DIXONS FAZAKERLEY ACADEMY

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Year 7

Student Planner and Knowledge Navigators

2023-24 Cycle 3

Full Name:	**Advisory:**
Advisor:	**Head of Year:**

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Toilet during lesson permission

Date	Time	Period	Subject	Staff

Date	Time	Period	Subject	Staff

Parent permission - paracetamol

Occasionally students can develop headaches or other minor ailments in school. These can usually be resolved by staff in Mountain Rescue by supplying water; allowing a time out; providing a quiet space and by providing paracetamol.

Staff on site will always administer paracetamol in accordance with guidelines for a child's age and only where we have consent from a parent / carer. Paracetamol will be given by a trained first aider if it is deemed appropriate. If we issue paracetamol to your child in the school day, we will always call home to let you know that paracetamol has been given and the time the student took it.

If, after interventions above, your child continues to worsen or their condition does not improve, we will contact you to decide on the best course of action for the remainder of the day.

Consent

I agree, subject to the conditions above, to allow a trained forst aider at the academy to administer an appropriate dose of paracetamol should my child present with a minor ailment.

Parent name:_____ Relationship to student:_____

Parent signature:_____ Date: _____ /_____ /_____

Revision Space

Mission

We ensured all students succeeded at university, or a real alternative, thrived in a rewarding career and had a purposeful and happy life.

My sentence:

Values

Determination - We never give up. No matter how challenging things get, we keep climbing.

Integrity - We do the right thing because it is the right thing to do. We do this even when people are not watching.

Respect - We value each other. We promote the hopes, qualities and achievements of every member of our community.

Drivers

Mastery - To get better at things that matter.

Autonomy - To direct our own lives.

Purpose - To connect to a cause larger than ourselves.

Introduction to the student planner

The student planner is the main method of communication between the academy and home. The planner is used to record key dates, homework, corrections and notes from staff and families, as well as used for Morning Meeting work. It should be kept tidy and free from damage, with all writing neat and appropriate. If the student planner becomes damaged or messy, a replacement must be purchased from the academy.

This Planner contains key information about our expectations of students, information on our culture and values, and a diary section to support students in their work management.

Students are expected to have their planner with them at all times and should present it immediately to any member of staff that requests it.

Attendance and Punctuality

In order to reach their full potential, it is imperative that students attend the academy on time every day. Every student has a target attendance level of 100% - we accept nothing less.

All students must:

- Be in the academy every day
- Make medical / dental appointments outside of academy time
- Not take holidays in academy time
- Ensure their family call the academy before 8.30am if students are too ill to attend school
- ensure their family write a note in the student planner stating the reason for absence
- record their own attendance in their planner

If students are late to the academy and arrive before 9.00am they will receive a late mark and a 30 minute same day correction.

If students are late to the academy and arrive after 9.00am they must sign in at the main reception and will receive an unauthorised absence mark for the morning and a 1 hour same day correction.

If students need to leave the academy early for an appointment, families must call the academy to advise of this. Families will also be expected to provide evidence of any appointment. For their safety, students must sign in and out of the academy if they are arriving after 9.00am or leaving before the end of the day.

Positive consequence of good attendance

- Golden tickets
- Student appreciations
- Regular prize draws
- Every opportunity to achieve your potential

Negative consequence of good attendance

- Same day corrections
- Education and grades suffer
- Staff spend unnecessary time contacting home
- Potential fines and court action

Revision Space

Revision Space

Safeguarding - ”Be safe, tell someone”

It is everybody’s responsibility in school to keep you safe. This incudes:

- Looking after the building to make sure the site is safe.
- Doing fire tests and fire alarms so we can evacuate in an emergency.
- Preventing you from feeling threatened, bothered or bullied by other students.
- Looking out for you on the roads at the end of the day, ensuring cars are parked safely and that you are free from problems outside of our gates.
- Looking out for signs that you are unwell, struggling in some way or at risk of harm inside or outside school.
- Speaking to the right people at the right time to support you; including having conversations with your family.

If you are worried or concerned you can speak to any member of staff. They will listen to you and then, if necessary, they will tell one of the designated members of staff.

Designated safeguarding lead - Mrs S Kokosalakis

Deputy Designated safeguarding leads - Ms K McKee, Mrs J Simms, Ms R Sayer, Mr A Roberts & Ms K Claughton

Write the names of the staff you will speak to if you have a safeguarding concern here:

Bullying

Bullying is when a person or group of people repeatedly hurt, threaten, frighten or make someone unhappy.
At Dixons Fazakerley Academy , we believe that we should all work together to stop bullying. This can only be done if you tell us about it.
If you are being bullied (or you witness someone else being bullied), **be safe, tell someone**. This could be your advisor, any member of staff or your family.

What actions may be taken when bullying is reported?

- Someone will talk to you about it. They will talk to you about the best action to take to solve the problem.
- You could be given help and advice to deal with the problem yourself.
- The person doing the bullying could be spoken to.
- A supervised meeting could be arranged between the bully and the victim so that problems could be discussed.
- Families may be informed.
- Families may be invited into school to discuss the problem.
- Sanctions may be put in place which may escalate if the situation does not improve.

If you would prefer to speak to a counsellor online, please visit childline.org.uk or call 0800 1111.

Home - Academy Agreement

The Dixons Difference is our relentless focus on student achievement, led by highly committed and highly professional staff. By creating a can-do, independent culture with an emphasis on self-discipline, we prepare our learners for future success in an ever-changing world. Our Academies put students at their heart and work in close partnership with parents. We value diversity and cultivate happy schools, based on strong relationships, mutual respect, integrity and honesty.

Dixons Fazakerley Academy will ensure that:

- we provide a safe and supportive environment for students to enjoy learning and achieve their full potential
- we provide a consistently high standard of teaching
- students have the best possible education by providing a suitable curriculum and individual support
- we provide parents / carers with regular reports and opportunity for discussion about their child’s progress
- we set regular homework
- we contact home to acknowledge students’ successes
- we contact home if there are concerns about students’ behaviour, progress or attendance
- we contact home if students are to be retained for more than 10 minutes after the end of the academy day
- we provide a wide variety of co-curricular electives and expeditions

Parents / carers will ensure that:

- your child attends every day, on time, unless they are seriously ill
- your child does not take extended family trips or holidays during term-time
- your child has the correct learning equipment needed for the day, including PE kit when necessary
- you support the academy’s policies and regulations on behaviour and uniform including same day after-school corrections (detentions) until 4.30pm after communication from the academy
- you provide a suitable environment for your child to work at home
- your child completes their homework on time and to the highest standard
- you attend advisor consultations and parent / carer evenings to discuss your child’s progress, and any other meetings arranged with your support
- you read and sign the student planner every week
- your contact details are up-to-date and you let reception know if your contact details change
- your child participates in co-curricular electives and expeditions
- you pay for the replacement of any equipment or books your child loses or damages

Students will ensure that they:

- work hard and follow the learning habits in every lesson and around the academy
- attend regularly, arrive on time, wear the correct uniform and bring the correct equipment
- behave responsibly both at the academy and travelling to and from the academy
- complete all homework to the highest standard and hand it in on time
- treat all adults and students with respect • are polite at all times and open the door to let an adult through first
- respect the academy building and equipment and leave all rooms tidy after using them
- do not undermine the safety of others • take letters and messages home and deliver them to their parents / carers
- keep their planner up to date with homework and next steps and show it to academy staff if requested
- take an active part in academy life

Advisor Signature	Parent Signature	Student Signature

Revision Space

Revision Space

Revision Space

Uniform Expectations for all students

- Academy striped tie (tie is optional for girls in Years 10 & 11, they may choose to wear a blouse with no tie).
- Girls can opt to wear plain black shalwar kameez or tunic with a white shirt and with their blazer over the top.
- Hijabs, scarves, turbans, crowns and top knots, worn for religious reasons, must be plain black and well secured.
- Socks should be plain black, a small bow at the side is permitted. Socks worn with a skirt can be ankle or knee-length but not over the knee. Tights should be black opaque 40 denier or more.
- Shoes must be sensible and **entirely** plain black with no large badges or logos (for example Vivienne Westwood X Melissa shoes and similar are not acceptable), laces must be fastened and be plain black. Heels, boots (including Doc Marten boots) and trainers are not acceptable. Students wearing the wrong footwear will be asked to change into academy footwear.
- No jewellery is allowed, this includes facial jewellery or visible body-piercings. Plasters cannot be worn to cover piercings. Any student wearing jewellery will be asked to instantly remove it and it will be placed in the academy safe until the end of the day. The only exception to this is where there is a religious expectation, for example the Sikh Kara.
- **Smart watches are not allowed**.
- Hair must be a natural colour and appropriate to a place of work with no unusual styles or colours, shavings or patterns.
- Students may be asked to tie hair back for health and safety reasons.
- Hair bands should be plain.
- Belts, if worn, should be plain black.
- The students' school bag should be the academy school back pack with Dixons Fazakerley logo.
- Outdoor jackets, jumpers, cardigans other than academy uniform, should not be worn at any time inside the academy.
- Hats, hoods and caps need to be removed before entering the building.
- The PE kit consists of a Trutex Akoa label black buttoned polo shirt with purple inserts featuring the academy logo, shorts and PE socks, in the same design.

Key Stage 3 (KS3) Uniform Expectations (Years 7, 8 and 9)

- Graphite grey academy Trutex blazer with academy logo.
- A white shirt with no coloured garments underneath the shirt.
- A grey, black or purple V-neck jumper or cardigan with a contrasting V.
- Black tailored trousers - jeans / tracksuits / leggings / very flared, tight, knee length or trousers which gather at the ankle are not considered appropriate wear. Jeans are defined as trousers with patch pockets and rivets. Trousers should not trail on the floor.
- Black **knee length** box pleated or double pleated skirt, or students may choose to wear a black knee length pinafore.
- Make-up, false eyelashes, lash extensions (classic, volume, Russian, express etc.), nail varnish, false nails (gel nails, shellac, acrylic etc.) are **not allowed** at any time.

Key Stage 4 (KS4) Uniform Expectations (Year 10 & 11)

- Formal Suit jacket or blazer in choice of plain black, grey or navy blue.
- White shirt or blouse, no coloured garments are to be worn underneath the shirt.
- Black, grey or navy blue tailored trousers - jeans / tracksuits / leggings / very flared, tight, knee length or trousers which gather at the ankle are not considered appropriate wear. Jeans are defined as trousers with patch pockets and rivets. Trousers should not trail on the floor.
- Jumpers or cardigans should be black, grey or navy blue with a v neck to match the suit in a plain solid colour (optional item).
- Skirts should be black, grey or navy blue, knee-length, straight, pleated or A line fit. **Tube skirts and mini-skirts are not allowed**. Pinafores should be knee length, plain black, grey or navy.
- Make up, if worn, should be entirely discreet and natural. **False eyelashes are not allowed**.
- Nail varnish, false nails (gel nails, shellac, acrylic etc.) are **not allowed** at any time.

Learning Habits

Successful students will develop good learning habits during their time at Dixons Fazakerley Academy. This takes hard work! Our learning habits are:

Homework and deadlines: Hand in homework on time and to a good standard.

On-Task behaviour: Make sure you are learning and following academy routines at all times, in lessons, at break and during transition.

Punctuality and attendance: You should be in school every day by 8.30am for Morning Meeting. Book any appointments outside of school hours and aim for

Perfect uniform: Take pride in your appearance and only wear the items that are part of our academy uniform. This includes jewellery, hair and make up.

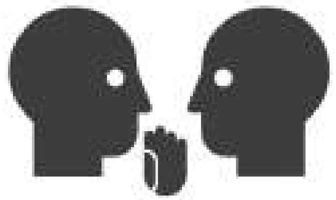
Equipment: Ensure you have 2 black pens, 2 green pens, a pencil, ruler, rubber, whiteboard pen and your PE kit with you so you are ready to learn.

Positive response: Always respond positively and politely to adults and end sentences with Miss, Sir or a teacher's name e.g. Mr Wilson.

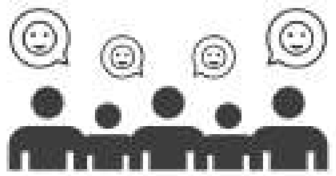
Learning Modes

In all classrooms, we use our four learning modes to ensure all students know what is expected of them. Failure to follow any of these learning modes will result in a correction being issued. The four learning modes are:

Independent silent study This is the default position. Students work indvidually and silently without communicating with other students.



Quiet partners Students are allowed to speak quietly to the person next to them about the task.



Polite tables and groups Students are allowed to speak to, and work with other students in their group or on their table.

Respectful whole class Students should track the teacher. There are no hands up and no shouting out. The teacher will direct questions to the class.

DFA Reads

Reading well allows us to succeed with our studies, to have access to information we might want, and it opens the gates to worlds beyond our own experiences. Every student at Dixons Fazakerley Academy will be supported to become a fluent and confident reader. One of the key parts of supporting students with this is 20 minutes of 'DFA Reads' at the beginning of our day.

During DEAR, students are supported to develop their reading through programmes matched to their current reading needs. Students are challenged to read a range of texts, which will include the selection of the books that form our 'Dixons Fazakerley Academy canon', as well as exploring and understanding a range of new and important vocabulary.

Students who read regularly at school and at home are happier , more successful students. We encourage all students to read at home and are grateful to all families for supporting our students in developing this lifelong skill, which can unlock so many opportunities throughout life.

Revision Space

Revision Space

Monday Morning Meeting - Cycle 3 Week 10

Mastery Next Step

Word of the Week	

Tuesday Morning Meeting: English Masterclass

English Masterclass: Retrieval Practice

1. ______________________	4. ______________________
2. ______________________	5. ______________________
3. ______________________	6. ______________________

English Masterclass: Application Practice

I Do	**You Do**

English Masterclass: Additional Notes

Wednesday Morning Meeting: Behaviour Curriculum and Cognitive Science

Behaviour Curriculum Brain Dump

Behaviour Curriculum: Retrieval Practice

1. _____	4. _____
2. _____	5. _____
3. _____	6. _____

Cognitive Science Brain Dump

Personal Reflection: How will I apply what I have learnt in today's session?

Revision Space

Revision Space

Thursday Morning Meeting: English Masterclass

English Masterclass: Retrieval Practice

1. ______________________________	4. ______________________________
2. ______________________________	5. ______________________________
3. ______________________________	6. ______________________________

English Masterclass: Application Practice

I Do	You Do

English Masterclass: Additional Notes

Friday Morning Meeting: Cultural Studies

Quote of the day

"Everyone has inside them a piece of good news. The good news is you don't know how great you can be! How much you can love! What you can accomplish! And what your potential is." — Anne Frank

What have you learnt from today's session? Write down at least three facts below.
1.
2.
3.
4.
5.

Review of Mastery Next Step: Did you achieve your mastery next step from Monday? If so, how did you achieve it? If not, why not?

Monday Morning Meeting - Cycle 3 Week 11

Mastery Next Step

Word of the Week: Definition	
Word of the Week: Use in a sentence	

Revision Space

Revision Space

Tuesday Morning Meeting: Maths Masterclass

Maths Masterclass: Retrieval Practice

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________

Maths Masterclass: Application Practice

I Do	You Do

Maths Masterclass: Application Practice

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________

Maths Masterclass: Diagnostic Question

Wednesday Morning Meeting: Behaviour Curriculum and Cognitive Science

Behaviour Curriculum Brain Dump

Behaviour Curriculum: Retrieval Practice

1. _____	4. _____
2. _____	5. _____
3. _____	6. _____

Cognitive Science Brain Dump

Personal Reflection: How will I apply what I have learnt in today's session?

Revision Space

Revision Space

Thursday Morning Meeting: English Masterclass

English Masterclass: Retrieval Practice

1. ____

2. ____

3. ____

4. ____

5. ____

6. ____

English Masterclass: Application Practice

I Do	You Do

English Masterclass: Additional Notes

Characterisation	
25. Motivation	What a character wants or needs in a scene
26. Style	The way in which something is performed e.g. naturalistically
27. Subtext	The unspoken meaning, feelings and thoughts beneath the lines

Physical Skills and Vocal Skills			
28. Movement	Changing positions or moving across the space	**38. Pitch**	The vocal register - high or low
29. Posture	The way they stand and hold themselves	**39. Pace**	How quickly or slowly something is done
30. Gesture	Movements of hands, head, legs usually convey a message/meaning	**40. Pause**	A hesitation or silence
31. Facial expressions	The feelings (or lack of them) shown on the face	**41. Emphasis**	Stressing or highlighting something
32. Use of stage space	How an actor moves around the space, using levels, direction	**42. Inflection**	Saying a word in a particular way to stress its meaning
33. Interaction/ Proxemics	How a character reacts to other characters. Proxemics mean moving towards or away from another character and the distance between the characters	**43. Accent**	A way of pronouncing words associated with a country, region or social class
34. Handling of props	How a prop is handled during a performance	**44. Volume**	Degree of loudness
35. Choreography/ stage fights	Setting movements to create meaning/blocking movements to create the impression of violence	**45. Delivery**	How dialogue is said to convey meaning
36. Stage business	Minor movements or blocking that an actor does to establish a situation (reading a book/ closing a window)	**46. Emotional range/tone**	Feelings are expressed by the way the line is said
37. Pace and pause of movement	The speed of the movement and use of stillness to convey a meaning, feeling or atmosphere	**47. Phrasing**	Use of hesitation, metre and/or grouping

Quote of the day

"I hated every minute of training, but I said, 'Don't quit. Suffer now and live the rest of your life as a champion." — Muhammad Ali

What have you learnt from today's session? Write down at least three facts below.
1.
2.
3.
4.
5.

Review of Mastery Next Step:
Did you achieve your mastery next step from Monday? If so, how did you achieve it?
If not, why not?

Monday Morning Meeting - Cycle 3 Week 12

Mastery Next Step

Word of the Week: Definition	
Word of the Week: Use in a sentence	

KS3 DT Knowledge Navigator

Key Terms	
1. Customer	A person who will buy OR use your product.
2. Client	A person or company asking you to work for them.
3. Design Brief	A guide for a project given to you by the client.
4. Ore	The solid material which metal is taken from.
5. Ferrous Metal	A metal which contains iron.
6. Non-Ferrous Metal	A metal which does not contain iron.
7. Alloy	A metal made from 2 or more metals to improve its properties.
8. Pewter	Alloy metal which will melt at low temperatures. Contains many metals including Tin & Copper.
9. Mould	A hollow container designed for casting.
10. Casting	The process of using the mould to pour molten metal inside and create a shape when the metal has cooled.
11. Sprue Hole	The gap where the metal enters the mould.
12. Sprue	The metal which is left over from moulding which takes the shape of the sprue hole.
13. Hearth	The base of the furnace in the workshop used for heating metal.

6 Rs	
R Reduce	Minimise the amount of material and energy used in the production or use of the product.
R Recycle	Take an existing product that has become waste and reprocess the material to use in a new product.
R Reuse	Take an existing product that's become waste and use the material or parts for another purpose, without processing it.
R Repair	When a product breaks down or doesn't function properly, you should be able to fix it.
R Refuse	Don't use or buy a product if you think you don't need it or if it is bad for the environment.
R Rethink	Ask if we can sustain our current way of life and the way we design and make. Come up with new solutions.

Key Terms	
Health and Safety	A set of **rules and regulations** enforced to keep people safe in the chosen environment.
Hazard	A risk of harm or injury.
Precaution	A measure taken to **minimise** the **chance** of harm or injury.
Pillar Drill	A drill mounted on a column or Pillar. It is used to drill holes in wood, metal and plastics. You must clamp your work.
Dowel	A hardwood rod made of ramin with a circular profile.
Sand Paper	Made from Aluminium Oxide comes in a variety of grades.
Isometric Drawing	A drawing with vertical lines and lines at 30degrees from the horizontal.
Manufactured Board	Large sheets of processed wood such as plywood and MDF.

Key Terms	
Polymer	Technical term for what we commonly call **plastics**.
Molecule	A group of atoms **bonded** together.
Polymer Chain	A **chain** of **molecules** found in all polymers.
Thermoforming	A polymer which can be **reheated** and **reformed repeatedly**.
Cross links	**Connections** between polymer chains.
Thermosetting	A polymer which **cannot** be reheated and reformed.
Raw material	The **natural material** from which a product is made.
Extracting oil	**Drilling** into the earth to remove oil.
Fractional distillation	**Separating** oil into different parts, including what is needed to **make polymers.**
Moulding	Turning a polymer into a product shape.
Stock Form	How we **buy** polymers/plastics to use to make products at school e.g. sheet, tubular, square profile.
PVA	Glue used to join timber or paper/board together.
Epoxy Resin	Glue used to join timber/metal/polymers together.
Solvent Cement	Glue used to join polymers together.
Contact Adhesive	Glue used to join timber/metal/polymers together.

Tuesday Morning Meeting: Maths Masterclass

Maths Masterclass: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Maths Masterclass: Application Practice

I Do

You Do

Maths Masterclass: Application Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Maths Masterclass: Diagnostic Question

Key Terms

1	**Health and Safety**	Rules you should follow in the kitchen to keep you safe while cooking and preparing food.
2	**Cross-contamination**	When **bacteria from raw meat is spread onto vegetables.** Puts people at risk of food poisoning. Avoided by using different equipment to prepare and cook raw meat and vegetables.
3	**The Eatwell Guide**	The main source of **nutritional information** in the diet – five food groups: Fruit and vegetables, carbohydrates, protein, dairy and alternatives, oils and spreads. Gives food portion information to people.
4	**Nutritional Values**	The amount of nutrients – **both macro (big) and micro (small)** – that a given dish provides you with.
5	**Micronutrients**	**Nutrients** such as vitamins and minerals, including calcium, vitamin A, B, C, D, E and K.
6	**Sensory Analysis**	**Using the senses** – sound, texture, aesthetics, hearing, smell and umami – to decide how successful a dish is.
7	**Heat Transfer**	When **heat is transferred** from the source of heat to the food. **Conduction, convection and radiation** – frying = conduction, boiling = convection, grilling = radiation.
8	**Fermentation**	Micro-organisms – such as yeast – breaking down the carbohydrates in food into alcohol substances. We use different amounts of fermentation for different foods.
9	**Method**	The steps that are written down about how to make the dish.
10	**Ingredients**	The different food products that are needed to make a dish.
11	**Food Evaluation**	The process of analysing food products to determine their sensory, nutritional, and safety properties.
12	**Balanced Diet**	Eating a variety of foods to get all the nutrients in the right proportions and quantities to be healthy.
13	**Composite Meal**	A food/dish made from different food groups, e.g. pizza, spaghetti bolognese.

Equipment for Cooking

	**14. Piping Bag**	Used to apply various liquid-based food to other foods – batter or icing. Part of shaping and moulding
	**15. Palette Knife**	Used to smooth or lift different types of foods or decorative foods, such as smoothing butter cream icing
	**16. Baking Tray**	Used to cook or bake food items. Different types of trays are available

17. The Eatwell Guide

Fruit and Veg

Dairy and Alternatives

Carbohydrates

Oils and Spreads

Protein

18. Heat Transfer

Conduction – direct heat - frying

Convection – heat rising through liquid or air - boiling

Radiation – heat from light ray transfer – bbq/grilling

Wednesday Morning Meeting: Behaviour Curriculum and Cognitive Science

Behaviour Curriculum Brain Dump

Behaviour Curriculum: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Cognitive Science Brain Dump

Personal Reflection: How will I apply what I have learnt in today's session?

Key Terms

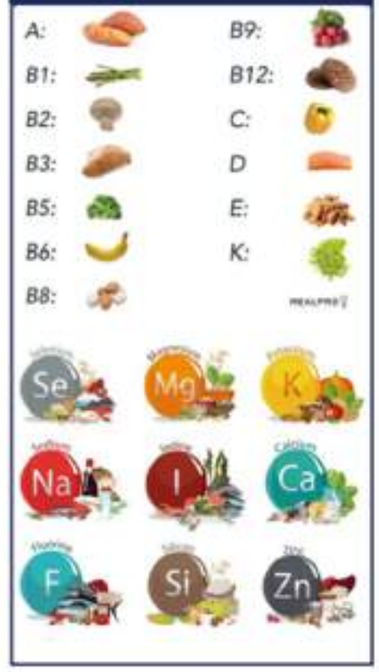
1	**Health and Safety**	Rules you should follow in the kitchen to keep you safe while cooking and preparing food.
2	**Cross-contamination**	When bacteria from raw meat is spread onto vegetables. Puts people at risk of food poisoning. Avoided by using different equipment to prepare and cook raw meat and vegetables.
3	**The Eatwell Guide**	The main source of **nutritional information** in the diet – five food groups: Fruit and vegetables, carbohydrates, protein, dairy and alternatives, oils and spreads. Gives food portion information to people.
4	**Nutritional Values**	The amount of nutrients – **both macro (big) and micro (small)** – that a given dish provides you with.
5	**Macronutrients**	**Nutrients** we supposed to consume in large amounts such as carbohydrates, proteins and fats.
6	**Micronutrients**	**Nutrients** we supposed to consume in small amounts such as vitamins and minerals including calcium, vitamin A, B, C, D, E and K.
7	**Raising Agents**	Three types: **Chemical** (such as baking powder), **biological** (yeast) and **mechanical** (whisk) used **to get air into food** to change the characteristics. For example, yeast fermenting to release CO_2 to help create air bubbles in bread and make it rise.
8	**Time Plan**	A plan for how you will allocate time to each step of a **method** in a recipe while cooking.
9	**Enzymic Browning**	When a food reacts with oxygen to make it brown.
10	**Food Sources and Origins**	Where a food comes from – the original place. Such as pork from a pig.
11	**Seasonality and Food Miles**	**The distance a product has travelled** to reach the destination it is cooked and eaten in. For instance, peaches bought from abroad to the UK because they're not **seasonal.**

Equipment for Cooking

	**Spatula**	Used to combine, smooth, separate, or collect mixtures or food during cooking or preparation. Different types of spatulas are available.
	**Frying Pan**	Used for different types of frying such as shallow frying, stir fry, deep frying
	**Weighing Scale and Measuring Spoons**	Used to measure the correct amount of solid food and liquid

15. The Eatwell Guide

16. Micronutrients



17. Seasonality

Thursday Morning Meeting: English Masterclass

English Masterclass: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

English Masterclass: Application Practice

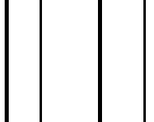
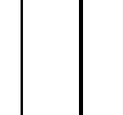
I Do

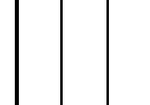
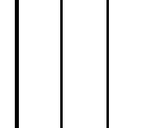
You Do

English Masterclass: Additional Notes

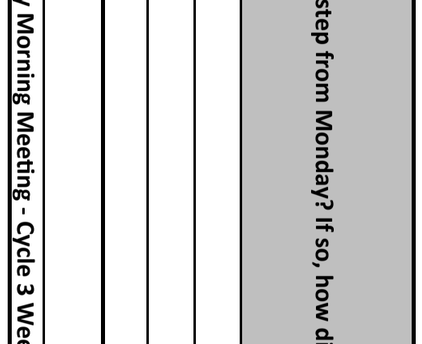
Key Terms

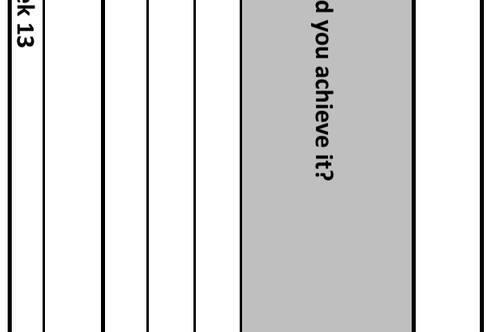
1	Fruits and vegetables	**1st and largest food group.** All fruits and vegetables – does not include potatoes. This is the one we should have the most of.
2	Carbohydrates	**2nd largest food group** has two main categories: Starchy are slow-release energy – foods like porridge, whole grains. Sugary are fast-release energy – foods such as sweets, juice, white bread.
3	Protein	**3rd largest food group.** All forms of meat. Includes eggs and other animal products – bacon and sausages. Non animal sources: beans, pulses, nuts, lentils.
4	Dairy and alternatives	**4th largest food group.** Cheese, milk, cream from animals. Alternatives are options that are made from plant products as opposed to animal products, such as soya milk.
5	Fats and spreads	**5th and last food group** – Olive oil, margarine, for example, are in this group.
6	The Eatwell Guide	Tool created by government to advise on healthy diet and what food should be consumed in each proportion. Can advise on food groups as an overall diet for daily or weekly planning.
7	Macronutrients	The main and biggest **(macro = big)** nutrients we need each day for our bodies to function.
8	Carbohydrates - macronutrient	Its main function is to give us **energy** to perform daily activities.
9	Proteins - macronutrient	A macronutrient. Its main function is to help the **body build muscles and repair body cells.**
10	Fats - macronutrient	A macronutrient. Its main function is to help **protect organs** from damage by providing a cushion.
11	Cross contamination	A spread of harmful microorganism from one thing to another. For example, if kitchen environment is not kept clean or unhygienic preparation of food.
12	Hazard	A hazard is **any source of potential damage, harm or adverse health effects on something or someone.** Basically, a hazard is the potential for harm.
13	Seasonality	Seasonality of food refers to the times of the year when a given type of food is at its peak, either in terms of harvest or its flavour.

	**Hob**	Used for frying, boiling or other types of cooking using a saucepan. Top of the oven.
	**Grill**	The top section of the oven (if it's a double oven).
	**Tea Towel**	Used for drying equipment.

	**Washing Up Bowl**	Filled with hot water to wash equipment.
	**Knife**	Paring knife – small knife used to generally cut veg and meat.
	**Chopping boards**	Used to cut food product on to protect work surface. Red for meat, white for veg.

Protein

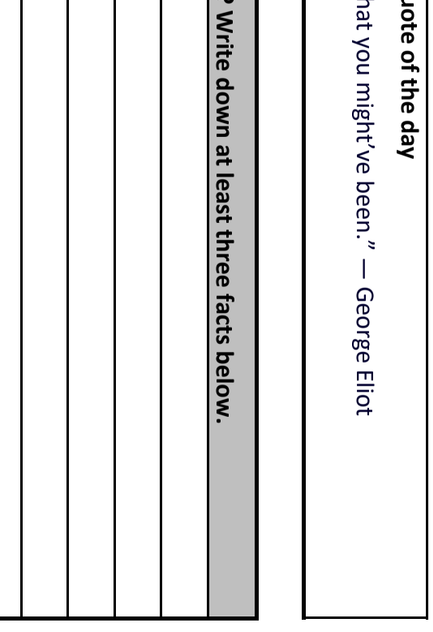




Hygiene and Safety in the kitchen

Personal rules:

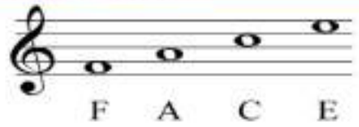
- Wash your hands for 20 seconds
- Wear an apron
- Tie your hair back
- Remove jewellery



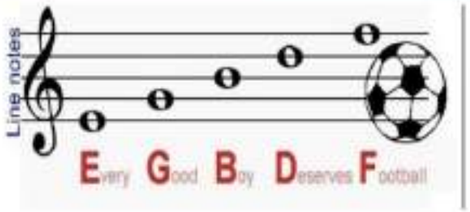
Music Knowledge Navigator

Key Definitions		
1.	**Notation**	A series or system of written symbols used to represent elements in music.
2.	**Clef**	Any of several symbols placed at the left hand end of a stave, indicating the pitch of the notes written on it.
3.	**Treble Clef**	A symbol found at the beginning of a stave to indicate how the notes on that stave should be read.
4.	**Stave**	A set of five parallel lines on which a note is written to indicate its pitch.
5.	**Ledger Line**	A ledger line is used in musical notation to notate pitches above or below the lines and spaces of the regular musical staff.
6.	**Accidental**	A sign seen before a note on the stave that raises or lowers the pitch of a note.
7.	**Semitone**	The smallest interval used in classical Western music, equal to a twelfth of an octave or half a tone.
8.	**Whole Tone**	The distance of two semitones between two notes.
9.	**Enharmonic**	Relating to or denoting notes which are the same in pitch (in modern tuning) though bearing different names.

The Notes in the Spaces on the Stave



The Notes on the Lines of the Stave

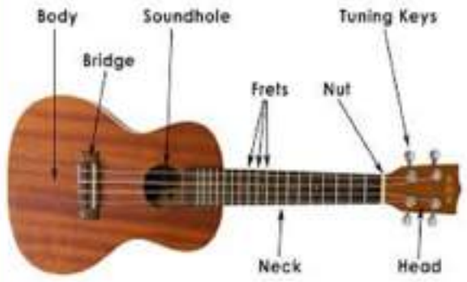


Exploring Chords and Melodies

A-Musical Elements-Key Definitions		
8.	**Ukulele**	A small four-stringed guitar of Hawaiian origin.
9.	**Chord**	A group of (typically three or more) notes sounded together, as a basis of harmony.
10.	**Sequence**	A particular order in which related things follow each other.
11.	**Tempo**	The speed of a piece of music.
12.	**Technique**	A skilful or efficient way of doing or achieving something.
13.	**Ensemble**	To perform music to an audience as part of a group.
14.	**Performance**	The act of entertaining an audience by singing or playing a piece of music on a music instrument.
15.	**Rhythm**	Patterns of long and short sounds played within a steady beat.
16.	**Pitch**	The highness or lowness of sound.

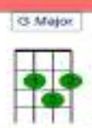
B-The parts of a Ukulele

10.



11. The ukulele has four strings tuned to the notes G C E A (Greedy Cats Eat Ants).

C-Chords on the Ukulele

	Chord Name	Notes in the Chord	Position on the instrument	Diagram
12.	C Major	C E G	A string, 3rd fret	
13.	A minor	A C E	G string, 2nd fret	
14.	G Major	G B D	C string 2nd fret, E string 3rd fret & A string 2nd fret	
15.	F Major	F A C	G string fret 2 & E string fret 1	

Tuesday Morning Meeting: Maths Masterclass

Maths Masterclass: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Maths Masterclass: Application Practice

I Do	You Do

Maths Masterclass: Application Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Maths Masterclass: Diagnostic Question

Wednesday Morning Meeting: Behaviour Curriculum and Cognitive Science

Behaviour Curriculum Brain Dump

Behaviour Curriculum: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Cognitive Science Brain Dump

Personal Reflection: How will I apply what I have learnt in today's session?

Music Knowledge Navigator

KS3 Music-Knowledge Navigator

Exploring Rhythmic Notation

A-Musical Elements-Key Definitions		
1.	**Pulse**	Pulse is a steady beat like a ticking clock, or your heartbeat and it provides the basis for rhythmic structure in music.
2.	**Rhythm**	An aspect, characteristic or feature that makes up a piece of music.
3.	**Element**	The length of a sound – long/short
4.	**Dynamics**	The varying levels of volume within a piece of music.
5.	**Solo**	To perform music to an audience by yourself.
6.	**Ensemble**	To perform music to an audience as part of a group.
7.	**Performance**	The act of entertaining an audience by singing or playing a piece of music on a music instrument

B-Note Names, Symbols, Duration & Rests				
	Note	**Name**	**Duration**	**Rest**
11.		Semibreve	4 beats	
12.		Minim	2 beats	
13.		Crotchet	1 beat	
14.		Quaver	½ beat	
15.		Semiquaver	¼ beat	

C-Dynamics Symbols			
	Symbol	**Italian**	**English**
16.	*pp*	*pianissimo*	Very quiet
17.	*p*	*piano*	Quiet
18.	*mf*	*mezzo forte*	Moderately loud
19.	*f*	*forte*	loud
20.	*ff*	*fortissimo*	Very loud
21.		*crescendo*	Gradually getting louder

Introduction to Keyboard Skills

A-Musical Elements-Key Definitions		
1.	**Keyboard**	A musical instrument that consists of a row of keys that increase in pitch across the instrument.
2.	**Octave**	A series or scale of eight notes e.g. C to C.
3.	**Accuracy**	The quality or state of being correct or precise.
4.	**Semibreve**	A note having the time value of 4 beats represented by a ring with no stem.
5.	**Solo**	To perform music to an audience by yourself.
6.	**Ensemble**	To perform music to an audience as part of a group.
7.	**Performance**	The act of entertaining an audience by singing or playing a piece of music on a music instrument

B-Numbering Our Fingers

8. 

C-The Musical Alphabet

9. The musical alphabet starts on the note C.
10. The notes within the musical alphabet are C D E F G A and B.

D-The Notes on a Keyboard

11. 

12. C is always the white note situated to the left of the set of two black keys.
13. Middle C is the C note found directly in the middle of the keyboard.

How Do Artists Use the Different Elements of Art?

1. I will learn how artists use the different elements of art.
2. I will research and respond to a wide range of artists.
3. I will explore a range of materials, techniques, and processes.

Artists we will use to explore the Elements of Art: Sonia Delaunay; Wassily Kandinsky; Paul Klee

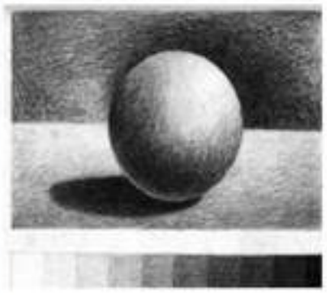

Sonia Delaunay 1885-1979

Wassily Kandinsky 1866

Paul Klee 1879-1940

All artists use the colour wheel to make decisions about their work.

You will learn how to paint with accuracy and how to create a colour wheel.




What are the Elements of Art?
The Elements are LINE; COLOUR; VALUE; SPACE; SHAPE; FORM; TEXTURE.
You will be learning how the Elements of Art are the foundation of ALL Art created. Artists use the Elements in all forms.

You will explore mark making, creating tone and texture. Your sketchbook will become a pathway towards GCSE Art and Design as you become even more confident in Art.

Art Knowledge Navigator

Thursday Morning Meeting: English Masterclass

English Masterclass: Retrieval Practice

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

English Masterclass: Application Practice

I Do

You Do

English Masterclass: Additional Notes

Knowledge Organiser: Computer Crime & Cyber Security

Summary

Malware is a general term that describes lots of different programs that try to do something unwanted to your computer. Malware is made to stop your device from running properly and sometimes to steal your information.

Anti-malware software is designed to find and stop malware from damaging your computer or a network. To protect your computer you need to install **anti-malware** software and run regular scans.

When you are online you need to watch out for **phishing** and **spam emails** and protect your private information. **Phishing** emails are trying to trick someone into giving out information over email. **Spam emails** can contain **malware**.

Smartphones and mobile devices allow for photos, videos and your location to be shared instantly on the internet. **Be careful what you get up to in public as anyone might have a smartphone pointed at you.** Do not post photos or videos of other people online without their permission.

Key Vocabulary

Backup	A copy of important files that is kept separately in case your original files are lost or damaged.
Chat room	Accessed on the internet, users can meet to chat in real-time, messages are typed out but voice chat rooms exist too.
Copyright	A set of rights that prevents people copying and distributing a piece of work without the copyright holder's permission.
Data	Values, typically letters or numbers.
File sharing	The act of sharing files over the internet.
Firewall	An application that prevents unauthorised connections to and from the internet.
Hack	Gaining unauthorised access to a computer.
Information	Data that has meaning, not just a number or a letter.
Licence	A legal agreement between the company who published the software and the end user covering areas such as copyright.
Malware	Malicious software created to damage or gain illegal access to computer systems.

Phishing emails are trying to trick someone into giving out information over email.

What to look out for in a phishing email

- The greeting is not personalised
- Poor spelling and grammar
- Forged link
- Sense of urgency
- Request for personal information

The sender's address is often a variation on a genuine address

Spam emails offer all kinds of things like money and prizes and can contain malware too.

Ways to reduce spam:

Use a spam filter - most email clients try to stop spam from reaching you by using a spam filter.

Do not give your email address out – if you don't trust the website or if supplying your email address is optional, don't give it to them.

Keep an eye out for tick boxes – when you sign up to a website, it might try to sign you up to its newsletter.

Malware is software that can harm devices

Typical actions of malware include deleting or modifying files.

Spyware—secretly monitors user actions, e.g. key presses, and sends information to the hacker. Some spyware can even use your webcam without your knowledge.

Viruses—spreads through normal programs and might slow down your device or change your applications and documents.

Worms— spread from device to device and copy themselves hundreds of times. A worm might copy itself onto your email account and then send a copy to all of your email contacts!

Trojan horse— pretends it will be a useful and safe program, when actually it will try to attack your device.

Adware—displays adverts while it is running; some can serve as spyware, gathering information about you from your hard drive, the web sites you visit, or your keystrokes.

Staying safe online

Never disclose your name telephone number address or school

It's wise not to share your location. Especially on websites and apps that are accessible by anyone.

Never accept someone as a 'friend' on social media simply because they claim to know another friend of yours.
Always be cautious about what you say online.

Visit these websites for advice

ChildLine 0800 1111 | Webwise | THINK U KNOW

Knowledge Organiser: Understanding computers *Discover how computers work*

Summary

Computers require input hardware, processing hardware and output hardware. The hardware that defines a computer is the **CPU** and **memory**. Without these a computer could not function. The CPU and memory work together to run programs.

CPU - executes programs using the **fetch-decode-execute cycle**.

Memory - stores program operations and data while a program is being executed. There are several types of memory, including: **registers, cache, RAM** and **virtual memory**.

Storage - stores programs and files long term, even when they are not in use. Devices such as hard drives, USB memory sticks or SD cards are used to store files such as photos, music and software applications long term.

An **input device** is any piece of computer hardware **used to provide data to a computer system.** Examples include: keyboard, mouse, scanner, digital camera and webcam.

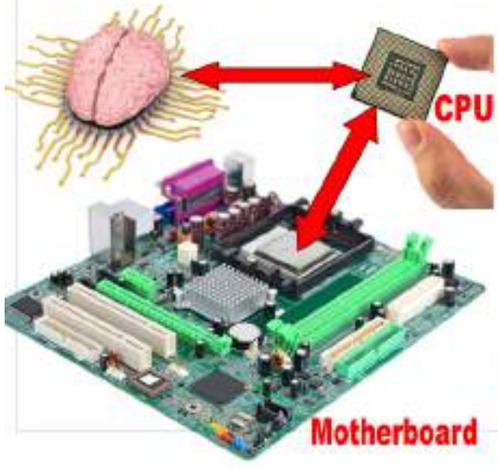
An **output device** is any piece of computer hardware used to communicate the results of data that has been processed.

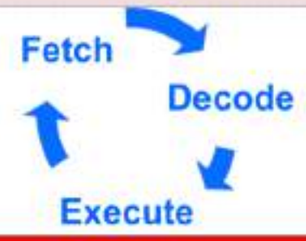
Central Processing Unit

The **Central Processing Unit** or **CPU** is arguably the most important component of a computer.

You can think of the CPU is being like the brain in a human.

It is responsible for all of a computer's processing.





The Fetch – Decode – Execute cycle

The **CPU** operates by repeating three operations:

FETCH – causes the next instruction and any data involved to be fetched from main memory

DECODE – decodes the instruction to make sure it can be carried out

EXECUTE – carries out the instruction

Repeat...

Key Vocabulary

Clock speed	The speed of a computer CPU, measured in hertz.
Cache	A piece of temporary memory. It can refer to a part of the RAM, storage disk, CPU, or an area for storing web pages.
CPU	**C**entral **P**rocessing **U**nit - the brains of the computer that processes program instructions. Also called a **microprocessor**.
Execute	To run a computer program.
GHz	Gigahertz. One billion hertz per second = one gigahertz. This is a measure of frequency and is used to describe bus speeds and CPU clock speeds.
Hardware	The physical parts of a computer system, e.g. a graphics card, hard disk drive and CD drive.
Mother-board	The circuit board inside a computer that houses the CPU, memory and connections to other devices.
RAM	Memory that is constantly being written to and read from. It does not retain its contents without a constant supply of power, i.e. when a computer is turned off, everything stored in its RAM is lost.
Registers	The section of high speed memory within the CPU that stores data to be processed.
Software	Software is the programs that run on a computer.
Virtual memory	A section of a computer storage drive which is temporarily used as RAM.

Binary Units

Remember the units used in the binary system.

1 byte =	8 bits
1 Kilobyte =	1024 bytes
1 Megabyte =	1024 Kilobytes
1 Gigabyte =	1024 Megabytes
1 Terabyte =	1024 Gigabytes

English Language Paper 1 KS3 Knowledge Organiser

READING THE EXTRACT
1. Read and annotate for **10 MINUTES** 2. Read the questions 3. Highlight information in the extract that will help you with the questions.
4. Make notes alongside each paragraph of the extract to explain what is happening.

Qs	Time	What should I do for this question?	
Q1 **COMPREHENSION**	5 minutes	• Write 4 things that are asked for in the question. • You can write in bullet points.	
Q2 **LANGUAGE ANALYSIS**	10 minutes	You will **ANALYSE** the language of the extract. Aim to analyse **3 QUOTATIONS** from the specific part of the text. • **WHAT** is shown about the focus of the question? Make clear points about the presentation of character or theme. Then, embed relevant evidence. • **HOW** does the writer show the focus? Zoom in on key words from selected evidence, analyse the use of language techniques. • **WHY** does the writer present the focus in this way? What is the writer trying to show about the focus?	
Q3 **STRUCTURE ANALYSIS**	10 minutes	You will **ANALYSE** the **BEGINNING, MIDDLE AND END** of the extract. You will explore how the technique has been set out to **INTEREST THE READER.** • What is happening at the this part of the text? What is the reader's focus on? Does the writer use a specific structure technique? Include evidence to support this. Why does this make the reader interested? • Do not analyse the language of quotations.	
Q4 **EVALUATION**	25 minutes	You will **EVALUATE** the extract – this means you will give your opinion on the question set and **ANALYSE** evidence from the text to support this. • **WHAT** is your opinion on the question? • **HOW** is this opinion supported by the extract? Provide evidence to support and analyse key words and techniques within this. • **WHY** is the writer presenting the character of idea in this way? Evaluate what impact this has on the reader.	
Q5 **NARRATIVE (STORY) OR DESCRIPTIVE WRITING**	45 minutes	Content Narrative • Story progression: opening to introduce the narrator → build up → climax → resolution → ending • One narrator and just one other character. • DO NOT write an action packed story! Just write a simple story of something that could happen every day. Description • Details on the whole scene → zoom in 1 → zoom in 2 → zoom in 3 • Have a clear narrator who is guiding the reader through the scene. • Sensory imagery – sight, smell, sound, taste, touch.	Technical Accuracy • Correct punctuation . , ! ? ; : - ( ) " • Capital letters for the start of sentences and proper nouns • Paragraphing – start a new paragraph for a new focus in your writing • Sentence structures – simple, complex, compound • Sentence openers – fronted adverbials, list of three • Vocabulary – a variety of exciting words

Language Techniques:
- Adjective / verb / noun
- Simile
- Metaphor
- Personification
- Alliteration
- Hyperbole
- Repetition
- Rhetorical question
- Juxtaposition
- Pathetic fallacy
- /Imperative/Exclamative/Declarative sentences

Structure Techniques:
- Beginning
- Middle
- End
- Climax
- Cliff-hanger
- Foreshadowing
- Rising action
- Panoramic
- Narrative perspective
- Cyclical structure
- Chronological

Synonyms for SHOWS:
- Suggests
- Conveys
- Portrays
- Illustrates
- Presents
- Displays
- Demonstrates
- Indicates
- Reveals
- Highlights
- Reflects

Sentence Starters:

Q2
The writer uses language to describe...
This is shown in, '.....'
The use of ..... suggests.....
Connotations of the word '.....' portray.....
This makes the reader feel..... because.....

Q3
At the beginning, the writer focuses on...
This is shown in '.....'
The writer uses the technique... to suggest...
This makes the reader feel .....

Q4
My opinion on the text is...
This is supported in the text with '...'
The writer uses ..... to suggest.....
This is effective..... because.....
This makes the reader feel..... because.....

Unit 1
Algebra

OPERATIONS		
order of operations	the laws regarding the **order** in which to **calculate** this is used in algebra too	

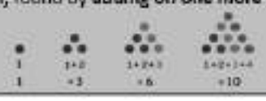
ALGEBRAIC NOTATION	
unknown value	a value which is **not known** represented by **a letter** in algebra
variable	a value which **can change** represented by **a letter** in algebra
coefficient	a number used to **multiply** a variable the number that comes **in front** of a **letter**, e.g. 3b means 3xb the **coefficient** is **3**, the **variable** is **b**
constant	something which **doesn't change** in a formula
indices	**power** of a variable or number
term	a **number or letter** on its own, or **numbers and letters** multiplied together *e.g. -2, 3x or $5a^2$*
like terms	terms which are the same apart from their numerical coefficients: they are the **same variable** and have the **same power**
expression	a set of **terms combined using** the operations **+, -, x or ÷**, there is **no "="** sign *e.g. 4x-3, 5a - 3xy + 17*
equation	where **two expressions** are **equal** in value – there is always an **"="** sign *e.g. 4b = 18*

ALGEBRAIC SHORTHAND: EXAMPLES	
b	$1 \times b$
$3b$	$3 \times b$
b^3	$b \times b \times b$
$3b^3$	$3 \times b \times b \times b$
$(3b)^3$	$(3 \times b) \times (3 \times b) \times (3 \times b)$
$\frac{a}{b}$	$a \div b$

INSTRUCTIONS: EQUATIONS	
solve	**find the value** of an unknown or **variable**, use **inverse operations** and the **balancing method**
inverse	the **opposite**
balance an equation	use to **solve** an equation, do the **same** to **both sides of the "="** to **eliminate terms** from **both sides** and **keep it balanced**

INSTRUCTIONS: GENERAL	
evaluate	**find the value of**
form	to **write** or **produce**
substitute	**replacing letters with numbers** to calculate the **numerical value**
simplify	to reduce to its **simplest form**
expand	**multiply** terms inside a bracket by those outside the bracket
factorise	finding the **factors** of an expression the reverse of **expand**, it is when we write an expression using **brackets**
collect like terms (+/-)	you can **add** or **subtract** like terms using the **coefficients**
multiplying terms	**multiply coefficients**/numbers, **simplify variables** with **indices**
dividing terms	set up using a **vinculum**, **cancel common** factors, **simplify variables** with **indices**

SEQUENCES VOCABULARY	
sequence	a **pattern** of **terms/numbers** which **follow** a **rule**
term	each **value in a sequence** is called a term
position	the place it is **located** *e.g. in the sequence: 3, 5, 7, 9 the term '5' has a **position of 2** (as is the **2nd term**)*
term-to-term rule	a **rule** which allows you to **calculate the next term** in a sequence **if you know** the **previous term**
position-to-term rule	a **rule** which allows you to **calculate any term** that is in the **nth position** of the sequence *(n^{th} Term)*
generate	to **produce** or **create**

TYPES OF SEQUENCES	
linear sequences	a sequence where the **difference between terms increases or decreases** by the **same amount** each time also known as an **arithmetic** sequence use **DiNO** to find the **nth term**: find the **difference**, use as the **coefficient of 'n'** then +/- the **'one before' onto** the **end**
squares and cubes	**square numbers: 1, 4, 9, 16, 25, 36...** **cube numbers: 1, 8, 27, 64, 125...**
Fibonacci sequences	a sequence where the next number is found by **adding up the previous two terms** the Fibonacci sequence: **1,1,2,3,5,8,13 ...**
triangular number	a number that can make a **triangular dot pattern**, found by **adding on one more each time** 

Section 8	
Akhirah	Meaning 'afterlife'.
Jannah	Heaven.
Jahannam	Hell.
Judgement day	Belief that Allah will, at one point in future, judge all souls on whether they lived well enough to spend eternity in Jannah or in Jahannam.

Section 9	
Khalifah	Means both 'leader' and 'steward' (i.e caretaker, like of the planet, nature, etc.)
Stewardship	The belief that mankind is responsible for, and should look after, all of nature.
Eco-friendly	Something that is not harmful, or may even be beneficial, to the environment.

Section 10	
Zakah	One of the 5 pillars of Islam; commitment to annual donation to charity (2.5% of wealth)
Hajj	One of the 5 pillars of Islam; commitment to a pilgrimage (holy journey) to Mecca.
Mecca	City in Saudi Arabia, considered the holiest on earth in Islam as the ummah began here.

Section 11	
Prejudice	To judge someone or a group of people without knowing/understanding them.
Discrimination	To treat someone or a group of people negatively based on prejudice.
Stereotype	An overly simple idea of someone or a group of people that is usually negative.

Section 12	
Terrorism	Beliefs and/or acts that cause (or aim to cause) suffering and fear in society.
Extremism	Beliefs considered highly unacceptable and highly discriminatory to others.
Islamophobia	Hatred, prejudice or discrimination of Muslims or the religion of Islam.

Section 13	
Hate crime	A crime committed because of the criminal's prejudice towards someone/a group.
Media	Any method of mass communication (e.g. newspapers, TV, Facebook, Instagram, etc)
Diversity	The positive quality of having many differences, for example UK society has lots of diversity because of its many people of various faiths, cultures, ethnicities, etc.

Section 1	
Abrahamic faiths	The religions of Judaism, Christianity and Islam; all are united by belief in prophet Abraham and traditions which come from this.
Influence	To affect something (e.g. our actions, feelings, thoughts, choices, etc)
Allah	Arabic term for God

Section 2	
Tawhid	The belief that there is only one God: Allah.
Ummah	Meaning 'brotherhood'; term for the Muslim community local or worldwide
Muslim	A follower of Islam

Section 3	
Omnibenevolent	Belief that God/Allah is all-loving.
Omnipotent	Belief that God/Allah is all-powerful.
Omniscient	Belief that God/Allah is all-knowing.

Section 4	
Sunni	Meaning 'follower of the sunnah'; these are the Muslims who traditionally recognised Abu Bakr (Muhammad's close friend) as the ummah's next leader.
Sunnah	The path and way of Muhammad; all Muslims try to follow this in life.
Shi'a	Meaning 'supporters of Ali'; these are the Muslims who traditionally recognised Ali (Muhammad's son-in-law) as the ummah's next leader.
Khalifah	Means both 'leader' and 'steward' (i.e caretaker, like of the planet, nature, etc.)

Section 5	
Rak'ah	A 'stage' or 'step' in Islamic prayer.
Misbaha beads	Prayer beads used by Muslims to recite Allah's 99 names as a show of devotion.
Salah	One of the 5 pillars of Islam; Muslims commit to praying 5 times each day.
Taqwa	Meanings 'God-consciousness'; Muslims focus on Allah alone when praying.

Section 6	
Qur'an	The holiest book in Islam; it was revealed to Prophet Muhammad over 23 years.
Surah	A chapter of the Qur'an.

Section 7	
Hafiz	Meaning 'guardian'; the term for a person who has memorised the whole Qur'an.
Prophet	A messenger of God Allah; in Islam, Muhammad is the most beloved messenger.

Unit 2
Number

NUMBER SENSE	
integer	a **whole number** can be positive or negative
place value	the **value** of a digit in a number based on **where it lies** 
decimal	**not** a whole number, it has a **decimal point** in it, can be positive or negative
terminating decimals	decimals which have a **finite** number of place values
recurring decimals	decimals with **repeating** digits or **repeating patterns** of digits
negative	a number that is **less than zero**, they can be decimals
ascending	numbers ordered from **smallest to largest**
descending	numbers ordered from **largest to smallest**

INEQUALITIES	
where two expressions are **not equal** in value	
strict inequalities:	< **less** than  > **greater** than
non-strict inequalities:	≤ **less** than or **equal** to ≥ **greater** than or **equal** to

MULTIPLES, FACTORS AND PRIME NUMBERS		
multiple	the result of **multiplying** a number by an integer, *e.g. the 3rd multiple of 7 is 21*	
lowest common multiple (LCM)	the **lowest common number** in the **multiplication tables** of two or more different numbers	
factor	a quantity which **divides equally** into a number, *e.g. factors of 8 are 1, 2, 4 and 8*	
highest common factor (HCF)	the **highest factor** which belongs to two or more numbers	
prime number	an integer greater than 1 that has **exactly two factors, 1 and itself**	
prime numbers	**2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31...**	
prime factor	a **factor** of a number which is also **prime**	
product of prime factors (prime factorisation)	a set of **prime factors** which **multiply** to give a number .	*e.g. prime factor tree* 12 = **2 x 2 x 3** or **2^2 x 3**

OPERATIONS		
addition	symbol: + *(plus)*	Vocabulary: **add, more than, sum, total, all together, more than**
subtraction	symbol: − *(minus)*	Vocabulary: **subtract, less, difference, take away, fewer than**
multiplication	Symbol: **X** *(times)*	Vocabulary: **multiply, lots of, product**
division	Symbol: ÷ *(obelus)*	Vocabulary: **divide, split, share**
quotient	the **result** of a division (**dividend ÷ divisor = quotient**)	
remainder	the amount **left over** when a divisor doesn't fit into a dividend exactly	

APPROXIMATION AND ESTIMATION	
rounding	writing a number **less accurately** so it is easier to work with **below** 5, **stay the same**, 5 or above, **round up**
decimal place	the position of a digit after the **decimal point**
money	when working in pounds (£) and pence, all answers should be given to **2 decimal places**
significant figure	1st significant figure: the **first digit** in a number which is **not a zero**
estimate a calculation	The **process** of rounding numbers to **one significant figure** and then **calculating** to get an **approximate** answer.
approximate	an answer **close** to the exact value

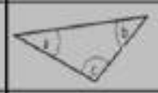
PERIMETER	
perimeter	the shortest **distance** around a shape, to calculate it you find the **sum of its sides**
rectangle perimeter	**P = (l+w)x2** add the length and width, then multiply by 2
perimeter of a compound shape	find all the **lengths** around the outside of the shape and **add** them up

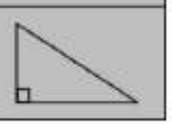
AREA		
area	the amount of **space** a **2D shape** takes up	
area of a rectangle	$A = bh$ Area = **base x height**	
area of a triangle	$A = \frac{bh}{2}$ Area = $\frac{\text{base x height}}{2}$	
area of a compound shape	work out the **area** of each shape, **add** together	

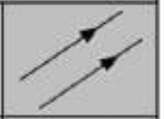
Unit 3
2D Shape and Angle Geometry

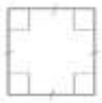
UNITS	
metric units	an **international** system of units based on **10s, 100s** and **1000s**
metric length conversions	1cm = **10mm** 1m = **100cm** 1km = **1000m**
metric mass conversions	1kg = **1000g** 1 tonne = **1000kg**
metric capacity conversions	1 litre = **1000ml**

TYPES OF ANGLE	
angle	a **measure** of turn, **units=degrees**
acute angle	an angle **less than 90°**
right angle	**90°**
obtuse angle	an angle **between 90° and 180°**
straight line	**180°**
reflex angle	an angle **between 180° and 360°**
a full turn	**360°**

ANGLE RULES		
angles around a point	**add to 360°** (as they make a full turn)	
angles on a straight line	**add to 180°**	
vertically opposite angles	when **two lines intersect**, angles **opposite** each other **are equal**	
angles in a triangle	**add to 180°**	
angles in a quadrilateral	**add to 360°**	

TYPES OF TRIANGLE		
equilateral	3 equal sides 3 equal angles (60°)	
isosceles	2 equal sides 2 equal angles	
scalene	no equal sides no equal angles	
right angled	any **triangle** with a **90°** angle can be scalene or isosceles	

GENERAL VOCABULARY		
vertex (vertices)	a **point** where **two or more line segments meet, a corner**	
polygon	a **2D shape** with **3 or more straight sides**	
regular polygon	a polygon with **sides** that are **all equal** and **angles** that are **all equal**	
parallel lines	lines with the same **gradient** they **never meet** they are **always** the **same distance apart**	
perpendicular lines	lines are perpendicular when they **meet** or **intersect** at a **right angle (90°)**	

PROPERTIES OF QUADRILATERALS	
square 	**four equal sides** **four right angles** **opposite sides parallel** **diagonals bisect** each other at **right angles** **four lines** of **symmetry** **rotational symmetry** of **order four**
rectangle 	**two pairs** of **equal sides** **four right angles** **opposite sides parallel** **diagonals bisect** each other, **not at right angles** **two lines** of **symmetry** **rotational symmetry** of **order two**
rhombus 	**four equal sides** **diagonally opposite** angles are **equal** **opposite sides parallel** **diagonals bisect** each other **at right angles** **two lines** of **symmetry** **rotational symmetry** of **order two**
parallelogram 	**two pairs of equal sides** **diagonally opposite angles** are **equal** **opposite sides parallel** **diagonals bisect** each other, **not at right angles** **no lines** of **symmetry** **rotational symmetry** of **order two**
kite 	**two pairs** of **adjacent sides** of **equal length** **one pair of diagonally opposite** angles are **equal** (where different length sides meet) **diagonals intersect at right angles**, but **do not bisect** **one line** of **symmetry** **no rotational symmetry**
trapezium 	**one pair** of **parallel sides** **no lines** of **symmetry** **no rotational symmetry** special Case: **isosceles trapeziums** have **one line** of **symmetry**

Section 7	
Sikhi	Monotheistic religion founded in India by Guru Nanak in the 15th century.
Mul Mantra	First verse of the Guru Granth Sahib (holy book) containing key teachings about God

Section 8			
Japji	Morning Sikh prayer, which involves the Mul Mantra.		
Haumai	Self-centredness; the source of evil according to Sikhi		
Sewa	Selfless service, of which there's three types.	**Dhan**	Material service (e.g. charity)
Man	Mental service (e.g. meditation at Gurdwara)	**Tan**	Physical service (e.g. nursing)

Section 9	
Extracts from Guru Granth Sahib	"There is only one God, His name is True. He is the Creator without fear, without hate."
	"Serving them, my body is purified"
	"He is the Cherisher of the poor"

Section 10	
The Fall	The story of Adam and Eve's disobedience of God told in Genesis and the Qur'an.
Genesis	First chapter of the Bible.
Human nature	What is common about all humans; Christians believe temptation is part of it.

Section 11	
Extracts from Genesis	"She took some of the fruit and ate it."
	"Her offspring will crush your head, and you will bite her offspring's heel."

Section 12	
Free will	The ability to act however we choose; Christians believe God gave this to mankind.
Salvation	Means 'to be saved'; Christians are moral and worship God to gain this in death.
Theologian	One who studies God and beliefs concerning God.

Section 13	
St Irenaeus	2nd century theologian, claimed that God allows evil to test mankind's goodness.
St Augustine	5th century theologian, claimed that God's loving gift of freedom is why evil exists, because this must include the freedom to disobey God, otherwise it's not freedom.

Section 1			
Omniscient	Belief that God is all-knowing.	**Omnipotent**	Belief that God is all-powerful.
Omnibenevolent	Belief that God is all-loving.		
Moral evil	Suffering that is man-made	**Natural evil**	Naturally occurring suffering

Section 2			
Problem of evil	The name for a particular atheist argument which suggests God does not exist because if He were omnipotent He would use power to prevent evil and if He were omnibenevolent He would want to prevent evil.	**Inconsistent triad**	
J. L. Mackie	Modern philosopher who supported the problem of evil argument against the existence of God.		

Section 3	
Karma	The results of your actions which affect your rebirth after death.
Dharma	One's duty in life; Hindus believe we share similarities, but we all have a unique dharma.
Samsara	Means 'to flow'; this means the cycle of birth, life and death in Hindu belief.
Moksha	The belief that with enough good karma, one's atman will be free from samsara and be one with Brahman.

Section 4	
Ahimsa	Hindu concept meaning 'non-violence'
Satyagraha	A term coined by Mahatma Gandhi, meaning 'hold onto truth' – Gandhi believed that it was moral to withstand evil with peace and love no matter the pressure.

Section 5			
Sin	Action that is against the will of God		
Hawwa	The Arabic for 'Eve', who with Adam were the first people to disobey Allah		
Jannah	Arabic for 'heaven'	**Jahannam**	Arabic for 'hell'

Section 6	
Extracts from Qur'an	"If the good outweighs the bad, even by one deed, the person goes to paradise."
	"Fight in the way of Allah, but do not transgress... Allah does not love transgressors."
Hadith (teaching of the Prophet)	"An Arab has no superiority to a non-Arab."

Unit 4
Fractions

FRACTIONS VOCABULARY	
fraction	represents the **division** of **one integer** by **another**, *e.g.* $\frac{2}{3}$ = **2 ÷ 3**
vinculum	the **line** in the **middle of a fraction**
numerator	the **number above the vinculum** in a fraction
denominator	the **number below the vinculum** in a fraction
unit fraction	a fraction where the **numerator is 1**, *e.g.* $\frac{1}{6}$
proper fraction	a fraction where the **numerator** is **smaller than the denominator**, *e.g.* $\frac{3}{5}$
improper fraction	a fraction when the **numerator** is **greater than the denominator**, *e.g.* $\frac{5}{3}$
reciprocal	the reciprocal of a number is **1 divided by the number**, *e.g. the reciprocal of x is* $\frac{1}{x}$, *the reciprocal of* $\frac{3}{4}$ *is* $\frac{4}{3}$
mixed number	a number formed of both an **integer** part and a **fractional** part, e.g. $3\frac{2}{5}$
dividend	the **amount** to be **divided up**
divisor	the **amount** you are **dividing by**
quotient	the **result** of a **division** (**Dividend ÷ divisor = quotient**)
remainder	the amount **left over** when a divisor doesn't fit into a dividend exactly

FRACTIONS MANIPULATION	
equivalent fractions	fractions which **represent** the **same value** *e.g.* $\frac{2}{3}$ *and* $\frac{4}{6}$ **multiply** the **numerator** and **denominator** by the **same amount**
simplifying fractions	fractions can be **simplified** by **dividing** the **numerator** and **denominator** by a **common factor** to get a fraction in its **simplest form, you must divide by the highest common factor** (HCF)
mixed to improper	**multiply** the **denominator** by the **whole number** part, **add** this to the **numerator**
improper to mixed	**divide** the **numerator** by the **denominator**, the **quotient** is the **whole number part**, the **remainder** is then **written as a fraction**
fractions of amounts	**divide by the denominator** (bottom number) and **multiply by the numerator** (top number)

FRACTION NOTATION	
vinculum →	$\frac{3}{5}$ ← numerator ← denominator

FRACTIONS: OPERATIONS		
add	you need a **common denominator**, then **add** the **numerator**	$\frac{A}{B}+\frac{C}{B}=\frac{A+C}{B}$
subtract	you need a **common denominator**, then **add** the **numerator**	$\frac{A}{B}-\frac{C}{B}=\frac{A-C}{B}$
addition and subtraction of mixed numbers	you need to **convert** mixed numbers **into improper fractions** with a **common denominator**, then **add/subtract** the **numerators**	
multiply	**multiply** the **numerators** **multiply** the **denominators**	$\frac{A}{B}\times\frac{C}{D}=\frac{AC}{BD}$
divide (KCF)	**keep** the **first fraction** **change** the **÷ to x** **flip** the **second fraction**, then **multiply**	$\frac{A}{B}\div\frac{C}{D}=\frac{A}{B}\times\frac{D}{C}=\frac{AD}{BC}$
multiply and divide mixed numbers	you need to **convert** mixed numbers **into improper fractions**, the **use the methods** for multiplying and division **as above**	

COMMON FDP CONVERSIONS		
fraction	decimal	percentage
1/2	0.5	50%
1/4	0.25	25%
3/4	0.75	75%
1/10	0.1	10%

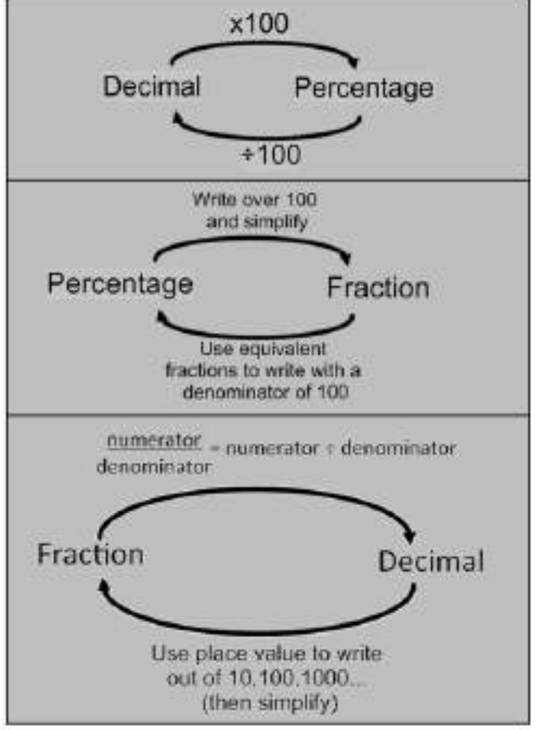
COMPARING FRACTIONS	
proportion	an **amount of a whole**
comparing fractions	re-write the fractions with **common denominators** **compare the numerators**
comparing FDP	**convert** all to **decimals** **write** your **answers** as it was **originally given** in the question
ascending	putting in **order going up**
descending	putting in **order going down**
ordering fractions	re-write the fractions with **common denominators** **compare the numerators** to **order them**

Unit 5 Percentages

COMMON FDP CONVERSIONS		
fraction	**decimal**	**percentage**
1/2	**0.5**	**50%**
1/4	**0.25**	**25%**
3/4	**0.75**	**75%**
1/10	**0.1**	**10%**

COMMON PERCENTAGES	
percentage	parts per **100,** symbol **%**
find 10%	divide by **10** (because **100% ÷ 10 = 10%**)
find 1%	divide by **100** (because **100% ÷ 100 = 1%**)
find 50%	divide by **2** (because **100% ÷ 2 = 50%**)
find 25%	divide by **4** (because **100% ÷ 4 = 25%**)
find 75%	add together **50% and 25%**

FDP CONVERSIONS



KEY CONCEPTS	
percentages	out of **100**
proportion	an **amount** of a **whole** can be **fractions, decimals** or **percentages**

PERCENTAGE CALCULATIONS	
multiplier	a percentage **written** as a **decimal**
percentage increase	**adding a percentage** to the original amount
percentage increase non-calc	find the **percentage** using **box** method, then **add** it on to the **original** amount
percentage increase calc	**multiplier** method: use **1.__ and multiply** by original
percentage decrease	**subtracting a percentage** from the original amount
percentage decrease non-calc	find the **percentage** using **box** method, then **subtract** it from the **original** amount
percentage decrease calc	multiplier method: do **100 - %** to give **0.__ and multiply** by original

INTEREST	
principal	the **starting** amount
simple interest	the **same amount** is **added each year** 1. find the **percentage** 2. x by **years** 3. **add** on
compound interest	exponential growth, **accumulated interest** paid on the original amount, each year a **larger amount** of interest is paid. **final total = principal x multiplier^n** principal = **original / starting amount** multiplier = **% increase / decrease** n = **number of time periods** (per annum = per year)

Section 7	
Contrasting	When one thing differs to another and they are compared.
Sanathan Dharman	The term used by many Hindus to refer to their faith; means 'eternal spiritual path'.

Section 8	
Orally	The mode of spoken communication; this is the way Hindu beliefs developed in ancient India as the written word was not accessible to most.
Aum	The symbol of Hinduism and sound of Brahman; often chanted during worship.
Bhagavad Gita	One of the holy texts of the Hindu faith.
Upanishads	One of the holy texts of the Hindu faith.

Section 9	
Brahman	The name given to the one, ultimate God in Hinduism.
deity	A term for a god; there are many different deities in the Hindu faith.
Trimurti	'Tri' means three and 'murti' means image, so this is the term for the three major Hindu gods: Brahma (the creator, Vishnu (the preserve) and Shiva (the destroyer)
murti	Means 'image'; these are the focal point of a Hindu shrine

Section 10	
Puja	Means 'worship'; the term used for Hindu worship.
Mandir	Hindu place of worship.
Arti	The name for the ceremony of worship which welcomes the deity to a shrine; the use of light is significant, hence the lamp used being known as the arti lamp.

Section 11	
Sewa	The belief that we have a duty to serve others and the deity selflessly.
Bhajan	Hindu songs of worship; literally means 'adoration'.
Kirtan	The chanting of mantras during puja, usually to the sound of music.
Mantra	A word, phrase of syllable repeated over and over to feel greater spirituality.

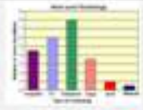
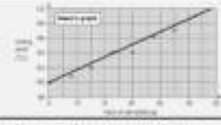
Section 12	
Karma	The results of your actions which affect your rebirth after death.
Atman	The soul which is non-physical and immortal.
Samsara	Means 'to flow'; this means the cycle of birth, life and death in Hindu belief.

Section 13	
Moksha	The belief that with enough good karma, one's atman will be free from samsara and be one with Brahman.
Caste	One's class or level in society based; this is decided by your karma gained in previous lives according to traditional Hindu thought.
Dalits	Those at the bottom of the caste system, commonly known as 'untouchables'.
Discrimination	Any act considered to treat someone unfairly because of who they are (e.g. race).

Y7 Science Cycle 1 - Sheet 1

Science Skills

1.1 - Lab Equipment	
Mass Balance	Measures the **mass** of an object in **grams**.
Measuring Cylinder	Measures the **volume** of a **liquid** in **ml** or **cm³**.
Thermometer	Measures **temperature** in **°C**.
Stopwatch	Measures **time** in **minutes** and **seconds**.
Pestle and Mortar	**Crushes** up substances.
Bunsen Burner	**Heats** substances. Burns **natural gas (methane)**.
Tripod	Metal **stand** with **three legs**.
Gauze	**Wire mesh** – goes on **top** of **tripod**.
Conical Flask	**Cone** shaped **container** – holds **liquids**.
Pipette	**Transfers** small amounts of **liquid**.
1.2 - Hazard Symbols	
	**Flammable** - Sets on **fire** easily.
	**Corrosive - Destroys** living tissue such as **skin** and **eyes**.
	**Toxic -** Can cause death if **swallowed** or **breathed** in.
	**Irritant -** Causes **skin irritation**.
	**Serious Health Hazard -** Can cause serious **health problems** such as **cancer** and **breathing difficulties**.
	**Environmental Hazard -** Toxic to **wildlife** living in **water**.

1.3 - Planning an Investigation	
Independent Variable	The one you **change**.
Dependent Variable	The one you **measure**.
Control Variables	The ones you keep the **same** to make it a **fair test**.
Method	Step by step **instructions** for an investigation.
Table	**Left** hand column = **independent** variable. **Right** hand column = **dependent** variable.
Repeat Readings	Take **3 sets** of readings and **calculate** an **average**.
Calculating an Average	**Add** the values together and **divide** by how many values you have.
1.4 - Graphs	
Categoric Data	Data that is in **words** e.g. type of metal, colour.
Continuous Data	Data that is in **numbers** e.g. length, mass, time.
Bar Chart	Use if your **independent** variable is **categoric**. 
Line Graph	Use if your **independent** variable is **continuous**. 
X Axis	**Horizontal** axis – Plot the **independent** variable on here.
Y Axis	**Vertical** axis – Plot the **dependent** variable on here.
Anomaly (or Outlier)	A value that does **not fit** in with the **pattern** of the **other results**.
Line of Best Fit	**Straight line** with a **ruler** as close to as many points or a **smooth curve**. **Ignore** anomalies.

2.1 - Living Organisms	
Living Organisms	**Living things** that are made of **cells** and carry out the **seven life processes.**
Seven Life Processes	**Movement, Reproduction, Sensitivity, Nutrition, Excretion, Respiration, Growth.** (MRS NERG)
Unicellular	Living organisms made from only **one cell.**
Multicellular	Living organisms made from **many cells.**
2.2 - Parts of the cell found in both plant and animal cells.	
Nucleus	**Controls** the **cell's activities.** Contains **genetic information (DNA).**
Cell Membrane	**Controls** what **enters** and **leaves** the cell.
Cytoplasm	**Jelly-like fluid** where **chemical reactions** occur.
Mitochondria	Where **respiration** occurs which **releases energy** for the cell.
2.3 - Parts of the cell found in only plant cells.	
Cell Wall	**Supports** and **strengthens** the cell.
Chloroplasts	Where **photosynthesis** occurs which makes **food** for the plant. Contains a **green chemical** called **chlorophyll** which **absorbs light.**
Vacuole	Contains **cell sap.**
2.4 - Specialised Cells	
Sperm Cell	**Fertilise** egg cells. Carry **male DNA. Tail** to help it **swim.** Many **mitochondria. Enzymes** in head. Half a set of **DNA.**
Egg Cell	Contains **female DNA.** Cytoplasm contains **nutrients. Cell membrane** only allows **one sperm** in. Half a set of **DNA.**
Red Blood Cell	Carry **oxygen. No nucleus. Large surface area.**
White Blood Cell	Fight **infections** caused by **micro-organisms.**
Cilia Cell	Tiny **hairs** to sweep **mucus** (containing **bacteria**) out of the **airways.**
Nerve Cell	Carry **electrical signals. Long** and **branched** at the ends.
Root Hair Cell	**Absorbs water** and **minerals** from the soil. **Root hair projections** provide a **large surface area. No chloroplasts.**
Palisade Cell	Found in **leaves.** Contains many **chloroplasts** for **photosynthesis.**

2.5 - Body Organisation	
Cell	Basic **building block** of life.
Tissue	Group of **similar cells** working together.
Organ	**Different tissues** working together.
Organ System	**Different organs** working together.
Organism	**Different organ systems** working together.
2.6 - Respiration	
Respiration	**Chemical reaction** that occurs in all living organisms.
	Releases energy for **movement, growth and warmth.**
Aerobic Respiration	**Requires oxygen**
	glucose + oxygen -> carbon dioxide + water (+ energy)
Anaerobic Respiration	**Does not require oxygen** – happens in **muscle cells** during **exercise.**
	glucose -> lactic acid (+ energy)
	Lactic acid causes **muscle cramps.**
2.7 - Photosynthesis	
Photosynthesis	Produces **food (glucose)** for plants. Occurs in **chloroplasts.**
	carbon dioxide + water ---(light energy)---> **glucose + oxygen**
Chlorophyll	**Green chemical** which **absorbs light energy** needed for **photosynthesis.**
2.8 - Diffusion	
Concentration	**Number of particles** in a **given volume.**
Diffusion	**Movement of particles** from an area of **higher concentration** to an area of **lower concentration.**
Factors increasing the rate of diffusion into / out of cells.	**Large surface area.**
	Short distance e.g. thin cell walls
	Steep concentration gradient i.e. large difference between the higher and lower concentration.

Y7 Science Cycle 1 - Sheet 2

Cells & Life Processes

Science Knowledge Navigators

YEAR 7 GEOGRAPHY – CYCLE 3 – URBANISATION (Rio de Janeiro and London Case Studies)

BOX 1: URBANISATION KEYWORDS	
urban area	**cities, towns**
rural area	**countryside, villages**
population	**number** of **people** in a **place**
migration	**moving from** one **area to another**
urbanisation	**increase** in **%** of **a country's population living** in **urban** areas
megacity	**urban** area with **population** more than **10 million people**
densely populated	**lots** of **people living** in an **area** → **crowded**
sparsely populated	**only** a **few people living** in an **area**
GDP	**Gross Domestic Product** → **money ($) made in country** → in **one year**
LIC	**Low Income Countries** → **poorest countries** → e.g. **Nepal**
NEE	**Newly Emerging Economies** → **getting richer** → e.g. **Brazil**
HIC	**High Income Countries** → **richest countries** → e.g. The **UK**
birth rate	**number** of **live births (per 1,000 people)** → **high** in **LICs**
death rate	**number** of **deaths (per 1,000 people)** → **high** in **LICs**
life expectancy	**average age** that a **person** is **likely to live to** (in a particular place)
literacy rate	**percentage** of **people** who can **read** and **write**
development	to **improve a place** → e.g. **better education, health care** and **jobs**
sustainable	**sustainable development** → **does not harm planet** for **future people**
infrastructure	**places** and **their connections** e.g. **road, rail, power supplies**

BOX 2: FACTORS AFFECTING THE RATE OF URBANISATION	
rural to urban	**rural to urban migration** → **people moving from countryside to cities**
push factors	**people migrate from rural** areas → negative reasons e.g. **famine**
pull factors	**people migrate to urban** areas → positive reasons e.g. **better paid jobs**
natural increase	**young adults** → **start a family** → **birth rate higher than death rate**

BOX 3: TYPES OF EMPLOYMENT → THE FOUR INDUSTRIAL SECTORS	
primary	**getting raw materials from** the **land** and **sea** e.g. **farming** → **low pay**
secondary	**making products** from **raw materials** e.g. **car manufacturing**
tertiary	**service industries** → e.g. **doctors and teachers** → **higher pay**
quaternary	**ICT** and **research** e.g. **computer designers** and **scientists**

BOX 4: RIO DE JANEIRO AND LONDON COMPARISON		
	Rio de Janeiro (Brazil, S. America)	**London** (UK, Europe)
population	**megacity** → over **12 million**	**9 million** people
reasons for population size	• **rural** to **urban migration** • **urbanisation speeding up**	• **international migration** • **urbanisation slowing**
GDP	**NEE** → **$1.9 trillion**	**HIC** → **$2.9 trillion**
life expectancy	**76**	**83**
literacy rate	**97%**	**99%**
employment	mostly **secondary** and **tertiary**	mostly **tertiary** and **quaternary**

BOX 5: CHALLENGES IN RIO DE JANEIRO ☹	
social	• **squatter settlements (favelas)** → e.g. **Rocinha** → no **sewage** system → poor **sanitation** → waterborne **diseases** → diarrhea
economic	• **inequalities** → some areas much poorer → **power cuts** → **few employment opportunities** in favelas → high levels of **crime**
environmental	• **traffic congestion** → roads very busy → lots of **air pollution** • **litter** and **sewage problem** → especially on the **beaches/sea**

BOX 6: OPPORTUNITIES IN RIO DE JANEIRO ☺	
social	• **'Self-help Schemes'** → **provides locals with building materials** → **improve homes** • **'Pacifying Police'** → **reduced crime** in the favelas
economic	• **transport systems extended** → now **includes** the **favelas** → gives **residents** the **opportunity** to travel to **work** in the **city** center
environmental	• **improved train system** → less cars → **reduce air pollution** • **ships fined** for **dumping waste** into **sea near Rio de Janeiro coast**

BOX 7: CHALLENGES IN LONDON ☹	
social	• **education** → in **Newham** (**deprived** area) → only **62%** of children **achieve 5 good GCSEs. Health** → **life expectancy** in **Kensington** (**less deprived** area) → is **88** → compared to **only 79** in **Newham**
economic	• **urban deprivation** → over **2 million** people in London live in **poverty** → some areas suffer from **dereliction** e.g. **graffiti** and **crime**
environmental	• **water deficit** → **London** → **not enough water** to **meet population demand** → **water is transferred** from **elsewhere** in country • **waste disposal** → **challenge** → **rising population**

BOX 8: OPPORTUNITIES IN LONDON ☺	
social	• **sustainable urban living** → **Olympic Park** transformed into **sustainable housing** → renamed **East Village** → **rainwater** used to **flush toilets** and **allotments** to **reduce food miles**
economic	• **new train line** → called **Crossrail** → will have space for **extra 200 million passengers** each year → **reduce journey** times to **work**
environmental	• **urban greening** → increasing **parks** in London e.g. the **Olympic Park** • **11,000 pay as you go bicycles** → **sustainable** → reduces **pollution**

BOX 9: MIGRATION KEYWORDS	
economic migrant	when a **person moves from one place to another** for a **better job**
immigration	**people entering a foreign country** to **live there**
emigration	**people leaving** their **own country** to live in **another country**
refugee	**forced** to **flee country** due to **danger** → **granted protection**
asylum seeker	**forced** to **flee country** due to **danger** → **waiting for protection**

Geography Knowledge Navigator

Section 7: Why did William win?	
Conquer	To overcome and take control of a place or people by force.
Norman Army	7000 soldiers who William brought to conquer England. 1000 cavalry, 2000 archers
Shield Wall	The Anglo-saxon army made a shield wall by overlapping their shields in long rows
Feigned retreat	Tactic of pretending to retreat so the enemy chases you and break their defensive position

Section 8: How did William Conquer England?	
Anglo Saxon rebellions	Uprisings against William I in York, Ely and Exeter
Harrying of the North	William's response York rebellion. He massacred people, slaughtered animals, burnt crops, salted earth
Stone keep castles	A much larger castle built with a stone tower with very thick walls. Strong defence against attacks.
Domesday book	Survey of all the property owned in England
Norman Lords	Loyal Normans who William gave most of the land to

Section 9: Kingdom of Mali	
Oral history	Historical evidence which is spoken instead of written down
Griot	Special caste of people whose job was to tell the stories of the Mali Kingdom, often using music.
Islamic Scholars	Highly educated Muslim people from the Middle East whose job was to study and write books
Mansa	The title given to the ruler of the Kingdom of Mali (equivalent to 'emperor' or 'king')

Section 10: Mali and Sunjata Keita	
Sunjata Keita	First Mansa of the Kingdom of Mali from 1235-1255
Mandinka people	The people who lived in West Africa and united in the Kingdom of Mali
Trade routes	Long roads which people travelled on to exchange goods
Taxation	A system where a leader takes money from people they rule over

Section 11: Mali and Mansa Musa	
Catalan Atlas	A map of the world made in 1375 in Spain. It shows the land known to Europeans and includes pictures of important people and captions.
Mansa Musa	Famous ruler of Mali from 1312-1337
Hajj	Muslim pilgrimage to Makkah – Mansa Musa went on Hajj in 1324
Timbuktu	City which became a world-famous centre of wisdom and religion. Location of the famous Djingbuerer Mosque.

Section 12: Mongols and Tumujin	
The Steppe	A huge area of Asia with an extreme climate where trees don't grow.
Nomadic	Because it was impossible to farm on the Steppe, the Mongols were nomadic (moved from place to place, hunting)
Temujin	Birth name for Genghi Khan, ruler of the Mongols from 1162 who slaughtered tribes who did not obey him
Horses	Essential to the Mongols for their nomadic way of life and for war

Section 13: Mongols and Genghis Khan	
Genghis Khan	Title given to Tumujin in 1206 after he took control of trade along the Silk Road. Genghis Khan means 'universal ruler'
Yasa	The system of law used by the Mongols which everyone had to follow
Pax Mongolica	Period of peace across the Mongol Empire
Black Death	Deadly disease which travelled along the Silk Road

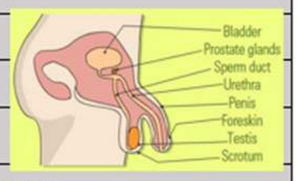
3.1 - Animal Adaptations (Competing for food, space, mates and water)	
For the Arctic	**Thick fur** and **fat** layer for **insulation**, **small ears** to reduce heat loss, **wide feet** to stop **sinking** into snow.
For the desert	Little **urine** and **sweat**, long **eyelashes**, **wide feet**, some are **nocturnal**, camel's hump **stores fat** as food store.
For hunting prey	**Sharp teeth** and **claws / talons**, **fast**, eyes on **front** of head, **camouflaged** to sneak up on prey.
For avoiding predators	Good **hearing**, eyes on **side** of head, **warning** colours, **camouflaged** to hide from predators.
For movement	**Streamlined** bodies, strong **muscles**, **webbed** feet, long **tail** for **balance**, long **legs**.
3.2 – Plant Adaptations (Competing for light, water, space and minerals)	
For absorbing light	**Broad flat leaves**, may **float** on water.
For water	**Spines** to reduce **water loss**, **swollen stems** to **store water** and **widespread roots** to cover large area.
For insect pollination	Brightly coloured **petals** and sweet **nectar**.
For wind pollination	**Anthers** and **stigma** hang **outside** plant.
For seed dispersal	By animals – **little hooks** on fruit or **sweet** fruit. By air – **parachutes** or **wings** on seeds. By water – **floating** fruit.
3.3 - Food Chains and Webs	
Producers	**Green plants** or **algae** that produces their own **food** by **photosynthesis**.
Consumers	**Animals** that **eat other organisms**.
Decomposers	**Fungi** or **bacteria** that **break down dead organisms**.
Arrows	Show **direction** of **energy transfer** between **organisms**.
Interdependence	Living organisms **depend** on each other for **food**, **shelter**, **pollination** and **seed dispersal**.

3.4 - Classification of Living Organisms	
Classification	**Sorting** organisms into **groups** with **similar characteristics**.
Levels of Classification	**Kingdom, phylum, class, order, family, genus, species.**
Carl Linnaeus	Scientist who developed the **Linnaean classification system**.
Five Kingdoms	**Animals, plants, fungi, prokaryotes, protists.**
Binomial Name	**Latin** name for an organism. **First** part is the **genus, second** part is the **species**. E.g. humans = ***Homo sapiens***.
Vertebrates	Animals which have a **backbone**.
Invertebrates	Animals which do **not** have a **backbone**.
3.5 - Five Vertebrate Groups (MR FAB)	
Mammals	Covered in **hair**, give birth to **live young**, **warm** blooded, **lungs** for breathing in oxygen.
Reptiles	Covered in **dry scales**, lay **eggs**, **cold** blooded, **lungs** for breathing in oxygen.
Fish	Covered in **scales**, lay **eggs**, **cold** blooded, **gills** for absorbing oxygen from water.
Amphibians	Covered in **moist skin**, lay **eggs**, **cold** blooded, **lungs** and **moist skin** for taking in oxygen.
Birds	Covered in **feathers**, lay **eggs**, **warm** blooded, **lungs** for breathing in oxygen.

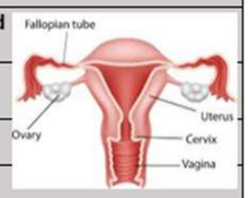
Y7 Science Cycle 3 - Sheet 3
Ecology

Science Knowledge Navigators

3.1 - Male Reproductive System	
Sperm Cell	**Male gamete** (sex cell).
Testes	**Produces** and **stores sperm cells.**
Sperm Duct	**Carries sperm** to the **penis.**
Glands	**Add fluids** to the **sperm** to make **semen.**
Urethra	**Carries sperm** and **urine** out of the penis.
Ejaculation	When **sperm** are **released** from the penis.

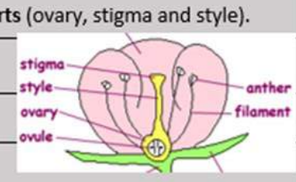


3.2 - Female Reproductive System	
Egg Cell (Ovum)	**Female gamete** (sex cell).
Ovaries	**Stores egg cells.** One egg cell is **released** every **28 days** (**ovulation**).
Oviducts	**Carry egg cells** away from the ovary. Also called **fallopian tubes.**
Uterus	Where the **baby grows** for **9 months.**
Vagina	**Muscular tube.** Penis enters here.
Cervix	**Ring** of **muscle** that **holds** the **baby** in place.



3.3 - Fertilisation and Pregnancy	
Fertilisation	The **nucleus** of a **sperm cell fuses** with the **nucleus** of an **egg cell** in the **oviduct.** Forms a **zygote.**
Zygote	Cell formed by fertilisation. **Divides** into **more cells** and forms an **embryo.**
Embryo	**Ball** of **cells. Attaches** to **lining** of **uterus** (**implantation**). Develops into **fetus.**
Fetus	Name given to an **unborn baby** after **8 weeks.**
Placenta	**Organ** that allows **oxygen** and **nutrients** to **diffuse** from mother's to baby's blood. Also removes **carbon dioxide** from baby's blood.
Umbilical Cord	**Connects placenta** to the **fetus.**
Amniotic Sac	**Filled with fluid.** Acts as **shock absorber** to **protect** the fetus.

3.4 - Plant Reproductive Parts (found in a flower)	
Stamen	**Male reproductive parts** (anther and filament).
Anther	Produces **pollen grains** (male sex cell).
Filament	**Holds up** the **anther.**
Carpel	**Female reproductive parts** (ovary, stigma and style).
Ovary	Produces **ovules** (female sex cells).
Stigma	Collects **pollen grains.**
Style	**Holds** up the **stigma.**



3.5 - Pollination and Fertilisation in Plants	
Pollination	**Transfer** of **pollen** from an **anther** to a **stigma.** Pollen is **spread** by **insects** or **wind.**
Cross-Pollination 	**Pollen** is **spread** between **two different plants.**
Self -Pollination 	**Pollen** is **spread** between the male and female parts of the **same plant.**
Fertilisation	**Nucleus** of **pollen grain fuses** with **nucleus** of **ovule.** Happens in **ovary.** Forms **seeds.**
Seed Dispersal	Main methods: **wind, animals, water** and **explosion.**
Germination	When a **seed** starts to **grow.** This requires **water, oxygen** and **warmth.**

Y7 Science Cycle 2 - Sheet 3

Reproduction

Science Knowledge Navigators

Section 1: Time	
BCE	Before the common era – he number of years or centuries **before** the year in which Christians believed Jesus to have been born eg 100BCE
CE	Common era - The number of years or centuries **after** the year in which Christians believed Jesus to have been born eg 1066 CE
Medieval Period	The time period covering c450CE - c1500CE
Centuries	The name of the century is always one higher than the numbers at the start of the year. E.g. **2022** is in the **21st** century and **1066** is in the **11th** century

Section 2: Early settlers on British Isles	
Hunter-gatherers	People who rely on finding food and hunting wild animals to survive, rather than farming
Romans	People from the Roman Empire who ruled over Britain from 43CE- 401CE
migration	The movement of people from one area to another. This may be temporary or permanent and may be international or within a country.
Doggerland	A land bridge which once connected the British Isles to the rest of Europe

Section 3: Romans	
Roman Empire	A large area of Europe, the Middle East and North Africa ruled over by an emperor. It lasted from 753BCE –476CE
Anglo-Saxons	Tribes of Angles, Saxons, Jutes from mainland Europe who settled in England
Emperor Constantine	The Roman Emperor who made Christianity the official religion of England

Section 4: Anglo-Saxons and Vikings	
Anglo-Saxon England	An area made up of seven separate kingdoms which competed for dominance
Alfred the Great	Anglo-Saxon King who united England under one King
Vikings	People from Norway, Denmark and Sweden who raided England – famed for wearing horned helmets (but they didn't!)
Danelaw	Area in the north of England ruled over by the Vikings 9th century-11th century

Section 5 Claimants to the throne	
Claim to the throne	Reason given that a particular person should be the next King
Edward Confessor	King who died in January 1066 leaving no obvious heir to the throne
Harold Godwinson	Earl of Wessex who was chosen by the witan to be the king after Edward the Confessor
William Duke of Normandy	Duke of Normandy (in France) who claimed Edward had promised him the throne
Harald Hardrada	Viking leader, who had links to the English throne through the Danelaw

Section 6 Start of the Battle of Hastings	
Battle of Stamford Bridge	Battle between Hardrada and Godwinson won but then had to get his army south to Hastings
Battle of Hastings	Battle between Harold Godwinson and William Duke of Normandy for the English throne
Senlac Hill	Harold II placed his Anglo-Saxon army at the top of this hill.
Norman Preparation	William brought 7000 men, set up camp at Hastings, raided villages and built a castle

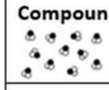
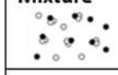
History Knowledge Navigator

¿Qué vas a hacer este fin de semana? *(What are you going to do this weekend?) [What you are going to do this end of week?]*			
Time phrase	**Verb**	**Infinitive verb phrase**	**Prepositional phrase**
Este fin de semana *(This weekend)* *[This end of week]*	**voy a** *(I am going to)* **no voy a** *(I am not going to)* **vamos a** *(we are going to)* **no vamos a** *(we are not going to)* ***me gustaría** *(I would like)* *[me it would please]* ***no me gustaría** *(I wouldn't like)* *[not me it would please]*	**salir** *(to go out)* **ir al cine** *(to go to the cinema)* **ir al parque** *(to go to the park)* **ir a la cafeteria** *(to go to the café)* **ir a la bolera** *(to go to the bowling alley)* **ir a la playa** *(to go to the beach)* **ir de paseo** *(to go for a walk)* **ir de compras** *(to go shopping)* **nadar en la piscina** *(to swim in the swimming pool)*	**con mis amigos** *(with my friends)* **con mi familia** *(with my family)* **con mi mejor amigo/a** *(with my best friend)* **con mis hermanos** *(with my siblings)* **con mis primos** *(with my cousins)*

1.1 - The Periodic Table	
Periodic Table	Contains information about **118 elements**, arranged in order of **atomic number**.
Groups	The **vertical columns**.
Periods	The **horizontal rows**.
Alkali Metals	**Group 1 elements**. Very **reactive**, **soft** and **dull**.
Halogens	**Group 7 elements**.
Noble Gases	**Group 0 elements**. Very **unreactive**.
Transition Metals	Found in the **middle block**.

1.2 - Chemical Symbols of Elements					
C	**carbon**	**He**	**helium**	**N**	**nitrogen**
H	**hydrogen**	**F**	**fluorine**	**S**	**sulphur**
O	**oxygen**	**Cl**	**chlorine**	**Be**	**beryllium**
Li	**lithium**	**Br**	**bromine**	**Cu**	**copper**
Na	**sodium**	**Mg**	**magnesium**	**Fe**	**iron**
K	**potassium**	**Ca**	**calcium**	**Ne**	**neon**

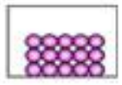
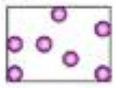
1.3 - Properties of Metals and Non-Metals		
Properties	**Metals**	**Non-Metals**
Periodic Table	**Left** hand side	**Right** hand side
Do they conduct?	**Conductors** of **heat** and **electricity**	**Insulators** of **heat** and **electricity**
Appearance	**Shiny** (when **polished**)	**Dull**
Density	**High density** (heavy for their size)	**Low density** (light for their size)
Mechanical Properties	**Malleable** (can be **bent** or **hammered** into shape)	**Brittle** (**breaks easily**)
	Ductile (can be **pulled** into **wires**)	
Sonorous?	**Sonorous** (makes a **ringing sound** when hit)	**Not sonorous**

1.4 - Elements, Compounds and Mixtures	
Element 	Substance made up of only **one type** of **atom**.
Compound 	Substance that contains a**toms** of **two** or **more types** of **atom**, **chemically joined together**.
Mixture 	**Two** or **more** substances **mixed** together but **not chemically joined**.
Chemical Reaction	A change in which **atoms** are **rearranged** and **new substances** are made. Often **irreversible**.
Physical Change	A change in which **no new substances** are made. E.g. **changes of state**. Often **reversible**.
Naming compounds	**Rule 1:** Use for **metal** + **non-metal**. **Metal** goes **first**, then **non-metal** changes ending to **–ide**. E.g. iron + sulphur -> iron sulphide
	Rule 2: Use for **metal** + **non-metal** + **oxygen**. **Metal** goes **first**, then **non-metal** changes ending to **–ate**. E.g. copper + sulphur + oxygen -> copper sulphate

1.5 - Chemical Formulae of Substances					
H_2O	**water**	**H_2**	**hydrogen**	**$C_6H_{12}O_6$**	**glucose**
CO_2	**carbon dioxide**	**Cl_2**	**chlorine**	**NH_3**	**ammonia**
O_2	**oxygen**	**CH_4**	**methane**	**NaCl**	**sodium chloride**
N_2	**nitrogen**	**CO**	**carbon monoxide**	**$CuSO_4$**	**copper sulphate**

Y7 Science Cycle 3 - Sheet 1

Atoms, Elements & Periodic Table

1.1 - States of Matter	
Solids 	**Particles** are **close together** and **regularly arranged**. Particles **vibrate** around **fixed positions**. **Strong forces** between particles.
	Fixed shape. Fixed volume. Cannot flow. Cannot be **compressed. High density.**
Liquids 	**Particles** are **close together** and **randomly arranged**. Particles **move around each other**. **Weak forces** between particles.
	No fixed shape. Fixed Volume. Can flow. Cannot be **compressed. Medium density.**
Gases 	**Particles** are **far apart** and **randomly arranged**. Particles **move quickly** in **all directions**. **No forces** between particles.
	No fixed shape. No fixed volume. Can flow. Can be **compressed. Low density.**

1.2 - Changes of State	
Melting	When a **solid** is **heated** and turns into a **liquid.**
Boiling / Evaporating	When a **liquid** is **heated** and turns into a **gas.**
Condensing	When a **gas** is **cooled** and turns into a **liquid.**
Freezing	When a **liquid** is **cooled** and turns into a **solid.**
Subliming	When a **solid** is **heated** and turns into a **gas.**
Melting Point	**Temperature** at which a substance **melts** when **heated** or **freezes** when **cooled.** (MP of ice = **0°C**)
Boiling Point	**Temperature** at which a substance **boils** when **heated** or **condenses** when **cooled.** (BP of water = **100 °C**)

1.3 - Solutions	
Solution	A **mixture** formed when a **solute dissolves** in a **solvent.**
Solvent	The **liquid** part of a **solution** e.g. **water, ethanol.**
Solute	The substance **dissolved** in the **solvent** e.g. **sugar, salt,** carbon dioxide, copper sulphate.
Soluble	Will **dissolve** in a **solvent** e.g. **sugar in water.**
Insoluble	Will **not dissolve** in a **solvent** e.g. **sand in water.**
Saturated Solution	A **solution** that contains the **maximum** amount of **solute** that can be **dissolved** at that particular **temperature.**

1.4 - Separating Mixtures	
Filtration 	**Separates** an **insoluble solid** from a **mixture**. E.g. sand from water.
	Pour **mixture** through **filter paper** in a **funnel**. **Collect filtrate** in a **conical flask. Residue** collects in **paper.**
Evaporation 	**Separates** a **soluble solid** from a **solution** e.g. salt from water.
	Heat the **mixture. Liquid evaporates. Solid** forms **crystals**.
Distillation 	**Separates** a **liquid** from a **solution** e.g. water from a salt solution or a **mixture** of **liquids**. e.g. ink
	Heat the **mixture** in a **round bottom flask**. Liquid **evaporates** and **rises**, then **cools** and **condenses** in the **condenser. Collect** the **distillate.**
Chromatography 	**Separates** a **mixture** of **coloured dyes.**
	Draw a start **line** in **pencil** on **filter paper**. Put a **dot** of the **sample** on the line. Dip **paper** in a **solvent.**

Y7 Science Cycle 2 - Sheet 1

Particles and Solutions

¿Qué vas a hacer este fin de semana? *(What are you going to do this weekend?) [What you are going to do this end of week?]*			
Time phrase	**Verb**	**Infinitive verb phrase**	**Prepositional phrase**
Este fin de semana *(This weekend)* *[This end of week]*	**voy a** *(I am going to)* **no voy a** *(I am not going to)* **vamos a** *(we are going to)* **no vamos a** *(we are not going to)* ***me gustaría** *(I would like)* *[me it would please]* ***no me gustaría** *(I wouldn't like)* *[not me it would please]*	**salir** *(to go out)* **ir al cine** *(to go to the cinema)* **ir al parque** *(to go to the park)* **ir a la cafeteria** *(to go to the café)* **ir a la bolera** *(to go to the bowling alley)* **ir a la playa** *(to go to the beach)* **ir de paseo** *(to go for a walk)* **ir de compras** *(to go shopping)* **nadar en la piscina** *(to swim in the swimming pool)*	**con mis amigos** *(with my friends)* **con mi familia** *(with my family)* **con mi mejor amigo/a** *(with my best friend)* **con mis hermanos** *(with my siblings)* **con mis primos** *(with my cousins)*

¿Qué hay en tu ciudad o tu pueblo? What is there in your city or town? [What there is in your city or your town?]					
Introductory phrase	article	noun (place)	"and"	article	noun (place)
En mi ciudad hay *(in my city there is / there are)*	un (a) - M	castillo *(castle)* (super)mercado *([super] market)* estadio *(stadium)* centro comercial *(shopping centre)* polideportivo (sports centre)	y *(and)*	unos *(some)* – M muchos *(lots of)* – M	parques *(parks)* museos *(museums)* cines *(cinema)* restaurantes *(restaurants)*
	una (a) - F	piscina *(swimming pool)* universidad *(university)* bolera *(bowling alley)* playa *(beach)*		unas *(some)* – F muchas *(lots of)* - F	tiendas *(shops)* plazas *(squares)* iglesias *(churches)* mezquitas *(mosques)*
En mi pueblo no hay *(in my town there isn't / aren't)*		castillo *(castle)* (super)mercado *([super] market)* estadio *(stadium)* centro comercial *(shopping centre)* polideportivo (sports centre)	y *(and)*	muchos *(lots of)* – M	parques *(parks)* museos *(museums)* cines *(cinema)* restaurantes *(restaurants)*

NB: when we use the phrase "en mi ciudad / en mi pueblo no hay we don't use the article 'una / un or unos / unas' after

2.1 - Acids, Alkalis and Indicators	
Acid	A **solution** with a **pH lower than 7.**
Alkali	A **solution** with a **pH higher than 7.**
Neutral	A **solution** with a **pH of exactly 7.**
pH Scale	A scale from **0** to **14** that is used to measure how **acidic** or **alkaline** a solution is.
Indicator	A chemical that **changes colour** to show whether a solution is **acidic, alkaline** or **neutral.**
Universal Indicator	A **dark green indicator** that changes a **wide range** of **colours** depending on the **pH.**
Red Litmus Paper	An **indicator paper** that turns **blue** in **alkali.**
Blue Litmus Paper	An **indicator paper** that turns **red** in **acid.**
pH Probe and Meter	Used to **measure pH electronically.** More **accurate** than an indicator.

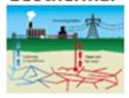
2.2 - The pH Scale			
pH	**Substance**	**Colour with Universal Indicator**	**Everyday Examples**
0-3	**Strong Acid**	**Red** or **Orange**	**Stomach acid, battery acid, lemon juice, vinegar.**
4 - 6	**Weak Acid**	**Orange** or **Yellow**	**Tomatoes, bananas, coffee, acid rain.**
7	**Neutral**	**Green**	**Water**
8 – 10	**Weak Alkali**	**Blue**	**Toothpaste, washing up liquid, baking soda.**
11 - 14	**Strong Alkali**	**Dark Blue** or **Purple**	**Oven cleaner, drain cleaner, bleach.**

2.3 - Common Laboratory Acids and Bases	
Acids	**hydrochloric acid - HCl**
	sulphuric acid – H_2SO_4
	nitric acid – HNO_3
Bases	**metal hydroxides** e.g. **sodium hydroxide - NaOH**
	metal oxides e.g. **magnesium oxide - MgO**
	metal carbonates e.g. **calcium carbonate - $CaCO_3$**

2.4 - Neutralisation Reactions	
Base	A substance that will **neutralise** an **acid.** (**Soluble bases** are known as **alkalis.**)
Neutralisation	A **reaction** between an **acid** and an **alkali/base** which forms a **neutral solution.**
Neutralisation Word Equations	**metal hydroxide + acid -> salt + water**
	metal oxide + acid -> salt + water
	metal carbonate + acid -> salt + water + carbon dioxide
Rules for Naming the Salt	1. **First** part comes from the **metal** in the **base.**
	2. **Second** part comes from the **acid.** **hydrochloric acid -> chloride** **nitric acid -> nitrate** **sulphuric acid -> sulphate**
Test for Carbon Dioxide Gas	**Bubble** the gas through **limewater** – it will turn **cloudy.**
Making Salt Crystals	1. Add the **base** to the **acid** until **no more** will **react.**
	2. **Filter** the mixture to **remove** any **unreacted base.**
	3. **Heat gently** to **evaporate** some of the water then leave to **crystallise.**

Year 7 Science Cycle 3 – Sheet 2
Acids & Alkalis

2.1 - Energy Stores – Objects with energy in this store.	
Kinetic	All **moving objects.**
Gravitational Potential	All objects. The **higher** the object is **lifted up**, the **greater** the energy.
Thermal	All objects. The **hotter** the object, the **greater** the energy.
Elastic Potential	Anything that has been **stretched** or **squashed** and will **return** to its **original shape.**
Chemical	Anything that can **release** energy by a **chemical reaction.** e.g. **food, fuels, batteries.**
2.2 - Energy Transfer Pathways	
Mechanically	When a **force** acts.
Electrically	When an **electrical current** moves.
By Heating	When energy is transferred from a **hotter** to a **colder** object.
By Radiation	By **sound** or **light** waves.
2.3 – Energy Conservation & Efficiency	
Law of Conservation of Energy	Energy **cannot** be **created** or **destroyed.** It can only be **transferred** from **one store** to **another.**
Efficiency	A **measure** of how good an appliance is at **transferring energy usefully.** A **percentage** between **0%** and **100%.**
Efficiency Equation	$\text{Efficiency} = \frac{\text{Useful energy out}}{\text{Total energy in}} \times 100\%$
2.4 - Non-Renewable Energy Resources – Limited supply and will run out.	
Fossil Fuels (Coal, oil and gas)	Fuels are **burnt** to **heat water** which makes **steam.** Steam turns a **turbine** which turns a **generator.**
	Pros – Releases **lots of energy, reliable.**
	Cons – Releases **carbon dioxide** which causes **global warming.**
Nuclear (Plutonium and Uranium)	**Nuclear reactions** release energy to **heat water** which makes **steam.** Steam turns a **turbine** which turns a **generator.**
	Pros – Releases **lots of energy, reliable.**
	Cons – Produces **dangerous radioactive waste.**

2.5 - Renewable Energy Resources - Will not run out.	
Wind Turbines 	Wind spins **turbine blades.**
	Pros – No **pollution.**
	Cons – Spoils **landscape,** only works when **windy, noisy.**
Solar Cells 	**Light** hits **solar cells** and **generates electricity.**
	Pros – No **pollution.**
	Cons – Only works when **sunny.**
Geothermal 	**Hot rocks** underground heat water to form **steam,** which turns **turbines.**
	Pros – No **pollution.**
	Cons – Not many places are **suitable.**
Tidal 	**Water flows** through **turbines** in an **estuary** as the **tides** go in and out.
	Pros – No **pollution.**
	Cons – **Costly** to set up. May affect **wildlife.**
Wave 	**Waves** in the **sea** turn a **turbine.**
	Pros – No **pollution.**
	Cons – **Costly** to set up.
Hydroelectric 	**Water falls down** and turns **turbines** in a **dam.**
	Pros – No **pollution.**
	Cons – **Costly** to set up. Can cause **flooding** and **destroy habitats.**
Biofuels 	**Burning crops** or **animal waste** in a power station.
	Pros – **Carbon neutral.**
	Cons – Crops need to be grown which takes up **a lot of land.** Crops could be used to **feed people** instead.

Y7 Science Cycle 2 - Sheet 2

Energy

Science Knowledge Navigators

Verb	**Noun**	**Adjective**	**"and"**	**Verb**	**Location**
		pequeña *(small)*			**en la montaña** *(in the mountains)*
Vivo en	**una casa**	**grande** *(big)*		**está**	
(I live in)	*(a house)*	**bonita** *(pretty)*			**en un pueblo** *(in a town)*
Vivimos en		**fea** *(ugly)*		*(it is located)*	
(We live in)		**moderna** *(modern)*			**en una ciudad** *(in a city)*
		antigua *(old)*			
		cómoda *(comfortable)*	**y**		**en la costa** *(on the coast)*
Antes, vivía en		**pequeño** *(small)*			
(Before, I used to live in)	**un piso** *(a flat)*	**grande** *(big)*	*(and)*	**estaba**	**en el campo** *(in the countryside)*
		bonito *(pretty)*			
		feo *(ugly)*		*(it was located)*	**en el desierto** *(in the desert)*
Antes, vivíamos en		**moderno** *(modern)*			
		antiguo *(old)*			**en el bosque** *(in the woods)*
(Before, we used to live in)		**cómodo** *(comfortable)*			

¿Qué hay en tu ciudad o tu pueblo? *(What is there in your city or town?] [What there is in your city or your town?]*

Introductory phrase	**Article**	**Noun (Place)**	**"and"**	**Article**	
		castillo *(castle)*		**unos** *(some) – M*	**parques** *(parks)*
En mi ciudad (no) hay *In my city there is / are (not)*	**un** *(a) - M*	**(super)mercado** *([super] market)*		**muchos** *(lots of) - M*	**museos** *(museums)*
		estadio *(stadium)*			**cines** *(cinema)*
		centro comercial *(shopping centre) [centre commercial]*			**restaurants** *(restaurants)*
		polideportivo *(sports centre)*			
En mi pueblo (no) hay *In my town there is / are (not)*			**y**		
	una *(a) – F*	**piscina** *(swimming pool)*	*(and)*	**unas** *(some) – F*	**tiendas** *(shops)*
		universidad *(university)*			**plazas** *(squares)*
		bolera *(bowling alley)*		**muchas** *(lots of) - F*	**iglesias** *(churches)*
		playa *(beach)*			**mezquitas** *(mosques)*

Y7 Science Cycle 1 - Sheet 3

Forces & Space

3.1 - Forces Introduction	
What is a force?	A **push**, **pull** or a **twist**.
What can a force do?	Change the **speed**, **direction** or **shape** of an object.
Units for Force	**Newtons** (unit symbol = N)
Measuring Force	Use a **Newton meter** (also called a force meter).
3.2 - Different Forces	
Friction	Acts between **two surfaces rubbing together**. Acts in the **opposite direction** to movement.
Air Resistance	Acts on all objects **moving** through **air**. Acts in the **opposite direction** to movement.
Weight or Gravitational Force	Force caused by **gravity**. **Pulls** all objects towards the **centre** of the **Earth**.
Upthrust	Acts **upwards** on **floating** objects.
Driving Force or Thrust	Force produced by an **engine**, which **moves** objects.
Support Force	Acts **upwards** on objects resting on **solid surfaces** e.g. the ground.
Water Resistance	Acts on all objects **moving** through **water**. Acts in the **opposite direction** to movement.
Tension	**Pulling** force in **ropes** and **cables**.
3.3 – Effects of Forces	
Resultant Force	**Overall force** acting on an object.
Stationary	**Not moving** (still).
Balanced Forces	**Resultant force** is **zero**. Forces **cancel** out. Cause **no change** in **motion**.
Unbalanced Forces	**Resultant force** is **not zero**. Forces do **not cancel** out. Cause a **change** in **motion**.
Interaction Pairs of Forces	Forces come in **pairs** that: - Are the **same size**. - Act in **opposite directions**. - Act on **two different objects**.

3.4 - The Solar System & Beyond	
Solar System	Made up of **8 planets** which **orbit** the **Sun**.
Planets (Closest to furthest from Sun)	**Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.**
Pluto	**Reclassified** as a **dwarf planet**.
Sun	The **star** in the middle of our **solar system**.
Moon	A **natural satellite** that **orbits** a planet.
Galaxy	A **collection** of **billions** of **stars**.
Milky Way	Name of the **galaxy** that our **Sun** is in.
Proxima Centauri	**Nearest star** to our **Sun**. **4 light years away.**
Andromeda	**Nearest galaxy** to the **Milky Way galaxy**.
Light Year	The **distance light travels** in **one year**.
Universe	Everything in **space** – made up of **billions** of **galaxies**.
3.5 - The Earth	
Day	Length of **time** a **planet** takes to make one full **spin** on its **axis**.
Length of Earth Day	**24 hours**
Daytime in the UK	When the UK **faces towards** the **Sun**.
Night-time in the UK	When the UK **faces away** from the **Sun**.
Year	Length of **time** a **planet** takes to **orbit** the **Sun**.
Length of Earth Year	**365.25 days**
Leap Years	Occur every **4 years**. **February** has an **extra day**.
Summer in UK	When the **northern hemisphere** is **tilted towards** the **sun**. Sun's **rays** more **concentrated**. Sun **high** in **sky.**
Winter in UK	When the **northern hemisphere** is **tilted away** from the **sun**. Sun's **rays** less **concentrated**. Sun **low** in **sky.**

French Knowledge Navigator

Quel temps fait-il? *(What is the weather like)*				
Where	**Country / City**	**Verb**	**Weather**	**Adverb**
En *(In)* À *(in)* Dans le nord de la / l' *(in the north of)* Dans le sud de la / l' *(in the south of)* Dans l'est de la / l' *(in the east of)* Dans l'ouest de la / l' *(in the west of)*	France Angleterre *(England)* Paris Londres *(London)* Liverpool Bordeaux Nice	il neige *(its snowing)* il pleut *(its raining)*		partout (everywhere) toujours (always / still) malheureusement (unfortunately) aujourd'hui (today)
		il y a	du soleil *(its sunny)* du vent *(its windy)* du brouillard *(its foggy)*	
		il fait	chaud *(its hot)* froid *(its cold)* beau *(its nice)* mauvais *(its bad)* nuageux *(its cloudy)*	

Quel temps fait-il? *(What is the weather like)*				
Where	**Country / City**	**Verb**	**Weather**	**Adverb**
En *(In)* À *(in)* Dans le nord de la / l' *(in the north of)* Dans le sud de la / l' *(in the south of)* Dans l'est de la / l' *(in the east of)* Dans l'ouest de la / l' *(in the west of)*	France Angleterre *(England)* Paris Londres *(London)* Liverpool Bordeaux Nice	il neige *(its snowing)* il pleut *(its raining)*		partout (everywhere) toujours (always / still) malheureusement (unfortunately) aujourd'hui (today)
		il y a	du soleil *(its sunny)* du vent *(its windy)* du brouillard *(its foggy)*	
		il fait	chaud *(its hot)* froid *(its cold)* beau *(its nice)* mauvais *(its bad)* nuageux *(its cloudy)*	

¿Cuántas años tiene? *(How old is he/she/they?) [How many years he/she has?]*

Noun	**Verb**	**Number**	**"Year/Years"**
Mi madrastra *(My stepmum)* **Mi hermano menor** *(My younger brother) [My brother younger]* **Mi tía** *(My aunt)* **Mi sobrino** *(My nephew)*	**tiene** *(he/she has)*	**un** *(1)*	**año** *(year)*
		dos *(2)* **tres** *(3)* **cuatro** *(4)* ***cinco*** *(5)* **seis** *(6)* **siete** *(7)* ***ocho*** *(8)* **nueve** *(9)* **diez** *(10)* **once** *(11)* **doce** *(12)* **trece** *(13)* **catorce** *(14)* **quince** *(15)* **dieciséis** *(16)* **diecisiete** *(17)* **dieciocho** *(18)* **diecinueve** *(19)* **veinte** *(20)* **veintiuno** *(21)* **treinta** *(30)* **treinta y tres** *(33)* **cuarenta** *(40)* **cuarenta y cinco** *(45)* **cincuenta** *(50)* **cincuenta y dos** *(52)* **sesenta** *(60)* **setenta** *(70)*	**años** *(years)*
Mis padres *(My parents / My dads)* **Mis madres** *(My mums)* **Mis primos** *(My cousins)*	**tienen** *(they have)*		

¿De qué color son los ojos? *(What colour eyes does he/she have?) [Of what colour are the eyes?]*

¿Cómo tiene el pelo? *(What is his/her hair like?) [How he/she has the hair?]*

Noun	**Verb**	**Noun**	**Adjective**	**"and"**	**Verb**	**Noun**
Mi madre *(My mum)* **Mi hermana mayor** *(My older sister) [My sister older]* **Mi tío** *(My uncle)*	**tiene** *(he/she has)*	**el pelo** *[the hair]*	**rubio** *(blonde)* **negro** *(black)* **castaño** *(brown)* **largo** *(long)* **corto** *(short)* **liso** *(straight)* **rizado** *(curly)*	**y** *(and)*	**lleva** *(he/she wears)*	**gafas** *(glasses)* **trenzas** *(braids)* **velo** *(a headscarf)*
		los ojos *[the eyes]*	**verdes** *(green) [greens]* **azules** *(blue) [blues]* **marrones** *(brown) [browns]* **grises** *(grey) [greys]*			
Mi abuelo *(My granddad)*	**es** *(he/she is)*	**calvo/a** *(bald)* **pelirrojo/a** *(ginger-haired)*				

Spanish Knowledge Navigator

¿Cómo estás? *(How are you?) [How you are?]*
¿Qué tal? *(How are you?) [What such?]*

Verb phrase	Reason
Estoy bien porque *(I am doing well because) [I am well be-cause]*	**estoy en forma** *(I am in shape)* **he comido muy bien** *(I have eaten very well)* **el fin de semana, ¡lo pasé bomba!** *(I had a great weekend!) [the end of week, it I passed bomb]* **dormí bien** *(I slept well)* **me acosté con las gallinas** *(I went to bed early) [myself I went to bed with the chickens]*
Estoy mal porque *(I am doing badly because) [I am badly be-cause]*	**podría ser mejor** *(it could be better)* **estoy enfermo/enferma** *(I am in ill)* **el fin de semana, ¡lo pasé muy mal!** *(I had a very bad weekend!) [the end of week, it I passed badly]* **me duele la cabeza** *(I have a headache) [myself it hurts the head]* **me duele la garganta** *(I have a sore throat) [myself it hurts the throat]* **estoy agotado/a** *(I am exhausted)* **no tengo dinero** *(I don't have any money) [not I have money]*

¿Cuántas personas hay en tu familia? *(How many people are there in your family?) [How many people there are in your family?]*

Introductory sentence	Verb	Noun	"and"	Noun	"and me"
En mi familia hay ___ per-sonas. *(In my family there are ____ people).*	**Somos** *(We are)*	**mi madre** *(my mum)* **mi padrastro** *(my step-dad)* **mi hermano mayor** *(my older brother) [my brother older]* **mi abuelo** *(my gran-dad)* **mi tío** *(my uncle)* **mi prima** *(my cousin F)*	**y** *(and)*	**mi padre** *(my dad)* **mi madrastra** *(my step-mum)* **mi hermana menor** *(my younger sister) [my sister younger]* **mi hermanastro** *(my step-brother)* **mi abuela** (*my grand-mother)* **mi tía** (*my aunt)* **mi sobrina** (*my niece)*	**y yo.** *(and me.)*

Noun	Verb	Name	"and"	Verb	Alphabet
Mi madre *(My mum)* **Mi padrastro** *(My stepdad)* **Mi sobrino** *(My nephew)*	**se llama** *(is called) [himself/ herself calls]*	**Ana** **Fuad** **Jorge**	**y** *(and)*	**se escribe** *(it is spelt) [itself it writes]*	**A-N-A** *(ah, eneh, ah)* **F-U-A-D** *(efeh, oo, ah, acheh)* **J-O-R-G-E** *(hota, oh, ereh, heh, eh)*

French Knowledge Navigator

Quels sports tu joues?

Verb	Sport
Je joue *(I play)* Nous jouons *(we play)* Il joue *(he plays)* Elle joue *(she plays)* Ils / elles jouent *(they play)*	au foot *(football)* au golf *(golf)* au hockey *(hockey)* au rugby *(rugby)* au basket *(basketball)* au volley *(volleyball)* au tennis *(tennis)* au tennis de table *(table tennis)*

Le temps et les sports *(weather and sports)*

When / if	Weather	Verb	Sport	Location	With …
Quand *(when)* S' *(if)*	il fait froid *(its cold)* il fait chaud *(its hot)* il fait beau *(its nice)* il fait mauvais *(its bad)* il pleut *(its rain-ing)* il neige *(its snowing)* il y a du soleil *(its sunny)* il y du vent *(its windy)* il y a du brouil-	je joue *(I play)* je ne joue pas *(I don't play)* nous jouons *(we play)* nous ne jouons pas *(we don't play)*	au foot *(football)* au golf *(golf)* au hockey *(hockey)* au rugby *(rugby)* au basket *(basketball)* au volley *(volleyball)* au tennis *(tennis)* au tennis de ta-ble *(table ten-nis)*	dans le parc *(in the park)* dans le gymnase *(in the gym)* dans le jar-din *(in the garden)*	avec ma soeur *(with my sister)* avec mon frère *(with my broth-er)* avec mon prof *(with my teach-er)* avec mes amis *(with my friends)*

Quels sports tu joues / jouais / voudrais jouer?

Time phrase	Verb	Sport	Connective	Verb	Adjective
Maintenant *(now)* Quand j'étais plus jeune *(When I was younger)* Si j'avais le choix *(If I had the choice)*	Je joue *(I play)* Je jouais *(I used to play)* Je jouerais *(I would play)* je voudrais jouer *(I would like to play)*	au foot *(football)* au golf *(golf)* au hockey *(hockey)* au rugby *(rugby)* au basket *(basketball)* au volley *(volleyball)* au tennis *(tennis)*	car *(because)* mais *(but)*	c'est *(it is)* c'était *(it was)* ce serait *(it would be)*	facile *(easy)* ennuyeux *(boring)* nul *(rubbish)* difficile *(difficult)* exaltant *(exciting)* fatigant *(tiring)*

Qu'est-ce qu'il y a dans ta ville? *(what is there in your town?)*

Location	Verb	Places
En ville *(In town)* Dans ma ville *(In my town)* À Liverpool *(In Liverpool)* En Angleterre *(In England)*	il y a *(there is)* il n'y a pas de / d' *(there is not)*	une piscine *(a swimming pool)* une banque *(a bank)* une poste *(a post office)* une bibliothèque *(a library)* une musée *(a museum)* une patinoire *(an ice rink)* une église *(a church)* une mosquée *(a mosque)*
	il y avait *(there used to be)* il n'y avait pas *(there used to not be)*	un parking *(a car park)* un centre commercial *(a shopping centre)* un bowling *(a bowling alley)* un camping *(a campsite)* un centre sportif *(a sports centre)* un château *(a castle)* un hôpital *(a hospital)* un hôtel *(a hotel)* un parc *(a park)* un magasin *(a shop)* un restaurant *(a restaurant)*

French Knowledge Navigator

	Adjective
	grand(e) *(big)* petit(e) *(small)* nul *(rubbish)* intéressant(e) *(interesting)* ennuyeux (-se) *(boring)* énorme *(enormous)* moderne *(modern)* cher *(expensive)* amusant(e) *(fun)* utile *(useful)* bien pour les jeunes *(good for young people)*
	Verb
	c'est *(it is)* c'était *(it was)*

Qu'est-ce qu'il y a dans ta ville? *(what is there in your town?)*

Location	Verb	Places
En ville *(In town)* Dans ma ville *(In my town)* À Liverpool *(In Liverpool)* En Angleterre *(In England)*	il y a *(there is)* il n'y a pas de / d' *(there is not)*	une piscine *(a swimming pool)* une banque *(a bank)* une poste *(a post office)* une bibliothèque *(a library)* une musée *(a museum)* une patinoire *(an ice rink)* une église *(a church)* une mosquée *(a mosque)*
	il y avait *(there used to be)* il n'y avait pas *(there used to not be)*	un parking *(a car park)* un centre commercial *(a shopping centre)* un bowling *(a bowling alley)* un camping *(a campsite)* un centre sportif *(a sports centre)* un château *(a castle)* un hôpital *(a hospital)* un hôtel *(a hotel)* un parc *(a park)* un magasin *(a shop)* un restaurant *(a restaurant)* un supermarché *(a supermarket)* un théâtre *(a theatre)*