King's Oak ACADEMY

Cabot Learning Federation

Year 9 Block 2 Knowledge Organisers

Name:

Tutor Group:

Contents:

Block 2 Homework Hand in schedule

Homework will be checked first thing each morning in tutor time. You will need to come to school each day with your homework book and Knowledge Organisers. The table shows which subject you will hand in on each day.

Day	Date	Subject
Mon	27/11/2023	French
Tue	28/11/2023	English
Wed	29/11/2023	PE
Thu	30/11/2023	Maths
Fri	01/12/2023	Science
Mon	04/12/2023	Geography
Tue	05/12/2023	English
Wed	06/12/2023	Art
Thu	07/12/2023	Maths
Fri	08/12/2023	Science
Mon	11/12/2023	French
Tue	12/12/2023	English
Wed	13/12/2023	Music
Thu	14/12/2023	Maths
Fri	15/12/2023	Science
Christmas Holidays		
Wed	03/01/2024	PE
Thu	04/01/2024	Maths
Fri	05/01/2024	Science
Mon	08/01/2024	French
Tue	09/01/2024	Health
Wed	10/01/2024	Drama
Thu	11/01/2024	Maths
Fri	12/01/2024	Science
Mon	15/01/2024	History
Tue	16/01/2024	Computing
Wed	17/01/2024	DT
Thu	18/01/2024	History
Fri	19/01/2024	English
Mon	22/01/2024	English
Tue	23/01/2024	Science
Wed	24/01/2024	French
Thu	25/01/2024	Maths
Fri	26/01/2024	Art
Mon	29/01/2024	English
Tue	30/01/2024	Science
Wed	31/01/2024	Geography
Thu	01/02/2024	Maths
Fri	02/02/2024	Music
Mon	05/02/2024	English
Tue	06/02/2024	Computing
Wed	07/02/2024	History
Thu	08/02/2024	Maths
Fri	09/02/2024	DT
Mon	12/02/2024	English
Tue	13/02/2024	Science
Wed	14/02/2024	Geography
Thu	15/02/2024	Maths
Fri	16/02/2024	Drama

How to complete your homework

For all subjects except Maths, homework tasks are based around Knowledge Organisers. Maths will be complete through Sparx Maths – see separate sheet for info.

To complete your homework, you must:

1. Check the hand in schedule (previous page) for the week so that you can see which Knowledge Organisers you need to be learning and what the deadline date is.
2. Carefully study the sections of the Knowledge Organiser that you are learning.
3. If you are learning **key knowledge** (for example in Science, Geography or History) Write between 10 and 20 self-quizzing questions and answers that test your grasp of this knowledge. If you are learning **key vocabulary** such as in French or English, try to read, cover, say write and check – simply read the word, cover it up, say it aloud then write it down and check if you spelled it correctly.
4. Complete all of your homework in your homework book, including your Sparx Maths notes. Put the deadline date and subject at the top of the page, so that you can clearly see when the work will be checked by your tutor and teacher.
5. Make sure you remember your homework book **everyday**, it will be checked each morning by your tutor and also in your lessons.

You may be set additional 'optional' homework tasks to complete by your teachers to deepen your knowledge, particularly for revision in the build up the to end of block assessments.

On the next page there are some optional extra ideas for ways you could use your Knowledge Organisers

What are 'self-quizzing questions'?

Here is a section of a Science Knowledge Organiser. You could test your grasp of this knowledge by asking yourself,

"What ions are found in acids?"

"Are all acids poisonous?"

These are examples of self-quizzing questions.

In your homework book, you should write the questions and their answers.

2. Acids (pH 1-6)

- **Acids** are a family of chemicals, examples are lemon juice, vinegar and Coca Cola. There is also acid in our stomach.
- Acids contain Hydrogen (H^+) ions.
- **Strong acids** like hydrochloric acid are very corrosive this means they destroy skin cells and cause burns.
- **Weak acids** like vinegar are safe to eat but are still irritant to sensitive parts of the body.

How else can I use my Knowledge Organiser?

The Knowledge Organisers in this booklet will help you learn a wide range of knowledge to prepare you for your lessons as well as the multiple-choice tests at the end of this block of learning.

To get the most out of your Knowledge Organisers, you should be learning sections and then testing yourself. There will be set tasks each week based on the Knowledge Organisers, and there are some optional ideas below that you could try in addition to this if you wish.

Learning Key vocabulary:

- Highlight key terms for a subject and look up the definitions
- Write a sentence using the key terms you have highlighted
- Practice spellings – read, cover, say, write and check to learn the correct spellings of key terms

Quizzes/questions:

- Write some self-quizzing questions based on the information read
- Test your friends and family on their knowledge of a subject
- Get your parents/carers to ask you some questions
- Create exam style questions and then swap with a friend

Reflecting on learning:

- Before a topic – rank order your confidence and then revisit at the end of the topic, rank again and consider where you have improved
- Add more detail to the Knowledge Organiser after you have been taught that topic
- Traffic light (red, amber, green) each box based on how confident you are

Revision:

- Create 2-3 flashcards each week based on each box
- Create a mind map showing the key information from the Knowledge Organiser
- Read ahead to develop skills, knowledge and understanding so you feel more confident before lessons

General use:

- 50 words, 30 words, 10 words – summarise the information on the Knowledge Organiser from 50 words to 30 words to 10 words
- Pictionary – learn the definitions then draw it for your friends/family to guess
- Elevator pitch – summarise the information in a box/whole Knowledge Organiser for a 30 second presentation
- Generation game – like the famous conveyor belt – look at the Knowledge Organiser and then try to remember as many items as possible
- Key term stories – write a short story using 6 key words that are found on the Knowledge Organiser
- Scavenger hunt – read through the Knowledge Organiser with a friend/family member and see who can find specific information/facts first
- Read, cover, check – read the box, write out what you can remember, check what you have missed (then add in purple pen)

Maths Homework – Sparx Maths

What is Sparx Maths?

- Sparx Maths is an online platform we use at King's Oak Academy, it can be accessed at https://www.sparxmaths.uk/
- Each weekly task on Sparx is made up of questions linked to learning in the classroom (either past, current or future) plus some times table questions.
- This should take approximately one hour per week (if it takes longer one week then it will take less time in future weeks).
- Each question has a short video you can watch if you are getting stuck.
- For each question, write down the **bookwork code, your working, and the answer** in your homework book. **You should also mark your own work**.
- You will be able to redo a question if you get it wrong. This is where you have the biggest opportunity to learn.
- To successfully complete your Sparx homework you need to achieve 100% completion each week, meaning you need to get every question correct.
- This is because these questions are at exactly the right level for you.

What if I get stuck and keep getting a question wrong?

Remember this is the point where you are going to learn the most!

- ☐ Attempt each question before watching the video.
- ☐ Show your working out in your book.
- ☐ Watch the video.
- ☐ Copy down the method shown in the video into your book.
- ☐ Try the question again. Show your working out in your book.
- ☐ Copy the question in your book.
- ☐ Ask your maths teacher to help you **before** it is due in.

You can gain 'Positive Points' for your Sparx work by;

a) Completing Sparx homework early.
b) Completing the optional XP boost questions.
c) Completing the optional target questions.
d) Completing independent learning tasks based on topics you find difficult.

Year 9 Curriculum:

Question topics will be set by your Maths teacher to make sure that they fit with the topics you are studying each term, as set out in the table here:

	Term 1	Term 2	Term 3 and Term 4	Term 5 and Term 6
Year 9	**Working with number** Rounding, estimation Error Intervals Indices Standard form **Working algebraically** Expanding & factorising Identities AP1	**Numerical reasoning** Percentages Money **Probability** Finding probabilities Frequency trees Probability tree diagrams AP2 (DOOYA)	**Working with data** Statistical measures, Boxplots Averages from frequency tables **Reasoning geometrically** Angles in parallel lines Bearings, Constructions & loci **Solving** Solving equations, Solving inequalities Simultaneous equations **Sequences** Linear nth term, Quadratic nth term Fibonacci, quad & geometric	**Graphing** Straight line graphs, Sketching graphs Graphical solutions, parallel lines **Rearranging** Rearranging formulae Units, compound measures **Scaling** Direct/inverse proportion Similarity, Scale diagrams & maps **Visualising** Transformations, Plans & elevations Surface area AP3 (DOOYA)

Year 9 Still Life

Still life

A Still life is a painting or drawing of an arrangement of objects, typically including fruit and flowers and objects contrasting with these in texture, such as bowls and glassware.

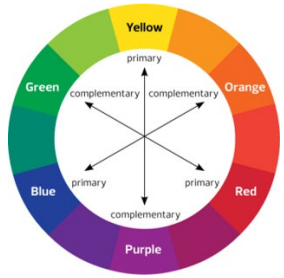
Tonal value

'Tonal Value' or **'Value'** in Art, is part of a family of visual components which make up the **'Elements of Art'.** They can be used singularly or in conjunction with each other to create visual art; a painting, print, photograph, pattern, design or sculpture.
Tonal value plays a huge part within the Elements of Art, so we will spend more time explaining what it is and how it is used.

Primary Colours
The three primary colours are red, yellow and blue. In traditional colour theory these are the 3 colours that cannot be formed by mixing any combinations or other colours. All other colours are derived from mixing these three colours.

Secondary Colours
Secondary colours form the next most basic of the standard colour wheels. Mixing the three primary colours with each other forms these colours. For example, yellow mixed with blue makes green or yellow mixed with red makes orange.

Complimentary colours are the opposite of a colour on the colour wheel e.g. Green is the complimentary colour of red.



Artist study – Paul Cezanne

Paul Cézanne (1839-1906) was an artist who painted over 1300 paintings!
Cézanne made art at the same time as the Impressionists, but his approach challenged their art rules.
The Impressionists tried to capture movement and light, they worked quickly and messily, often painting outside.
Cézanne's process was a lot slower. He liked to slowly study objects and look at them from different angles. He was more interested in how something made him feel, rather than trying to paint realistically - this made him a bit of rebel!

Apples

The objects Cézanne chose to focus on in his paintings weren't very symbolic, or very fancy. He often chose to paint... apples!
By focusing on these local, familiar objects, Cézanne draws our focus back to the everyday. He did this as a way of slowing down in amongst a busy world.
He enjoyed studying these apples from many different angles, often showing different perspectives on one canvas - making his work almost 3D!

Art movement

Cezanne is now known as a Post-Impressionist and called 'the father of modern art' because he showed how free art could really be.
He encouraged artists to explore colour, shape and space without needing to make sense in a traditional, realistic way.
This approach influenced Cubism and postmodern artists such as Pablo Picasso, Vanessa Bell, etc. - who have all created still life artwork in their own unique style.

Year 9 Drama – Terms 1-2: Exploring Practitioners

Developing your knowledge, skills and understanding of a variety of theatrical conventions as used by key practitioners

Bertolt Brecht	A German practitioner concerned with Epic and Political theatre
Konastatin Stanislavski	Russian practitioner who created naturalism from realism. Stanislavski believed that theatre should be 'a slice of life.'
Antonin Artaud	A French practitioner who developed the Theatre of Cruelty. His performances were mainly abstract and used lots of physicality.
Frantic Assembly	A British physical theatre company. Focusing on paired or grouped choreographed performances.
Epic	An over exaggerated performance using set conventions which break the fourth wall.
Naturalism	A form of realism where acting and actions are presented as they would be in real life.
Theatre of Cruelty	A genre of theatre used by Artaud. This theatrical form uses animalistic and sensory overloading techniques to shock the audience.
Physical Theatre	A combination of dance and drama to create a choreographed performance.
Subtext	The deeper meaning behind a character's action or dialogue.
Emotion Memory	This is a technique which requires performances to recall past experiences to extract emotions and use them in performances to make their characters as realistic as possible.
Placards	Signs display key information, narration, facts and questions for the audience.
Narration	A storytelling technique to help inform the audience.
Body Tension	How relaxed or tense an actor's muscles are.
Verfrumdungseffekt	Also known as the V effect. This is a combination of techniques used to alienate/distance the audience from the action.
Direct Address	Characters speaking directly to the audience in role, as performers or narrators.
Sense Memory	This is when an actor recalls their senses to allow their actions to be more realistic.
Choreography	This is a structure dance or movement sequence.
Canon	This is where performs start and different points and repeat the actions of the previous person.
Unison	When performs use choreography at the same time in the same way.

Year 9 Clock Project

King's Oak Academy

Key words:

Design Brief
Annotations
Target market
Prototype
Modelling
Memphis
Isometric
Oblique
Post modern
Acrylic
CAD/CAM
Epoxy resin
Plywood
Production Plan

Product analysis

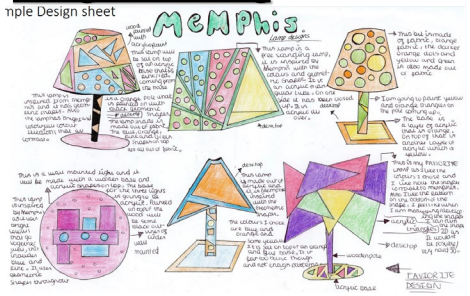
Analyse the above clocks using ACCESS FM.

Design Brief Analysis

A design brief is a statement telling you what to do. To understand exactly what you need to do you need to break it down. The easiest way to break it down in by using the 5Ws and H to ask some questions. These questions could be:

- Who is going to use it?
- What materials could it be made from?
- How much will it cost to make?

Design sketching



Try drawing in 3D isometric or oblique and a ruler to help you

- When drawing your design sketches, make sure they are in 3D and must always be drawn in PENCIL.
- When rendering use colouring pencils.
- Get creative with your ideas. Your imagination has no limits.

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

ACCESS FM - Helpsheet

A is for **Aesthetics**		**Aesthetics** means **what does the product look like?** What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?
C is for **Cost**		**Cost** means **how much does the product cost to buy?** How much does it: Cost to buy? Cost to make? How much do the different materials cost? Is it good value?
C is for **Customer**		**Customer** means **who will buy or use your product?** Who will buy your product? Who will use your product? What is their: Age? Gender? What are their: Likes? Dislikes? Needs? Preferences?
E is for **Environment**		**Environment** means **will the product affect the environment?** Is the product: Recyclable? Reuseable? Repairable? Sustainable? Environmentally friendly? Bad for the environment? **6R's of Design:** Recycle / Reuse / Repair / Rethink / Reduce / Refuse
S is for **Size**		**Size** means **how big or small is the product?** What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit? Would it be improved if it was bigger or smaller?
S is for **Safety**		**Safety** means **how safe is the product when it is used?** Will it be safe for the customer to use? Could they hurt themselves? What's the correct and safest way to use the product? What are the risks?
F is for **Function**		**Function** means **how does the product work?** What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?
M is for **Material**		**Material** means **what is the product made out of?** What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

Wood or **Timber**
comes from trees. There are two types of tree.

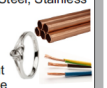
- **Softwood** - come from coniferous trees. They are usually faster growing, therefore usually more open grained, softer and cheaper. Used mainly for construction. Examples; Pine, Larch, Spruce, Red Cedar.
- **Hardwood** - come from broad leaved trees, they are usually deciduous, which means they lose their leaves in winter. They are usually slower growing, therefore usually tighter grained, harder and more expensive. Often used for furniture. Examples: Oak, Ash, Beech, Mahogany.

There also

- **Manufactured Boards** - are made by gluing wood fibres or veneers together. They come in sheets of standard size and thicknesses. Used for floorboards, worktops, furniture, construction. Examples; mdf, chipboard,plywood

Metal
comes from ore, which is mined and smelted to create metals. There are three types.

- **Ferrous** - contain Iron and some carbon. They are the most commonly used. They are magnetic and most rust. Used for from constructions to tools. Examples; Cast Iron, Mild Steel, High Carbon Steel, Stainless Steel, High Speed Steel.
- **Non Ferrous** - do not contain Iron. They do not rust, but can tarnish. They are used for everything from, pipes, cables, food tins and cans, to planes to jewellery. Examples; Copper, Tin, Aluminium, Zinc, Silver.



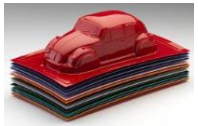
- **Alloys** - are a mixture of two or metals. Most metals are alloys. An alloy uses the best properties of each metal. Examples; Brass, Bronze, Duralminium, Casting Alloy(L4)

Plastic

- Also called Polymers Most polymers are synthetic (man-made), most are made from oil. Many polymers are capable of being recycled, but most are not. There are two types:

- **Thermoset** - are heated and moulded into shape once.
- They cannot soften if reheated. They are used for worktops, electrical fittings, glues. Examples; Melamine Formaldehyde, Epoxy Resin, Polyester Resin, Phenol Formaldehyde, Urea Formaldehyde.
- **Thermoplastic** - soften when heated and ca be shaped when hot. The plastic hardens when it is cooled, but can be re-shaped if re-heated. Used for baths, buckets, bottles, pipes, food packaging, shoe soles. Examples; High Density Polyethylene, Expanded Polystyrene, Acrylic, Nylon, PVC, PET

Create a 12 question quiz (including answers) based on the 3 materials in your knowledge organiser.



HIPS (High impact polystyrene)

MDF

Acrylic

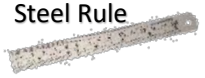
Evaluation:

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?

Tools and Equipment:

Steel Rule



Tri Square

Tenon saw

Coping Saw

Bench hook

File

Abrasive paper

Belt sander

Pillar drill

Scroll saw

Laser cutter

English

Year 9

Block 2
Modern Texts

Vocabulary Organiser

Number	Word	Definition	Term	Unit Name
1	**Masculinity**	Real or perceived characteristics of males	Term 1	A View from the Bridge
2	**Femininity**	Real or perceived characteristics of females	Term 1	A View from the Bridge
3	**Immigrant**	An immigrant is a person who has come to live in a country from some other country.	Term 1	A View from the Bridge
4	**Obsession**	If you say that someone has an obsession with a person or thing, you think they are spending too much time thinking about them.	Term 1	A View from the Bridge
5	**Honour**	Honour means doing what you believe to be right and being confident that you have done what is right.	Term 1	A View from the Bridge
6	**Omerta**	A conspiracy of silence	Term 1	A View from the Bridge
7	**Vulnerable**	Someone who is vulnerable is weak and without protection, with the result that they are easily hurt physically or emotionally.	Term 2	A View from the Bridge
8	**Imperious**	If you describe someone as imperious, you mean that they have a proud manner and expect to be obeyed.	Term 2	A View from the Bridge
9	**Deference**	Deference is a polite and respectful attitude towards someone, especially because they have an important position.	Term 2	A View from the Bridge
10	**Denial**	A denial of something is a statement that it is not true, does not exist, or did not happen.	Term 2	A View from the Bridge
11	**Pugnacious**	Someone who is pugnacious is always ready to quarrel or start a fight.	Term 2	A View from the Bridge
12	**Inevitable**	If something is inevitable, it is certain to happen and cannot be prevented or avoided.	Term 2	A View from the Bridge

9.10 Leisure and Healthy Living FRENCH

ACTIVITY VERBS	
aller	To go
jouer	To play
manger	To eat
visiter / rendre visite	To visit / pay a visit
faire	To do
danser	To dance
boire	To drink
regarder	To watch
écouter	To listen
lire	To read
acheter	To buy
finir	To finish
écrire	To write
dormir	To sleep
nader	To swim
rester	To stay
voyager	To travel
chanter	To sing
envoyer des textos	To text
contacter	To contact
appeler	To call
cuisiner	To cook
aider	To help
travailler	To work
se relaxer	To relax
se reposer	To rest

INTENSIFIERS			
très	very	extrêmement	extremely
tellement	so	trop	too
assez	quite	vraiment	really
un peu	a bit	pas du tout	not at all

HEALTHY LIVING VERBS	
se coucher	To go to bed
avoir envie de	To fancy (feel like)
trouver (un emploi)	To get a job
courir	To run
se droguer	To take drugs
se soûler	To get drunk
se sentir bien/mal	To feel well/unwell
être au régime	To be on a diet
être en forme	To be in shape
garder la forme	To stay in shape
eviter	To avoid
fumer	To smoke
essayer (+ infinitive)	To try (to do something)
se lever	To get up
s'inquiéter	To worry
se sentir	To feel
avoir mal	To have pain
avoir sommeil	To feel sleepy
surmonter	To overcome

LES GENS	PEOPLE
avec	with
mes ami(e)s	my friends
mon frère	my brother
ma sœur	my sister
mes parents	my parents
ma famille	mi family
seul	alone

ENDROITS	PLACES
Chez moi	At my home
Chez mon ami(e)	At my friend's house
Dans ma chambre	In my bedroom
Dans le salon	In the living room
Dans le jardín	In the garden
Dans mon quatier	In my neighbourhood
En Angleterre	In England
À l'étranger	Abroad
En ville	In town
À la campagne	In the countryside
À la montagne	In the mountains
Au bord de la mer	At the coast

ADJECTIVES	
relaxante	relaxing
agréable	pleasant
sérieux / sérieuse	serious
sportif / sportive	sporty
enrichissant / enrichissante	enriching
amusant / amusante	fun
passionnant / passionnante	exciting
rapide	quick
énervant / énervante	annoying
gratifiant / gratifiante	rewarding
ennuyeux / ennuyeuse	boring
facile	easy
difficile	difficult
intéressant / intéressante	interesting
bon/ bonne pour la santé	healthy
mauvais/ mauvaise pour la santé	unhealthy

9.10 Leisure and heathy living

3 time frames
Infinitives
Time phrases

opinions
justifications
describing and comparing

Verbs and the present tense in French

The infinitive

When you look up a verb in the dictionary, you find its original, unchanged form which is called the ***infinitive*** (manger, boire, jouer, visiter, habiter, aller etc.). The infinitive ends in **–re**, **-er** or **–ir.**

Forming the present tense in French

Take off the last 2 letters of the infinitive (**–re**, **-er** or **–ir)** and add the following endings depending on the pronoun:

*Important! There are some key irregulars to learn which don't follow this pattern – aller (as shown here), être, avoir and faire are really important!

	RE verb	ER verb	IR verb
Je (I)	-s	-e	-s
tu (you)	-s	-es	-s
il/elle (he/she)		-e	-t
nous (we)	-ons	-ons	-issons
vous (you all)	-ez	-ez	- issez
ils/elles (they)	-ent	-ent	- issent

Verbs and the near future tense in French

You can talk about the future by using the **near future** tense.

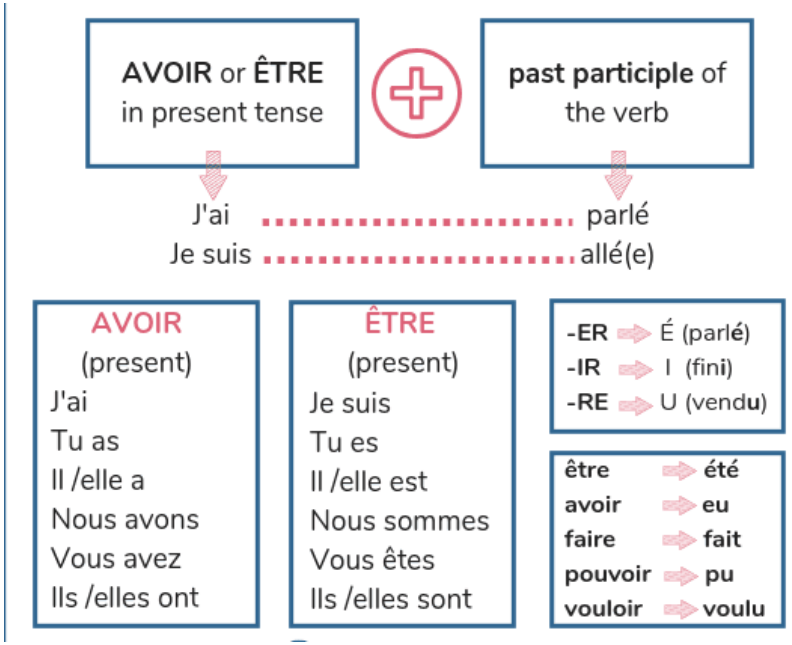
Use part of the verb ALLER + a + the infinitive to say what you are **going** to do.

Ce soir je vais jouer au tennis. *This evening I am going to play tennis.*

Demain Paul va a faire un gateau. *Tomorrow Paul is going to make a cake.*

Aller (to go)	
Je vais	I am going
Tu vas	You are going
Il/elle va	He /she/one is going
Nous allons	We are going
Vous allez	You (lot) are going
Ils/elles vont	They are going

Verbs and the past tense in French



9.10 Leisure and heathy living

3 time frames
Infinitives
Time phrases

opinions
justifications

1.Expressing FUTURE intentions :
J'ai l'intention de + infinitive (I plan to/ I intend to ...)
Je voudrais + infinitive (I would like to...)

2.Using infinitives after j'aime/je m'aime pas/je déteste/je préfère :
You can also use an infinitive after opinion verbs such as aimer, détester and préférer. They are usually translated with a **gerund** (a verb ending with -ing) in English:
J'aime *habiter* à Newcastle - I like living in Newcastle.
Tu préfères *jouer* au foot ou au tennis? - Do you prefer playing football or tennis?
Je déteste *boire* du café parce que c'est dégoûtant – She hates drinking coffee because it's disgusting.

3.Opinions
J'aime - I like
J'aime beaucoup- I like **a lot**
Je n'aime pas beaucoup- I don't like **much**
Je préfère – I prefer
Je déteste - I hate
Je ne peux pas supporter - I can't stand

4.Justification
Parce que - because
Ainsi– therefore/so
Par conséquent - consequently

5.Comparisons
Plus…..que –more…than
Moins…que - less…than
Aussi…que – as…as

6.Superlative
Le/la plus – the most
Le/la moins – the least
Le/la mieux – the best
Le/la pire – the worse

7.Time phrases
Normalement - normally
D'habitude - usually
Généralement - generally
Quelquefois – sometimes

Ensuite – next
Rarement - rarely
Le weekend prochain– next weekend
La semaine prochaine - next week

Le weekend dernier - last weekend
Le mois dernier - last month
L'été dernière - last summer
Pendant le confinement - during lockdown

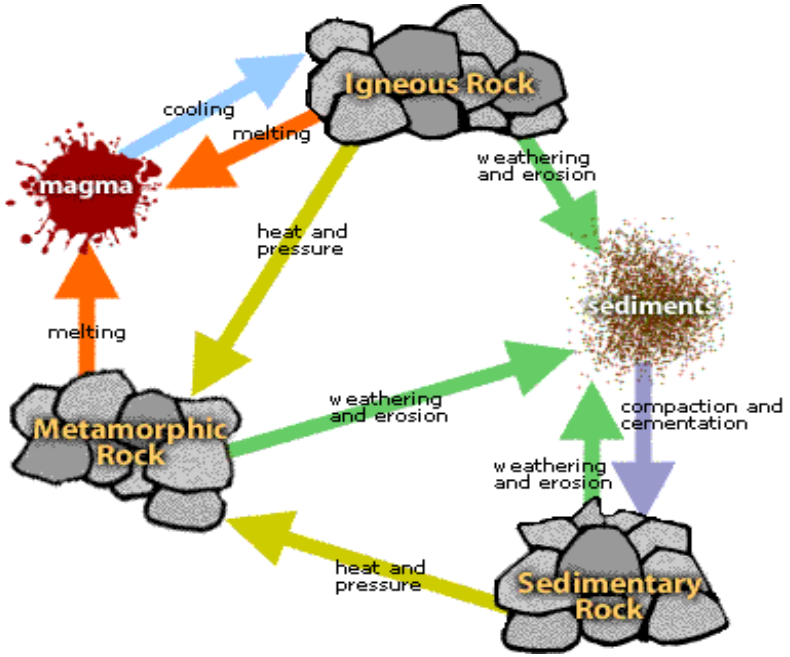
Year 9 KOA Geography Knowledge Organiser – Block 2: How long can we exploit the Earth's resources for?

Key concepts:

Interdependence -- The control and monitoring of resources so that they do not become depleted or exhausted. Link between human and physical geography in relation to resources.

Environmental impacts – impact of resource use and extraction on the environment

Sustainable development - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs in relation to resources



Igneous rock
This is formed from molten rock often linked to volcanoes. The molten rock may cool slowly, allowing time for minerals to form large crystals, which lock together. Granite and basalt are types of igneous rock.
Igneous rocks are very hard and durable. In the UK they form mountainous areas. People use igneous rocks to construct some buildings. Crushed granite is often used to surface roads. Igneous rocks are also important sources of minerals like diamonds.

Sedimentary rocks
Most of these types of rocks are formed under the sea. Rock particles carried by rivers were washed out to sea, and settled on the sea floor. On the sea bed they were buried by newer sediment, squeezed and cemented together over thousands of years to form new rock. These rocks also include the fossilised remains of sea creatures. Chalk and limestone are examples of sedimentary rocks that are made up almost entirely from fossils.
Sedimentary rocks include valuable rocks such as coal and iron ore. Salt and potash are also important raw materials for the chemical industry. Sand and gravel are used for making concrete and cement. Clay is used to make house bricks.

Metamorphic rocks
These rocks form from existing rocks that are transformed by great heat or pressure. These changes lead to the existing minerals melting and forming new minerals. Marble and slate are examples of metamorphic rocks. The sedimentary rock, mudstone, is transformed into slate, and limestone into marble.
Slate is very durable and is formed in thin layers, which can be cut into thin, strong tiles, ideal for making roof tiles. Marble is used as a building stone, and to make sculptures.

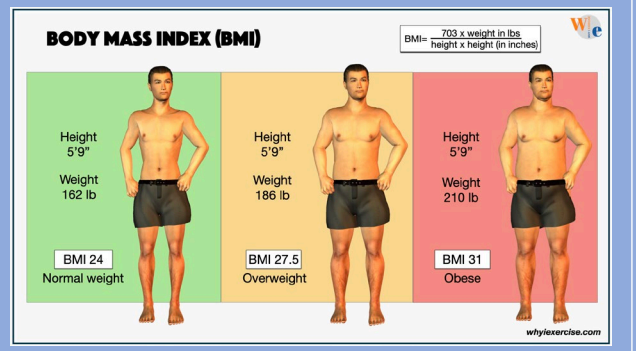
Key Vocab
Atmosphere – the thin, fragile layer of gases that surrounds the Earth
Biome – a large community (large ecosystem) of plants and animals found in a major habitat such as rainforests, tundra etc
Biosphere – living matter on Earth, including all plant and animal life
Crude Oil – naturally occurring and unrefined petroleum that can be refined into diesel, petrol, gasoline, kerosene, and other petrochemicals
Energy mix - relates to the different energy sources we use as a country and in what proportions. This is often spilt into renewable and non-renewable forms of energy.
Fossil Fuel – a natural hydrocarbon fuel such as petroleum, coal or natural gas, which is formed by the fossilised (preserved) remains of ancient plants and animals that are deposited over millions of years
Geological time - the long period of time occupied by the earth's geologic history
Geologists – expert scientists who study the structure of the Earth and its rocks Hydrosphere – the water on the surface of the earth in oceans, rivers, lakes, rain and mist
Igneous rock - Come from inside the Earth. Igneous rocks include lavas that form during volcanic eruptions, but also include magma that cools down and becomes solid before reaching the surface
Lithosphere – the rigid outer layer of the earth, made up of the up mantle and the crust
Metamorphic rocks - have been subjected to tremendous heat and/or pressure, causing them to change into another type of rock. They are usually resistant to weathering and erosion and are therefore very hard-wearing.
Natural Resources – substances that are found in nature which can be used by humans for our benefit, such as water, soil, coal, minerals, wood, animals etc
Non-renewable – substances which are limited and so will run out one day or cannot be replaced during our lifetime, such as natural gas, coal etc
Raw Materials – the basic materials or substances from which products can be made, such as wood can be transformed into furniture
Renewable – resources that can be replaced over time, and will not run out, such as water, wind, forests, etc
Sedimentary - formed from sediments that have settled at the bottom of a lake, sea or ocean, and have been compressed over millions of years. The sediment comes from eroded rocks carried there by rivers or ice, and from the skeletons of sea creatures. Stakeholders- someone with an interest in a particular issue
Sustainability – when materials and resources are used in a way that will balance the needs of the present without compromising the future, the ability to maintain something such as economic growth.

KOA Health

Food Technology Knowledge Organiser

Energy from food

- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with the term calories (kcal).
- Different foods provide different amounts of energy.



Body Mass Index (BMI) can be used to identify if an adult is a correct weight for height.

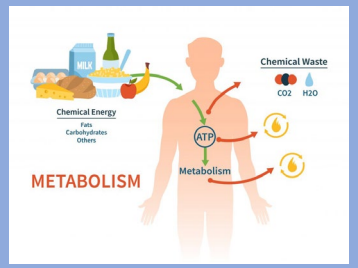
BMI = $\frac{\text{weight (kg)}}{(\text{height in m})^2}$

Recommended BMI range (adults)

Less than 18.5	Underweight
18.5 to 25	**Desirable**
25-30	Overweight
30-35	Obese (Class I)
35-40	Obese (Class II)
Over 40	Morbidly obese

Energy requirements vary from person to person, depending on the Basal Metabolic Rate (BMR) and Physical Activity Level (PAL).

Total energy expenditure = BMR x PAL



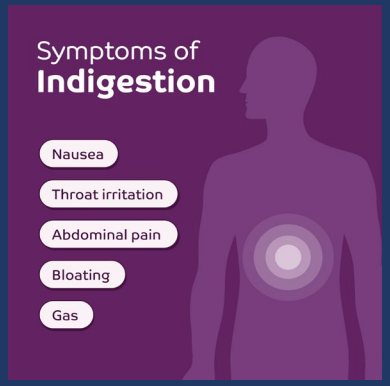
Stages of digestion

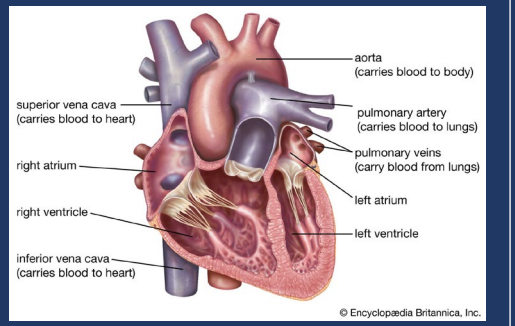
Ingestion - the intake of food into the gastrointestinal (GI) tract.

Digestion - a series of physical and chemical processes which begin in the mouth but take place mainly in the stomach and small intestine.

Absorption - the passage of digested food substances across the gastrointestinal lining into the bloodstream and lymphatic system.

Elimination - the excretion of undigested food substances (such as cellulose) or waste in faeces.





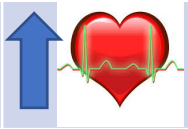
Energy

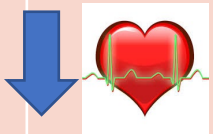
Energy is essential for life, and is required to fuel many different body processes, growth and activities. These include:
keeping the heart beating;
keeping the organs functioning;
maintenance of body temperature;
muscle contraction.

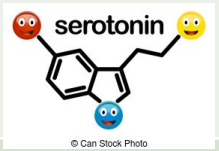
Different people need different amounts of dietary energy depending on their:

age;
gender;
body size;
level of activity;
genes.

Block 2 – Effects of exercise.

Physical Effects Immediate	
Increased heart rate	
Increased breathing rate and depth	
Skin becomes red as blood comes to the surface	
Skin becomes sweaty to lower your body temperature	
Lactic acid is produced causing muscular pain	
Activation of serotonin	

Physical Effects Long Term	
Lower resting heart rate	
Lower breathing rate	
Bigger and Stronger muscles (Hypertrophy)	
Reduce risk of chronic illnesses such as type 2 diabetes and heart disease	

Mental Effects	
Reduces Stress	
Makes you feel good. It releases the feel good hormone Serotonin.	
Increases Confidence	

Social Effects	
Make Friends	
Team Work Skills	
Communication Skills	
Leadership Skills	

King's Oak ACADEMY

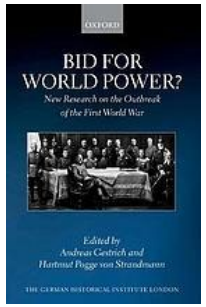
Year 9: Block 2: Causes of World War One

Chronology	Putting events in the order that they happened
Fact	Something that can be proven true
Opinion	A statement of a person's or group's thoughts, feelings, or beliefs.
Decade	10 years
Century	100 years
Infer	To work something out from a source
Armistice	a pause in fighting brought about by agreement between the two sides
Arms Race	countries that are enemies each try to build or collect weapons faster than the other can
Patriotism	love that a person feels for his or her country
Kaiser	The king of Germany
Terrorism	the use of violence as a means of achieving a goal
Occupation	When a foreign country takes control of and governs another country

Sources and Interpretations

Sources are things that were created at the time or by someone who lived at the time. We can **infer** (work out) information about the past from them.

Interpretations are accounts of the past usually written by historians. They use sources to make judgements about what happened.

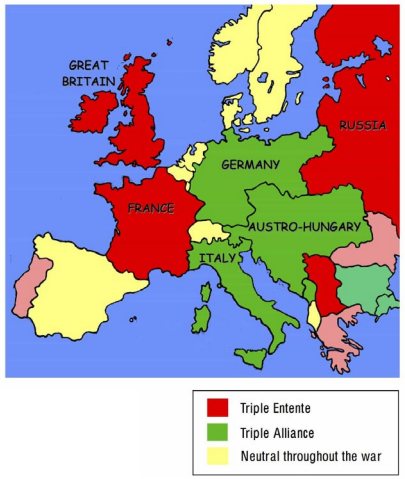


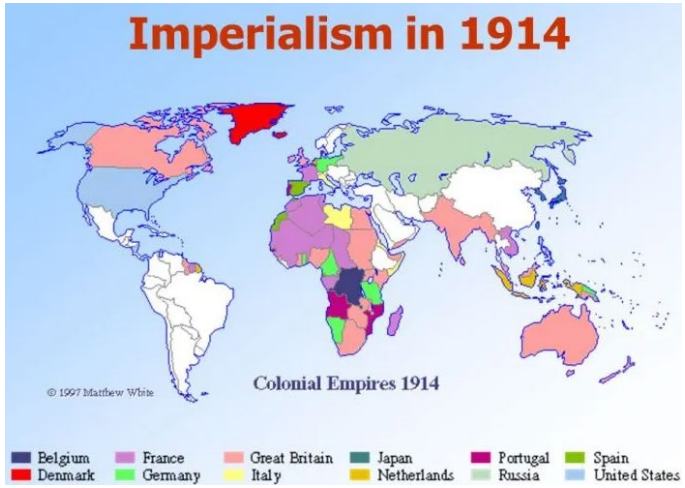
Gerhard Hirschfeld believes Imperialism is to blame for the outbreak of WW1

Militarism	Germany wanted to become a world power, so began to build up its navy. This alarmed Britain so they built the 'Dreadnought'. Germany responded by building its own version.
Alliances	Germany felt threatened because it thought it was being surrounded by hostile nations. However, most people thought the alliances would prevent war.
Nationalism	Germany was a new country and wanted to quickly become a world power. However, France were resentful at losing land. In the Austrian-Hungarian empire some countries esp. Serbia became restless.
Imperialism	Each of the major countries were trying to protect their colonies as they provided important resources. Germany had been acquiring new colonies which the other nations saw as a threat.
Assassination	The Bosnian Black Hand Gang wanted the Austro-Hungarian Empire to leave Bosnia. In June 1914, they killed the heir to the Austro-Hungarian throne, Franz Ferdinand. This caused Austria-Hungary to declare war on Bosnia.

The Schlieffen Plan

Germany had started drawing up a plan for war - the Schlieffen Plan - in 1897. It took nine years to finalise, it was based on the belief that, if the country went to war, Germany would be faced with a war on two fronts with France and Russia. The plan assumed that France was weak and could be beaten quickly, and that Russia was much stronger, but would take longer to mobilise its army.





Causes of WW1: Historiography

Richard Evans, a British historian who specialises in German history.

"Serbia bore the greatest responsibility for the outbreak of WWI. Serbian nationalism was profoundly disruptive and Serbian backing for the Black Hand terrorists was extraordinarily irresponsible.
Austria-Hungary bore only slightly less responsibility for its panic over-reaction to the assassination of Franz Ferdinand.
France encouraged Russia's aggressiveness towards Austria-Hungary and Germany encourage Austria's refusal to back down".

Annikar Mombauer, a German historian and Senior Lecturer in Modern European History at the Open University.

"Without the initial willingness of Austria's leaders for a 'reckoning' with Serbia, Germany's decision-makers would not have been able to use the assassination as the trigger for war.
Ultimately, there is some agreement that Germany at the very least encouraged Austria, or at worst, that pressure was put on Austria-Hungary to act before it was too late…
…Out of a mixture of desperation and over-confidence, Austria-Hungary and Germany unleashed a war to preserve and expand their empires".

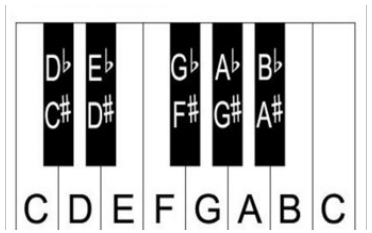
3. Dr Heather Jones, Professor of Modern and Contemporary European History at UCL, who specialises in WWI.

"A handful of bellicose [war like] political and military decision-makers in Austria-Hungary, Germany and Russia caused WWI.
Relatively common before 1914, assassinations of royal figures did not normally result in war. But Austria-Hungary's military leaders (main culprits for the conflict) saw the assassination as an excuse to conquer and destroy Serbia, an unstable neighbour which had sought to expand beyond its borders into Austro-Hungarian land. Serbia, exhausted by earlier conflicts in 1912-3, did not want a war in 1914".

Year 9 Terms 1 & 2 – How can music tell my story?

Key Words

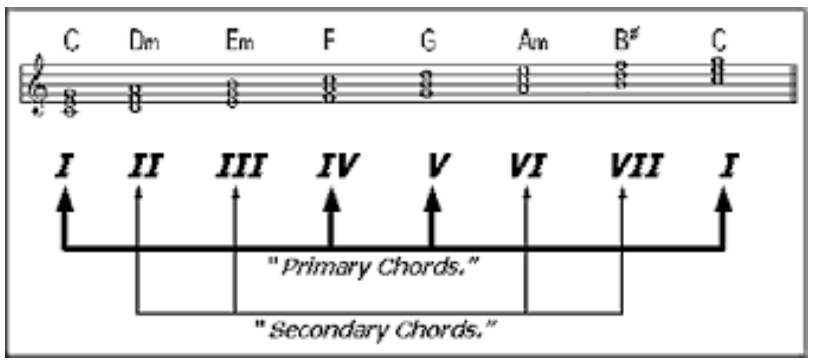
Strings
Woodwind
Brass
Percussion
Synthesisers
Chord
Major
Minor
Chord sequence
Chords I, IV, V
Chords ii, iii, vi
Rhythm
Syncopation
Bass line



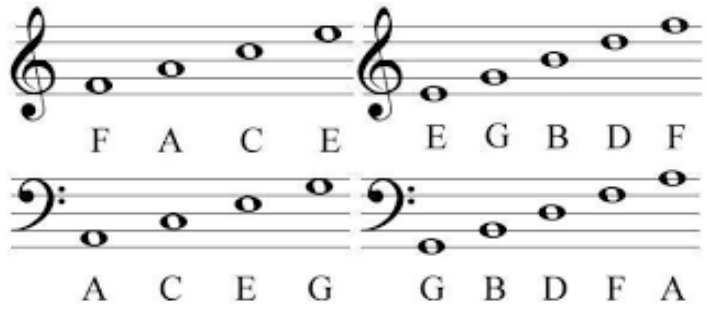
Musical Elements

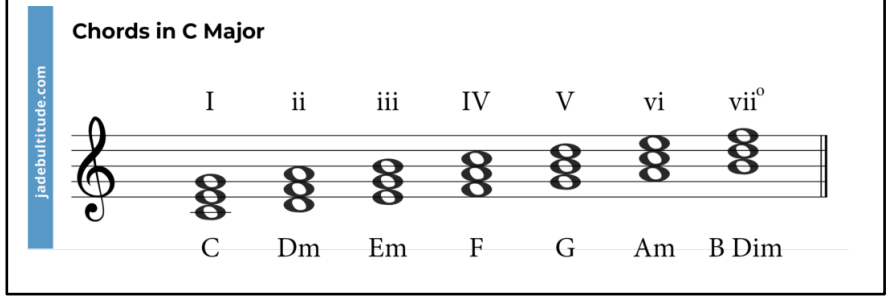
Dynamics	*(volume)*
Rhythm	*(duration of notes)*
Tempo	*(speed)*
Context	*(background info)*
Structure	*(sections)*
Melody	*(organisation of pitches)*
Instrumentation	*(instruments & voices)*
Texture	*(layers)*
Harmony	*(chords & progressions)*
Tonality	*(key)*

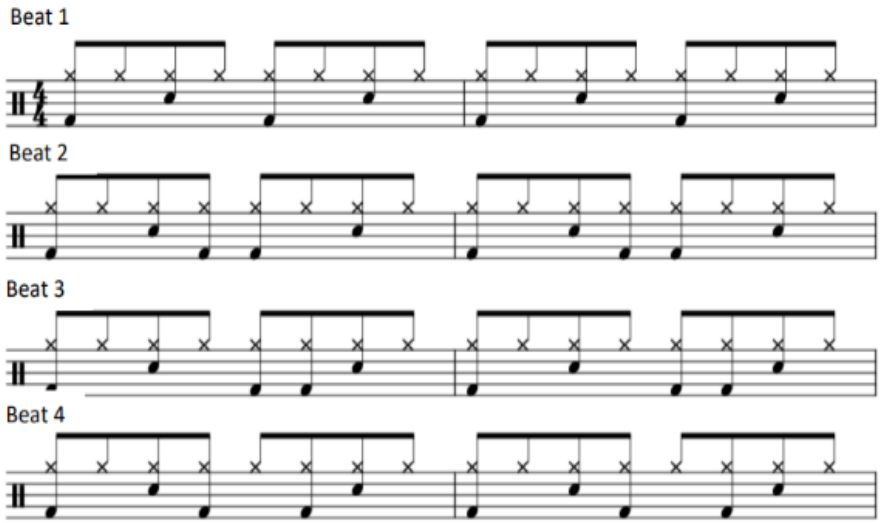
Chords numbers (Roman numerals) in C Major



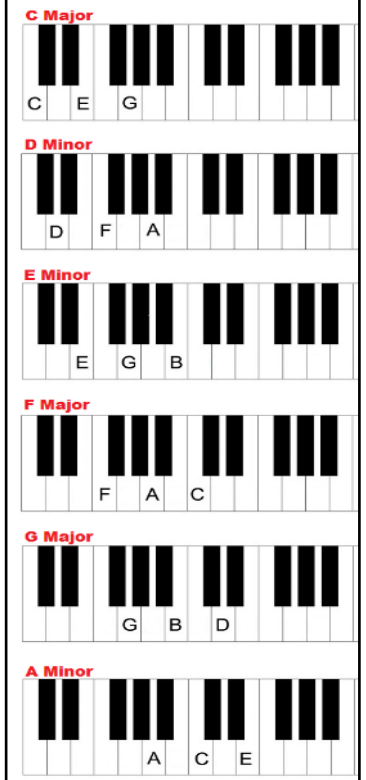
Reading Music







Piano Chords in C



Religion and World Studies Term 2 - Change makers

A change maker is someone that has used their religious, or non-religious, ideas and beliefs to go about making a change in the world. These changes have not always been easy, or well received, but people have believed so strongly that what they believe is right, they have used both violent and non-violent methods to try to create change through protest, education, human rights and ideas in order to make the world a better place.
Change makers can be individuals or groups of people who have the same ideas and beliefs.

Malala Yousafaz

Malala Yousafzai is a Pakistani activist who, while a teenager, spoke out publicly against the ban on the education of girls that was imposed by the Tehrik-e-Taliban Pakistan (TTP; sometimes called Pakistani Taliban).
Malala's father established and administered the school she attended, Khushal Girls High School and encouraged her to follow in his path. In 2007 the area she lived in was invaded by the TTP and began imposing strict Islamic law, destroying or shutting down girls' schools, banning women from any active role in society, and carrying out suicide bombings. Malala and her family fled the region for their safety, but they returned when tensions and violence eased.
When she was 11 years old, her father took her to a local press club in Peshawar to protest the school closings, and she gave her first speech—"How Dare the Taliban Take Away My Basic Right to Education?" Her speech was publicized throughout Pakistan. Toward the end of 2008, the TTP announced that all girls' schools in would be shut down on January 15, 2009. The TTP shut down all girls' schools in and blew up more than 100 of them.
Malala continued to make television appearances in the local and international media, and in October 2011 she was nominated by for the International Children's Peace Prize. In December of that year she was awarded Pakistan's first National Youth Peace Prize (later renamed the National Malala Peace Prize). On October 9, 2012, Malala was shot in the head by a TTP gunman while she was en route home from school. She survived the attack and was flown from to Birmingham, England, for surgery. Malala fully recovered and has just received a degree from Oxford University.

Activism	using campaigning to bring about social or political change
Civil disobedience	refusing to obey laws in a non-violent way
Civil rights	these are legal rules that are supposed to protect individuals from unfair treatment in their society, like the right to vote.
Democracy	a form of government where the citizens choose their leaders through elections
Equality	where all people are viewed as of equal value
Privilege	when one social group has advantages over other social groups
Racism	the idea that some groups of humans are superior or inferior to others based on their skin colour or culture
Racist	expressing racist ideas or supporting racist policies through our actions
Racist policy	laws and government guidelines that are racist

Peter Singer

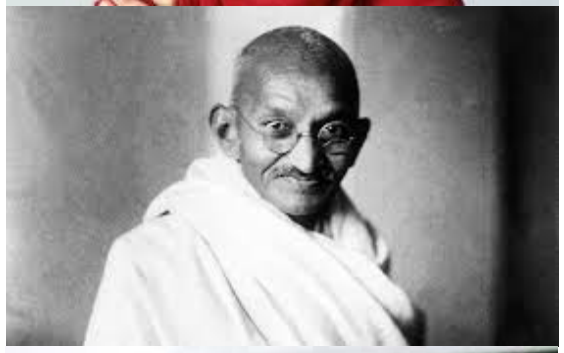
Peter Singer is an Australian ethical and political philosopher best known for his work in bioethics and his role as one of the founders of the modern animal rights movement. At Oxford his association with a vegetarian student group and his reflection on the morality of his own meat eating led him to adopt vegetarianism. While at Oxford and during a visiting professorship at New York University in 1973–74, he wrote what would become his best-known and most influential work, *Animal Liberation: A New Ethics for Our Treatment of Animals* (1975).The publication of *Animal Liberation* in 1975 greatly contributed to the growth of the animal rights movement by calling attention to the routine torture and abuse of countless animals in factory farms and in scientific research.

Mahatma Gandhi

Mahatma Gandhi, was an Indian lawyer, politician, social activist, and writer who became the leader of the nationalist movement against the British rule of India. Gandhi grew up in a Hindu home with a strong belief in nonviolence. When he finished school, he moved to England to study Law and joined the Inner Temple, one of the four London law colleges. When he finished his degree, Gandhi moved to South Africa where he was quickly exposed to the racial discrimination practiced in South Africa. As a result he decided he would not accept injustice as part of the natural or unnatural order in South Africa. Gandhi left South Africa in 1914, just before the outbreak of World War I and returned to India. For the next three years, Gandhi used his education and experiences to become involved in Indian politics. He could see the injustice in the British Raj and the way that Indian peasants were treated.

Indian suffered from a number of violent outbreaks following the war, most notably the Massacre of Amritsar, which was the killing of nearly 400 Indians who were gathered in an open space in Amritsar by British-led soldiers. Riots broke out and the British Raj enactment of martial law. The violence and unrest caused Gandhi to restart the Indian National Congress. He wanted the Indian people to gain their independence and stand up to British rule in India which treated the Indian people so badly.

Gandhi's vision was a programme of nonviolent, noncooperation which included boycotts not only of British manufactures but of institutions operated or aided by the British in India. This included laws, courts, offices and schools. The campaign electrified the country, broke the spell of fear of foreign rule, but led to the arrests of thousands of *satyagrahis*, who defied laws and cheerfully lined up for prison. Gandhi also led the famous Salt March, an act of civil disobedience, as he encouraged hundreds of protesters to take salt from the sea. Gandhi was eventually assassinated in 1947 whilst leading a protest to stop the violence of Muslims, Sikhs and Muslims, over the newly formed state of Pakistan.



Martin Luther King

Martin Luther King was a Baptist minister and social activist who led the civil rights movement in the United States from the mid-1950s until his death by assassination in 1968. His leadership was fundamental to that movement's success in ending the legal segregation of African Americans in the South and other parts of the United States. King rose to national prominence as head of the Southern Christian Leadership Conference, which promoted nonviolent tactics, such as the massive March on Washington (1963), to achieve civil rights. He was awarded the Nobel Peace Prize in 1964.

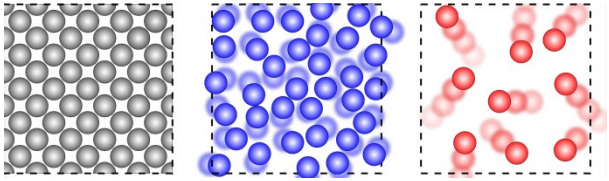
King had been pastor of the Dexter Avenue Baptist Church in Montgomery, Alabama, slightly more than a year when the city's small group of civil rights advocates decided to contest racial segregation on that city's public bus system following the incident on December 1, 1955, in which Rosa Parks, an African American woman, had refused to surrender her bus seat to a white passenger and as a consequence was arrested for violating the city's segregation law. Activists formed the Montgomery Improvement Association to boycott the transit system and chose King as their leader. King set about organizing the Southern Christian Leadership Conference (SCLC), which gave him a base of operation throughout the South, as well as a national platform from which to speak. King lectured in all parts of the country and discussed race-related issues with religious and civil rights leaders at home and abroad.

In an effort to draw together the multiple forces for peaceful change and to convince the country and the world of the importance of solving the U.S. racial problem, King joined other civil rights leaders in organizing the historic March on Washington. On August 28, 1963, an interracial assembly of more than 200,000 gathered peaceably in the shadow of the Lincoln Memorial to demand equal justice for all citizens under the law. Here the crowds were uplifted by the emotional strength and quality of King's famous "I Have a Dream" speech, in which he emphasized his faith that all men, someday, would be brothers.

King was assassinated in 1968 but people continue to work to end racial inequality and discrimination to this day.

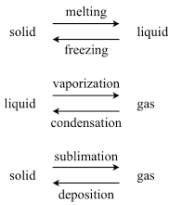
States of Matter

Arrangement of particles in the three GCSE states of matter

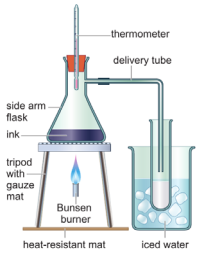


State	Arrangement of particles	Movement of particles	Attractive forces (None/Few/Many)
Gas	Random Far apart	Fast in all directions	None
Liquid	Random Close together	Move around each other	Few
Solid	Regular Close together	Vibrate around fixed positions	Many

Changes of state



Distillation (Pg 100) (Core Prac)



Predicting states

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.

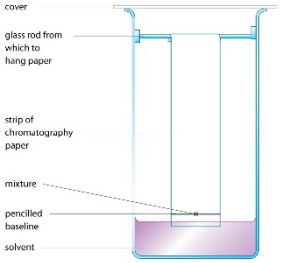
- What state is substance D in at 1000^{O}C?

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^{O}C and a gas above its' boiling point of 1413^{O}C.
- Therefore, at 1000^{O}C, substance D is a liquid.

Chromatography (Core Prac)

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



- Rf measured from baseline

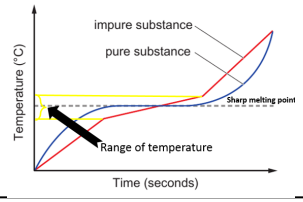
$$Rf = \frac{\text{distance moved by chemical}}{\text{distance moved by solvent}}$$

Purity

Purity is the word used to describe a substance where its composition…

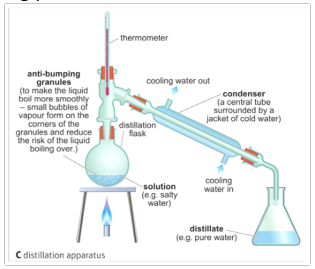
- Cannot be changed
- Is the same in all parts of the substance.
- Has a sharp melting point.

- **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.

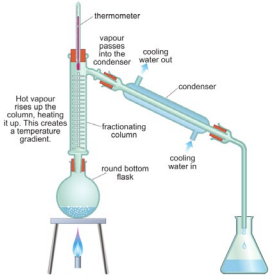


Distillation

To separate two liquids with different boiling points



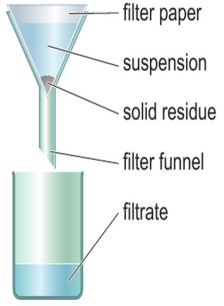
Fractional Distillation



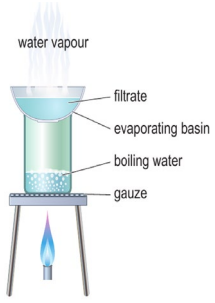
Filtration & crystallisation (Core Prac)

To separate a solid and a liquid

- **Filtration** to separate an **insoluble** solid from a liquid



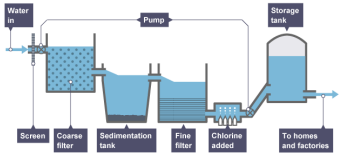
- **Crystallisation** to separate a solid **dissolved** in a liquid.



Water purification

Ground water, waste water and surface water all need **purification**.

- **Filtration** to remove solid matter
- **Sedimentation** to remove finer particles
- **Chlorination** to kill bacteria

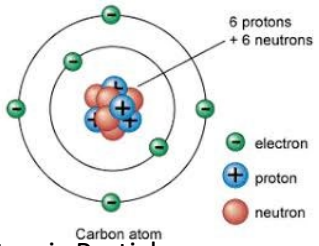


- Sea water is purified by distillation.
- Water for chemical tests must be purified or dissolved ions etc. will interfere with the tests.

EDEXCEL 9-1 Combined Science| **Chemistry – Key Concepts** | Required Knowledge

Atom Structure

Diagram

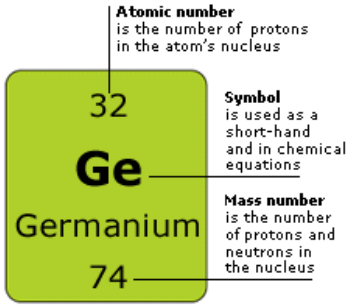


Subatomic Particles

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

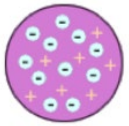
Atom Symbols

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



History of Atom


Dalton
"Billiard Ball" Model


Thomson
"Plum Pudding" Model


Rutherford Model


Bohr Model

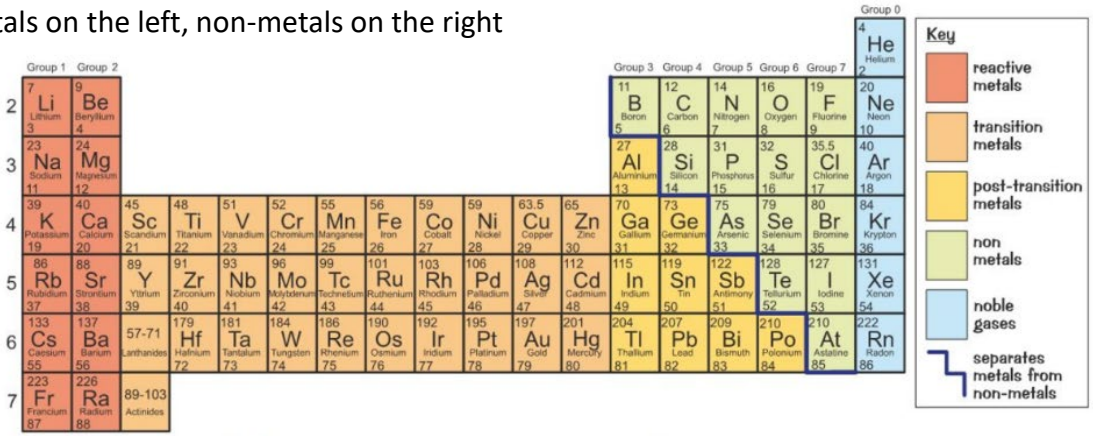
Dalton
Solid sphere

Thompson
Protons/ electrons randomly arranged

Rutherford/Bohr
Positive nucleus with electrons around

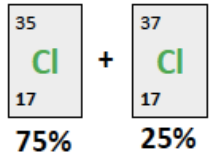
Modern Periodic Table

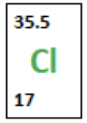
- Arranged by increasing atomic mass (proton number) in rows called periods
- Metals on the left, non-metals on the right



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





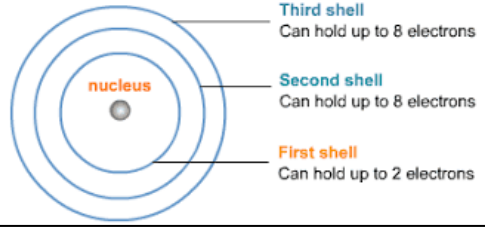
H - e.g. M_r of Cl is calculated using The abundance of each of the Atomic masses of the isotope
(35 x 75/100) + (37 x 25/100) = 35.5

History of Periodic table

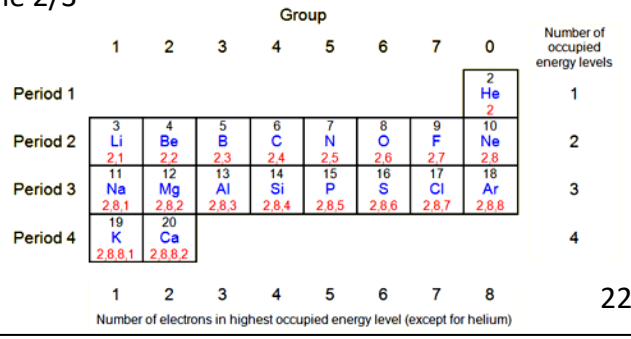
- Dimitri Mendeleev was the first to publish an organised table of elements
- He arranged by relative atomic mass
- But he also left gaps so that elements with similar properties were in the same group
- Using the gaps he was able to predict elements that had not been discovered yet

Electronic Configuration

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

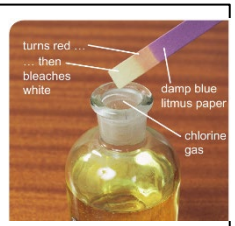


- Rule 2/3



Group 1 – Physical properties of alkali metals

- Low melting points and boiling points (decreases down the group)
- Very soft
- Can test for chlorine gas using damp blue litmus paper which turns red, then bleaches white



Group 1 – Reaction of alkali metals with water

- React vigorously with water
- Reactivity increases down the group (because the outer electron is lost more easily)

lithium + water → lithium hydroxide + hydrogen

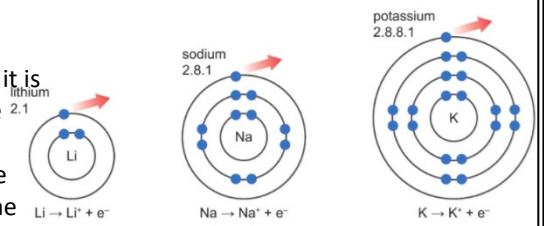
$2Li(s) + 2H_2O(l) \rightarrow 2LiOH(aq) + H_2(g)$

reactivity ↓

lithium + water	bubbles fiercely on the surface
sodium + water	melts into a ball and fizzes about the surface
potassium + water	bursts into flames and flies about the surface

Group 1 – Reactivity

- Reactivity increases down the group
- Alkali metals need to lose one electron to form a 1+ ion
- The bigger the atom the easier it is to lose an electron so the more reactive the atom
- This is due to a greater distance (weaker attraction) between the positive charge of nucleus and outer shell electrons



Group 0 – Properties of noble gases

- Non-metals
- Inert (very unreactive)
- Non-flammable
- Colourless
- Monatomic (exist as single atoms)
- Boiling point, melting point and density all increase down the group

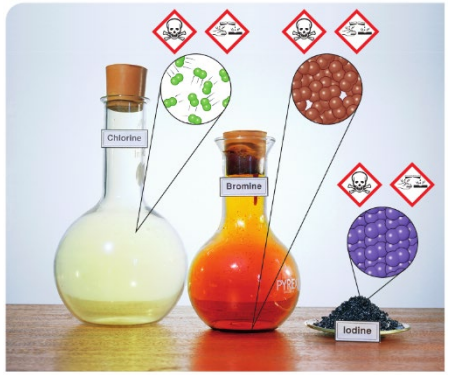
Group 0 – Uses of noble gases

<u>Helium</u>
Used in balloons and airships to make them float as it is much less dense than air.

<u>Argon</u>
Used in light bulbs, as it is unreactive it stops the hot filament burning away.

<u>Neon</u>
Used in signs as it glows when electricity passes through it.

Group 7 – Physical properties of halogens

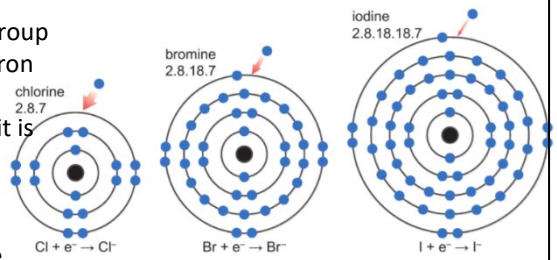


Group 7 – Reaction of halogens with metals and hydrogen

- Halogen + metal → metal halide
  E.g. chlorine (g) + sodium (s) → sodium chloride (s)
- Halogen + hydrogen → hydrogen halide
  E.g. chlorine (g) + hydrogen (g) → hydrogen chloride (g)
- Hydrogen halides dissolve in water to form acids
  E.g. hydrogen chloride (g) → hydrochloric acid (aq)

Group 7 – Reactivity

- Reactivity decreases down the group
- Halogens need to gain one electron to form a 1- ion
- The bigger the atom the harder it is to gain an electron so the less reactive the atom
- This is due to a greater distance (weaker attraction) between the positive charge of nucleus and outer shell electrons



Group 7 – Displacement reactions

- Displacement reaction is where a more reactive element 'pushes out' (displaces) a less reactive element from a compound
- **H** - Redox reactions: halogens gain electrons (reduction) while halide ions in the salt lose electrons (oxidation)
- Shows order of reactivity:
  Chlorine, bromine, iodine

$Cl_2 + 2KBr \rightarrow 2KCl + Br_2$

salt (aq) / halogen	potassium chloride	potassium bromide	potassium iodide
chlorine	X	$2KCl + Br_2$	$2KCl + I_2$
bromine	no reaction	X	$2KBr + I_2$
iodine	no reaction	no reaction	X

$Cl_2 + 2e^- \rightarrow 2Cl^-$
Chlorine is reduced (gains electrons)

$2Br^- \rightarrow Br_2 + 2e^-$
Bromide is oxidised (loses electrons)

O	Oxidation
I	Is
L	Loss
R	Reduction
I	Is
G	Gain

Science: Working Scientifically

1. Hypotheses and Variables

1	Hypothesis	A hypothesis is a prediction made about an experiment based on some previous scientific knowledge.
2	Dependent Variable	What we measure
3	Independent Variable	What we change
4	Control Variable	What we keep the same

3. Methods

1	Contents of a method	• A clear sequence • Information on which equipment to use • Volumes and masses for reagents • Scientific language

Example method:

Sequencing

Precision

1. 25cm^3 sulphuric acid was added to a small beaker.
2. Using a spatula, excess insoluble base (copper oxide powder) was added to the acid. Check the base is in excess by looking for remaining powder in the beaker.
3. The excess base was filtered out using filter paper in a funnel. The filtrate was allowed to filter into a conical flask.
4. When filtration was complete, the filter paper was discarded and the filtrate solution was poured into an evaporating dish.
5. The solution was left for a few days or the evaporating dish heated for the dissolved salt to crystallise.

Scientific language

Equipment

2. Key Terms

1	Independent variable	The variable you change to find out its effect on the dependent variable
2	Dependent variable	The variable you measure to see how it changes
3	Control variable	Any variable that you must keep the same to ensure it doesn't affect the dependent variable
4	Mean	The total of the values divided by the number of values
5	Anomalous data	Data that does not fit the expected pattern

4. Results Tables

1	Results table layout	The independent variable should always go in the first column, the dependent variable then goes in the column to the right of this.
2	Contents of a results table	• Show all repeat measurements • Include the units in the headings • Circle anomalies • Discount these when calculating a mean

Example results table:

Concentration of acid (M)	Time taken for reaction to complete (s)			Mean (s)
0.1	102.1	105.6	103.4	103.7
0.2	88.8	86.5	87.2	87.5
0.3	69.1	67.3	64.2	66.9
0.4	56.2	40.1	53.3	54.8
0.5	32.1	30.1	33.2	31.8

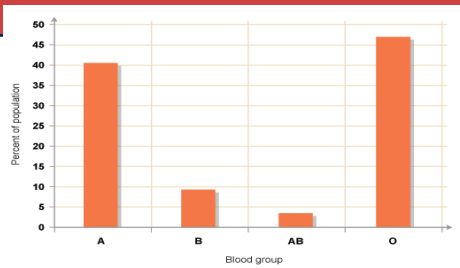
5. Common laboratory equipment

1	Beaker		For pouring and transferring liquids and solutions.
2	Conical Flask		For carrying out reactions
3	Bunsen Burner		To heat substances
4	Tripod		To support
5	Gauze		To place an object on for example conical flask that you are going to heat.
6	Heatproof mat		To protect the desk from the heat produced by the Bunsen Burner and any spillages from the substances which are being heated
7	Evaporating basin		To evaporate the water from solutions. Leaving behind the solute.

8	Test Tube		For carrying out chemical reactions with small volumes of liquid
9	Boiling Tube		A boiling tube is used to heat substances in a Bunsen Burner
10	Measuring Cylinder		To accurately measure out volumes of liquid
11	Spatula		To move small amounts of solid powders
12	Stirring Rod		To stir solutions.
13	Thermometer		To measure the temperature of a substance
14	Tongs		To hold an move hot solids for example pieces of metal

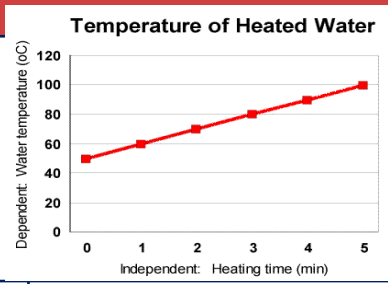
Science: Working Scientifically

6. Discontinuous data



1	Discontinuous data	Discontinuous or categoric data can only take certain values
2	Examples of discontinuous data	Eye colour and blood group,
3	How to plot discontinuous data	Bar Chart

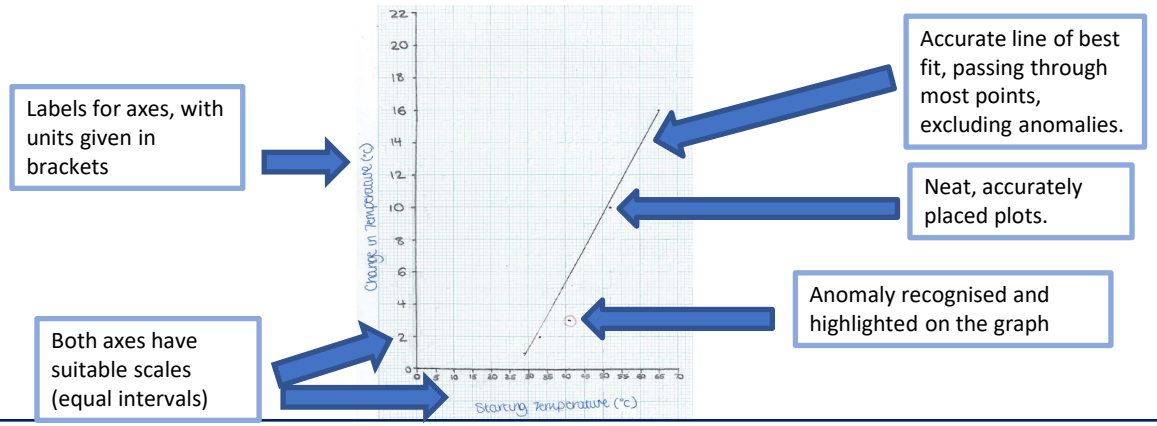
7. Continuous data



1	Continuous data	Continuous data can take any value
2	Examples of continuous data	Height or temperature.
3	How to plot continuous data	Line Graph

8. Drawing good line graphs

1	x Axis	Plot the dependent variable
2	y Axis	Plot the independent variable
3	Drawing the graph	• Label axis and include units • Use small precise crosses to mark your points
4	Line of best fit	Line of best fit which goes smoothly though as many points as possible (this does not have to be a straight line)
5	Anomalies	Circle anomalies and don't include them when drawing the line of best fit



Working Scientifically

A	Planning experiments	
1	**Independent variable**	What you are investigating / changing in the investigation
2	**Dependent variable**	What you will measure in the investigation
3	**Control variables**	What you will keep the same
4	**Control experiment**	Kept under the same conditions as the rest of the investigation, but has nothing done to it. Used for comparison.
6	**Hazard**	Something that could cause harm.
7	**Risk**	The chance that a hazard could cause harm
8	**Continuous variable**	Can have **any numerical value**, e.g. heights of pupils in a class 2 continuous variables can be plotted on a scatter graph
9	**Categoric variable**	Categoric variables have values that are word labels – e.g. eye colour Displayed using a bar chart
10	**Resolution**	The smallest change a measuring instrument can detect
11	**Uncertainty**	Resolution of the piece of equipment divided by 2

B	Analysing data	
1	**Range**	Largest value - smallest value
2	**Mean**	Add up all the values and divide by the number of values
3	**Median**	Put the values in order and add find the middle value
4	**Mode**	The most common value
5	**Percentage change**	$\frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100\%$
6	**Finding the percentage of a value**	70% of people in a sample of 200 were vaccinated 0.70 x 200 = 140

D	Unit conversions	
1	km → m	× 1000
2	m → cm	× 100
3	cm → mm	× 10
4	mm → micrometre (μ)	× 1000
5	micrometre (μ) → nanometre (nm)	× 1000
6	Kilo → Mega	× 1000
7	Mega → Giga	× 1000

C	Evaluating experiments	
1	**Anomaly**	A result that does not fit the pattern of the other results
2	**Valid**	Results that have been collected from a fair test.
3	**Repeatable**	Same person does the experiment again and gets the same pattern of results
4	**Reproducible**	Someone else does the experiment, using a different method, gets the same pattern of results
5	**Accurate**	Results that are close to the true value
6	**Precise**	Results that are close to mean of the results
7	**Random error**	Any error in your measurements that happens at random. reduced by making more measurements and calculating a new mean.
8	**Systematic error**	Cause readings to differ from the true value by the same amount each time. Caused by faulty or badly calibrated equipment
9	**Increasing accuracy**	Test more values closer together E.g. Find a more accurate optimum temperature by testing 32, 34, 36, 38°C – not just 30 and 40°C.

HOMEWORK QUESTIONS

Week beginning 27th November

Mon 27/11/2023 French	Look-cover-write-check the 'Activity Verbs' box – you should try each word between 3 and 5 times, more if you struggle with a certain word.
Tue 28/11/2023 English	1. What does "masculinity" mean, and how might it be portrayed in media or society? 2. Define "femininity" and provide examples of traits associated with it. 3. What is the term used to describe someone who moves to a new country to live there, often seeking a better life? 4. Can you explain the concept of "obsession" and provide an example of something people might become obsessed with? 5. What is the significance of "honour" in a person's life, and how can it be demonstrated? 6. Describe the code of silence known as "omertà" and explain when it might be used. 7. How might someone be considered "vulnerable," and what are the potential consequences of vulnerability? 8. What does it mean for a person to act "imperious," and how might this behaviour affect others? 9. Define "deference" and give an example of when it's appropriate to show deference to someone. 10. Explain the concept of "denial" and describe a situation where it is commonly observed.
Wed 29/11/2023 PE	1. What is Serotonin? 2. What does lactic acid cause? 3. Is having a lower heart rate an immediate or long-term effect of exercise? 4. Name 2 social effects of exercise. 5. Does exercise cause or reduce stress? 6. What is the term for building bigger stronger muscles? 7. Why do we sweat? 8. Why does our skin go red when exercising? 9. Name a mental effect of exercise 10. When would our breathing rate increase?
Thu 30/11/2023 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 01/12/2023 Science	1. What are the 3 states of matter? 2. In which state do the particles vibrate around a fixed position? 3. Define the term mixture 4. What is distillation used to separate? 5. What is filtration used to separate? 6. How is Rf value calculated? 7. Name the 3 stages in water purification 8. Why is chlorine added to water 9. Water melts at 0°C and boils at 100°C. What state is it in at 78°C? 10. A substance melts at -28°C and boils at 52°C. What state is it in at 88°C?

Week beginning 4th December

Mon 04/12/2023 Geography	1. What does interdependence mean? 2. What is the biosphere? 3. What is the hydrosphere? 4. What does sustainable development mean? 5. What are igneous rocks? 6. How are igneous rocks formed? 7. What are sedimentary rocks? 8. How are sedimentary rocks formed? 9. What are metamorphic rocks? 10. How are metamorphic rocks formed?
Tue 05/12/2023 English	1. Provide an example of a "pugnacious" character in a story or real life, and describe their behaviour. 2. When something is described as "inevitable," what does that mean, and can you provide an example? 3. How is "masculinity" different from "femininity," and why are these terms important in discussions about gender? 4. Can you share a story of an "immigrant" who faced challenges and triumphs in a new country? 5. Describe a situation where someone's "obsession" with a hobby or interest became a problem. 6. What is the role of "honour" in traditional cultures, and how does it shape individuals' actions? 7. In what contexts is the code of "omertà" most commonly enforced, and why is it significant? 8. Explain how someone might become "vulnerable" and the potential consequences of vulnerability in different situations. 9. Write a sentence using "imperious" to describe a bossy or domineering character in a book or movie. 10. Use "deference" in a sentence to describe how someone might show respect to their elders.
Wed 06/12/2023 Art	1. What are the 3 primary colours? 2. What is the complimentary colour of Blue? 3. What is a Still Life? 4. What is tone? Why is it important in art? 5. Can you create a tonal chart going from light to dark in pencil? 6. Can you give an example of the crosshatching technique? 7. What 5 key things do you need on an artist research page? 8. What is an art movement? 9. What art movement was Paul Cezanne associated with? 10. What other art movements did Paul Cezanne influence?
Thu 07/12/2023 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 08/12/2023 Science	1. How would you separate a solid that is dissolved in a liquid 2. What is the term used to describe a solid turning into a liquid? 3. What is the term used to describe a liquid turning into a gas? 4. What is the term used to describe a gas turning into a liquid? 5. What is the term used to describe a liquid turning into a solid? 6. What is the liquid collected after filtration called? 7. In chromatography, what is the liquid called in which substances are dissolved? 8. True or false? A pure substance will have a sharp melting point 9. True or false? In a liquid the particles are spaced out and not touching 10. In distillation what is the name of the tube surrounded by cold water? 11. True or false? An impure substance will melt over a range of temperatures

Week beginning 11th December

Mon 11/12/2023 French	Look-cover-write-check the 'Healthy Living Verbs' box – you should try each word between 3 and 5 times, more if you struggle with a certain word.
Tue 12/12/2023 English	1. Describe a scenario where "denial" can have negative consequences for an individual or a group. 2. Write a sentence using "pugnacious" to describe a person who enjoys getting into arguments. 3. Use "inevitable" in a sentence to explain how change is an unavoidable part of life. 4. How do societal expectations of "masculinity" and "femininity" affect individuals and their choices? 5. Share a story of an "immigrant" family that you find inspiring or fascinating. 6. Write a sentence using "obsession" to describe someone's intense focus on a particular goal. 7. Use "honour" in a sentence to explain why keeping promises is an important aspect of honour. 8. Describe a situation where "omertà" might create tension or secrecy within a group. 9. Write a sentence using "vulnerable" to describe a character's emotional state after a difficult experience. 10. Use "deference" in a sentence to describe a student showing respect to a teacher.
Wed 13/12/2023 Music	1. What is the roman numeral sign for chord 1 in a key? 2. What is the roman numeral sign for chord 4 in a key? 3. What is the roman numeral sign for chord 5 in a key? 4. Which chord numbers are the Primary Chords in a key? 5. Draw a sharp sign 6. Draw a flat sign 7. Which notes are in a C Major chord? 8. Which notes are in a D minor chord? 9. Which number is the Am chord in the key of C? 10. Which number is the G chord in the key of C?
Thu 14/12/2023 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 15/12/2023 Science	1. Which ions are released by acids? 2. Which ions are released by alkalis? 3. Define the term base 4. True or false? All alkalis are bases 5. universal indicator goes which colour if reacted with an acid 6. universal indicator goes which colour if reacted with a neutral substance 7. What colour does phenolphthalein go in the presence of an alkali? 8. What kind of reaction occurs when an acid and a base react? 9. What are the 2 products in a neutralisation reaction? 10. What are the products in a reaction between a metal and an acid?

Week beginning 3rd January

Christmas Holidays	
Wed 03/01/2024 PE	1. What is Serotonin? 2. What does lactic acid cause? 3. Is having a lower heart rate an immediate or long-term effect of exercise? 4. Name 2 social effects of exercise. 5. Does exercise cause or reduce stress? 6. What is the term for building bigger stronger muscles? 7. Why do we sweat? 8. Why does our skin go red when exercising? 9. Name a mental effect of exercise When would our breathing rate increase?
Thu 04/01/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 05/01/2024 Science	1. What gas is produced in a reaction between an acid and metal carbonate? 2. True or false? A strong acid is the same as a concentrated acid 3. What is a precipitate? 4. True or false? All nitrates are soluble 5. True or false? Silver chloride is insoluble 6. Define the term electrolyte 7. True or false? At the cathode positive ions gain electrons 8. What does OIL RIG stand for? 9. What salt is formed if a reactant is hydrochloric acid? 10. What salt is formed if a reactant is sulfuric acid? 11. Is the anode positive or negative?

Week beginning 8th January

Mon 08/01/2024 French	Look-cover-write-check the 'Adjectives' box – you should try each word between 3 and 5 times, more if you struggle with a certain word.
Tue 09/01/2024 Health	1. How do we measure energy? 2. How do we calculate BMI? 3. What do BMR and PAL stand for? 4. What are the four stages of digestion? 5. What does our body need energy to do? 6. What factors mean that different people need different amounts of energy?
Wed 10/01/2024 Drama	1. How did Bertolt Brecht's concept of "Verfremdungseffekt" (alienation effect) influence the development of Epic theatre, and what is its significance in modern drama? 2. What are the main differences between the acting methods of Konstantin Stanislavski (naturalism- realistic) and Bertold Brecht (Epic theatre). 3. Frantic Assembly is known for its innovative physical theatre techniques. How do they incorporate body tension and movement into their productions? 4. What is the key principle behind Brecht's Epic theatre and how does it challenge conventional notions of theatre and audience engagement? 5. In the context of theatrical narration, how can subtext be effectively conveyed to the audience, and why is it important for creating depth and complexity in characters? 6. How does the use of placards in Bertolt Brecht's Epic theatre productions serve to disrupt the traditional narrative and engage the audience in a critical way? 7. Explain the concept of "emotion memory" as developed by Konstantin Stanislavski. 8. Discuss the significance of "Direct Address" in contemporary theatre? 9. Naturalism is a theatrical style that emphasizes what? 10. If you had to choose a style to perform a play in what would you chose and why?
Thu 11/01/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 12/01/2024 Science	1. Define hypothesis 2. Define independent variable 3. Define dependent variable 4. Define control variable 5. How do you calculate a mean? 6. What does anomalous data mean? 7. What does discontinuous data mean? 8. Name an example of discontinuous data 9. What does continuous data mean? 10. Name an example of continuous data

Week beginning 15th January

Mon 15/01/2024 History	1. What is chronology? 2. What is a fact? 3. What is an opinion? 4. What is the difference between a fact and a opinion? 5. What does it mean to infer? 6. What is an armistice? 7. What is the Arms Race? 8. What does patriotism mean? 9. What was the Schlieffen Plan? 10. What does Kaiser mean? Who was the Kaiser during WWI?
Tue 16/01/2024 RE	1. What is activism? 2. What is democracy? 3. What is racism? 4. What did Malala Yousafzai campaign for? 5. What did Peter Singer argue against? 6. From which country did Mahatma Gandhi first become exposed to racial discrimination? 7. What was the message of Martin Luther King's "I have a dream" speech?
Wed 17/01/2024 DT	1. How could you be safe in the workshop? 2. What is a 'design brief'? 3. Name 3 pieces of equipment used to build a speaker? 4. Why is it important to analyse a design brief? 5. What is meant by isometric drawing? 6. Why is it important to draw in pencil? 7. State 2 health and safety checks before using a belt sander. 8. What is PPE? 9. What does ACCESSFM stand for? 10. Why is it important to evaluate your work?
Thu 18/01/2024 History	1. What does occupation mean? 2. What is militarism? 3. How did militarism cause WWI? 4. What were the alliances before WWI? 5. How did the different alliances lead to WWI? 6. What is imperialism? 7. How did imperialism lead to WWI? 8. Which assassination led to the outbreak of WWI? 9. What is a source? 10. What is an interpretation?
Fri 19/01/2024 English	1. What does "masculinity" mean, and how might it be portrayed in media or society? 2. Define "femininity" and provide examples of traits associated with it. 3. What is the term used to describe someone who moves to a new country to live there, often seeking a better life? 4. Can you explain the concept of "obsession" and provide an example of something people might become obsessed with? 5. What is the significance of "honour" in a person's life, and how can it be demonstrated? 6. Describe the code of silence known as "omertà" and explain when it might be used. 7. How might someone be considered "vulnerable," and what are the potential consequences of vulnerability? 8. What does it mean for a person to act "imperious," and how might this behaviour affect others? 9. Define "deference" and give an example of when it's appropriate to show deference to someone. 10. Explain the concept of "denial" and describe a situation where it is commonly observed.

Week beginning 22nd January

Mon 22/01/2024 English	1. Provide an example of a "pugnacious" character in a story or real life, and describe their behaviour. 2. When something is described as "inevitable," what does that mean, and can you provide an example? 3. How is "masculinity" different from "femininity," and why are these terms important in discussions about gender? 4. Can you share a story of an "immigrant" who faced challenges and triumphs in a new country? 5. Describe a situation where someone's "obsession" with a hobby or interest became a problem. 6. What is the role of "honour" in traditional cultures, and how does it shape individuals' actions? 7. In what contexts is the code of "omertà" most commonly enforced, and why is it significant? 8. Explain how someone might become "vulnerable" and the potential consequences of vulnerability in different situations. 9. Write a sentence using "imperious" to describe a bossy or domineering character in a book or movie. 10. Use "deference" in a sentence to describe how someone might show respect to their elders.
Tue 23/01/2024 Science	1. What are the 3 states of matter? 2. In which state do the particles vibrate around a fixed position? 3. Define the term mixture Which ions are released by acids? 4. Which ions are released by alkalis? 5. Define the term base 6. What is distillation used to separate? 7. What is filtration used to separate? 8. How is Rf value calculated? 9. Name the 3 stages in water purification 10. What kind of reaction occurs when an acid and a base react? 11. What are the 2 products in a neutralisation reaction? 12. What are the products in a reaction between a metal and an acid?
Wed 24/01/2024 French	Look-cover-write-check the 'Intensifiers' and 'People' box – you should try each word between 3 and 5 times, more if you struggle with a certain word.
Thu 25/01/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 26/01/2024 Art	1. What is a Still Life? 2. What 5 key things do you need on an artist research page? 3. What is an art movement? 4. What art movement was Paul Cezanne associated with? 5. What other art movements did Paul Cezanne influence? 6. What is tone? Why is it important in art? 7. Can you create a tonal chart going from light to dark in pencil? 8. Can you give an example of the crosshatching technique? 9. What are the 3 primary colours? 10. What is the complimentary colour of Blue?

Week beginning 29th January

Mon 29/01/2024 English	1. Describe a scenario where "denial" can have negative consequences for an individual or a group. 2. Write a sentence using "pugnacious" to describe a person who enjoys getting into arguments. 3. Use "inevitable" in a sentence to explain how change is an unavoidable part of life. 4. How do societal expectations of "masculinity" and "femininity" affect individuals and their choices? 5. Share a story of an "immigrant" family that you find inspiring or fascinating. 6. Write a sentence using "obsession" to describe someone's intense focus on a particular goal. 7. Use "honour" in a sentence to explain why keeping promises is an important aspect of honour. 8. Describe a situation where "omertà" might create tension or secrecy within a group. 9. Write a sentence using "vulnerable" to describe a character's emotional state after a difficult experience. 10. Use "deference" in a sentence to describe a student showing respect to a teacher.
Tue 30/01/2024 Science	1. Define hazard 2. Define risk 3. Define resolution 4. Define uncertainty 5. How do you calculate range of results? 6. How do you calculate the median? 7. How do you calculate the mode? 8. Define valid 9. Define repeatable 10. Define reproducible
Wed 31/01/2024 Geography	1. What are environmental impacts? 2. What is a biome? 3. What is crude oil? 4. What does energy mix refer to? 5. What is a fossil fuel? 6. Create a diagram that shows the rock cycle and the different process between them (eg. Heating, cooling, etc...)
Thu 01/02/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 02/02/2024 Music	2. What is the roman numeral sign for chord 2 in a key? 3. What is the roman numeral sign for chord 6 in a key? 4. Which chord numbers are the Secondary Chords in a key? 5. Draw a natural sign 6. Name 3 string instruments 7. Name 3 woodwind instruments 8. Which 3 main sounds are used to make a drum beat? 9. Which sections would you typically hear in a song? 10. What does harmony mean in music? 11. Which number is the Dm chord in the key of C?

Week beginning 5th February

Mon 05/02/2024 English	1. What does "masculinity" mean, and how might it be portrayed in media or society? 2. Define "femininity" and provide examples of traits associated with it. 3. What is the term used to describe someone who moves to a new country to live there, often seeking a better life? 4. Can you explain the concept of "obsession" and provide an example of something people might become obsessed with? 5. What is the significance of "honour" in a person's life, and how can it be demonstrated? 6. Describe the code of silence known as "omertà" and explain when it might be used. 7. How might someone be considered "vulnerable," and what are the potential consequences of vulnerability? 8. What does it mean for a person to act "imperious," and how might this behaviour affect others? 9. Define "deference" and give an example of when it's appropriate to show deference to someone. 10. Explain the concept of "denial" and describe a situation where it is commonly observed.
Tue 06/02/2024 RE	Answer the questions on the first page of the knowledge organiser
Wed 07/02/2024 History	1. What is Richard Evans' opinion on the outbreak of the WWI? 2. What evidence does Evans' use to justify his opinion? 3. What is Annikar Mombauer' opinion on the outbreak of the WWI? 4. What evidence does Mombauer's use to justify his opinion? 5. What is Dr. Heather Jones' opinion on the outbreak of the WWI? 6. What evidence does Jones' use to justify his opinion? 7. Which historian do you agree with most? 8. Explain your answer.
Thu 08/02/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 09/02/2024 DT	1. What tool cuts straight lines? 2. What tool cuts curves/intricate shapes? 3. What are the 2 natural categories of timber? 4. Name 3 different materials. 5. What makes a good design? 6. What is meant by design 'annotations'? 7. Name 2 things you could annotate on a design? 8. How would you describe the 'Memphis' style? 9. How did you test your product when you were making it? 10. Analyse 1 of the clocks shown.

Week beginning 12th February

Mon 12/02/2024 English	1. Provide an example of a "pugnacious" character in a story or real life, and describe their behaviour. 2. When something is described as "inevitable," what does that mean, and can you provide an example? 3. How is "masculinity" different from "femininity," and why are these terms important in discussions about gender? 4. Can you share a story of an "immigrant" who faced challenges and triumphs in a new country? 5. Describe a situation where someone's "obsession" with a hobby or interest became a problem. 6. What is the role of "honour" in traditional cultures, and how does it shape individuals' actions? 7. In what contexts is the code of "omertà" most commonly enforced, and why is it significant? 8. Explain how someone might become "vulnerable" and the potential consequences of vulnerability in different situations. 9. Write a sentence using "imperious" to describe a bossy or domineering character in a book or movie. 10. Use "deference" in a sentence to describe how someone might show respect to their elders.
Tue 13/02/2024 Science	1. Define accurate 2. Define precise 3. What does random error mean? 4. How can you reduce the chance of random error? 5. What does systematic error mean? 6. What causes a systematic error? 7. How can you increase accuracy of results? 8. Define independent variable 9. Define dependent variable 10. Define control variable
Wed 14/02/2024 Geography	1. What are natural resources? 2. State three examples of natural resources. 3. What are raw materials? 4. State three examples of raw materials. 5. What does renewable mean? 6. What does sustainability refer to? 7. Why is it important that “we” act sustainably? 8. List the different ways that you can act sustainably. 9. List the different ways that KOA can be more sustainable.
Thu 15/02/2024 Maths	Remember to write down your workings and bookwork codes in your homework book.
Fri 16/02/2024 Drama	1. Define sense memory and give an example of how you could use it as an actor 2. What is the difference between sense memory and emotion memory? Give an example 3. What does unison mean? 4. What is subtext? Give an example 5. What is the difference between theatre of cruelty and physical theatre? Give an example 6. Explain how an actor can use Verfrumdungseffekt 7. What is the effect on the audience with direct address? Give an example 8. Explain the differences between the styles of Stanislavski and Brecht 9. Do you prefer Stanislavski or Brecht – give 3 reasons to support your answer 10. Explain why script writers use narration