intervention may increase the conflict even further.
31	<b>isolated</b>	Being in a remote location. Happening only once.	The castle was in an isolated position. The theft was an isolated incident.
32	<b>media</b>	The main means of mass communication (broadcasting, publishing, and the Internet) are regarded together.	The media coverage of the Olympics was very good.

33	<b>mode</b>	A way in which something happens or is done; a fashion or style in clothes, art, literature, etc.	Flying is now a common mode of transport.
34	<b>paradigm</b>	A typical example or pattern of something.	Fast and skilful, he is the paradigm of the perfect football player.
35	<b>phenomenon</b>	A fact or situation that is observed to exist or happen.	Gravity is a natural phenomenon.
36	<b>priority</b>	A thing that is regarded as more important than others.	She made homework her priority.
37	<b>prohibited</b>	Something that has been forbidden/ banned.	The sale of alcohol to people under 18 is prohibited.
38	<b>publication</b>	The preparation and issuing of a book, journal, or piece of music for public sale.	The publication contained several short stories and poems.
39	<b>quotation</b>	Something that is quoted - a word / phrase / passage referred to or repeated. Offers or prices given for something.	The quotation was taken from "Macbeth". The quotation for the repair was £100.
40	<b>release</b>	To set free from restraint/ confinement; to make something available to the public.	The band will release their new single on Friday.
41	<b>reverse</b>	To move backwards; to make something the opposite of what it was.	The winners were announced in reverse order.

## A CHRISTMAS CAROL

Plot	
Stave 1	Scrooge treats Bob, Fred, and others with contempt, only caring for money and himself. On Christmas Eve, he has a visit from Marley's Ghost, who warns Scrooge of his fate of the visit of the three spirits.
Stave 2	The Ghost of Christmas Past shows Scrooge scenes of himself as a young boy in school and as a young apprentice. They also witness Scrooge's breakup with his fiancée and the life and family he could have had. Scrooge reflects on how he has treated others.
Stave 3	The Ghost of Christmas Present shows Scrooge people celebrating Christmas: the Cratchit family, people in solitary places and his nephew, Fred. Finally, Scrooge sees two monstrous children: Ignorance and Want.
Stave 4	The Ghost of Christmas Yet-to-Come shows Scrooge reactions to his own death and how he is thought of after passing on. This is contrasted with the death of Tiny Tim.
Stave 5	Scrooge wakes on Christmas morning, reborn as a new man. He delights in putting right his wrongs from Stave 1 and opens himself up to helping others and celebrating Christmas.

Themes		
Christmas	Children	Poverty
Generosity	Family	Responsibility
Forgiveness	Injustice	Redemption
Change	Supernatural	Death

Assessment Objectives	
AO1, AO2 and AO3 are equally weighted for this question	
	Read, understand and respond to texts. Students should be able to:
AO1	<ul style="list-style-type: none"> <li>use textual references and quotations, to support and illustrate interpretations.</li> <li>maintain a critical style and develop an informed personal response.</li> </ul>
AO2	Analyse the language, form and structure used by a writer to create meanings and effects, using relevant subject terminology where appropriate.
AO3	Show understanding of the contexts in which the text was written.

Characters	
Ebenezer Scrooge	The main character. He is miserable, miserly, tightfisted and horrid. He rejects Christmas and refuses to offer help or kindness to anyone. The events of the novel change Scrooge completely into a generous, open-hearted man.
Bob Cratchit	Scrooge's clerk. Bob is hard-working, uncomplaining and loving to his family. He is humble and meek and grateful for all he has.
Fred	Scrooge's nephew. He is positive, kind and warm-hearted. He persists in inviting Scrooge to Christmas dinner, as he realises it is Scrooge who misses out in refusing.
Tiny Tim	Bob Cratchit's youngest son. Tim is a "cripple" and not likely to survive for long. Despite this, he is good natured and thinks of others. He says, "God bless us, everyone!"
Marley's Ghost	Scrooge's dead business partner. He warns Scrooge of his fate after death, if he does not change his ways.
Spirits of Christmas Past, Present and Yet-to-Come	These three ghosts all play a part in Scrooge's transformation. Each contribute by showing Scrooge key events in Scrooge's life and the lives of others.
Fan	Scrooge's sister and the (dead) mother of Fred. Fan is kind to Scrooge when he is a boy in school.
Fezziwig	Scrooge's old boss. He shows seasonal generosity to his workers, including Scrooge who is his apprentice.
Mrs Cratchit	Bob's wife. She makes the best of not having much money and makes the most of what she has for her family. She is slightly less forgiving of Scrooge than her husband.
Belle	Scrooge's fiancée. She breaks up with Scrooge, as she can see that money means more to him than she does.

Vocabulary
Stave (Chapter)
Narrative
Dramatic Irony
Prose
Hyperbole
Metaphor
Pathetic Fallacy
Simile
Symbolism
Foreshadowing
Third Person Intrusive
Exclamatory Tone
Humour
Allegory
Listing
Non-linear
Dialogue
Genre

Structure and Form
Written in five chapters called 'staves' (after the musical stave which also has five lines).
The novel is cyclical in nature, with the last stave directly referencing the events of the first.
The stages of Scrooge's redemption are clear. His initial solitude in Stave 1; his gradual realisation and lessons learned in Staves 2-4; his rebirth in Stave 5.

Context
Written by Dickens in 1843 as a direct comment on the conditions endured by the poor (particularly children) during the 'Hungry Forties'. Initially intending to write a pamphlet on the subject, Dickens felt the novel would have more impact and be a "sledgehammer blow" on behalf of the poor.
Having known periods of poverty and hardship in his own childhood, Dickens was a fierce opponent of the Poor Law, which advocated workhouses and prisons as a solution to the problem of social inequality.
Dickens saw a need for the wealthy to share their fortunes and help the most vulnerable in society. He directly references the views of Thomas Malthus, who saw poverty as inevitable and a need to 'decrease the surplus population'.
Christmas had fallen out of favour by 1843 and was not universally celebrated. Although a Christian holiday, celebrating the birth of Jesus Christ, it also encompassed pagan traditions around the winter solstice and looked ahead to the coming spring. In addition, Dickens saw Christmas as a time of sharing food, gifts and time. For Dickens, the 'Christmas spirit' is generosity and compassion for others. Dickens can be partially credited with cementing the popularity of the holiday.
Ghost stories were traditional at Christmas. These were often read aloud, and the novella format allows for this. The story uses many tropes of the ghost genre and combines these with a morality tale.
Tips
<ul style="list-style-type: none"> <li>Support points with reference to characters and events and refer back to the question set.</li> <li>The provided extract can be useful for language analysis (AO2).</li> <li>Remember to integrate points of context into discussion of the characters, events and themes.</li> </ul>





## 'A Christmas Carol' Sample Exam Question



### A Christmas Carol

You are advised to spend about 45 minutes on this question.

You should use the extract below and your knowledge of the whole novel to answer the question.

Write about the some members of the Cratchit family and how they are important to the novel as a whole.

In your response you should:

- refer to the extract and the novel as a whole.
- show your understanding of characters and events in the novel.
- refer to contexts of the novel.

[40]

The children drank the toast after her. It was the first of their proceedings which had no heartiness in it. Tiny Tim drank it last of all, but he didn't care twopence for it. Scrooge was the ogre of the family. The mention of his name cast a dark shadow on the party, which was not dispelled for a full five minutes.

After it had passed away they were ten times merrier than before, from the mere relief of Scrooge the Baleful been done with. Bob Cratchit told them how he had a situation in his eye for Master Peter, which would bring in, if obtained, full five-and-sixpence weekly. The two young Cratchits laughed tremendously at the idea of Peter's being a man of business; and Peter himself looked thoughtfully at the fire from between his collars, as if they were deliberating what particular investments he should favour when he came into receipt of that bewildering income. Martha, who was a poor apprentice at a milliner's, then told them what kind of work she had to do, and how many hours she worked at a stretch, and how she meant to lie a-bed tomorrow morning for a good long rest; tomorrow being a holiday she passed at home. Also how she had seen a countess and a lord some days before, and how the lord "was much about as tall as Peter"; at which Peter pulled up his collars so high that you couldn't have seen his head if you had been there. All this time the chestnuts and the jug went round and round; and by and by they had a song, about a lost child travelling in the snow, from Tiny Tim, who had a plaintive little voice, and it very well indeed.

There was nothing of high mark in this. They were not a handsome family; they were not well dressed; their shoes were far from being waterproof; their clothes were scanty; and Peter might have known, and very likely he did, the inside of a pawnbroker's. But they were very happy, grateful, pleased with one another, and contented with the time; and when they faded, and looked happier yet in the bright sprinklings of the Spirit's torch at parting, Scrooge had his eye on them, and especially Tiny Tim, until the last.

### Commentary

The opening sentence shows a clear focus on the question and addresses the 'importance'. The candidate then brings in contextual points and discusses Dickens' intentions in writing the novel. The second paragraph keeps the focus firmly on why Bob is important in the novel. It also brings in some AO2 points about technique as well as some context – discussing how employees were treated.

The candidate also uses the extract here.

There are appropriate direct references from the extract and other parts of the text, used to support the candidate's astute points. Overall this response shows assured understanding of the demands of the task and covers all the Assessment Objectives in a sustained, integrated way.

### Exemplar response

The Cratchit family are a very important to 'A Christmas Carol' because they play a big part in the central story of Scrooge's redemption. They are also important because Dickens wanted to portray the poor of Victorian London in the 19th century in a positive way and they help him do achieve his aims.

We first encounter the father of the Cratchits, Bob, in the first chapter. He is not named by Dickens here – we only discover his name later in the book – and this is perhaps deliberate to show his lowly status – Scrooge only cares of him as a "clerk" and not a human being. Bob is one of the first 'victims' we see of Scrooge's miserly ways – he only has "one piece of coal" and has to "warm himself on a candle" so he is important in establishing Scrooge's meanness and penny-pinching ways. Moreover, Bob reinforces the message of Christmas by "applauding" Fred when he speaks on the benefits of Christmas. Scrooge doesn't want to give Bob Christmas Day off. This was not uncommon at the time and Bob is important in showing the audience how poorly employees were often treated. In the extract, Bob "toasts" Scrooge with his family which shows how grateful he is to Scrooge, despite being so badly treated by him. This was important for Dickens to show how grateful and humble the poor are and weren't the monsters they were thought of.

In Stave three, we see the rest of the Cratchit family. They are obviously poor (Mrs Cratchit is in her "twice turned gown") and they have a small "goose" for dinner. However, they are grateful and make the best of it. Mrs Cratchit and Belinda are "brave in ribbons" and it is said that the goose was treated like a "feathered phenomenon" or a "black swan". This shows how grateful they are and was central to the theme. They are also a loving family and the day is full of fun (they "laughed tremendously").

Tiny Tim is a "cripple" but is selfless and kind-hearted and cares about others as can be seen when he says "God bless us everyone" and thinks of others when he goes to church. He is important because Scrooge has a face to put to his Malthusian comment of "decrease the surplus population" and changes his mind. In fact, Tiny Tim's death shows a stark contrast to Scrooge's – the boy is mourned and will live on, whereas Scrooge will not. Therefore, Tiny Tim plays a hugely important role in Scrooge's redemption.

Finally, the Cratchits are important at the end of the novel – Scrooge buys them a "turkey" and it is the "biggest one in the shop". This shows just how much Scrooge has changed.

Overall, the Cratchits are essential in showing the 'grateful poor' as was Dickens' intention and also play a huge part in showing Scrooge's transformation.



Explorations in Creative Reading (GCSE English Language Paper 1 Section A – AQA)					
Q	What is the Q asking?	Subject terminology		Excellence criteria	Sentence starters
Read	5-10 mins to read the source				
1: facts	<p><b>Read lines... to ... List 4 things you learn about ...</b></p> <p>1. Re-read the specified lines.</p> <p>2. Copy 4 facts: do not infer.</p> <p><b>4 marks – 5 minutes</b></p>			<ul style="list-style-type: none"><li>○ Focus on facts, not inference or analysis</li><li>○ You can quote the text</li></ul>	
2: analyse language	<p><b>Read lines ... to ... . How does the writer use language to present ...?</b></p> <p>1. Re-read the specified lines.</p> <p>2. Highlight or underline 3 quotations relevant to the question. You can quickly annotate.</p> <p>3. Write 3 PEEA paragraphs responding to the question.</p> <p><b>8 marks – 10 minutes</b></p>	<p>1. <b>Adjective</b>: describes a noun.</p> <p>2. <b>Adverb</b>: describes a verb.</p> <p>3. <b>Alliteration</b>: words start with same sound.</p> <p>4. <b>Allusion</b>: reference to another text or event.</p> <p>5. <b>Colloquial language</b>: informal language.</p> <p>6. <b>Euphemism</b>: replacing an offensive phrase with milder words.</p> <p>7. <b>Hyperbole</b>: over-exaggeration.</p> <p>8. <b>Imagery</b>: visual language.</p> <p>9. <b>Imperative verb</b>: command.</p> <p>10. <b>Juxtaposition</b>: contrasting ideas.</p> <p>11. <b>Metaphor</b>: comparison.</p>	<p>12. <b>Modal verb</b>: shows possibility e.g. could, might.</p> <p>13. <b>Onomatopoeia</b>: words which sound like what they describe e.g. boom.</p> <p>14. <b>Oxymoron</b>: combines contradictory terms e.g. a minor crisis.</p> <p>15. <b>Pathetic fallacy</b>: using the weather to set the emotion or mood.</p> <p>16. <b>Personification</b>: giving an object human characteristics.</p> <p>17. <b>Semantic field</b>: group of words with similar connotations.</p> <p>18. <b>Sibilance</b>: repetition of “s” sound.</p> <p>19. <b>Simile</b>: comparison using “like” or “as”.</p> <p>20. <b>Symbolism</b>: image represents an idea.</p> <p>21. <b>Triple</b>: list of three.</p> <p>22. <b>Verb</b>: action word.</p>	<p><b>Point</b></p> <ul style="list-style-type: none"><li>○ Respond directly to the Q using precise vocabulary.</li><li>○ Use “in order to” to address key concepts.</li></ul> <p><b>Evidence</b></p> <ul style="list-style-type: none"><li>○ Select precise evidence</li><li>○ Embed fluently in a sentence</li></ul> <p><b>Explain / analyse</b></p> <ul style="list-style-type: none"><li>○ What do the words suggest, imply or symbolise?</li><li>○ Explore more than one word, idea or interpretation</li><li>○ Use subject terminology.</li></ul>	<p>The writer portrays ... as ... in order to suggest that...</p> <p>This is clear when we read “...” Evidence of this is “...”</p> <p>This means that... We learn that... The writer communicates that... The word / language device suggests / conveys... This indicates that... In addition, the word / language device is used because... This reinforces the idea that...</p>
3: analyse structure	<p><b>Use the whole source. How does the writer structure the text to interest you as a reader?</b></p> <p>1. Identify 3 or more structural devices, choosing one from the beginning, one from the middle, and one from the end of the text.</p> <p>2. Write 3 PEEAs responding to the question, thinking beginning, middle, end.</p> <p><b>8 marks – 10 minutes</b></p>	<p><b>Beginning: Narrative perspective</b></p> <p>A. 1<sup>st</sup> person: told from the character’s perspective (I)</p> <p>B. 2<sup>nd</sup> person: directed to the reader (you)</p> <p>C. 3<sup>rd</sup> person: external narrator (he, she, it)</p> <p>D. Limited narrator: doesn’t have full knowledge of the situation</p> <p>E. Omniscient narrator: full knowledge and understanding</p> <p>F. Unreliable narrator: we question the narrator’s credibility</p> <p><b>Beginning: Introducing Ideas</b></p> <p>G. Establishing setting</p> <p>H. Introducing character(s)</p> <p>I. Establishing an atmosphere</p>	<p><b>Middle: shifts in...</b></p> <p>J. Focus</p> <p>K. Place</p> <p>L. Time (flashforward / flashback)</p> <p>M. Narrative perspective</p> <p>N. Atmosphere / mood</p> <p><b>Ending:</b></p> <p>O. Circular structure: the narrative ends where it begins</p> <p>P. Cliff-hanger: the narrative ends suddenly</p> <p>Q. Resolved ending: loose ends are tied up</p> <p>R. Unresolved ending: loose ends are not tied up</p> <p><b>Overall structure:</b></p> <p>S. Linear: events are told in the order that they happen, chronologically</p> <p>T. Non-linear: events are not in order</p> <p>U. Motif: a pattern of ideas, images or words repeated throughout the text</p>	<p><b>Point</b></p> <ul style="list-style-type: none"><li>○ Respond directly to the question using precise vocabulary</li><li>○ Use “in order to” to address key concepts</li></ul> <p><b>Evidence</b></p> <ul style="list-style-type: none"><li>○ Select precise evidence</li><li>○ Embed fluently in a sentence</li></ul> <p><b>Explain / analyse</b></p> <ul style="list-style-type: none"><li>○ Explore the effect of the structural device</li><li>○ Use subject terminology</li></ul>	<p>The writer structures the text by... in order to... The writer introduces the idea of... The writer focuses on... The writer develops the idea of... The writer draws the extract to a close by...</p> <p>This is evident in the line “...”</p> <p>The structural device is used because... This suggests that... This introduces / develops... This focusses our attention on... The writer zooms in on... because...</p>
4: present a point of view	<p><b>Read lines ... to ... Having read this section of the text, a student said “.....” To what extent do you agree?</b></p> <p>1. Re-read the specified lines.</p> <p>2. Agree/disagree table.</p> <p>3. Write 4 PEEA paragraphs.</p> <p><b>20 marks – 20 minutes</b></p>	<p><b>All language and structural devices</b></p> <p><b>Use XXOX to structure your argument:</b></p> <p>X: strongest agree point</p> <p>X: next agree point</p> <p>O: other side of the argument – if relevant</p> <p>X: final agree point</p>		<p>See Question 2</p>	
		<p><b>Analytical verbs:</b></p> <ul style="list-style-type: none"><li>○ <b>presents</b>: portrays, conveys</li><li>○ <b>shows</b>: demonstrates, illustrates</li><li>○ <b>suggests</b>: hints, implies, indicates</li><li>○ <b>reveals</b> that...: exposes, clarifies</li><li>○ <b>emphasises</b>: confirms, highlights</li><li>○ <b>creates</b> debate about...: initiates, generates, provokes</li><li>○ <b>explores</b> the idea that...: considers, prompts, questions</li><li>○ <b>challenges</b> the idea that...: confirms</li><li>○ <b>confirms</b> the idea that...: supports, justifies, develops</li><li>○ <b>believes</b>...: perceives, trusts, learns, observes</li><li>○ <b>considers</b>...: appreciates, clarifies, examines</li><li>○ <b>sympathises</b>...: emphasises, senses, pities, understands</li><li>○ <b>discovers</b>...: realises, understands, decides, concludes</li></ul>			

#### Analytical verbs:

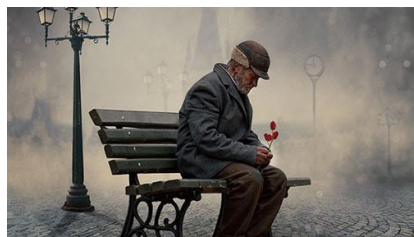
- **presents**: portrays, conveys
- **shows**: demonstrates, illustrates
- **suggests**: hints, implies, indicates
- **reveals** that...: exposes, clarifies
- **emphasises**: confirms, highlights
- **creates** debate about...: initiates, generates, provokes
- **explores** the idea that...: considers, prompts, questions
- **challenges** the idea that...: confirms
- **confirms** the idea that...: supports, justifies, develops
- **believes**...: perceives, trusts, learns, observes
- **considers**...: appreciates, clarifies, examines
- **sympathises**...: emphasises, senses, pities, understands
- **discovers**...: realises, understands, decides, concludes
- **develops** the idea that...: builds, changes



## Explorations in Creative Writing (GCSE English Language Paper 1 Section B – AQA)

### Example question:

Write a description for a magazine inspired by this image:



OR

Write the opening of a story about isolation.

24 marks for content and organisation, 16 marks for technical accuracy

### Developing your character:

Before the exam, you need to create a fully developed character and know everything about them. When you go into the exam, you can “drop” your character into the image to give you a starting point.

Make sure you know your character’s...

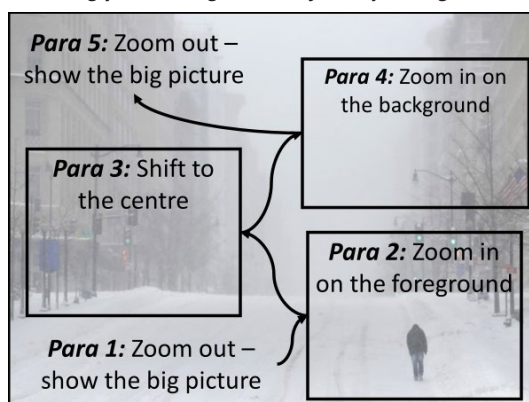
- Family and education background
- Experience of work and employment
- Experience of historical events e.g. World War Two
- Personality and characteristics
- Likes and dislikes (food, clothes....)

For each of these, ask yourself **why**. E.g. Why does my character become angry easily? Why did my character leave school at 16?

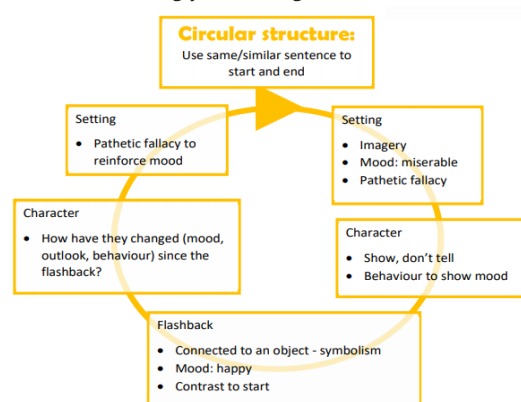
### Excellence criteria for self-assessment

	Target
Content and organisation: 24 marks	<b>Communication is convincing</b> – it reads like a novel / short story
	<b>Communication is compelling</b> – it is a short story I would be interested in reading
	<b>Tone, style and register are matched to audience</b> – you have written in the style of a novelist
	<b>Extensive and ambitious use of vocabulary</b>
	<b>Sustained crafting of linguistic devices</b> – you have used a range of language devices throughout
	<b>Use of structural features</b> – e.g. circular structure
Technical accuracy: 16 marks	<b>Inclusion of a range of complex ideas</b> – e.g. you explore different moods, emotions, aspects of character
	<b>Paragraphs are linked</b>
	<b>Sentence demarcation is accurate</b> – full stops, commas etc are in the correct place
	<b>Wide range of punctuation used accurately</b>
	<b>Uses the full range of sentence forms for effect</b>
	<b>Secure control of complex grammatical structures</b>
	<b>High level of accuracy in spelling</b>
	<b>Extensive and ambitious use of vocabulary</b>

### Structuring your writing 1: take a journey through the image



### Structuring your writing 2: circular structure



### Using descriptive language: show, don't tell

We use a range of language devices to show rather than tell the reader what the character is doing. E.g. She was sad. → Her body drooped. Slowly, she wrapped her arms around herself, hoping to stop herself shattering into a million pieces. As her lip began to quiver, a single tear fell.

Use all the language devices listed on the other side of this Knowledge Organiser (see Question 2) to describe:

- Facial expression
- Body language and movement
- Clothing and appearance
- Reactions to other people
- Tone of voice
- Changing weather
- How an object moves
- How an event makes the character feel

### Using a range of sentence structures – start with...

1. Two –ing verbs	Raising a hand...
2. Two or three adjectives	Humid and clammy, the air...
3. Two –ly adverbs	Rapidly, quickly, the bird...
4. A preposition (over, under, in)	Under the moon, the river...
5. A simile	Like a...
6. A connective:	First, we..
7. The noun – adjective, adjective – sentence:	The tree – bony, twisted – grew...
8. More, more, more sentence:	The <b>more</b> he cried, the <b>more</b> he felt...
9. The so, so sentence:	It was <b>so</b> small, <b>so</b> tiny...
10. It was one of those days...	It was <b>one of those days when</b> ...

### Using a range of punctuation

.	End a sentence
,	Separate clauses in a sentence (where you take a breath)
-	Add additional information in an informal way
;	Add additional information – full sentence before and after the ;
:	Introduce a list OR a shocking idea e.g. Morning arrived: disaster!
( )	Include additional information that isn't essential to the sentence
?	Pose a question
!	Show shock or surprise (use sparingly)
...	Build tension or leave a gap
'	Indicate possession (Amy's work) or omission (I can't do it)



The Soldier by Rupert Brooke  
*The one about dying unselfishly for your country.*



- ☐ “there’s some corner of a foreign field/ That is for ever England”
- ☐ “A pulse in the eternal mind”
- ☐ “hearts at peace, under an English heaven.”

**Content:** In this poem, the persona, a soldier heading to war, talks about the possibility of dying in a foreign country. He claims that this should not be an occasion for sadness, but that by dying he will have made “a corner of a foreign field” a small part of England. He **personifies** England as his mother, who gave birth to him and raised him to become the person he is. He feels that he owes his life to her and therefore unselfishly sacrifices his life. He believes dying will be comforting and that he is only giving back the things that England gave to him and his memory and sacrifice will live on after death.

**Context:** The poem is **idealistic**. Rupert Brooke was a young, untested soldier, who had attended public school and was Cambridge educated. Athletic and called “the handsomest young man in England,” he was part of the Bloomsbury group of authors and becoming known for his poetry. He wrote this poem at the start of the **First World War** as part of a series of **sonnets** and Winston Churchill admired its **selfless patriotism**. Brooke wrote idealistically about the war. He had not seen action and was never to. After embarking for war, he contracted blood-poisoning from a mosquito bite and died on French hospital ship. The poem has become a **symbol for a lost generation of youth**.

**Form:** This poem is a **sonnet**, traditionally used for love poetry. Rather than a person, this sonnet expresses Brooke’s love and devotion to his country. Written in the **first person**, it follows an unwavering **iambic pentameter** and clear **rhyme scheme**, that demonstrates the persona’s commitment to England. It is characterised as **Georgian** poetry with **motifs** of nature, youth and innocence.

**Structure:** The first **8 lines, or octave**, focus on how England enriched his life and he owes it to her. Whereas, the last **6 lines, or sestet**, reflect on how his death is meaningful, and reciprocal. It will bring him peace, and England security. Usually, there is conflict or debate between the two parts of a sonnet, but in *The Soldier* there is only harmony. The structure of the poem embodies the harmonious relationship between man and country.

#### **Language Features:**

- England is **personified** through the **extended metaphor** of a mother who has nurtured a son who is willing to die to protect her, embodying ideas of heroic sacrifice.
- **Natural imagery** is used extensively to express his love of the English countryside and creates a **Romantic**, idealised idea of war without pain or suffering.
- **Religious imagery** reveals his sense of faith and belief that his sacrifice will be immortalised by God.

#### **Key Themes:**

- ☐ Deep and lasting love (for his country) that is unselfish / Nature and Place
- ☐ Faith, belief and worship
- ☐ Attitudes to war and patriotism

#### **Good to compare with:**

- ☐ Sonnet 43
- ☐ A Wife in London
- ☐ Living Space
- ☐ Dulce, Mametz Wood. The Manhunt

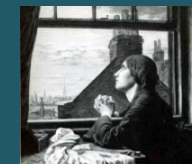




### A Wife in London by Thomas Hardy

*The one with the tragic telegram and the ironic letter.*

- ☐ "She sits in tawny vapour"
- ☐ "The street lamp glimmers cold"
- ☐ "He –has fallen - in the far South Land..."
- ☐ "His hand, whom the worm now knows"



**Content:** The poem opens with a description of a wife sitting at home alone in London, against the backdrop of fog and misery which enfolds her. A sharp knock at the door brings her to her senses, and a messenger delivers a telegram with the tragic news that her husband, who is at war in a distant country, has been killed. The poem moves to the following day. Here a letter is delivered to her from her husband who wrote it before he died. He talks with enthusiasm of his hopes for coming home and their future together. The joy and optimism with which he speaks serves to emphasise the terrible waste of his life and the wife's desolation and sadness.

**Context:** In the poem, Hardy speaks as an **observer** and chooses to focus on those left behind at home at times of war. The war he is speaking about is **the Boer War** – a series of campaigns fought against the Boers (or Dutch) over territory in the **south of Africa**. The war was a **distant one** and one many thought was unnecessary and wasteful of life, as many men died needlessly of diseases like enteric fever. He uses the isolation of the wife to emphasise her helplessness in the face of her separation from her husband – she could be any one of any number of wives left behind – and employs the letter "page full" of hope to show the futility of war and how many died in their prime.

**Form:** The **persona** in the poem is an observer who watches in a detached manner contributing to the helpless and melancholy tone. **The irregular rhythm** and dashes create pauses and reflect the disbelief of the wife at the news. There is an **asymmetrical rhyme scheme (ABBAB)** which is broken once in the half rhyme of "smartly" and "shortly" – reflecting the wife's struggle to absorb the news.

**Structure:** Hardy **deliberately divides** the poem into two opposing halves – **The Tragedy and The Irony**. The **first 2 stanzas** accentuate the wife's loneliness trapped in the web of London's fog and build to climax of anticipation with the tragic news. The second 2 stanzas **juxtapose** the news of the husband's death with his joyful prose, fresh and firm. Hardy does this to show how war can crush hope and joy.

#### Language Features:

- Hardy uses **visual imagery** and the **pathetic fallacy** of the fog to distil the wife's isolation and grief. The fog encloses her and foreshadows the grip of death into which she will fall, and **imagery of light** offers no warmth, hope or consolation.
- **The contrast** of the **opening imagery** with the husband's joyful language, punctuated by powerful **alliteration**, creates a deep sense of irony and loss.
- **The graphic imagery** of his "hand" once "fresh" and "firm" now intimately acquainted with the worm focuses on his physical decay and the horror of war.

#### Key Themes:

- ☐ Love and relationships
- ☐ Pain and suffering – Death and Loss
- ☐ The impact of war on the individual

#### Good to compare with:

- ☐ The Manhunt
- ☐ As Imperceptibly as Grief
- ☐ Dulce/ Mametz Wood

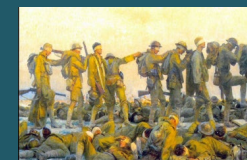




Dulce et Decorum Est by Wilfred Owen

*The famous one about the horrific effects of a gas attack.*

- ☐ "Bent double like old beggars... coughing like hags"
- ☐ "All went lame; all blind"
- ☐ "As under a green sea, I saw him drowning"
- ☐ "Obscene as cancer"



**Content:** The persona describes the suffering of the exhausted soldiers, which he is one of, as they march away from battle back to their rest camp. They are broken, injured and so tired they appear drunk. Suddenly, the shout of "Gas!" rings out. A chlorine gas shell has been dropped and the soldiers scramble to get their gas masks on. One soldier is unable to and flounders toward the persona choking on gas. The persona recounts how in all his dreams he still sees the man's face plunging towards him. He directly asks the reader if he had seen young men die in such an obscene way could they ever say to others that it is sweet and fitting to die for your country. He calls this a lie.

**Context:** 2<sup>nd</sup> Lt Wilfred Owen was a decorated soldier, who won the highest honour of the **Military Cross** for bravery in the front line of battle in **the First World War**. Unlike, Brooke he experienced the horror and depravity of battle first hand and felt that his one duty as a poet was to tell the **"truth."** He wasn't unpatriotic, in fact after treatment for shell shock (PTSD) he returned to the front, but was sadly killed in action on 4<sup>th</sup> Nov 1918, 7 days before the war ended. The **Latin phrase** in his poem means *It is sweet and fitting to die for your country*. It was often displayed in military training camps to inspire trainee soldiers to greater patriotism. Owen criticises this as a lie told by the establishment which he finds disgraceful.

**Form:** The poem has some **regular and irregular features**. The **regular ABAB rhyme scheme** reflects the relentless trudge and suffering of the soldiers plight; however the **stanzas are of irregular length** and the **iambic pentameter falters** at times, perhaps showing the unpredictability of war or the soldiers exhaustion. It can seem disjointed, fragmented and confusing – like war.

**Structure:** It is written in the **first person** and is almost certainly **autobiographical** in nature. It starts with a **past tense** description of the long trudge of the soldiers back to rest camp, and **develops** to the panic of the gas attack. It **then flashes forward** to the present and the horrific dreams the persona still has of the incident. It **ends** with a **graphic description** of the soldier's death on the back of cart and **questions** the honesty and integrity of those who spread the "old lie" to the young.

**Language Features: (there are almost too many)**

- **Similes** are used extensively by Owen to describe the condition of the men and the experience of the gas attack.
- **Graphically violent imagery** to describe the soldier's hideous death, including powerful **adjectives and verbs** convey the brutal, shocking reality of war.
- **Direct address** – "My friend" challenges the reader, authorities and other poets (including Jessie Pope) to consider the falsehood they pedal to youth of Britain.

**Key Themes:**

- ☐ War and its impact
- ☐ Pain, suffering, death, loss and PTSD
- ☐ Negative Emotions

**Good to compare with:**

- ☐ Mametz Wood
- ☐ The Manhunt
- ☐ London





### Mametz Wood by Owen Sheers

*The one where a mass grave of dead soldiers is unearthed.*

- ☐ “the wasted young”
- ☐ “blown and broken bird’s egg of a skull”
- ☐ “a wound working a foreign body to the surface of the skin”



**Content:** The persona in the poem describes that how even now the farmers in France are still finding the remains of soldiers who died on the battlefields of the **First World War** in the earth as they plough. The remains seem to be near a place called **Mametz Wood** where a particularly brutal battle, that cost many lives, took place. The narrator references how they were commanded to walk into battle and face the devastating machine guns. The poem moves to the present and the discovery of a mass grave of soldiers that has just been discovered and recounts how they are linked arm in arm and how their mouths seem to be open as if they are mid song.

**Context:** *Mametz Wood* was written in 2005 by British poet Owen Sheers. Mametz is a village in Northern France; the woodland nearby was the site of an especially bloody battle during **World War I**, in which around 4,000 men from the British Army's Welsh Regiment were killed. Sheers's poem is set many years later, and considers the way that, even a century after the conflict, the land around Mametz Wood is still filled with fragments of the dead soldiers' bodies. The poem is thus a consideration of the horrors of war, its lasting effects, the fragility of life, and the time it takes nature to heal from such atrocities. It is a commemorative and **elegiac** in tone.

**Form:** The poem is written in **tercets** (3 line stanzas) that seem a little less robust than a quatrain, perhaps hinting at the delicate balance between life, death and nature. Sheers chooses to write in **the 3<sup>rd</sup> person**, which creates a sense of distance and detachment. He uses **enjambment** within and between stanzas, which could reflect the slow unearthing and passing of time as the pieces are dug up. It creates a reflective tone.

**Structure:** The **first 3 stanzas** focus on the “years” after the war and how farmers found the fragile remains of the “wasted young” leading the narrator to reflect on their death at the mercy of machine guns. The **4<sup>th</sup> stanza** brings us to the **present day** and how “even now” the earth is still healing from the horror. The **final 3 stanzas are written “this morning”** and create a sense of immediacy around the horrific discovery of a mass grave – a reminder that this war is forever present in our history.

### Language Features:

- The earth is **personified** as a “sentinel” who guards the remains of the soldiers and ensures they do not slip from memory. It is also described as wounded, suggesting how it still needs to heal from the horror of war.
- **Images of brokenness and fragility** such as the **symbolism** of the “bird’s egg” emphasise the fragility of life but also how war can **dehumanise** those who fight in it.
- **Graphic imagery** is used to describe the mass grave to suggest the horrific manner of their death, but is contrasted with the **metaphor** of the “mosaic” emphasising their beauty and delicacy.

### Key Themes:

- ☐ Attitudes to war/ death and loss
- ☐ The passage of time/ the past
- ☐ Nature

### Good to compare with:

- ☐ Dulce/ The Soldier
- ☐ The Manhunt/ A Wife in London
- ☐ To Autumn





1. The Manhunt by Simon Armitage:  
The one about the scarred soldier.

- ☐ "frozen river"
- ☐ "foetus of metal"
- ☐ "unexploded mine"



**Content:** The wife of a soldier gets to know her husband again after he returns home injured from the war. Her husband is physically scarred by the injuries he sustained in the war, but he also has deeply buried psychological scars as result of his traumatic experiences. The poem traces his physical scars and explores deeper into the "unexploded mine" of PTSD. Physically, they can remain close, but there is a gap between them now emotionally as he struggles to let her in.

**Context:** *The Manhunt* is a **contemporary poem** and was originally aired as part of a Channel 4 documentary, *Forgotten Heroes: The Not Dead*. In the film, the poem is read by Laura, the wife of Eddie Beddoes, who is the subject of the poem. He served as a peace-keeper in Bosnia before being discharged due to injury and depression. Armitage wrote the poem after interviewing veterans returning from war and as a means of exploring the psychological impact on those who survived intense trauma.

**Form:** The poem is written in **couplet –long stanzas**, which have lines of varying length, from **Laura's perspective**. At the start, the couplets rhyme, but the **rhyme** breaks down making the poem feel disjointed and conveys the theme of brokenness. It may reflect their struggle to reconnect and how she will have to learn who her husband now is.

**Structure:** Each **couplet** introduces a different injury and the reader explores the body and mind of the soldier alongside his wife, experiencing the process at the same time. The use of **enjambment** mimics the way she traces the injuries that run continuously across his body and explores the damage done. It demonstrates the slow progress she is carefully making.

**Language Features:**


- The soldier's body is described by using **adjectives of damage** to show how broken war has left him.
- Parts of the body and mind are described using **metaphors** suggesting his is compiled of broken objects and that part of his humanity has been erased.
- **The verbs** express her tenderness and caution in how she approaches him.
- The final **metaphor of the "unexploded mine"** refers to the tension and stress his memories cause which he has not come to terms with yet.

**Key Themes:**

- ☐ War and its lasting effects
- ☐ Love and relationships
- ☐ Pain and suffering
- ☐ Loss and change

**Good to compare with:**

- ☐ Dulce, Mametz Wood
- ☐ A Wife in London
- ☐ London
- ☐ As Imperceptibly a Grief

 <b>Year 10 Mathematics Knowledge Organiser</b>	<b>Topic</b>	<b>Key terms – use <a href="http://www.amathsdictionaryforkids.com">www.amathsdictionaryforkids.com</a> to help</b>	
	<b>Statistics: Interpreting Averages</b>	<b>Discrete data</b>	Data that can only take certain values 3, 6, 10, -9, 4235 are all <b>discrete data</b> values
		<b>Continuous Data</b>	This is data in which all values are possible The heights measured were all examples of <b>continuous data</b>
		<b>Speed</b>	A way of measuring how quickly something is moving or being done <b>Speed</b> = Change in Distance ÷ Time.
		<b>Acceleration</b>	The rate of change of the velocity of an object with respect to time <b>Acceleration</b> = Change in Speed ÷ Time

## Averages and Spread

Hey diddle diddle, the median's the middle  
 You add then divide for the mean  
 The mode is the one you see the most  
 And the range is the difference between  
 Yeah!

**Median**

Find the median of  
6, 4, 3, 6, 7, 11, 9, 15

Put the numbers in order,  
smallest first

3 4 6 **6 7** 9 11 15

There are two numbers in  
the middle, 6 and 7 - find  
halfway between them

$(6 + 7) \div 2 = 6.5$   
So 6.5 is the **median**

**Mean**

Find the mean of  
8, 6, 2, 3, 11, 12, 0

Find the sum of the numbers

Total = 42

There are 7 items in the  
data set (the numbers) so we  
will divide by 7

$42 \div 7 = 6$   
So 6 is the **mean**

**Mode**

Find the mode of  
1, 3, 6, 4, 3, 2, 7, 8, 10

Find the number that appears  
the most (Putting them in  
order can help)

3 appears the most  
(twice) so **3 is the mode**

**Range**

Find the range of  
2.6, 3.7, 2.1, 8.4, 2.9, 3.6

Find the Highest and Lowest  
numbers and calculate  
Highest - Lowest

Highest = 8.4 Lowest = 2.1  
Range = 8.4 - 2.1 = 6.3

## Means from Tables

**Discrete Data**

Add a frequency density 'fx' column

Number of badges	Frequency	fx
0	2	$0 \times 2 = 0$
1	8	$1 \times 8 = 8$
2	4	$2 \times 4 = 8$
3	3	$3 \times 3 = 9$
4	5	$4 \times 5 = 20$
5	3	$5 \times 3 = 15$

Mean = 'fx' total ÷ 'Frequency' total

fx total = 60 Frequency total = 25  
 $60 \div 25 = 2.4$  badges

**Grouped Continuous Data**

Time taken (mins)	Frequency
$0 < m \leq 10$	3
$10 < m \leq 20$	8
$20 < m \leq 30$	11
$30 < m \leq 40$	9
$40 < m \leq 50$	9

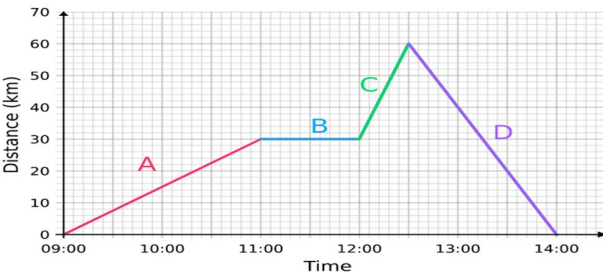
First, find the midpoint of each  
group, and then follow the same  
rules as if it were discrete data!

Frequency	Midpoint (x)	fx
3	$\frac{0+10}{2} = 5$	$3 \times 5 = 15$
8	$\frac{10+20}{2} = 15$	$8 \times 15 = 120$
11	$\frac{20+30}{2} = 25$	$11 \times 25 = 275$
9	$\frac{30+40}{2} = 35$	$9 \times 35 = 315$
9	$\frac{40+50}{2} = 45$	$9 \times 45 = 405$

## Distance & Velocity Time Graphs

**Distance-Time graphs**

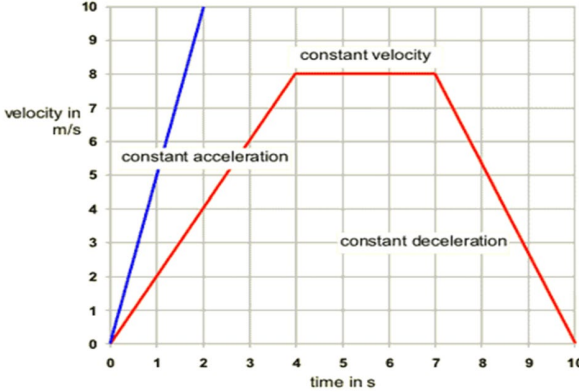
If an object moves along a straight line, the distance travelled can be represented by a **distance-time graph**




A - travelled 30km in 2 hours  
B - stationary period  
C - travelled 30km further from start  
D - travelled 60km back to starting point

**Velocity-Time Graphs**

A **velocity-time** graph shows the speed and direction an object travels over a specific period of time



<div></div> <div>Year 10 Mathematics Knowledge Organiser</div>	Topic	Key terms – use <a href="http://www.amathsdictionaryforkids.com">www.amathsdictionaryforkids.com</a> to help	
	Number Fractions & Percentages	Percentage	An amount given out of 100 The <b>percentage</b> 37% means '37 out of every 100'.
		Decimal multiplier	A decimal used to find the percentage of an amount. 15% = 15/100 = 0.15 so 0.15 is the <b>decimal multiplier</b> .
		Equivalent Fractions	Fractions that are equal to each other $\frac{2}{3}$ and $\frac{8}{12}$ are <b>equivalent fractions</b> .

Calculating with Fractions	Calculating with Percentages
----------------------------	------------------------------

<div>Simplifying</div> <p>To write a fraction in its simplest form, (cancel down), you must divide both parts by their HCF.</p> <div><math display="block">\frac{6}{12} \div 6 = \frac{1}{2}</math></div>	<div>Mixed Numbers</div> <p>An <b>improper fraction</b> is one where the numerator is greater than the denominator. A <b>mixed number</b> is a number with an integer part and a fraction part</p> <p><b>Improper → Mixed</b></p> $\frac{13}{4} = \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{1}{4} = 3\frac{1}{4}$ <p><b>Mixed → Improper</b></p> $3\frac{2}{5} = \frac{3 \times 5 + 2}{5} = \frac{17}{5}$	<div>Percentage of an Amount</div> <p>To find 10% of an amount → ÷ by 10</p> <div><div>Find 15% of 20</div><math display="block">\begin{array}{r} 10\% = 2 \\ + 5\% = 1 \\ \hline 15\% = 3 \end{array}</math></div> <div><div>Find 21% of 60</div><math display="block">\begin{array}{r} 10\% = 6 \\ + 10\% = 6 \\ + 1\% = 0.6 \\ \hline 21\% = 12.6 \end{array}</math></div> <div>Percentage Increase</div> <p>Add to the original amount</p> <div><div>Non Calculator</div><div>Increase 80 by 12%</div><div>10% = 8</div><div>1% = 0.8</div><div>2% = 1.6</div><div>12% = 9.6</div><div>80 + 9.6 = 89.6</div></div> <div><div>Calculator</div><div>Increase 120 by 23%</div><div>100% + 23% = 123%</div><div>123% = 1.23</div><div>Multiply by the multiplier</div><div>120 x 1.23 = 147.6</div></div> <div>Percentage Decrease</div> <p>Subtract from the original amount</p> <div><div>Non Calculator</div><div>Decrease 40 by 27%</div><div>10% = 4</div><div>1% = 0.4</div><div>7% = 2.8</div><div>20% = 8</div><div>27% = 10.8</div><div>40 - 10.8 = 29.2</div></div> <div><div>Calculator</div><div>Decrease 35 by 16%</div><div>100% - 16% = 84%</div><div>84% = 0.84</div><div>Multiply by the multiplier</div><div>35 x 0.84 = 29.4</div></div>	<div>Reverse Percentages</div> <p>Lauren is given a 12% pay rise. Her new salary is £24,080</p> <p>What was Lauren's salary before the pay rise?</p> <div><div>The new salary is 12% larger than the original.</div><div>So let the original = 100%.</div><div>The new must be 100% + 12% = 112%</div><div>112% as a decimal multiplier is 1.12</div></div> <p>so original x 1.12 = £24,080</p> <p>original = £24,080 ÷ 1.12 = £21500</p>
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<div>Fraction of an Amount</div> <p>Step 1: Divide by the denominator. Step 2: Multiply by the numerator.</p> <p>Find <math>\frac{3}{4}</math> of 20</p> <p>Step 1: 20 ÷ 4 = 5</p> <p>Step 2: 5 x 3 = 15</p>	<div>Calculating with Mixed Numbers</div> <p>Change into improper fractions FIRST, then calculate as normal.</p> $2\frac{1}{3} - 1\frac{2}{5} = \frac{7}{3} - \frac{7}{5}$	<div>Percentage Change</div> $\frac{\text{Change}}{\text{Original}} \times 100$ <p>Original skirt price = £15</p> <p>Sale price = £12</p> $\frac{3}{15} \times 100 = 20\%$	<div>Profit &amp; Loss</div> $\frac{\text{Profit or loss}}{\text{Cost}} \times 100$ <p>Profit or loss is selling minus cost</p> <p>Sale price = £25.20 cost £18</p> <p>profit = £7.20</p> $\frac{7.20}{18} \times 100 = 40\%$
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<div>Add and Subtract</div> <p>Look for a common denominator.</p> $\frac{2}{3} + \frac{4}{5}$ <p>In this case, 15 is a common denominator We now write them as equivalent fractions</p> $\frac{10}{15} + \frac{12}{15} = \frac{22}{15} = 1\frac{7}{15}$ <p>We do exactly the same for subtraction</p> $\frac{7}{8} - \frac{3}{7}$ $\frac{49}{56} - \frac{24}{56} = \frac{25}{56}$	<div>Multiplying</div> <p>Multiply the numerators Multiply the denominators</p> $\frac{3}{7} \times \frac{2}{5} = \frac{3 \times 2}{7 \times 5} = \frac{6}{35}$ $1\frac{2}{3} \times 2\frac{4}{5}$ $\frac{5}{3} \times \frac{14}{5} = \frac{5 \times 14}{3 \times 5} = \frac{70}{15} = 4\frac{10}{15} = 4\frac{2}{3}$
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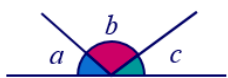


Year 10 Mathematics Knowledge Organiser	Topic	Key terms – use <a href="http://www.amathsdictionaryforkids.com">www.amathsdictionaryforkids.com</a> to help	
		<b>Perpendicular</b>	Lines which are at an angle of $90^\circ$ to each other.
		<b>Radius</b>	The distance from the centre of a circle to its edge.
		<b>Pi (<math>\pi</math>)</b>	the number created when you divide the circumference of any circle by its diameter.

Explain why AB is **perpendicular** to BC.  
The **radius** of the circle is 7 cm.  
 $\pi r^2$  sounds like area to me. When I need the circumference, I'll just use  $\pi d$ .

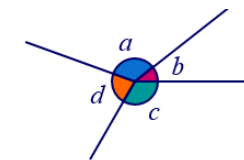
### Basic Angle Properties

On a Straight line



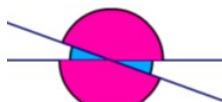
$$a + b + c = 180^\circ$$

Around a Point



$$a + b + c + d = 360^\circ$$

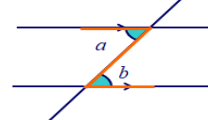
Vertically Opposite



Are equal

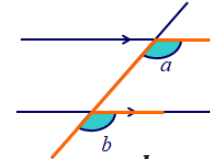
### Angles In Parallel Lines

Alternate



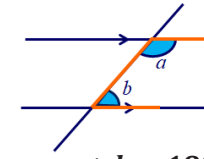
$$a = b$$

Corresponding



$$a = b$$

Interior

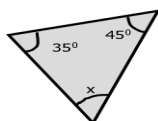


$$a + b = 180$$

### Angles In Triangles – Add up to $180^\circ$

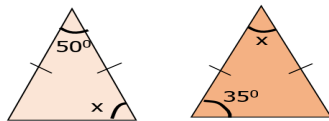
Scalene

No equal side and angles



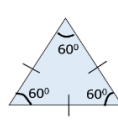
Isosceles

2 equal side and base angles

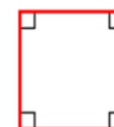


Equilateral

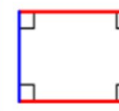
3 equal sides and angles



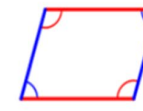
### Angles In Quadrilaterals – Add up to $360^\circ$



square



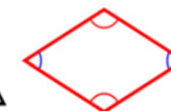
rectangle



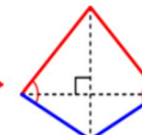
parallelogram



trapezium



rhombus



kite

### Area of 2 Dimensional Shapes

**Square**  
 $A = l^2$   
Length, L

**Rectangle**  
 $A = lh$   
Length, L  
Height, h

**Triangles**  
 $A = \frac{1}{2}bh$   
Height, h  
Base, b

**Parallelogram**  
 $A = bh$   
Height, h  
Base, b

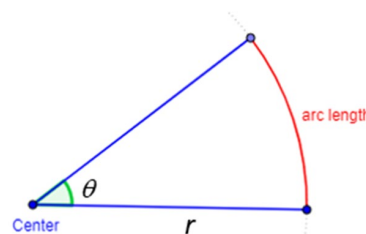
**Trapezium**  
 $A = \frac{1}{2}(a+b)h$   
Height, h  
Length, a  
Length, b

**Circle**  
Radius, r  
Diameter, d  
 $A = \pi r^2$   
 $C = \pi d$   
 $C = 2\pi r$

Remember for Area: Use Perpendicular height

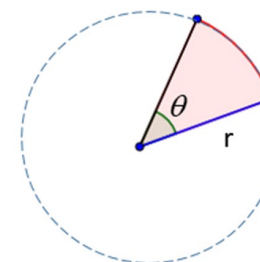
**COOL SHAPES**

### Arc Length and Sector Area



If  $\theta$  is measured in degrees then

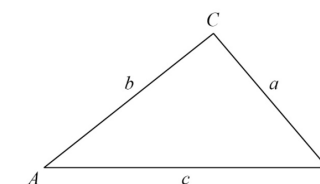
$$\text{arc length} = \frac{\theta}{360^\circ} \times 2\pi r$$



If  $\theta$  is measured in degrees then


$$\text{area of sector} = \frac{\theta}{360^\circ} \times \pi r^2$$

### Area of a Triangle Part 2



Area of triangle =

$$\frac{1}{2}ab \sin C$$

 <b>Year 10 Mathematics Knowledge Organiser</b>	<b>Topic</b>	<b>Key terms – use <a href="http://www.amathsdictionaryforkids.com">www.amathsdictionaryforkids.com</a> to help</b>	
	<b>Algebra Manipulation and Solving</b>	<b>Expression</b>	Numbers, symbols and operators (such as + and ×) grouped together that show the value of something.
		<b>Expanding brackets</b>	"Expanding" means <b>removing the ( )</b> ... but we have to do it the right way!
		<b>Simplify</b>	In general, it is simpler when it is <b>easier to use</b> .
		<b>Factorise</b>	Finding what to multiply to get an expression.
			$3(4x + 9y + 5z)$ is an <b>expression</b> . <b>Expand</b> the expression $(x + 5)^2$ <b>Simplify</b> $7x + 4y + 2x - 3y$ <b>Factorise</b> $x^2 + 8x - 20$

### Expanding Brackets

To expand brackets: multiply everything in the bracket by the term outside the bracket

Single Bracket Expansion

**Expanding**

$$2(g + 4) = 2g + 8$$

**Expanding**

$$5n(n + 3) = 5n^2 + 15n$$

2 Single Brackets → Expand then Simplify

$$5(x + 3) + 6(x - 4) = 11x - 9$$

$$5x + 15 + 6x - 24$$

Double Bracket Expansion

$$(x + 7)(x - 4) = x^2 + 3x - 28$$

$$x^2 - 4x + 7x - 28$$

How you expand it out is your call - Crab's Claw, FOIL, ... the choice is yours

### Factorising

Factorising is the opposite of expanding. You need to identify factors that the terms share... it could be a **number (HCF)**, a **letter** or **both**!

$$5x + 15 = 5(x + 3)$$

$$10x - 12 = 2(5x - 6)$$

$$10xy + 15y = 5y(2x + 3)$$

$$8x^2y + 4xy^2 = 4xy(2x + y)$$

### Quadratics

A quadratic is a 3-part equation that is equal to zero and has 2 roots.

Factorise  $x^2 + 7x - 18$

Find 2 numbers that  $\times$  to  $-18$  and  $+$  to  $7$

2 numbers are 9 and -2

**Answer**  $(x + 9)(x - 2)$

To solve, we equate the brackets to zero.

$$(x + 9)(x - 2) = 0$$

$$x + 9 = 0 \quad x = -9$$

$$x - 2 = 0 \quad x = +2$$

### Inequalities

Inequalities follow the same rules as equations (with one exception see second example!)

As when solving equations, you need to get the unknown on its own on one side of the inequality.

$$2x - 5 \geq 7$$

$$+5 \quad +5$$

$$\div 2 \quad \div 2$$

$$2x \geq 12$$

$$x \geq 6$$

The exception to the normal rules comes when you divide by a negative number. When you divide by a negative you reverse the symbol

Add or subtract to isolate the variable term. Multiply or divide to solve for the variable. If multiply or divide by a negative number then reverse the inequality symbol.


$$-3x + 5 \leq -16$$

$$-5 \quad -5 \text{ Subtract}$$

$$-3x \leq -21$$

$$\frac{-3x}{-3} \geq \frac{-21}{-3} \text{ Divide by -3, reverse inequality}$$

$$x \geq 7$$

 <b>Year 10 Mathematics Knowledge Organiser</b>	<b>Topic</b>	<b>Key terms – use <a href="http://www.amathsdictionaryforkids.com">www.amathsdictionaryforkids.com</a> to help</b>	
	<b>Algebra</b> Equations, Inequalities and Equations of Lines	<b>Equations</b>	a statement that the values of two mathematical expressions are equal (indicated by the sign =). $y = 4x + 3$ is a linear <b>equation</b> .
		<b>Inequalities</b>	An inequality shows the relative sizes of numbers and unknowns. The <b>inequality</b> $x > 3$ means $x$ is greater than 3.
		<b>Gradient</b>	the steepness of a straight line. The <b>gradient</b> of $y = 4x + 3$ is 4
		<b>Intercept</b>	Where a straight line crosses the $y$ -axis. The <b><math>y</math>-Intercept</b> of $y = 4x + 3$ is 3

**Solving Equations**

Solving an equation allows us to find the value of an unknown.

<b>Solving 2-Step</b>	<b>Solving with UOBS</b>
<p>An equation that requires 2 inverse steps to solve.</p> $2x - 3 = 11$ <div> <math>x \rightarrow \times 2 \rightarrow -3 \rightarrow 11</math>  <math>7 \leftarrow \div 2 \leftarrow +3 \leftarrow 11</math> </div>	<p>Eliminate the smallest <math>x</math> variable</p> $3x + 6 = 7x - 14$ $\begin{array}{r} -3x \\ -3x \end{array}$ $6 = 4x - 14$ <div> <math>x \rightarrow \times 4 \rightarrow -14 \rightarrow 6</math>  <math>5 \leftarrow \div 4 \leftarrow +14 \leftarrow 6</math> </div>

**Solving with Brackets - Expand then solve**

$3(x - 2) = 21$   
 $3x - 6 = 21$

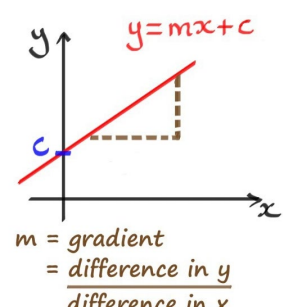
$x \rightarrow \times 2 \rightarrow -3 \rightarrow 11$   
 $7 \leftarrow \div 2 \leftarrow +3 \leftarrow 11$

**Inequalities**

Inequalities represent a set of data that might be greater, less than or equal to a certain value.

<b>Solving Inequalities</b>
<p>Inequalities are solved using the same method as if you were solving an equation.</p> <div> <math>3x + 5 \leq 17</math>  <math>x \rightarrow \times 3 \rightarrow +5 \rightarrow 17</math>  <math>4 \leftarrow \div 3 \leftarrow -5 \leftarrow 17</math>  <math>x \leq 4</math> </div> <div> <math>\frac{x}{4} - 2 &gt; 3</math>  <math>x \rightarrow \div 4 \rightarrow -2 \rightarrow 2</math>  <math>16 \leftarrow \times 4 \leftarrow +2 \leftarrow 2</math>  <math>x &gt; 16</math> </div>

**The equation of a straight line**


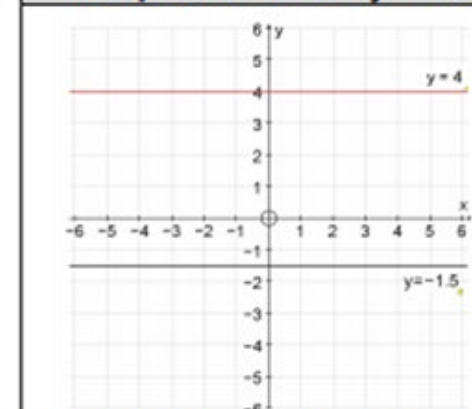


$y = mx + c$

$m = \text{gradient} = \frac{\text{difference in } y}{\text{difference in } x}$

All linear graphs can be written in the form

$$y = mx + c$$

<b>m is the gradient</b>	<b>c is the <math>y</math>-Intercept</b>
<p>How steep the line is</p> <p>For every number you go to the <b>right</b>, it is the number you must go <b>up</b> (<math>+mx</math>) or <b>down</b> (<math>-mx</math>)</p>	<p>where the line <b>crosses the <math>y</math>-axis</b> at</p> <p>Sometimes this point is referred to as <math>(0, c)</math></p>
<b>Graphs of form <math>x = a</math></b>	<b>Graphs of form <math>y = b</math></b>
 <p>Notice that these graphs are vertical</p>	 <p>Notice that these graphs are horizontal</p>



## Communicable Diseases

**Communicable (infectious) diseases** are caused by pathogens such as bacteria and viruses that can be passed from one person to another e.g bacteria and viruses. These are called **pathogens** (microorganisms that cause disease).

Pathogens can be spread by:

- **By air** (including droplet infection), including coughing, sneezing, and talking.
- **Direct contact**, which is common in plants, and includes STI transmission in humans.
- **By water**, where the pathogen enters the body through the digestive system.

## Viral diseases

Viruses use your body cells as a host to reproduce, which destroys your cells. Examples include **measles**, **HIV/AIDS**, and **Tobacco mosaic virus (TMV)**.

## Bacteria disease

Bacterial disease affect animals and plants. Examples include **salmonella**, **gonorrhoea**, and bacteria that cause **crown galls** in plants.

## Diseases caused by fungi and protists

Fungal diseases include **athlete's foot** and **rose black spot disease**, a disease that affects plants and can often be devastating. Protist diseases are rare, but very dangerous, including **malaria**, which is spread between people by female mosquitos.

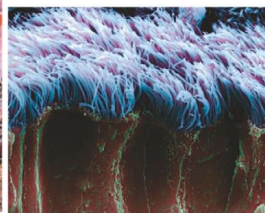
## Preventing infections

**Ignaz Semmelweis** introduced the policy of **washing hands in hospitals**, which saw a large decrease in hospital deaths. Other pioneering discoveries included **Louis Pasteur developing vaccines** and **Joseph Lister developing antiseptic chemicals**. Other methods of preventing infections are **hygiene**, **isolating infected individuals**, **destroying or controlling vectors**, and **vaccinations**.

## Human defence responses



**Figure 1** The scabs that restore the protective barrier of the skin and prevent pathogens getting in are made of red blood cells tangled in protein strands formed by platelets



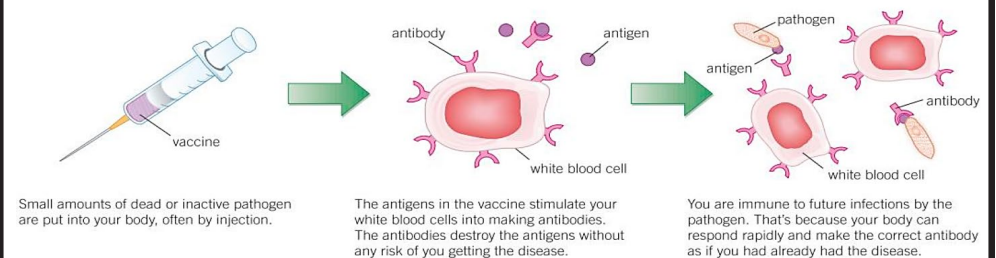
**Figure 2** The cilia of the airways beat together to move mucus containing trapped pathogens away from the lungs

**Table 1** Ways in which your white blood cells destroy pathogens and protect you against disease

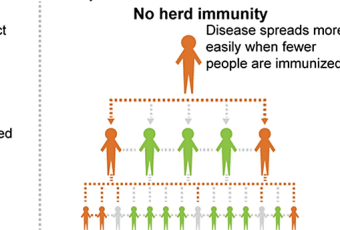
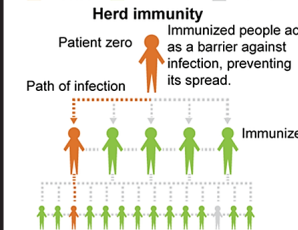
Role of white blood cell	How it protects you against disease
<b>Ingesting microorganisms</b> 	Some white blood cells ingest (take in) pathogens, digesting and destroying them so they cannot make you ill.
<b>Producing antibodies</b> 	Some white blood cells produce special chemicals called antibodies. These target particular bacteria or viruses and destroy them. You need a unique antibody for each type of pathogen. When your white blood cells have produced antibodies once against a particular pathogen, they can be made very quickly if that pathogen gets into the body again. This stops you getting the disease twice.
<b>Producing antitoxins</b> 	Some white blood cells produce antitoxins. These counteract (cancel out) the toxins released by pathogens.

## Preventing and treating disease

### Vaccinations



Infected Vaccinated Not vaccinated but healthy

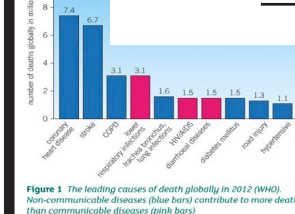


Vaccines contain a **dead or weakened** version of a pathogen, allowing your white blood cells to practice destroying it. The aim of vaccines is to create **herd immunity** amongst a population.

### Discovering and developing drugs

A lot of the compounds that are used in medicines today were discovered from plants and microorganisms. Examples include **aspirin**, **digitalis**, and the antibiotic **penicillin**, that was discovered by **Alexander Fleming**. It is important that bias is avoided when developing a drug, and so methods like **placebos**, **blind trials**, and **double blind trials** are often used by researchers.

## Non-communicable diseases

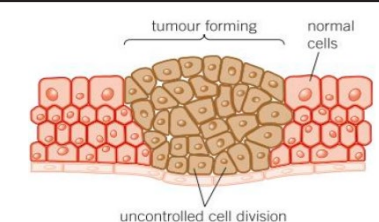


**Figure 1** The leading causes of death globally in 2012 (WHO). Non-communicable diseases (blue bars) contribute to more deaths than communicable diseases (pink bars)

There are many **risk factors** for diseases. A risk factor is something that increases the chances of a disease developing. Risk factors include **family history**, **smoking**, **alcohol**, **poor diet**, **lack of exercise**, and **carcinogens** (agents that cause cancer).

## Cancer

Cancerous cells are called **malignant tumours**, which are cells that have divided uncontrollably and can spread around the body. **Benign tumours** are cells that have divided uncontrollably but stay in one place. Risk factors of cancer include, **family history**, **smoking**, **ionising radiation**, and certain viruses such as **HPV**.



**Figure 1** A tumour forms when there is uncontrolled cell division

## Year 10 Biology: Infection and Response Key Vocabulary

Key word	Definition	Contextual Sentence
<b>benign tumours</b>	Growths of abnormal cells that are contained in one area, usually within a membrane, and do not invade other tissues.	Moles on the body are usually examples of <b>benign tumours</b> .
<b>cancer</b>	The common name for a malignant tumour, formed as a result of changes in cells that lead to uncontrolled growth and division.	Ionising radiation such as UV light is a risk factor for skin <b>cancer</b> .
<b>carcinogens</b>	Agents that cause cancer or significantly increase the risk of developing cancer.	Some chemicals found in smoking tobacco such as tar are <b>carcinogens</b> .
<b>causal mechanism</b>	Something that explains how one factor influences another.	Alcohol is a <b>causal mechanism</b> for cirrhosis of the liver.
<b>clinical trials</b>	Test potential new drugs on healthy and patient volunteers.	If successful at the first stage of <b>clinical trials</b> , the new drug will then be tested on sick volunteers.
<b>communicable disease</b>	Disease caused by pathogens that can be passed from one organism to another.	Viruses, bacteria, protists, and fungi are all examples of <b>communicable diseases</b> .
<b>correlation</b>	An apparent link or relationship between two factors.	Smoking is positively <b>correlated</b> to lung cancer.
<b>ionising radiation</b>	Has enough energy to cause ionisation in the materials it passes through, which in turn can make them biologically active and may result in mutation and cancer.	Sunbeds use <b>ionising radiation</b> .
<b>malignant tumours</b>	Invade neighbouring tissues and spread to different parts of the body in the blood where they form secondary tumours. They are also known as cancers.	Chemotherapy and radiotherapy are treatments for <b>malignant tumours</b> .
<b>non-communicable diseases</b>	Are not infectious and cannot be passed from one organism to another.	Cancer and diabetes are examples of <b>non-communicable diseases</b> .
<b>pathogens</b>	Microorganisms that cause disease.	Salmonella bacteria is an example of a <b>pathogen</b> .
<b>placebo</b>	A medicine that does not contain the active drug being tested, used in clinical trials of new medicines.	Researchers will often use a <b>placebo</b> when developing a new drug to avoid bias.
<b>preclinical testing</b>	The site of aerobic cellular respiration in a cell.	The sperm contains many <b>mitochondria</b> to release energy for movement.
<b>sexually transmitted disease (STD)</b>	Transmitted from an infected person to an uninfected person by unprotected sexual contact.	The use of condoms is one way to reduce the spread of <b>sexually transmitted diseases (STDs)</b> .
<b>tumour</b>	A mass of abnormally growing cells that forms when the cells do not respond to the normal mechanisms that control growth and when control of the cell cycle is lost.	The two types of <b>tumours</b> are benign and malignant.
<b>vaccine</b>	Dead or inactive pathogenic material used in vaccination to develop immunity to a disease in a healthy person.	<b>Vaccines</b> are used to create herd immunity amongst a population to reduce the spread of a pathogen.
<b>virus</b>	Pathogens that are much smaller than bacteria and can only reproduce inside living cells of other organisms.	Influenza and TMV are both examples of <b>viruses</b> .

## Year 10 Biology: Photosynthesis Key Vocabulary

Key word	Definition	Contextual Sentence
<b>endothermic reaction</b>	A reaction that requires a transfer of energy from the environment.	Photosynthesis is an <b>endothermic reaction</b> as it takes in light energy from its' surroundings.
<b>glucose</b>	A simple sugar.	Plants use carbon dioxide and water, as well as taking in light, to make <b>glucose</b> and oxygen.
<b>limiting factors</b>	Limit the rate of a reaction, for example photosynthesis.	Carbon dioxide is often a <b>limiting factor</b> for photosynthesis as the Earth's atmosphere is made from only 0.04% carbon dioxide.
<b>photosynthesis</b>	The process by which plants make food using carbon dioxide, water, and light.	The rate <b>photosynthesis</b> is greatest in bright, warm, carbon dioxide rich environments.

## Photosynthesis

Plants can make their own food by **photosynthesis**. This takes place in the green part of plants (especially the leaves) as well as in algae. It is an **endothermic** reaction as it requires an input of energy from the environment (light).

Photosynthesis can be summarised as follows:

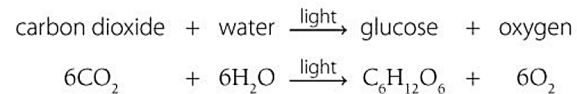
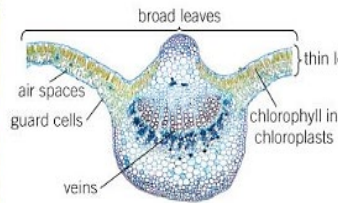


Figure 2 Leaves are well-adapted for photosynthesis

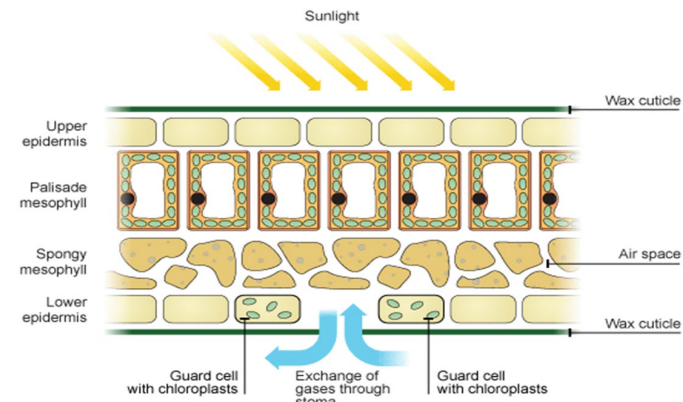


### Leaf adaptations

Leaves are highly adapted for photosynthesis. Adaptations include:

- **Broad**, giving them a large surface area to absorb light.
- **Thin** for easy gas diffusion.
- Contain **chlorophyll** to absorb light.
- **Xylem** and **phloem** to transport water and minerals as well as sugars around the leaf.
- **Air spaces** to allow gas exchange.
- **Guard cells** to open and close **stomata** to regulate gas exchange.

## Structure of a leaf



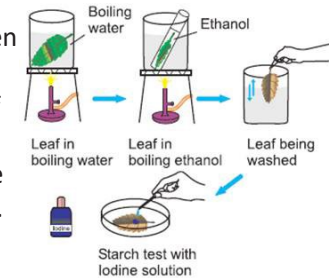
## How plants use glucose

Plants use photosynthesis to make **glucose**, which they use for a variety of things. Plants may use glucose to:

- Build larger molecules such as **cellulose**, to strengthen cell walls, and **starch**, which is insoluble so is easier to store.
- Make **amino acids** which can be made into proteins which can be used in many ways, including to make enzymes.
- Make **lipids** such as fats and oils which can be used in cells as an energy store.

### Testing a leaf for starch

You can test a leaf for starch to see if it has been photosynthesising, as starch is stored glucose. You first need to place the leaf in a test tube of ethanol and heat it in a water bath. This removes the green colouring. You then remove the leaf from the test tube and add iodine to it. If the iodine turns **blue/black** then the leaf contains starch.



## The rate of photosynthesis

Plants need light, warmth, and carbon dioxide in order to photosynthesise. Sometimes, one or more of these things can be in short supply which limits the amount of photosynthesis. These are known as **limiting factors**.

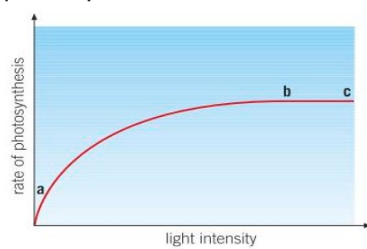


Figure 1 Investigating the effect of light intensity on the rate of photosynthesis

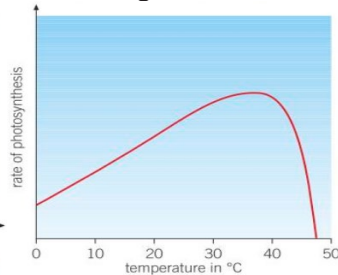


Figure 2 The effect of increasing temperature on the rate of photosynthesis

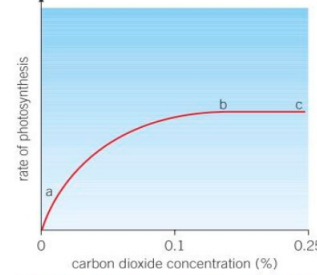
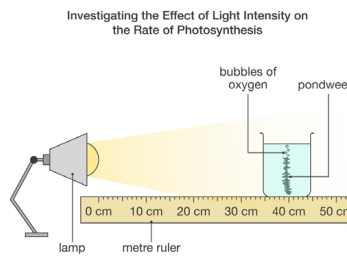


Figure 3 The effect of increasing carbon dioxide concentration on the rate of photosynthesis

### Investigating how light intensity affects photosynthesis

You can investigate how light intensity affects the rate of photosynthesis by moving a lamp further away from some **pondweed** that is in water. As the pondweed photosynthesises, you can count the **number of bubbles of oxygen** produced in a given time, which gives an indication of the rate of photosynthesis. The closer the lamp to the pondweed, the greater the number of bubbles.



## Making the most of photosynthesis (Higher)

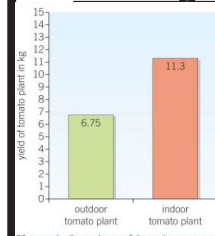


Figure 1 One piece of American research showed the crop yield for tomatoes was almost doubled in a greenhouse



Figure 2 By controlling the temperature, light, and carbon dioxide levels in a greenhouse like this you can produce the biggest possible crops.

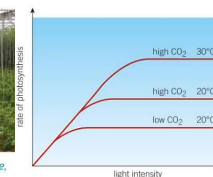


Figure 3 Growers need to look at this type of data to help them decide the best economic condition for growing their plants. The cost of providing the conditions that give the very highest yields may be too expensive and may wipe out the profits from the bigger, cleaner crop



# Year 10 Chemistry: Reacting Masses & Testing for Gases

## Relative Atomic Mass

The **mass** of an atom so tiny it is not practical to use it in experiments or in calculations so instead we use the Relative Atomic Mass (**Ar**). It is an **AVERAGE** of all the *isotopes*.

You can calculate the relative atomic mass **Ar** of an element given the percentage abundance of its isotopes. <sup>63</sup>Cu (abundance = 69%) and <sup>65</sup>Cu (31%)

To work out the relative atomic mass of copper from this data – imagine you have 100 copper atoms where 69 copper atoms would have a relative mass of 63 and the other copper would have a mass of 65. Then calculate the mean relative mass of these 100 atoms.

$$r \text{ of Cu} = \frac{(69 \times 63) + (31 \times 65)}{100} = 63.5$$

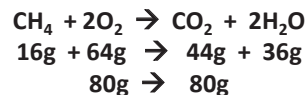
## Relative Formula Mass

(**Mr**) is the sum of the atomic masses added together.

$$\text{e.g. Mr of H}_2\text{O} = 1+1+16= 18$$

## Conservation of Mass

The law of conservation of mass states that during a chemical reaction no atoms are lost or created. This means you will have the same amount of atoms on both sides of the reaction. For e.g.



This also means that in a chemical reaction, mass is never lost or gained. Therefore the total mass of the products will be the same as the total mass of the reactions.

## Expressing Concentrations

The concentration of the orange squash is decreasing from left to right. The darker colour indicates more squash in the same volume.

**Concentration is measured in grams per dm<sup>3</sup> or mols per dm<sup>3</sup>.**



## Calculating Concentration

To work out the concentration we divide the amount of solute dissolved by the volume

**Example:** “A solution of Sodium Chloride has a concentration of 200g/dm<sup>3</sup>. What mass will be in 700ml?”

First convert 700ml to dm<sup>3</sup> 700/1000=0.7

Then rearrange the equation

$$\begin{aligned}\text{Amount of solute} \\ &= \text{Concentration} \times \text{Volume of solution} \\ &= 200 \text{ g/dm}^3 \times 0.7 \text{ dm}^3 \\ &= 140\text{grams}\end{aligned}$$

## The calculation to work out concentration

$$\text{concentration (g/dm}^3\text{)} = \frac{\text{amount of solute (g)}}{\text{volume of solution (dm}^3\text{)}}$$

## Converting ml/cm<sup>3</sup> into dm<sup>3</sup>

1dm<sup>3</sup> (decimetre) is equal to 1000ml (millilitres) so to convert from ml/cm<sup>3</sup> to dm<sup>3</sup> we need to divide by 1000

ml	dm <sup>3</sup>
500	0.5
750	0.75
250	0.25

## Pure substances & Formulation

The definition of a **pure** substance is

**“a pure substance is one that is made up of one substance. The substance can be an element or a compound”.**

This is different to the word “pure” in everyday life. For example “pure orange juice” is not a pure substance as it has different substances in it.

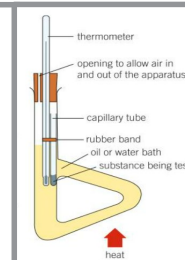
A **formulation** is a substance that is designed to be useful. For instance; paint, medication, dyes, and cleaning products.

## Pure or Not Pure, that is the question!

You can use the **melting point** or **boiling point** to determine if a substance is **pure** using equipment such as that in the picture to the right.

**A pure substance has a fixed melting point.**

An impure substance has a range of melting points. Impure substances tend to have a lower melting point and a higher boiling point.



## Testing for Gases

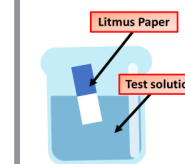
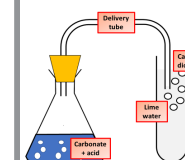
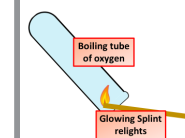
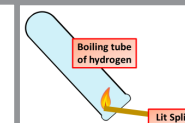
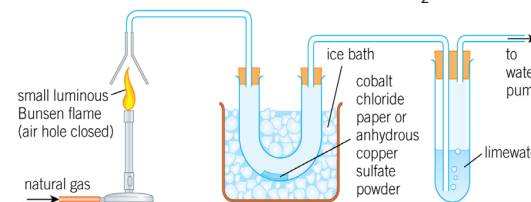
Test for **hydrogen** (H<sub>2</sub>) is the **squeaky pop test**, where you put a lit splint into the test tube. The **hydrogen** gas will react with the heat to produce a pop sound.

The test for **oxygen** (O<sub>2</sub>) is using a **glowing splint** and when it comes into contact with **oxygen**, the splint will relight.

The test for **carbon dioxide** is bubbling the gas through **limewater**; if there is **CO<sub>2</sub>** present, then the **limewater** turns cloudy.

The test for chlorine (Cl<sub>2</sub>) is done by using **Litmus** paper, where the coloured paper will turn with as the chlorine “bleaches” the **Litmus** paper.

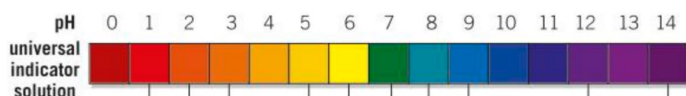
The test for **H<sub>2</sub>O** and **CO<sub>2</sub>** (the products of combustion) is using the equipment below. It uses **cobalt blue paper** to test for water and **limewater** to test for CO<sub>2</sub>



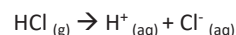
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## Neutralisation and the pH scale

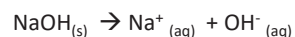


All **acids** release  $\text{H}^+$  (aq) ions when added to water. It is this excess of  $\text{H}^+$  (aq) ions that makes a solution **acidic**. An **acidic** solution is less than 7 on the pH scale.



*The greater the concentration of  $\text{H}^+$  ions the lower the pH value.*

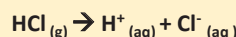
All **alkalis** release  $\text{OH}^-$  ions when added to water, the excess  $\text{OH}^-$  ions make the solution **alkaline**. An **alkaline** solution is above 7 on the pH scale



*The greater the concentration of  $\text{OH}^-$  ions the higher the pH value*

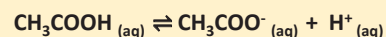
A value of 7 indicates that the substance is **neutral**.

## Strong and weak acids



In this reaction **ALL or 100 %** of  $\text{HCl}$  **ionises** or dissociates into ions, we call this a **Strong Acid**. Other examples are Sulphuric acid and Nitric acid.

For some acids, only a few  $\text{H}^+$  ionise into ions for example Ethanoic acid. This is the reason why it is a **weak acid**



The concentration of  $\text{H}^+$  ions is related to pH values as follows

$$\text{pH } 1 = 0.1\text{M}$$

$$\text{pH } 2 = 0.01\text{M}$$

$$\text{pH } 3 = 0.001\text{M}$$

$$\text{pH } 4 = 0.0001\text{M}$$

As the concentration of  $\text{H}^+$  ions decreases by a factor of 10. This is called the order of magnitude, the pH value will increase by one unit.

Therefore if we make a solution 10 times more dilute the pH value increases by 1.

Key Vocabulary	Definition	Contextual Sentence
acid	when dissolved in water, its solution has a pH value less than 7. Acids are proton ( $\text{H}^+$ ion) donors.	Sulfuric acid makes sulphates when reacting with bases.
alkali	its solution has a pH value more than 7.	Sodium Hydroxide is a strong alkali.
base	the oxide, hydroxide, or carbonate of a metal that will react with an acid, forming a salt as one of the products. (If a base dissolves in water it is called an alkali). Bases are proton ( $\text{H}^+$ ion) acceptors.	When the <b>base</b> copper oxide reacts with acid, it is warmed to speed up the reaction.
displacement reaction	a reaction in which a more reactive element takes the place of a less reactive element in one of its compounds or in solution.	Carbon reducing a metal ore is a <b>displacement reaction</b> .
electrolysis	the breakdown of a substance containing ions by electricity.	<b>Electrolysis</b> is used to obtain Aluminium from its oxide.
equilibrium	the point in a reversible reaction at which the forward and backward rates of reaction are the same. Therefore, the amounts of substances present in the reacting mixture remain constant.	During the production of Ammonia <b>equilibrium</b> isn't reached because a closed system is not used.
half equation	an equation that describes reduction (gain of electrons) or oxidation (loss of electrons).	When copper ions are reduced the <b>half equation</b> is: $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$
ionic equation	an equation that shows only those ions or atoms that change in a chemical reaction.	$\text{Cu}^{2+} + \text{Zn} \rightarrow \text{Zn}^{2+} + \text{Cu}$
neutral	a solution with a pH value of 7 which is neither acidic nor alkaline.	Water is a <b>neutral</b> liquid.
neutralisation	the chemical reaction of an acid with a base in which a salt and water are formed.	Indigestion tablets reacting with excess stomach acid is an example of <b>neutralisation</b> .
ore	rock which contains enough metal to make it economically worthwhile to extract the metal.	Bauxite is the main <b>ore</b> of Aluminium.
oxidation/oxidised	a reaction where oxygen is added to a substance / or when electrons are lost from a substance.	During the extraction of Copper from its oxide, Carbon is <b>oxidised</b> .
pH / pH scale	a number which shows how strongly acidic or alkaline a solution is.	On the <b>pH scale</b> water has a value of 7.
reactivity series	a list of elements in order of their reactivity.	Platinum and Gold are found at the bottom of the <b>reactivity series</b> .
reduction / reduced	a reaction in which oxygen is removed or electrons are gained.	<b>Reduction</b> happens at the cathode during electrolysis.
salt	a compound formed when some or all of the hydrogen in an acid is replaced by a metal.	Sodium Chloride is a <b>salt</b> .
strong acids	these acids completely ionise in aqueous solutions.	Nitric Acid is a <b>strong acid</b> .
weak acids	acids that do not ionise completely in aqueous solutions.	Ethanoic acid is a <b>weak acid</b> .

# Year 10 Chemistry: Energy changes

## Energy Changes

Reactions can be grouped into two types;

### Exothermic

These are reactions that **release thermal energy** to the surroundings.

e.g. Burning, Neutralisation

you observe a **temperature rise**. A use of these is hand warmers.

### Endothermic

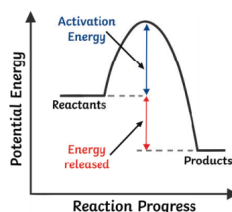
These reactions **take in thermal energy** from the surroundings.

e.g. some salts dissolving, thermal decomposition of calcium carbonate

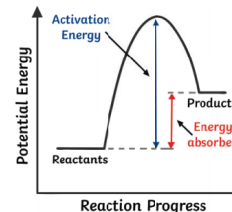
you observe a **temperature drop**. Use of these is sports injury packs.

## Reaction Profiles

The reaction profile diagrams show the pathway of a reaction in terms of energy and time.



Exothermic Reaction



Endothermic Reaction

## Activation Energy

The **activation energy** is the minimum amount of energy needed to start the reaction. This is when colliding particles have sufficient energy to cause a reaction.

If there is not enough energy, then there will not be a reaction.

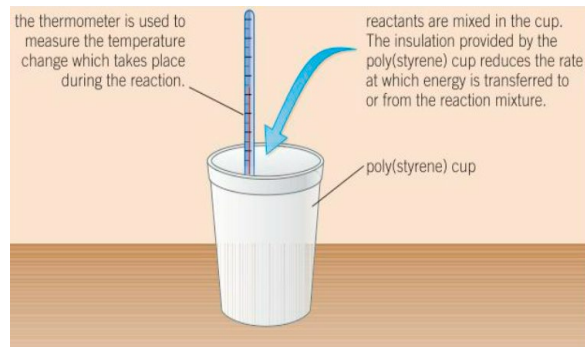
These reactions can be represented by energy profile diagrams. Measured from the peak of the curve to the energy of reactants.

## Required Practical: Energy Changes

The energy change in a reaction can be measured using the simple apparatus to the left. The chemicals are mixed, and the temperature is taken at regular time intervals.

You will need to take a start temperature and an end temperature and calculate the temperature difference.

Polystyrene is used as it is a **better insulator** than glass and so it reduces heat transfer. You could insulate further by adding a lid.



## Bond Energy Calculations (HT)

These are calculations to work out the overall energy change of a reaction.

The amount of energy to break all the bonds in the reactants minus the amount of energy to make the bonds in the products.

So to use simple numbers if the energy required to break the reactant bonds was 200kJ/mol and the energy released from the new bonds was 150kJ/mol The overall energy change would be = 200-150=50 kJ/mol

## Worked Example (HT)

Calculate the energy change for the following reaction:



To make it easier you should draw out the displayed formula for the reaction.

On the left side there are;

4 x O-H bonds = 464 + 464 + 464 + 464 = 1856

2 x O-O bond = 146 + 146 = 292

**Total energy for bonds breaking = 1856 + 292 = 2148kJ/mol**

On the right side there are

4 x O-H bonds = 464 + 464 + 464 + 464 = 1856

1 x O=O bond = 498

**Total energy for bonds forming = 1856 + 498 = 2354kJ/mol**

**$\Delta H$  = Sum of bonds broken – Sum of bonds made**

$\Delta H$  = 2148 – 2354

**$\Delta H$  = -206kJ/mol (a negative number implies an exothermic reaction)**

Key Vocabulary	Definition	Contextual Sentence
<b>bond energy</b>	the energy required to break a specific chemical bond.	The <b>bond energy</b> increases generally for double and triple bonds.
<b>Activation energy</b>	The energy required to start a reaction.	The particles collided with sufficient energy to start the reaction. This is called <b>activation energy</b> .
<b>endothermic</b>	a reaction that takes in energy from the surroundings.	Melting is an <b>endothermic</b> reaction.
<b>exothermic</b>	a reaction that transfers energy to the surroundings.	Combustion of fuels e.g. wood burning is an <b>exothermic</b> reaction.
<b>fuel cells</b>	sources of electricity that are supplied by an external source of fuel.	In a Hydrogen <b>fuel cell</b> the only waste product is water.

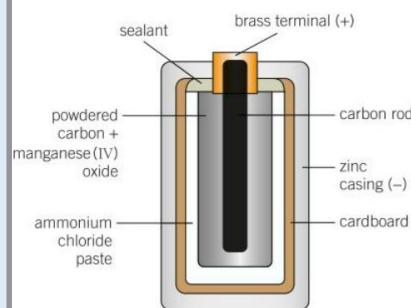
# Year 10 Chemistry: Energy Changes (Seps)

## Chemical cells and batteries (Seps)

A chemical cell converts chemical energy into electrical energy. More than one cell is called a battery. There are two types of chemical cell; rechargeable and non-rechargeable.

Non-rechargeable cells will produce a voltage until the chemicals inside are used up. Once this happens it will not work and will need to be recycled.

Rechargeable cells/ batteries can be recharged many times. An electrical current is passed through the cell. This works by reversing the chemical reactions to be used again.



## The first mass-produced cells (Seps)

The first mass-produced cells were similar to this diagram, a zinc-carbon dry cell. This diagram represents cell that produces a voltage of 1.5V. It cannot be recharged. It is prone to leaking if left in the appliance. These cells should always be disposed of in a recycling center.

Other cells can be recharged and used more than once. The recharging process, the battery is connected to a power supply that reverses the chemical reactions.

## Voltage (Seps)

The voltage of a cell is affected by the metals used inside it.

Metals tend to lose electrons to form ions. If two different metals are dipped in a salt solution and are connected by a wire, the more reactive metal will lose electrons. This is a simple cell.

**The bigger the difference in the reactivity of the two metals, the bigger the voltage produced.**

E.g. aluminium and zinc = small voltage as they are close on reactivity series. By aluminium and copper = larger voltage as they are further apart.

## Advantages & Disadvantages of Fuel Cells (Seps)

### Advantages

- Do not need to be electrically recharged
- No pollutants are produced
- Can be a range of sizes for different uses

### Disadvantages

- Hydrogen is highly flammable
- Hydrogen is sometimes produced for the cell by non-renewable means
- Hydrogen is difficult to store

## How to dispose of cells/batteries

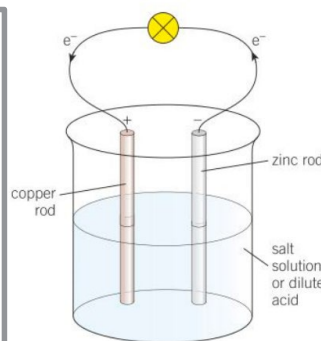
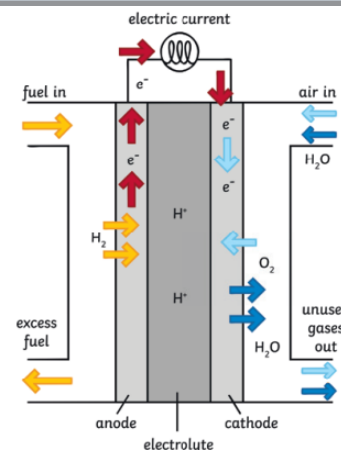
Cells/batteries must be taken to a waste disposal site for batteries. Some supermarkets have them or the local waste disposal service run by your council. The dry cells are prone to leaking over a period of time which can be harmful.

## Hydrogen Fuel Cells (Seps)

Hydrogen fuel cells provide an alternative to burning fossil fuels. They cause less pollution but they are highly flammable and difficult to store.

Fuel cells work differently to chemical cells in that they need to be supplied with continuously with a fuel and oxygen. This will allow the fuel cell to produce a voltage.

Inside the fuel cell, hydrogen is oxidized electrochemically. This allows for the reaction to take place at a lower temperature. The fuel is not combusted and the cells only produce water.



## So what's happening in the diagram above?

An electrical cell made from zinc and copper. The **electrons** flow from the more reactive metal (which is zinc) to the less reactive metal (copper).

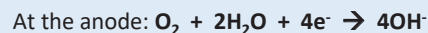
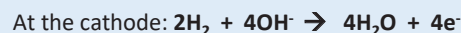
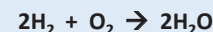
This means that zinc is acting as the **negative terminal** of the cell, providing **electrons** to the external circuit. The **current** will flow in the circuit opposite until one of the reactants is used up.

This is the principle that is used when you see people using lemons as a battery to charge their phones on TV.

## Ionic equations (Seps)

Ionic equations show the movement of ions/electrons without showing the spectator ions. Spectator ions are ions that don't change within the reaction. E.g.: if a sulphate ion is still a sulphate ion on the products – it hasn't changed.

Within the fuel cell, you have the following reaction;



This means that oxygen is being reduced (gains electrons) and hydrogen is being oxidized (loss of electrons). Oxidation and reduction happen simultaneously, this is known as a redox reaction.

Li	Lithium
K	Potassium
Ba	Barium
Ca	Calcium
Na	Sodium
Mg	Magnesium
Al	Aluminum
C	Carbon
Zn	Zinc
Fe	Iron
Ni	Nickel
Sn	Tin
Pb	Lead
H	Hydrogen
Cu	Copper
Hg	Mercury
Ag	Silver
Au	Gold
Pt	Platinum

# Year 10 Physics: Introduction to Forces Knowledge

## Scalars and Vectors

**Scalar Quantity:** has a **magnitude** but no direction.

- Speed, time, mass, distance. Will only ever have a value.
- 100kg, 15m, 120s

**Vector Quantity:** has a **magnitude AND a directions**.

- Velocity, acceleration, force, displacement
- Can have a **+ve or -ve value**.
- 20m North, +15m/s, 100N left

**Representing Vectors:** Arrows are used. They show **direction** .....and **magnitude**

## Resultant Force

The **overall force** acting on an object

Add together when in **same direction**



Subtract when in **opposite direction**



Remember: Force is a **vector**. It needs **magnitude AND direction**

## Weight

the force acting on the object mass due to gravity

$$\text{Weight (N)} = \text{mass (Kg)} \times \text{gravity (N/Kg)}$$

## Contact and non-contact Forces

**Contact:** When two objects interact with each other by touching.

**Friction, air resistance, tension, normal contact, reaction.**

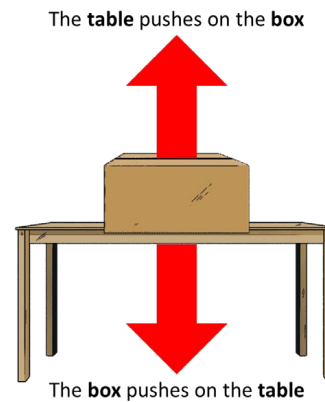
**Non-Contact:** When two objects do not touch when they interact.

**Magnetism, electrostatic, gravity.**

## Forces between objects

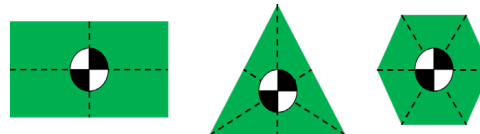
**Newton's Third Law:**  
Every action has a reaction that is **equal** in size, but **opposite** in direction.

**Only applies when looking at two objects interacting**



## Centre of mass

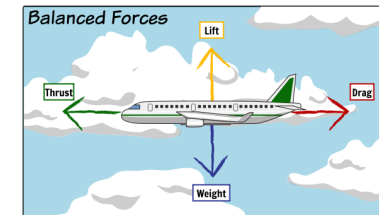
"The **centre of mass** of an object is the point at which its **mass** can be thought of as being **concentrated**"



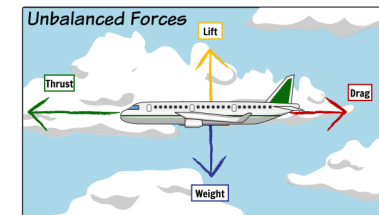
## Balanced and Unbalanced

**Newton's First Law:** An object at **rest** stays at **rest** and an object in **motion** stays in **motion** with the same speed and in the same direction unless acted **upon by an unbalanced force**.

**Only applies when looking at forces acting on a single object**

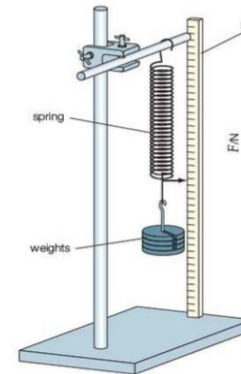


**Balanced forces:**  
Constant Speed or stationary



**Unbalanced forces:**  
Accelerating, Decelerating

## Hooke's Law (Require Practical)



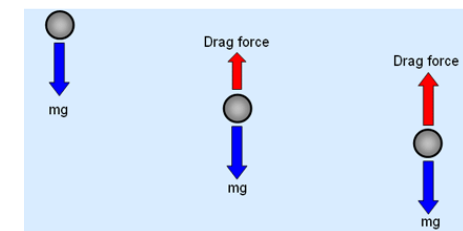
The **extension** of an object (such as a spring) is **directly proportional** to the **force** applied to it, also long as the **limit of proportional** has not been exceeded.

$$\text{Force (N)} = \text{Spring Constant (N/m)} \times \text{Extension (m)}$$

(k = spring constant)

## Terminal Velocity

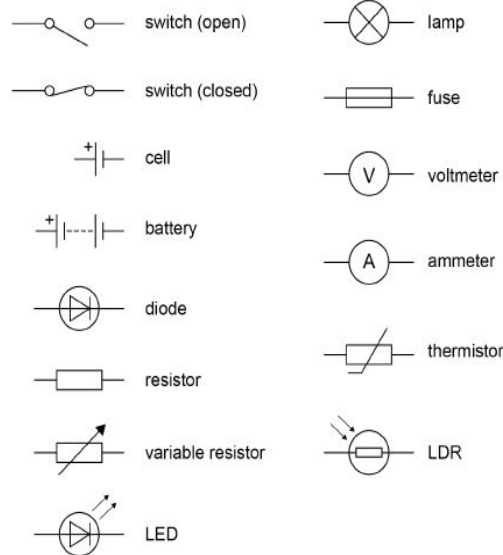
- 1) at the start, the object **accelerates** downwards due to the **force** of gravity.
- 2) as the object's **speed increases**, frictional forces such as **air resistance** or **drag increase**.
- 3) at **terminal velocity**, the **weight** of the object due to gravity is **balanced** by the **frictional forces**, and the resultant force is **zero**.



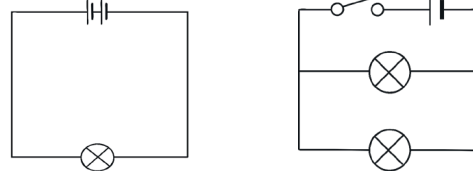


# Year 10 Physics: Electricity Basics Knowledge

## Circuit Symbols



## Series vs Parallel



**Current:** Is the same at any point in the circuit  
 $I_1 = I_2 = I_3$

**Current:** Is shared across branches, equals the power source.  
 $I_1 = I_2 + I_3$

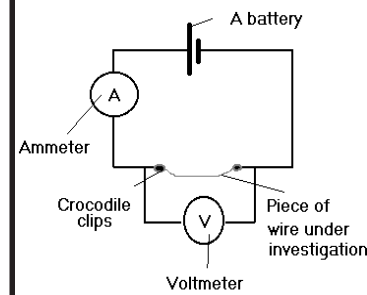
**PD:** Is split between the components  
 $V_1 = V_2 + V_3$

**PD:** Each branch equals the PD across the cell.  
 $V_1 = V_2 = V_3$

**Resistance:** Total resistance equals the sum of each individual resistor

**Resistance:** Total resistance is always less than the smallest resistor

## Investigating Resistance



**Ammeter** Measures current, must be placed in **series**  
**Voltmeter** Measures potential difference, must be placed in **parallel**

1. Connect the circuit as shown in the diagram above.
2. Connect the crocodile clips to the resistance wire, 100 cm apart.
3. Record the reading on the ammeter and on the voltmeter.
4. Move one of the crocodile clips closer until they are 90 cm apart.
5. Record the new readings on the ammeter and the voltmeter.
6. Repeat the previous steps reducing the length of the wire by 10 cm each time down to a minimum length of 10 cm.
7. Use the results to calculate the resistance of each length of wire by using  $R = V/I$ , where R is resistance, V is voltage and I is current.
8. Plot a graph of resistance against length for the resistance wire

## Equation

## Symbol

## Units

Charge Flow = Charge x Time

$Q=It$

Charge- coulomb (C)  
Current- Amp (A)  
Time- Second (s)

PD = Current x resistance

$V=IR$

PD – volts (V)  
Current- Amp (A)  
Resistance- Ohm ( $\Omega$ )

Power = Current x PD

$P=IV$

Power- Watt (W)  
Current- Amp (A)  
PD – volts (V)

Power = current<sup>2</sup> x resistance

$P=I^2R$

Power- Watt (W)  
Current- Amp (A)  
Resistance- Ohm ( $\Omega$ )

Energy = power x time

$E=Pt$

Energy- Joule (J)  
Power- Watt (W)  
Time- Second (s)

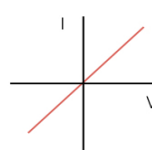
Energy = charge x PD

$E=QV$

Energy- Joule (J)  
Charge- coulomb (C)  
PD – volts (V)

**Ohm's Law** Potential Difference is directly proportional to current, assuming temperature is kept constant or  $V=IR$

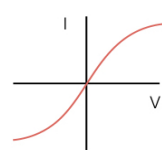
## Fixed Resistor



Straight line through zero  
 $V \propto I$

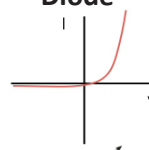
## IV Characteristics

### Filament Bulb



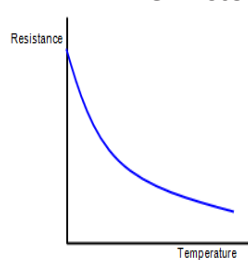
$V$  is not  $\propto I$   
Due to temp increase

### Diode



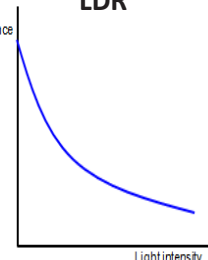
$V$  is not  $\propto I$   
Current only flows in +ve

## Thermistor



Resistance decrease as temperature/light intensity increases

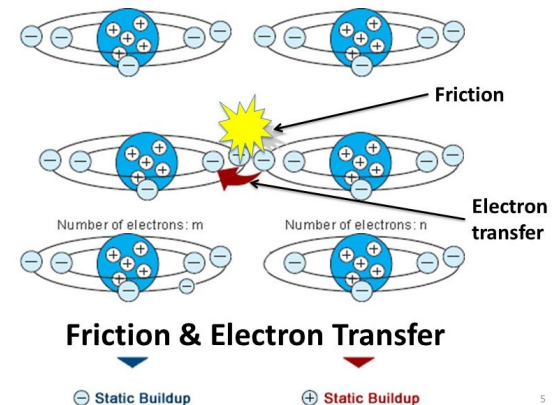
## LDR



## Static Electricity (Physics Only)

Things with an **electric charge** feel a force while in an **electric field**.

**Static electricity** is caused when electrons are transferred from an insulator to another due to **friction**



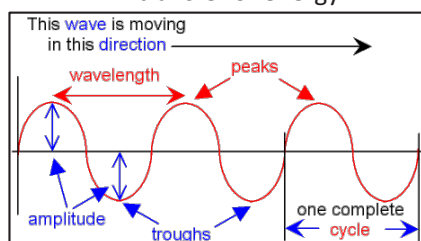
# Year 10 Physics: Introduction to Forces & Electricity Vocab

Key Vocabulary	Definition	Contextual Sentence
<b>Displacement</b>	distance in a given direction.	The boat had a <b>displacement</b> of 120m North.
<b>Driving Force</b>	force of a vehicle that makes it move (sometimes referred to as motive force).	The engine provided the <b>driving force</b> for the car.
<b>Forces</b>	a force (in newtons, N) can change the motion of an object.	Weight, friction and air resistance are all examples of <b>forces</b> .
<b>Free-body diagram</b>	a diagram that shows the forces acting on an object without any other objects or forces shown.	The Physics used a <b>free body diagram</b> to show the force acting on a moving car.
<b>Friction</b>	the force opposing the relative motion of two solid surfaces in contact.	Ice is slippery as there is very little <b>friction</b> .
<b>Magnitude</b>	the size or amount of a physical quantity.	The <b>magnitude</b> of gravity of Earth 9.8 N/Kg
<b>Newton's First Law</b>	if the resultant force on an object is zero, the object stays at rest if it is stationary, or it keeps moving with the same speed in the same direction.	The forces on the accelerating car were unbalanced, which proves <b>Newton's First Law</b> .
<b>Newton's Third Law</b>	when two objects interact with each other, they exert equal and opposite forces on each other.	<b>Newton's Third Law</b> explains why a canon recoils when it is fired.
<b>Resultant Force</b>	a single force that has the same effect as all the forces acting on the object.	If 100N acts right on a box, and 20N acts left, the <b>resultant force</b> is 80N right.
<b>Scalar</b>	a physical quantity, such as mass or energy, that has magnitude only (unlike a vector which has magnitude and direction).	Speed, mass and distance are all <b>scalar</b> quantities.
<b>Vector</b>	a vector is a physical quantity, such as displacement or velocity, that has a magnitude and a direction (unlike a scalar which has magnitude only).	Velocity, weight and displacement are all <b>vector</b> quantities.

Key Vocabulary	Definition	Contextual Sentence
<b>Ampere (A)</b>	The unit of current.	The phone had a current rating of <b>2A</b> .
<b>Coulomb (C)</b>	The unit of charge.	One amp is the same as one <b>Coulomb</b> per second.
<b>Diode</b>	A non-ohmic conductor that has a much higher resistance in one direction (its reverse direction) than in the other direction (its forward direction).	A <b>diode</b> is used in a circuit to control the direction the current is able to flow in.
<b>Electric Field</b>	A charged object (X) creates an electric field around itself, which causes a non-contact force on any other charged object in the field.	The electron is repelled due to the <b>electric field</b> of the object.
<b>Electrons</b>	Tiny negatively charged particles that move around the nucleus of an atom.	The object became charged as it gained or lost <b>electrons</b> .
<b>Ion</b>	A charged atom or molecule.	The atom lost an electron to become a positive <b>ion</b> .
<b>Ohm's Law</b>	The current through a resistor at constant temperature is directly proportional to the potential difference across the resistor.	The fixed resistor obeys <b>Ohm's Law</b> .
<b>Parallel</b>	Components connected in a circuit so that the potential difference is the same across each one.	When a bulb breaks in a <b>parallel</b> circuit, the other bulbs remain lit.
<b>Potential Difference</b>	A measure of the work done or energy transferred to the lamp by each coulomb of charge that passes through it. The unit of potential difference is the volt (V).	The <b>potential difference</b> was determined using the voltmeter.
<b>Resistance</b>	Resistance (in ohms, $\Omega$ ) = potential difference (in volts, V) $\div$ current (in amperes, A).	As the electrons moved through the conductor they encountered <b>resistance</b> .
<b>Series</b>	Components connected in a circuit in such a way that the same current passes through them.	When a bulb breaks in a <b>series</b> circuit, the other bulbs do not remain lit.
<b>Static Electricity</b>	Electric charge stored on insulated objects.	A static shock is caused by a build up of <b>static charge</b> .
<b>Volts</b>	The unit of potential difference.	The UK mains potential difference is <b>230V</b>

### Transverse Wave

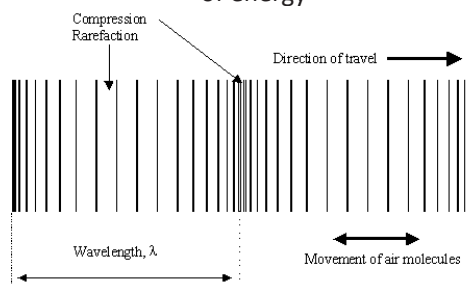
Vibrations of particles are at **right angles** to transfer of energy



Water waves, Light, Radio, Microwaves,, Infrared, Ultra-Violet, X-ray , Gamma, S Waves

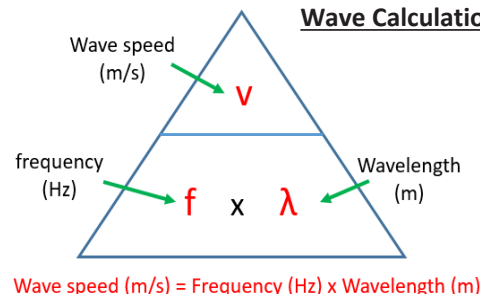
### Longitudinal Wave

Vibrations of particles are **parallel** to transfer of energy



Sound, Ultra-sound, P waves (Seismic wave)

### Wave Calculations

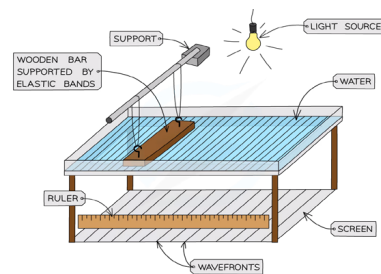


$$f = \frac{1}{T}$$

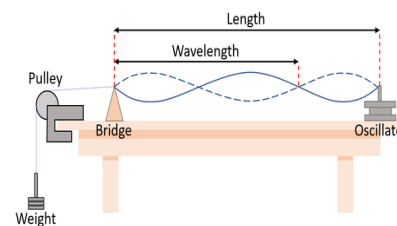
$f$  = frequency  
 $T$  = Period

### Wave Speed (Required Practical)

#### In a liquid



#### In a solid



Adjust signal generator to vary **frequency** and **wavelength**. Measure frequency (number of waves per second) and wavelength (Length of wave from two similar points) . Calculate **wave speed** using equation

### Reflection

When a wave hits a material it will reflect from it.

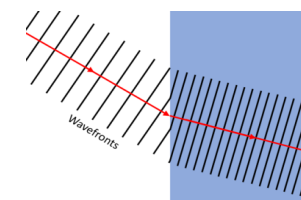
**Angle of incidence = Angle of reflection**



### Refraction

When a wave moves from one medium to another its direction changes due to a change in speed.

**Less dense to more dense, wave slows, wavelength decreases, frequency remains constant.**



Key Vocabulary	Definition	Contextual Sentence
<b>Amplitude</b>	the height of a wave crest or trough of a transverse wave from the rest position.	The musical note was louder because it had a very large <b>amplitude</b> .
<b>Compression</b>	squeezing together.	The sound wave move trough air as a series of <b>compressions and rarefactions</b> .
<b>Echo</b>	reflection of sound that can be heard.	The sound wave reflected of the tunnel in the form of an <b>echo</b> .
<b>frequency</b>	the number of wave crests passing a fixed point every second.	The musical note was high pitched as it had high <b>frequency</b> .
<b>longitudinal waves</b>	waves in which the vibrations are parallel to the direction of energy transfer.	Sound and ultra-sound are all examples of <b>longitudinal</b> waves.
<b>mechanical wave</b>	vibration that travels through a substance.	Water waves are examples of <b>mechanical waves</b> .
<b>oscillate</b>	move to and fro about a certain position along a line.	The particle was made to <b>oscillate</b> as the sound wave passed through the air.
<b>rarefaction</b>	stretched apart.	The sound wave move trough air as a series of <b>compressions and rarefactions</b> .
<b>speed</b>	the speed of an object (metres per second) = distance moved by the object (metres) ÷ time taken to move the distance travelled (seconds).	The <b>speed</b> of sound in air is 330 m/s
<b>transverse wave</b>	a wave where the vibration is perpendicular to the direction of energy transfer.	Microwaves, gamma rays and X-rays are all examples of <b>transverse waves</b> .
<b>vibrate</b>	oscillate (move to and fro) rapidly about a certain position.	The ground was made to <b>vibrate</b> as the s wave passed through the earth.

GCSE Paper 1 Religion Christian Practices
1. Worship
2. Prayer
3. Baptism
4. Holy Communion
5. Pilgrimage
6. Festivals
7. Role of the Church in the local community
8. Mission and Evangelism
9. Church growth
10. The importance of the worldwide Church (reconciliation)
11. Christian Persecution
12. The Church's response to world poverty

## 1. Worship

**Liturgical** – Follows a set structure or ritual e.g. RC

**Non-liturgical** - Does not follow a set structure or ritual

**Informal** – Non-liturgical worship that is 'spontaneous' or 'charismatic'

**Private** – worshipping alone

### Why is worship important?

- It brings a sense of togetherness as a community
- It makes a person feel closer to God
- It is peaceful – allowing for prayer and meditation
- It is an external expression of their faith.

## 2. Prayer

Nature and purpose of prayer

### PACT

P- Praising and adoring God

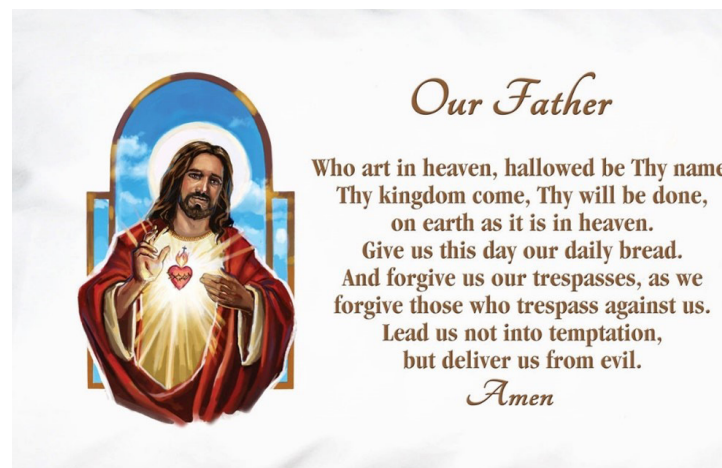
A- Asking

C- Confession

T- Thanksgiving

When Jesus' disciples asked him to teach them how to pray, he answered with the Lord's Prayer. Christians see it as a model of good prayer as it combines all aspects of PACT.

*"Our Father who art in heaven, hallowed be thy name"  
"Give us this day our daily bread. And forgive us our sins."*



## 3. Baptism

Sacraments are holy rituals through which believers receive a special gift of grace. Roman Catholics believe in seven sacraments, Protestants believe in just two.

Baptism is a ritual through which a person becomes a member of the Church. It involves the use of water to symbolise the washing away of sin. Infant baptism is for babies and young children. It welcomes the child into the Christian family and is believed to cleanse the child of the Original Sin of Adam and Eve. Believer's baptism is for people who are old enough to understand the significance of the ritual. The person is fully immersed under the water to wash all their sin (not just original sin).

## 4. Eucharist/Communion

Holy Communion (also known as the Eucharist) is the sacrament that uses bread and wine to celebrate the sacrifice of Jesus on the cross and his resurrection. It recalls the Last Supper of Jesus, using his words and actions. Christians interpret the meaning of Holy Communion in different ways. Roman Catholics believe in transubstantiation. This means they believe the bread and wine literally become flesh and blood. Many other Christians see the bread and wine as symbolic.

**"This is my body Eat this and remember me."  
"This is my blood...drink this and remember me."**

In most churches the Holy Communion service has two parts: the ministry of the Word (which focusses on the Bible) and the ministry of Holy Communion (the offering, consecrating and sharing of bread.)

## 5. Pilgrimage

A pilgrimage is a journey made by a believer to a holy site for religious reasons. As well as making a physical journey to a sacred place, the pilgrim also makes a spiritual journey towards God.

**Lourdes**- the place where the Virgin Mary appears to a young girl Bernadette. Mary told Bernadette to dig and when she did a spring of water emerged. Pilgrims visit the site to drink the water in the hopes it will heal them.

**Iona**- An island on the coast of Scotland, discovered by St. Columba. Said to be so beautiful it must be the creation of God. Called the 'thin place', as it is believed this is place where the space between heaven and earth is at its thinnest.



## 6. Festivals

A festival is a day or period of celebration for religious reasons. Festivals help Christians to remember and celebrate the major events in their religion- particularly the life, death and resurrection of Jesus.

Christmas commemorates the incarnation and birth of Jesus. Celebrations begin on the 25th December and last 12 days, ending with Epiphany (which recalls the visit of the wise men).

Easter celebrates the resurrection of Jesus from the dead. Celebrations begin before Easter Sunday and finish with the feast of the Pentecost.

## 7. The role of the Church in the local community

The Church is the holy people of God, also called the Body of Christ, among whom Christ is present and active. A church is a building in which Christians worship. Individual churches and the Church as a whole help the local community in a variety of ways.

1. Trussell Trust- A charity running over 400 food banks in the UK. These provide emergency food, help and support to people in crisis in the UK.
2. The Oasis Project- A community hub run by Plymouth Methodist Mission Circuit. Provides an internet café, creative courses, a job club, training opportunities, a meeting place and a food bank. Spiritual and practical help is given to those in need.
3. Street Pastors- An initiative started in London in 2003 by a Christian charity the Ascension Trust. Adult volunteers are trained to patrol the streets in urban areas. The main aim originally was to challenge gang culture and knife crime in London. The focus then widened to responding to drunkenness and anti-social behaviour.
4. Parish Nursing Ministries- This Christian charity supports whole person health care through the local church. They provide churches with registered parish nurses, who promote well being in body, mind and spirit.

## 8. The place of mission and evangelism

A mission is a vocation or calling to spread the faith. The Church has a mission to tell non-believers that Jesus Christ, the Son of God, came into the world as its savior. Christians spread the faith through evangelism (showing faith in Jesus by example or telling others). They do this to fulfill Jesus' instructions to the disciples to spread his teachings (the Great Commission).

**‘Therefore, go and make disciples of all nations, baptising them in the name of the Father and of the Son and of the Holy Spirit, and teaching them to obey everything I have commanded you.’ Matthew 28:19-20**

## 9. Church growth

Up to a third of the world's population claim to be Christian (including people who rarely attend church), and around 80,000 people become Christians each day. The Church expects new Christians to help spread the faith as part of their commitment to Jesus.

Christ for all Nations is an example of a Christian organization promoting evangelism. They do this by holding evangelistic meetings throughout the world, but particularly in Africa. Some of their large open air-rallies held in Africa have drawn crowds of up to 1.6 million people.



## 10. The importance of the worldwide Church

The worldwide Church has a mission to restore people's relationship with God and with one another. The Church therefore plays an important role in reconciliation (restoring harmony after relationships have broken down), through initiatives to develop peace and understanding.

The Corrymeela Community brings together people from different backgrounds, including people of different faiths or political leanings.

Irish Churches Peace Project brings Catholics and Protestants together in Northern Ireland.

## 11. Christian persecution

Christians have faced persecution (hostility and ill treatment (from the beginning of the Church, and Christians are still persecuted worldwide today. For some Christians, persecution can have positive effects: it can strengthen the faith, allow them to share in Jesus' sufferings, and even inspire others to become Christian.

The Church helps those who are persecuted through prayer, practical help and financial support, and by raising awareness of persecution and campaigning against it. Christian Solidarity Worldwide campaigns for religious freedom for all.

## 12 The Church's response to world poverty

Christians try to help those living in poverty because Jesus taught that this was important. For example:

- Jesus once told a rich man to sell everything and give to the poor.
- The parable of the Rich Man and Lazarus tells of a rich man who ends up in hell for ignoring a beggar.
- The parable of the Good Samaritan teaches the importance of helping others.

Three Christian charities that help those in poverty are:

- Christian Aid supports projects to encourage sustainable development.
- Tearfund works with over 90,000 churches worldwide to help lift people out of poverty.
- CAFOD gives short term aid such as food, water and shelter and works with local organisations to train, supply and support communities to work their own way out of poverty.





Key Term	Definition	Contextual Sentence
<b>Worship</b>	Acts of religious praise, honour or devotion	Christians worship God in church each Sunday.
<b>Liturgical worship</b>	A church service that follows a set structure of ritual	Roman Catholics have liturgical worship.
<b>Non-liturgical worship</b>	A service that does not follow a set text or ritual	Non-conformist Christians have non-liturgical worship.
<b>Informal worship</b>	A type of non-liturgical worship sometimes 'spontaneous' or 'charismatic' in nature	The Pentecostal Church have informal worship.
<b>Prayer</b>	Communicating with God , either silently or through words of praise, thanksgiving or confession, or requests for God's help or guidance.	Prayer is a key way for Christians to worship God.
<b>Sacrament</b>	Rites and rituals through which the believer receives a special gift of grace; they are an 'outward sign' of an 'inward grace'.	The Roman Catholic Church have seven sacraments.
<b>Baptism</b>	The ritual through which people become members of the Church; baptism involves the use of water as a symbol of the washing away of sin.	Baptism is a sacrament in both the Roman Catholic and Protestant Church.
<b>Holy Communion (Eucharist)</b>	A service of thanksgiving in which the sacrificial death and resurrection of Jesus are celebrate using bread and wine; also called Eucharist, Mass, the Lord's Supper, the Breaking of Bread, and the Divine Liturgy.	There is a similar pattern in the way most churches celebrate Holy Communion.
<b>Pilgrimage</b>	A journey by a believer to a holy site for religious reasons; pilgrimage is an act of worship and devotion.	Iona is an important pilgrimage site for Christians.
<b>Festival</b>	A day or period of celebration for religious reasons.	Festivals help Christians remember the major events in their religion.
<b>Christmas</b>	The day commemorating the Incarnation, the birth of Jesus; also seen as the season of 12 days ending with the Epiphany.	Christmas is celebrated on the 25th December.
<b>Easter</b>	The religious season of celebrating the Resurrection of Jesus from the dead; it starts on Easter Day and finished with the feast of the Pentecost.	Easter is the most important Christian festival.
<b>Church</b>	1. The holy people of God, also called the Body of Christ, among whom Christ is present and active. 2. A building in which people worship.	The Church help the local community through food banks.
<b>Agape</b>	A word in the Bible that describes selfless, sacrificial, unconditional love.	Showing agape love is part of the Christian way of life.
<b>Mission</b>	The vocation or calling of a religious organisation or individual to go out and spread their faith.	The Church has a mission to spread the gospel to non-believers.
<b>Evangelism</b>	Spreading the Christian gospel by public preaching or personal witness.	The Alpha Course is an example of evangelism.
<b>Reconciliation</b>	A sacrament in the Catholic Church; also, the restoring of harmony after relationships have broken down.	The Corrymeela Community works for reconciliation.
<b>Persecution</b>	Hostility and ill treatment, especially because of race, or political or religious beliefs.	Christians have faced persecution throughout the history of the Church.

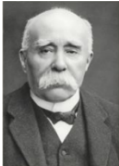




## Year 10 History Autumn Term- Peacemakers and the Treaty of Versailles

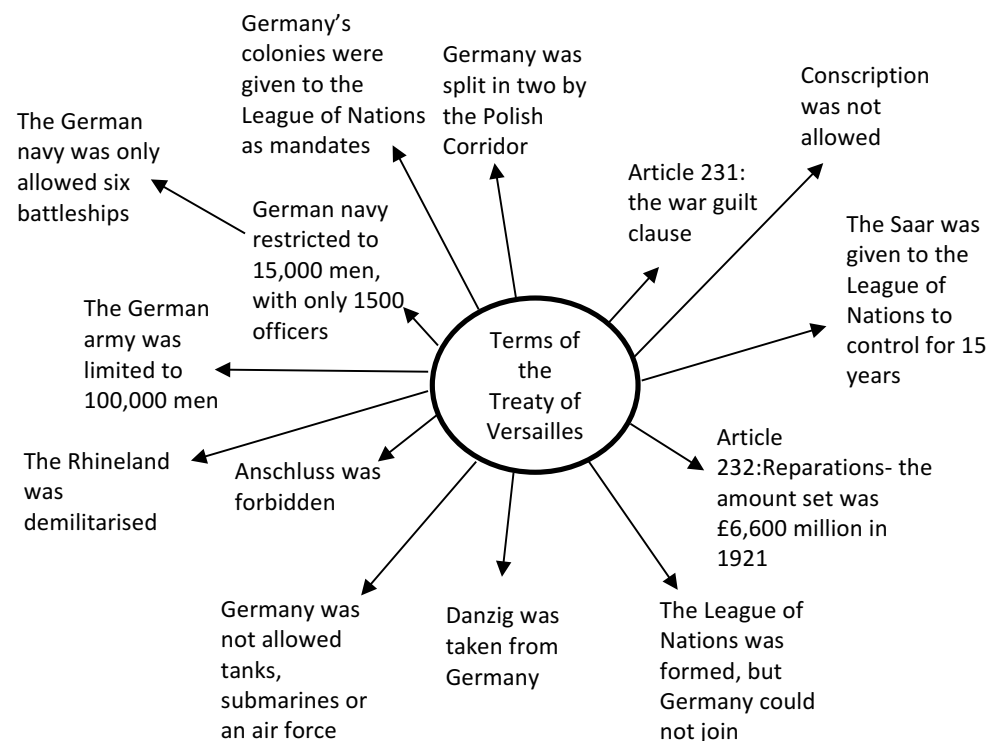
The First world war devastated Europe. 8 Million soldiers and a further 8 million civilians lay dead. Towns railways and farms had been destroyed. The world would never be the same again. When the leaders of the winning countries met at the Paris peace conference they had to decide the terms of the final peace treaties. There was a great deal of pressure of the Big Three to make a lasting peace, however each had their own aims.

The Treaty of Versailles was signed on the 28<sup>th</sup> June 1919. The final treaty was a Diktat, meaning that Germany were not allowed to negotiate terms. The Germans were unhappy with the final treaty, however the Big Three were also not satisfied with it.

11 November 1918	Signing of armistice led to the end of WW1
January 1919	Paris peace conference
June 1919	Signing of the Treaty of Versailles

Leader	Country	Aims
 Georges Clemenceau	France	<ul style="list-style-type: none"> <li>Wanted Germany to pay reparations to rebuild areas of France badly affected by war</li> <li>Wanted revenge for all the lives lost</li> <li>Aimed to weaken Germany so it could never attack again</li> <li>Wanted to push German borders back to the Rhine so French people would feel safer</li> </ul>
 David Lloyd George	Britain	<ul style="list-style-type: none"> <li>Wanted a cautious approach: The British public wanted to see Germany punished, but Lloyd George feared this would lead to Germany wanting revenge</li> <li>Wanted to keep Germany strong so it could trade with Britain and act as a buffer to Communism</li> <li>Aimed to gain German colonies to add to the British Empire</li> <li>Wanted Naval supremacy by reducing Germany's navy</li> </ul>
 Woodrow Wilson	USA	<ul style="list-style-type: none"> <li>Wanted a fair peace, so Germany would not seek revenge</li> <li>Proposed the Fourteen points, including foundation of a League of Nations, Self determination and freedom of the seas; but the American public didn't want the USA to get involved in European affairs again.</li> </ul>

Key Word	Definition
Demilitarise	Remove all military from the area
Allies	A group of countries that work together
Diktat	A forced treaty – Germany called the Treaty of Versailles a diktat or dictated peace
Big Three	Representatives of the most powerful winning countries – Britain, France and the USA
Conscription	Compulsory military service
Paris Peace conference	Meeting held at the Palace of Versailles in France at the end of the first World War, to decide how to punish the countries that had lost the war.





## Year 10 History

### Autumn Term- Reactions to the Treaty of Versailles

The Treaty of Versailles was signed and it immediately became international law. However not everyone was satisfied with the terms of the treaty. The Big Three had contrasting views on how Germany should be punished. Germany was outraged by the harsh terms they had been dealt.

The Treaty of Versailles dealt with Germany, however Germany had allies during the war. Austria-Hungary, Bulgaria and Turkey all had to be dealt with as well at the Paris peace conference

Country	Opinion on the Treaty of Versailles
<b>Germany</b>	<ul style="list-style-type: none"> <li>Germany was in turmoil at the end of the First World War, the Kaiser had fled to Holland after abdicating the throne.</li> <li>The people of Germany were furious over the Treaty of Versailles. They perceived that the treaty would lead to financial ruin for Germany.</li> <li>The Germans called the treaty a Diktat as they felt it had been dictated to them and they had been forced to sign.</li> <li>The war guilt clause meant that Germany had to accept responsibility for starting the war.</li> <li>They had been told they were winning the war, so felt like they had been stabbed in the back and betrayed by the government. People called those who had signed the armistice the November Criminals.</li> <li>Germany felt like the treaty had left them vulnerable, without a large army to defend themselves they could be easily attacked.</li> <li>13% of land was lost to other countries, this left 6 million German people no longer living in Germany.</li> </ul>
<b>Britain</b>	<ul style="list-style-type: none"> <li>Lloyd George was pleased about Britain having naval supremacy over Germany and the British empire gaining more colonies.</li> <li>Lloyd George was unhappy about the harsh reparations meaning Britain would lose trade with Germany. He was also concerned about the threat of possible future war.</li> <li>British people generally thought the treaty was fair, and could even have been harsher.</li> <li>Lloyd George was hailed as a hero, and newspapers said Britain would never be threatened by Germany again.</li> </ul>
<b>France</b>	<ul style="list-style-type: none"> <li>Clemenceau was pleased about France gaining Alsace-Lorraine and that Germany had no army present in the Rhineland.</li> <li>Clemenceau was unhappy about the reparations, he wanted Germany to pay more. He was also unhappy that Germany was allowed to have an army at all, even if it was a small one. Clemenceau had wanted the whole of the Rhineland to be taken away from Germany not just demilitarised.</li> <li>Many people in France were furious – they believed that the treaty was nowhere near harsh enough and that Germany should suffer as much as France had done during the war.</li> <li>The French people felt that Clemenceau had not done enough to get revenge and he was voted out at the next election.</li> <li>There were a few terms that the people of France liked, such as gaining control of the Saar and its coalfields for 15 years.</li> </ul>
<b>USA</b>	<ul style="list-style-type: none"> <li>Woodrow Wilson was pleased that the League of Nations was created.</li> <li>Woodrow Wilson was unhappy that his Fourteen points were ignored in the treaty terms and the harshness of the treaty terms.</li> <li>The USA had only joined the war in 1917 and no fighting took place in the USA, Americans did not want revenge in the same way as Britain and France.</li> <li>Many people including Wilson thought the treaty was too harsh.</li> <li>The USA wanted to follow a policy of isolationism. The US Senate refused to approve the treaty or to allow the USA to join the League of Nations.</li> </ul>

Key Word	Definition
Isolationism	A policy in which a country does not get involved in Foreign affairs
Ratify	Agree with, make official
Abdicate	To give up the throne of a country
Weimar Republic	The democratic government that ruled Germany from 1918-1932

Country	Austria	Bulgaria	Hungary	Turkey
<b>Name of Treaty</b>	Treaty of St Germain	Treaty of Neuilly	Treaty of Trianon	Treaty of Sevres
<b>Date</b>	10 <sup>th</sup> September 1919	27 <sup>th</sup> November 1919	4th June 1920	10 <sup>th</sup> August 1920
<b>Land</b>	Land taken to create new countries Czechoslovakia and Yugoslavia	Land lost to Yugoslavia and Greece	Land lost to Romania, Czechoslovakia, Yugoslavia and Austria	Split up the Turkish Empire so Turkey lost nearly all its land in Europe
<b>Reparations</b>	Agreed in principal, but the amount was never fixed	£100 million	Agrees in principal, but the amount was never fixed	None
<b>Military restrictions</b>	30,000 in army, no conscriptions; no navy	20,000 in army; no conscriptions; no air force; only four battleships	30,000 in army; no conscription; only three patrol boats	50,000 in army; seven sailboats; six torpedo boats
<b>Other terms</b>	Forbidden to unite with Germany	None	None	Dardanelles and Bosphorus straits were opened to other countries

## Year 10 History

### Autumn Term- League of Nations formation and 1920s

During the First World War, many people wanted to set up an organisation that would encourage countries to work together when they had problems and work out their differences, rather than resorting to fighting. At the end of the war US president Woodrow Wilson wanted to set up the League of Nations. What was the League of Nations and why did it have limited powers?

### The League had Two Main Aims

- 1) **To maintain peace** — using three different methods:
  - **Disarmament** involved reducing the number of weapons that each country had.
  - **Arbitration** meant helping countries to **talk** about their disputes rather than fight.
  - **Collective security** meant that if one country attacked another, League members would **act together** to **control** the aggressor.
- 2) **To encourage cooperation** — and help solve **economic** and **social** problems, such as disease, slavery, and poor working and living conditions.

### The League was made up of Various Parts

All the members of the League followed a **Covenant** (agreement) of 26 Articles (rules). Articles 1 to 7 set up the structure of the League:

#### The Assembly

The Assembly met once a year to discuss matters like the membership of the League, as well as efforts to maintain world peace. Every country in the League had one vote at the Assembly. Decisions could only be made if everyone agreed on them.

**The International Labour Organisation**  
This part of the League discussed and made suggestions to improve working conditions. It was made up of government officials, employers and workers from different countries.

#### The Council

The Council met at least four times a year. It had permanent members (Britain, France, Italy, Japan and later Germany) and temporary members. It dealt with international affairs and aimed to settle disputes. All members had a vote, but permanent members could veto (reject) Council decisions.

**The Permanent Court of International Justice**  
This was made up of fifteen judges from different member countries. They were asked to settle international disputes.

#### The Secretariat

Carried out the work of the League, like a civil service.

Everyone hoped this would avoid another major war.

- 1) **42** countries **joined** the League at the start. In the **1930s**, about **60** countries were members. This made the League seem **strong**.
- 2) The League also had a range of **agencies** and **commissions**, which worked on specific **humanitarian issues**. These included a **health** organisation, a commission for **refugees**, and a commission for **women's rights**. These commissions did some valuable work (see p.26).

Key Word	Definition
Council	Members of the League of Nations who met once a year to discuss and vote on matters of international importance
Covenant	An agreement. This was set up to determine what could be expected of the League and its members
Unanimous	When everyone agrees
Veto	The right to reject a proposal

#### Problems with the League of Nations

The USA didn't join the League of Nations. Wilson was ill and the senate rejected it.

Germany were not allowed to join the League because they lost the war. The USSR were not allowed to join because they were communist

Britain and France were in charge but neither were strong enough to do the job properly

The league could introduce sanctions but only if powerful countries applied them.

The League relied on the armies of member states, this made it difficult to act on threats.

The league was a large organisation but it was also complicated. Everyone had to agree in the assembly and council before anything happened. It made it difficult to get anything done.

Economic sanctions were frequently undermined by the USA's non membership and the unwillingness of Britain and France to enforce

#### The League of Nations resolved disputes in the 1920s:

**Upper Silesia** was a region with valuable industry. A referendum was held for citizens to choose whether to be ruled by Poland or Germany, but the result was too close to be decisive. In 1921, the League suggested dividing the area between the two countries, which both sides (and most citizens) accepted.

**The Aaland Islands** sit almost exactly halfway between Sweden and Finland. They belonged to Finland, but most people there wanted to be ruled by Sweden. In 1921, the League decided that the islands should remain Finnish, and both sides accepted this.

**Bulgaria** was invaded by Greece in 1925 after border disputes. The league ordered Greece to withdraw, and it obeyed.

#### The League of Nations struggled to resolve disputes in the 1920s:

**Corfu**, a Greek island was occupied by Italy in 1923 in response to an Italian diplomat being shot dead in Greece. At first, the League told Italy to leave and fined the Greeks. Italy ignored this and demanded compensation from Greece. The League changed its mind and agreed that Greece should give money to Italy and apologise. Greece obeyed and Italy withdrew its troops.

**Vilna** was chosen as the capital of the newly-formed Lithuania after the First World War, but most of the population were Polish. Poland seized Vilna in April 1919 and refused to give it up when told to do so by the League. On this occasion, the League was powerless to stop military aggression.

**The Ruhr** (an industrial region of Germany) was invaded and occupied by France in 1923 after Germany had failed to keep up its reparation payments. The French began shipping its products back to France. The League of Nations didn't intervene. The USA helped resolve the situation with the Dawes plan.

## Year 10 History

### Autumn Term- League of Nations in the 1930s

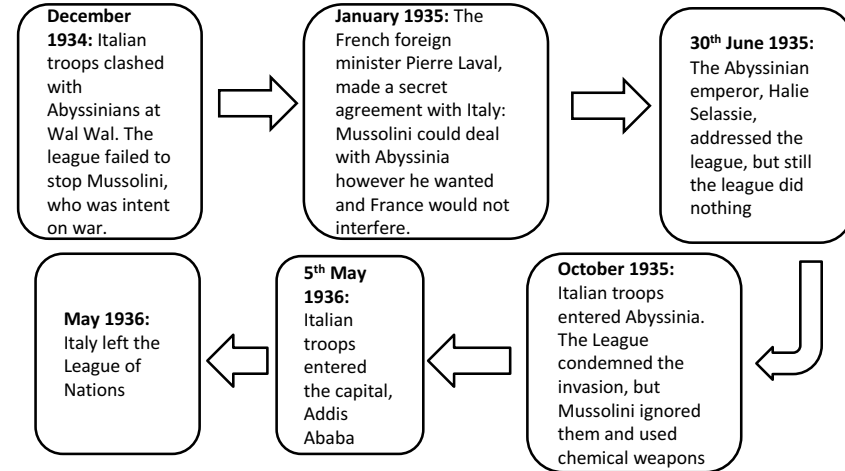
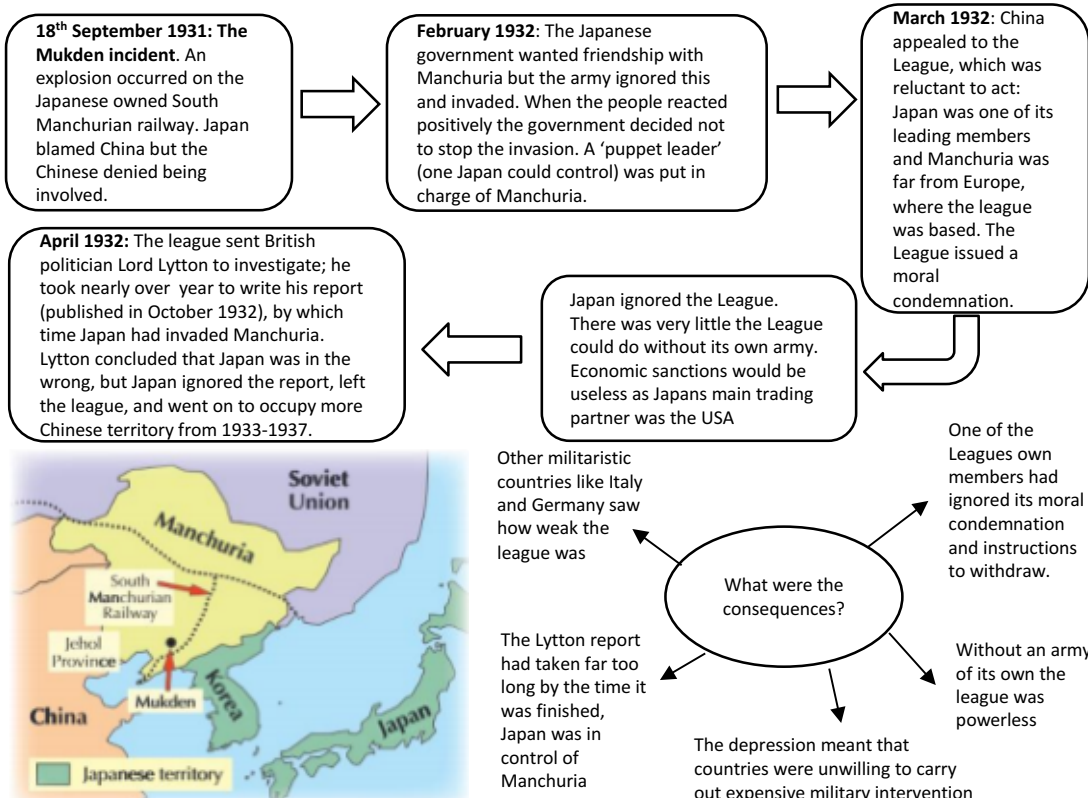
The League of Nations faced one of its biggest tests so far in September 1931. The Japanese army staged the Mukden incident and used it as an excuse to invade the region of Manchuria in China. The league was also challenged by Italy and Mussolini. In 1935 he invaded Abyssinia in North – East Africa. Both countries were permanent members of the League and had gone against the covenant.

#### Causes of the Manchurian crisis:

- 1929 Wall street crash started the Great depression. Japan suffered greatly its main export was silk, a luxury many could not afford.
- Japan became more militaristic- the government looked for land to invade, thinking it could give them more natural resources. Manchuria was rich in natural resources.
- Japan already had industry and a railway there so it looked like an ideal place to invade.

#### Causes of the Abyssinia crisis:

- Mussolini wanted to rebuild the Roman Empire, by invading other countries
- There was natural resources in Abyssinia, which would be useful for Italy during the Depression.
- In 1896, Italy had tried to invade Abyssinia and had been humiliated when the country defeated them, Mussolini wanted revenge.
- In 1935, Britain and France signed an agreement with Italy to form the Stresa Front. Mussolini did not think Britain and France would endanger the new agreement by trying to stop him in Abyssinia.





## Paper 1: Living with the Physical Environment

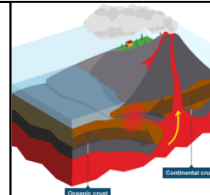
### Section A: Natural and Tectonic Hazards

#### What is the definition of a Natural Hazard?

A natural hazard is a natural event such as an earthquake, volcanic eruption, tropical storm or flood that poses risk of death, injury or damage to people and property.

#### What are the processes at Destructive Plate Margins?

This is where two plates are moving towards each other. The oceanic dense plate subducts beneath the less dense continental plate. Friction between the plates causes earthquakes. As the oceanic plate moves downwards it melts. The magma here is very viscous (like jam) and forces its way to the surface to form steep sided composite volcanoes such as those found on the west coast of South America where the Nazca plate subducts beneath the South American plate. Eruptions are often very violent and explosive. COLLISION IS 2 CONTINENTAL PLATES COMING TOGETHER.



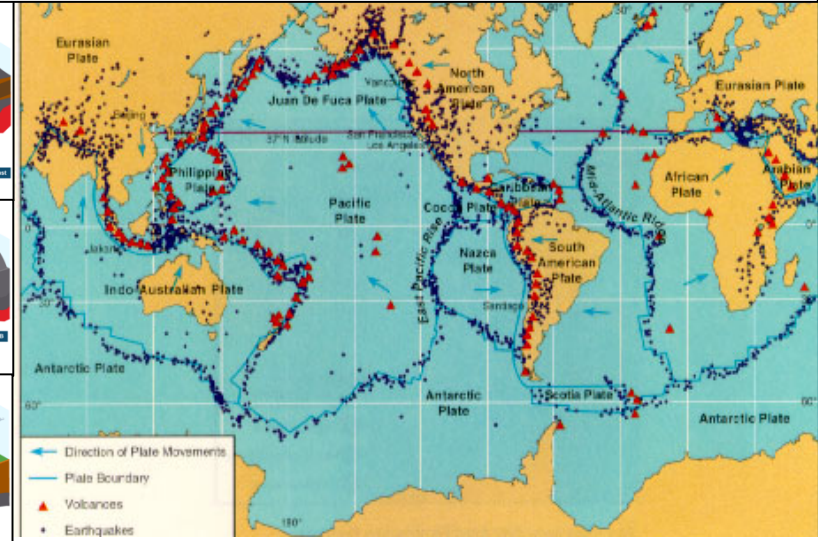
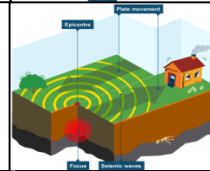
#### What are the processes at Constructive Plate Margins?

This is where two plates are moving apart like what is happening at the Mid-Atlantic Ridge where magma forces its way to the surface along the Mid-Atlantic Ridge. As it breaks through the overlying crust it causes earthquakes. On reaching the surface it forms volcanoes such as Eyjafjallajökull in Iceland. The magma here is very hot and fluid, it will flow a long way before cooling, resulting in typically broad and flat shield volcanoes.



#### What are the processes at Conservative Plate Margins?

This is where two plates are sliding alongside each other such as the San Andreas Fault in California. The faster-moving Pacific Plate is sliding in the same direction next to the slower North-America Plate. Friction between the two plates then causes earthquakes as stresses gradually build up over many years, they are released suddenly when pressure builds up and plates slip or shift. There are no volcanoes here.



#### How can we manage and reduce the effects of a Tectonic Hazard?

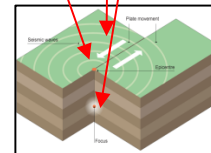
##### Monitoring and Prediction

##### Protection

##### Planning

- Seismometers are used to measure tremors before a main earthquake.
- Monitoring the water table (water tends to fluctuate before an earthquake).
- Satellites monitor ground deformation.
- Designing buildings and roads to withstand earthquakes.
- Increasing awareness.
- Earthquake drills.
- Seismic maps can be made.
- Prepare emergency supplies.

The point directly above the focus where the seismic waves reach first, is called the epicentre. Seismic waves travel out from the focus, which is the point at which pressure is released.



#### What are the reasons why people continue to live in areas at risk from a Tectonic Hazard?

People living in poverty ridden areas have more important things to think about like food, money, security and family. Plate margins often coincide with very favourable areas for settlement, such as coastal areas where ports have developed. Fault lines associated with earthquakes allow water supplies to reach the surface. This is important in dry desert regions. Better building design can withstand earthquakes so people feel less at risk. Volcanoes can bring benefits such as fertile soils, rocks for building, rich mineral deposits, hot water and geothermal energy. More effective monitoring of volcanoes and tsunamis waves enable people to receive warnings and evacuate before events happen.

# Paper 1: Living with the Physical Environment

## Section A: Weather Hazards

### How can Tropical Storms be Managed?

#### Monitoring

#### Protection

Satellites monitor cloud patterns associated with tropical storms.

NASA monitor weather patterns using unmanned drones called Global Hawk.

Reinforce buildings - hurricane shutters on windows and doors.

Develop coastal flood defences.

Create 'no-build zones' in low lying areas.

#### Prediction

#### Planning

Supercomputers give 5 days' warning and predict a location within 400km.

Track forecast cones plot the tropical storms path. Approx. 70% occur within the cone.

Those living where it will hit can prepare disaster supply kits and ensure their car is fully fuelled.

People should know where evacuation centres are.



### What is the global distribution of tropical storms?

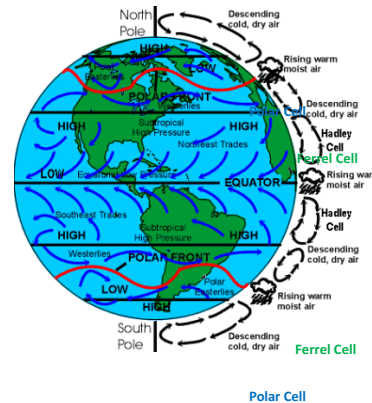
Tropical storms are a natural hazard. They have different names depending on their location. They occur between 5° and 30° north and south of the Equator, between the tropic of Cancer and the tropic of Capricorn. This provides areas of intense low-pressure so that warm, moist air rises rapidly to reach high altitudes where it begins to spin (Coriolis effect). They don't occur on the equator because there is not enough spin from the rotation of the Earth. In the USA and Caribbean tropical storms are called Hurricanes. In south-east Asia and Australia, they are called cyclones, but in Japan and the Philippines they are called typhoons.

### What are the Causes and Formation of a Tropical Storm?

1. The sun's rays heat large areas of the ocean in the summer and the autumn. When ocean temperatures reach 27°C, warm, moist air rises upwards drawing water vapour up from the ocean surface. This is a low-pressure system.
2. This evaporated air cools as it rises and condenses to form towering thunderstorm (cumulonimbus) clouds.
3. As the air condenses it releases heat which powers the storm and draws up more and more water from the ocean.
4. Several smaller thunderstorms join, to form a giant spinning storm. When surface winds reach an average 120km per hour (75mph) the storm officially becomes a tropical storm.
5. The storm now develops an eye at its centre where air descends (sinks) rapidly. The outer edge of the eye is the eyewall where the most intense weather conditions (strong winds and heavy rain) are felt.
6. As the storm is carried across the ocean by the prevailing winds, it continues to gather strength.
7. On reaching land the storm's energy supply (evaporated water) is cut off. Friction with the land slows it down and it begins to weaken as it approaches land. If the storm reaches warm seas after crossing the land, it may pick up strength again.

### What is Global Atmospheric Circulation?

The atmosphere - the air above our heads - is a complex swirling mass of gases, liquids and solids. These include water droplets, water vapour, ash, carbon dioxide and oxygen - just to mention a few. Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth. It involves many circular movements called **cells**. These cells all join to form the overall circulation of the earth's atmosphere.



Air at the equator is heated strongly so it rises in **low pressure** conditions. The air flows towards the North and South Poles. As warm air rises it cools and condenses. **Low pressure** therefore brings clouds and rain.

The air sinks at 30° north and south of the Equator under **high pressure**. **High pressure** weather brings dry and clear skies. This forms a convection (circular movements) cell called the Hadley cell.

Air at the polar latitudes is colder and denser (heavier) so the air sinks towards the ground surface under **high pressure** conditions. This air flows towards the Equator. The air warms as it reaches about 60° and again rises under **low pressure** conditions. This forms the **Polar Cell**. Located between the Hadley cell and the Polar cell is the **Ferrel Cell**.

### Is the UK Weather becoming more Extreme?

Extreme Weather is not new to the UK. However, the frequency of extreme weather in the UK is increasing. Since the 1980s, UKs temperatures have increased by about 1°C and winter rainfall has increased. There have been more weather records broken in recent years than ever before.

#### Extreme Weather Records

**Temperature**  
**Rainfall**

December 2010 coldest on record for 100 years.

Warmest April was 2011.

Highest temperature was 38.5°C in Kent in August 2003.

Lowest temperature was -27°C in Scotland in 1995.

Highest two-day record of rainfall (405mm) was in 2015.

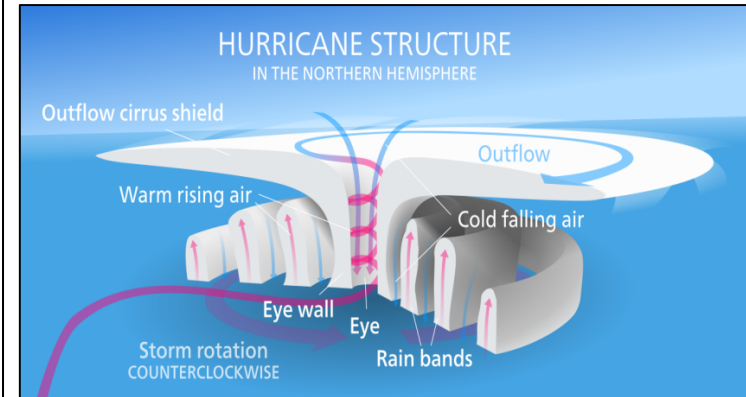
Highest three - four-day rainfall records were both in 2009.

Highest monthly total rainfall was 1296mm in 2015.

Serious flooding has become more frequent in winters.



### What is the structure and the features of a tropical storm?



### What are future predictions for UK Weather?

Precipitation is expected to become more frequent.

Some rivers are expected to flood more frequently in winters.

Air temperature is expected to increase, causing more drought.

Climate change cannot be responsible for individual extreme weather events, yet scientists say it can be responsible for increased frequency in such events.

# Paper 1: Living with the Physical Environment

## Section A: Climate Change

### What are the possible Causes of Climate Change?

Climate change is the **long-term** change in weather. Global climate change occurs very slowly over thousands of years. Evidence of climate change occurring before humans existed means climate change must be natural as well as human enhanced. Natural causes alone cannot account for the significant temperature increase since the 1970s. A thicker layer of greenhouse gases (carbon dioxide 77%, methane 14%, nitrous oxide 8% and CFCs 1%) caused by human activity means less of the Sun's energy is able to escape the Earth's atmosphere, so the temperature increases.

### What is the evidence for Climate Change?

Since 1914 the Met Office has reliable climate change data collected using weather stations, satellites, weather balloons, radar and ocean buoys. Evidence includes:

- An increase in the average surface air temperature by 1°C over the past 100 years.
- The warmest ocean temperatures since 1850.
- A 19cm rise in sea levels since 1900.
- Arctic sea ice has thinned by 65% since 1975.



Natural records like tree rings, ice cores (spanning 800, 000 years) and ocean sediments (spanning beyond the quaternary period), help estimate climate. The period of timeline that spans from **2.6 million years ago to the present day** is called the **Quaternary Period**. This period marks a time when there was a **global drop in temperature** and the most recent ice age began.

Ice cores are cylinders of ice drilled out of an ice sheet or glacier. The ice encloses small bubbles of air that contain a sample of the atmosphere - making it possible to measure the past concentration of gases in the atmosphere. Antarctic ice cores show us that the concentration of CO<sub>2</sub> was stable until the early 19th century.

### How will Climate Change affect People and the Environment?

- Less ice in the Arctic Ocean increases shipping and extraction of gas and oil reserves (because we can reach it).
- Droughts reduce food and water supplies in sub-Saharan Africa.
- Water scarcity in the south and south east of the UK.
- 70% of Asia at increased risk of flooding.
- Sea level rise increases flooding and coastal erosion.
- Ice melts so wildlife declines such as Adelie penguins on the Arctic peninsula and polar bears in the Arctic.

### How can we Manage Climate Change?

The burning of fossil fuels to produce electricity, fuels vehicles and power industry contributes 87% of all human-produced CO<sub>2</sub> emissions. The rest comes from land uses changes such as deforestation (9%) and industrial processes such as making cement (4%).

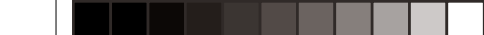
**Alternative Energy Provision:** To help reduce carbon emissions many countries are turning to alternative sources of energy such as: hydro-electricity, nuclear power, solar, wind and tidal. These do not emit large amounts of CO<sub>2</sub>. Some are also renewable and will last into the future. Nuclear power uses uranium to generate electricity but it does not emit CO<sub>2</sub> as a by-product. At current, in 2016, renewables produce more than 20% of the UK's electricity.

**Carbon Capture and Storage:** Coal is the most polluting of all fossil fuels. China gets 80% of its electricity from burning coal, India 70% and the USA 50%. Carbon capture and storage (CCS) uses technology to capture CO<sub>2</sub> produced from the use of fossil fuels in electricity generation and industrial processes. It is possible to capture up to 90% of the CO<sub>2</sub> that would otherwise enter the atmosphere. Once CO<sub>2</sub> is captured, the carbon gas is compressed and transported by pipeline to an injection well. It is injected as a liquid into the ground to be stored in suitable geological reservoirs such as sedimentary rock as this prevents it from escaping. The UK is the world leader in CCS.

**Planting Trees:** Trees act as carbon sinks, removing CO<sub>2</sub> from the atmosphere by the process of photosynthesis. They also release moisture into the atmosphere. This has a cooling effect by producing more cloud, reducing incoming solar radiation. Tree planting is well established in many parts of the world. Plantation forests can absorb CO<sub>2</sub> at a faster rate than natural forests and can do so effectively for up to 50 years. The UK has a £24.9 million project to reduce deforestation and increase reforestation in Brazil. It aims to tackle climate change by reducing 10.71 million tons of CO<sub>2</sub> emissions over 20 years by recovering 41,560 hectares of degraded forests.

### International Agreement: Paris Agreement 2015 -

- 195 adopted the first ever universal and legally binding global climate deal.
- To peak greenhouse gas emissions as soon as possible and achieve a balance between sources and sinks of greenhouse gases in the second half of this century (2050-2100).
- To keep global temperature increase below 2°C and limited to 1.5°C above pre-industrial levels.
- To review progress every 5 years.
- \$100 billion a year to support climate change initiatives in developing countries by 2020, with further finance in the future.
- There have been criticisms that many of these agreements are 'promises' or aims and not firm commitments.



<b>Conservative Plate Margin</b>	Tectonic plate margin where two tectonic plates slide past each other.	<i>Earthquakes are caused by conservative plate margins.</i>
<b>Constructive Plate Margin</b>	Tectonic plate margin where two tectonic plates slide past each other.	<i>Shield volcanoes are formed by constructive plate margins.</i>
<b>Destructive Plate Margin</b>	Tectonic plate margin where two tectonic plates slide past each other.	<i>Volcanoes and earthquakes are found on destructive plate margins.</i>
<b>Immediate Response</b>	The reaction of people as the disaster happens and in the immediate aftermath.	<i>An immediate response to the hazard was evacuation.</i>
<b>Long-term Response</b>	Later reactions that occur in the weeks, months and years after the event.	<i>A long term response to the hazard was improving infrastructure.</i>
<b>Monitoring</b>	Recording physical changes, such as earthquake tremors around a volcano, to help forecast when and where a natural hazard might strike.	<i>Seismologists are able to predict future earthquakes by monitoring seismic activity.</i>
<b>Prediction</b>	Attempts to forecast when and where a natural hazard will strike, based on current knowledge. This can be done to some extent for volcanic eruptions (and tropical storms), but less reliably for earthquakes.	<i>Seismologists are able to predict future earthquakes by monitoring seismic activity.</i>
<b>Planning</b>	Actions taken to enable communities to respond to, and recover from, natural disasters, through measures such as emergency evacuation plans, information management, communications and warning systems.	<i>We can reduce the impacts of tectonic hazards by planning ahead.</i>
<b>Protection</b>	Actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design.	<i>Strengthening buildings and infrastructure adds protection to communities in the event of an earthquake, and can reduce the effects.</i>
<b>Primary Effects</b>	The initial impact of a natural event on people and property, caused directly by it, for instance the ground buildings collapsing following an earthquake.	<i>A primary effect of an earthquake is the collapse of buildings.</i>
<b>Secondary Effects</b>	The after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, for instance fires due to ruptured gas mains resulting from the ground shaking.	<i>A secondary effect of an earthquake is homelessness, because your home collapsed, or unemployed because your place of work collapsed.</i>
<b>Climate Change</b>	A long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature.	<i>The burning of fossil fuels in one of the most significant causes of climate change.</i>
<b>Mitigation</b>	Action taken to reduce or eliminate the long-term risk to human life from natural hazards, such as building earthquake-proof buildings or making international agreements about carbon reduction targets.	<i>Mitigation strategies include the use of alternative energies, and adopting a plant based diet.</i>
<b>Adaptation</b>	Actions taken to adjust to natural events such as climate change, to reduce potential damage, limit the impacts, take advantage of opportunities, or cope with the consequences.	<i>Adaptation strategies include the building of flood defences and water transfer schemes.</i>
<b>Orbital Changes</b>	Changes in the pathway of the Earth around the Sun.	<i>Orbital changes modify the total amount of sunlight reaching the Earth by up to 25%.</i>



## Life at School and College: GCSE Foundation Tier Spanish Knowledge Organiser

### Key Ideas

- Las reglas del colegio.
- Los problemas escolares.
- Las diferencias entre los institutos de España y los de Inglaterra.
- Mi instituto ideal.
- Mi uniforme escolar.
- Los deberes.



### Key Vocabulary

#### Los sustantivos

el acoso (escolar)	(school) bullying
el alumno	pupil, student
los apuntes	notes
la biología	biology
el bolígrafo	pen
la clase	classroom
el comportamiento	behaviour
los deberes	homework
la escuela	school
el examen	examination
el permiso	permission
el recreo	break, recess, playtime, recreation
la rutina	routine

los vestuarios	changing rooms
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Los adjetivos	
desobediente	disobedient
educativo/a	educational
obligatorio/a	compulsory
privado/a	private
sobresaliente	outstanding

#### Los verbos

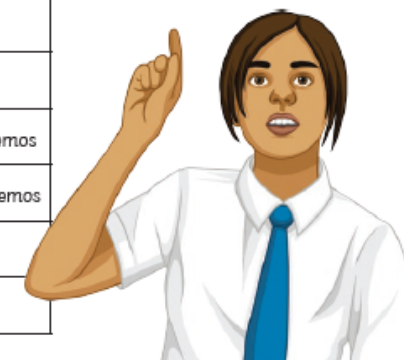
aprender	to learn
aprobar	to approve, to pass (an exam)
comportarse	to behave

charlar	to chat
entender	to understand
explicar	to explain
preguntar	to ask a question
suspender	to fail (exam/subject)



### Key Verbs

Infinitivo	Presente	Pasado (Pretérito)	Futuro
hacer – to do	yo hago ; él/ella hace ; nosotros/as hacemos	yo hice ; él/ella hizo ; nosotros/as hicimos	yo haré ; él/ella hará ; nosotros/as haremos
ser – to be	yo soy ; él/ella es ; nosotros/as somos	yo era ; él/ella era ; nosotros/as éramos	yo seré ; él/ella será ; nosotros/as seremos
estar- to be	yo estoy ; él/ella está ; nosotros/as estamos	yo estuve ; él/ella estuvo ; nosotros/as estuvimos	yo estaré ; él/ella estará ; nosotros/as estaremos
tener – to have	yo tengo ; él/ella tiene ; nosotros/as tenemos	yo tuve ; él/ella tuvo ; nosotros/as tuvimos	yo tendré ; él/ella tendrá ; nosotros/as tendremos
deber – to have to	yo debo ; él/ella debe ; nosotros/as debemos	yo debí ; él/ella debía ; nosotros/as debíamos	Yo deberé ; él/ella deberá ;
saber- to know (a fact)	yo sé ; él/ella sabe ; nosotros/as sabemos	yo supe ; él/ella supo ; nosotros/as supimos	nosotros/as deberemos





## Key Phrases

hay que/no hay que + infinitivo	it is necessary to/you should; it is not necessary to/you shouldn't
se debe/no se debe + infinitivo	one must/one must not
está prohibido + infinitivo	it is forbidden
no tengo confianza en mí mismo/a	I do not have confidence in myself.
estoy a favor del uniforme escolar	I am in favour of the school uniform.
estoy en contra del uniforme escolar	I am against the school uniform.
tengo la razón	I am right.
me equivoco	I am wrong.
los problemas más serios son	the most serious problems are
mejor	better
por	worse
excepto	except
temprano/tarde	early/late
más.... que/menos.... que	more ... than/less ... than



## Tricky Pronunciation: Practise these with your teacher!

hay que	it is necessary to	Make sure you don't pronounce the 'h'
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## False Friends

el director/la directora	headteacher
aprobar un examen	to pass an exam
la jornada escolar	school day
durar	to last



## Tricky spellings

el comportamiento	behaviour	
el examen	exam	Check the accent on the 'a'.
está prohibido	it is forbidden	Check the "h" between the first 'o' and the first 'i'.

## Key Questions

1. ¿Tienes demasiados deberes?  
Do you have too much homework?
2. Describe las reglas de tu colegio.  
Describe the school rules.
3. Para ti, ¿cuáles son los problemas más serios de tu colegio?  
What are the most serious problems at school, in your opinion?
4. ¿Estás a favor o en contra del uniforme escolar?  
Are you for or against school uniform?
5. Describe tu instituto ideal.  
Describe your ideal school.
6. ¿Cuáles son las principales diferencias entre la rutina escolar de España y la de Inglaterra?  
What are the main differences between school life in Spain and school life in England?

## Useful Grammatical Structures

- Be aware of grammatical markers which help you to work out whether a noun is singular or plural. Most plurals add '-s' at the end of the noun.
- Use the infinitive after these key constructions: hay que (you should); no hay que (you shouldn't); se debe/ no se debe (one must/one mustn't); está prohibido (it is forbidden to).
- Use relative pronouns to link sentences together e.g. que (that/which); donde(where); cuando (when).
- Use negatives to negate a sentence. Place them before the verb e.g. no juego a fútbol (I don't play football); nunca juego a fútbol (I never play football).



## Travel and Tourism GCSE Foundation Tier Spanish Knowledge Organiser

### Key Ideas

- Por qué me gusta ir de vacaciones
- Los destinos de vacaciones: normalmente/ el año pasado/el año que viene
- Los tipos de vacaciones que me gustan
- Quedarse en Inglaterra o viajar al extranjero
- Las ventajas y los inconvenientes de los diferentes tipos de alojamiento/ transporte
- Las actividades que se hacen de vacaciones (opiniones)
- ¿Cómo son las vacaciones de tus sueños?

### Los verbos

alojarse	to lodge, to stay
bañarse	to bathe, to swim
caminar	to walk
descansar	to rest
esquiar	to ski
estar de vacaciones	to be on holiday
llevar	to take
pasar	to spend time, to go through, to pass
reservar	to book, to reserve
sacar fotos	to take photos
tomar el sol	to sunbathe
viajar	to travel

### Key Vocabulary

Los sustantivos	
el aeropuerto	airport
la agencia de viajes	travel agent's
el aire acondicionado	air conditioning
el albergue juvenil	youth hostel
el alojamiento	accommodation
el avión	airplane, aeroplane
el barco	boat
el billete (de ida/de ida y vuelta)	(single/return) ticket
la cama de matrimonio	double bed
la cámara de fotos	camera
el camping	camp site, camping
el coche	car
el crucero	cruise
la maleta	suitcase
el mar	sea
la media pensión	half board
la montaña	mountain
la playa	beach
la pensión completa	full board
la tienda de campaña	tent
el viaje	trip, journey
el vuelo	flight

### Key Phrases

Me gusta/No me gusta ir de vacaciones porque...	I like/dislike going on holiday because...
Encuentro las vacaciones relajantes/ estresantes.	I find holidays relaxing /stressful.
No me gusta ir de vacaciones con mi familia.	I don't like going on holiday with my family.
Personalmente prefiero las vacaciones culturales.	Personally, I prefer cultural holidays.
Normalmente nos quedamos en una casa de alquiler.	Usually, we stay in a holiday home.
Alojarse en una casa de alquiler te da más libertad.	Staying in a holiday home gives you more freedom.
Durante las vacaciones de verano...	During the summer holidays, ...
Hizo mucho calor todos los días.	It was hot every day.
La ventaja de coger un vuelo es que es más rápido.	The advantage of taking the plane is that it's fast.
Visité muchos lugares turísticos y saqué muchas fotos.	I visited lots of tourist spots and I took lots of photos.
Probé la comida local.	I sampled the local cuisine.
Para mis vacaciones ideales me gustaría ir a...	For my dream holiday, I would like to go to...

Infinitivo	Presente	Pasado (Pretérito)	Futuro
hacer - to do	yo hago ; él/ella hace ; nosotros/as hacemos	yo hice ; él/ella hizo ; nosotros/as hicimos	yo haré ; él/ella hará ; nosotros/as haremos
ser - to be	yo soy ; él/ella es ; nosotros/as somos	yo era ; él/ella era ; nosotros/as éramos	yo seré ; él/ella será ; nosotros/as seremos
estar - to be	yo estoy ; él/ella está ; nosotros/as estamos	yo estuve ; él/ella estuvo ; nosotros/as estuvimos	yo estaré ; él/ella estará ; nosotros/as estaremos
tener - to have	yo tengo ; él/ella tiene ; nosotros/as tenemos	yo tuve ; él/ella tuvo ; nosotros/as tuvimos	yo tendré ; él/ella tendrá ; nosotros/as tendremos
ir - to go	yo voy ; él/ella va ; nosotros/as vamos	yo fui ; él/ella fue ; nosotros/as fuimos	yo iré ; él/ella irá ; nosotros/as iremos
viajar - to travel	yo viajo ; él/ella viaja ; nosotros/as viajamos	yo viajé ; él/ella viajó ; nosotros/as viajamos	yo viajaré ; él/ella viajará ; nosotros/as viajaremos

### Los adjetivos

aburrido/a	boring
bonito/a	beautiful
cansado/a	tiring
emocionante	exciting
estresante	stressful
interesante	interesting
lento/a	slow







## Travel and Tourism GCSE Foundation Tier Spanish Knowledge Organiser

Key Questions	
1. ¿Te gusta ir de vacaciones?	Do you like going on holiday?
2. ¿Cuáles son las ventajas y los inconvenientes de... a) los diferentes tipos de alojamiento? (los hoteles/los albergues, etc.) b) los diferentes tipos de transporte? (el avión/el coche) c) los diferentes destinos? (la ciudad/el campo, etc.)	What are the advantages and disadvantages of... different types of accommodation (hotels/holiday homes)? different means of transport (plane/car)? different destinations (town/countryside)?
3. ¿Dónde vas de vacaciones normalmente?	Where do you normally go on holiday?
4. ¿Prefieres quedarte en Gran Bretaña o viajar al extranjero?	Do you prefer staying in Great Britain or going abroad?
5. Describe un día típico.	Describe a typical day.
6. ¿Qué hiciste el año pasado en las vacaciones de verano?	What did you do last year during the summer holidays?
7. Háblame de las vacaciones de tus sueños.	Talk to me about your dream holiday.

Useful Grammatical Structures
<ul style="list-style-type: none"><li>Use modifiers to modify an adjective. Examples include: bastante (quite); un poco (a bit)</li><li>Use intensifiers to intensify an adjective. Examples include: realmente (really); muy (very); particularmente (particularly); totalmente (totally); completamente (completely)</li><li>Use connectives and conjunctions to make longer sentences. Examples include: porque (because); ya que (as/because); pero (but); sin embargo (however); cuando (when), although (aunque)</li></ul>

Tricky Spellings		
el avión	airplane, aeroplane	Check the accent
la cámara de fotos	camera	Check the accent

Tricky Pronunciation	Practise these with your teacher!
alojarse	to lodge, to stay
bañarse	to bathe, to swim
llevar	to take



## Life at School/College GCSE Foundation Tier French Knowledge Organiser

### Key Ideas

- Règlements scolaires
- Problèmes scolaires
- Différences entre la journée scolaire en France et la journée scolaire en Angleterre
- Mon collège idéal
- L'uniforme scolaire
- Les devoirs



### Key Vocabulary

#### Les noms

les affaires (f)	belongings/possessions
l'ambiance (f)	atmosphere
les bijoux (m)	jewellery
le bruit	noise
la coiffure	hairstyle
l'intimidation (f)	bullying
le maquillage	make-up
la mode	fashion
le prix	prize
la punition	punishment
la récompense	reward
les règlements (m)	rules
la rentrée	start of the new school year
la retenue	detention

le souci	worry
le temps libre	free time
les vêtements (m) de marque	designer clothes

#### Les adjectifs

bruyant (e)	noisy
démodé(e)	old-fashioned
faux / fausse	false
pénible	annoying/painful
propre	clean
sale	dirty
stressant(e)	stressful
vrai(e)	true

#### Les verbes

écrire	to write
faire de son mieux	to do one's best
mâcher	to chew
porter	to wear
savoir	to know (a fact)
se moquer de	to make fun of



### Key Verbs

Infinitif	Présent	Passé	Futur
faire – to do	je fais; il / elle fait; nous faisons	j'ai fait; il / elle a fait; nous avons fait	je ferai; il / elle fera; nous ferons
être – to be	je suis; il / elle est; nous sommes	j'ai été; il / elle a été; nous avons été	je serai; il / elle sera; nous serons
avoir – to have	j'ai; il / elle a; nous avons	j'ai eu; il / elle a eu; nous avons eu	j'aurai; il / elle aura; nous aurons
savoir – to know (a fact)	je sais; il / elle sait; nous savons	j'ai su; il / elle a su; nous avons su	je saurai; il / elle saura; nous saurons
devoir – to have to	je dois; il / elle doit; nous devons	j'ai dû; il / elle a dû; nous avons dû	je devrai; il / elle devra; nous devrons

## Key Phrases

- il faut / il ne faut pas + infinitive - it is necessary to/it is not necessary to
- on doit / on ne doit pas + infinitive - one must/one mustn't
- il est interdit de + infinitive - it is forbidden to
- je n'ai pas de confiance en moi - I have no confidence in myself
- je suis pour l'uniforme scolaire - I am for the school uniform
- je suis contre l'uniforme scolaire - I am against the school uniform
- j'ai raison - I'm right
- j'ai tort - I'm wrong
- les problèmes les plus graves sont ... the most serious problems are...
- mieux - better
- pire - worse
- sauf - except
- tôt / tard - early/late
- plus ... que / moins ... que - more ... than/less ... than



## Tricky Pronunciation: Practise these with your teacher!

en retard	late	Don't pronounce the last letter.
il faut	it is necessary to	Make sure this is distinct from 'il fait'.
on doit / la coiffure	one must/ hairstyle	Check the 'oi' sound.
le prix / mieux /	price/better/ jewellery	Don't pronounce the 'x'.
l'avantage	advantage	No 'd' in French.
le temps libre	free time	Don't pronounce the 'ps'; check the nasal vowel.
bien équipé	well-equipped	Pronounce the final 'é'.

## False Friends

le directeur/la directrice	headteacher
passer un examen	to take an exam
réussir un examen	to pass an exam
la journée scolaire	school day
sale	dirty
durer	to last



## Tricky spellings

il faut	it is necessary to	Make sure this is distinct from 'il fait'.
régulièrement	regularly	Check the accents.

## Key Questions

1. Tu as trop de devoirs ? Do you have too much homework?
2. Décris les règlements scolaires. Describe the school rules.
3. Quels sont les problèmes les plus graves au collège, à ton avis ? What are the most serious problems at school, in your opinion?
4. Tu es pour ou contre l'uniforme scolaire ? Are you for or against school uniform?
5. Décris ton collège idéal. Describe your ideal school.
6. Quelles sont les différences principales entre la vie scolaire en France et la vie scolaire en Angleterre ? What are the main differences between school life in France and school life in England?

## Useful Grammatical Structures

- Be aware of grammatical markers which help you to work out whether a noun is singular or plural. Most plurals add 's'; however, there are exceptions, e.g. le bateau / des bateaux ; une souris / des souris.
- Use the infinitive after these key constructions: il faut (you should); il ne faut pas (you shouldn't); on doit / on ne doit pas (one must/one mustn't); il est interdit de (it is forbidden to).
- Use relative pronouns to link sentences together, e.g. qui (who/which); que (that/which); dont (whose); où (where).
- Use negatives to negate a sentence. Place them around the verb, e.g. je ne joue pas au foot (I don't play football); je ne joue jamais au foot (I never play football).



## Travel and Tourism GCSE Foundation Tier French Knowledge Organiser

### Key Ideas

- Pourquoi on aime partir en vacances
- Les destinations de vacances – normalement / l'année prochaine / dernière
- Les types de vacances qu'on aime
- Rester en Angleterre ou partir à l'étranger
- Les avantages et inconvénients de différents types d'hébergement / transport
- Les activités qu'on fait en vacances (opinions)
- Comment sont tes vacances de rêve ?

### Key Phrases

J'aime / je n'aime pas aller en vacances parce que...	I like/dislike going on holiday because...
Je trouve les vacances relaxants / stressantes	I find holidays relaxing/stressful.
Je n'aime pas aller en vacances en famille	I don't like going on holiday with my family.
Personnellement je préfère les vacances culturelles	Personally I prefer cultural holidays.
D'habitude on reste dans un gîte	Usually we stay in a holiday home.
Dans un gîte on a plus de liberté	Staying in a holiday home gives you more freedom.

Pendant les grandes vacances...	During the summer holidays...
Il faisait chaud chaque jour	It was hot every day.
L'avantage de prendre l'avion est que c'est rapide	The advantage of taking the plane is that it's fast.
J'ai visité plusieurs sites touristiques et j'ai pris beaucoup de photos	I visited lots of tourist spots and I took lots of photos.
J'ai goûté la cuisine locale	I sampled the local cuisine.
Pour mes vacances de rêve je voudrais aller au Maroc	For my dream holiday I would like to go to Morocco.

### Key Verbs

Infinitif	Présent	Passé	Futur
<b>faire</b> – to do	je fais/ il fait/ elle fait nous faisons/ ils font / elles font	j'ai fait/ il a fait/ elle a fait/nous avons fait/ ils ont fait/ elles ont fait	je ferai/ il fera/ elle fera nous ferons/ ils feront/ elles feront
<b>être</b> – to be	je suis/ il est/ elle est nous sommes/ils sont/ elles sont	j'ai été/ il a été/ elle a été nous avons été/ ils ont été/ elles ont été	je serai/ il sera/ elle sera nous serons/ ils seront / elles seront
<b>avoir</b> – to have	j'ai/ il a/ elle a nous avons/ ils ont/elles ont	j'ai eu/ il a eu/ elle a eu nous avons eu/ils ont eu/ elles ont eu	j'aurai/ il aura/ elle aura nous aurons/ ils auront / elles auront
<b>aller</b> – to go	je vais/ il va/ elle va nous allons/ ils vont / elles vont	je suis allé(e)/ il est allé/ elle est allée nous sommes allé(e)s/ ils sont allés/elles sont allées	j'irai/ il ira/ elle ira nous irons/ils iront /elles iront
<b>prendre</b> – to take	je prends; il/elle prend; nous prenons	j'ai pris; il/elle a pris; nous avons pris	je prendrai; il/elle prendra; nous prendrons

### Key Vocabulary

#### Les noms

à l'étranger	abroad
l'aéroport	airport
l'avion	aeroplane
le camping	campsite
la crème solaire	suncream
un coup de soleil	sunburn
la cuisine locale	the local cuisine
le gîte	holiday home
l'hôtel	hotel
le maillot de bain	swimwear
la plage	beach
le séjour	stay
le temps	the weather
les vacances (f)	holidays
la voiture	car
le voyage	journey

#### Les adjectifs

beau / belle	beautiful
ennuyeux / ennuyeuse	boring
fatigant(e)	tiring
intéressant(e)	interesting
lent(e)	slow
passionnant(e)	exciting
stressant(e)	stressful

#### Les verbes

nager	to swim
bronzer	to sunbathe
faire chaud / froid	to be hot/cold (weather)
perdre	to lose
rester	to stay
voyager	to travel

## Key Questions

- |   |   |
|---|---|
| 1. Aimes-tu aller en vacances ?                   | Do you like going on holiday ?                  |
| 2. Quels sont les avantages et inconvénients      | What are the advantages and disadvantages of:   |
| a) des différents types d'hébergement ?           | different types of accommodation (hotels/       |
| (les hôtels / les gîtes etc.)                     | holiday homes)                                  |
| b) des différents moyens de transport ? (l'avion  | different means of transport (plane/car)        |
| / la voiture)                                     |   |
| c) des différentes destinations ? (la ville / la  | different destinations (town/countryside)       |
| campagne etc.)                                    |   |
| 3. Où vas-tu en vacances normalement ?            | Where do you normally go on holiday?            |
| 4. Préfères-tu rester en Grande-Bretagne ou aller | Do you prefer staying in Great Britain or going |
| à l'étranger ?                                    | abroad?   |
| 5. Décris-moi une journée typique.                | Describe a typical day.                         |
| 6. Qu'est-ce que tu as fait pendant les grandes   | What did you do last year during the summer     |
| vacances l'année dernière ?                       | holidays?                                       |
| 7. Parle-moi de tes vacances de rêve.             | Talk to me about your dream holiday.            |

## False Friends

l'Amérique	the continents of North and South America (not just the USA)
une journée	a day
la location	the rental
rester	to stay

## Useful Grammatical Structures

- Use **modifiers** to modify an adjective.
- Use **intensifiers** to intensify an adjective. Examples include: vraiment (really); très (very); particulièrement (particularly); totalement (totally); complètement (completely); si (so).
- Use **comparatives** to compare two or more items. Examples include: plus/moins/aussi sain que... (more/less/as healthy as...)
- Use **connectives and conjunctions** to make longer sentences. Examples include: parce que (because); car (as/because); mais (but); cependant (however); quand (when).

- Use the **perfect tense with avoir or être** to describe past events. Examples include: je suis allé(e) (I went); j'ai visité (I visited); j'ai fait (I did); j'ai dormi (I slept); j'ai bu (I drank).

## Tricky Pronunciation

ennuyeux / ennuyeuse	boring
je préfère	I prefer
le gîte	holiday home
le temps	weather
le maillot de bain	swimwear
un coup de soleil	sunburn

## Tricky Spellings

les vacances	holidays	Make sure that this is feminine. It is always plural.
ennuyeux / ennuyeuse	boring	Make sure that this is feminine. It is always plural.
passionnant(e)	exciting	Check the double 's', double 'n' and ending.
préféré(e)	favourite	Check the accents.





# My Studies GCSE Foundation Tier German Knowledge Organiser

Infinitiv	Präsens	Vergangenheit	Futur
machen – to do	ich mache; er/sie macht wir machen	ich habe gemacht; er/ sie hat gemacht wir haben gemacht	ich werde machen; er/sie wird machen wir werden machen
sein – to be	ich bin; er/sie ist wir sind	ich bin gewesen; er/ sie ist gewesen wir sind gewesen	ich werde sein; er/sie wird sein wir werden sein
haben – to have	ich habe; er/sie hat wir haben	ich habe gehabt; er/ sie hat gehabt wir haben gehabt	ich werde haben; er/sie wird haben wir werden haben
gehen – to go	ich gehe; er/sie geht wir gehen	ich bin gegangen; er/ sie ist gegangen wir sind gegangen	ich werde gehen; er/sie wird gehen wir werden gehen

Key Vocabulary	
Adjektive	
alt	old
neu	new
anstrengend	tiring
einfach	easy
hilfreich	helpful
interessant	interesting
langweilig	boring
nett	nice/kind
praktisch	useful
toll	great

Key Vocabulary	
Substantive	
das Abitur	leaving school exams take at 18
die Atmosphäre	the atmosphere
die Bibliothek	library
Chemie (f)	chemistry
Erdkunde	geography
Fremdsprachen	foreign languages
die Gesamtschule	comprehensive school
Geschichte (f)	history
Hausaufgaben (npl)	homework
das Heft	exercise book
die Kantine	canteen
der Lehrer/die Lehrerin	teacher
Naturwissenschaften (f)	science
die Note	mark
die Pause/ die Mittagspause	break/lunch hour
der Sportplatz	playing field
die Stunde	hour/lesson
der Stundenplan	timetable

Key Ideas
<ul style="list-style-type: none"> <li>• Die Schulfächer – Pro und Kontra</li> <li>• meine Meinungen zu den Lehrern und Lehrerinnen</li> <li>• Hausaufgaben</li> <li>• die Pause/die Mittagspause</li> <li>• mein Stundenplan</li> <li>• Schulreisen</li> <li>• ein typischer Schultag</li> <li>• Aktivitäten außerhalb des Stundenplans</li> </ul>

Key Vocabulary	
Die Verben	
benutzen	to use
lernen	to learn
verstehen	to understand
unterrichten	to teach
zeichnen	to draw

Key Phrases	
in der Schule lerne ich	at school I learn
normalerweise gehe ich zu Fuß in die Schule	normally I go by foot to school
ich habe Mathe gewählt	I've chosen Maths
ich habe gute/schlechte Noten in	I have good/bad marks in
mein Lieblingsfach ist	my favourite subject is
Deutsch gefällt mir nicht	I don't like German
meine Lehrer/Lehrerinnen sind	my teachers are
ich habe meine Hausaufgaben vergessen	I've forgotten my homework
die erste Stunde beginnt um	the first lesson starts at
die Pause/die Mittagspause dauert	break lasts/lunch-time lasts
nach der Pause haben wir	after lunch we have
ich bin Mitglied der Theatergruppe	I am a member of the theatre group
es war	it was
es gibt	there is/there are



### Key Questions

1. Wie heißt deine Schule?	What is your school called?
2. Wie kommst du in die Schule?	How do you get to school?
3. Wie findest du deine Schule?	What is your school like?
4. Was lernst du in der Schule?	What do you learn at school?
5. Wie viele Stunden gibt es pro Tag?	How many lessons are there per day?
6. Was ist dein Lieblingsfach?	What is your favourite subject?
7. Wie findest du deine Lehrer/Lehrerinnen?	What are your teachers like?
8. Bekommst du viele Hausaufgaben?	Do you have a lot of homework?
9. Was machst du in der Pause/der Mittagspause?	What do you do during break/the lunch-hour?
10. Hast du einen Schüleraustausch gemacht?	Have you been on an exchange?

### Tricky spellings

Deutsch gefällt mir nicht	I don't like German	check the umlaut, tsch
sein/mein/meine	to be or his /my	check the ei

### Useful Grammatical Structures

- Use **modifiers** to modify an adjective. Examples include: ziemlich (quite); ein bisschen/etwas (a bit/rather).
- Use **intensifiers** to intensify an adjective. Examples include: wirklich (really); sehr (very); besonders (particularly); total (totally); völlig (completely); so (so).
- Use **connectives and conjunctions** to make longer sentences. Examples include: because (weil); aber (but); jedoch (however).
- Use **wenn** to mean **when** if you are referring to the future, present or a habitual action in the past; use **als** to refer to a specific event in the past; use **wann** when you ask a question.
- Use the **perfect tense with haben or sein** to describe past events. Examples include: ich bin gegangen (I went); ich bin gekommen (I came); ich bin gefahren (I travelled); ich habe gesehen (I saw); ich habe gegessen (I ate); ich habe getrunken (I drank).

### False Friends

das Gymnasium	grammar school
das Internat	boarding school
das Labor	laboratory
die Note	mark
die Realschule	secondary modern

### Tricky Pronunciation

Practise these with your teacher!

Mathe (f)	maths
schlecht	bad
Fächer	subjects



## Travel and Tourism GCSE Higher Tier German Knowledge Organiser

### Key Ideas

- Die Wichtigkeit eines Urlaubs
- Die Vorteile des Urlaubs
- Ein Urlaub im Inland oder im Ausland verbringen?
- Welcher Urlaubstyp bist du?
- Was man im Urlaub macht
- Dein Traumurlaub

### Die Substantive

der Ausflug	trip, excursion
der Campingplatz	campsite
das Schloß	castle
der Blick	view, glance
das Einzelzimmer	single room
die Ermäßigung	reduction
die Fahrt	journey
der Bahnsteig	platform
die Fahrradvermietung	bicycle hire
das Gepäck	luggage
die Jugendherberge	youth hostel
die Öffnungszeiten	opening hours
die Reise	journey
die Halbpension	half board
das Meer	sea
der Flug	flight
der Koffer	suitcase
der Notausgang	emergency exit
der Stadtbummel	stroll through town; window shopping



### Key Vocabulary

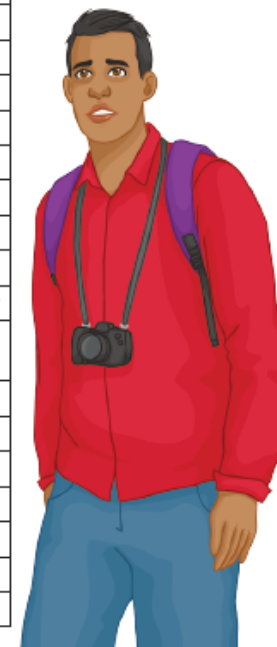
#### Key Phrases

Man braucht die Ferien, um zu + infinitive	You need a holiday in order to...
Ich mache gern / Ich mache nicht gern Urlaub, weil...	I like/I don't like to go on holiday because...
Ich mache lieber Urlaub im Ausland/im Inland	I prefer to have a holiday abroad/at home
Ich mache nicht gern Urlaub mit meiner Familie, da...	I don't like to go on holiday with my family as...
Ein Urlaub im Ausland/im Inland bietet viele Vorteile	A foreign holiday/holiday at home has lots of advantages
Man kann neue Kulturen erfahren	You can experience new cultures
Man kann die Sprachkenntnisse verbessern	You can improve your languages
Man kann neue Leute kennenlernen	You can get to know new people
Man kann Spaß haben	You can have fun
Das Wetter im Urlaub/Die Geschichte des Landes ist mir wichtig	The weather/history of the country is important to me on holiday
Ich mache gern einen Familienurlaub/Partyurlaub/Strandurlaub/ Sporturlaub/Stadturlaub	I like to go on a family/party/beach/sports/city holiday
Im Urlaub besuche ich gern die Sehenswürdigkeiten	On holiday I like to visit the sights
Im Urlaub gehe ich gern zum Strand	On holiday I like to go to the beach
Im Urlaub genieße ich die einheimische Küche	On holiday I enjoy the local cuisine
Mein Traumurlaub wäre nach ... zu fahren	My dream holiday would be to travel to...
Letztes Jahr bin ich nach ... gefahren	Last year I went to...
Das Wetter/Die Unterkunft war...	The weather/The accommodation was...
Ich habe vor, nächstes Jahr nach ... zu fahren	I intend to go to ... next year

#### Die Adjektive

beliebt	popular
örtlich	local
sehenswert	worth seeing
seekrank	sea sick
weg	away
frei	available, free
inbegriffen	included, inclusive of
besetzt	occupied
flach	flat

Infinitiv	Präsens	Perfekt	Futur
gehen - to go	ich gehe; du gehst; er geht; sie geht; wir gehen	ich bin gegangen; du bist gegangen; er ist gegangen; sie ist gegangen; wir sind gegangen	ich werde gehen; du wirst gehen; er wird gehen; sie wird gehen; wir werden gehen
machen - to do	ich mache; du machst; er macht; sie macht; wir machen	ich habe gemacht; du hast gemacht; er hat gemacht; sie hat gemacht; wir haben gemacht	ich werde machen; du wirst machen; er wird machen; sie wird machen; wir werden machen
fahren - to travel	ich fahre; du fährst; er fährt; sie fährt; wir fahren	ich bin gefahren; du bist gefahren; er ist gefahren; sie ist gefahren; wir sind gefahren	ich werde fahre; du wirst fahren; er wird fahren; sie wird fahren; wir werden fahren
besuchen - to visit	ich besuche; du besuchst; er besucht; sie besucht; wir besuchen	ich habe besucht; du hast besucht; er hat besucht; sie hat besucht; wir haben besucht	ich werde besuchen; du wirst besuchen; er wird besuchen; sie wird besuchen; wir werden besuchen





## Travel and Tourism GCSE Higher Tier German Knowledge Organiser

### Key Questions

1. Ist es wichtig, einen Urlaub zu machen?	Is it important to go on holiday?
2. Was sind die Vor- und Nachteile eines Urlaubs im Ausland?	What are the pros and cons of foreign holidays?
3. Wo verbringst du normalerweise deine Ferien?	Where do you normally spend your holidays?
4. Welcher Urlaubstyp bist du?	What kind of holiday appeals to you?
5. Was hast du letztes Jahr in den Sommerferien gemacht?	What did you do last year in the summer holidays?
6. Wie bist du dorthin gefahren?	How did you travel /get there?
7. Wohin wirst du nächstes Jahr fahren?	Where will you go next year?
8. Beschreib dein Traumreiseziel.	Describe your dream holiday destination.

### False Friends

die Pension	(small) hotel
der See	lake (die See = the sea)



### Useful Grammatical Structures

In order to list activities that you can do on holiday, use simple phrases, e.g. **Man kann** (you can) with an infinitive at the end; **um ... zu** with an infinitive at the end.

Examples include **Man kann schwimmen gehen** (You can go swimming); **Ich fahre nach Frankreich, um die Kultur zu erleben** (I go to France to experience the culture).

Vary your future tense holiday ideas with **Nächstes Jahre hoffe ich/habe ich vor nach ... zu fahren** (Next year I hope to/intend to go to...).

Don't forget to use the **zu + infinitive** construction.

Use different subordinating conjunctions to extend your opinions on why you go on holiday. In addition to **weil** (because) you can use **da** (as), **ich denke dass** (I think that).

Use prepositional set phrases to describe things like weather/conditions on a past holiday. Examples include **trotz des Wetters + verb** (despite the weather) or **wegen des Wetters + verb** (on account of the weather); **während des Sommers + verb** (during the summer); **anstatt eines Hotels** (instead of a hotel); **trotz der Jahreszeit** (despite the time of year).



### Tricky Pronunciation

Practise these with your teacher!

Ich mache lieber	Don't stress the r.
die Sehenswürdigkeiten	Pay attention to the ü.
wichtig / Wetter	Pay attention to the pronunciation of w in German.

### Tricky Spellings

wäre (would be)	Don't forget the ä.
letztes (last)	Not letztes!



