BRISTOL METROPOLITAN ACADEMY

# Knowledge Organisers 2021-22

# Year 9 – Term 1

| | |
|---|---|
| 6th September 2021 | Week A |
| 13th September 2021 | Week B |
| 20th September 2021 | Week A |
| 27th September 2021 | Week B |
| 4th October 2021 | Week A |
| 11th October 2021 | Week B |
| 18th October 2021 | Week A |

Complete your homework on the night stated e.g. if it is a Monday week A you will complete DT and English homework.

| | **Week A** | **Week B** |
|---|---|---|
| **Monday** | English/DT | MFL |
| **Tuesday** | Maths/Drama | ICT/PE |
| **Wednesday** | Science | English |
| **Thursday** | RS/Music | Geography/Art |
| **Friday** | History | Maths |

# How to use your knowledge organiser

**Top tips:**
1. Focus on the information you are most unsure of first
2. Follow the timetable in your homework book to make sure you are revisiting subjects equally
3. Don't panic if you don't remember all the information first time, keep revisiting it
4. You can ask your parents/carers to test you/check your work

## Look

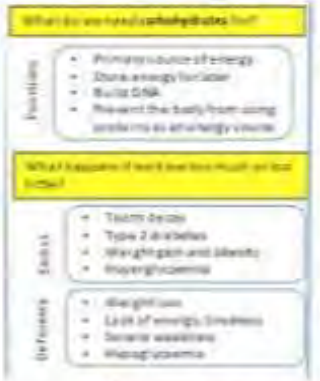
What topic/subject are you focusing on?

What task have you been set?

## Self quizzing

You need to create 5 questions (with their answers) about the content on the knowledge organisers.

Top tip! Use subject specific language e.g. function. If you aren't sure what they mean, look it up, ask an adult or ask your teacher.



Questions you might consider:

1. What is a key function of carbohydrates?

It is our primary source of energy.

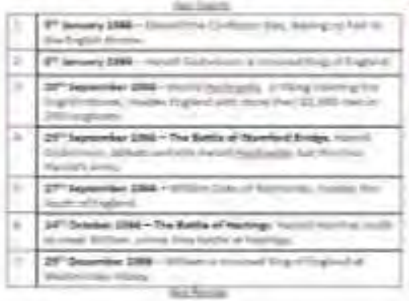
## Write

Complete the task in your homework book.

Make sure to write the date, subject and topic you are focusing on (and underline them).

## Revision

Here you are recording key facts/concepts to help you remember them.



You might write these key events out like a timeline.

Key events

**5th January 1066** Edward the Confessor dies, leaving no heir to the English throne.

**6th January 1066** Harold Godwinson is crowned King of England

## Keyword/theme development

Here you are focusing on keywords/ themes and practising memorising them.

| Key Terms | Definitions |
|---|---|
| State of matter | Matter is divided into three states: solid, liquid and gas |
| Melting | Change of state from solid to liquid |
| Freezing | Change of state from liquid to solid |
| Evaporation | Change of state from liquid to gas |
| Condensation | Change of state from gas to liquid |

Copying these words into your book can help you to remember them.

## Check

Once you have finished go back and check your work against the knowledge organiser. Make any corrections crossing out mistakes with a single line.

Why not ask someone at home to check your work with you?

**Contents:**

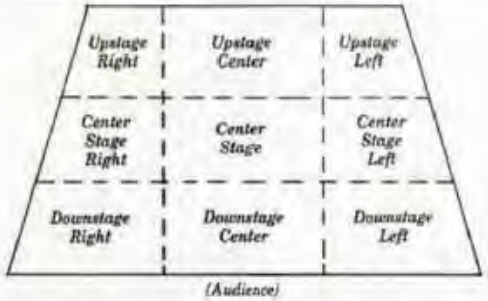
DRAMA

# Stage Configurations

KS4 Knowledge Organiser

**Stage positioning**

Where actors stand while onstage.




## Thrust

A **thrust stage** extends into the audience on three sides and is connected to the backstage area by its upstage end. A thrust has the benefit of greater intimacy between performers and the audience, while retaining the utility of a backstage area. Entrances onto a thrust are most readily made from backstage, although some theatres provide for performers to enter through the audience.


## Promenade

**Promenade theatre** is extremely versatile. With no formal stage, and the audience and actors occupying the same space, it allows for experimentation with both new and old plays and explores what the theatrical experience can entail for an audience. In moving the audience around throughout the performance, promenade theatre also pushes boundaries of setting in a way that can't be achieved in regular theatre.

## Proscenium Arch

An arch framing the opening between the stage and the auditorium. This create a 'window' around the scenery and performers. IT gives everyone in the audience a good view because the performers need only focus on one direction rather than continually moving around the stage to give a good view from all sides. A proscenium theatre layout also simplifies the hiding and obscuring of objects from the audiences view (sets, performers not currently performing, and theatre technology). End on staging is a proscenium without the wings and picture frame.

## Traverse

Audience is predominantly on two sides of the stage, facing towards each other. Also known as alley or corridor stage. Sometimes on end of the stage space may also end in audience, making it similar to thrust or three-quarter round stage. Other times, the ends of the stage are much larger than the traverse stage itself allowing for more space for actors, sets and scenery.


## In-the-Round

The audience is seated in a circle around the **stage** or on at least three of its sides. The stage is always in the centre with the audience arranged on all sides. Actors entering and exiting through the audience from different direction.

# KS4 Knowledge Organiser

## Theatre Roles

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

## Genre/Style

**Naturalistic/ Naturalism** – Attempts to depict things realistically.

**Realism -** Attempts to depict things as they actually are

**Physical Theatre** - The body is at the heart of the storytelling

**Musical Theatre** – Singing, dancing and acting. For example: Musicals

**DocuDrama** – A piece of theatre based on a real-life event

**Tragedy** – Sad or shocking

**Historical** – Based on a real-life historical event. For example WW1

**Theatre in Education** – Theatre that goes into school to educate students about a social or personal issue.

# Year 9 D&T – Term 1 – Pewter Project

Select one symbol from the selection above.

Create a logo for a product/company of your choice using your chosen symbol.

You can achieve this by modifying your chosen symbol by applying a range of composition techniques to develop its shape, form, and visual appeal. Be as creative as possible.

Logo design principles

1. Simple - needs to be easily identifiable at a glance.
2. Memorable – should be easily recalled after just one look.
3. Original – Create a unique design that cannot be confused with another.
4. Timeless - should be modern yet timeless and should avoid trends.
5. Versatile - can be used in a variety of sizes and colours.
6. Appropriate - should be appropriate for the intended audience.

Keywords

**Malleable** – able to be hammered or pressed into shape without breaking
**Innovative-** new and original
**Analysis** - detailed examination of the something
**Annotation-** analysis added to a text or diagram
**Alloy** - a metal made by combining two or more metallic elements

## What is Pewter?

Pewter is a malleable metal alloy consisting of tin, antimony, copper, bismuth, and sometimes silver. Modern pewter consists of are 94% tin.

Pewter has a low melting point (around 170–230 °C) making it ideal for melting on a chip forge and brazing hearth and casting.

## 2D Design Basic Tools

2D DESIGN

SELECT – Use this tool to select different to highlight objects.

LINE – This tool creates straight lines. Click to start the line, extend out and click to finish.

CIRCLE – This tool creates circle shapes. Click to start the circle, extend to the size needed and click to finish.

PATH – This tool creates curved lines through continual clicks.

RECTANGLE – This tool can be used to create both rectangular and square shapes.

TEXT – Use this tool to insert text onto your designs. The font, size and direction of the text can be changed.

DELETE PART – Use this tool to delete separate lines and objects.

DELETE ANY – Use this tool to delete whole lines and objects.

## Isometric Drawing Shows Objects at 30°

1) Isometric drawing can be used to show a 3D picture of an object.
2) It doesn't show perspective (things don't get smaller in the distance), but it's easy to get dimensions right.
3) There are three main rules when drawing in isometric:

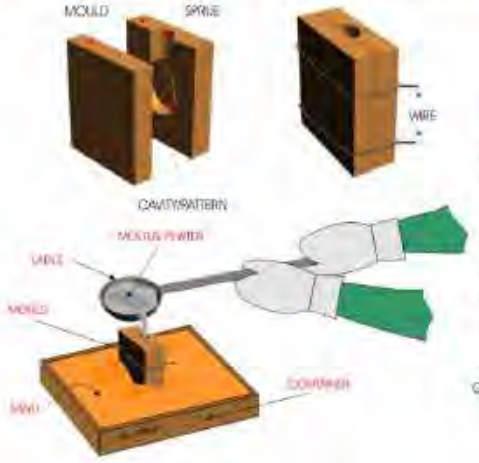
## Crating Can Be Used to Draw 3D Shapes

Crating is where you start by drawing a box — the 'crate' — and gradually add bits on and take bits off till you get the right shape. For example, you can remove sections from a cuboid to make any other 3D shape.

1) When you're sketching a 3D object, it's easier if you imagine it as a basic shape.
2) First draw the basic geometric shape faintly.
3) Stick to a particular drawing technique — isometric drawing, for example.
4) The object can then be drawn within the box.
5) Details of the object can be added by drawing more geometric shapes on top.

## CAD/CAM

CAD stands for Computer Aided Design.
It involves designing products on a computer, rather than using a pencil and paper.
CAD packages include 2D drawing software (e.g. Adobe® Illustrator®, CorelDRAW®, TechSoft 2D Design® and ArtCAM®) and 3D modelling software (e.g. SolidWorks®).
CAD helps designers model and change their designs quickly. It's easy to experiment with alternative colours and forms and you can often spot problems before making anything.
In 3D programs, you can view the product from all angles.
CAM stands for Computer Aided Manufacture.
It's the process of manufacturing products with the help of computers.
CAD software works out the coordinates of each point on the drawing. These are called x,y,z coordinates — x is the left/right position, y is forwards/backwards and z is up/down. The point where x, y and z meet is (0,0,0) — the datum.
CAM machines are computer numerically controlled (CNC) — they can follow the x,y,z coordinates and move the tools to cut out or build up your design.
For example, some milling machines are CAM machines. They remove material from a larger piece of material to shape and create a product.




## Jewellers Clamp

## Wire Wool

## Needle Files

## Metalworking Vice

## Polishing Machine

## Silicon Carbide Paper

## Safety Gear


## Evaluation

Designers evaluate their finished products or prototypes in order to test whether they work well and if the design can be corrected or improved. Whatever you have designed it is important to evaluate your work constantly during the project.
Evaluation can take a variety of forms:

- General discussion with other pupils, staff and others.
- Questionnaires / surveys carried out at any time during the project.
- Your personal views, what you think of existing designs.
- Most important of all - what do you think of your designs, prototypes and finished products ?
- Can you think of any other ways of evaluating your work ?

ENGLISH

# Unit 1: The War of The Worlds

## H.G. Wells (1866-1946)

- 'The Shakespeare of Science Fiction.'
- Time Machine was his 1st Novel
- He was a scientific journalist/sociologist/ developed interest in political reform later.
- Wanted the world to become 1 state.
- Draper. Teacher. Lecturer.

## The War of The Worlds

- can be seen as a **critique of the British Empire**, particularly with regards to the Tasmanians who were wiped out by European colonists.

## What factors led to the formation of the sci-fi genre?

- **Mary Shelley** – the mother of science fiction – wrote one of the first novels of sci-fi, Frankenstein, in 1818. One of the narrators, Frankenstein, is a scientist who brings a monster to life by using galvanism.
- The **rise of the sci-fi genre** evolved in the C19th due to new technological innovations caused by the **Industrial Revolution** and an **increased awareness of science** – most notably galvanism, inoculation and blood transfusions.

## Quotations

| | |
|---|---|
| 'The sun was setting' | |
| A barrow of ginger beer amongst other deserted vehicles was left.' | |
| 'Arrows against the lightening' | |
| 'What good is religion if it collapses under calamity?' | |
| "This isn't a war... It never was a war, any more than there's war between men and ants." | |
| No one would have believed...this world was being watched keenly and closely by intelligences greater than man's | |
| And before we judge of them too harshly we must remember what ruthless and utter destruction our own species has wrought.' | |

## SPAG

A semi-colon (;) is used to separate two main clauses (sentences). It replaces conjunctions such as and AND but. Remember FANBOYS? Example sentence: *The teacher joked; the pupil laughed.*

## Tier 3 vocabulary

**Connotation** a feeling, idea or image a word evokes.

**Foreshadowing:** clues provided by the writer to pre-empt an event.

**Juxtaposition:** contrast which occurs in close proximity (within a small space)

**Motif:** a repeated symbol

**pathetic fallacy:** the use of weather to indicate mood/a means for foreshadowing.

**Tension:** a feeling of anxiety a character/ reader experience in anticipation of an event.

**Epistrophe:** repetition which occurs at the end of the sentence.

## Tier 2 vocabulary

| | |
|---|---|
| prescient | Ethical |
| Scrutinise | Unethical |
| Complacent | Savage |
| Terrestrial | Civilised |
| Inferior | Jingoistic |
| Superior | Façade |
| Imperialism | Social hierarchy |
| Missionary | Innovation |
| Perish | Colonialism |
| Disillusionment | Obliterate |
| Apocalyptic | Pessimistic |
| Optimistic | Annihilate |
| Extra-terrestrial | |

## Themes

***Warfare and fear*** - the Martian's weaponry were HG Wells' predictions for the future of warfare - chemical warfare, laser-like weapons, and industrial robots.

***Imperialism*** – *the Martian's invasion of earth mirrors that of the British empire.*

***Destruction of civilisation/social Darwinion*** - *the novel* explores this theory by suggesting that all humanity, regardless of strength or social class, suffers collectively under the Martians' rule. It forces its readers to revise their view of humanity's place in the universe.

## What do we need **proteins** for?

**Functions**
- Build enzymes and hormones
- Build cell membranes
- Repair and maintain tissues
- Defend the body (antibodies)
- Secondary source of energy

## What happens if we have too much or too little?

**Excess**
- Kidney and liver diseases
- Weight gain

**Deficiency**
- Kwashiorkor
- Slowing growth rate
- Swelling

### Protein alternatives

**Vegetarians** and **vegans** don't consume meat so instead they use protein alternative products which are manufactured in order to provide protein in a diet and protein rich foods.


Soy chunks

Tofu

Textured vegetable protein (TVP)

Tempeh

Beans, lentils, chickpeas

## What do we need **carbohydrates** for?

**Functions**
- Primary source of energy
- Store energy for later
- Build DNA
- Prevent the body from using proteins as an energy source

## What happens if we have too much or too little?

**Excess**
- Tooth decay
- Type 2 diabetes
- Weight gain and obesity
- Hyperglycaemia

**Deficiency**
- Weight loss
- Lack of energy, tiredness
- Severe weakness
- Hypoglycaemia

## What do we need **fats** for?

**Functions**
- Source of energy
- Insulation
- Dissolve vitamins
- Build hormones
- Build cell membranes

## What happens if we have too much or too little?

**Excess**
- Obesity
- Hypertension
- Coronary heart disease
- Fatty liver disease
- Type 2 diabetes

**Deficiency**
- Weight loss
- Vitamin deficiency
- Heart disease
- Feeling cold

There are two different types of fats

Saturated

Unsaturated

## Macros

**Protein**

Build & Protects Muscle

**Fat**

Provides Long Lasting Energy

**Carbs**

Quickest Source of Energy

## Micros

**Vitamins**

Made by Plants & Animals

**Minerals**

Consumed by Plants & Animals

## Visible fats

Fats you can see, such as on meat are often saturated.

## Invisible fats

Unsaturated fats you cannot see, such as in nuts and avocados. They are often good for the brain,

Butter

Cream

Eggs

Olive oil

Avocado

## Micronutrients

Vitamins and minerals are essential nutrients that your body needs in small amounts to work properly.

**Fat-soluble vitamins**
Fat-soluble vitamins (vitamin A, D, E and K) are mainly found in: animal fats, vegetable oils, dairy foods, liver and oily fish
While your body needs these vitamins to work properly, you don't need to eat foods containing them every day.

**Water-soluble vitamins**
Water-soluble vitamins (vitamin C, the B vitamins and folic acid) are mainly found in:
fruit and vegetables, grains, milk and dairy foods
These vitamins aren't stored in the body, so you need to have them more frequently.
If you have more than you need, your body gets rid of the extra vitamins when you urinate.

**Minerals**
Minerals include calcium and iron amongst many others and are found in:
Meat, cereals, nuts, fish, milk and dairy foods, fruit and vegetables.

Minerals are necessary for 3 main reasons:
Building strong bones and teeth
Controlling body fluids inside and outside cells
Turning the food you eat into energy

# Year 9- Food

## Food Fortification

During processing, many food products lose their nutritional value.
**The function of fortification is to:**
- Restore nutritional value of foods.
- Improve nutritional value of foods.
- Make food more suitable for certain groups of consumers.
- Prevent diseases caused by malnutrition.

Some foods are fortified by law:

| | | |
|---|---|---|
| Wheat, flour and bread | Thiamine | To prevent beriberi disease, help release energy from food. |
| | Niacin | To prevent pellagra, help release energy from food. |
| | Calcium | To prevent rickets and osteoporosis. |
| | Iron | To prevent iron deficiency anaemia. |
| Vegetable fat spreads | Vitamin A | To prevent growth and eyesight issues, such as night blindness. |
| | Vitamin D | To prevent rickets and osteoporosis. |
| Semi-skimmed and skimmed milk | Vitamin A | To prevent growth and eyesight issues, such as night blindness. |

Other foods, such as cereals and fruit juices, are fortified voluntarily.

FRENCH

# 9.9 Technology and Media

| Technology verb infinitives | |
|---|---|
| supprimer | to delete, erase |
| charger | to load |
| tchatter | to chat online |
| poster des photos | to post photos |
| communiquer | to communicate |
| répondre | to answer |
| créer | to create |
| donner | to give |
| télécharger | to download |
| envoyer | to send |
| functionner | to work, to function |
| enregister | to save |
| parler | to speak, to talk |
| surfer sur Internet | to surf the internet |
| pouvoir | to be able to |
| recevoir | to receive |
| prendre des photos | to take photos |
| regarder en streaming | to stream |
| utiliser | to use |

| Technology nouns | |
|---|---|
| Un dossier | file |
| Un courrier indésirable | spam, junk mail |
| Un courrier électronique | email |
| Un disc dur | hard drive |
| Un jeux | game |
| Un texto/un SMS | text message |
| Un téléphone portable | mobile/smartphone |
| Un ordinateur | computer |
| Un ordinateur portable | laptop |
| Un jeux-vidéo | video game |
| Une chanson | song |
| Un écran | screen |
| Internet | internet |
| Un réseau social | social network |
| Une magazine (digitale) | (digital) magazine |
| Un salon de discusión | chat room |
| Una tablette | tablet |
| La technolgoie | technology |

| Technology adjectives | |
|---|---|
| ennuyeux/se | boring |
| vieux/vieille | old |
| animé(e) | exciting |
| confus | confusing |
| court(e) | short |
| à la mode | fashionable |
| lent(e) | slow |
| divertissant(e) | entertaining |
| effrayant(e) | scary |
| estimulant(e) | stimulating |
| informatif/ve | informative |
| interéssant(e) | interesting |
| inutile | useless |
| longue | Long |
| dangereux/se | dangerous |
| pratique | practical |
| rapide | fast |
| ridicule | ridiculous |
| casse(e) | broken |
| utile | useful |

Dans le passé C'était Il y avait J'utilisais J'étais Mais maintenant C'est Il y a

| TV Genres | |
|---|---|
| les comédies | comedies |
| les jeux télévisés | quiz shows |
| les documentaires | documentaries |
| les infos | the news |
| les programmes de sport | sports programmes |
| les séries policières | police shows |
| les feuilletons | soap operas |

| The Imperfect | |
|---|---|
| Dans le passé | In the past |
| C'était | It was |
| Il y avait | There was |
| J'utilisais | I used to use |

| Film genres | |
|---|---|
| Les films d'action | action films |
| Les films d'amour | romantic films |
| Les films de science fiction | sci-fi films |
| Les films dramatique | dramatic films |
| Les films à suspense | Suspense/thriller films |
| Les films d'horreur | horror films |

# 9.9 French Technology and Media Knowledge Organiser

**3 time frames**
**Infinitives**
**Time phrases and connectives**
**Negative constructions**
**Opinions and justifications**
**Comparatives and superlatives**

**Comparatives – to express more or less than**
**… c'est plus…adjective…que** - is more…adjective…than
**… c'est moins …adjective ….que** - is less…adjective… than
**… c'est aussi…adjective….que** – is as…adjective…as
***For example:***
*Il est* **plus** *grand* **que** *son frère. (He is taller (more tall) than his brother.))*
*Cette maison est* ***moins*** *grande* ***que*** *notre maison. (This house is smaller (less big) than our house.))*
*Ce chien est* ***aussi*** *grand* ***que*** *mon chat. (This dog is as big as my cat).*

**Make a French comparison from good to better or from bad to worse:**
Like in English the words for bad and good are irregular . Good > better (bon > **mieux**) and bad>worse (mauvais > **pire**).
***For example:***
Cette pizza est **mieux que** l'autre. (This pizza is better than that other one.)
La grippe est **pire qu'**un rhume. (Flu is worse than a cold)

**Notice that the adjective always agrees with the first noun*

**Superlatives – to express the biggest, the most interesting etc…**
**… c'est le/la/les plus + adjective** – is the most + adjective
**….c'est le/la/les moins + adjective** - is the least + adjective
***For example:***
***La plus*** *intelligente de la classe (the most intelligent in the class)*
***Le moins*** *grand de la famille (the shortest (least tall) in the family)*

**Adjectives** describe nouns e.g. a **blue** phone.
In French, adjectives normally go after the words they are describing e.g. un portable bleu (a blue mobile phone) and they have to agree with the noun they are describing.
In French, adjectives must agree with the noun (or pronoun) they describe in gender and in number. This means that if the noun an adjective describes is feminine, the adjective must be feminine e.g. une télévision noire (a black televisión). If that same noun is also plural, the adjective will be feminine AND plural as well e.g. les télévisions noires (black televisions).

| Opinion phrases | |
|---|---|
| À mon avis | In my opinion |
| Je pense que | I think that |
| Je crois que | I believe that |
| Je dirais que | I would say that |
| Personellement | Personally |
| Je considère que | I consider that |
| De mon point de vue | From my point of view |
| Je le/les trouve | I find it / them |

| Connectives | |
|---|---|
| et | and |
| mais | but |
| parce que | because |
| çependant | however |
| en plus | furthermore |
| par exemple | for example |
| ensuite | then |
| finalement | finally |
| néanmoins | nevertheless |

| Time phrases | |
|---|---|
| Aujourd'hui | Today |
| Normalement | Normally |
| De temps en temps | Sometimes |
| Le weekend | On the weekend |
| (Deux) fois par semaine | (Twice) a week |
| Souvent | Often |
| Toujours | Always |
| | |
| Hier | Yesterday |
| Avant-hier | The day before yesterday |
| La semaine dernière | Last week |
| Le weekend dernier | Last weekend |
| Le mois dernier | Last month |
| L'année dernière | Last year |
| Hier soir | Last night |
| Il y a (deux jours/ans) | (Two days/years) ago |
| | |
| Demain | Tomorrow |
| À l'avenir | In the future |
| Le weekend prochain | Next weekend |
| La semaine prochaine | Next week |
| L'année prochaine | Next year |

# GEOGRAPHY

## Can you make a decision?

Decision making is a key skill in geography – and in life! This theme is all about developing your ability to process information, apply your own understanding and justify your opinions.

### Key Geographical Words

| | |
|---|---|
| Stakeholders | Individuals or groups of people interested or invested in something |
| Sustainability | When something can continue into the future with little or no change / impact |
| Social | Relating to people and/or society |
| Economic | Relating to money and/or the economy of a place |
| Environmental | Relating to the natural surroundings of a place or the world's natural environment |
| GIS | Geographical Information Systems – layers of numerical data over spatial maps |
| Flooding | When a river overflows its banks, or the sea level rises and causes water to go where it would not normally be |
| Renewable Energy | Energy and power from sources that will not run out e.g. solar, wind, hydroelectric |

### Understanding the Issue

In order to make good decisions you have to be **well-informed**.

This is why geographers spend a lot of time **information gathering** and **conducting investigations.**

The more information you have, the better you will understand the issue. This is important as it helps you **find a solution**

When presented with information it is helpful to:

- **Skim read** it and assess what you have in front of you
- **Choose** sections to read thoroughly
- **Organise** the information based on what it tells you

### Assessing the options

When presented with options or solutions, it is important to **weigh up** the **evidence** that supports or goes against each option.

This can easily be done using a table layout →

Sometimes applying a score helps to make the final decision

| | + | - | Score /10 |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

### Writing a response

The written response needs to include:

- Your decision (first sentence/paragraph)
- Supporting evidence
- Reasons for dismissing alternative options

Write in well-structured paragraphs:

Point – make a statement
Evidence – use data / evidence to support your point
Explain – demonstrate your geographical understanding of the issue
Link – back to other points and your choice

**Causes of WW1 background:** Historians disagree about what caused the First World War. Due to the MAIN causes of WW1 the 'balance of power' between the nations of Europe became unstable. It was a global conflict involving the main European powers and their empires from August 1914 to November 1918.

## Key Events

| | |
|---|---|
| 1 | **1879** – Dual Alliance between Germany and Austria-Hungary signed. |
| 2 | **1882** – **Triple Alliance** formed when Italy joined the Dual Alliance. |
| 3 | **1904** – Entente Cordiale signed between Britain and France. |
| 4 | **1905** – Germany creates the **Schlieffen Plan** to avoid facing a war on two fronts. |
| 5 | **1906** – Britain launces HMS Dreadnought, starting the **Naval Arms Race.** |
| 6 | **1907** – Russia joins the alliance with Britain and France, becoming the **Triple Entente.** |
| 7 | **28th June 1914** – **Assassination of Archduke Franz Ferdinand.** |
| 8 | **28 July 1914** – Austria-Hungary declares war on Serbia **WW1 began.** |
| 9 | **1st August 1914 –** Germany declares war on Russia. |
| 10 | **2nd August 1914** – France mobilises in support of Russia. |
| 11 | **3rd August 1914** – Germany declares war on France. |
| 12 | **4th August 1914** – **Britain** declares war on Germany. |

## Key People

| | | |
|---|---|---|
| 13 | Franz Ferdinand | Heir to the throne of Austro-Hungarian Empire. Assassinated by Gavrilo Princip. |
| 14 | Gavrilo Princip | A Bosnian Serb from a peasant family, who succeeded to kill Franz Ferdinand, the trigger event for World War One. |
| 15 | Kaiser Wilhelm II | The Kaiser was the official head (Emperor) of Germany before and during World War 1. |

# History – Year 9 Knowledge Organiser Term 1 Causes of WW1

## MAIN Causes of WW1

**M: Militarism:** A country wanting to have a strong army and navy.
**A: Alliances**: A group of countries that promise to protect and support each other.
**I: Imperialism:** A act of growing an empire. This brought conflict with other countries keen to expand their empires.
**N: Nationalism:** The belief that your country is stronger and better than others.

Find out more:
https://www.bbc.co.uk/bitesize/guides/z4n4jxs/revision/1

## Key Historians

| | |
|---|---|
| Max Hastings | A **military historian** who believes Germany was to blame for the start of WW1. |
| Gerhard Hirschfeld | A **modern historian** who believes that WW1 was due to the countries in alliances. |
| Richard Evans | A **modern historian** who believes that the Serbians are to blame for the start of WW1. |

## Key Terms

| | | |
|---|---|---|
| 17 | The Triple Alliance | The Triple Alliance was the treaty by which Germany, Austria-Hungary and Italy agreed to support each other militarily in the event of an attack against any of them. |
| 18 | The Triple Entente | The Triple Entente was a diplomatic and military agreement between France, Great Britain, and Russia, formed in part as a response to the formation of the Triple Alliance. |
| 19 | Black Hand Gang | Serbian Nationalist group aimed to unite all Serbian people in a Greater Serbia. |
| 20 | Naval arms race | The race between Germany and Great Britain between from 1906 to 1914 following Britain launched the first dreadnought a ship that meant all others were redundant before its awesome fire power. |
| 21 | Schlieffen plan | The German idea to avoid a war on two fronts. It would quickly defeat France. It assumed the Russian's would be slow to mobilise. The plan did not work. |

## Key Skills

Source A: The man in the bath is Kaiser Wilhelm, the leader of Germany.

| | | |
|---|---|---|
| 22 | Interpretation | a viewpoint or opinion. *What viewpoint is being given in the source about the cause of WW1?* |
| 23 | Long term cause | Factors or causes which happen a long time before an event takes place. |
| 24 | Short term cause | Factors or causes which happen just before an event takes place. Usually a catalyst. |

MATHS

## Key ideas

- To be able to round to a set number of decimals places or significant figures
- To be able to estimate to a sensible degree of accuracy
- To be able to write numbers in index form
- To be able to use a calculator to find powers and roots

## Rounding and Estimating

**Decimal Places:** The number of digits in a number after the decimal point

**Significant Figures:** The digits that have meaning or contribute to the value of the number


**Rounding:** Approximating a number to a specified degree of accuracy, e.g. to the nearest 10

**Round 248.561 to 1 decimal place, then 2 decimal places.**

- 248.5|6|1 to 1 decimal place is 248.6
- 248.56|1| to 2 decimal places is 248.56

Notice that your answer should have the same number of decimal places as the approximation asked for.

**Round 53,879 to 1 significant figure, then 2 significant figures.**

- 5|3|879 to 1 significant figure is 50,000
- 53|8|79 to 2 significant figures is 54,000

Notice that the number of significant figures in the question is the maximum number of non-zero digits in your answer.

**Estimate:** Approximating the value of calculation by rounding the numbers

Estimate the value of $23 \times 67$.

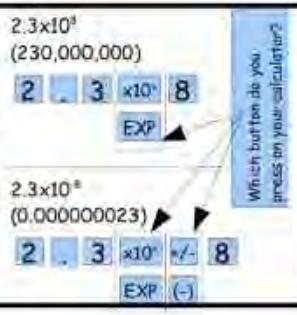
Rounding to 1 significant figure gives: $20 \times 70 = 1,400$

Therefore: $23 \times 67 \approx 1,400$

## Key ideas

- Investigate positive and negative powers of 10
- Work with numbers in standard form
- Mentally calculate with numbers in standard form
- Use operations with standard form
- Use a calculator to work with numbers in standard form
- Use negative/fractional indices

We can also write numbers in standard form on a calculator




- A number is converted into **standard form** when the number is very large or very small, this mainly used in science and astronomy.
- The format of a number in standard form consists of a number between 1 and 10 but **cannot be 10,** multiplied by a power of 10.

$$(1 \leq x < 10) \times 10^n$$

- Converting a **very small number into standard form**: Size of a bacteria is 0.00000037

$$0.00000037 = 3.7 \times 10^{-7}$$

- Converting a **very large number into standard form**: Distance from Earth to the sun is 147100 million metres

$$147,100,000,000 = 1.471 \times 10^{11}$$

- Converting into a **small ordinary number**

$$2.4 \times 10^{-6} = 0.0000024$$

- Converting into a **large ordinary number**

$$5.67 \times 10^9 = 5\,670\,000\,000$$

Common mistakes:

- When not in standard form but in the same format as the number is not between $1 \leq x < 10$

(too big) $76.18 \times 10^6 = 7.618 \times 10^7$ and (too small) $0.12 \times 10^{-6} = 1.2 \times 10^{-7}$

When the **number is getting smaller the power gets bigger**, and when the **number gets bigger the power gets smaller.**

## Powers of 10

| | | |
|---|---|---|
| $10^6$ = | 1,000,000 | Mega (M) |
| $10^5$ = | 100,000 | |
| $10^4$ = | 10,000 | |
| $10^3$ = | 1,000 | Kilo (K) |
| $10^2$ = | 100 | |
| $10^1$ = | 10 | |
| $10^0$ = | 1 | |

| | | |
|---|---|---|
| $10^0$ = | | 1 |
| $10^{-1}$ = | | 0.1 |
| $10^{-2}$ = | centi (c) | 0.01 |
| $10^{-3}$ = | milli (m) | 0.001 |
| $10^{-4}$ = | | 0.0001 |
| $10^{-5}$ = | | 0.00001 |
| $10^{-6}$ = | micro (μ) | 0.000001 |

When **adding or subtracting** numbers in standard form the numbers must be converted into the ordinary numbers

$$(2.3 \times 10^4) + (6.4 \times 10^3) =$$
$$23000 + 6400 =$$
$$29400 = 2.94 \times 10^4$$

When **multiplying** numbers in standard form the format stays the same. We can use **index laws** to help us.

$$(1.5 \times 10^3) \times (3 \times 10^5) =$$
$$4.5 \times 10^{3+5} =$$
$$4.5 \times 10^8$$

1. Multiply the numbers together e.g. $1.5 \times 3 = 4.5$
2. Multiply the powers of ten together e.g. $10^3 \times 10^5 = 10^8$

When **dividing** numbers in standard form the format stays the same. We can use **index laws** to help us.

Dividing the numbers e.g. $2.5 \div 5 = 0.5$
Dividing the powers of ten e.g. $10^{11} \div 10^{13} = 10^{-2}$

$$(2.5 \times 10^{11}) \div (5 \times 10^{13}) =$$
$$0.5 \times 10^{-2} =$$
$$5 \times 10^{-3}$$

This is not complete standard form, we multiply 0.5 by $10^2$ and therefore the power reduces by 1.

## Indices

The **exponent** of a number says **how many times** to use the number in a multiplication.

In $8^2$ the "2" says to use 8 twice in a multiplication, so $8^2 = 8 \times 8 = 64$

***Exponents are also called Powers or Indices.***

exponent (or index, or power)

$8^2$

base

Exponents make it easier to write and use many multiplications

$a^n$ tells you to multiply **a** by itself, so there are **n** of those **a**'s: $a^n = \underbrace{a \times a \times \ldots \times a}_{n}$

What about if it's a negative exponent? What could be the opposite of multiplying?

A **negative** exponent means how many times to **divide** one by the number.

For example: $5^{-3} = 1 \div 5 \div 5 \div 5 = 0.008$

But that can be done an easier way:

$5^{-3}$ could also be calculated like:

$1 \div (5 \times 5 \times 5) = 1/5^3 = 1/125 = 0.008$

**This makes sense if we look at the pattern of powers of 5**

**Example: Powers of 5**

| | | |
|---|---|---|
| | ... etc. | |
| $5^2$ | 1 x 5 x 5 | 25 |
| $5^1$ | 1 x 5 | 5 |
| $5^0$ | 1 | 1 |
| $5^{-1}$ | 1 ÷ 5 | 0.2 |
| $5^{-2}$ | 1 ÷ 5 ÷ 5 | 0.04 |
| | ... etc. | |

5x Larger

5x Smaller

## Expanding brackets

Expand & Simplify:

$3(x+2)$

| × | $x$ | $+2$ |
|---|---|---|
| 3 | $3x$ | $+6$ |

$3x+6$

Expand & Simplify:

$10(x-4)$

| × | $x$ | $-4$ |
|---|---|---|
| 10 | $10x$ | $-40$ |

$10x-40$

When expanding brackets you can use the grid method to help you. Remember you are multiplying everything inside the bracket by everything outside the bracket

Expand and simplify:

$2(4a+2b)-2(a+3b)$

$8a + 4b - 2a - 6b$

$6a - 2b$

Expand & Simplify:

$(x+2)(x+3)$

| × | $x$ | $+2$ |
|---|---|---|
| $x$ | $x^2$ | $+2x$ |
| $+3$ | $+3x$ | $+6$ |

$x^2 + 2x + 3x + 6$

$x^2 + 5x + 6$

Expand & Simplify:

$(x+2)(x-5)$

| × | $x$ | $+2$ |
|---|---|---|
| $x$ | $x^2$ | $+2x$ |
| $-5$ | $-5x$ | $-10$ |

$x^2 + 2x - 5x - 10$

$x^2 - 3x - 10$

$$\frac{(x+2)(x+2)}{}$$

| | $x$ | $+2$ |
|---|---|---|
| $x$ | $x^2$ | $+2x$ |
| $+2$ | $+2x$ | $+4$ |

$= x^2 + 4x + 4$

## Factorising expressions:

- The opposite (inverse) of expanding
- Answer will include brackets
- Look for common factors (numbers and algebra)
- Always choose the HCF

e.g. 1 $10a + 15 = 5(2a+3)$

10 & 15 both in the 5 times table

$10a = 5 \times 2a$ $\quad 15 = 5 \times 3$

e.g. 2 $6x^2 - 21xy = 3x(2x-7y)$

6 & 21 both in the 3 times table

Both terms have an $x$ in them

$6x^2 = 3x \times 2x$ $\quad 21xy = 3x \times 7y$

## Key words

**Expression:** A collection of numbers and symbols/ letters without an equal sign

**Term:** A group of symbols/ letters in an expression which is separated by $+$ *and* $-$ signs

**Variable/symbols:** A quantity that represents an unknown value e.g. $x, a, n, y$

**Expand:** To remove brackets from an expression by using multiplication

**Factorise:** The inverse of expanding brackets, to put an expression back into brackets

## Simplifying Expressions

$a + a + a = 3a$

$4 \times d = 4d$

$y \times y \times y = y^3$

$7 \times e \times f = 7ef$

### Simplifying expressions (adding/subtracting)

Remember you can only add/subtract like terms

$2a + 3b - a + 4b = a + 7b$

$2a - a = a$ $\quad +3b + 4b = +7b$

### Simplifying expressions (multiplying)

Remember to multiply the numbers and terms separately

$5p \times 3q \times 4p = 60p^2q$

$5 \times 3 \times 4 \times p \times p \times q$

$60 \times p^2 \times q = 60p^2q$

Rearrange the formula to make a the subject

This means we want to rearrange the formula so it says a =

$b = 5a + 21$

$-21 \quad -21$

$b - 21 = 5a$

$\div 5 \quad \div 5$

$\frac{b-21}{5} = a$

Our answer should say ... $a = \frac{b-21}{5}$

$P = \frac{k}{j}$

$P = \frac{k}{j}$

$\times j \quad \times j$

$Pj = k$

The letter $k$ is now isolated, so $k$ is now the subject of the formula.

**Useful Links**

https://vle.mathswatch.co.uk/vle/

https://corbettmaths.com/tag/algebra/

https://www.bbc.com/bitesize/topics/z4f3cdm

# Film and Game Music

## Year 9 – Topic 1

## Keywords

Leitmotif – A short piece of music that represents a character

Underscore – Quiet music that plays underneath dialogue

Dialogue – The characters voices

Foley – All non-music sounds

Composer – The person who writes the music

Film score – The music that accompanies a film

Mickey-Mousing – Use sound and rhythm to imitate the action on screen

## Genres

Horror Sci-fi Comedy
Romance Action Adventure
Thriller Kids Fantasy
Comic-book Film Noir

## Garageband Shortcuts

Cmd + Space = Search

Cmd + C = Copy

Cmd + V = Paste

Cmd + T = Cut

Cmd + Z = Undo

+ (On screen) = Add new instrument

Double Click (on a part) = Edit Music

# Key Stage 3 Knowledge Organiser – Year 9 Core PE Unit 2: Healthy Active Lifestyle

| Physical Components of Fitness | | Definition | Types of Training to improve fitness components | Fitness Tests for measuring each component of fitness |
|---|---|---|---|---|
| 1 | **Aerobic Endurance** | The ability to exercise your cardio respiratory system for a long period of time. | Continuous, Fartlek, Interval, Circuit. | Forestry Step Test, Multi Stage Fitness Test. |
| 2 | **Muscular Endurance** | The ability to exercise your muscular system for a long period of time. | Circuits, Free weights, Plyometrics. | One minute press-up, one minute sit-up test. |
| 3 | **Muscular Strength** | The maximum force that a muscle or muscle group can produce. | Circuits, Free weights, Plyometrics. | Hand grip dynamometer. |
| 4 | **Flexibility** | The range of movement around a joint. | Static, Ballistic, Proprioceptive Neuromuscular Facilitation. | Sit and reach test. |
| 5 | **Speed** | The distance covered over time (metres per second. | Hollow sprints, Acceleration sprints, Interval. | 35m sprint test (BTEC) or 30m sprint test (GCSE). |
| 6 | **Body Composition** | The ratio of fat mass to fat free mass in the body. | | Body Mass Index, Bioelectrical Impedance Analysis, Skinfold test. |
| **Skill Components of Fitness** | | **Definition** | **Types of Training to improve fitness components** | **Fitness Tests for measuring each component of fitness** |
| 7 | **Balance** | The ability to maintain a centre of mass above a base of support. | | Stork Stand Test. |
| 8 | **Coordination** | Being able to use two or more body parts at once to complete a motor task efficiently. | | Wall Toss test. |
| 9 | **Reaction Time** | The time taken to respond to a stimulus. | | Ruler Drop Test. |
| 10 | **Power** | The combination of speed and strength. | Circuits, Free weights, Plyometrics. | Vertical Jump Test. |
| 11 | **Agility** | The ability to change direction at speed without losing balance. | | Illinois Agility Test. |

| Physical Effects of exercise Long Term | |
|---|---|
| 12 | Lower resting heart rate (bradycardia). |
| 13 | Lower breathing rate. |
| 14 | Bigger and stronger muscles including the heart (Hypertrophy). |
| 15 | Reduced risk of chronic illnesses such as type 2 diabetes and heart disease. |
| 16 | Increased bone density. |
| 17 | Improvement in specific components of fitness. |
| 18 | Decreased risk of hypertension. |

| | Principles of Training | How to apply them |
|---|---|---|
| 19 | Frequency | How often you train. |
| 20 | Intensity | How hard you train. |
| 21 | Time | How long you train for. |
| 22 | Type | The method of training you use. |

# RS

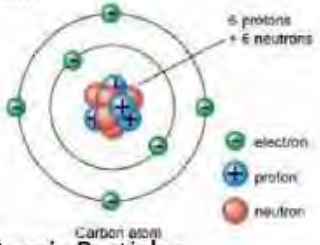
## Change Makers: 9:1

| | Key concept | Definition |
|---|---|---|
|  | 1. Activism | To protest and organise actions (campaign) to bring to bring about political or social change. |
|  | 2. Civil Rights | The rights that citizens (people) have, such as political and social freedom and equality. |
|  | 3. Civil Disobedience | To refuse to follow the law if it is unjust (unfair) as a peaceful form of protest. |
|  | 4. Democracy | "Rule by the people". The system in which civilians vote for who they want to govern the country, the party with the most votes, become out elected leaders. |
|   | 5. Privilege | An advantage, or unspoken permission granted or available to particular people. (i.e, white privilege) |
|  | 6. Racism | Prejudice and/or discrimination that is directed against a person or people because of their racial or ethnic group. |
|  | 7. Equality | The idea that all people, no matter their wealth, gender, sexuality, race, ability or disability should have fair and equal rights. |

| Key info | | | ✓ |
|---|---|---|---|
| 8 | Ahimsa | The Hindu, Buddhist and Jain belief in 'non-violence' | |
| 9 | Pacifism | The belief that war and violence can never be justified and that all disputes should be settled in a different way. | |
| 10 | Human rights | Human rights are the rights that all human beings have no matter who they are. These include; the right to life, freedom from slavery and torture, freedom of opinion and expression, the right to work and to education as well as many more. | |
| 11 | Nobel Peace Prize | The **Nobel Prize** is a set of annual international awards given by Swedish and Norwegian institutions to recognise the academic, cultural, or scientific achievements of people. | |
| 12 | Boycott | To refuse to buy a product or take part in an activity as a way of expressing your disproval (that you don't agree with what that person/company are doing). | |
| 13 | Racial Segregation | The action of separating people of different race, as well as the places they are allowed to be, i.e, different toilets, churches, schools etc. | |
| 14 | Theocracy | Where a God is recognized as the supreme ruler of a country who gives divine instructions to humans who act on His behalf. | |
| 15 | Shariah Law | Shariah law is a religious law. It is a combination of the key beliefs of Islam, particularly from the Qur'an (The Muslim holy book, believed to be the words of God) and the Hadith (teachings of the most important prophet, Muhammad, PBUH). | |
| 16 | Persecution | To be treated unfairly and/or very badly; especially because of race or political or religious beliefs. | |
| 17 | Islamophobia | A fear and/or hatred of Muslims and the religion Islam. | |
| 18 | Revolution | To take over government through political activism/force to create a new government or social order. To do so in favour or a new system. | |
| 19 | Feminism | The belief that men and women should have equal rights and opportunities. | |
| 20 | Speciesism | To assume that humans are superior (more important) than animals. This often leads to the exploitation of animals. | |
| 21 | Animal Liberation | To free animals from exploitation and cruel treatment by humans | |
| 22 | Theocracy | Where a God is recognized as the supreme ruler of a country who gives divine instructions to humans who act on His behalf. | |
| 23 | Climate Emergency | A situation, in some cases declared by a government, in which special measures must be taken to halt environmental damage caused by climate change. | |

## Atom Structure

Diagram

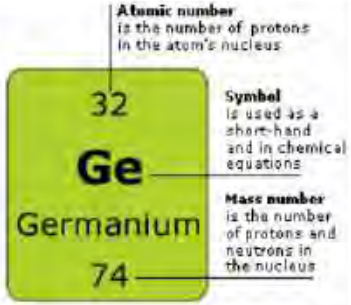



Subatomic Particles

| Subatomic particle | Location | Mass | Charge |
|---|---|---|---|
| Proton | Nucleus | 1 | +1 |
| Neutron | Nucleus | 1 | No charge |
| Electron | Shells | 0 (negligible) | -1 |

## Atom Symbols

Bigger number is the mass number.
To find neutrons subtract the smaller number




## History of Atom





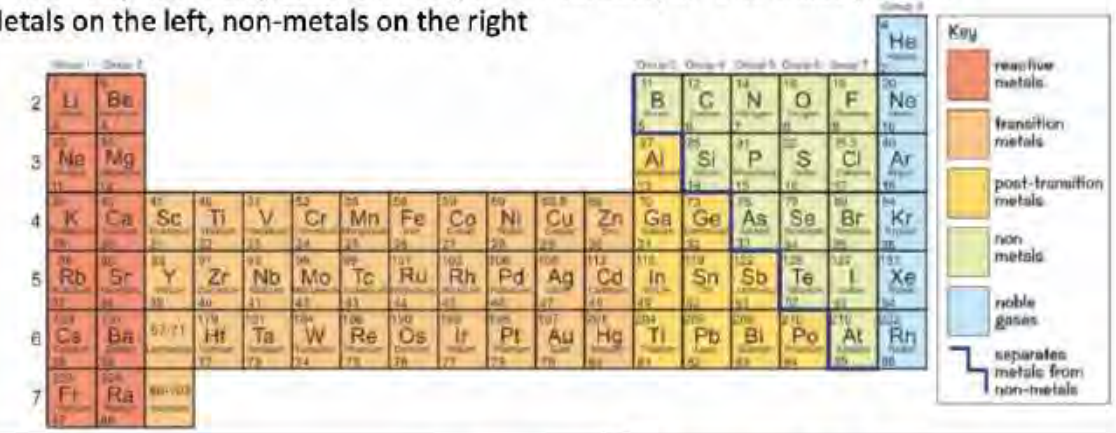
Dalton
Solid sphere

Thompson
Protons/ electrons randomly arranged

Rutherford/Bohr
Positive nucleus with electrons around

## Modern Periodic Table

- Arranged by increasing atomic mass (proton number) in rows called periods
- Metals on the left, non-metals on the right




## Isotopes

- Elements with the same number of protons but different numbers of neutrons
- This explains why relative atomic mass (Mr) isn't always a whole number

**H** - e.g. $M_r$ of Cl is calculated using
The abundance of each of the
Atomic masses of the isotope
(35 x 75/100) + (37 x 25/100) = 35.5


75% 25%

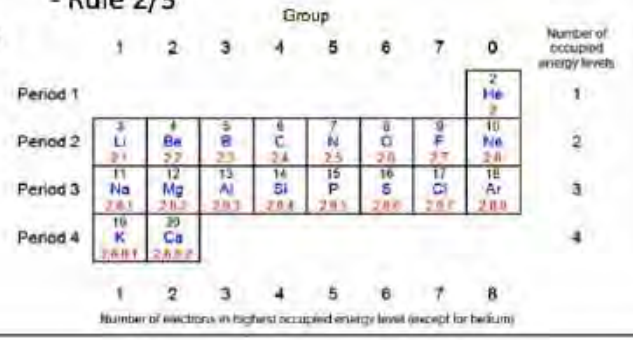

## History of Periodic table

- Dimitri Mendeleev was the first to publish an organised table of elements
- He arranged by relative atomic mass
- But he also left gaps so that elements with similar properties were in the same group
- Using the gaps he was able to predict elements that had not been discovered yet

## Electronic Configuration

- Using the rules to draw the first 20 elements
- Rule 1


- Rule 2/3

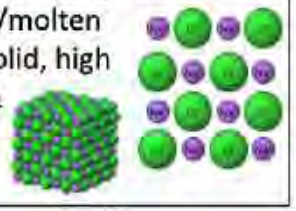


## Ions

- Atoms are more stable with full outer electron shells
- Metals lose electrons resulting in a positive ion. E.g. sodium in group 1 → $Na^+$ ion and calcium in group 2 → $Ca^{2+}$ ion
- Non-metals gain electrons resulting in a negative ion, e.g. oxygen in group 6 → $O^{2-}$ ion and chlorine in group 7 → $Cl^-$ ion

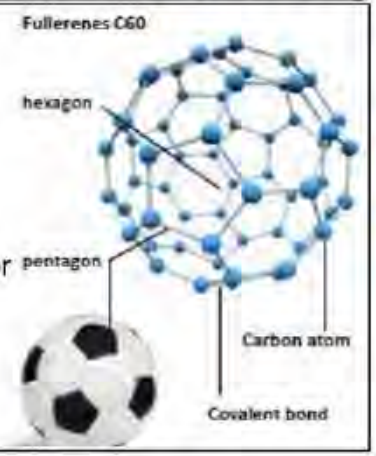
## Ionic Compounds

- Positive and negative ions arrange in a regular lattice
- This explains properties including ability to dissolve, conduct electricity when dissolved/molten but not solid, high melting & boiling points



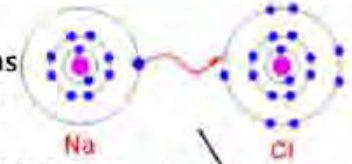
## Fullerenes, Allotropes

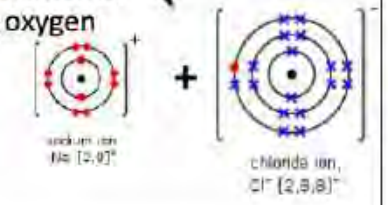
<u>C60</u>
Strong, weak intermolecular forces (like graphite)
Can be used as lubricants
<u>Graphene</u>
Strong, light, good electrical conductor
Can be rolled into tubes




## Ionic Bonding

- Positive and negative ions are attracted and form a compound
- Compound name –ide with 2 elements, -ate with 3 elements including oxygen
- Use the crossover method to determine the formula

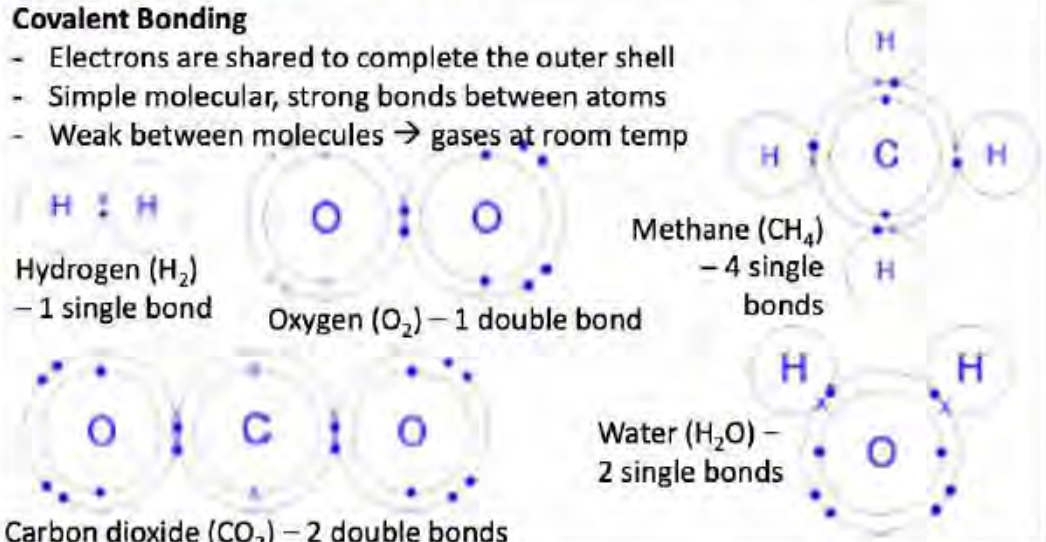




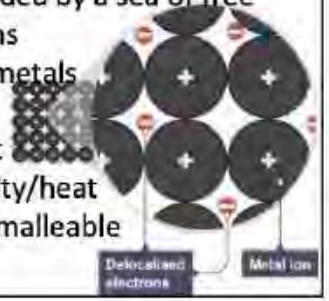
## Covalent Bonding

- Electrons are shared to complete the outer shell
- Simple molecular, strong bonds between atoms
- Weak between molecules → gases at room temp




## Metallic Bonding

- Metal atoms lose electrons to become positive ions surrounded by a sea of free electrons
- Allows metals to conduct electricity/heat and be malleable

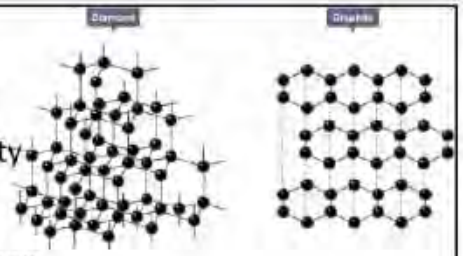



## Bonding Models

Ball and stick models are limited: they don't show electrons and appear to have large gaps between atoms. Dot and cross diagrams are limited: they are 2D and don't show bond angles.

## Giant Covalent Structures, Allotropes

- Bonding between many non-metal atoms
- <u>Diamond</u>, each C atom forms 4 bonds
- Rigid, strong and doesn't conduct electricity
- Used for cutting tools
- <u>Graphite</u>, each C forms 3 bonds leaving a free electron and weak bonds between layers
- Soft, good electrical conductor
- Used as a lubricant

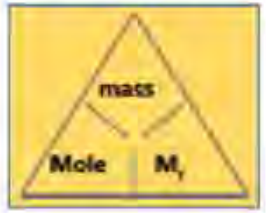


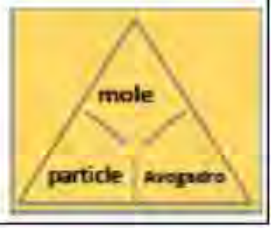
## Conservation of mass

- In a closed system the total mass of the reaction before and after doesn't change
- This is because no atoms are destroyed or created, they are just rearranged
- If mass goes up it's because one of the reactants has joined from the air
- If mass goes down it's because a gas has been released

## H - Moles

- A mole is an amount of particles equal to Avogadro's constant ($6.02 \times 10^{23}$)
- One mole of any substance will have a mass in grams equal to the relative particle mass ($A_r$ or $M_r$) for the substance
- The number of particles of substance in a given mass of that substance can be found by using the 1st equation to find the number of moles and the 2nd equation to find the number of particles




## Relative Masses ($M_r$)

- To find $M_r$ add the relative atomic mass ($A_r$) of the elements making up a compound

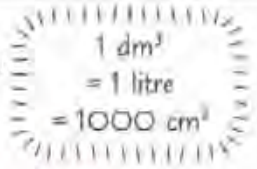
$H_2O$

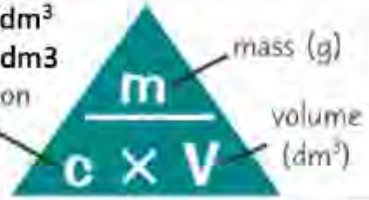
H=1 O=16

(1x2)+16=18

## Calculating Concentration

- The more solute dissolved in in a given volume, the more crowded the particles are = more concentrated
- Volume must be in $g/dm^3$
- 1 gram dissolved in 1 dm3 = 1 $g/dm^3$




## Calculating Reacting Masses

- In reactions there will be a limiting reactant which is used up, other reactants are in excess

1. Write out the balanced equation
2. Work out Mr of the reactant and product you're interested in
3. Divide both by the Mr of the limiting reactant
4. Multiply both by the given mass of the limiting reactant

- To find the mass of limiting reactant needed to make a certain mass of product

1. Write out the balanced equation
2. Work out the Mr of the reactant and product you're interested in
3. Divide both by the Mr of the product
4. Multiply both by the given mass of the product

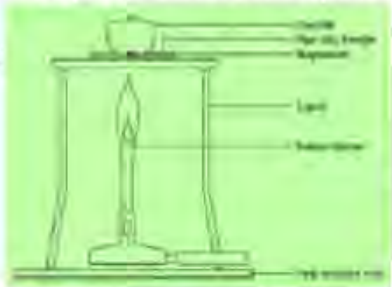
## Empirical Formulae

- Tells you the smallest ratio of atoms in a compound
- To find it divide the molecular formula by the highest common multiple

| Compound | Molecular Formula | Empirical Formula |
|---|---|---|
| Butane | $C_4H_{10}$ | $C_2H_5$ |
| Octane | $C_8H_{18}$ | $C_4H_9$ |

- Use empirical formula along with $M_r$ to find molecular formula, divide Mr of the compound by the $M_r$ of the empirical formula, then multiply everything in the empirical formula by 2

## Experimental Technique



If 9.6g of Mg reacts with 6.4g of O

9.6 / 24 ($A_r$ Magnesium) = 0.4

6.4 / 16 ($A_r$ Oxygen) = 0.4

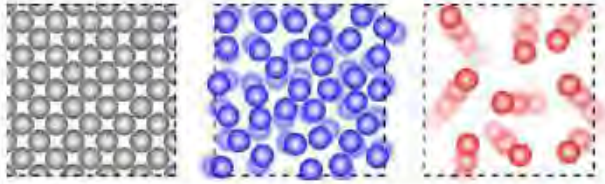
Ratio 0.4 : 0.4 or 1:1 (MgO)

## H - Balancing Equations with Reacting Masses

1. Divide mass of each substance by Mr → moles
2. Divide all moles by the smallest number of moles
3. Multiply by an amount to make them all whole numbers
4. Write a balanced equation using these numbers

## States of Matter (Pg 97)

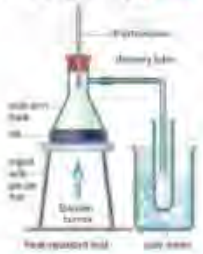
- Arrangement of particles in the three GCSE states of matter



| State | Arrangement of particles | Movement of particles | Attractive forces (None/Few/Many) |
|---|---|---|---|
| Gas | Random<br>Far apart | Fast in all directions | None |
| Liquid | Random<br>Close together | Move around each other | Few |
| Solid | Regular<br>Close together | Vibrate around fixed positions | Many |

## Changes of state (Pg 98)


## Distillation (Pg 100) (Core Prac)



## Predicting states (Pg 98)

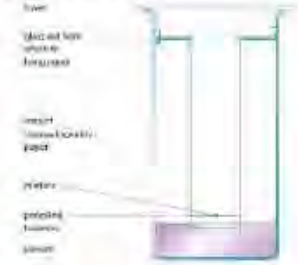
- When given data regarding the melting and boiling point of a substances, you need to be able to predict which state these substances are in given a temperature.
- What state is substance D in at 1000°C?

| Substance | Melting point / °C | Boiling point / °C |
|---|---|---|
| A | −218.4 | −183.0 |
| B | 1535 | 2750 |
| C | 1410 | 2355 |
| D | 801 | 1413 |

- D is a solid below its' melting point of 801°C and a gas above its' boiling point of 1413°C.
- Therefore, at 1000°C, substance D is a liquid.

## Chromatography (Pg 102) (Core Prac)

- Uses the different **solubilities of solutes** in the same **solvent** to separate them

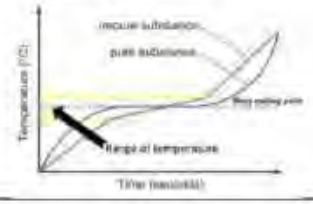


- Rf measured from baseline

$$Rf = \frac{\text{distance moved by chemical}}{\text{distance moved by solvent}}$$

## Purity (Pg 99)

- **Purity** is the word used to describe a substance where its composition...
  - Cannot be changed
  - Is the same in all parts of the substance.
  - Has a sharp melting point.
- **Mixtures** contain elements and/or compounds that are NOT chemically bonded together.
  - Use a physical process to separate mixtures
  - Mixtures do not have a fixed composition.
  - Melts over aa range of temperatures.




## Distillation (Pg 100)

- To separate two liquids with different boiling points

## Fractional Distillation (Pg 100)

## Filtration & crystallisation (Pg 101) (Core Prac)

To separate a solid and a liquid

- **Filtration** to separate an **insoluble** solid from a liquid
- **Crystallisation** to separate a solid **dissolved** in a liquid.



## Water purification (Pg 104)

- Ground water, waste water and surface water all need **purification**.
- **Filtration** to remove solid matter
- **Sedimentation** to remove finer particles
- **Chlorination** to kill bacteria

- Sea water is purified by distillation.
- Water for chemical tests must be purified or dissolved ions etc. will interfere with the tests.

SPANISH

# 9.9 Technology and Media

| Technology verb infinitives | |
|---|---|
| **borrar** | to delete, erase |
| **cargar** | to load |
| **chatear** | to chat online |
| **colgar fotos** | to post photos |
| **comunicarse** | to communicate |
| **contestar** | to answer |
| **crear** | to create |
| **dar** | to give |
| **descargar** | to download |
| **enviar** | to send |
| **funcionar** | to work, to function |
| **guardar** | to save |
| **hablar** | to speak, to talk |
| **mandar** | to send |
| **navegar la red** | to surf the internet |
| **poder** | to be able to |
| **recibir** | to receive |
| **sacar fotos** | to take photos |
| **transmitir** | to stream |
| **usar** | to use |
| **utilizar** | to use |

| Technology nouns | |
|---|---|
| **el archivo** | file |
| **el correo basura** | spam, junk mail |
| **el correo electrónico** | email |
| **el disco duro** | hard drive |
| **el juego** | game |
| **el mensaje de texto** | text message |
| **el móvil** | mobile/smartphone |
| **el ordenador** | computer |
| **el ordenador portátil** | laptop |
| **el videojuego** | video game |
| **la canción** | song |
| **la pantalla** | screen |
| **la red** | internet |
| **la red social** | social network |
| **la revista (digital)** | (digital) magazine |
| **la sala de chat** | chat room |
| **la tableta** | tablet |
| **la tecnología** | technology |

| Technology adjectives | |
|---|---|
| **aburrido/a** | boring |
| **antiguo/a** | old |
| **animado/a** | exciting |
| **confuso/a** | confusing |
| **corto/a** | short |
| **de moda** | fashionable |
| **despacio/a** | slow |
| **entretenido/a** | entertaining |
| **escalofriante** | scary |
| **estimulante** | stimulating |
| **informativo/a** | informative |
| **interesante** | interesting |
| **inútil** | useless |
| **largo/a** | long |
| **lento/a** | slow |
| **peligroso/a** | dangerous |
| **práctico/a** | practical |
| **rápido/a** | fast |
| **ridículo/a** | ridiculous |
| **roto/a** | broken |
| **útil** | useful |

| Tv Genres | |
|---|---|
| **las comedias** | comedies |
| **los concursos** | quiz shows |
| **los documentales** | documentaries |
| **las noticias** | the news |
| **los programas de deporte** | sports programmes |
| **las policiacas** | police shows |
| **las telenovelas** | soap operas |

| Haber (perfect tense) | to have |
|---|---|
| **he** | I have |
| **has** | you have |
| **ha** | he/she/it/has |
| **hemos** | we have |
| **habéis** | you all have |
| **han** | they have |

| Film genres | |
|---|---|
| **las películas de acción** | action films |
| **las películas de amor** | romantic films |
| **las películas de ciencia ficción** | sci-fi films |
| **las películas de drama** | dramatic films |
| **las películas de suspenso** | suspense films |
| **las películas de terror** | horror films |
| **las películas de thriller** | thriller films |

# 9.9 Spanish Technology and Media Knowledge Organiser

**3 time frames**
**Infinitives**
**Time phrases and connectives**
**Negative constructions**
**Opinions and justifications**
**Comparatives and superlatives**

**Comparatives – to express more or less than**
**... es más...adjective...que** - is more...adjective...than
**... es menos ...adjective ....que** - is less...adjective... than
**... es tan...adjective....como** – is as...adjective...as
***For example:***
*Es **más** grande **que** su hermano. (He is taller (more tall) than his brother.))*
*Esta casa es **menos** grande **que** nuestra casa. (This house is smaller (less big) than our house.))*
*Este perro es **tan** grande **como** mi gato. (This dog is as big as my cat).*

**Make a Spanish comparison from good to better or from bad to worse:**
Like in English the words for bad and good are irregular . Good > better (bueno > **mejor**) and bad>worse (malo > **peor**).
***For example:***
Esta pizza es **mejor que** la otra. (This pizza is better than that other one.)
La gripe es **peor que** un resfriado. (Flu is worse than a cold)

**Notice that the adjective always agrees with the first noun*

**Superlatives – to express the biggest, the most interesting etc...**
**... est el/la/los/las más + adjective** – is the most + adjective
**....est el/la/los/las menos + adjective** - is the least + adjective
***For example:***
***La más** inteligente de la clase (the most intelligent in the class)*
***El menos** grande de la familia (the shortest (least tall) in the family*

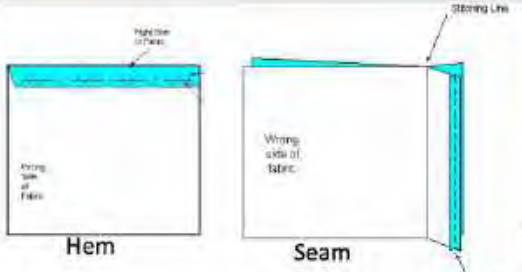
**Adjectives** describe nouns e.g. a **blue** phone.
In Spanish, adjectives normally go after the words they are describing e.g. un móvil azul (a blue mobile phone) and they have to agree with the noun they are describing.
In Spanish, adjectives must agree with the noun (or pronoun) they describe in gender and in number. This means that if the noun an adjective describes is feminine, the adjective must be feminine e.g. una televisión negra (a black televisión). If that same noun is also plural, the adjective will be feminine AND plural as well e.g. las televisiónes negras (black televisions).

| **Opinion phrases** | |
|---|---|
| En mi opinión | In my opinion |
| Pienso que | I think that |
| Creo que | I believe that |
| Diría que | I would say that |
| Personalmente | Personally |
| A mi juicio | In my opinion |
| Considero que | I consider that |
| Desde mi punto de vista | From my point of view |
| Lo / Las encuentro | I find it / them |

| **Connectives** | |
|---|---|
| y | and |
| pero | but |
| porque | because |
| sin embargo | however |
| además | furthermore |
| por ejemplo | for example |
| luego | then |
| finalmente | finally |
| no obstante | nevertheless |

| **Time phrases** | |
|---|---|
| Hoy | Today |
| Normalmente | Normally |
| De vez en cuando | Sometimes |
| El fin de semana | On the weekend |
| (Dos) veces por semana | (Twice) a week |
| A menudo | Often |
| Siempre | Always |
| Ayer | Yesterday |
| Anteayer | The day before yesterday |
| La semana pasada | Last week |
| El fin de semana pasado | Last weekend |
| El mes/año pasado | Last month/year |
| Anoche | Last night |
| Hace (dos días/años) | (Two days/years) ago |
| Mañana | Tomorrow |
| En el futuro | In the future |
| El fin de semana próximo | Next weekend |
| La semana próxima | Next week |
| El año próximo | Next year |

# Year 9 Textiles Knowledge Organiser

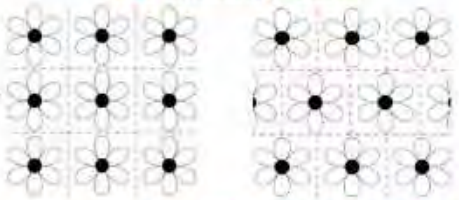



**What is the difference between a hem and a seam?**

A hem is a neat non fraying edge made by folding fabric over and stitching it down. A seam is a line along which pieces of cloth are joined by sewing.

One image is called a 'motif'

The motif has been repeated to make two different patterns



plain repeat pattern

brick repeat pattern/ offset repeat pattern

| Equipment | Use |
|---|---|
| **Bobbin**  | A bobbin is a cylinder, to which cotton thread is wrapped around. It is found in the bottom part of a sewing machine. |
| **Overlocker machine**  | An overlocker does not replace a sewing machine. Its primary function is to clean finish a raw edge, giving the project a professional appearance |
| **Quick unpick**  | It is used to quickly remove stitches and seams. |
| **Tailor's chalk**  | Used to mark on to fabric. It is easily washed off. |
| **Measuring Tape**  | It is a flexible ruler that can be used for body measurements, tailoring and dressmaking. It is flexible to measure fabric and curves of the body. |

## About Designers

### Orla Kiely

Orla Kiely is known for her print designs inspired by her early childhood – the colours of the countryside and her home.

Kiely's design work lends itself to CAD for its repetitive style. Her original work was hand painted using gouache paint. 'Stem' is her most iconic print which consists of simple graphic strength – clean, measured and bold.

Kiely believes her work is never finished and can be re-worked several times until she is satisfied with the end result.

### Laura Ashley

Print has been at the forefront of the Laura Ashley brand since it was first established when Laura Ashley started printing her own designs for head scarves.

She went on to design dresses for social wear at the end of the 1960s. Her popular long Victorian-inspired dresses became known as the 'Laura Ashley look'.

The business expanded into coordinated ranges of furnishing fabrics using natural materials such as cotton and recycled paper for wallpaper.

## Textiles Hierarchy of Key words

**Tier 3** 'Academic' keywords.

Plain seam, analyse, sustainable, embellishment, Woven/ bonded/ knitted, Free machine embroidery, function, develop

**Tier 2** Valuable keywords used in most lessons every lesson.

Complementary colours, contrast, environment, fastening, compare, embroidery, iron, equipment, context, appliqué, effect, improve

**Tier 1** Basic keywords used in almost every lesson.

colour, design, shape, machine, pattern, line, Texture, tone, theme, Fabric, thread, sew

# Year 9 — Past Project

**Content:** In this project you will learn
**Knowledge** – different artists who have represented
**Understand** – What inspired these artists to create work and how to write about the work
**Skills** – You will learn how to analysis artists work, improve drawing skills, tonal work, ceramics
**Outcome** – Tonal drawing and ceramic piece

## The Suffragettes' Movement

The women's suffrage movement was a decades-long fight to win the right to vote for women in the United States. It took activists and reformers nearly 100 years to win that right, and the campaign was not easy: Disagreements over strategy threatened to cripple the movement more than once.

## The Civil Rights Movement

The civil rights movement in the United States was a decades-long struggle by African Americans and their like-minded allies to end institutionalized racial discrimination, disenfranchisement and racial segregation in the United States.

## The Stonewall Riots

The Stonewall riots were a series of spontaneous, violent demonstrations by members of the gay community in response to a police raid that began in the early morning hours of June 28, 1969, at the Stonewall Inn in the Greenwich Village neighborhood of Manhattan, New York City.



## GSCE ART Annotation

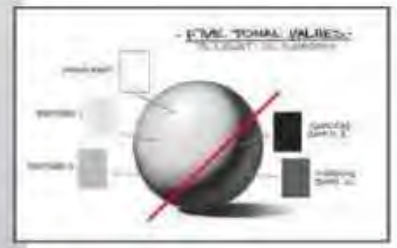

Basic, simple, solid, loud, quiet, bright, realistic, stylised, observed, busy, vibrant, strange, interesting, balanced, lively, negative, recognisable, abstract, tactile, meaningful, symbolic, depressing, unique, emotive, hidden, textural, dynamic, disturbed, sophisticated, puzzling, optimistic, powerful, intentional, concealed, subtle.

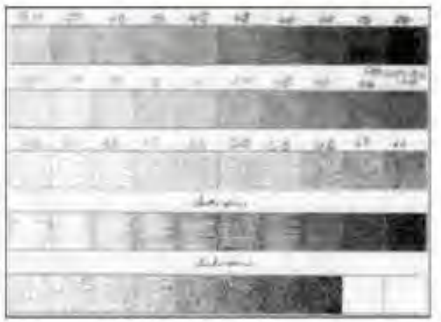
**Example**

**REMEMBER to check your..**
**Spellings, Grammar and Punctuation**
**Sentence Starter Help**
**Try thinking of your own too**

- In this piece I have...
- The materials I have used are...
- The technique I have used is...
- Through working in this way I have learnt how to...
- I have shown ... in the style of...
- This piece could develop further by including...
- The artist ..... has influenced my design because...
- To develop this piece further I could...
- I think using ... worked really well because...
- I am particularly pleased with... and I now aim to...

**KEYWORDS**
**Conflict**
**Inequality**
**Racism**
**Discrimination**
**Slavery**
**Apartheid**
**Female emancipation**
**Social Class**
**Gay rights**

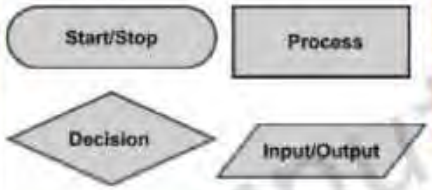


# Year 9 - Programming

Year 7 - Knowledge

### Flowcharts
Using symbols to represent algorithms.




### Computational Thinking

**Algorithm**
Step by step list of instructions to complete a task

**Abstraction**
Process of removing unnecessary details

**Decomposition**
Process of breaking down tasks into smaller sub tasks

**Pattern Recognition**
Finding the similarities or patterns among small, decomposed problems

### Pseudocode
Representing algorithms using a common language.

```
1.  Get name
2.  IF name = "Mr Ahmed":
3.      Display "You are
    cool"
4.  ELSE:
5.      Display "You are
    kind of cool"
```

Year 8 and 9 - Knowledge

## Variables
Memory in code that changes

```
1.  name = USERINPUT
2.  OUTPUT name
```

## Programming Constructs

**Sequence** - More than 1 line of code outside Selection and Iteration structures.

```
1.  age = USERINPUT
2.  age < 17 THEN
3.  OUTPUT "You can not drive"
```

**Selection** - IF Statement (decisions)

```
1.  age = USERINPUT
2.  IF age < 17 THEN
3.      OUTPUT "You can not drive"
4.  ELSE
5.      OUTPUT "You can drive"
```

**Iteration** - Repetition in instructions

```
1.  OUTPUT "Want to hear a joke?"
2.  joke = USERINPUT
3.  WHILE joke != "Yes"  THEN
4.      OUTPUT "Want to hear a joke?"
5.      joke = USERINPUT
6.  OUTPUT "A fish swam into a wall"
7.  OUTPUT "Damn"
```

## Data Types

**Character** - An individual letter e.g. "A"
**String** - A group of characters e.g. apple12
**Integer** - A whole number e.g. 58
**Real/Float** - A decimal number e.g. 4.58
**Boolean** - True or False

## Operators

| Operator | Meaning |
|---|---|
| + | Addition |
| - | Subtraction |
| * | Multiplication |
| / | Divide |
| = | Equal |

| Operator | Meaning |
|---|---|
| ≠ | Not Equal |
| < | Less Than |
| ≤ | Less/Equal |
| > | More Than |
| ≥ | More/Equal |

## Errors

**Logic Error** - Occurs when there is a fault in the logic or structure of the problem.
**Syntax Error** - Syntax is the spelling and grammar of a programming language. An error occurs when you type in the code incorrectly.

## Debugging
The process of identifying errors (bugs) and fixing them

# 9.9 German Technology and Media Knowledge Organiser

**3 time frames**
**Infinitives**
**Time phrases and connectives**

**Negative constructions**
**Opinions and justifications**
**Comparatives and superlatives**

## Comparisons

Add 'er' to the adjective. You can't add the word 'mehr' = more.
Er ist kleiner = he is smaller es ist billiger = it is cheaper
**Exceptions are besser (better)/größer(bigger)/älter(older)**

## Superlative

You add an '-ste' to the adjective, sometimes '-este' to make it easier to say. Fred ist der **Kleinste** = Fred is the small**est.** Ellie ist die Laut**este**

## Comparing Things

Joe ist älter **als** Fred = Joe is older **than** Fred
Joe ist **weniger** alt **als** Fred = Joe is **less** old **than** Fred
Joe ist **so** alt **wie** Fred = Joe is **as** old **as** Fred
Joe ist **genauso** alt **wie** Fred = Joe is **just as** old **as** Fred

## Opinion phrases

Opinion phrases help make your work more interesting- have a look at the list on your vocabulary list. Try to use a range of opinions in your work e.g., ich mag (I like), ich denke, dass (I think that)

**Verbs and the present tense in German**

When you look up a verb in the dictionary, you find its original, unchanged form which is called the ***infinitive*** (machen, essen, trinken, spielen, haben, sein, etc.). The infinitive ends in **–en or just -n**

**Forming the present tense in German**

For regular verbs follow the pattern opposite
However, the irregular verbs don't follow the pattern exactly. Your teacher will help you with these. (haben/sein/lesen/fahren)

| Opinion phrases | |
|---|---|
| Meiner Meinung nach | In my opinion |
| Ich denke,dass | I think that |
| Ich glaube, dass | I believe that |
| Ich würde sagen | I would say that |
| Persönlich | Personally |
| Ich interessiere mich für | I'm interested in |
| einerseits/andererseits | On the one hand/on the other hand |
| Ich finde...toll | I find ...great |
| Ich bin gegen | I am against |

| Connectives | |
|---|---|
| und | and |
| aber | but |
| denn/weil | because |
| obwohl | however |
| außerdem | furthermore |
| zum Beispiel | for example |
| dann | then |
| schließlich/endlich | finally |
| dennoch | nevertheless |

| Time phrases | |
|---|---|
| heute | Today |
| normalerweise | Normally |
| ab und zu | Sometimes |
| am Wochenende | On the weekend |
| zweimal pro Woche | (Twice) a week |
| oft | Often |
| immer | Always |
| gestern | Yesterday |
| vorgestern | The day before yesterday |
| Letztes Wochenende | Last weekend |
| Letzte Woche | Last week |
| Letzten Monat | Last month |
| Letztes Jahr | Last year |
| gestern Abend | Last night |
| vor 2 Tagen/2 Jahren | (Two days/years) ago |
| morgen | Tomorrow |
| in der Zukunft | In the future |
| Nächstes Wochenende | Next weekend |
| Nächste Woche | Next week |
| Nächstes Jahr | Next year |

GERMAN

# 9.9 Technology and Media - German

| Technology verb infinitives | |
|---|---|
| **löschen** | to delete, erase |
| **hochladen** | to upload |
| **chatten** | to chat online |
| **Fotos teilen** | to share photos |
| **kommunizieren** | to communicate |
| **antworten/beantworten** | to answer |
| **schaffen** | to create |
| **geben** | to give |
| **herunterladen** | to download |
| **schicken** | to send |
| **funktionieren** | to work, to function |
| **speichern** | to save (data on computer) |
| **sprechen** | to speak, to talk |
| **das Internet surfen** | to surf the internet |
| **können** | to be able to |
| **bekommen** | to receive |
| **Fotos nehmen** | to take photos |
| **streamen** | to stream |
| **benutzen** | to use |

| Technology nouns | |
|---|---|
| **eine Datei** | file |
| **Junk-Mail** | spam, junk mail |
| **eine E-Mail** | email |
| **Computerfestplatte** | hard drive |
| **Spiele** | games |
| **die Nachrichten/SMS** | text message |
| **das Handy/das Smartphone** | mobile/smartphone |
| **der Compter** | computer |
| **der Laptop** | laptop |
| **die Computerspiele** | video game |
| **das Lied** | song |
| **der Bildschirm** | screen |
| **das Internet** | internet |
| **das soziale Netzwerk** | social network |
| **eine Zeitschrift** | magazine |
| **Chatroom** | chat room |
| **der Tablet- PC** | tablet |
| **die Technologie** | technology |

| Technology adjectives | |
|---|---|
| **langweilig** | boring |
| **alt/altmodisch** | old |
| **spannend** | exciting |
| **schwer** | difficult |
| **kurz** | short |
| **modisch** | fashionable |
| **langsam** | slow |
| **unterhaltsam** | entertaining |
| **gruselig** | scary |
| **aufregend** | stimulating |
| **lehrreich** | informative |
| **interessant** | interesting |
| **nutzlos** | useless |
| **lang** | Long |
| **gefährlich** | dangerous |
| **praktisch** | practical |
| **schnell** | fast |
| **dumm** | stupid |
| **kaputt** | broken |
| **nützlich** | useful |

| Tv Genres | |
|---|---|
| **die Komödien** | comedies |
| **die Quizsendungen** | quiz shows |
| **die Dokumentarfilme** | documentaries |
| **die Nachrichten** | the news |
| **die Sportsendungen** | sports programmes |
| **die Krimis** | police shows |
| **die Seifenopern** | soap operas |

| | |
|---|---|
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| Film genres | |
|---|---|
| **die Actionfilme** | action films |
| **die Liebesfilme** | romantic films |
| **ein Science-Fiction-Film** | sci-fi film |
| **die Abenteurfilme** | adventure films |
| **der Thriller/der Krimi** | Suspense/thriller film |
| **die Horrorfilme** | horror films |

# Questions and activities – hints and tips

**Summarising a lesson:**

Answer the following questions to help you summarise your learning in a lesson. This will help you recap and think again about your learning, and will be useful to look back on in the future.

- What key words did you use in the lesson?
- Can you define those key words and use them in a sentence?
- What new content did you cover?
- How does this link to your previous learning?
- Can you summarise your learning into one sentence?

**Revision:**

If you have an MCQ approaching, you could create some revision material based on your knowledge organiser.

Can you get down the key information in a spider diagram?

Can you use diagrams, pictures, symbols etc to recall your knowledge?

**Knowledge quizzes:**

Create a set of questions using the information from your knowledge organiser, or from your lesson.

You could make them about key words, and maybe even give multiple choice answers.

Go over the questions you keep getting wrong.

Try the questions out with those at home, or maybe your teacher could use them for their starter quiz in class.

**Keyword Development:**

Practise the spellings of key words. Use the look-cover-write-check method to help you.

Can you explain what the key words mean?

Can you link the key words together?

Copy out the key words with their definitions.

# What might it look like?

Geography — Thursday 1st October

Topic: Our Place in the World

Lesson Summary:

Longitude - the distance, in degrees, E or W of the Prime Meridian.

Latitude - the distance, in degrees, N or S of the Equator.

Today we learnt about how the world is divided up using lines of latitude + longitude. The Equator is an 0° latitude, and the poles are 90° N +S.

This links to our previous learning because now I can say where the continents are using longitude + latitude to find them on a map

Lesson summary:

Knowledge Quiz:

Science

Topic: Cells — Monday 28th September

Knowledge Quiz:

1.) What is the name of the part of the microscope where the specimen is placed?
A= Stage

2.) How many cells are there in a 'unicellular' organism?
A= one

3.) What does the 'cell membrane' do?
A= controls movement of substances in + out of the cell

4.) Where does photosynthesis take place in a cell?
A= Chloroplast

5.) What is the function of the red blood cells?
A= to carry oxygen

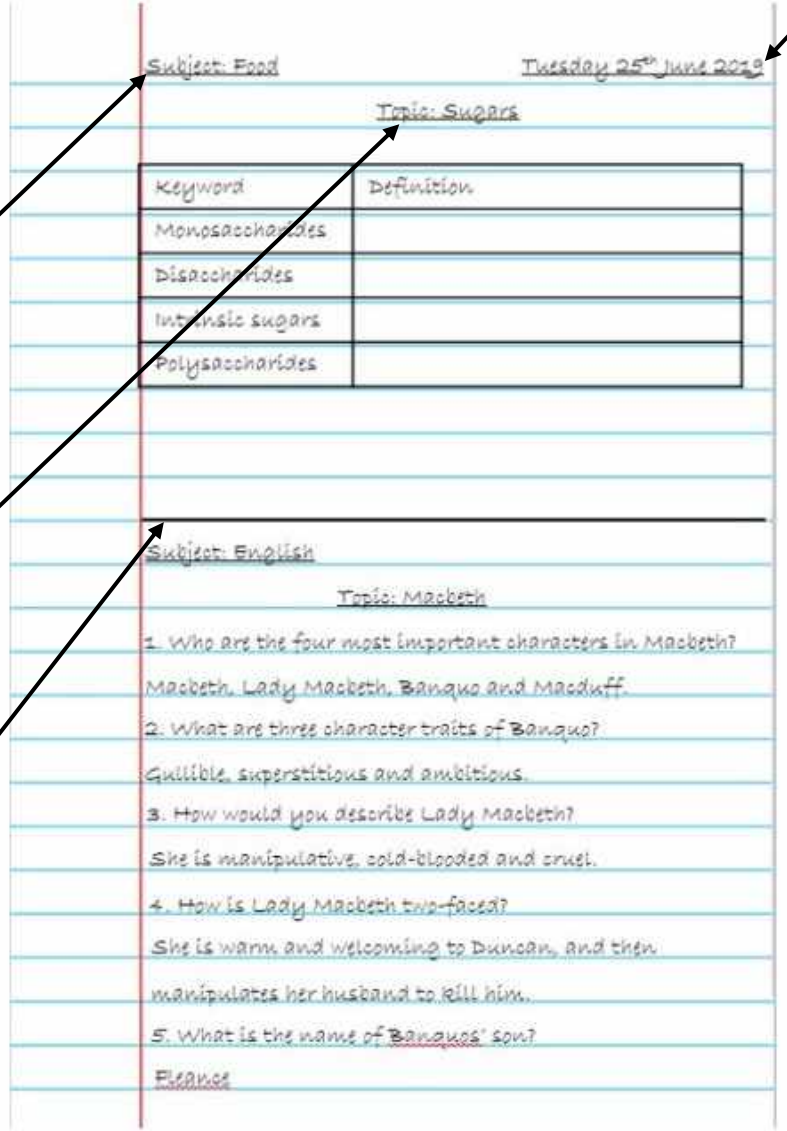
# How to present your homework:

**Date** written fully on the right hand side of the page and underlined – this should be the day you complete the homework.

**Subject** written on the left-hand side of the page and underlined.
For example: Food

**Topic** written on the centre of the page and underlined.
For example: Sugars

**One single straight line** between both pieces of homework.



Subject: Food — Tuesday 25th June 2019

Topic: Sugars

| Keyword | Definition |
|---|---|
| Monosaccharides | |
| Disaccharides | |
| Intrinsic sugars | |
| Polysaccharides | |

Subject: English

Topic: Macbeth

1. Who are the four most important characters in Macbeth?

Macbeth, Lady Macbeth, Banquo and Macduff.

2. What are three character traits of Banquo?

Gullible, superstitious and ambitious.

3. How would you describe Lady Macbeth?

She is manipulative, cold-blooded and cruel.

4. How is Lady Macbeth two-faced?

She is warm and welcoming to Duncan, and then manipulates her husband to kill him.

5. What is the name of Banquos' son?

Fleance

# Notes