Knowledge Organiser
Year 7

Term 1

Name _____

Tutor Group _____

This document is part of your compulsory equipment and must be taken to every lesson (with the exception of practical PE).

Table of contents

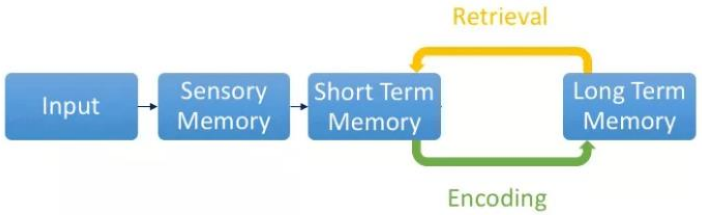
What is a Knowledge Organiser?

Your knowledge organiser summarises all the key facts and knowledge that you will need to have learned on a particular subject onto one side of A4. This information might include,

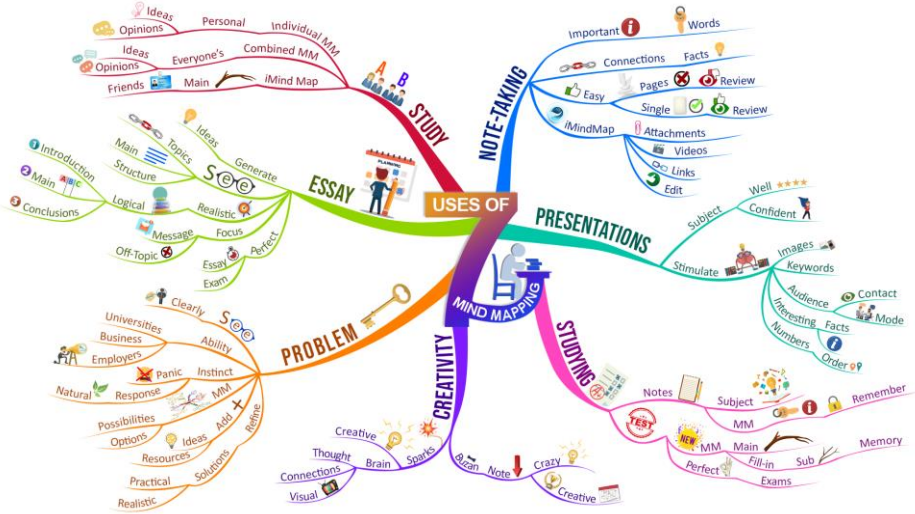
- key vocabulary
- key places and people
- useful diagrams
- key dates for a subject like history
- key themes
- important quotes
- stem sentences for a subject like Maths

How can you use your Knowledge Organiser most effectively?

1. Use it as a **checklist** to make sure you have notes and resources in your books or folders on each area. If you have a gap, talk to your teacher.



2. Use it to help get the information and knowledge into your **long-term memory**. Just reading over the pages does not help. You will need to put your knowledge organiser away and see how much you can remember. You could get a family member or carer to help test you on what you have remembered.



3. Knowledge organisers have already broken the knowledge down into chunks for you so they can be used to create **flashcards, revision posters or mind maps.**

4. Use your knowledge organiser **to get ahead on a topic**. Reading about what you are going to study and looking up any new or difficult words means that you are better prepared for your learning in the next lesson.

5. It is best to use your knowledge organiser for **short periods of time but regularly.** Choose a small part of a topic and practice writing it out with your organiser closed every day for 10 minutes.

THE KING SOLOMON STANDARD

Come to class fully prepared with correct equipment (Black / Blue Pen, pencil, glue stick, scissors, ruler, calculator, protractor and compass, exercise / text books). Form Tutors will check your equipment on a regular basis.

Presentation

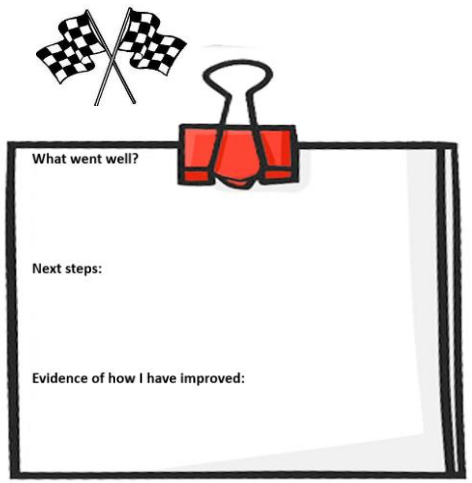
- Students write in black or blue inked pen only unless allowed by teachers to use another colour.
- Students ensure that all work has a Title and Hebrew and English dates, which are all underlined.
- Students take care of their exercise books and folders. There is no graffiti in, or on, books. All books must be covered and labelled clearly.
- Worksheets and Pit Stops slips must be stuck in or stapled.
- Pages must not be torn out of books.
- Work will be returned if it represents a significant lack of effort and students will be expected to resubmit the work.
- **PEEL** paragraphs must be labelled clearly and easy to spot.

Literacy marking symbols

Your teachers will be using the symbols below to mark your work.

S	Spelling mistake.
P	Punctuation mistake – either punctuation has been omitted, or has been used incorrectly.
??	Does not make sense/is not clear.
//	Start a new paragraph.
^	A word or sentence is missing.
C	Capital letter is needed.
DW	Choose a different word.

- *Correct all your class work and homework errors using a different coloured pen.*
- C3B4ME (See three before me; i.e. first try independently, check your class notes/resources or ask one of your peers before you ask your teacher ☺).



How to complete my Pit Stop slips

What went well….

Completed by your teacher or by you after receiving some guidance from your teacher.

Next steps….

Completed by your teacher or by you after receiving some guidance from your teacher.

Evidence of how I have improved:

Completed by student stating clearly where the work can be found. This is not a promise of what you will do but a clear indication of where to find the work of what you have done already in order to improve and following the advice from next steps.

THE PEEL PARAGRAPH

PEEL

***Point*: Your argument in one line.**

I think that ….. It is clear that…… In my opinion ….. The point is that….

***Evidence*: Reasons or evidence that back your argument up.**

This is because …… This is evidenced by ….. For instance ….. We can see that...

***Explanation*: Explain how your reasons or evidence prove your point.**

Therefore, this proves that….. because …… This shows that ….. This demonstrates…..

***Link*: Mini conclusion answering the question.**

In conclusion …… Overall …… To conclude ….. Finally…… To summarise…

How can I improve my writing?

Point

- I have included a point in my paragraph.
- The reader will be able to understand my entire argument just by reading the point.

Evidence

- My paragraph has at least two pieces of evidence.
- My evidence is in full sentences, carefully chosen and clearly helps prove my argument.
- My evidence is specific and detailed (includes quotes/facts/names/events/key words).

Explanation

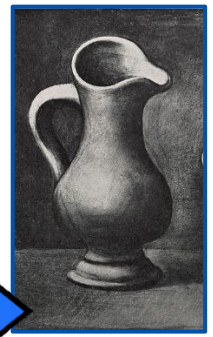
- I explain how my evidence proves that my argument is right.
- My explanation is at least two or three sentences long.
- I have added some balance to my argument and shown how there may be other reasons or arguments to the question.
- I have explained why my answer is the right one rather than any of the other reasons, ideas or arguments.

Link

- I have included a link sentence in my paragraph.
- My link sums up my argument.
- My link uses the information I have used in my paragraph.

AUTUMN 1

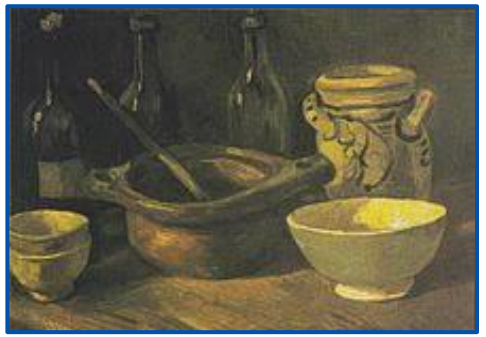
KEY MOVEMENTS - Realism



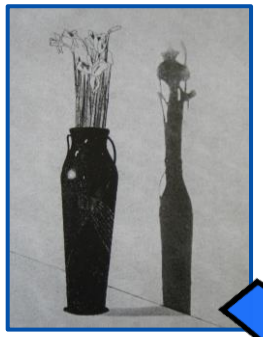
Picasso

Chardin

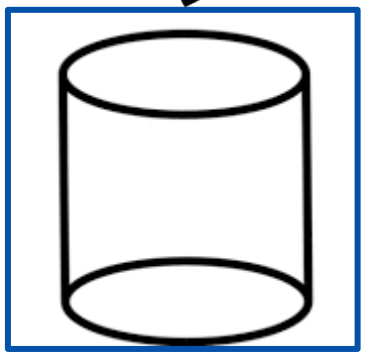
Morandi



Van Gogh



Hockney



1. Looking at simple three - dimensional shapes of containers

- Elliptical rim
- Curved Base
- Gradation of Tone across Surface.

2. Overlapping shapes

- Creating depth or space
- Near and Far.

3. Object and Shadow

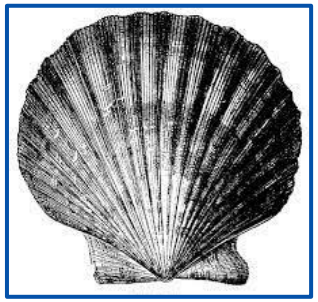
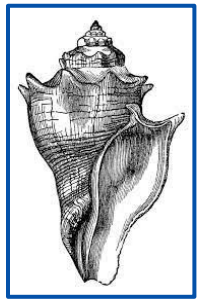
- Alternative ways of creating depth
- Effects of light.

Key Words

Direct Observational Drawings, Still-Life, Line, Shape, Form, Volume, Three-Dimensional, Tone, Gradation, Circular, Ellipse/Elliptical, Symmetry/Symmetrical, Proportion, Overlap, Depth, Space.

AUTUMN 2

KEY MOVEMENTS - Naturalism



Victorian Shell illustrations


Watteau


O'Keeffe


Riley

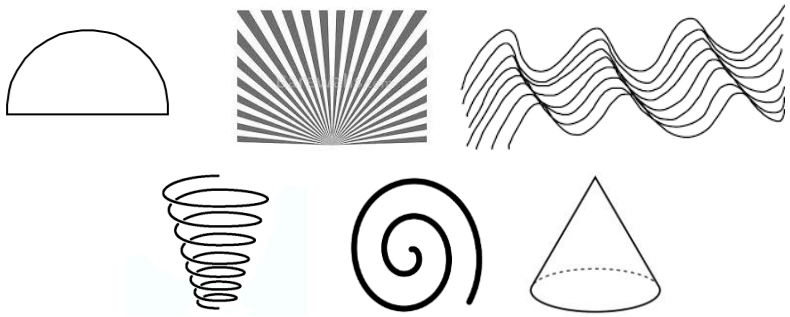

Scallop Shell


Whelk Shell

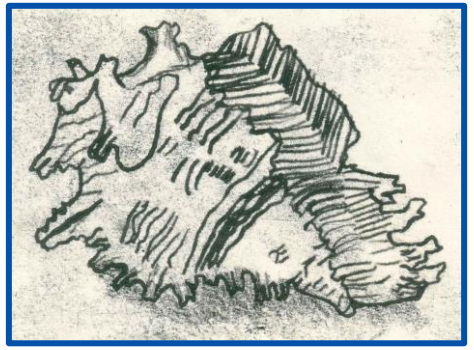

Conch Shell

4. Drawing of the three different species of Shells

- Creating links between Maths and Drawing.
- Appreciation of Geometry in Nature.




Pencil Drawings



Mono-Prints

5. Developing initial Drawings into Basic Printmaking techniques such as, mono-printing.

Key Words

Scallop Shell: Semi Circular, Triangular, Converging, Undulating, Corrugated. Whelk Shell: Spiral, Segment, Compartment, Tapering, Conical, Apex, Conch Shell: Spikes, Protrude, Texture, Rough, Smooth.

HARDWOODS

Hardwoods come from broad-leaved, deciduous trees.

Tools used for wood

Tri-Square

Tenon Saw

Coping Saw

Bastard File

What are each of these tools used for?

SOFTWOODS

Softwoods come from coniferous trees which are evergreen, needle-leaved, cone-bearing trees, such as cedar, fir and pine

Processing wood for use in manufacture

Stage 1 - Tree Felling

Stage 2 - Storage

Stage 3 - To Sawmill

Stage 4 - Rough Sawing

Stage 5 - Seasoning

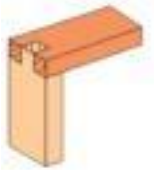
Stage 6 - Cutting to Size

Stage 7 - Manufacturing

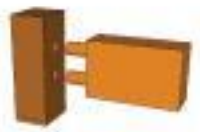
MANUFACTURED BOARDS

Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together.
Manufactured boards often made use of waste wood materials.

Wood joints



Finger Joint



Dowel Joint

Wood joints are used to secure two or more pieces of wood together.
This is the strongest way to join wood.

Dovetail Joint

Wood adhesives

Wood glue is the most common way of joining two pieces of wood together.
It is also known as PVA (Polyvinyl acetate).

Design & Technology

FERROUS	NON-FERROUS
Ferrous metals contain iron and are magnetic. They will rust easily.	Non-ferrous metals do not contain iron, they are not magnetic and are more resistant to corrosion.

Tools used for metal

Engineers Square

Junior Hacksaw

Scriber

Centre Punch

Ball Pein Hammer

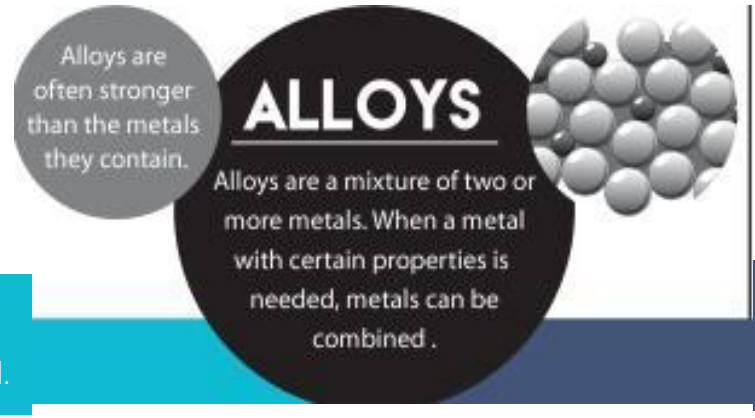
Tin Snips

Mining of Iron Ore

In order to **produce steel**, iron ore is required, in large quantities. **Iron ore is dug out of the ground from open cast mines or mined deep underground**. The ore is crushed into a fine powder, mixed with water, making a **slurry**. Clay is added to the slurry and the mixture shaped into pellets and baked, forming a hard shell. The pellets are sent to a steel mill in order to **extract the iron** which is normally **converted into steel**.

How metals are supplied

Metals can come in solid bars of different shapes or tubes. Most metals are also available as sheet metals.



Joining metals - permanent

Brazing

Soldering

Welding

Rivets & Screws

Brazing - melting a filler metal or alloy between the components you want to join.

Soldering - is a type of brazing which works at lower temperatures.
Welding - is different from soldering in that the two pieces of metal are themselves melted along the joints, fusing together as they cool.
Rivets & Machine Screws - with a rivet, a hole is drilled through both pieces of work, the rivet is placed through it, and its end beaten into a dome. With machine screws, the screw needs to be fitted in to a predrilled hole.

Joining metals - temporary

Adhesives such as Epoxy Resin can be used to join metals but the join will not be as strong as a permanent fixing technique.

FERROUS METALS

cast iron, mild steel, high carbon steel and stainless steel.

NON-FERROUS METALS

aluminium, brass, copper, lead, zinc, titanium and tin.

THERMOPLASTICS

Thermoplastics can be heated and shaped many times.

THERMOSET

Thermosets, once shaped can not be reheated and reshaped. Instead they will just burn.

Tools used for plastic

Coping Saw (narrow blade)

Scroll Saw

Wet & dry sandpaper

Polisher/buffing machine

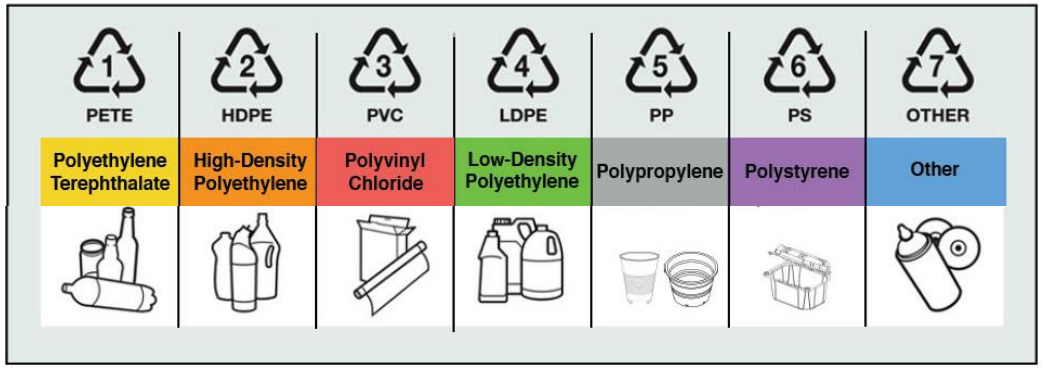
Joining plastics

The most effective way to join plastics together is to use a liquid cement called 'Tensol'. This works by using a capillary action, this means the liquid flows between the pieces and fuses them together.

How is plastic made?

Plastic is made from a combination of natural materials.
The main one being crude oil. To extract crude oil, drilling needs to be done deep underground. This can have a damaging effect on the environment. It also uses a lot of energy and creates fumes and gases that are released into the environment during refining and production.

Plastic Categories



Plastics are put into different categories depending on their properties. This makes it easier to identify them when they need to be recycled or disposed of. Look out for the different symbols on different bottles/containers/packaging.

Plastic used in school

Acrylic

Advantages -

- Can be easily cut
- Supplied in large sheets
- Comes in a wide range of colours
- Can be heated to bend and curve
- Can be polished

Disadvantages-

- Can get scratched and damaged
- They are not strong and can break if dropped
- They can discolour with age
- Difficult to recycle

THERMOPLASTICS

Casings for power tools, curtain rail fittings, kitchen equipment, packaging & toys.

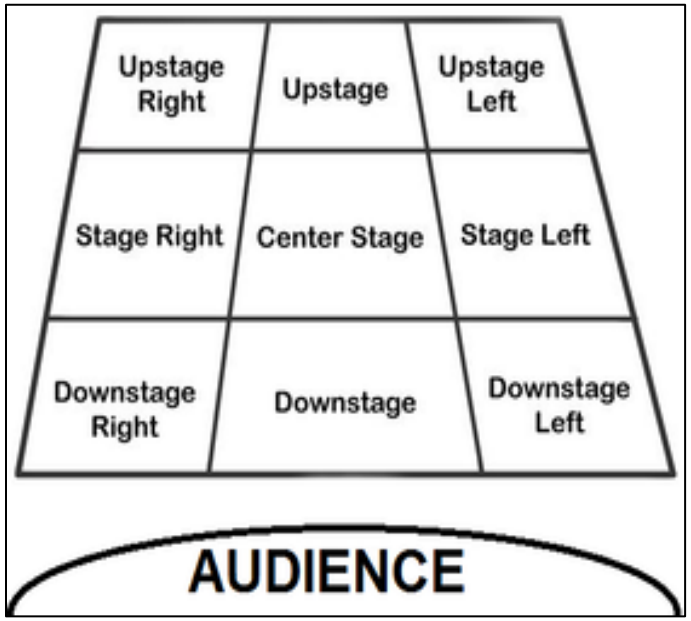
THERMOSET

light switches, work surfaces, electrical insulation & door handles.

Dramatic Elements

Dramatic elements are all the pieces you need within a good performance to ensure your audience can understand the dramatic action and your intent.

Audience = The people who watch your performance.
Dramatic Action = What is happening in your performance.
Intent = What you want your audience to think, feel, do post-performance.



REMEMBER: The stage positions are always from the actor's point of view.

Key Command Words:
Describe: Tell me what you see or do.
Explain: Tell me why you did it or why they did it.
Evaluate: Tell me how it could be improved or what was good about it.

Dramatic Element	Meaning	Example
Role	A portrayal of a type or Stereotype of person or position.	Teacher, Boy, Mother, Baker, Lion.
Character	Detailed and specific portrayal of a person or thing.	Tony Stark, Lady Macbeth, Bart Simpson, Peppa Pig
Relationship	The connections between people.	Familiar, Lovers, Enemies.
Tension	Anticipation/Conflict between characters. Problems, surprises & mystery in the plot.	It so dark, is a monster going to jump out?
Focus	What your attention is on.	Is it on what's happening or elsewhere?
Situation	The circumstances someone find themselves in.	John and Mary are at the beach alone and they just kissed.
Time	The time in the scene.	2:00pm, Lunch time, After dark, 3 days later.
Place	Where you are.	California, Bedroom, Behind the rock.
Language	How you are using your voice.	Dynamics, Accent, Pitch, Pause, Breath Control.
Movement	How you are using your body.	Posture, Levels, Action, Gait, Space, Eye Contact.
Mood	How people are feeling.	Angry, Sad, Excited, Happy Worried.
Atmosphere	How it feels in the place.	It feels tense inside the dark room.
Symbols	Something that represents or stands for something else.	The golden arches represent McDonalds.

These combined create the dramatic action of the performance!

Vocal Skills:

How you modify your voice when performing.

Physical Skills:

How you modify your body when performing.

How to Evaluate

P -> Point: Tell me which performance skill (physical or vocal skill) you used.

E -> Evidence: Tell me how you have used the performance skill.

E -> Explain: Tell me why you used the performance skill.

L -> Link: Link to how it helped you create one of the dramatic elements.

Vocal Skills	Definition	Example
P - Pitch	How high or low you voice sounds.	High squeaky voice or low deep voice.
I – Intonation	How clearly you speak.	Mumbling or saying every word clearly.
P - Pace	The speed in which you speak.	Fast or slow.
E – Emphasis	The importance you put on certain words.	Using volume or pause to highlight a word. I *(pause)* **AM** right!
D - Dynamics	The volume that you are speaking at.	Loudly or quietly.
B – Breath Control	How many breaths you take in a sentence.	Do you take lots of breaths or none at all.
A - Accent	The way you pronounce words.	America, Australian, Jamaican, British.
P - Pause	How many breaks you take.	I am *(pause)* NOT going to see you again.

Physical Skills	Definition	Example
P - Posture	The way you hold yourself.	Hunched back, straight back.
E – Eye Contact	Where you are looking.	Staring, looking at the floor, quickly looking.
T - Tension	How tight or relaxed your body is.	Clenched fists, locked knees.
F – Facial Expression	How you are modifying your face.	Closed Eyes, Wide open mouth.
L - Levels	The heights used within the performance.	Standing on toes, crawled up in a ball.
A - Action	Movements that have specific meanings.	Thumbs up, waving, peace sign.
G - Gait	The way you are walking.	Skipping, stomping, floating.
S - Space	The area that you are using.	Are you standing close or far away.

English: 'The Island'

Types of Newspapers:

Broadsheet:
Newspapers that discuss serious topics like politics, the economy & world news.

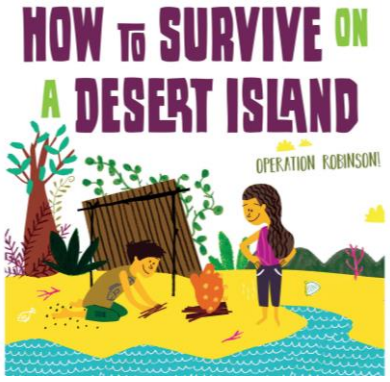
Examples: The Times, The Guardian, The Independent.

Tabloid:
Newspapers that discuss sensationalised topics such as celebrities, crime stories, television.

Examples: Daily Mail, The Sun, Daily Star,

Newspaper articles must provide the answers to the 5 W's:

Who? What?
Where? When?
Why?



Non-Fiction Subject Terminology

Terminology	Definition
PAFT	Purpose, audience, form and tone
Purpose	What a text trying to do. Is it informative, advisory or persuasive
Audience	Who a text is aimed at
Format	The type of text (eg: letter, speech, report etc)
Direct Address	Using you, we or us.
Anecdote	A short story often from one's own experience
Adjectives	Describing words
Facts	Facts and figures
Opinion	An individual view or perspective
Rhetorical Question	Asking a question as a way of asserting something. Asking a question, which already has the answer hidden in it.
Repetition	Where words or phrases are used more than once in a piece of writing
Statistics	Figures (percentages/fractions)
Triple	List of three adjectives, clauses, nouns

Links to future units you will study:
Gothic and Horror Writing (Year 8)
Writing to Inform - Food Review (Year 8)
Descriptive Writing and Discursive Writing
GCSE Language Paper 1 & 2 (Year 10)

Features of a Newspaper Article:

- Heading
- Sub-Heading
- Picture
- Captions
- Columns
- Caption
- Newspaper Name
- Reporter's Name

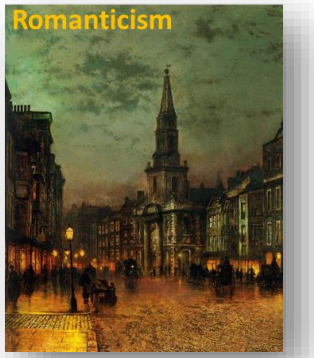
Connectives:	Emphasis:	Contrast:
At the start	Importantly	Although
Firstly	Significantly	Whereas
Secondly	In particular	Otherwise
Thirdly	Furthermore	Alternatively
Next	Additionally	Nevertheless
Meanwhile	In addition	Conversely
Subsequently	As well as	However
Finally	Ultimately	On the other hand
In conclusion	Moreover	

English: London

Glossary	Terms
Romanticism	A movement focusing on intense emotions such emotions as fear, horror and terror, and awe. Often linked to describe the beauty of nature.
Personification	Human characteristics applied to something non-human.
Majestic	Having or showing impressive beauty or scale.
Stanzas	A section or verse of a poem. Essentially, a poetry paragraph!
Shift of focus	Changes in ideas and perspectives. EG: Outside to inside.
Repetition	When words, phrases or ideas are repeated for effect.
Metaphor	A figure of where something is described as if it is something else. EG: He was a fearless lion.
Pathetic fallacy	Where the weather mirrors emotions in a text.
Rhyme	The pattern of similar sounding words across lines in a poem.

PEEL PARAGRAPHS

Point
Evidence
Explanation
Link back to Question



This term, you will begin to write analytical essays. You will need to follow this structure to help you with your writing. We use this in all subjects, and, in English, it is something that you will use all the way up to year 11.

Some sentences starters:

Point
- The writer uses….
- One of the language features used is…. To create….
- It can be argued that….

Evidence
- For examples…
- This is shown when..
- This is demonstrated when…
- We know this because…..

Explanation
- This shows…
- This suggests..
- This implies…
- The writer has chosen these techniques because…

Links to the question/ writer/ reader
- To link back to the original statement…
- Therefore, we can see…
- This is important, because….
- From that, we can see….

Links to future units you will study:

The study of class in rich and poor (Year 7 Trash, Year 8 Blood Brothers)
Poetry Devices (Year 7 Poetry, Year 9 War Poetry, Years 10 & 11 Poetry Anthology)
Literature movements through the years (Year 8 Gothic)
The study of London in different eras (Year 10, Jekyll and Hyde)

The Plague of London 1665-1666

Great Fire of London 1666

Westminster Bridge opens 1750

Samuel Johnson published the Oxford Dictionary 1755

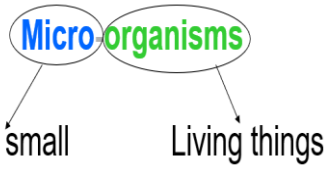
London's population grew rapidly after the industrial revolution and so did its economy from 1800

Year 7 Food & Nutrition: Hygiene, Safety & Cooking

Buying, storing, preparing & cooking food safely and hygienically are vital for health.

Microorganisms

Microorganisms are everywhere. They can be carried by food, people, dirty equipment, animals and pests. Most are harmless.



Food spoilage

When food spoils, the following may change:

- appearance
- taste
- texture
- smell

Food can spoil and decay due to the action of microbes, insects and other pests/pets.

Weighing and Measuring

For good results, **accurate** weighing and measuring is essential. When baking with flour, sugar & liquids, measure accurately or your cooking will be spoiled. If you weigh out too much sugar or too little raising agent, your cakes would not rise or you could spoil the taste and/or texture.

Food can be weighed in **Grams (g).** There are **1000g** in a **Kilogram (kg)**. Liquid is measured in **Millilitres (ml)** or **litres.**

Food needs to be stored properly and within its date mark.

USE BY:	BEST BEFORE:
25/08/20	25/08/21
KEEP REFRIGERATED	STORE IN A COOL DRY PLACE

There are a number of basic food skills which enable you to prepare a variety of simple dishes.

These can include:

- Knife skills
- grating
- juicing
- kneading
- measuring
- peeling
- rolling-out
- rubbing-in
- stirring
- washing
- weighing

The bridge hold and claw grip should be used when cutting food to avoid harm.

Bridge hold

Claw grip

Basic cooking skills are required to make a dish.

Grate

Knead

Measure/weigh

Peel

Roll-out

Rub-in

The Cooker

METHODS OF COOKING

Heat transfers in three ways:

Conduction

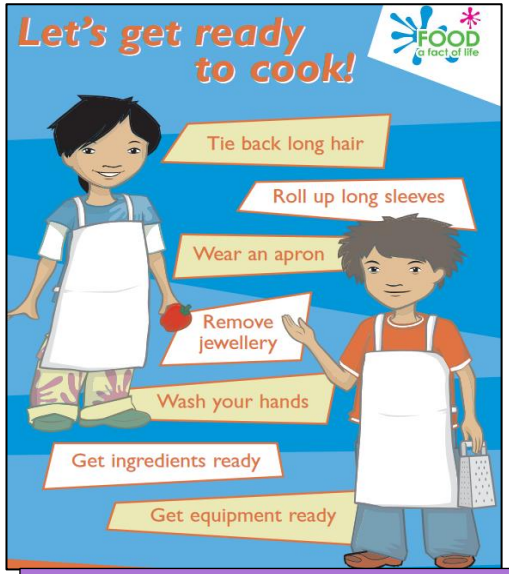
Metal is a **conduct**or of heat and carries the heat from the heat source to the food

Convection

When heated, gas or air particles expand and rise, causing colder particles to sink, creating convection currents which distribute heat.

Radiation

Heat is transferred directly onto the surface



Good personal hygiene is vital when cooking to avoid **cross contamination** and the risk of **food poisoning**.

Clean hands. Hair tied back. Wear an apron. Wear blue plasters. Don't cough/sneeze over food. Use the bridge and claw methods for cutting/chopping.

Year 7 Food & Nutrition: Diet & Good Health

8 tips for healthy eating

The Government has produced 8 tips to help us make healthier choices

1) Base your meals on starchy foods
2) Eat lots of fruit and veg
3) Eat more fish
4) Cut down on saturated fat and sugar
5) Eat less salt
6) Get active and be a healthy weight
7) Drink plenty of water
8) Don't skip breakfast

Young people should do at least 60 minutes of physical activity a day. How much do you do? Get active on different ways?

We should drink about 6 to 8 glasses of water, or other fluids, every day.

Drinking helps to replace the fluid that our body loses naturally throughout the day by breathing, sweating and when we go to the toilet.

The UK's Healthy Eating Model is called **The Eatwell guide** and has five groups. Different foods belong in each of the groups

Eat lots of **fruit and vegetables.**

Eat at least 5 portions every day.

Drinks
Have 6-8 glasses a day.

Have lots of **potatoes, bread, rice and pasta.**

Oils and spreads
Eat in small amounts.

Have some **milk, cheese and yogurt.**

Foods high fat, salt and sugar
Eat less often and in small amounts.

Have some **beans, pulses, fish, eggs and meat.**

Macronutrient major groups of nutrients needed by the body in large amounts (g). They include **Carbohydrate, Protein, Fats**

The main source of energy for the body.

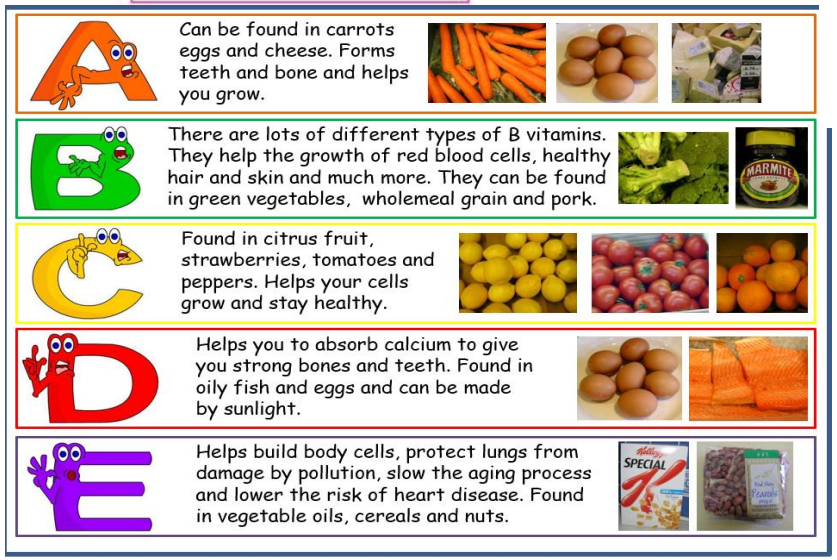
Provides the body with growth and repair.

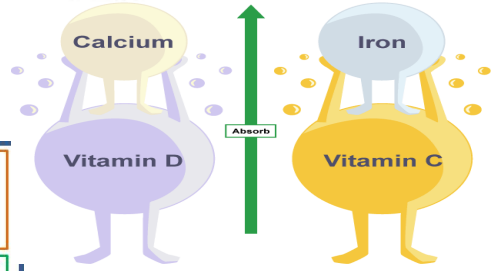
Provides the body with insulation and a small amount protects vital organs. Provides essential fatty acids for the body.

Starchy foods, such as bread, pasta, rice & potatoes are an important part of a diet. These should make up a third of your diet.

Active recreation, eg. play, dance, cycling, skateboard

Active living, eg. walking, gardening, using the stairs





Micronutrients - groups of nutrients need by the body in small amounts (mg or ug). Includes vitamins & minerals.

Vitamins are necessary for energy production, immune function, blood clotting and other functions.

Minerals play an important role in growth, bone health, fluid balance and several other processes.

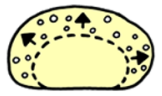
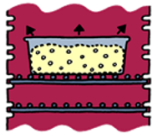
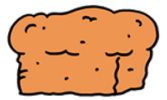
Year 7 Food & Nutrition: Processes, Food Science & Safety

Key words

Skills & Techniques

Claw grip	Tuck fingers back in a claw. Cut in front of knuckle
Bride hold	Arch thumb and index finger. Cut underneath arch
Peeling	Angle peeler to 'catch' on to the ingredient. Push away from you
Slicing	Knife at 45-degree angle. Point on board. Pull toward you
Grilling	Intense radiant heat from a hot element either above or below food (Radiation)
Rubbing in method	Fat rubbed into flour using fingertips. Used for crumble & pastries
Using the cooker	Main parts: hob, grill, oven, temperature dials, shelves, timer
Weigh/Measure	Accuracy affects outcome 1000g in 1kg; 1000ml in 1 litre, 3tsp ; 1tbsp

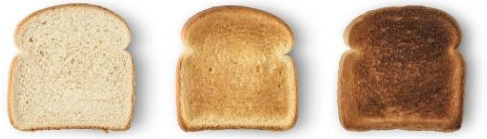
What's happening inside the bread?

			
The dough is kneaded to give the bread its texture. The protein in the flour is stretched to make an elastic dough and pockets of gas are formed.	Whilst the dough is proving, bubbles of carbon dioxide gas are formed from the yeast action. These help to stretch the dough and make it rise.	In the oven the gas bubbles (carbon dioxide and air) expand with the heat. This makes the bread rise further.	Eventually the heat sets the loaf giving it a well-risen structure and a light and spongy texture.

Food Science - Processes

Dextrinisation

When food containing starch is heated (without the presence of water) it can produce brown compounds due to dextrinization. Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins. These dextrins can also produce a brown colour eg Toast



Enzymic Browning

The discolouration of a fruit or vegetable due to the reaction of enzymes with plant cell substances from the air

Sensory Analysis Word Bank

When conducting **sensory analysis** (taste test) on a food product it is important to be able to describe the food in detail. To help do this use a range of **describing words** to show the **qualities of a food product**

APPEARANCE	FLAVOUR	TEXTURE	AROMA
Attractive	Acidic	Brittle	Acrid
Appetising	Aftertaste	Bubbly	Aromatic
Bright	Balanced	Chewy	Burnt
Burnt	Bitter	Clammy	Cheesy
Colourful	Bland	Close	Fishy
Colourless	Buttery	Creamy	Floral
Crumbly	Cheesy	Crisp	Fragrant
Crystalline	Citrus	Crumbly	Fruity
Cuboid	Cool	Crunchy	Light
Dark	Delicate	Dry	Meaty
Dull	Delicious	Flaky	Musty
Evenly baked	Fizzy	Fluffy	Perfume
Firm	Greasy	Greasy	Pungent
Fizzy	Herby	Gritty	Rancid
Flaky	Hot	Hard	Roasted
Flat	Light	Juicy	Rotten
Fragile	Mature	Lumpy	Savoury
Glossy	Mild	Moist	Scented
Golden	Peppery	Mushy	Sour
Golden brown	Refreshing	Open	Spicy
Greyish	Rich	Rubbery	Strong
Heavy	Salty	Runny	
Interesting	Savoury	Sandy	
Light	Scrumptious	Short	
Limp	Sharp	Smooth	
Mouth-watering	Sickly	Soft	
Off-colour	Sour	Sticky	
Over cooked	Spicy	Stringy	
Pale	Sweet	Stodgy	
Plain	Tainted	Tacky	
Runny	Tangy	Tender	
Stringy	Tart	Tough	

Claw grip

Bridge hold

Slicing

Dicing

Hygiene is key to Food Safety!

Geography Enquiry question 1: What skills do I need as a geographer?

Types of geography

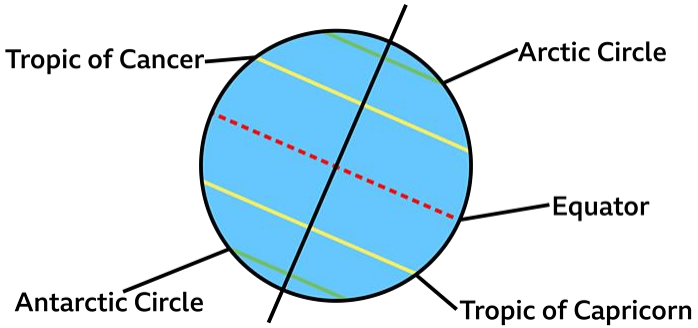
Human geography = This focuses on the study of human interaction with the environment, its cultural, social and economic aspects.



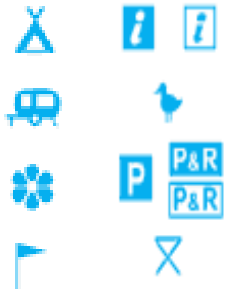
Physical geography = This focuses on the study of the natural features of the word such as rivers, coasts, mountains, ecosystems, the weather and climate.



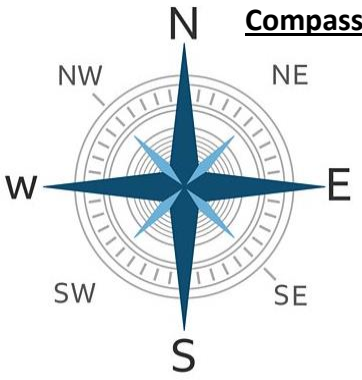
Lines of latitude:



Map Symbols:



Compass points:



Lines of latitude	Imaginary lines around the world that goes from East to West
Lines of longitude	Imaginary lines around the world that goes from North to South
Continent	A landmass made up of many countries
Grid square	Used to help locate places on a map Scale
Scale	The ratio of a distance on a map to the real distance on the ground
Relief	The difference between the highest and lowest elevations in an area
Compass	An instrument used for navigation and orientation
Physical features	The natural features on the earth's surface that are not manmade
Human features	All the features on the earth's surface that have been added by humans
Density	The average number of people living in an area per square kilometre (sq/km)

To find a 4-figure grid reference you must:

1) Go along the corridor and find the grid square.
2) Choose the bottom left number on that square.
3) You then go up the stairs, find the grid square and choose the bottom left number on that square.

To find a 6-figure grid reference you must:

1) Go along the corridor and find the grid square.
2) Choose the bottom left number on that square.
3) Imagine the square is divided into tenths and decide how many 10ths across the object it.
4) You then go up the stairs, find the grid square and choose the bottom left number on that square.
5) Imagine the square is divided into tenths and decide how many 10ths across the object it.

Relief and height of land

You can tell the height of land on a map in three different ways:

Contour lines are line on a map that join places of equal height. They are usually shown as fine brown lines on a map.

If contour lines are close together, the land is steep.
If contour lines are far apart, there is a gentle slope.

Layer colouring uses colours to represent areas of higher land. Areas of mountainous land are usually shown as brown, like in this map of the UK

Spot heights are usually shown as a dot or triangle with a number on a map. They give the exact height of a point on the map.

Geography Enquiry question 2: What is the UK like?

What are the different groupings on our islands?

England + Wales + Scotland = **Great Britain**

Great Britain + Northern Ireland = **The United Kingdom**

The United Kingdom plus Ireland = **The British Isles**

The UK is made up of both Physical and Human environments:

Physical landscapes – Landscapes created naturally.
Human landscapes – Landscapes created by people.

Urban areas of the UK like London have a lot of people, they are **Densely Populated**.

Rural areas of the UK like Cornwall have few people, They are **Sparsely Populated.**

What is The UK's role in the wider world?

The UK is connected to the rest of the world through:

- **Trade Transport**
- **Communications**
- **Investment**
- **International organisations**
- **Tourism**
- **Culture**
- **Aid**

The UK plays a key role in organisations such as The UN and The Commonwealth. The UK is also a major player in global economics as a trading partner of most countries around the world. Our relationships with other countries is what makes us successful.

Why is London a major world city?

London is a **World City**, which means it is a major centre for **finance, trade, business, politics, culture, scientific information and mass media**. It has power and influence across the whole world.

London is also a very diverse city meaning its population has come from all over the world to live and work.

These people have brought their languages, religions, food and culture with them, making London a global city representing the whole world.

London is our home and also home to nearly **9 million other people.**

Key words:

Relief – Height of land above sea level (m)

Layer shading – using different colours to show the difference in height of land.

Population density - This refers to the amount of people living per km2 of land.

Trade – buying and selling of goods between countries.

History: Migration Through Time

Overarching enquiry question: What is a British person?

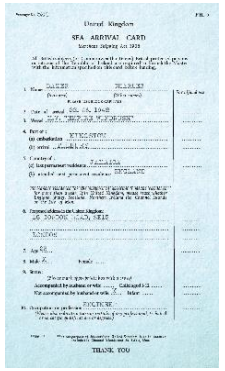
The history of the British Isles is one that can be looked at in terms of **migration**. Different groups of people have moved to these islands over centuries, changing our **culture** and **society**. There have been many different reasons for people coming to Britain. The first few waves of migration were predominantly due to the **resources** and protection the island offered (ancient peoples of the Mesolithic Period, the Celts and the Romans). The second wave of migration revolves around the **conquest** of the island (Anglo-Saxons, Vikings and the Normans). The third wave of migration we look at illustrates how **persecution** can lead to fresh waves of migration (Jews, Roma, Huguenots and Palatines). The fourth wave of migration demonstrates how **economics** and **politics** play a part in migration of the modern day. This chronological understanding allows the study of both the **positives** and **negatives** of migration, and brings together the idea of a **multicultural** UK as well as the difficulties of defining a British person.

Timeline of events	
c.4000 BC	Mesolithic Period
c.3,100 BC	Stonehenge built
2,500 BC	Bronze Age
1,000 BC	Celtic people came to Britain
55/54 BC	Julius Caesar invades Britain
410 CE	Romans leave Britain
1016 CE	Canute becomes first Viking king of England
1066 CE	The Normans invade
1290 CE	Jews expelled from Britain
1505 CE	First written record of Roma in Britain
1560 CE	First Huguenots arrive in Britain
1656 CE	Jews welcomed back by Cromwell
1693 CE	First Palatines arrive
1881 CE	Many Jews come from Eastern Europe
1948 CE	Empire Windrush brings first Jamaican immigrants to Britain
1997 CE	1 million migrants from Europe live in Britain
2011 CE	% of people living in the UK that were born abroad is 13.4%
2016 CE	Britain votes to leave the EU
2027 CE	National Statistics Office predicts pop. of UK will reach 70 million

Key words:	
Chronological order	The order in which things happened.
Era	A long and/or distinct period of history.
BC/BCE	Before Christ/Before Common Era.
AD/CE	Anno Domini (The year of our Lord)/Common Era.
Migrant	A person who moves from one place to another in order to find work or better living conditions.
Resources	Any physical material constituting part of Earth that people need and value.
Clan	A close-knit group of interrelated families.
Tribe	A group of people including many families, clans, or generations.
Invasion	When an army or country uses force to enter and take control of another country.
Persecuted	Hostility and ill-treatment based on race, religion or politics.
Economic Migrant	A person who travels from one place to another to improve their standards of living.
Empire Windrush	A ship bringing the first large influx of migrants, from Jamaica.
Brexit	The withdrawal of the United Kingdom from the European Union.
Discrimination	Treating categories of people unfairly, such as on the grounds of race, gender, age etc.
Deported	Removing a foreigner from a country, typically for being there illegally or a criminal.
Multiculturalism	The presence of multiple cultural groups living in one society.

What sources should I know about/use?

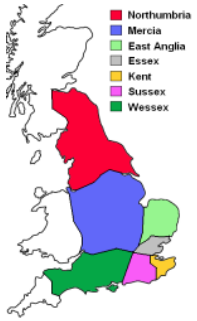
Windrush landing cards (primary sources – sources from the time we are studying).

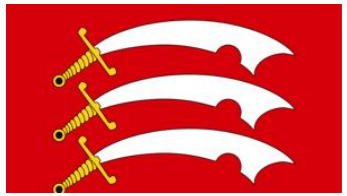


History: Anglo-Saxon Essex

Overarching enquiry question: What did the Anglo-Saxons of Essex leave behind?

From 450 AD Anglo-Saxons began to **migrate** to England; they were attracted by the fertile farmlands and forests that would provide good hunting grounds. They began to settle and create kingdoms such as **Mercia, Wessex and Northumbria** and by the 6th century seven kingdoms were established. In Anglo-Saxon **society** the King was at the top; he was helped by his Earls to run his kingdom, whereas slaves were at the bottom. Kings would often get into **conflict** with kings from other kingdoms or rich Earls. This led to the Kingdom of Essex often being **subservient** to other kingdoms. Comparing the **Kingdom of Essex** to the **Kingdom of Wessex** allows us to address similarities and differences between kingdoms. However, separate kingdoms ended in **927** when Athelstan became the king of a united **England**, work that actually began with his grandfather Alfred the Great. We can learn about Anglo-Saxon Essex by what it has left behind: **Prittlewell Tomb** and **artefacts**, place names, symbols, battle sites etc. However, we are faced with difficulties due to the the **sparsity** of sources.



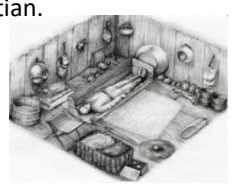


The Essex Flag

Timeline of events	
AD 450	Anglo Saxons begin to arrive in Britain
527	Æscwine becomes the first King according to some sources
798	Sigeric abdicates
825	Sigered was the last King of Essex
871	Alfred the Great becomes King
927	Athelstan is king of a united England
991	The Battle of Maldon

What sources should I know about/use?

Anglo Saxon Tomb – This tomb was found near Prittlewell in Essex, it is important as it can tell us about life at the time, for example that the person was Christian.



Key words:	
Migration	Movement of people
Kingdom	A country or territory ruled by a king.
Push factor	When people move because there are bad things about where they live.
Pull factor	When people choose where they are going because of all the nice things that are there.
Witan	Also called Witenagemot, the council of the Anglo-Saxon kings in England who advised the king.
Noble	A person of high birth or rank (often owning lots of land and very powerful).
Earl	Highest ranking noble (included in the Witan). Had their own land called earldoms.
Thanes	Nobles. They were a lord who held his land directly from the king in return for military service.
Churls	Freemen. Rented small farms that they worked on themselves and their families.
Thralls	Slaves. Seen more as property rather than people.
Danelaw	The part of England in which the laws of the Danes held sway.
Subservient	Submissive to the control of another kingdom.
Ceded	To give up (land or territory).
Pagan	Those who worshipped lots of different Gods.
Christian	A follower of the teachings of Jesus Christ.
Archaeologist	A person who studies history through excavation sites and physical remains
Source	Something that can tell us about history
Prittlewell Tomb	A Saxon tomb found in Essex that housed some 40 rare and precious artefacts.
Legacy	The long lasting impact of something; the mark something can leave upon the world.
Saexe	Saxon short sword.
Runes	The letters of an ancient Germanic language.
King Saebert	The most famous King of Essex.
Alfred the Great	The most famous King of Wessex was King Alfred.
Pious	A deeply religious person.
Athelstan	Alfred the Great's grandson, credited in part with the unification of England.
Draft	A version of something that is made before the final version. It helps improve what you are writing.

עִבְרִית 123

Ivrit

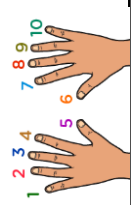
עִבְרִית

The basics:

I	Ani	אני
You (M)	Ata	אתה
You (F)	At	את
Him	Hoo	הוא
Her	Hee	היא
We	Anachnoo	אנחנו
You (plural)	Atem	אתם
They	Hem	הם

You will learn how to count to ten:

1	Echad	אחד
2	Shtayim	שתיים
3	Shalosh	שלוש
4	Arba	ארבע
5	Chamesh	חמש
6	Shesh	שש
7	Sheva	שבע
8	Shmoneh	שמונה
9	Taisha	תשע
10	Eser	עשר



You will learn the Hebrew Alphabet:

א	Aleph	
ב	Bet	
ג	Gimmel	
ד	Daled	
ה	Heh	
ו	Vav	
ז	Zayin	
ח	Chet	
ט	Tet	
י	Yud	
כ	Kaf	ך – Final Kaf
ל	Lamed	
מ	Mem	ם – Final Mem
נ	Nun	ן – Final Nun
ס	Samech	
ע	Ayin	
פ	Pay	ף – Final Pay
צ	Tzadi	ץ - Final Tzadik
ק	Kuf	
ר	Raish	
ש	Shin	
ת	Taf	

Key words and phrases you will learn:

My name is… Hashem Sheli…	השם שלי
My age is…Ani ben(M)/bat(F)…	אני בן/בת
I live…Ani gar(M)/gara(F)…	אני גר/גרה
My birthday is on the… Hayom huledet sheli ba…	היום הולדת שלי ב

You will learn the months of the year. Below is a list of the months that are pronounced differently:

January	Yanwar	ינואר
February	Febwar	פברואר
March	Mertz	מרץ
May	Mai	מאי
June	Yuni	יוני
July	Yuli	יולי

UNIT: CALENDAR AND FESTIVALS OF TISHREI

The Jewish calendar is a lunar calendar and has 12 months of 29 or 30 days.

The Lunar calendar based on the cycle of the moon

TIshrei the first month of the Jewish year

5783 the new Jewish year starting on Rosh Hashanah

Rosh Hashanah the Jewish New Year

Yom Kippur the day of Atonement

Sukkot literally means small huts

Sukkot is a special Jewish festival in Tishrei

Teshuvah repentance

Repentance saying sorry and making amends for mistakes

Shofar a rams horn sounded on Rosh Hashanah

Arba minim four plants used on Sukkot

Jewish Studies

Watch this:

SCAN ME

https://www.youtube.com/watch?v=JpFw7DqRMEc

UNIT: SHABBAT

Shabbat the Jewish sabbath; a holy day of rest.

Challah sweet bread eaten on shabbat

Kiddush a ceremony with wine to mark the holiness of shabbat and festivals

Melachah work (39 types) that Jews cannot do on shabbat (such as driving)

Havdallah ceremony to mark the end of shabbat

Synagogue (Shul) Jewish place of worship

SHABBAT EXPLAINED

The seventh day of the week, a holy day of rest, commanded in the Torah.

Shabbat marks the day G-d rested after completing the creation of the world in six days. Keeping shabbat is one of the ten commandments

'Remember the shabbat day to keep it holy'.

On Shabbat Jewish people switch off from the busy week; they do not do many types of work including writing, using phones, driving.

Time is spent with family and friends and at special services in synagogue.

In the home, Jews eat special shabbat meals together; candles are it to bring in shabbat. Challah is eaten at each meal. Wine is used to make kiddush.

Havdallah is made with wine, spices and a special candle to mark the end of Shabbat on Saturday night.

QUESTIONS TO CONSIDER

Why is it good to have a day of rest?
How can shabbat help you to appreciate the world?

UNIT: KAYIN AND HEVEL

Torah the Jewish Holy book

Genesis (Bereishit) the first book of the Torah

Rashi a famous Rabbi who wrote explanations of the Torah

Adam and Eve the first man and woman created by G-d

Kayin (Cain) and Hevel (Abel) their sons

Offering dedicating some of the best of what you have to G-d

Premeditated something that has been planned and thought about before it is done

Motive the reason for doing something

KAYIN AND HEVEL THE STORY OF THE FIRST MURDER:

The story of Kayin and Hevel is in the Torah, in the first book of Genesis.

Adam and Eve are their parents.

Kayin was the older brother; he was a farmer. Hevel was a shepherd.

Both gave offerings to G-d; G-d accepted Hevel's offering, but not Kayin's.

Kayin was furious and depressed. He met Hevel in a field and murdered him.

When G-d asked him where his brother was, he said he did not know and asked ' Am I my brother's keeper?'

QUESTIONS TO THINK ABOUT:

Why did Kayin kill Hevel? Was the murder premediated? What did Rashi say?

Why did Kayin say he did not know where his brother was if he had just killed him?

Thoughts - how do anger, jealousy and resentment affect you in your life?

Read this:

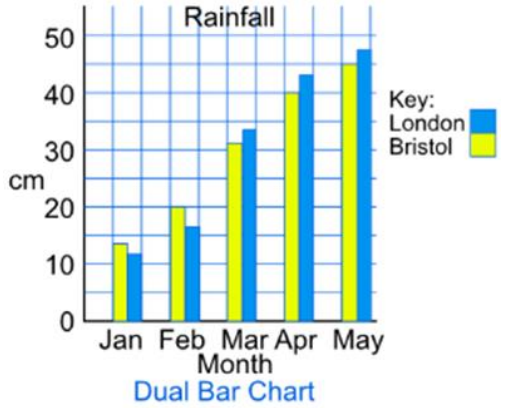
https://www.chabad.org/parshah/article_cdo/aid/3749639/jewish/Cain-and-Abel-The-Story-of-the-First-Sibling-Rivalry.htm

SCAN ME

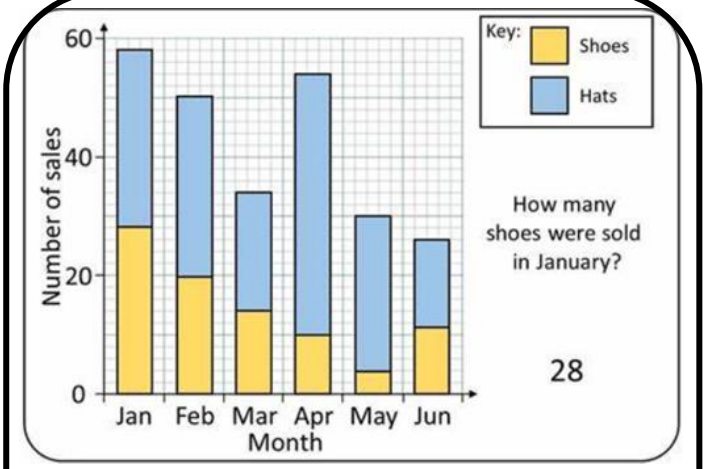
MATHS Unit 1: Analysing and displaying data

ESSENTIAL KNOWLEDGE:
- Use a key when drawing a pictogram.
- You cannot find the mean or median if the data is not quantitative (numbers).

KEY WORDS:
Average, Cumulative, Mean, Median, Mode, Range, Bar Chart, Line Chart, Tally Pictogram, Axis, Scale.



Dual bar charts show data side by side.



Compound bar charts show data stacked on top of each other.

Averages and Range:

5. 5. 8. 9. 11. 15. 17

- Mode is the most common. Mode = 5
- Median is the middle when arranged in size order. Median = 9
- Mean is when you find the sum and divide by the amount of values. Mean = 10
- Range is the biggest subtract the smallest. Range = 12

Tally Chart

Tally chart is used to sort data into groups
A line is drawn for each item in a group, with a diagonal line to group every five items making it easier to count

Jack records the car colours in a car park

Red	Silver	Black	Blue
Blue	Silver	Green	Silver
Silver	Blue	Red	Red
Silver	Red	Silver	Green

Colour	Tally	Total
red	IIII	4
black	I	1
blue	III	3
green	II	2
silver	𝍸 I	6

Pictograms:

Pictograms use pictures to portray data, with each symbol representing an amount. Part of a picture can be used to represent different frequency.

Example, put the following information into a pictogram

Transport		Frequency
Walk	🚗	12
Bike	🚲	6
Car	🚗🚗🚗🚗	48
Bus	🚗🚗🚌	33
Tube	🚗🚗🚃	28
	Key 🚗 represents 12 teachers	

Facts
- There are 127 teachers in total
- Car is the most popular transport
- Bike is the least popular transport

MATHS Unit 2: Number skills

ESSENTIAL KNOWLEDGE:
- Multiplication tables.
- Using a column method to add, subtract and multiply.
- Using a bus stop to divide.

KEY WORDS:
Multiple, Factor, Prime Factor, Multiply, Divide, Sum, Difference, Square Number, Significant Figure, Decimal Place.

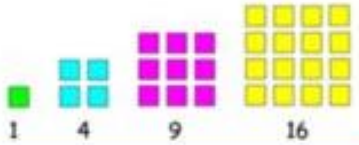
Prime Numbers:

2 3 5 7 11 13 17 19 23 29 31 37 41 43...

Prime Number – A number that has exactly two different factors, which are 1 and the number itself e.g. 17 is prime.

Square Numbers:

Square Number: The product of a number multiplied by itself
e.g. 2 x 2 = 4



Rounding:

Rounding is making a number simpler but keeping it close to its original value.

You can round to significant figures or decimal places.

e.g. Round 3.1476 to 2 decimal

3.1476

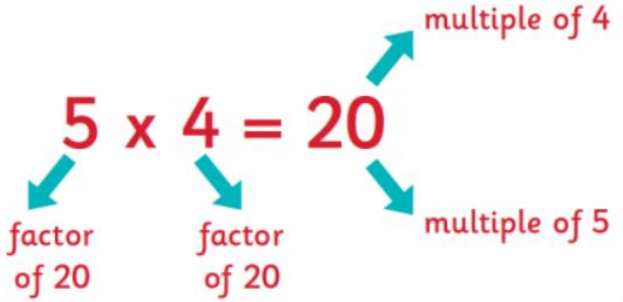
Remember:

5 or above rounds up.

Below 5 stays the same.

Answer: 3.15

Multiples and Factors:



Order of Operations:

- Use BIDMAS to help you remember the order you need to complete the operations.

E.g. $3 \times (5 + 6) - 2^2$
$= 3 \times 11 - 2^2$
$= 3 \times 11 - 4$
$= 33 - 4$
$= 29$

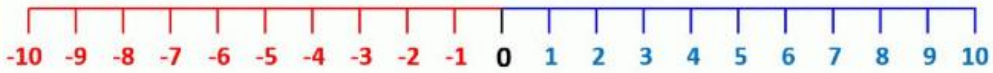
B	Brackets
I	Indices
D	Division
M	Multiplication
A	Addition
S	Subtraction

Negative Numbers:

When adding or subtracting use a number line.

To add move right. To subtract move left.

e.g. -8 + 12.
Start at -8 then move right 12 places.
The answer is 4.



MATHS Unit 3: Expressions, functions and formulae

DEFINITIONS:
Inverse means the opposite of, or the reverse of.
Substitute means replace letters, or words, with values.
Simplifying algebra means making it easiest to use/read, e.g. by collecting like terms.

KEY WORDS:
Simplify. Substitute, Formulae, Function, Co-efficient, Term, Expression, Equation, Identity.

Essential knowledge:

$A + A + A + A = 4A$
$B \times B \times B = B^3$
$4c \times 3c = 12c^2$

Simplifying expressions (adding/subtracting)

'Collect like terms', you cannot collect terms that are not the same e.g. x and y.
Always include the sign in front of the term.

E.G.

$4a + 2b + 6a - 7b = 10a - 5b$

$4a + 6a = 8a$ $\quad$ $2b - 7b = -5b$

Forming Expressions

Using a letter to represent an unknown value

E.G.

John thinks of a number, n, he multiplies his number by 8 and then subtracts 2.

Write an expression for the answer John gets.

$8n - 2$

Substitute into worded formulae

You need to replace the word with the information given to find the answer.
e.g. To find Sarah's age you add 3 onto Tom's age.
If Tom is 5, how old is Sarah?
5 + 3 = 8 so Sarah is 8
If Tom is 40, how old is Sarah?
40 + 3 = 43 so Sarah is 43

Substitution

Substitution is replacing the letter with a given value.
Remember to use BIDMAS.

E.G.

$p = 5$ $\quad$ $y = -3$

$4p + 6y = 4(5) + 6(-3) = 20 - 18 = 2$

Function machines

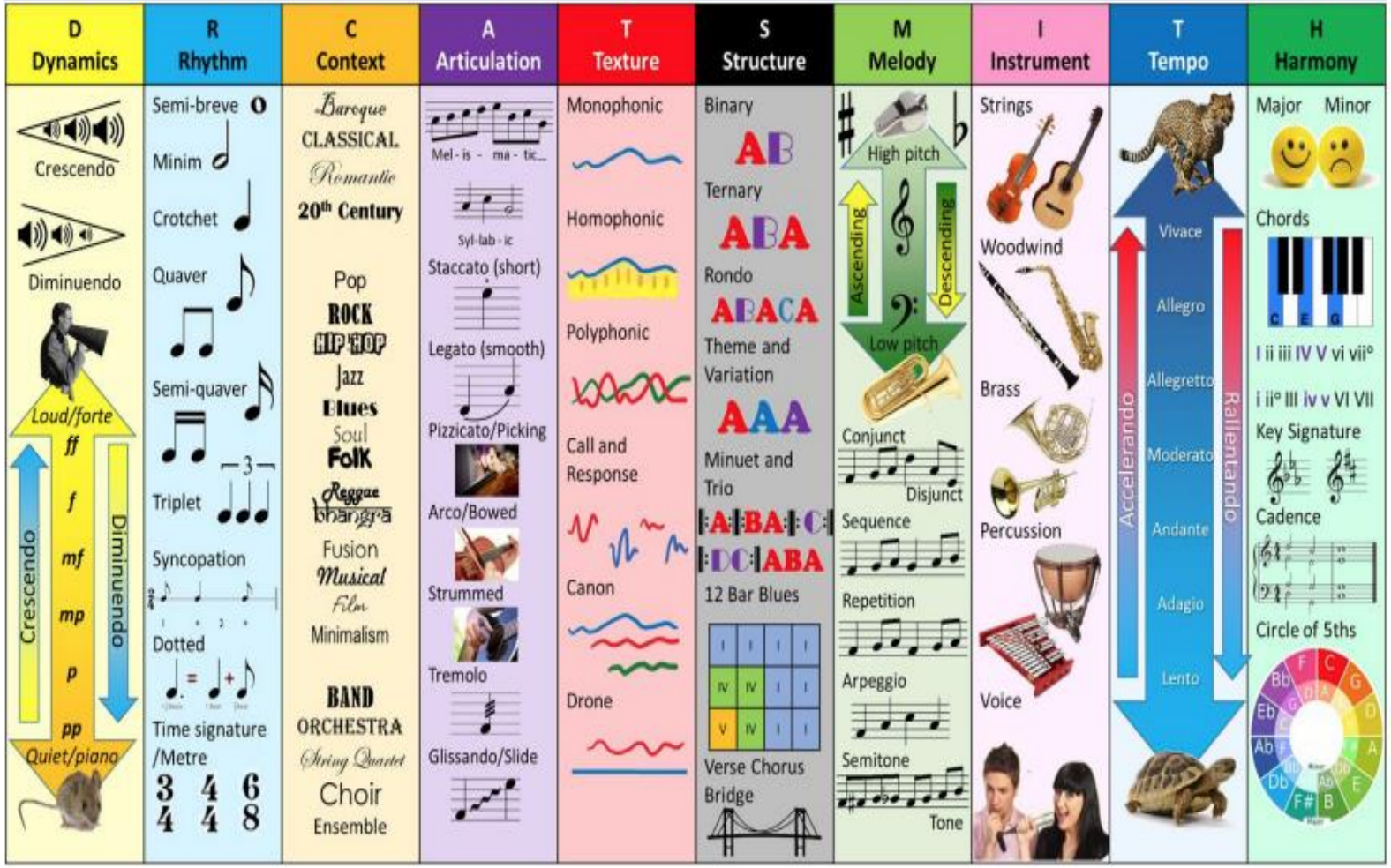
- Input are the numbers that go in to the machine.
- Output are the numbers that come out of the machine.
- If you are given the output, you need to use inverse operations to find the input

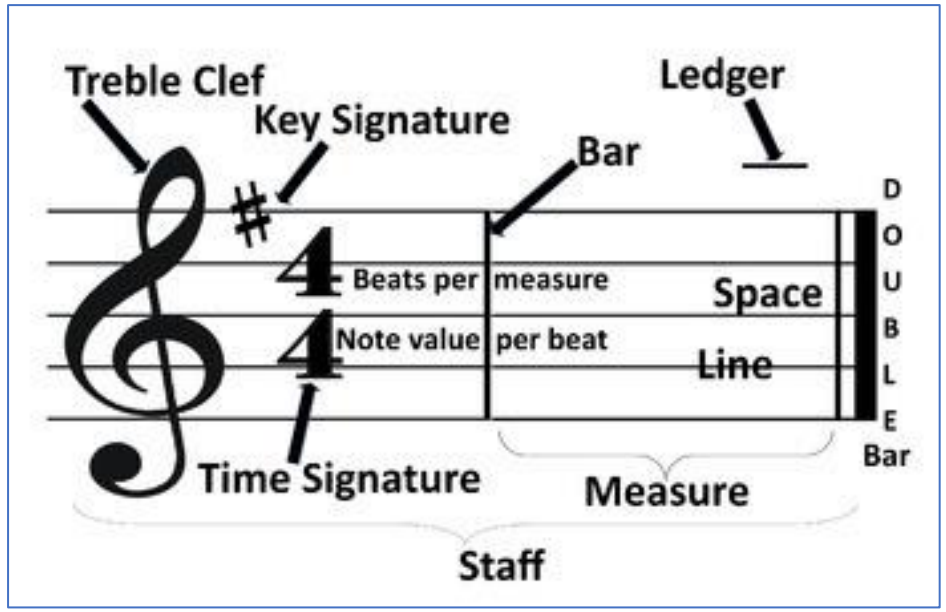
e.g. if the input is 5

Musical Elements

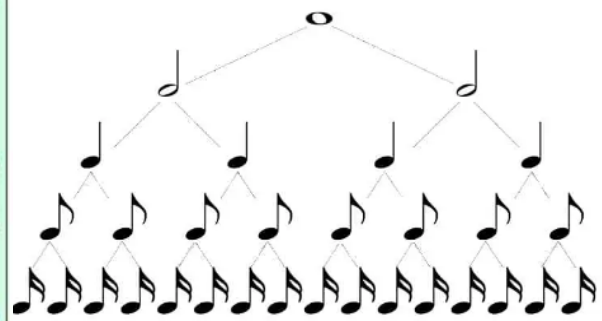
Musical elements are all the things you need within a good performance to ensure your audience is captivated by your music. The musical elements are remembered by using the acronym ‘DR CAT SMITH’.

Audience = People who listen to your music





Musical Note Tree



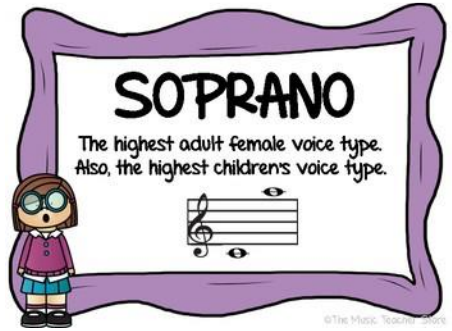
- Semibreve – 4 beats
- Minim – 2 beats
- Crotchet – 1 beat
- Quaver – 1/2 beat
- Semiquaver – 1/4 beat

Musical Notes

In music when you are creating a piece, you use notes to represent the sounds you want to create. Think of them as your musical alphabet.

Instrumentation

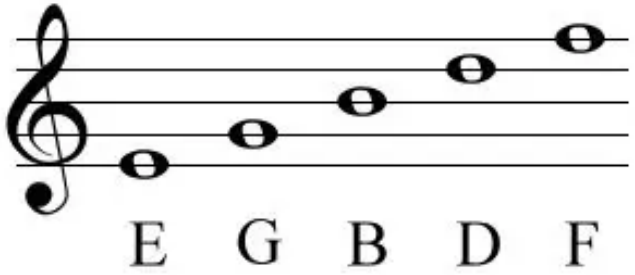
There are lots of fun instruments we can use when creating our music along with one that we all have…our vocals.



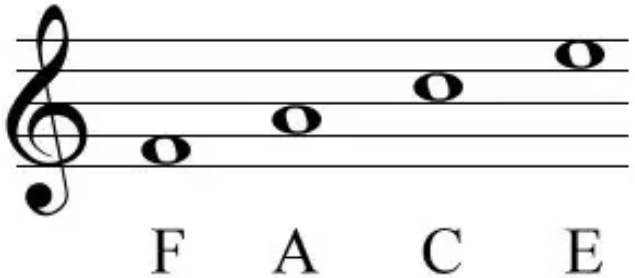
Term	Definition	Example
Dynamics	Dynamics is how loud or quiet the music is played.	The piece of music is Forte (loud).
Rhythm	Is created by combining a variety of notes of different durations.	The rhythm had two short notes and one long note.
Context	Context refers to the genre and or style of music.	The style of music was rock.
Articulation	How a particular instrument is played	The Violin is played with a bow (Arco).
Texture	Texture describes how melodies, rhythms and harmonies are layered in a piece of music.	The texture of the piece was monophonic. It only had one layer.
Structure	Structure (or form) is the overall plan of a piece of music.	The structure of the piece consisted of an Intro, verse, chords, bridge, verse, outro.
Melody	A sequence of notes arranged in a definite pattern of pitch and rhythm	The melody of the piece was cheerful.
Instrumentation	The instruments that are used.	I could hear a guitar and drum kit being played.
Harmony	The combination of simultaneously sounded musical notes.	The harmony of the piece used G and C Chords.
Tempo	Tempo is how fast or slow a piece of music is played.	The tempo of the piece was fast (Presto).

Singing

To produce musical tones by means of the voice. The above are the different ranges our voice can fit into



Every Green Bus Drives Fast



FACE IN THE SPACE

Jewish Theatre

Jewish theatre consists of plays written and performed primarily by Jews. The range of Jewish theatre is broad and includes operetta, musical comedy, melodrama etc. Jewish theatre's roots include the often satiric plays traditionally performed during the religious holiday of Purim, the singing of cantors in the synagogues, Jewish secular song and dramatic improvisation and so much more.

The Megillat Esther

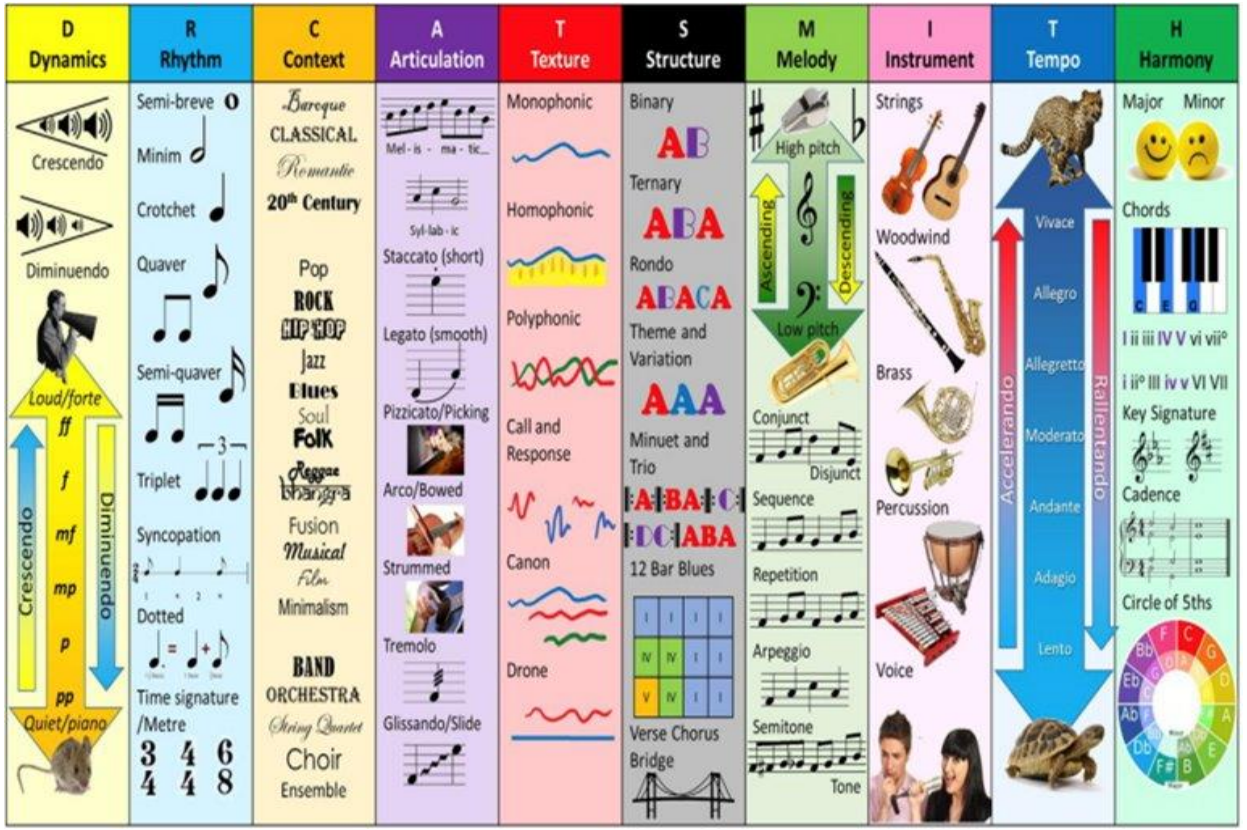
The Megillat Esther is a special scroll in Judaism, that is beautifully decorated.

It tells that story of Queen Esther, the wife of a Persian king. She bravely stopped a plan by Prime Minister Haman to kill all Jews – saving her people.

During the Jewish festival of Purim, the story is read aloud in synagogues. People boo, hiss and stamp when they hear Prime Minister Haman's name, and cheer when they hear Esther's!

There are four main vocal ranges:

- Soprano = High female voice
- Alto = Low female voice
- Tenor = High male voice
- Bass = Low male voice



Book of Esther Characters

(Left to Right)

Haman (BOOOO!)

Achashveirosh

Mordechai

Esther

Vocal Skills	Definition
P - Pitch	How high or low you voice sounds.
I – Intonation	How clearly you speak.
P - Pace	The speed in which you speak.
E – Emphasis	The importance you put on certain words.
D - Dynamics	The volume that you are speaking at.
B – Breath Control	How many breaths you take in a sentence.
A - Accent	The way you pronounce words.
P - Pause	How many breaks you take.

Physical Skills	Definition
P - Posture	The way you hold yourself.
E – Eye Contact	Where you are looking.
T - Tension	How tight or relaxed your body is.
F – Facial Expression	How you are changing your face.
L - Levels	The heights used within the performance.
A - Action	Movements that have specific meanings.
G - Gait	The way you are walking.
S - Space	The area that you are using.

Chag Purim – Hebrew

Chag Purim
Chag Purim
Chag gadol layehudim

Masechot, ra'ashanim,
shirim verikudim.

Hava narishah - rash, rash, rash,
Hava narishah - rash, rash, rash,
Hava narishah - rash, rash, rash,
Bara'ashanim.

Chag Purim
Chag Purim
zeh el zeh sholchim manot,

Machmadim, mamtakim,
Tunifim migdanot.

Hava narishah - rash, rash, rash,
Hava narishah - rash, rash, rash,
Hava narishah - rash, rash, rash,
Bara'ashanim.

Festival of Purim – English

Purim time
Purim time
A big festival for the Jewish people

Masks, noisemakers
songs and dances.

Wind your noisemakers - "rash rash rash"
Wind your noisemakers - "rash rash rash"
Wind your noisemakers - "rash rash rash"
With your noisemakers.

Purim time
Purim time
We send gifts to one another

Treats, sweets
and other nice things.

Wind your noisemakers - "rash rash rash"
Wind your noisemakers - "rash rash rash"
Wind your noisemakers - "rash rash rash"
With your noisemakers.

PE - Netball

Key Vocabulary

Passing and receiving – different types of passes include chest pass, bounce pass, shoulder pass and overhead pass.
Attacking – getting free from an opponent in order to receive the ball. Includes the skills of sprinting, dodging and changing direction.
Shooting – With one hand under the ball and the other steadying it at the side, keep your eyes on the hoop, bend your knees and push the ball with the fingers.
Defending – Marking your opposite player both with and without the ball.
Footwork – You must land with a 1-2 landing or with 2 feet. You must then not move the landing foot

Key Images

An example of shooting taking place in netball. What positions shoot?

Challenge Questions

Can you name all the netball positions?

Do you know the starting positions of all the players?

Watch an international or super league game of netball online. What can you learn from this? Scan the code below to watch

SCAN ME

Dig Deep & Discover

To find out information on joining a local club, CLICK HERE or scan code below

SCAN ME

Redbridge SPORTS & LEISURE

Find more information on Netball as well as the rules by CLICKING HERE or by scanning the code below

England netball

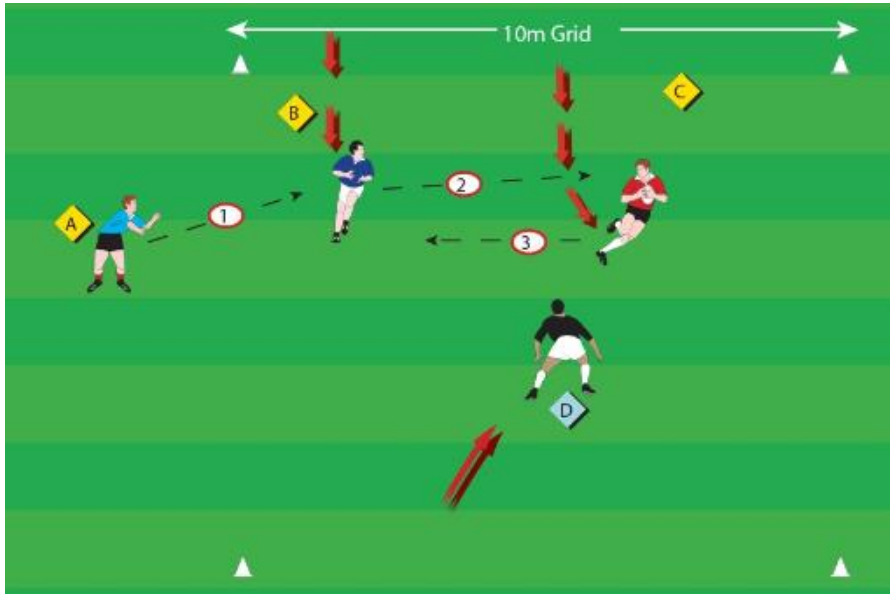
SCAN ME

PE - Rugby

Key Vocabulary

Passing	A skill used to move the ball from player to player. There are a variety of passes depending on position, game situation and are of pitch.
Tackling	A skill used to try to stop an opponent who has the ball by bringing them down to the ground. There are different types of tackles and safe tackling technique is extremely important.
Positioning	This is the position a player takes on the field. This is very important to abide by the laws of the game and also to score tries.
Carrying	A skill used to gain territory and score tries. This is where a player keeps the ball as they progress down the pitch
Handling	A skill used to catch and throw the ball. Very important to move the ball effectively and to open up space.

Key Images



Passing being demonstrated in rugby

Challenge Questions

Watch a premiership or international rugby game with focus on the different positions on the pitch.

What different positions are there and what role do the different players take up on the pitch?

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Scan code for ways to pass in rugby

PE - Table Tennis

Key Vocabulary

Grip - How you hold the bat to make contact with the ball to help it land on the table.

Backhand push - The ball is played on the backhand side, with a flat bat face to push the ball over the net.

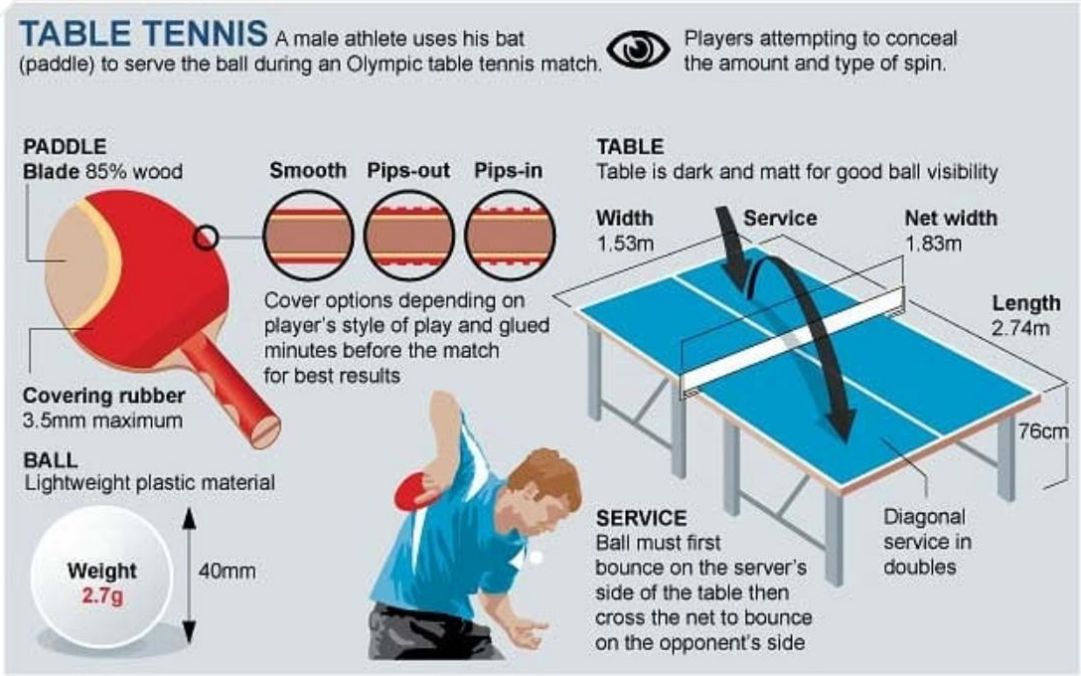
Forehand push - The ball is played on the forehand side, with a flat bat face to push the ball over the net.

Serve - The first shot to begin a rally. The serve is alternated between the two players, after two serves the service goes to the opposite player regardless of the winning shot.

Forehand topspin - A shot played on the forehand side, contact cuts on an angle to the ball to make it move differently.

Doubles play – working as a two to outwit the opponents

Key Images



Challenge Questions

What are the rules that govern the serve in Table Tennis?

When playing the forehand push how should bat be positioned to help the balls go in the correct direction?

What must happen to the bat to achieve topspin in the rally?

Dig Deep & Discover

Click here for Table Tennis England

SCAN ME

Click here for Table Tennis foundation

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To find out information on joining a local club, CLICK HERE

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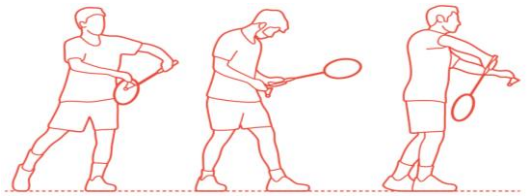
PE - Badminton

Key Vocabulary

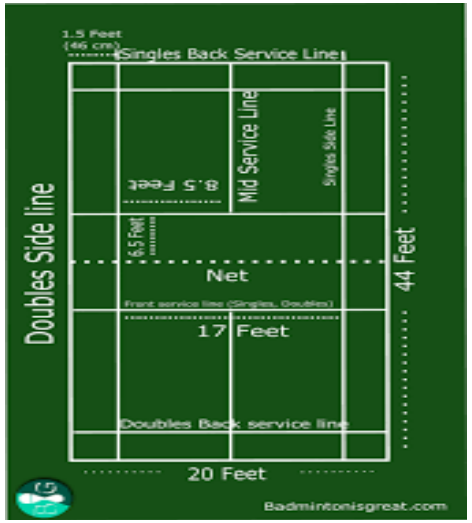
READY POSITION	Balanced position, side on, racket up and ready, on toes.
GRIP	Shake hands with the racket sideways on. Wrap fingers round the tape.
SERVE	There are several types of serve, low/backhand, long, flick. A backhand server should land close to the service line on the opponents side of the net. The racket head must start from below the waist and make contact with the shuttle below the servers waist.
UNDERARM CLEAR	This shot is played high to the back of your opponent's court. Start sideways on and use a whip action with the wrist to create power.
OVERHEAD CLEAR	Played to the back of the opponents court and is a defensive shot. Start sideways on, racket up and behind you, focus on making contact with the shuttle in front of you.

Key Images



Ready position for a serve

Badminton court areas



Challenge Questions

Draw a badminton court and label it correctly with the lines that are in/out for both singles and doubles.

Watch an international game of badminton online. What can you learn from this? Scan the code below to watch

SCAN ME

Dig Deep & Discover

SCAN ME

To find out information on joining a local club, CLICK HERE or scan code below

Redbridge SPORTS & LEISURE

Find more information on badminton as well as the rules by CLICKING HERE or by scanning the code below

BADMINTON ENGLAND

SCAN ME

Progress check: How well have you performed in this terms four sports?

WWW

EBI

My grade: **Above** **Expected** **Below**

A Year 7 PE student will:

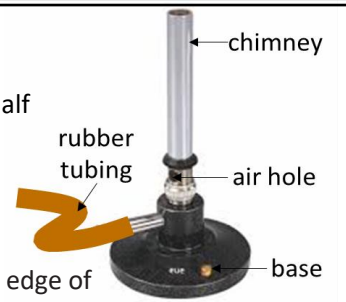
Be able to understand the general rules and regulations
Develop and apply knowledge of basic skills in small game situations
Demonstrate some creativity in body movements

INTRODUCTION 1 – Safety

KEY WORD	DEFINITION
Hazard	Something in an experiment that could cause harm
SI Unit	The standard unit we use in Science to make measurements
Hypothesis	A prediction about an experiment that you can test
Flammable	Will set on fire easily
Corrosive	Will burn through skin or clothing
Irritant	Will cause irritation of the skin, eyes or mouth/throat
Toxic	Could be fatal if swallowed or inhaled (poisonous)
Harmful to Health	Will cause health problems if swallowed or inhaled. This could be short term or long term
Environmental Hazard	Will cause damage to animals or plants if not disposed of correctly

If the hole is open, you get a **safety flame**.
If the hole is closed, you get a **roaring flame**

When using a Bunsen, we normally use a '**half-way**' flame when heating, by half opening the **air hole**.



How to use a Bunsen burner:

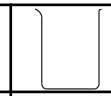
1. Make sure there are no breaks or holes in the gas hose.
2. Follow lab rules: safety goggles, tie hair back, tuck in your tie.
3. Put the Bunsen burner on a heat-resistant mat, making sure it isn't near the edge of the bench.
4. Turn the collar to ensure the air hole of the Bunsen burner is closed.
5. Hold a lit splint 1-2 cm above the top of the barrel of the burner.
6. Turn on the gas at the gas tap, and the Bunsen burner will burn with a yellow flame.
7. Extinguish the splint and place it on the heat-resistant mat.

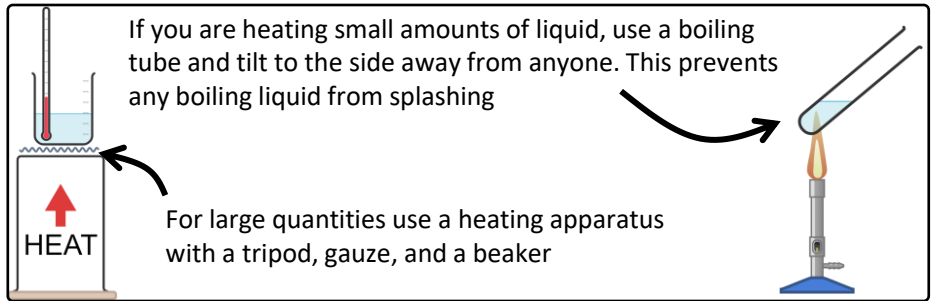
Hazchem labels tell us about the chemical hazards that something may have

Laboratory Rules:

- Do not enter the laboratory without permission
- Dress correctly for practical work, (tie your hair back, tuck in your ties, wear goggles)
- Follow instructions from the person in charge
- Make sure your working area is safe (tuck in stools, stand up, move bags/coats)
- Never run in the laboratory
- Do not eat or drink, there are many dangerous chemicals that may be on the desks
- Do not taste or sniff chemicals, they can be harmful or toxic.
- Do not leave a Bunsen unattended. It should be on a safety flame so others can see it.
- Tell the teacher when an accident happens, or something is broken

Risk Assessment: Plan for hazards by, identifying the hazard, think about what could increase the risk, and then consider the precautions you should take. **E.g.,** tie back hair when using a Bunsen burner, because it could catch fire if it goes in the flame.

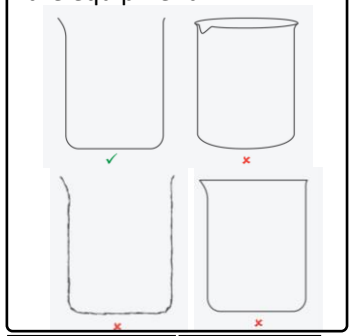
beaker		Used to stir and heat larger quantities of liquid
conical flask		Used to mix liquids together to do reactions
test tube		Used for small scale tests
boiling tube		Used to heat smaller quantities of liquid
Bunsen burner		Used as a heat source to do experiments
measuring cylinder		Measures out volumes of liquid
funnel		Used to carefully pour, or filter liquids



If you are heating small amounts of liquid, use a boiling tube and tilt to the side away from anyone. This prevents any boiling liquid from splashing

For large quantities use a heating apparatus with a tripod, gauze, and a beaker

When doing scientific drawings of equipment, draw in 2D, use a ruler and don't close off the tops of the equipment



Quantity	SI Unit
length	m or cm
mass	kg or g
force (weight)	N
temperature	°C
time	s
area	m^2
volume	m^3
density	g/cm^3

INTRODUCTION 1 – Investigation

KEY WORD	DEFINITION
Independent Variable	What you change in an experiment
Dependent Variable	What you measure in an experiment
Control Variable	The things you keep the same in an experiment
Reliability	How much your results are similar to each other, normally found by repeating the experiment
Discrete Data	Data that is words e.g. colours like 'red' or 'blue' or how an object feels like 'hard' or 'smooth'
Numerical Data	Data that is numbers e.g. time, height or temperature

Putting results in **tables** makes it easier to understand.

- Put a **heading** in each column – including units if appropriate
- The **independent variable** should be in the first column
- The **dependent variable** should be in the second column

If the independent variable is **numerical** then they are written from lowest to highest

Wing Length (cm)	Time (s)
5	0.8
10	1.4
15	2.0

When drawing a graph, before you start plotting you should remember **SALT**

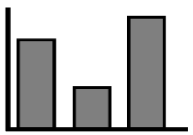
S: Choose a **SCALE** for the axes so that the graph is as big as possible on the page

A: Using a pencil and ruler draw your **AXES**

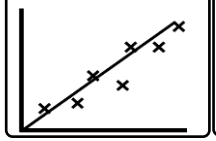
L: **LABEL** the axes with the quantity and unit e.g. 'Temperature °C'

T: Write a **TITLE** for your graph

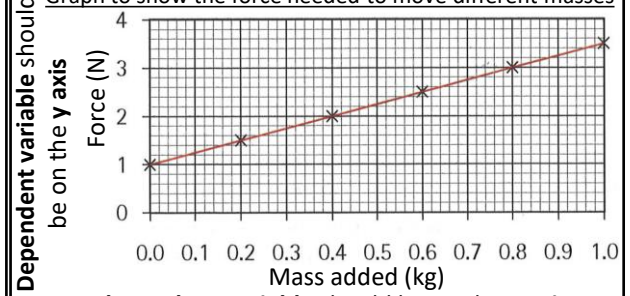
Bar charts for **categorical** data



Line graphs for **numerical** data



Graph to show the force needed to move different masses



Independent variable should be on the **x axis**

Count the **big squares** on the graph paper and pick a suitable scale.

When you do **experiments,** you should **research** before you do the experiment. When you do this follow this guide…

1. List the things you need to know → 2. Write down what you know already → 3. Find a book or website that tells you the rest

Conclusion

A **conclusion** sums up what has been found out in an investigation.
The conclusion should be clearly structured and explained using **scientific knowledge**.

Planning Investigations

Work out your **hypothesis**
Make a **prediction**

- **Change** only one variable
- **Measure** only one variable
- **Control** the other variables.

This makes it a **fair test**.

A **hypothesis** is an idea about how something works that can be tested in an **experiment**.
A **prediction** says what will happen in an experiment if the **hypothesis** is correct.
Hypothesis: seeds need sunlight to grow
Prediction: seeds grown without light will make shorter plants than seeds grown with light

The Three Variables

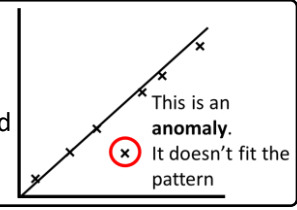
Independent Variable: What **I** change
Dependent Variable: Your **D**ata
Control Variable: What you keep **C**onstant

Methods are written so that other scientists could see what you did and **repeat** the experiment again using your instructions. This will make the experiment **repeatable**.

A method should…

- Start with a list of equipment with a diagram
- Be in bullet points showing the order to do things
- Each step describes one action
- Everything that was done needs to be listed so that someone else could take your plan and reproduce the experiment exactly.

Data that doesn't fit a **pattern** is an **anomaly**, and should be **ignored**



When you have multiple sets of **data** you may need to find an **average** of these pieces of data.
The **average** we use in science is usually the **mean**.

$$mean = \frac{add\ up\ all\ your\ values}{number\ of\ values}$$

If you have an anomaly in your data, we ignore this when calculating the mean.
e.g., **Try 3** in the table doesn't fit the same pattern, so we don't include this in the calculation.

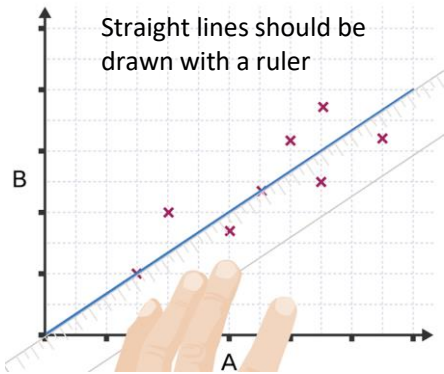
Try 1	Try 2	Try 3	Try 4
40s	45s	15s	38s

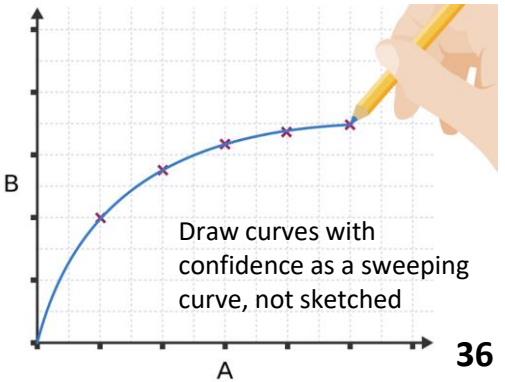
This is an anomaly!

$$mean = \frac{40 + 45 + 38}{3} = 41$$

Once you have plotted a **line graph** you should draw a **line of best fit**.
This could be a **straight** line, or a **curve** and should go through as many points as possible

Straight lines should be drawn with a ruler

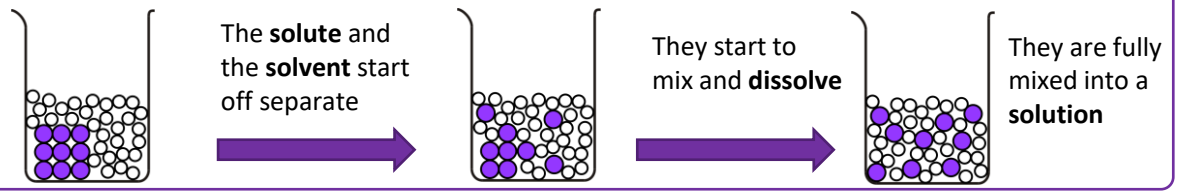


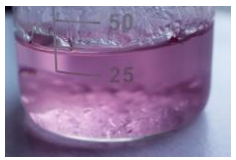


MATTER 1 – Separating Mixtures

KEY WORD	DEFINITION
Solvent	A substance, normally a liquid, that dissolves another substance
Dissolve	A substance that can dissolve in a liquid
Solution	When a solute mixes completely with a solvent
Soluble (Insoluble)	Property of a substance that will (will not) dissolve in a liquid
Solubility	Maximum mass of solute that dissolves in a certain volume of solvent ($g/100cm^3$)
Concentration	Measurement of how much of a substance is dissolved in a known volume of solvent.
Pure Substance	Single type of material with nothing mixed in
Mixture	Two or more pure substances mixed together, whose properties are different to the individual substances
Filtration	Separating substances using a filter to produce a filtrate (solution) and residue
Distillation	Separating substances by boiling and condensing liquids
Evaporation	A way to separate a solid dissolved in a liquid by the liquid turning into a gas
Chromatography	Used to separate different coloured substances

A **solution** is a mixture made of a **solute** and a **solvent**. The **solute** is often a solid that breaks apart and mixes in with the **solvent**. When it is fully mixed in, it's **dissolved**.



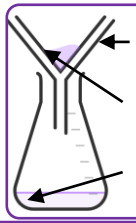


A **saturated solution**, is one where no more solute will dissolve

Different **solutes** will have different **solubilities**.
Some solutes are **insoluble**, which means they **won't dissolve**
Increasing the **temperature** often increases the **solubility**

You calculate the solubility by…

$$\textbf{solubility}\ (g/100cm^3) = \frac{\textbf{max. mass that dissolves}\ (g)}{\textbf{volume of solvent}\ (100cm^3)}$$

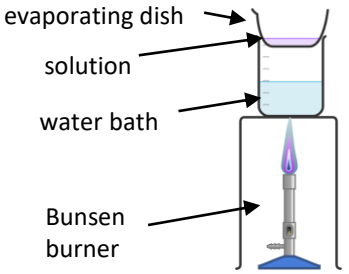


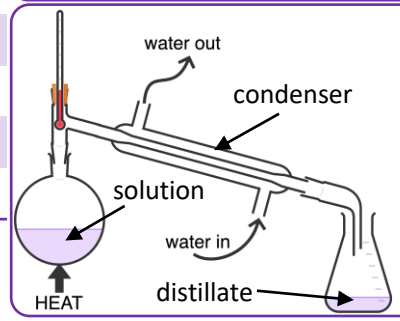
Filtration

- Separates an **insoluble solid** from a liquid or solution
- It uses a circle of **filter paper** folded and placed in a **filter funnel**.
- The liquid or solution passes through the **filter funnel** (the **filtrate**)
- The solid is too big to fit through the tiny holes in the filter paper, so it cannot run through, and remains on the paper (the **residue**)

Crystallisation

- Separates the **solute** from a **solution**, you lose the solvent.
- The solution is **heated** over a water bath slowly
- Heat until most of the solvent has **evaporated** which makes the solution more **saturated**.
- Leave the solution to **cool** and crystals will form.
- Put in a **warm place** and the rest of the solvent will **evaporate**.



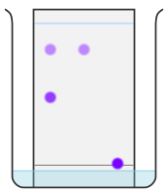


Distillation

- Separates the **solvent** from a **solution.**
- The solution is placed in a flask and heated until it boils
- The solvent turns into a gas, but the solute remains in the flask
- The gas passes into the condenser where it cools and turns back into a liquid.

Chromatography

- Separates mixtures that are soluble in the same solvent.
- The mixture is placed on a piece of **chromatography paper** which is placed in a **solvent**.
- As the solvent moves up the paper it separates all the different parts of the ink



- Draw a **pencil line** above the level of the **solvent** in the beaker
- Put a **small spot** of the dye on the pencil line, let it dry
- Gently lower the paper into the **solvent**, and hang it so it doesn't fall into the liquid below
- Observe the **colours** moving up the **chromatogram**

Pure substances have one spot. **Mixtures** have more than one spot.

The higher up the substance moves, the more **soluble** it is. If the substance is **insoluble** the spot doesn't move.

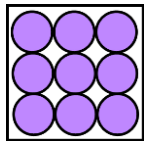
Gases can also **dissolve** in solvents. Fizzy drinks contain dissolved **carbon dioxide**

Water is not the only **solvent**. Permanent ink is **insoluble** in water, but **soluble** in ethanol

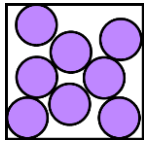
MATTER 1 – The Particle Model

KEY WORD	DEFINITION
Particle	A very tiny object such as an atom or molecule, too small to be seen with a microscope
Atom	A small particle of matter that makes up substances
Particle Model	A way to think about how substances behave in terms of particles
Diffusion	The process by which particles in liquids or gases spread out through random movement from a region where there are many particles to one where there are fewer
Gas Pressure	Caused by collisions of particles with the walls of a container
Evaporate	Change from liquid to gas at the surface of a liquid at any temperature
Boil	Change from liquid to gas of all the liquid when the temperature reaches boiling point
Condense	Change from gas to liquid when the temperature reaches boiling point
Melt	Change from solid to liquid when the temperature reaches melting point
Freeze	Change from solid to liquid when the temperature reaches melting point
Sublime	Change from a solid directly into a gas
Boiling Point	The temperature when something boils or condenses
Melting Point	The temperature when something freezes or melts

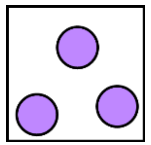
Solids
- Have a fixed shape, and a fixed volume
- Cannot be compressed
- Particles are closely packed in a regular arrangement
- Particles are fixed and can only move by vibrating



Liquids
- Take the shape of their container, but have a fixed volume
- Cannot be compressed
- Particles are closely packed but randomly arranged
- Particles move randomly over each other

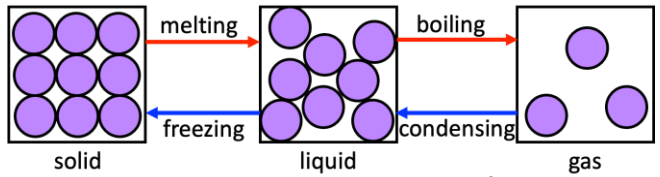


Gases
- Expand to fill the space of their container
- Can be compressed
- Particles are spread out and randomly arranged
- Particles move quickly in all directions



The **particle model** is the model we use to explain the properties of solids, liquids and gases. These **particles** are the **atoms** or **molecules** that the substance is made of.

Solids, liquids and gases are the three **states of matter**. The **particles** are **arranged** differently in each state. If you heat, or cool down a substance it will change **state**.

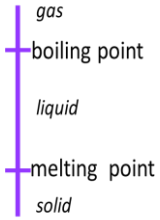


The **melting point** is the temperature at which something **melts** or **freezes**.
The **boiling point** is the temperature at which something **boils** or **condenses**.

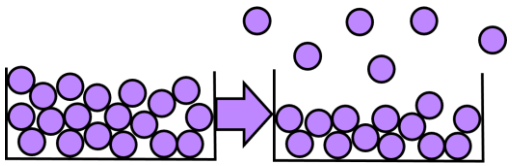
If you know the **boiling** and **melting point** of a substance, you can work out what **state of matter** it will be at room temperature

e.g. Zinc has a **boiling point** of 907 °C and a **melting point** of 420 °C what state would it be at 100 °C, and 500 °C?

100 °C is less than 420 °C so it must be **solid**
500 °C is greater than 420 °C but less than 907 °C so it must be a **liquid**.

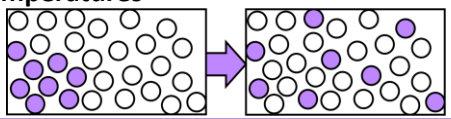


Evaporation and **boiling** are both **liquid → gas** state changes.
Evaporation happens at any temperature. Only the **surface** layer turns into a gas. It is much **slower** than boiling.



Gas pressure is caused by gas particles hitting the walls of a container. If there are **more particles** or a **higher temperature** the pressure will increase because there are more collisions.

Diffusion
- Particles spread out from **high concentration** to **low concentration**.
- Particles move **randomly** until they are evenly spread out.
- Diffusion is **quicker** at **higher temperatures**



Some substances will go straight from a **solid** to a **gas** without becoming a liquid.
This is known as **subliming**

A **pure substance** is made of only one kind of atom or molecule.
- The **particles** are all the same
- They have a **fixed melting** and **boiling point**
- They cannot be **separated**

FORCES 1 – Speed

KEY WORD	DEFINITION
Speed	How much distance is covered in how much time
Average Speed	The overall distance travelled divided by overall time for a journey
Relative Motion	Different observers judge speed differently if they are in motion too, so an object's speed is relative to the observer's speed
Acceleration	How quickly speed increases or decreases
Upthrust	A force in liquids or gases that pushes things upward
Thrust	The driving force that makes things move forward
Friction	A force caused by two things rubbing together it acts in the opposite direction of movement
Drag Force	Forces caused by air or water hitting an object. May be called air resistance, or water resistance

To find average speed use the equation…

$$\boldsymbol{speed\ (m/s) = \frac{distance\ (m)}{time\ (s)}}$$

We can use a simple equation to help us remember the equation

$$\boldsymbol{s = \frac{d}{t}}$$

Objects that have a **higher speed** will cover **more distance** in the same **time**.

If something speeds up as it moves it **accelerates**.

If something slows down as it moves it **decelerates**.

You can find acceleration by looking at **change in speed**.

The units for **speed** are different depending on the units you use to measure the **distance** and **time**. It could be **km/h** or **cm/min**

If there is an **overall force** on an object it will…

- Make the **speed** change e.g. braking a car makes it slow down
- Change the **direction** that it moves e.g. satellites orbit around the Earth in circles
- Change the **shape** of the object e.g. squashing a stress ball makes it smaller

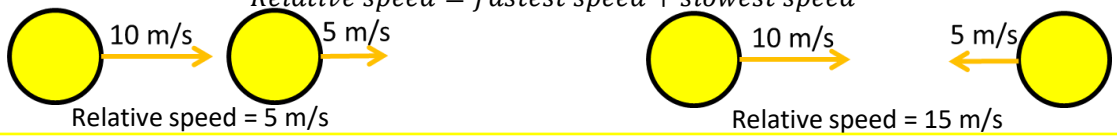
Compare the movement of two objects and find the **relative speed** of the two objects.

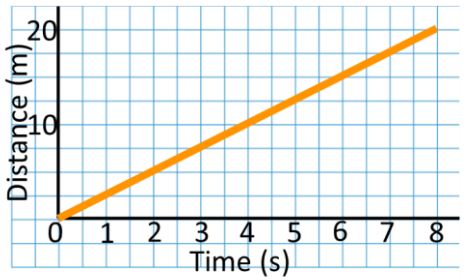
If they are moving in the **same direction**

$$Relative\ speed = fastest\ speed\ - slowest\ speed$$

If they are moving in **opposite directions**

$$Relative\ speed = fastest\ speed + slowest\ speed$$





By finding the **gradient** of a distance time graph you can find the speed.

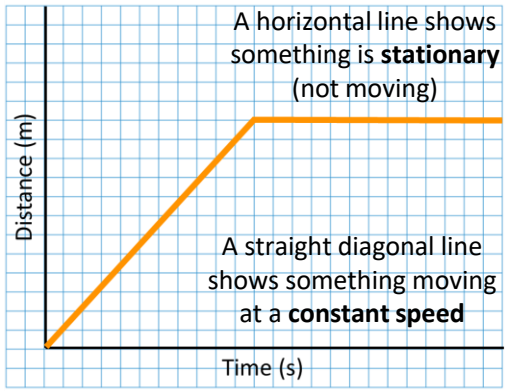
$$\boldsymbol{gradient = \frac{change\ in\ y\ axis}{change\ in\ x\ axis}}$$

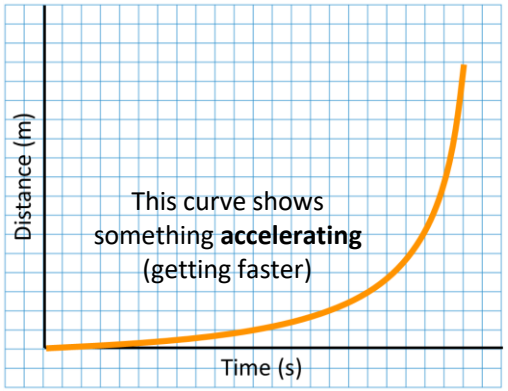
So for this graph…

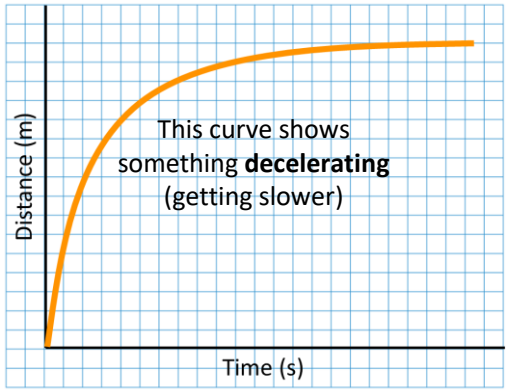
- The y-axis goes from 0-20
- The x-axis goes from 0-8

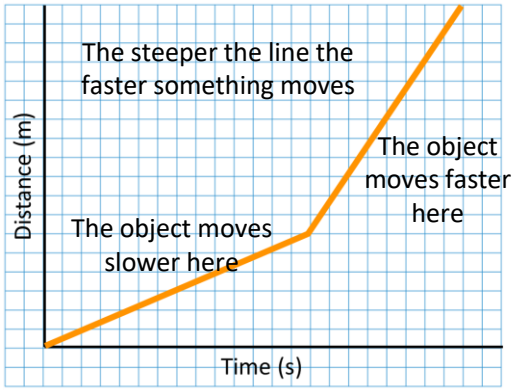
$$gradient = \frac{20}{8} = 2.5\ m/s$$

You can plot the distance something travels on a **distance-time graph** to help describe complicated journeys that have objects moving at different speeds.









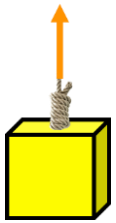
FORCES 1 – Gravity

KEY WORD	DEFINITION
Weight	The force of gravity on an object (N)
Contact Force	A force that acts with direct contact
Non-contact Force	A force that acts without direct contact
Mass	The amount of stuff in an object (kg)
Resultant Force	The overall force acting on a body
Gravitational Field Strength (g)	The force from gravity on 1 kg (N/kg)
Field	The area where other objects feel a non-contact force

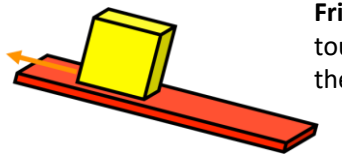
Forces are **pushes** or **pulls**. They make things change speed or direction.
Multiple **forces** can act on an object at one time to make an overall **resultant force**.

Force diagrams show the relative sizes of different forces. These should be drawn to **scale**

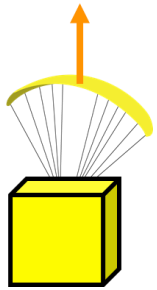
Contact forces are forces where objects are **physically touching** including…



Tension: an upward force caused by objects hanging on a rope or rod

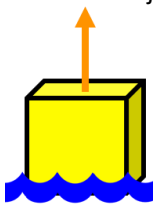


Friction: a force between two touching surfaces that prevents them moving against each other

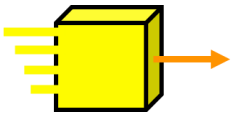


Air Resistance: A force caused by something moving through air, the faster it moves the greater the air resistance

Upthrust: An upward force that happens in liquids or gases when an object floats

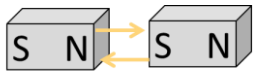


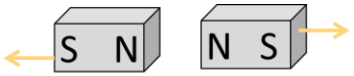
Thrust: a force that makes things move, normally from an engine



Non-contact forces are forces where objects don't need to be touching to still work.
This includes **gravity** but also includes…

Magnetic force: between different magnetic poles





Electrostatic force: between charged particles.

Earth's **gravitational field strength** is

10N/kg

The moon is only about **1 N/kg**

On the moon your **mass** would be the **same**, but you'll weigh less.

To calculate the **resultant force** add up all the forces in one direction and take them away from the opposite direction.

You should include the **overall direction** when calculating the resultant force

e.g. For the balloon there are **200N upward**, and **100N downward**.

200N – 100N = 100N upward

Weight is caused by the force of gravity pulling an object down…

$$\boldsymbol{Weight\ (N) = mass\ (kg) \times gravitational\ field\ strength\ (N/kg)}$$

Gravity is a **non-contact force** that acts on all masses.

Every object exerts a **gravitational pull** on every other object, but you can only feel the pull of very large objects like the Earth

The force of **gravity** acting on an object that has mass creates the force **weight**.

Weight is a force and is measured in **Newtons**

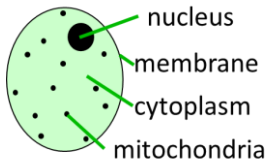
Very large bodies like stars and planets generate a **gravitational field**. The closer to the body, the larger the **field strength**

Further from the Earth, your **mass** will be the same, but you will **weigh** less.

ORGANISMS 1 – Cells

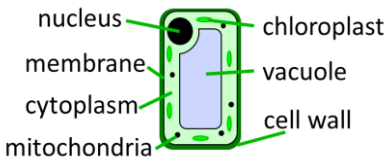
KEY WORD	DEFINITION
Cell	The unit of a living organism that can carry out life processes
Unicellular	Living things made of only one cell
Multicellular	Living things made of many cells organised into tissues
Tissue	Group of cells of one type
Structural Adaptation	Special features to help a cell carry out its functions
Cell Membrane	Surrounds the cell and controls the movement of substances in and out of the cell
Nucleus	Contains genetic material (DNA) which controls the cell activities
Vacuole	Area in a cell that contains liquid and can be used by plants to keep the cell rigid and store substances
Mitochondria	Part of the cell where energy is released from food molecules
Cell Wall	Strengthens the cell. In plant cells it is made of cellulose
Chloroplast	Part of plant cell that absorbs light energy so the plant can make food
Cytoplasm	Jelly like substance where most chemical processes happen

Cells are the smallest building blocks of life. All living things are made of **cells**



Animal cells have similar features:

Nucleus: contains **DNA** so it can control the cell and allow it to copy itself.
Cytoplasm: a jelly like substance where **chemical processes** happen
Cell Membrane: surrounds the **cytoplasm** and controls the **movement** of substances into and out of the cell
Mitochondria: where **respiration** takes place which releases energy from food

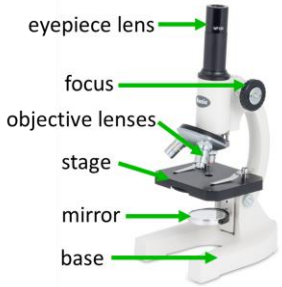


Plant cells have the same features, but also have:

Chloroplasts: where **photosynthesis** takes place so plants can make food using **sunlight**.
Vacuole: to store liquid to keep the cell rigid
Cell Wall: a strong wall made of **cellulose** which gives the cell its shape.

Microscopes magnify very small objects like cells so we can see them.

- Move the **stage** to the lowest position
- Place the **slide** onto the clips on the **stage**
- Select the **lowest magnification objective lens**
- Turn the **focus knob** until you can see the cells
- Repeat using a **higher magnification objective lens** to see the cells in more detail.



To calculate the **magnification** of the microscope…

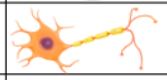
$$\textit{total magnification} = \textit{eyepiece lens} \times \textit{objective lens}$$

e.g. if the eyepiece is 10x and the objective is 20x

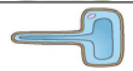
$$10 \times 20 = 200$$

When drawing cells, just draw simple outlines.

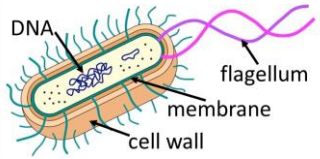
Examples of **specialised animal cells** are shown in the table below.

Cell Name	Image	Structure and Function
Sperm Cell		Long tail to allow the cell to swim to meet the egg, lots of mitochondria to release energy
Red Blood Cell		No nucleus to make space for lots of haemoglobin to carry oxygen
Nerve Cell		Branched structure allows it to communicate with other nerve cells to pass messages
Ciliated Cell		The hairs called cilia waft dust particles out of the lungs and throat collected in mucus
Muscle Cell		The muscle cells have lots of mitochondria for energy, and they can contract and expand

Examples of **specialised plant cells** are shown in the table below.

Cell Name	Image	Structure and Function
Palisade Leaf Cell		Has lots of chloroplasts to absorb light and produce glucose in photosynthesis
Root Hair Cell		Has a large surface area to absorb water. No chloroplasts are needed because it's underground.

A bacteria cell



A **bacteria** is an example of a **unicellular organism**. A life form made of only one cell.

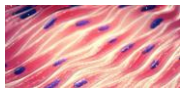
Organisms made of many cells are called **multicellular** organisms. **Animals**, **plants** and **fungi** are all examples of **multicellular organisms**.

ORGANISMS 1 – The Muscular Skeletal System

KEY WORD	DEFINITION
Organ	Group of different tissues working together to carry out a job
Nervous System	Sends electrical signals around your body
Digestive System	Breaks down and then absorbs food molecules
Circulatory System	Transports blood around the body carrying oxygen
Respiratory System	Replaces oxygen and removes carbon dioxide from the blood
Muscular Skeletal System	Muscles and bones work together to cause movement and support the body
Joints	Places where bones meet
Ligaments	Connect bones in joints
Tendons	Connect muscles to bones
Cartilage	Smooth tissue found at the end of bones which reduces friction
Bone Marrow	Tissue found inside some bones where new blood cells are made
Antagonistic Muscles	Muscles working in unison to create movement

In **multicellular organisms** there are different **cells** organised in a hierarchy as **tissues**, **organs** and **systems**

cells → **tissues** → **organs** → **organ systems** → **organism**

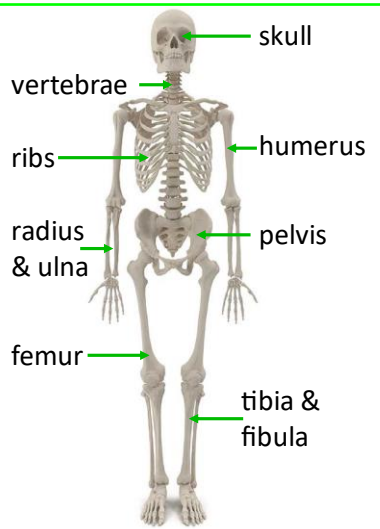


A **tissue** is made of many of the same **cells** e.g. **muscle tissue** is made of **muscle cells.**

An organ is made of many tissues that work together for a specific function.
e.g. your **biceps muscle** is made of **muscle** tissue and **tendon** tissue

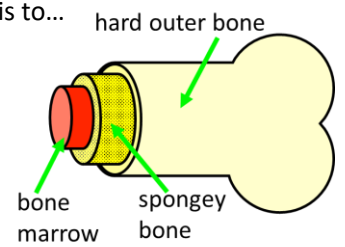
An **organ system** is made of many **organs**, some are listed in the table below

System	Major Organs	Function
Nervous	brain and nerves	Sends signals around the body
Digestive	stomach and intestines	Breaking down and absorbing food
Circulatory	heart and blood vessels	Moving blood around the body
Respiratory	lungs	Gas exchange and breathing



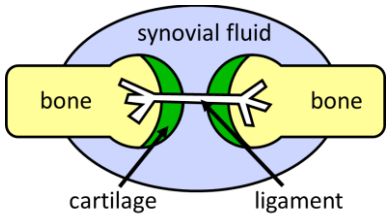
The **skeleton** makes up the **bones** in your body.
The function of the **skeleton** is to…

- support the body
- protect vital organs
- help us move
- create more blood cells



Bones…

- have a very **hard** thin **outer layer**
- have a **spongey layer** in the **middle** that can compress,
- **bone marrow** in the **centre** where **blood cells** are made.



Joints are where bones meet. They are held together with **ligaments.**

The **synovial fluid**, and soft **cartilage** help reduce **friction** so the bones move smoothly.

There are 3 types of joints…

Hinge joints: can only move forward and backward e.g. your knee or elbow
Ball and Socket Joints: can rotate in most directions e.g. your hip or shoulder
Fixed Joints: cannot move e.g. your ribs

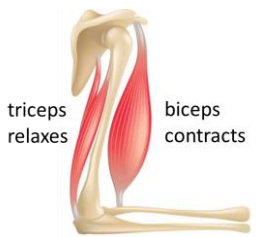
Muscles are connected to bones via **tendons**
Muscles make your body move by getting **shorter** and pulling on **bones**

Muscles work in **antagonistic muscle pairs**.

When one muscle contracts the other muscle must relax.

When you want to **bend** your arm the **biceps** get **smaller** and the **triceps** get **longer**.

When you wish to **straighten** your arm. The **biceps** get **longer** and the **triceps** get **shorter**.



Los números

1 un(o) / una
2 dos
3 tres
4 cuatro
5 cinco
6 seis
7 siete
8 ocho
9 nueve
10 diez
11 once
12 doce
13 trece
14 catorce
15 quince
16 dieciséis
17 diecisiete
18 dieciocho
19 diecinueve
20 veinte
21 veintiuno
22 veintidós
23 veintitrés
24 veinticuatro
25 veinticinco
26 veintiséis
27 veintisiete
28 veintiocho
29 veintinueve
30 treinta
31 treinta y uno
40 cuarenta
50 cincuenta
60 sesenta
70 setenta
80 ochenta
90 noventa
100 cien
200 doscientos
300 trescientos
400 cuatrocientos
500 quinientos
600 seiscientos
700 setecientos
800 ochocientos
900 novecientos
1000 mil

Saludos *Greetings*

¡Buenos días!	*Good morning*
¡Buenas tardes!	*Good afternoon*
¡Buenas noches!	*Good evening*
¡Hola!	*Hello*
¡Adiós!	*Goodbye*
¡Hasta luego!	*See you later*
Por favor	*please*
Gracias	*thank you*
¿Cómo estás? OR ¿Qué tal?	*How are you?*
¿Y tú?	*And you?*
Estoy…..	*I am…*
fenomenal	*great*
bien	*good/fine*
regular	*ok*
mal	*bad*
¡fatal!	*awful!*

Todo sobre mí *All about me*

¿Cómo te llamas?	*What's your name?*
Me llamo….	*My name is…*
¿Cómo se llama tu madre?	*What's your mother's name?*
Se llama….	*Her name is…*
¿Cuántos años tiene tu madre?	*How old is your mother?*
Tiene…. años	*She is……years old.*
¿Cuándo es tu cumpleaños?	*When is your birthday?*
Mi cumpleaños es el….de…..	*My birthday is on the …..of…*
¿Dónde vives?	*Where do you live?*
Vivo en……	*I live in…..*

¿Tienes mascotas/ animales? *Do you have any pets?*

Sí tengo… No, no tengo…	*Yes, I have… No, I don't have*
un caballo	*a horse*
un cobaya	*a guinea pig*
un conejo	*a rabbit*
un gato	*a cat*
un pájaro	*a bird*
un perro	*a dog*
un pez	*a fish*
un ratón	*a mouse*
una tortuga	*a tortoise*
un hámster	*a hamster*

Mi familia *My family*

¿Cuántas personas hay en tu familia?	*How many people are in your family?*
En mi familia hay tres personas	*In my family there are three people.*
mi hermano	*my brother*
mi hermana	*my sister*
mi padre	*my father*
mi madre	*my mother*
mis padres	*my parents*
mi abuela	*my grandmother*
mi abuelo	*my grandfather*
mi primo	*my male cousin*
mi prima	*my female cousin*
mi tía	*my aunt*
mi tío	*my uncle*
unos gemelos	*twins*
un gemelo	*a twin brother*
una gemela	*a twin sister*
soy hijo único/ hija única	*an only child*
un hermanastro	*a step-brother*
una hermanastra	*a step-sister*
un padrastro	*a step-father*
una madrastra	*a step-mother*
un nieto	*a grandson*
una nieta	*a granddaughter*

Carácter *Character*

Me llevo bien/mal con…porque es…	*I (don't) get on well with…because s/he is…*
simpático/a	*nice*
serio/a	*serious*
gracioso/a, divertido/a	*funny, fun*
trabajador/a	*hard-working*
perezoso/a	*lazy*
sociable	*outgoing*
tímido/a	*shy*
hablador	*talkative*
callado	*quiet*
egoísta	*selfish*
generoso/a	*generous*
paciente	*patient*
impaciente	*impatient*
optimista	*optimistic*
pesimista	*pessimistic*
bueno/a	*good*
malo/a, travieso/a	*bad, naughty*
tonto, loco	*silly, mad*
inteligente	*intelligent*
listo	*clever*
estúpido/a	*stupid*
imaginativo/a creativo/a	*imaginative creative*
interesante	*interesting*
aburrido/a	*boring*

Las profesiones *Jobs*

mi madre/ padre/ tío/a/ hermano/a es…	*my mum/ dad/ uncle/ aunt/ brother/ sister is …*
médico	*doctor*
abogado	*lawyer*
azafata	*flight attendant*
taxista	*taxi driver*
farmacéutico	*pharmacist*
enfermero/a	*nurse*
bombero	*fire fighter*
policía	*police office*
soldado	*soldier*
profesor/a	*teacher*
camarero/a	*waiter/ress*
dependiente	*shop assistant*
piloto	*pilot*
ingeniero	*engineer*
informático	*it engineer*
secretario/a	*secretary*
recepcionista	*receptionist*

Colores *Colours*

azul	*blue*
verde	*green*
marrón	*brown*
gris	*grey*
negro/a	*black*
blanco/a	*white*
rojo/a	*red*
amarillo/a	*yellow*
rosa	*pink*
naranja	*orange*
morado/a	*purple*

Los meses *Months*

enero	*January*
febrero	*February*
marzo	*March*
abril	*April*
mayo	*May*
junio	*June*
julio	*July*
agosto	*August*
septiembre	*September*
octubre	*October*
noviembre	*November*
diciembre	*December*

Tiene los ojos.. *S/he has eyes…*

azules	*blue*
marrones	*brown*
verdes	*green*
grises	*grey*

Descripción física *Physical description*

Es…	***He/she is…***
alto/a	*tall*
bajo/a	*short*
gordo/a	*fat*
delgado/a	*thin*
guapo/a	*good looking*
bonito/a	*pretty*
feo/a	*ugly*
grande	*big*
pequeño/a	*small*

Tiene el pelo… *S/He has _____hair…*

rubio	*blond*
marrón	*brown*
pelirrojo	*ginger*
negro	*black*
blanco/gris	*white/grey*
largo	*long*
corto	*short*
rizado	*curly*
ondulado	*wavy*
liso	*straight*
Tiene…	***He/she has…***
un bigote	*a moustache*
una barba	*a beard*
gafas	*glasses*

Adjetivos *Adjectives*

In sentences where the noun and the adjective are next to each other, in Spanish the noun usually comes first. In English it is the other way round. For example:
I have a white dog – **Tengo un perro blanco**
A big garden - **Un jardín grande**
Many adjectives change their ending to agree with the noun. You should check the gender and if it is singular or plural. For example:
Tengo un hermano alto. *I have a tall brother.*
Tengo los ojos marrones. *I have brown eyes.*

Make your sentences more interesting with ACOIN!

Adjectives		Connectives		Opinions		Intensifiers		Negatives	
simpático/a	*nice*	**y**	*and*	**me gusta**	*I like*	**muy**	*very*	**no hay**	*there is/ are not*
antipático/a	*unpleasant*	**pero**	*but*	**no me gusta**	*I don't like*	**un poco**	*a bit*	**sin**	*without*
divertido/a	*fun*	**también**	*also, too*	**prefiero**	*I prefer*	**algo**	*somewhat*	**nunca**	*never*
tímido/a	*shy*	**porque**	*because*	**me encanta**	*I love*	**suficiente**	*enough*	**nada**	*nothing*
perezoso/a	*lazy*	**ya que**	*because*	**pienso que**	*I think that*	**bastante**	*quite*	**nadie**	*no one*
inteligente	*intelligent*	**con**	*with*	**me mola**	*I like*	**realmente**	*really*	**tampoco**	*neither*
guapo/a	*good-looking*	**sin embargo**	*however*	**me apasiona**	*I love*	**casi**	*almost*	**ni... ni**	*neither... nor...*
delgado/a	*slim*	**no obstante**	*nevertheless*	**me chifla**	*I adore*	**mucho/a**	*a lot*	**jamás**	*never*
gordo/a	*fat*	**aunque**	*although*	**no soporto**	*can't stand*	**tan**	*so*	**no es**	*he/she/ it is not*
aburrido/a	*boring*	**por otro lado**	*on the other hand*	**no aguanto**	*I can't stand*	**demasiado**	*too*	**casi nunca**	*almost never*
grande	*big*	**así que**	*so*	**odio**	*I hate*				
pequeño/a	*small*	**tampoco**	*neither*	**no me gusta**	*I really don't like*				
bonito/a	*pretty*	**además**	*furthermore*	**nada**					

Pronombres *Pronouns*

Most verbs in Spanish have **six** forms which correspond to their respective pronouns and which will be listed in the following order:
1) **yo** (I)
2) **tú** (you-familiar a person you know well, a familiar relationship)
3) **él/ella/usted** (he/she/you-formal a person you don't know, a formal relationship)
4) **nosotros/nosotras** (we)
5) **vosotros/vosotras** (you-plural-familiar [only used in Spain])
6) **ellos/ellas/ustedes** (they/you-plural-formal [Spain]/you-plural [L. America])
It's **essential** that you get the **correct ending** for the person you're talking about in Spanish because **pronouns don't tend to be used in Spanish.**

SPANISH

Key verbs and structures – past

cuando era pequeñ/a	*When I was little*
tenía	*I had*
me gustaba	*I used to like*
había	*There used to be*

Key verbs – present

estoy	*I am (physical)*
está	*he/she is (physical)*
tengo	*I have / I am (age only)*
tiene	*he/ she has/ is (age only)*
soy	*I am (character)*
es	*he/ she is (character)*
me llamo	*my name is (I am called)*
se llama	*his/ her name is*
vivo en	*I live in*
vive en	*he/ she lives in*
me llevo bien con	*I get on well with*
se lleva bien con	*he/ she gets on well with*
trabajo	*I work*
trabaja	*he/ she works*
hay	*there is/ there are*

Key verbs and structures – future

cuando sea mayor	*When I am older*
si pudiera	*If I could*
me gustaría	*I would like to*

Marcadores temporales *Time phrases*

Pasado		Presente		Futuro	
Ayer	*yesterday*	**Hoy**	*today*	**Mañana**	*tomorrow*
La semana pasado	*Last week*	**Normalmente**	*Normally*	**La semana que viene**	*Next week*
El mes pasado	*Last month*	**A veces**	*sometimes*	**Esta tarde**	*This afternoon*
Anoche	*Last night*	**Siempre**	*always*	**El fin de semana que viene**	*Next weekend*
Hace dos días	*Two days ago*	**Todos los días**	*Every day*	**Más tarde**	*later*
El fin de semana pasado	*Last weekend*	**De vez en cuando**	*From time to time*		
El verano pasado	*Last summer*	**A menudo**	*often*		

Verbos *Verbs*

When talking about yourself, the verb normally ends with 'o'. For example:
Tengo el pelo castaño. *I have brown hair.*
Trabajo de bombero. *I work as a fire fighter.*

When talking about someone else, the verb usually ends in either 'a' or 'e'. For example:
Se llama Alex. *S/He is called Alex*.
Vive en Hainault. *S/He lives in Hainault.*

When talking about you and someone else or other people (like you and your family), the verb usually ends in 'amos' or 'emos'. For example:
Mi mejor amigo y yo tenemos doce años. *My best friend and I are 12 years old.*
Mi familia y yo nos llevamos genial. *My family and I get on great.*

Spelling rule:

CAROLINA

Only the consonants in the word **C**a**R**o**L**i**N**a can ever be doubled if in doubt, use singular.