



BOURNEMOUTH SCHOOL

Year 8

# Knowledge Organiser 4

Spring Term: 2024-25

Name: \_\_\_\_\_ Master Copy \_\_\_\_\_

Registration Form: 8

✓ Hard Work

✓ Discipline

✓ Smart Appearance

✓ Respect

## Bournemouth School

### Knowledge Organiser: Year 8 Spring Term 4

*'Knowledge is power' by Francis Bacon*

A knowledge organiser provides you with all the most important knowledge you need for each unit of study this half term. Your aim is to transfer all of this information into your long-term memory so you can use it in your lessons and further expand your understanding of this work.

How to use your knowledge organiser (KO):

1. Ensure you have your KO and Homework Learning journal with you at all times in school and when you need to do your homework at home.
2. In lessons when you have covered information that appears on your KO, your teacher will ask you to put a tick next to that section. This means that is now added to what you must learn for homework.
3. Initially, follow your homework timetable to decide what to revise each evening.
4. There are 4 strategies that you can use to revise. They are progressively more challenging so always start with the first in the list.

**a. Look Cover Write Check**

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
- ii. LOOK carefully at the subject and section of your KO you want to revise and try to remember as much as you can. Remember this should be a ticked section.
- iii. Now COVER this information so you can't read it.
- iv. WRITE out what you can remember word for word in your Homework Learning Journal.
- v. CHECK what you have written by comparing it to your KO. Tick each correct word in green pen and correct any errors you have made.
- vi. Repeat this process until you are confident you can remember everything you need.

**AIM:**

**You should be able to repeat the information by rote**

**b. Self or peer quizzing**

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
- ii. Write out a list of questions you could ask either yourself or a friend about this section of the KO. Write these in your Homework Learning Journal.
- iii. If you are working on your own, cover the KO and write a full answer to each question.
- iv. If you are working with a partner swap books and copy down their questions and have a go at answering them.
- v. Now uncover the KO and with a green pen correct your work.

**AIM:**

**You should be able to repeat the information by rote but with a good understanding**

**c. Playing with words and sentences**

- i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.

- ii. You now want to check how well you have learnt the information in your KO.
- iii. Definitions – look at words that are used in this section. Can you write a definition in your own words?
- iv. Rephrasing – can you rewrite the sentences or explanations in your own words?
- v. Summary – can you summarise the main points of this section of the KO?
- vi. Synonyms – can you write synonyms for key words and ideas?
- vii. New Sentences – can you write a sentence that includes the key vocabulary or definitions that you have learnt?

**AIM**

**You should be able to use the information in your KO in a flexible and confident way in your writing.**

**d. Think it, Link it**

- i. This is a technique to use towards the end of the half term when you are revising all of the KO.
- ii. Think of the links or connections between different sections of your KO.
- iii. Write these out in your own words in your Homework Learning Journal.
- iv. Think about the links between a particular section of your KO and what you have learnt in your lessons. Can you expand on this section by linking it to your wider knowledge?
- v. Write this out in your Homework Learning Journal.

**AIM**

**You should be able to link your homework and your lessons to show a confident understanding of the work covered.**

**Homework Learning Journal**

1. Always write the subject and the date when you start your homework.
2. Always write the strategy that you are going to use for your homework.
3. Always use a ruler to underline titles and dates.
4. Use a blue or black pen to complete your homework or a pencil if you need to draw.
5. Use a green pen to complete corrections of your work.
6. **You are expected to complete half a side of your Homework Learning Journal each evening as a minimum.**

**Checking:**

Your tutor will check your Homework Learning Journal at least once a week. If they are concerned that you aren't doing your homework properly they will offer support and guidance. If you don't respond to this guidance you will be added to the afterschool 'Success club' where a member of staff will help you complete your homework.

**DO NOW tasks:**

At the start of every lesson you should expect a Do Now task. This is a low stakes retrieval quiz on what you have learnt so far. If you have completed your homework this should be easy. The aim is to get 100% in each of these. If you miss this target occasionally, don't worry. If it happens regularly your teacher will ask your tutor to have a chat and offer you support.

## Maths:

Your teacher will set you tasks to complete on Dr Frost Maths. This will be set every week on a Monday and will be collected in and checked on a Friday. If this has not been completed you will be issued a Detention on a Wednesday Lunchtime.

# How long should I spend on my homework?

Key Stage 3					
Week 1					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
5 mins	MFL	MFL	Physical Activity	MFL	MFL
10	Maths	English		Maths	Art
10	Science	RS		Music	Science
10	Computing	FPAN/Graphics		History	Geography
25	Reading / Revision	Reading / Revision		Reading / Revision	Reading / Revision
Week 2					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
5 mins	MFL	MFL	Physical Activity	MFL	MFL
10	Maths	English		Maths	Art
10	Science	RS		Music	Science
10	Computing	DT		History	Geography
25	Reading / Revision	Reading / Revision		Reading / Revision	Reading / Revision

- You should spend about 35 minutes revising your KO each day.
- You should spend 25 minutes either reading or revising each day.
- This timetable is a guide. If you want to spend longer revising one subject that you find more difficult and less time on one you find easy, that is your choice.
- We would like you to spend one evening involved in a physical activity. This might be a sports club, a run, a game of football with friends or just a nice walk with the dog. Ask your PE teacher if you need guidance with this. It doesn't have to be on a Wednesday.

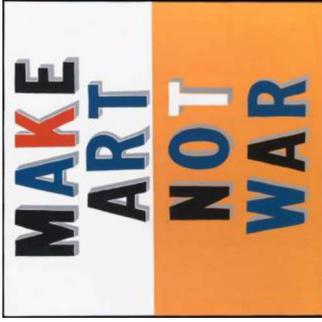


# Drawing with words – The Big Issue

## Artists

Jenny Holzer  
Barbara Kruger  
Bob and Roberta Smith

No.	Key terms	Tick
<b>Directional lines</b>	Directional lines lead the eye through an artwork and draw attention to certain parts or focus points. This basic art element can create a sense of flow, rhythm, and energy, which changes an artwork's general mood and feel.	
<b>Scale</b>	Scale can create different effects on the viewers perception, such as realism, depth, distance or emphasis. Scale is a principle of art that refers to the size or dimensions of an artwork or its parts compared to other artworks or objects.	
<b>Weight of Line</b>	Line weight is the visual lightness, darkness, or heaviness of a line within a drawing.	
<b>Types of pen</b>	Gel pen, roller ball, ink pen, felt tip pen. These different types of pen will give you different weights of line.	



- Tonal layering – Use text in layers to build tone, less layers = lighter tone
- Directional text – write in a certain direction to exaggerate shape and form

**Activism** consists of efforts to promote, impede, direct or intervene in social, political, economic or environmental reform with the desire to make changes in society toward a perceived greater good.



<b>Barbara Kruger</b>	Barbara Kruger is an American conceptual artist and collagist associated with the Pictures Generation. She is most known for her collage style that consists of black-and-white photographs, overlaid with declarative captions, stated in white-on-red Futura Bold Oblique or Helvetica Ultra Condensed text.
<b>Jenny Holzer</b>	Jenny Holzer is an American neo-conceptual artist. The main focus of her work is the delivery of words and ideas in public spaces and includes large-scale installations, advertising billboards, projections on buildings and other structures, and illuminated electronic displays.
<b>Bob &amp; Roberta Smith</b>	Bob and Roberta Smith (whose real name is Patrick Brill) is a British contemporary artist, writer, author, musician, art education advocate, and keynote speaker. He brings together sign writing, activism and discarded materials. Talking about his practice, he says he sees 'art as an important element in democratic life.'





Key Idea	Definition/Example	Tick
Subroutine	A small block of code that performs a particular task.	
Subroutine code example	<pre>Sub = AddNumbers   answer = number1 + number2 EndSub</pre> <p>This subroutine adds two numbers together.</p>	
Set pen colour	<code>GraphicsWindow.PenColor = "colour"</code>	
Set pen width	<code>GraphicsWindow.PenWidth = 3</code>	
Draw a rectangle	<pre>GraphicsWindow.DrawRectangle(x, y, width, height)</pre> <p>Where x and y are the coordinates of the top right corner of the rectangle.</p>	
Draw a line	<code>GraphicsWindow.DrawLine(x1, y1, x2, y2)</code> Where x1 and y1 represent the coordinates of the start of the line and x2 and y2 represent the coordinates of the end of the line.	
Clear the screen	<code>Clear()</code>	

Key Idea	Definition/Example	Tick
Set the width of the window	<code>GraphicsWindow.Width = 500</code>	
Set the height of the window	<code>GraphicsWindow.Height = 500</code>	
Move the turtle	<code>Turtle.Move(100)</code>	
Turn the turtle	<code>Turtle.Turn(90)</code>	
Stop drawing	<code>Turtle.PenUp()</code>	
Start drawing	<code>Turtle.PenDown()</code>	





# Computing Theory

Keyword	Definition	✓
<b>Abstraction</b>	Simplifies a problem by removing unnecessary detail.	
<b>Decomposition</b>	Breaking a complex task down into smaller tasks.	
<b>Algorithm</b>	A reusable set of instructions to solve a given problem.	
<b>Pseudocode</b>	A way to write out algorithms using code-like statements.	
<b>Flowchart / flow diagram</b>	Used to visually represent the steps that make up an algorithm.	
<b>Logical reasoning</b>	Thinking about the order of steps (the sequence) and the selection rules.	
<b>Debugging</b>	Finding where the problem is and then fixing it.	
<b>I/O device</b>	Allow users to input data into the computer, or receive a data output from the computer.	
<b>Primary storage</b>	Memory in which the computer can store the data or instructions that are currently in use.	
<b>Secondary storage</b>	The memory in which the computer can store data or instructions for the long term.	
<b>System software</b>	Controls the hardware of the computer and provides an environment for applications to run.	
<b>Device driver</b>	A small program which tell the operating system how to use a piece of hardware.	



Year 8 Knowledge Organiser Design Technology

Tick here	Different jobs linked to Design Technology: Product Design
	<ul style="list-style-type: none"> <li>o Architecture</li> <li>o Engineering</li> <li>o Furniture designer</li> <li>o CAD technician</li> <li>o Carpenter/joiner</li> <li>o Interior designer</li> <li>o Construction</li> </ul>
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Do Now 1 information</div>

Tick here	Tool name / key word	Function
	Hot glue gun	These heat up hot melt glue and are used to join material when modelling.
	Glasspaper	This is an abrasive paper which wears away material.
	Scoring	The process of cutting into a material, ready for folding.

Tick here	Famous product	Inspiration
	Anglepoise lamp	Human elbow
	Velcro	Burr plant
	Bullet train	Kingfisher bird
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Do Now 2 information</div>

Tick here	Tool/ equipment name	Function
	Craft knife	These are used to cut through papers and boards.
	Safety ruler	These are used to keep fingers safe when using craft knives.
	Cutting mat	These are used to cut papers and boards on when using craft knives.

Tick here	Key word	Definition
	Ergonomics	How easy or comfortable a product is to use.
	Ideation	The formation of design ideas.
	Annotation	Writing notes around design ideas to explain them.
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Do Now 3 information</div>



Context	Characters
<p>✓</p> <p><b>George Orwell</b> was the writing name of Eric Blair (1903-1950). He spoke out frequently against totalitarianism and social injustice. His most famous works are Animal Farm (1945) and Nineteen Eighty-Four (1949).</p>	<p>✓</p> <p><b>Napoleon</b> is the pig who emerges as the leader of Animal Farm after the rebellion. Napoleon’s character is based on Joseph Stalin – the leader of the communist Soviet Union. Napoleon is cunning, treacherous, lazy and selfish.</p>
<p><b>Tsar Nicholas II</b> was the last emperor of Russia. Tsar Nicholas was deemed to be a poor ruler – the country lost key battles against Japan and Germany and lived in luxury while thousands of unemployed peasants struggled to survive. Tsar Nicholas was eventually overthrown by the Bolsheviks and was executed in July 1917.</p>	<p><b>Boxer</b> is a cart-horse, who demonstrates incredible strength, work ethic, and loyalty. He represents those in the working classes (proletariat) who were hugely overworked. Boxer completes the most work on the farm and is admired by others for his physical accomplishments and mental grit.</p>
<p><b>Karl Marx</b> was a German philosopher from the 19th Century, who rejected capitalism. He instead believed in the introduction of a system in which wealth was communal and labour was shared. He believed this would produce a fairer, more stable way of life.</p>	<p><b>Old Major</b> is a prize-winning boar whose vision of a place in which the animals work for themselves serves as the inspiration for the rebellion. He is based on both Karl Marx and Vladimir Lenin, who inspired communism. Old Major is well respected, articulate, and persuasive.</p>
<p><b>The Russian Revolution</b> was the movement that removed the reigning Tsarist autocracy from power and led to the rise of the Soviet Union. The Bolsheviks, led by Vladimir Lenin, were able to overthrow the provisional government and establish their own federal government, creating the world’s first socialist republic.</p>	<p><b>Snowball</b> is one of the other leading pigs, who challenges Napoleon for leadership of the farm after the rebellion. He represents Leon Trotsky. He is intelligent and passionate, yet he does not resort to the same levels of cunning and manipulation as Napoleon.</p>
<p><b>Joseph Stalin</b> –Following the death of Lenin in 1924, Stalin rose to power through discreetly canvassing, manipulating and intimidating others, sidelining other potential leaders such as Victor Trotsky. Under Stalin, the Soviet Union became more autocratic and totalitarian: he oversaw mass repressions, hundreds of thousands of executions and millions of non-combatant deaths.</p>	<p><b>Squealer</b> represents the Soviet propaganda machine. He is a pig who is an exceptionally gifted and persuasive speaker, and is utilised to spread positivity about Napoleon, and negativity about Napoleon’s competition.</p>
<p><b>Life in the Communist Soviet Union</b> – The working class in the Soviet Union grew increasingly repressed throughout the progression of the USSR’s existence. It is generally accepted that the standard of living decreased, working conditions deteriorated, and personal freedoms were significantly violated.</p>	<p><b>Benjamin</b> is a long-lived donkey who refuses to feel enthused by the rebellion. Some say he represents the aged people of Russia, who remained cynical of the revolution.</p>



Chapter Quotations	✓
1. "Weak or strong, clever or simple, we are all brothers. No animal must ever kill any other animal. All animals are equal."	
2. "Never mind the milk, comrades!" cried Napoleon, placing himself in front of the buckets. "That will be attended to. The harvest is more important."	
3. "Milk and apples (and this has been proved by Science, comrades) contain substances absolutely necessary to the well-being of a pig. We pigs are brainworkers."	
4. "War is war. The only good human being is a dead one."	
5. Napoleon produced no schemes of his own, but said quietly that Snowball's would come to nothing, and seemed to be biding his time.	
6. "Comrades," he said quietly, "do you know who is responsible for this? Do you know the enemy who has come in the night and overthrown our windmill? SNOWBALL!"	
7. One Sunday morning Squealer announced that the hens, who had just come in to lay again, must surrender their eggs. Napoleon had accepted a contract for four hundred eggs a week.	
8. Napoleon was now never spoken of simply as "Napoleon." He was always referred to in formal style as "our Leader, Comrade Napoleon."	
9. Meanwhile life was hard. The winter was as cold as the last one had been, and food was even shorter. Once again all rations were reduced, except those of the pigs and the dogs.	
10. "All animals are equal, but some animals are more equal than others."	
Key Vocabulary	✓
<b>Tyranny</b> – a situation in which a leader or government has too much power and uses that power in a cruel and unfair way.	
<b>Revolution</b> - a situation in which people fight against those who are in charge of them.	
<b>Corruption</b> - when people use their power in a dishonest way order to make life better for themselves.	
<b>Propaganda</b> – Information that is meant to make people think a certain way. The information may not be true.	
Key terminology	✓
<b>Allegory</b> – a text that can be interpreted to reveal a hidden meaning, typically a moral or political one.	
<b>Moral</b> - concerned with the principles of right and wrong behaviour.	
<b>Dramatic irony</b> – when the audience knows something that characters don't.	
<b>Symbolism</b> – the use of objects or items to represent other ideas or concepts.	
<b>Characterisation</b> – the building or crafting of a fictional person (or animal).	
<b>Cyclical narrative</b> – a narrative where the beginning and ending are connected.	
<b>Foreshadowing</b> – hinting at events that are yet to happen (usually negative events).	
<b>Theme</b> – an idea that recurs in or runs through a work of art or literature.	

## Food Waste-

In the UK we through away over 7 million tonnes of food and drink a year. This is worth over £120 million pounds. This equals the average family wasting £700 per household. Most of this food wasted from consumers ends up in landfill, this rots down and produces harmful greenhouse gases, for example methane and Carbon Dioxide. The amount of greenhouse gases we are producing has been linked to global warming and climate change.

The food we waste most is   
**Bread-** Fresh Vegetables and fruit, Salad and drinks.  
 The main reasons we waste food are  
 Too much food is prepared and cooked. We do not check labels and food is not used in time.

Reduce your carbon footprint: to

- reduce yours you can,
- Buy fresh local produce
- Cook Fresh Meals
- Use seasonal UK ingredients
- Reduce your consumption of meat- More energy is used to raise animals than to grow cereals.
- Consider the method of cooking you use to reduce the amount of energy used, i.e. Microwave vegetables.

## FOOD MILES

The distance food travels from **Field to Plate**, is one way of indicating the environmental impact of the food we eat. Almost 54 percent of the vegetables and 90 percent of the fruit eaten in the UK is imported. Food is transported across the world because we want to buy foods out of season. For example Asparagus is only in season for May and June in the UK but we like to eat it all year so import it from as far away as Peru. Some foods are flown in and this increases carbon emissions.

## Carbon Footprint –

This measures the impact human activities have on the environment in terms of carbon emissions.

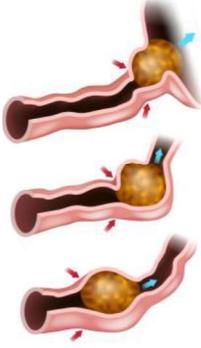
The carbon footprint of a product is the amount of carbon emissions produced in the growing/rearing, processing, production and disposal of food. It is not just the food miles- you need to consider all the processes the food has gone through from seed- to being eaten or disposed of.

**Eco Footprint-** More people including food manufacturers are stopping to consider the impact that our food has on the environment **ECO FOOTPRINT** is the term used to refer to the measurement of our actions on the environment. To achieve sustainable food production the food industry must reduce waste, water and energy inefficiency by using sustainable resources.

**Carbon offsetting-** some people and manufacturers plant trees to absorb the carbon dioxide given off during food production. This is called **Carbon Offsetting**.

**Food Sustainability-** When choosing foods we do need to think about whether they are sustainable, some of the factors you can consider are- Where has the food come from, has it been grown or produced locally, if it was imported could a Fairtrade product have been purchased. How was it produced? For example, were organic or sustainable farming methods of farming used? Is the food sustainable- i.e. have you chosen fish from a sustainable source? i.e. line caught and not trawled? Have you considered the amount of meat that you eat and have you checked if the meat was reared with high welfare standards? How much energy was used in the production, does the company use renewable energy sources? What impact has the production of the food had on the environment? For example pollution and carbon emissions.

**Oesophagus:** Circular muscles in the wall of the oesophagus relax in front of the bolus (a ball like mixture of food and saliva) while circular muscles behind the food contract, pushing the food bolus onward. This is called peristalsis.



## Genetically Modified Foods

The use of new technology in the food industry is controversial, especially products made by modifying or engineering the genetic make up of food. This is undertaken by copying a gene with its code and inserting it into another living organism.

GM means modifying or engineering the genetic make-up of food.

Advantages of GM are:

- improvements to quantity and quality of food.
- can grow in adverse conditions, e.g., drought, herbicide and insect resistant, therefore thrive better.
- high nutritional quality.
- cheaper to produce.

The concerns about GM foods include:

- Their long-term safety is unknown
- Environmental effects, as the pollen from GM crops does not stop in one place
- Ethics – we need adequate labelling: if a product has more than 1% of GM food this must be stated on the label, if it is under 1 per cent it does not need to be stated.

The most common GM foods include- Soy Beans and Corn, these are mostly used as animal feed.



Fairtrade ensures farmers and producers get a fair price for their product. Fairtrade addresses the injustices of conventional trade which traditionally discriminates against the poorest weakest producers

## Key terms

**CARBON FOOTPRINT-** the amount of carbon emissions produced in the growing, processing, production and disposal of food.

**ECO FOOTPRINT-** Measurement of our actions on the environment.

**FOOD MILES -**Distance food travels from farm to plate.

**CARBON OFFSETTING –** planting trees to absorb carbon dioxide.

**SUSTAINABLE FARMING-** using resources that will not run out.

**FOOD WASTE-** Food not consumed or used for its original purpose.

**GENETICALLY MODIFIED (GM) FOODS**  
 Describes foods where the genetic structure has been changed

**FAIRTRADE** an organisation that supports farmers to ensure that they get a fair deal.

**RSPCA ASSURED –** A certification mark given to producers to show buyers animal welfare standards have been applied and checked.

**RED TRACTOR – ASSURED FOOD STANDARDS** A certification mark given to producers to show buyers animal welfare standards have been applied and checked.

**MARINE STEWARDSHIP COUNCIL- An** organisation that ensures sustainable fishing practices have been used in catching seafood





les domiciles	homes
j'habite dans	<i>I live in</i>
il / elle habite dans un appartement	<i>he/she lives in.. flat</i>
une maison	<i>house</i>
une chaumière	<i>a cottage</i>
une villa	<i>a villa</i>
dans un village	<i>in a village</i>
dans une ville	<i>in a town</i>
à la campagne	<i>in the countryside</i>
à la montagne	<i>in the mountains</i>
au bord de la mer	<i>by the sea</i>

les prépositions	prepositions
devant	<i>in front of</i>
dans	<i>in</i>
derrière	<i>behind</i>
entre	<i>between</i>
sous	<i>under</i>
sur	<i>on</i>
à côté de	<i>beside</i>
à droite (de)	<i>to the right (of)</i>
à gauche (de)	<i>to the left (of)</i>
en face	<i>opposite</i>

les pièces	rooms
chez moi, il y a...	<i>in my home, there is/are...</i>
l'entrée	<i>the hallway</i>
la chambre de mes parents	<i>my parent's room</i>
la chambre de ma sœur	<i>my sister's room</i>
ma chambre	<i>my room</i>
la cuisine	<i>the kitchen</i>
le jardin	<i>the garden</i>
la salle à manger	<i>the dining room</i>
le salon	<i>the living room</i>
les toilettes/le WC	<i>toilets</i>
la véranda	<i>conservatory</i>
le garage	<i>the garage</i>
il n'y a pas de...	<i>there isn't a /there aren't any...</i>

habiter	to live
j'habite	<i>i live</i>
tu habites	<i>you live</i>
il/elle/on habite	<i>he/she/we live</i>
nous habitons	<i>we live</i>
vous habitez	<i>you live</i>
ils/elles habitent	<i>they live</i>

les endroits/places	
Dans ma ville, il y a...	<i>In my town, there is..</i>
un stade	<i>a stadium</i>
un château	<i>a castle</i>
un centre commercial	<i>a shopping centre</i>
un marché	<i>a market</i>
un centre de loisirs	<i>a leisure centre</i>
une piscine	<i>a swimming pool</i>
une église	<i>a church</i>
une patinoire	<i>an ice rink</i>
des musées	<i>some museums</i>
des magasins	<i>some shops</i>

**Les meubles et les appareils/furniture and appliances**

l'armoire (f)	<i>wardrobe</i>
le bureau	<i>desk</i>
le canapé/la chaise	<i>sofa/chair</i>
la douche	<i>shower</i>
la fenêtre	<i>window</i>
le frigo	<i>fridge</i>
le lavabo	<i>wash basin</i>
le lit	<i>bed</i>
la machine à laver	<i>washing machine</i>
la télé (satellite)	<i>(satellite) tv</i>



les adjectifs	adjectives
petit(e)	small
grand(e)	big
beau/belle	beautiful
joli(e)	pretty
vieux/vieille	old
nouveau/nouvelle	new
neuf/neuve	brand new
moderne	modern
confortable	comfortable
gros(se)	big (for animals/objects)/fat

Half-term 4

Comparatives

**Studio Grammaire** Page 82

You use comparative adjectives as follows:

**plus + adjective + que** more ... than  
*plus grand que* bigger than

**moins + adjective + que** less ... than  
*moins joli que* less pretty than **or**  
 not as pretty as

Là où j'habite

Pouvoir – To be able to/can	
Je peux	I can
Tu peux	You can
Il/elle/on peut	He/she/one/we can
Nous pouvons	We can
Vous pouvez	You can
Ils/elles peuvent	they can

French

Irregular adjectives

**Studio Grammaire** Page 82

The following adjectives are irregular. They have a special form when followed by a masculine noun beginning with a vowel or a silent **h**.

	Masculine	Feminine	Masculine before vowel or silent 'h'
beautiful	beau	belle	bel
old	vieux	vieille	vieil
new	nouveau	nouvelle	nouvel

These adjectives come **before** the noun they describe. So do *grand, petit, gros* and *joli*, but most other adjectives go **after** the noun.

La météo

La météo	
La météo/le temps	The weather
Quand	when....
il y a du soleil	It is sunny
il y a du vent	it is windy
il y a des nuages	there are clouds
il fait beau	it's nice weather
il fait mauvais	it's bad weather
il fait chaud	it's hot
il fait froid	it's cold
il pleut	it's raining
il neige	it's snowing

Adjectives that precede the noun:

**B.A.N.G.S**

Beauty beau, belle, jolie  
 Age vieille, vieux, jeune  
 Numbers 1, 3, 7  
 Goodness gentil, bon, mauvais  
 Size grand, petit

Dans ma ville il y a...	
Dans ma ville...	In my town...
On peut...	we can
visiter	visit
regarder	watch
manger	eat
nager	swim
voir	see

La météo	
La météo/le temps	The weather
Quand	when....
il y a du soleil	It is sunny
il y a du vent	it is windy
il y a des nuages	there are clouds
il fait beau	it's nice weather
il fait mauvais	it's bad weather
il fait chaud	it's hot
il fait froid	it's cold
il pleut	it's raining
il neige	it's snowing



YEAR 8 GEOGRAPHY



Superpowers

**Lesson 1. What is a superpower?**

**Superpower-** a country with 'the capacity to project dominating power and influence anywhere in the world, sometimes in more than one region of the globe at a time'.

**Factors used to define a superpower**

- **Resources** – Some resources such as oil and gas allow a country to become wealthy and powerful through trade.
- **Size** – countries with a larger area tend to have more resources and more neighbouring countries to influence.
- **Soft Power** - (culture) a nations way of life, values or beliefs. The more appealing this is the powerful.
- **Political Power** – having a seat on organisations such as the UN security council allows them power over global issues.
- **Population** –large populations are considered important to a country as they provide workers and more potential earnings
- **Economic Strength** - Countries with the largest economies have a big influence over global economies
- **Military Strength** – the more money spent on military and the type of weapons owned by government (eg nuclear weapons) influence how powerful a country is.

**Lesson 2 The rise and fall of superpowers.**

**Empire** – A group of countries ruled over by one state or monarch.

**Colonialism** – Occupying a country with settlers and exploiting it economically.

**Geopolitics-** Geopolitics is the study of the effects of Earth's geography (human and physical) on politics and international relations.

Why was Britain able to build such a large empire?

**Technology and Industrial Superiority** - as the first nation to experience an industrial revolution they were able to provide mass produced goods before others putting them at an advantage.

**The British Navy and Maritime Power** - Britain dominated maritime communication and trade routes. Being an island nation, shipbuilding and sailing were important skills.

What caused the fall of the British Empire?

**The Second World War** – After the war ended USA and Russia had more money, people and nuclear weapons leaving the world less reliant on Britain and its empire to keep order.

**Money** – the cost of the second world war was high for Britain in both human life and money. Britain could not afford to keep colonies that made no profit or to fight the countries who wanted independence.

**Nationalism** – Many colonies wanted independence and have their own culture and traditions at the heart of the country. In Britain too, people were moving away from the idea of spending on colonies, favouring investing in things like the NHS.

**Lesson 3 & 4. Emerging superpowers**

**The geography of superpowers is always changing.**

**Uni-Polar world system:** where most of the world region's economic, social, cultural aspects are influenced by a single state/country.

**Bi-Polar world system:** a system of world order in which the majority of global economic, military and cultural influence is held between two states.

**Multi-Polar world system:** power is distributed at least among 3 significant poles (countries).

**BRICS:** These are Brazil, Russia, India and China and together they account for 35% of the worlds GDP and 45% of the world's population.

**Lesson 5 & 6. South China Sea**

**Contested** – In competition for a position of power.

**Sovereignty:** the authority of a state to govern itself or another state.

The South China Sea and two island chains are claimed by a number of countries. China/Taiwan/Vietnam/The Philippines.

This area is said to be rich in oil and gas. It is also a major shipping route and home to fishing grounds that supply large numbers of people with food and livelihoods.

**Lesson 7. Who are the MINTS?**

Mexico, Indonesia, Nigeria and Turkey are all potential new economic superpowers.

**Nigeria:** has oil, an average age of 18 and has been an attractive country for investors, but corrupt governments mean that it is not as powerful as it should be.

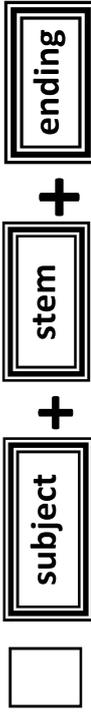
**Turkey:** average age 29, has had steady economic growth, despite several collapses and has a good strategic location. Suffers from political turmoil

**Mexico:** has the largest economy of all the MINT countries. An average age of 28. 75% of all exports go to the USA. Suffers from corruption and the grip of drug cartels.

**Indonesia:** top foreign export is mining, is pinning hopes on young entrepreneurs to attract investors. The largest of the MINT nations.



To use a regular present tense verb you need:



ich	I	- e
du	you	- st
er/sie/es	he/she/it	- t
wir	we	- en
ihr	you	- t
sie	they	- en
Sie	you (polite)	- en

**Chop the -en off the infinitive**

**For example:**  
lernen  
stem = lern-

German word order rules

**verb second:**  
In German, the verb is always the second idea in a sentence. If you start a sentence with a time phrase, the verb has to come immediately afterwards.  
Am Montag habe ich Mathe. Heute haben wir Sport.

**verb to end:**  
the conjunction “weil” sends the verb to the end of the clause. Ich mag Mathe, weil es Spaß macht.

Modal verbs

Modal verbs are usually used with an infinitive which goes at the end of the clause.

<u>dürfen - to be allowed to</u>		
ich darf	I am allowed to	
du darfst	you're allowed to	
er/sie/es darf	he/she/it is allowed to	spielen laufen benutzen singen
man darf	you are allowed to	
man darf nicht	you are not allowed to	

<u>In der Schule – In school</u>	
die Lehrerin(-nen)	teacher(s) (female) German teacher(s) (fem)
die Deutschlehrerin (-nen)	teacher(s) (male) sports teacher(s) (male)
der Lehrer(-)	What is there? There is ...
der Sportlehrer(-)	classroom(s)
Was gibt es?	table(s)
Es gibt	chair(s)
ein Klassenzimmer(-)	window(s)
einen Tisch(-e)	wall(s)
einen Stuhl(-'e)	door(s)
ein Fenster(-)	corridor(s)
eine Wand(-'e)	There are many...
eine Tür(-en)	
einen Korridor(-e)	
Es gibt viele ...	
<u>Wo ist das? – Where is it?</u>	

in der Schule	in school
im Klassenzimmer	in the classroom
im Korridor	in the corridor
an der Wand	on the wall
am Fenster	on the window
am Tisch	at the table
auf dem Tisch	on the table
neben der Tür	near/next to the door

Essential irregular verbs

mögen - to like

ich mag	I like
du magst	you like
er/sie/es mag	he/she/it likes
wir mögen	we like
ihr mögt	you (pl) like
sie mögen/ Sie mögen	they/you (formal) like

haben – to have

ich habe	I have
du hast	you have
er/sie/es hat	he/she/it has
wir haben	we have
ihr habt	you (pl) have
sie haben/ Sie haben	they/you (formal) have

sein - to be

ich bin	I am
du bist	you are
er/sie/es ist	he/she/it is
wir sind	we are
ihr seid	you (pl) are
sie sind/ Sie sind	they/you (formal) are



Die Schulfächer – school subjects

Deutsch	German
Englisch	English
Erdkunde	geography
Geschichte	history
Informatik	ICT
Kunst	art
Mathe	maths
Musik	music
Naturwissenschaften	science
Sport	sport/PE
Technik	technology
Theater	drama

Meinungen – Opinions

Mein Lieblingsfach ist ...	My favourite subject is ...
furchtbar	awful
einfach	easy
schwierig	difficult
interessant	interesting
langweilig	boring
nützlich	useful
nutzlos	useless
faszinierend	fascinating
nervig	irritating
supercool	really cool
stinklangweilig	dead boring

Die Wochentage – The days of the week

Montag	Monday
Dienstag	Tuesday
Mittwoch	Wednesday
Donnerstag	Thursday
Freitag	Friday
Samstag	Saturday
Sonntag	Sunday
Was hast du am ...?	What do you have on ...?
Am Dienstag habe ich ...	On Tuesday, I have ...
Am Sonntag haben wir keine Schule.	We have no school on Sunday.

Die Zeit – The time

Wann?	When ?
Um wie viel Uhr?	At what time ?
Um acht Uhr dreißig.	at 8:30
Wie viel Uhr ist es?	What time is it ?
Es ist neun Uhr fünfzig.	It is 9:50.
in der ersten Stunde	in the first lesson
vor der Pause	before the break
nach der Mittagspause	after lunch break
heute	today
morgen	tomorrow

Eigenschaften - Characteristics

Er/Sie ist ...	He/She is ...
alt	old
fair	fair
freundlich	friendly
jung	young
launisch	moody
streng	strict
unpünktlich	unpunctual
lustig	funny
nervig	annoying
Sie sind ...	They are ...

Oft benutzte Wörter – High-frequency words

denn/weil	because
zu	too
sehr	very
ziemlich	quite, fairly
ein bisschen	a bit
nicht	not
an	at, by, on (wall)
neben	near, next to
auf	on (top of)
sein/seine	his
ihr/ihre	her



# Graphic Communication - Book Cover Design

Key terms	LCWC	tick
Book cover design	In combining form and function, a great book cover must: Visually stand out in a crowded bookstore – or as an online thumbnail; Legibly state the title and the author's name; Communicate the book's tone and genre.	
Emphasis	Referring to the focal point of a design and the order of importance of each element within a design	
Contrast	Contrast is what people mean when they say a design "pops." It comes away from the page and sticks in your memory. Contrast creates space and difference between elements in your design. Your background needs to be significantly different from the color of your elements, so they work harmoniously together and are readable.	
Hierarchy in typography	Typographic hierarchy shows the reader which information to focus on, which is most important, and which just supports the main points. Make sure to use typographic hierarchy to bring attention to the more important text.	

The most important book cover elements:

- 1) Typography
- 2) Color palette
- 3) Imagery

## Understanding Genres & Trends

Each genre has visual expectations. For example:

- **Thrillers** – Dark tones, bold fonts, and mysterious imagery.
- **Romance** – Soft colors, elegant scripts, often featuring couples.
- **Fantasy** – Detailed illustrations, medieval fonts, magical elements.
- **Non-fiction** – Minimalist, bold typography, straightforward imagery.

## The Psychology of Covers

- **First Impressions Matter** – Covers should be eye-catching and clear.
- **Emotional Connection** – The imagery should evoke curiosity or intrigue.
- **Marketability** – Covers should align with reader expectations to drive sales

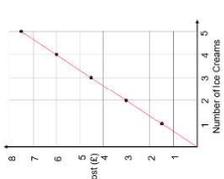
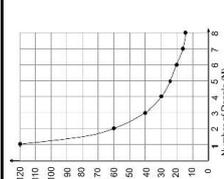
The diagram shows a book cover layout with the following elements labeled:

- Book summary**: Located at the top left of the cover.
- Endorsement**: Located below the book summary.
- Barcode and price**: Located at the bottom left of the cover.
- Spine**: The right edge of the book cover.
- TAGLINE**: Large text at the top center.
- MIKE ENGEL**: Author name at the top left.
- Author**: Label for the author's name.
- Illustration or photo**: A lightbulb icon representing an illustration or photo.
- Title**: The main title of the book.
- ROMAN**: A name or word below the title.
- Subtitle or tagline**: Text below the main title.





Keyword	Definition	Example(s)
Speed	<p>The formulae relating speed, distance and time are:</p> $speed = \frac{distance}{time}$ $distance = speed \times time$ $time = \frac{distance}{speed}$	<p>A runner runs 10 km in 1 hour and 37 minutes. Work out the average speed in kilometres per hour.</p> <p>1 hour and 37 minutes = <math>1\frac{37}{60}</math> hours</p> $speed = \frac{distance}{time} = \frac{10}{1\frac{37}{60}} = 6.19 km/h$
Density	<p>A measure of how tightly matter is packed within a 3D space.</p> $density = \frac{mass}{volume}$	<p>A piece of iron has a volume of 20 cm<sup>3</sup> and a mass of 158 g. Calculate the density of iron.</p> $density = \frac{mass}{volume} = \frac{158}{20} = 7.9 g/cm^3$
Rate of flow	<p>A measure of the volume of liquid passing over a given time.</p> $flow\ rate = \frac{capacity}{time}$	<p>A container of capacity 2 litres is filling at a rate of 40 ml/s. How long will it take to fill.</p> $time = \frac{capacity}{flow\ rate} = \frac{2000}{40} = 50s$
Pressure	<p>A measure of force over an area, with a unit of Newtons per square metre or pascal.</p> $pressure = \frac{force}{area}$	<p>A crate with a square base of length 10 cm on the floor exerts a force of 350 N. What is the pressure exerted?</p> $pressure = \frac{force}{area} = \frac{350}{0.1^2} = 35000 N/m^2$

Keyword	Definition	Example(s)												
Direct proportion	A relationship in which one variable increases at the same rate as another	<table border="1"> <tr> <td>Petrol (litres)</td> <td>15</td> <td>60</td> </tr> <tr> <td>COST (£)</td> <td>20.40</td> <td>81.60</td> </tr> </table> <p><math>15 \times 4 = 60</math> and <math>20.40 \times 4 = 81.60</math> so petrol and cost are directly proportional</p>  <p>Cost = 1.5 X Number of ice creams</p> <table border="1"> <tr> <td>Speed (x: km/h)</td> <td>20</td> <td>40</td> </tr> <tr> <td>Time (y: hours)</td> <td>6</td> <td>3</td> </tr> </table> <p><math>20 \times 2 = 40</math> and <math>6 \div 2 = 3</math> so speed and time are inversely proportional. Note that <math>xy = 120</math></p>  <p>Number of People x Cost = 120</p>	Petrol (litres)	15	60	COST (£)	20.40	81.60	Speed (x: km/h)	20	40	Time (y: hours)	6	3
Petrol (litres)	15	60												
COST (£)	20.40	81.60												
Speed (x: km/h)	20	40												
Time (y: hours)	6	3												
Graph of direct proportion	A linear graph (straight line) that goes from the origin. The formula will be $y = kx$ where k is the gradient of the line.													
Inverse proportion	A relationship between two variables in which as one variable increases, the other decreases at the same rate. In the formula $xy = 120$ , x and y are in inverse proportion.													
Graph of inverse proportion	A reciprocal curve that never touch either axes. The formula will be $xy = k$ or $y = \frac{k}{x}$ where k is a number													



Keyword	Definition	Example(s)
Inequality symbols	The inequality symbols are $>$ greater than $\geq$ greater than or equal to $<$ less than $\leq$ less than or equal to	$7 > 5$ $-3 \leq 10$ $2 \geq 2$ $1 \leq 2 < 5$ $x > 7$
Inequalities on a number line	Inequalities can be shown on a number line. Hollow circles are used for strict inequalities ( $<$ or $>$ ) and filled circles are used for inclusive inequalities ( $\leq$ or $\geq$ )	$x \geq 3$ 
Linear inequality	Like a linear equation but with an inequality symbol instead of an equals. Solved in the same way as linear equations except multiplying or dividing by a negative number changes the direction of the inequality.	$1 - 2x < 9$ $-2x < 8$ $x > 4$

Keyword	Definition	Example(s)
Bounds	The upper and lower bounds are the maximum and minimum values that a number could have been before it was rounded.	If a measurement ( $x$ ) was rounded to 3 cm to the nearest centimetre, it could have been as small as 2.5 cm or nearly as big as 3.5 cm.
Error interval	An error interval writes down a number's bounds using inequality symbols.	The error interval is $2.5 \text{ cm} \leq x < 3.5 \text{ cm}$

Calculations with bounds	<p>If X has the error interval <math>X_{LB} \leq X &lt; X_{UB}</math> and Y has the error interval <math>Y_{LB} \leq Y &lt; Y_{UB}</math> then</p> <p>Addition  <math>X_L + Y_L \leq X + Y &lt; X_U + Y_U</math></p> <p>Multiplication  <math>X_L \times Y_L \leq X \times Y &lt; X_U \times Y_U</math></p> <p>Subtraction  <math>X_L - Y_U \leq X - Y &lt; X_U - Y_L</math></p> <p>Division  <math>X_L \div Y_U \leq X \div Y &lt; X_U \div Y_L</math></p>	<p>A rectangle has side lengths 10 m and 4 m, both to the nearest metre. Find the maximum possible area of the rectangle.</p> <p><math>x = 10</math>, then <math>9.5 \leq x &lt; 10.5</math>  <math>y = 4</math>, then <math>3.5 \leq y &lt; 4.5</math></p> <p>Maximum area will be  <math>x_U \times y_U = 10.5 \times 4.5 = 47.25 \text{ m}^2</math></p>
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This QR code will take you to a Spotify playlist with audio examples of many of the concepts covered on this sheet and in lessons. You will find it helpful to listen to these as you learn.



**Theme** the opening or original tune

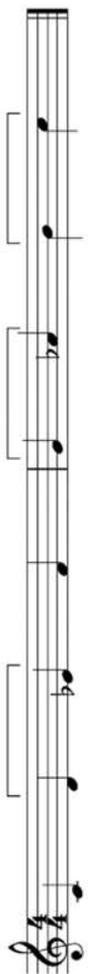
**Variation** a version of a theme which is in some way different

**Theme and variations** a way of structuring a piece of music by playing an original theme and then a series of variations

**Major key** music which uses the major scale is in a major key. The major scale has a fixed pattern of where the semitones come:



**Minor key** music which uses the minor scale is in a minor key. In the minor scale the 3rd and 6th notes are flattened, meaning that the semitones are in a different place compared to the major scale:



**Counter melody** a second melodic idea played against the main melody

**Canon** when one part strictly imitates another at a particular time distance

**Round** a special type of canon where you can go back to the beginning and repeat the canon endlessly e.g. *London's burning*

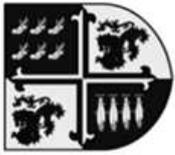
**Retrograde** when an idea is played backwards to develop the music

**Inversion** when an idea is played upside down to develop the music

**Diminution** when a melodic idea is played with shorter note lengths

**Augmentation** when an idea is played with longer note lengths

**Sequence** when a short melodic idea or cell is played more than once going up or down in pitch each time it is heard.



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**Layering** Creating a texture by adding and taking away different strands of the music

**Minimalism** A style of music based on repetition and gradual change which developed in the 1960's and 70's

**Motif** A short musical idea which is reused and varied to create a piece of music

**Note addition** Adding an additional note or notes to a motif

**Note subtraction** Taking a note away from a motif

**Phase shifting** Playing a pattern at a slightly different timing from the original, and moving the time difference between them

The musical elements:

## DR T SMITH

**Dynamics**

Changes in volume

**Rhythm**

Patterns of note lengths and accents

**Texture**

The way musical lines are combined in a piece

**Structure**

The different sections of a piece and the order in which they happen

**Melody**

Anything about the tunes in a piece of music

**Instruments**

Which instruments are used, and what they do

**Tonality**

Information about the key a piece of music uses, and how it changes

**Harmony**

The chords that are used



Keyword	Learn	✓
Bully	is the purposeful, repeated behaviour, by an individual or group of people, designed to cause physical and emotional distress.	
Cyberbully	is bullying carried out using technologies, particularly devices connected to the internet or to mobile networks.	
Assumption	a thing that is accepted as true or as certain to happen, without proof.	
Consequence	The result or effect, typically one that is unwelcome or unpleasant	
Consent	is an agreement by choice made by someone with the freedom and capacity to consent.	
Contraception	A method to prevent pregnancy.	
STI	A sexually transmitted infection (STI) is passed from person to person through having sex and sexual contact. You can get an STI from a male or a female partner, so it's important that you stay safe and look after your sexual health.	



## Online safety advice:

### Think before you post

Don't upload or share anything you wouldn't want your grandparents seeing. Once you post something, you lose control of it.

### Don't share personal details

Keep things like your address, phone number, full name, school and date of birth private, and check what people can see in your privacy settings. **Watch out for phishing and scams**

Phishing is when someone tries to trick you into giving them information, like your password. Never click links from emails or messages that ask you to login.

### Think about who you're talking to

There are lots of ways that people try to trick you into trusting them online.

### Keep your device secure

Make sure that you're keeping your information and device secure.

### Never give out your password

Make sure you pick strong, easy to remember passwords.

### Cover your webcam

Some viruses will let someone access your webcam without you knowing, so make sure you cover your webcam whenever you're not using it.

## What to do about bullying:

- Talk to any member of staff
- Use the "report bullying" box in the library
- Talk to an adult at home and ask them to help
- Use the "report a concern" link on the school website



## Support and useful websites:

For further guidance or support:

- speak to a parent/carer, tutor, head of year, school nurse/counsellor or other trusted member of staff in the school
- GP or a sexual health clinic

Brook: [www.brook.org.uk/help-advice](http://www.brook.org.uk/help-advice)

Childline: [www.childline.org.uk](http://www.childline.org.uk) 0800 1111

Get It: [www.getit.org.uk](http://www.getit.org.uk)

Child exploitation and online protection agency (CEOP) [CEOP Safety Centre](http://CEOP Safety Centre)





**Key Words:**

- ❑ **Humanism:** a non-religious belief system that focuses on the importance of reason, empathy, and compassion for others
- ❑ **Worship:** An act performed to communicate and express gratitude and reverence towards a deity(ies); God
- ❑ **Denomination:** Meaning type within for example within religions it is a branch or sect within a main religion such as Catholic and Protestant within the Christian Church
- ❑ **Meditation:** The act of giving your attention to only one thing, either as a religious activity or as a way of becoming calm and relaxed
- ❑ **Enlightenment:** The state of understanding something; in Hinduism and Buddhism, the highest spiritual state that can be achieved

**Scientific theories for the origins of the universe:**

- ❑ **Big Bang theory:** The theory states that around 14 billion years ago all matter and energy in the universe was at a point of infinite density and temperature known as a singularity, which then expanded rapidly. Eventually stars, galaxies and planets formed. This expansion was the beginning of time and continues to this day.
- ❑ **Evolution:** In 1859 Charles Darwin published 'On the Origin of Species', which set out his theory of evolution by natural selection. Darwin explained that living creatures evolved through a process of gradual change over millions of years and that the naturally best suited creatures survived ('Survival of the fittest')
- ❑ **Natural Selection:** The process by which evolution is believed to work. Animals are continuously adapting and develop changes in the genes (genetic traits such as eye and skin colour) that, if give better chances of survival are more likely to be passed on to offspring.

**The First Cause argument**

- ❑ Everything I've seen in the universe has a cause
- ❑ What is true of everything *in* the universe must be true of the universe too.
- ❑ Therefore the universe needs a cause too
- ❑ This would be the First Cause and it would need to be outside of the universe.
- ❑ Therefore God probably exists to have caused the universe.

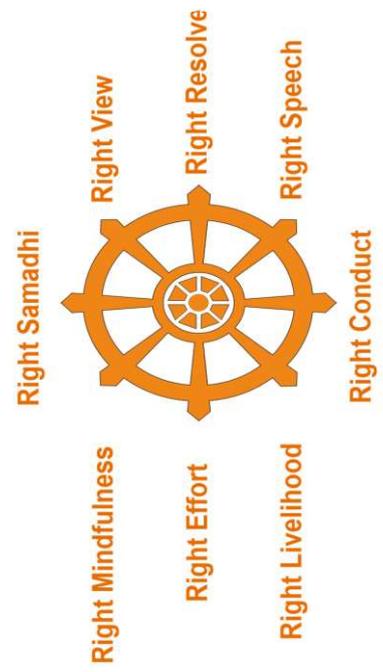
**The Design argument – The archer and the arrow**

- ❑ St Thomas Aquinas; Noted that everything in existence undergoes constant changes
- ❑ For Aquinas, non-intelligent things can only be moved by intelligent things to achieve their 'end's'
- ❑ Aquinas compared this to an archer who aims the arrow towards a target.
- ❑ The arrow has the ability to hit the bullseye, but it is the archer who directs the arrow to the target.
- ❑ For Aquinas, God is the archer and he has given everything including humans telos (purpose) that he directs us towards.

**Five Pillars of Islam:**

- ❑ **Shahadah:** the Muslim declaration of faith.
- ❑ **Salah:** The five daily prayers, which can be done anywhere.
- ❑ **Sawm:** The obligation on Muslims to fast between sunrise and sunset during the month of Ramadan.
- ❑ **Zakah:** The practice where a Muslim gives 2.5 per cent of their earnings to charity
- ❑ **Hajj:** The Muslim pilgrimage, which it is compulsory for Muslims to undertake at least once in their lifetime as long as they are healthy and can afford it.

**Eight fold path - the route to enlightenment**



**Beliefs through symbols**

	Christianity: The Cross or Crucifix		Hinduism: AUM; the sound of creation
	Islam: The Star and Crescent		Sikhism: The Khanda
	Buddhism: The Eight Fold Path of enlightenment		BRITISH HUMANIST ASSOCIATION



## Chemistry H – Types of Reaction

Keyword	Learn
Fuel	Stores energy in a chemical store which it can release as heat.
Chemical reaction	A change in which a new substance is formed.
Physical change	One that changes the physical properties of a substance, but no new substance is formed.
Reactants	Substances that react together, shown before the arrow in an equation.
Products	Substances formed in a chemical reaction, shown after the reaction arrow in an equation.
Conserved	When the quantity of something does not change after a process takes place.
Mass	Mass is conserved in a chemical reaction.
Combustion	A reaction with oxygen in which energy is transferred to the surroundings as heat and light.
Thermal decomposition	A reaction where a single reactant is broken down into simpler products by heating.
Chemical changes	Chemical changes can be described by a model where atoms and molecules in reactants rearrange to make the products and the total number of atoms is conserved.

## Physics I – Work done

Keyword	Learn
Work	The transfer of energy when a force moves an object, in joules.
Work done =	Force x distance
Lever	A type of machine which is a rigid bar that pivots about a point.
Input force	The force you apply to a machine.
Output force	The force that is applied to the object moved by the machine.
Displacement	The distance an object moves from its original position.
Deformation	When an elastic object is stretched or squashed, which requires work.



## Biology H - Respiration

Keyword	Learn
Respiration	A series of chemical reactions, in cells, that breaks down glucose to provide energy.
Aerobic respiration	Breaking down glucose with oxygen to release energy and producing carbon dioxide and water.
Anaerobic respiration	Releasing energy from the breakdown of glucose without oxygen, producing lactic acid (in animals) and ethanol and carbon dioxide (in plants and microorganisms).
Fermentation	Yeast fermentation is used in brewing and bread-making.
Energy	Most living things use aerobic respiration but switch to anaerobic respiration, which provides less energy, when oxygen is unavailable.

The word equation for aerobic respiration.



## Chemistry I – Chemical Energy

Keyword	Learn
Chemical bonds	Force that holds atoms together in molecules.
Energy changes	During a chemical reaction bonds are broken (requiring energy) and new bonds formed (releasing energy).
Exothermic	Reaction in which energy is given out, usually as heat or light.  If the energy released making new bonds is greater than the energy required to break old bonds, the reaction is exothermic.
Endothermic	Reaction in which energy is taken in, usually as heat.  If the energy released making new bonds is less than the energy required to break old bonds, the reaction is endothermic.
Catalysts	Substances that speed up chemical reactions but are unchanged at the end.



Present tense verb endings			
	-AR	-ER	-IR
I (yo)	o	o	o
You (tu)	as	es	es
He/she/it (el/ella)	a	e	e
We (nosotros)	amos	emos	imos
You all (vosotros)	áis	éis	ís
They (ellos/ellas)	an	en	en

Possessive adjectives		
<i>Possessive adjectives are the words for 'my', 'your', 'his', 'her', etc.</i>		
My	mi hermano	mis hermanos
Your	tu hermano	tus hermanos
His / her	su hermano	sus hermanos

High-frequency words	
además	in addition
porque	because
sin embargo	however
pero	but
o	or
bastante	quite
muy	very
un poco	a bit

Question words	
¿Cómo?	How?
¿Dónde?	Where?
¿Por qué?	Why?
¿Cuándo?	When?
¿Qué?	What?
¿Cuál?	Which?

Irregular verbs	
Tener	To have
tengo	I have
tienes	you have
tiene	he/she has
tenemos	we have
tenéis	you all have
tienen	they have

To be (Description)	
Ser	To be (Description)
soy	I am
eres	you are
es	he / she is
somos	we are
sois	you all are
son	they are

To be (Location)	
Estar	To be (Location)
estoy	I am
estás	you are
está	he / she / it is
estamos	we are
estáis	you all are
están	they are

Adjectives and agreement		
	Singular	Plural
Ending in o/-a	pequeño	pequeños
Ending in -e	inteligente	inteligente
Ending in a consonant	azul	azules

	Masculine	Feminine	Masculine	Feminine
Ending in o/-a	pequeño	pequeña	pequeños	pequeñas
Ending in -e	inteligente	inteligente	inteligente	inteligente
Ending in a consonant	azul	azul	azules	azules

Adjectives describe nouns. Their endings change to agree with the noun they describe. Adjectives fall into 3 main groups. The endings for each group work as seen above.



¿Cuántas personas hay en tu familia?	
En mi familia hay...	In my family there is ....
mis padres	my parents
mi madre	my mum
mi padre	my dad
mi abuelo	my grandfather
mi abuela	my grandmother
mi bisabuela	my great-grandmother
mi tío	my uncle
mi tía	my aunt
mis primos	my cousins
su hermano	his/her brother
sus hermanos	his/her brothers

Los números 20-100	
veinte	20
treinta	30
cuarenta	40
cincuenta	50
sesenta	60
setenta	70
ochenta	80
noventa	90
cien	100
treinta y uno	31

¿Cómo es?	
es...	he / she is
no es muy ...	he / she isn't very
alto/a	tall
bajo/a	short
delgado/a	slim
gordo/a	fat
guapo/a	good-looking
inteligente	intelligent
joven	young
viejo/a	old
tiene pecas	he has freckles
tiene barba	he has a beard
mi mejor amigo	my best friend
su mejor amigo	his / her best friend

¿Cómo es tu casa o tu piso?	
Vivo en ...	I live in ...
una casa	a house
un piso	a flat
antiguo/a	old
bonito/a	nice
cómodo/a	comfortable
moderno/a	modern
pequeño/a	small

¿Cómo tienes el pelo ?	
Tengo el pelo ...	I have ... hair
castaño	brown
negro	black
rubio	blond
azul	blue
liso	straight
rizado	curly
largo	long
corto	short
soy pelirrojo/a	I'm a redhead
soy calvo	I am bald

¿Dónde está?	
Está en ...	It is in ...
el campo	the countryside
la costa	the coast
una ciudad	a city
el desierto	the desert
la montaña	the mountains
un pueblo	a town / village
el norte	the north
el sur	the south
el este	the east
el oeste	the west
el centro	the centre

