2025/26

Cycle 1 Knowledge Navigator

Year 9

Name:

Form:

Morning Meeting Homework

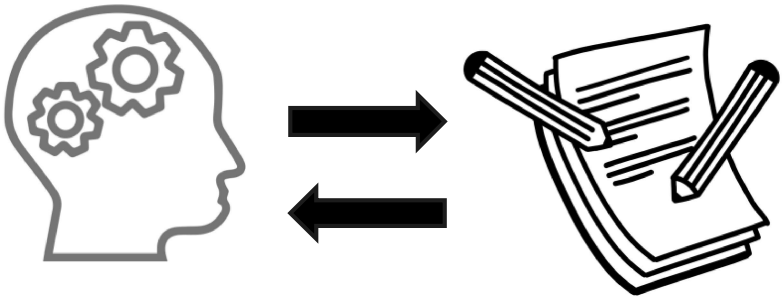
Purpose: to memorise and recall key facts from previous learning

100% Sheets

Purpose: to memorise and recall key facts for current learning

RCWC repeat!

Read the information and try to memorise it.
Cover up the information so you can't see it.
Write down as much as you can remember.
Check what you've written down against the information, and green pen what you've missed.
Repeat this to fill a minimum of 1 A4 side. The more you repeat this process, the more facts you will remember for your exams!



Contents

		Homework Schedule	CYCLE 1	1

	Week 1		Week 2		Week 3		Week 4		Week 5	
Monday			1/9/25	French	8/9/25	French	15/9/25	French	22/9/25	French
Tuesday			2/9/25	Science: Page 5 Box 1	9/9/25	Science: Page 5 Box 2&3	16/9/25	Science: Page 5 Box 1	23/9/25	Science: Page 5 Box 2&3
Wednesday			3/9/25	History Section A *Sparx Maths*	10/9/25	Geography Box 1 *Sparx Maths*	17/9/25	History Section B *Sparx Maths*	24/9/25	Geography Box 2 *Sparx Maths*
Thursday			4/9/25	English: Box 1	11/9/25	English: Box 2	18/9/25	English: Box 3	25/9/25	English: Box 4
Friday			5/9/25	Spellings Week 2	12/9/25	Spellings Week 3	19/9/25	Spellings Week 4	26/9/25	Spellings Week 5

	Week 6		Week 7		Week 8		Week 9		Week 10	
Monday	29/9/25	French	6/10/25	French	13/10/25	French	3/11/25	French	10/11/25	French
Tuesday	30/9/25	Science: Page 5 Box 4&5	7/10/25	Science: Page 5 Box 6&7	14/10/25	Science: Page 5 Box: 4&5	4/11/25	Science: Page 4 Box 3	11/11/25	Science: Page 4 Box 1&2
Wednesday	1/10/25	History Section C *Sparx Maths*	8/10/25	Geography Box 3 *Sparx Maths*	15/10/25	History Section D *Sparx Maths*	5/11/25	Geography Box 4 *Sparx Maths*	12/11/25	History Section E *Sparx Maths*
Thursday	2/10/25	English: Box 5	9/10/25	English: Box 6	16/10/25	English: Box 1	6/11/25	English: Box 2	13/11/25	
Friday	3/10/25	Spellings Week 6	10/10/25	Spellings Week 7	17/10/25	Spellings Week 8	7/11/25	Spellings Week 9	14/11/25	

	Week 11		Week 12		Week 13	
Monday	17/11/25	French	24/11/25	French	1/12/25	French
Tuesday	18/11/25	Science: Page 4 Box 3	25/11/25	Science: Page 4 Box 4&5	2/12/25	Science: Page 4 Box 6
Wednesday	19/11/25	Geography Box 5 *Sparx Maths*	26/11/25	History Section F *Sparx Maths*	3/12/25	Geography Box 6 *Sparx Maths*
Thursday	20/11/25	English: Box 3	27/11/25	English: Box 4	4/12/25	English: Box 5
Friday	21/11/25	Spellings Week 11	28/11/25	Spellings Week 12	5/12/25	Spellings Week 13

DIXONS COTTINGLEY ACADEMY

French	TRAVEL AND TOURISM	CYCLE 1	2

Week 1		Week 2		Week 2		Week 3			
Weather		**Countries / Places**		**Nationalities**		**Forms of Travel**		**Adjectives**	
le météo	the weather forecast	aux États-Unis	in/to the USA	marocain	Moroccan	en avion	by plane	loin	far
il fait beau	it's nice	au Maroc	in/to Morrocco	belge	Belgian	en train	by train	cher / moins cher	expensive/ cheap
il fait du soleil	it's sunny	en Suisse	in /to Switzerland	chinois	Chinese	en autobus	by bus	rapide	quick
il fait chaud	it is hot	en Espagne	in/to Spain	francophone	French speaking	en car	by coach	lent	slow
il fait froid	it is cold	en Angleterre	in/to England	québécois	From Québec (Canada)	en voiture	by car	vif	lively
il pleut	it's raining	au Pays de Galles	in/to the USA	suisse	Switzerland	en bateau	by boat	sympa	nice
il neige	it's snowing	en Tunisie	in/to Tunisia	arabe	Arabic	en TGV	by high speed train	confortable	comfortable
il fait du vent	it's windy	en Belgique	in/to Belgium	africain	African	à pied	on foot	étroit	narrow
la pluie / la neige	rain / snow	en Écosse	in/to Scotland	mondial	global	à vélo	by bike	relaxant	relaxing
le brouillard	fog	la Manche	the Channel			à métro	by underground	intéressant	interesting

Week 4		Week 4		Week 5					
Places to stay and visit		**Hotel facilities**		**Verbs**		**Nouns**		**Activities**	
un gite	a holiday home	une vue	a view	rester	to stay	la frontière	the border	aller à la montagne	to go to the mountains
une tente	a tent	une piscine	a swimming pool	louer	to hire	la valise	the suitcase	aller à un parc d'attractions	to go to an amusement park
un château	a castle	la plage	the beach	partir	to leave	l'addition	the bill	visiter un musée	to visit a museum
un chalet	a wooden house in the mountains	la climatisation	air con	voler	to steal	le plat	the dish	acheter des souvenirs	to buy souvenirs
au bord de la mer	by the sea	une douche/ un bain	a shower / a bath	profiter de	to make the most of	le vol	the flight	faire une promenade	to go on a walk
une chambre	a room	un grand lit	a double bed	dormir	to sleep	le séjour	the stay	faire les magasins	to go shopping
une île	an island	la porte	door	passer du temps	to spend time	l'argent	money	faire du tourisme	to do tourist activities
un spectacle	a show	l'accueil	reception / welcome	voyager	to travel	le retour	the return	sortir en ville	to go out into the town
le pont	the bridge	l'étage	floor	perdre	to lose	le logement	accommodation	essayer voir	to try to see

French	WHERE PEOPLE LIVE	CYCLE 1	3

Week 6

Conditional / Simple Future

J'irais	I would go
Je visiterais	I would visit
Je dormirais	I would sleep
Je jouerais	I would play
Je sortirais	I would go out
Je voyagerai	I will travel
Je mangerai	I will eat
Je louerai	I will hire
Je jouerai	I will play
Je traduirai	I will translate
J'inclurai	I will include

Week 7

Past Perfect

Je suis allé	I went
Je suis resté	I stayed
J'ai fait	I did
J'ai nagé	I swam
J'ai commandé	I ordered
J'ai traversé	I crossed
J'ai rêvé	I dreamt
J'ai dormi	I slept
J'ai acheté	I bought
J'ai organisé	I organised
J'ai rémarqué	I noticed

Week 8

Town - Key Nouns

une maison	house	la circulation	traffic
un appartement	apartment	l'abre	tree
une chambre	room	le coin	corner
une fenêtre	window	la rue	street
une ferme	farm	la route	road
le voisin	neighbour	le ciel	sky
le lieu	place	l'arrêt	stop
le mur	wall	l'abri	shelter
le chômage	unemployment	le printemps	spring

Week 9

Verbs

aller	to go
aider	to help
conduire	to drive
donner	to give
se situer	to be situated
travailler	to work
traverser	to cross
utiliser	to use
vendre	to sell
vivre	to live
trouver	to find

Week 10

Places in Town

une église	church	une usine	factory
un château	castle	un marché	market
une piscine	swimming pool	un magasin	shop
une patinoire	ice rink	une mosquée	mosque
un bâtiment	building	un hôpital	hospital
un musée	museum	un jardin	garden

Week 11

Advantages & Disadvantages / Useful Words

il y a	there is / are
il n'y a pas de	there is / are not
on peut	you can
on ne peut pas	you cannot
il y avait	there used to be
c'est / c'était	it is
l'avantage	the advantage
l'inconvénient	the disadvantage
chez moi	at my house
derrière / devant	behind / in front
proche	near
voici	here is

Week 12

Adjectives

sale	dirty	vivant	alive, living
propre	clean	peuplé	populated
grand/petit	big / small	calme	quiet
moderne/ vieux	modern / old	vif	lively
joli	pretty	industriel	industrial
tranquille	quiet	désagreable	unpleasant
vide	empty	égal	equal
ancien	former, ancient	intéressant	interesting
étroit	narrow	jeune	young
beau/belle	beautiful	actuel	current

Week 13

Future Plans

J'irai	I will go
J'habiterai	I will live
Je rencontrai	I will meet
Il y aura	There will be
Je mangerai	I will eat
Je sortirai	I will go out
Je jouerai	I will play
Je regarderai	I will watch
Je relaxerai	I will relax

Ideal Town - Conditional

J'irais	I would go	Je visiterais	I would visit
Je ferais	I would do	J'aurais	I would have
Je voudrais	I would like	Je remplacerais	I would replace
J'aimerais	I would like	Je sauverais	I would save
Je mangerais	I would eat	J'achèterais	I would buy
Je pourrais	I could	Je élirais	I would elect
Ce serait	It would be	Je défendrais	I would defend
J'habiterais	I would live	Je contribuerais	I would contribute
Il y aurait	There would be	Je louerais	I would hire

1. Density of materials

The density equation is Density (in kg/m^3) = mass (in kg) / volume (in m^3) [**ρ = m/V**]

The particle model can be used to explain

- the different states of matter
- differences in density.

2. Changes in state

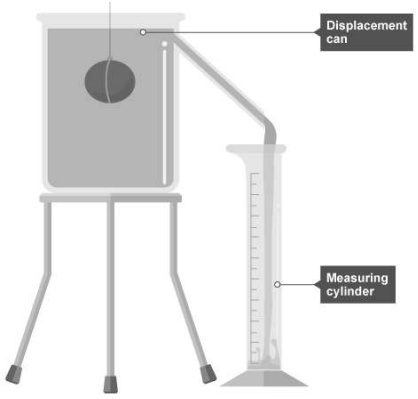
Changes of state are physical changes which differ from chemical changes because the material recovers its original properties if the change is reversed.

Melting	**Freezing**	**Boiling**	**Evaporating**	**Condense**	**Sublimating**
Solid → liquid	Liquid → solid	Liquid → gas	Liquid → gas	Gas → liquid	Solid → gas

3. PHYSICS REQUIRED PRACTICAL - Density

Aim of the experiment

To measure the density of various materials.



Method 1: Regular solids

1. Use a ruler to measure the length (l), width (w) and height (h) of a steel cube.
1. Place the steel cube on the top pan balance and measure its mass.
1. Calculate the volume of the cube using (l × w × h).
2. Use the measurements to calculate the density of the metal.
3. Use vernier callipers to measure the diameter of the sphere.
4. Place the metal sphere on the top pan balance and measure its mass.
5. Calculate the volume of the sphere using $\frac{4}{3}\pi r^3$
6. Use the measurements to calculate the density of the metal.

Method 2: Stone or other irregular shaped object

1. Place the stone on the top pan balance and measure its mass.
2. Fill the displacement can until the water is level with the bottom of the pipe.
3. Place a measuring cylinder under the pipe ready to collect the displaced water.
4. Carefully drop the stone into the can and wait until no more water runs into the cylinder.
5. Measure the volume of the displaced water.
6. Use the measurements to calculate the density of the stone.

4. Levels of organisation

Cells are the basic building blocks of all living organisms.
A tissue is a group of cells with a similar structure and function.
An organ is a group of tissues that work together to perform a specific function.
Organs are organised into organ systems, which work together to form organisms.

5. Digestive juices

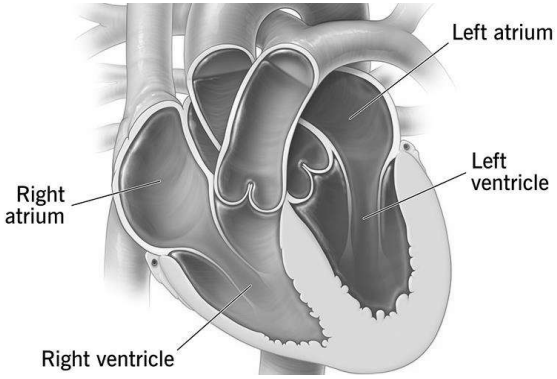
In the digestive system, **enzymes** break food down into into small soluble molecules that can be absorbed into the bloodstream.
Carbohydrases break down carbohydrates to simple **sugars**. (e.g. Amylase breaks down starch into glucose)
Proteases break down proteins to **amino acids**.
Lipases break down lipids (fats) to **glycerol and fatty acids**.
These digested products are used to build new carbohydrates, lipids and proteins. Glucose is used in respiration.
Bile is made in the liver and stored in the gall bladder. It is alkaline to neutralise hydrochloric acid from the stomach. It also emulsifies fat to form small droplets which increases the surface area. The alkaline conditions and large surface area increase the rate of fat breakdown by lipase.

6. The heart, blood vessels and blood

The heart is an organ that pumps blood around the body in a **double circulatory system**. The right ventricle pumps blood to the lungs for gas exchange. The left ventricle pumps blood around the rest of the body.

The body contains three different types of blood vessel: **arteries, veins** & **capillaries**.

Blood is a tissue consisting of liquid **plasma**, with **red blood cells**, **white blood cells** & **platelets** suspended in it.



7. Coronary heart disease: a non communicable disease

In CHD layers of fatty material build up inside the coronary arteries, narrowing them. This reduces the flow of blood through the coronary arteries, resulting in a lack of oxygen for the heart muscle and sometimes a heart attack.
Stents are used to keep the coronary arteries open. Statins are widely used to reduce blood cholesterol levels which slows down the rate of fatty material deposit.

1. Cell structure

Organelle	Function
Nucleus	Contains genetic material (DNA) which controls the cell's activities.
Cell membrane	Surrounds the cell and controls movement of substances in and out.
Cytoplasm	Jelly-like substance where most chemical processes happen.
Mitochondria	Site of respiration, where energy is released from food molecules.
Ribosomes	Site of protein synthesis.
Cell wall	Supports & strengthens the cell, in plant cells it is made of cellulose.
Chloroplast	Absorbs light energy so the plant can make food.
Vacuole	Contains liquid and used to keep the cell rigid and store substances.

An electron microscope has much higher magnification and resolving power than a light microscope. This means that it can be used to study cells in much finer detail.
This has enabled biologists to see and understand many more sub-cellular structures.

Magnification (M) = size of image (I) / size of actual object (A)

2. Transport in cells

Diffusion is the spreading out of the particles of any substance in solution, or particles of a gas, from an area of higher concentration to an area of lower concentration.

In multicellular organisms, the effectiveness of an exchange surface (such as lungs, lungs, gills) is increased by:

- having a large surface area
- a membrane that is thin, to provide a short diffusion path
- (in animals) having an efficient blood supply
- (in animals, for gaseous exchange) being ventilated.

Osmosis is the diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.

Active transport moves substances from a more dilute solution to a more concentrated solution (against a concentration gradient). This requires energy from respiration.

3. Stem cells

A stem cell is an undifferentiated cell of an organism which can become other types of cells.
Meristem tissue in plants can differentiate into any type of plant cell, throughout the life of the plant. Treatment with stem cells may be able to help conditions such as diabetes and paralysis. Stem cells from meristems in plants can be used to produce clones of plants quickly and economically.

4. Atoms, mixtures and compounds

All substances are made of atoms. An atom is the smallest part of an element that can exist.
Atoms of each element are represented by a chemical symbol, e.g. O for oxygen or Na for sodium.
There are about 100 different elements. Elements are shown in the periodic table.
Compounds are formed from elements by chemical reactions. Chemical reactions always involve the formation of one or more new substances. Compounds contain two or more elements chemically combined. Compounds can only be separated into elements by chemical reactions.

5. Sub-atomic particles

The relative electrical charges and relative masses of the particles in atoms are:

Name of particle	Proton	Neutron	Electron
Relative charge	+1	0	-1
Relative mass	1	1	Very small

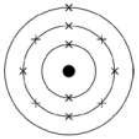
In an atom, the number of electrons is equal to the number of protons in the nucleus.
Atoms have no overall electrical charge.
The number of protons in an atom of an element is its atomic number.
Almost all the mass of an atom is in the nucleus.
The sum of the protons and neutrons in an atom is its mass number.
Atoms of the same element can have different numbers of neutrons; these atoms are called isotopes.

6. Representing atoms

(Mass number) 23
(Atomic number) 11 Na

Atoms can be represented as shown in this example:

The electronic structure of an atom can be represented by numbers or by a diagram. e.g. The electronic structure of sodium is 2,8,1 or showing two electrons in the lowest energy level, eight in the second level and one in the third energy level.



7. The periodic table

The elements in Group 0 are called the noble gases. They are unreactive and do not easily form molecules because their atoms have stable arrangements of electrons.

The elements in Group 1 are known as the alkali metals and have one electron in their outer shell. They react rapidly with water and the reactivity increases going down the group.

The elements in Group 7 are known as the halogens and all have seven electrons in their outer shell. The further down the group the more the reactivity of the elements decreases.

History	Empire	CYCLE 1	6

Section A – Overview of Empire	Section B – Causes of Empire	Section C – Attitudes to Empire
Overview of the British Empire In the 16th, 17th & 18th Britain began to expand its social, economic and political interests across the globe. By 1913 it held power to varying degrees over 412 million people, 23% of the world's population at this time, and held 24% of the Earths total land area. A well-known phrase at the time stated it was 'the Empire on which the sun never sets' It began with the Age of Discovery, when English explorers would compete with other European empires to colonise territory across the known and unknown world. **Colony** - A country or area under the full or partial control of another country **Colonise** - Send settlers to a place to take control of it **Empire** - An extensive group of states ruled over by a single monarch or sovereign state **Imperialism** - Extending a country's power and influence through colonisation or military force **Merchant / trader** -Someone who buys and sells goods **Indigenous** - The original occupants of colonies	**Exploration** - Between 1497 and 1763 English Seaman set out on journeys of exploration and began to reach places Europeans had never seen before. Christopher Columbus was the first to reach the Caribbean in 1492. Other English explorers followed such as Walter Raleigh, finding new lands in the Americas. It was known as the Age of Discovery. **Colonisation -** The first English colonies were founded in the 1620s, in the Caribbean, Barbados, Jamaica, Virginia and New York. These would be followed in the 17th Century by colonies in India, Africa and Australia. Many indigenous people were enslaved. **Competition & warfare –** Competition to establish colonies was intense between the European powers of Spain, Portugal and France who all understood the economic and military power colonies could bring. In the 18th century Britain fought a number of wars against France and took control of many French colonies as a result. **Trade -** By the 17th century Britain was heavily involved in the Transatlantic Slave Trade. Private companies, such as the East India Company, were encouraged by the British government to trade materials such as cotton, tea, sugar and spices, contributing to expanding colonies.	**British Attitudes Towards Empire 16th to 19th Century (For) -** Many British people supported the growth of Empire. They thought they were doing the right thing by taking British political values and Christianity to the rest of the world. Some thought they were genuinely helping others and were doing the right thing by helping people improve and become more like the British. **British Attitudes Towards Empire 16th to 19th Century** **(Against) -** Some British people thought that colonies had their own traditions and culture before the British arrived and these should be preserved. Some disapproved of using warfare as a way of controlling and expanding the empire. **Present Attitudes –** It's unacceptable to say that colonised people did not have or would not have developed their own forms of governments or laws without British influence. Also, Britain's Empire came at cost: the slave trade and stripping indigenous people of their land and rich cultures. **Attitudes of Colonists -** Many were deeply unhappy with being under British rule, facing political and economic inequality, and the decline in their cultural and religion.

Section D – Significance of India	Section E – Ghandi and Jinnah	Section F – Partition
India became part of the British Empire in 1858 and took over the lands that were controlled by the East India Company. The British got rid of many independent states in India and eventually the entire Indian country came under the British rule. The Battle of Plassey in 1757 ensured the East India Company could take control of India. The British provided a single system of law and government, unifying India. They also introduced English as a unifying language, such as in the Treaty of Allahabad. Indians were also looked down upon by the British and their culture was treated as inferior to European culture. India was so important to the British Empire because of its trade links with China, primarily tea, silk and opium.	Gandhi was an Indian lawyer, who employed nonviolent resistance to lead the successful campaign for India's independence from the British. Gandhi was also given the title of 'Father of The Nation'. This title was accepted by the Indian community, who then referred to Gandhi as "Bapu" In 1930 he led the Salt March, a peaceful protest where 60.000 Indians were arrested including himself 1942, Gandhi also launched the "Quit India" movement which called for the immediate withdrawal of the British from Indian governance. Jinnah served as the leader of the All-India Muslim League from 1913 until the creation of Pakistan on 14 August 1947. He is revered in Pakistan as the *Quaid-i-Azam* ("Great Leader"). He believed the only fair way for India to gain independence would be for Muslims to have their own land.	The **partition of India** split British India into the countries of India and Pakistan (East and West Pakistan) in 1947. The partition was caused in part by the two-nation theory presented by Syed Ahmed Khan. Pakistan became a Muslim country, and India became a majority Hindu but secular country. The main spokesman for the partition was Muhammad Ali Jinnah. He became the first Governor-General of Pakistan. Once the lines were established, about 14.5 million people crossed the borders to what they hoped was the safety of their religious majority. Approximately 14.5 million felt forced to move across the new borders of each country The newly formed governments were unable to deal with forced migration of such huge numbers. Violence occurred from all sides, hundreds of thousands died.

1617 – East India Company wins trading rights with Mughal Empire 1757 – Robert Clive wins decisive victory at Plassey, taking territorial and political control of large parts of India 1765 – Treaty of Allahabad and Dual Government created	1773 – Warren Hastings becomes first Governor of India, taking away power from Nawabs 1857 – Sepoy Rebellion break out against treatment of Indian soldiers serving under British. 1858 – The British Parliament put India directly under their political control 1885 – Indian National Congress formed to fight peacefully for independence	1906 – Muslim League organised aiming for a Muslim independent state 1919 – Amritsar Massacre – the British army opens fire on thousands of peaceful Indians 1930 - The Salt March to end British monopoly on the salt trade

Geography	The Future	CYCLE 1	8

	Key Knowledge to learn	
1 – Future Misconceptions and The Future of the EU	**Future Misconceptions** • In all LICs across the world today, 60% of girls finish primary school • Majority of the world live in NEEs • In the last 20 years, the proportion of the world population in extreme poverty has almost halved • The average life expectancy is the world is 70 years • 80% of the worlds 1-year old children today have been vaccinated against some disease • 80% of people in the world have some access to electricity	• European Union - a **group** of **27 countries** following **similar laws** • The **UK left** the **EU** on the 31st January **2020** (BREXIT) • **1957 -** The European Economic Community (EEC) is created. The member countries are Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany. The group aims to remove trade barriers and form a common market. • The objectives of the European Union are to establish European citizenship, ensure freedom, justice and security, promote economic and social progress, and assert Europe's role in the world. The capital of the European Union is Brussels, Belgium.
2 – Brexit and Problem with Energy	**Reasons for Leaving the EU** • We get control over all laws created • We get control over immigration **within** the EU • Don't pay £50 million a week membership fee • We may have to pay to enter EU countries • Goods imported to the UK may become more expensive • We would set our own taxes • More low paid jobs available • We can decide who we trade with • We won't have limits set on us like how much fish we can take from the sea.	**Problem with Energy** In the past, the UK was heavily reliant on fossil fuels such as coal, oil and gas. It is projected that in the future we will use more renewable energy. Energy supply and demand has increased overtime due to increase use of transport and industry. **Carbon Footprint =** The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation, or community.
3 – Solving the energy problem and the problem with food	**Solving the energy problem** **Energy Consumption - The amount of energy or power used** **Renewable Energy** - is naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat Examples of Renewable energy include: Solar, Hydroelectric power and wind power	**The Problem with Food** • **Malnutrition** - lack of proper nutrition, caused by not having enough to eat or not eating enough of the right things. • 1 billion in 2012 are hungry in the world which means 1 person out of 7. • Our planet has enough food so hunger shouldn't exist. • Bolivia, Democratic Republic of Congo and Ethiopia are struggling with hunger though they have lots of food and mostly work in agriculture. These countries have the highest rate of malnutrition. 41% of Ethiopians are undernourished. • 60% of people globally that are hungry tend to work in farming. • USA has lower rates of hunger and they struggle with obesity.

Geography	The Future	CYCLE 1	9

Week	Key Knowledge to learn	
4 – Solving the problem of Food and the Plastic Crisis	**Solving the problem of Food** **Lab Grown Food** More and more companies are beginning to produce meat in labs as a way to combat such issues as greenhouse gases emissions, overfishing and animal welfare concerns. They use stem cells to produce this meat. **Insects as a food source** Some countries have been eating insects for centuries and it isn't a new thing, for example countries in central America and Asia where 2 billion eat insects as part of their diet. Insects are very nutritious, have valuable fatty acids and are high in calcium. However, some insects may cause an allergic reaction.	**Plastic Crisis** • In 1950 the world produced only 2 million tonnes per year. Since then, annual production has increased nearly 200-fold, reaching 381 million tonnes in 2015. For context, this is roughly equivalent to the mass of two-thirds of the world population. • With the largest population, China produced the largest quantity of plastic, at nearly 60 million tonnes. This was followed by the United States at 38 million, Germany at 14.5 million and Brazil at 12 million tonnes.
5 – Causes and Impacts of Plastic	**Causes of Plastic Pollution** **Fishing Nets** - Commercial fishing is an economic necessity for many parts of the world. However, the nets used for certain large-scale trolling operations are usually made of plastic. These leak toxins at will, but they also often get broken up or lost. **It is Overused** - As plastic is less expensive, it is one of the most widely available and overused item in the world today. When disposed of, it does not decompose easily and pollutes the land or air. **Disposing of Plastic and Garbage** - Because plastic is meant to last, it is nearly impossible to break down. Burning plastic is incredibly toxic and can lead to harmful atmospheric conditions and deadly illness. Therefore, if it is in a landfill, it will never stop releasing toxins in that area.	**Impacts of Plastic Pollution** ✓ It upsets the food chain ✓ Groundwater pollution ✓ Land pollution ✓ Air pollution ✓ It kills animals ✓ It is poisonous ✓ It is expensive to clean up
6 – HS2	**Advantages and disadvantages of HS2** Journey times from London to Birmingham will be less than one hour. The £2-£3bn annual capital investment will help create jobs The environmental impact will be mitigated by 'green tunnels' and planting of trees. The cost of HS2 continues to rise. Initially, in 2015, the project was forecast to cost £56bn but now the total cost could soar to over £100bn. Forecasts for passenger numbers are uncertain Noise pollution is a concern also.	**Bradford Regeneration** **Urban decline** - is the deterioration of the inner **city** often caused by lack of investment and maintenance. **Regeneration** - means improving an area that has been experiencing a period of decline. Examples of how Bradford has been regenerated are as follows: The Broadway Shopping Centre; Lister Mills renovation into flats; Plans for a new Bradford Food Market; and Sunbridge wells bars and pubs.

ENGLISH	Rhetoric and Persuasive Writing	CYCLE 1	10

Week	Key Knowledge to learn
1 – Writing Forms:	• Form: The type of text that is created. These include: Letter, speech, magazine article, tabloid article, broadsheet article, blog post. • Letter: Recipient address at the top right, sender address underneath it to the right followed by the date and formal greeting. If you do not know the name of the recipient, you are writing *faithfully*. If you know their name, you are writing *sincerely*. • Speech: Contains a formal address at the beginning. Because the audience listen, not read, the content must be especially clear. • Magazine article: Whilst less formal than the other text types, it still must include a headline, a strapline, and a main body of text. • Tabloid article: More formal than a magazine but less formal than a tabloid, tabloids still use a headline and strapline before the main body of text. • Broadsheet article: The most formal type of article you may be asked to write again includes a headline, strapline, and a following main body. • Blog post: • Purpose: The reason the text has been written. Purposes include: To persuade, to argue, to entertain, to inform, to educate. • Literary Non Fiction: Non fiction texts that use the devices typically associated with fiction. • Persuade: A text that will include a range of rhetorical devices and a strong appeal to emotion to bring the audience into agreement on a specified focus. • Argue: A text that will include a range of rhetorical devices and a strong appeal to reason to bring the audience into agreement on a specified focus. • Entertain: A text that is designed using a range of literary devices to be engaging and interesting (this is often simply how we describe the focus of fiction). • Inform: A text that will include a range of data and facts alongside other devices to give the audience information on their specific area or topic. • Educate: A text that will include a range of data and facts in order to give the audience information and create opinions in them.
2 – Structure:	• Mode of address: The way in which you address your audience, including level of formality and appropriate nouns to use (Sir, Madam, you, etc.). • Anecdote: An emotive story with lots of specifics to help an audience grasp the significance of a point you are making. • PREMS: The acronym that guides you in what your paragraphs may include; political, religious, economic, moral, or social ideas regarding the topic you are discussing. • Political: Ideas relating to governmental or global affairs. • Religious: Ideas relating to theology, religious teachings, and God. • Economic: Ideas relating to finance, money and wealth. • Moral: Ideas relating to the understanding of right and wrong. • Social: Ideas relating to people, society, and those around us. • Circular structure: Ending a text similarly or identically to the opening (for example opening and ending on an anecdote). • Call to action: A demand or request for your audience to go and do something after reading the text.
3 - Devices Part 1:	• Repetition: Using a word or phrase a number of times intentionally. • Alliteration: The repetition of a sound (not a letter! Knee and Kaleidoscope are not alliteration!) • Emotive Language: Any example of language used in order to achieve an emotional response from the audience. • Hyperbole: Intentionally exaggerating for effect. • Rhetorical Question: • Opinions presented as facts: • Facts and statistics: • Rule of three or triplets: • Zeugma: The use of a verb as both literal and metaphorical within one sentence. • Epithet: The use of a noun phrase to replace a more simple proper noun. • Allusion: A reference made to something historic, literary, biblical or qur'anic, or mythological.

Week	Key Knowledge to learn
4 – Devices Part 2:	• Figurative Language: An umbrella term for similes, metaphors, and personification. • Simile: Something being described as "like" or "as" something else. • Metaphor: Something being described as if it is literally something else. • Extended Metaphor: Using a metaphor repeatedly, to build on the image throughout a paragraph or whole text. • Personification: Creating an image of a non-human noun as if it were human. • Zoomorphism: Creating an image of a non-animal noun (humans included, even though we are animals!) as if it were an animal. • Plosives: The use of sounds that are pushed from the mouth, these include: /p/ /b/ /t/ /d/ /g/ /k/ • Fricatives: The use of sounds made via friction, these include: /f/ /th/ • Sibilance: The use of sounds that are hissing or shushing sounds, these include: /s/ /z/
5 – Punctuation:	• Full Stop: Marks the end of a sentence. • Comma: Splits clauses up within a sentence or separates items within a list. • Apostrophe: Marks possession or omission. • Question Mark: Marks that a question was asked, whether literal or rhetorical. • Exclamation Mark: Marks that a sentence was exclaimed (emphatic). • Speech Marks: Marks that the words within the speech marks were said by someone else, whether dialogue in a story or a quotation from someone else. • Colon: Marks that a list is beginning or to introduce an extra piece of information to a main clause. • Semicolon: Marks a list of sentence length items is being used or that a second main clause is being given that is considering the same topic. • Dash: Marks a pause or break that is less than a full stop. • Parenthesise: Marks that information is extra to the rest of the sentence.
6 - Grammar:	• Active Voice: The subject of the sentence is the noun that completes the verb. *The boy kicked the ball*. • Passive Voice: The subject of the sentence is the noun that has the verb done to it. *The ball was kicked by the boy*. • Main Clause: Typically, this will be noun, verb, noun at a basic level, a main clause is a clause that can stand on its own and deliver meaning. *The boy ran to the shop*. Adding adjectives and adverbs etc. for depth will not change that this is a main clause. • Subordinate Clause: A clause connected to a main clause by connective or piece of punctuation. A subordinate clause depends on the main clause and will not work alone. *Knowing he was late, the boy ran to the shop*. • Coordinate Clause: Like a subordinate clause, however a coordinated clause can stand alone and deliver meaning. *The boy ran to the shop because he knew that he was already late.* • Embedded Clause: A clause that is 'dropped in' the middle of another. *The boy, always late for everything, ran to the shop*. • Declarative Sentence: A sentence that declares or states something. • Exclamative Sentence: A sentence ending with an exclamation mark. • Interrogative Sentence: A sentence ending with a question mark. • Imperative Sentence: A sentence in which the verb is a command or instruction. • Fronted adverbial: A clause at the beginning of a sentence (before the main clause) that adds information to how, where, when, or why the main clause happened. • 'If, If, Then' sentence: A sentence type following the structure shown here: *If only she had waited, if only she asked him instead of assuming, then maybe they would still be friends today*. • 'The more, the more, the more' sentence: • Dash for clarification: A sentence type following the structure shown here: *He knew he was doomed – he knew it from the moment he walked through the door.* • Adjective attack: Structuring a sentence as a list of adjectives, a colon, and then a main clause.

Department	Spellings	CYCLE 1	11

Week 1	Week 2	Week 3	Week 4	Week 5
1. temptation 2. liable 3. desist 4. dissuade 5. ornate 6. pessimism 7. derelict 8. subtlety 9. frantic 10. combination	1. onomatopoeia 2. derision 3. infatuate 4. argument 5. imbalance 6. impair 7. inspire 8. conciliatory 9. dazzling 10. believe	1. revile 2. union 3. tenacity 4. hierarchy 5. desolate 6. meant 7. implicate 8. ramification 9. modest 10. amply	1. vile 2. injustice 3. combat 4. significant 5. genial 6. hiatus 7. endorse 8. library 9. demolished 10. tractable	1. heeding 2. caution 3. redundant 4. orator 5. gratifying 6. brief 7. vapid 8. resort 9. inferior 10. savoury
Week 6	**Week 7**	**Week 8**	**Week 9**	**Week 10**
1. volatile 2. curious 3. resigned 4. consenting 5. artisan 6. develop 7. individual 8. spurn 9. physical 10. receptacle	1. mollify 2. debilitate 3. reactionary 4. autonomous 5. docile 6. despise 7. monotonous 8. stupor 9. genre 10. wretch	1. rogue 2. impede 3. beautiful 4. uniformity 5. assiduous 6. threadbare 7. apprise 8. extinction 9. foe 10. exemplify	1. sanction 2. contest 3. object 4. obdurate 5. distant 6. rigueur 7. oblige 8. stimulating 9. grandiose 10. self-righteous	1. fatuous 2. slang 3. stupidity 4. embroiled 5. attempt 6. naivete 7. ventriloquist 8. malign 9. indolent 10. raiment
Week 11	**Week 12**	**Week 13**	**Spellings to practise:**	
1. perfunctory 2. synecdoche 3. platitude 4. weird 5. tranquil 6. explicit 7. elated 8. perturbed 9. deceive 10. depot	1. omit 2. address 3. equivocate 4. certitude 5. vacant 6. glutton 7. soldier 8. prelude 9. slander 10. candid	1. demote 2. interior 3. foster 4. sanctuary 5. reveal 6. dubious 7. clement 8. ambition 9. dispute 10. dispute		

RE	CHRISTIAN BELIEFS	CYCLE 1	12

Week	Key Knowledge to learn
1 – Christian beliefs: Nature of God	Omnipotent – this means that God is all powerful. Nothing is impossible for God. The creation story shows the power of God as does the story of Noah's flood in the Old Testament where God flooded the earth for 40 days. Some Christians see the stories as literal truth and others see them as metaphors. Omnibenevolent means all loving, so God is the source of all goodness and love in the world. *"God so loved the world that He have His only son." John 3:16.* *The Parable of the Prodigal Son* also shows the love of God. A spoiled son was welcomed home by his Father even though he doesn't deserve it. Just means fair. God provides fair justice for all. Christians believe that God does not discriminate. *The 10 commandments* are rules given by God to Moses to ensure that people lived a good and fair life. The *Parable of the Sheep and Goats* teaches that all people will be judged on how they have lived their life. These beliefs influence Christians by: -encouraging them to look after the world as stewards because their all powerful God has created it. -Praying for the sick because they believe a loving and powerful God might provide a cure. -Treating others as they want to be treated with love following the example of God.
2 – Christian Beliefs: The Trinity	Christianity is monotheistic meaning that they only worship one God. God's nature is explained through the mystery of the Trinity and its three persons. The first person of the Trinity is God the Father who is the creator and sustainer of the Universe. The second person of the Trinity is God the Son. He is the loving nature of God. The son was ever present but became man in the form of Jesus through the incarnation. The third person is the Holy Spirit which is the presence of the God in the world. It gives them a source of strength in their lives. During Jesus' baptism a voice from Heaven said, *"You are my beloved Son"*. At the same time the Holy Spirit descended as a dove. All three persons of the Trinity were present at this time. During baptism Christians are baptised *"in the name of the Father and of the Son and of the Holy Spirit."*
3 - Christian beliefs: Creation	God created the universe in six days and rested on the seventh. God took great care over creating the universe and all life on earth. God created humans *"in his image"* to have dominion over the rest of his creatures. The first humans were Adam and Eve according to the *Book of Genesis*. God gave humans dominion over the earth. This means that they were in control of it. Christian's should act as God's stewards. This means that they must care for and protect the earth. Christians will care for the environment e.g. by giving to green charities or using low emission vehicles. Christians will reflect on the beauty and wonder of nature as a reflection of God's almighty power. Christians see humankind as a reflection of God so will care about every life and issues like human rights Quote 1 Omnipotence: *'Great is our Lord and mighty in power.' (Psalm 147:5)* Quote 2 "*God created the world from nothing in seven days."* (Genesis) Quote 3 Benevolence: *'For God so loved the world that he gave his only Son, so that whoever believes in Him shall not die, but shall have eternal life.' (John 3:16)*

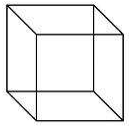
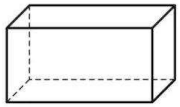
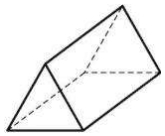
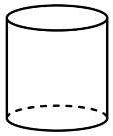
Week	Key Knowledge to learn
4 – Christian beliefs: Incarnation	God became man in the form of Jesus. This is celebrated at the festival of Christmas. Jesus was fully human AND fully God. *"He was begotten not made" Creed* Jesus came to free humans from sin and death, this is called atonement. Jesus came to show people how to live according to God's laws. The incarnation shows that God loves humanity that he was prepared to become one of us and share our suffering. *"He came from heaven and by the Holy Spirit was made incarnate of the Virgin Mary." Creed*. The incarnation gives them hope that they can overcome temptation and sin and achieve salvation. The incarnation means they will obey God's law/believe in Jesus/be active in the Church community, to gain eternal life opened up by Jesus' incarnation. Quote 1 *"Jesus is inseparably true God and true man."* (Catechism of the Roman Catholic Church). Quote 2 *"The Word became flesh and lived amongst us." (John 1:14).* Quote 3 *'If anyone acknowledges that Jesus is Son of God, God lives in him and he in God." (1 John 4:15)*
5 – Jesus as Son of God	**Miracles** A miracle is an extraordinary event that is not explainable by scientific law and is therefore attributed to God. Christians believe that Jesus (God incarnate) performed many miracles in his lifetime. Examples of Jesus' miracles recorded in the Bible include: 1. The Calming of the Storm 2. The healing of the Paralysed Man 3. The raising of Lazarus For Christians, miracles are a sign that God exists because the miraculous event does not seem to be explainable by scientific law. For Christians, miracles are a sign of what God is like e.g. all-powerful, caring, all loving and all-knowing. They might give Christians reassurance that God will be there to help them when they need it. It teaches Christians how they should act in difficult situations e.g. to help others that are ill. **Parables** Jesus' teachings and parables can be found in the New Testament of the Bible in the gospels of Matthew, Mark, Luke and John. A parable is a simple story used to tell a moral, spiritual or religious lesson. Examples of Jesus parables are: 1. The Good Samaritan 2. The Rich Fool 3. The Sheep and the Goats.
6 - Christian Beliefs: Crucifixion	Jesus died on a Friday. Christians call this day Good Friday. Crucifixion was a painful death. He was condemned to death by the Roman Governor Pontius Pilate. One of Jesus own disciples called Judas betrayed him. Jesus died asking God the Father to forgive his killers. Christians believe that Jesus died to atone for the sins of humanity. Atone means to put right. It was a painful death used for political prisoners as well as criminals. Jesus was crucified beside two common criminals. Christians will be forgiving of others as Jesus forgave his persecutors/killers. The crucifixion show's Jesus unconditional love for humankind as he was willing to suffer to save us from sin. It encourages Christians to risk suffering to stand up for what they believe is right. Quote 1 *"Truly I tell you today you will be with me in Paradise." Jesus to criminal crucified beside him. (Luke 23:42)* Quote 2 *"Father forgive them, for they know not what they do." Jesus on the cross, speaking about his killers (Luke 23:34)*

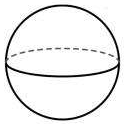
RE	CHRISTIAN BELIEFS	CYCLE 1	13

Week	Key Knowledge to learn
7 – Christian beliefs: Resurrection	Resurrection means rising from the dead. Jesus rose from the dead three days after death on the cross. Christians call this day Easter Sunday and it is one of the most important days of the Christian calendar. Jesus was seen alive by many hundreds of witnesses according to the Bible. The first to see the risen Jesus were the women who came to visit his tomb according to the Bible. Mary Magdalene was the first. (Mark 16) Christians believe that Jesus then appeared to his disciples who he told must spread the word of God as he had commanded them too. *"Go into the world and spread the Good News." (Mark 16)* One disciple called Thomas did not believe in the resurrection until he had seen him with his own eyes. Two more disciples met the risen Jesus on the road to Emmaus. The Resurrection proves to them that Jesus was God's son, so gives authority to his teaching and example. Quote 1 *"See my hands and my feet, that it is I myself. Touch me, and see. For a spirit does not have flesh and bones as you see that I have." (Luke 24:39)*
8 – Christian Beliefs: Ascension	Christians believe that after he rose from the dead Jesus later ascended (went up into) heaven. Some believe that this was a physical ascent and others claim that it is symbolic to show that Jesus' time on earth was over. It is significant because it marks the time when Jesus left earth in a physical way but the Holy Spirit was left behind to lead and guide Christians today. Ascension Day celebrates Jesus' ascension to heaven after he was resurrected on Easter Day. Quote 1: *"Then Jesus said to the apostles: 'Go forth to every part of the world, and proclaim the good news to the whole creation. Those who believe it and receive baptism will find salvation" Mark 16*. Quote 2:*"So after talking with them the Lord Jesus was taken up into heaven, and he took his seat at the right hand of God." Mark 16*
9 - Christian beliefs: Original Sin	A sin is an action that goes against the teachings and will of God. Christians believe that failure to believe in God is the biggest sin. Christians believe that breaking God's law or Jesus teachings are sins. Christians believe that all people are born and remain sinners. Christians believe that sin separates humans from God. Christians believe that the story of Adam and Eve tells them about Original Sin. Original Sin is a Christian belief of that states that sin has existed since the fall of the first man. In the book of Genesis, Adam and Even are said to have disobeyed God by eating from the Tree of Knowledge of Good and Evil. (Genesis 3). This sin was the original sin which broke the relationship between God and humans. God sent Adam and Eve from the Garden of Eden after their first sin and said that they would now die and return to dust.

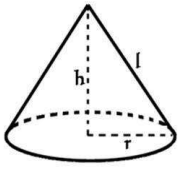
Week	Key Knowledge to learn
10 – Atonement	Jesus sacrificed himself to atone for our sins. Jesus sacrificed himself by dying on the cross as a human. Christians believe that Jesus paid the price for human sin and allowed the relationship between God and humanity to be healed. Some Protestant Christians believe that humans atone for their sins through proclaiming a belief in Jesus as God and Saviour. Roman Catholic Christians believe that atonement must come through active participation in the Sacraments. Roman Catholics believe that there are seven sacraments. The Church of England believes that there are two sacraments; Baptism and Eucharist. Quote 1: *"My grace is all you need." Jesus (2 Corinthians 12)*
11 - Salvation	Salvation is being saved from the consequences of our sin, ie death. Salvation is given by God's grace because Jesus sacrificed himself for us by dying on the cross. Salvation can be achieved through following God's law, relying on God's grace, or living according to the Holy Spirit within us. Christians will pray for salvation and eternal life and show gratitude through worship / following God's law. Christians know that we all have the spirit of God in us so have the ability to live as He wants and go to heaven. Source 1: *Parable of the Prodigal Son*. Source 2 *"For if you forgive other people when they sin against you, your heavenly Father will also forgive you." (Matthew 6:14).* Source 3 *"For all have sinned and fall short of the glory of God." (Romans 3:23).* Source 4 *"This is my blood of the covenant, which is poured out for many for the forgiveness of sins." (Matthew 26:28)*
12 - Judgement	Everyone will be judged after death / resurrection. Judgement Day decides if you go to heaven or hell. Judgement is based on how you lived your life and followed Jesus' teachings/God's laws. Christians believe that one of the natures of God is that he shows mercy and will therefore forgive. Christians will try to follow Jesus' teachings and God's laws so that they go to heaven on Judgment Day. They believe that Jesus death atoned for their sins. *"Love God and Love your Neighbour" (Matthew 22).* Christians will worship God to make sure he knows they love him and respect him and so will go to heaven. Only those that worship him and accept Jesus' salvation are assured a place in Heaven. Christians know that God's grace and mercy will mean their sins can be forgiven and they can go to heaven. *The Parable of the Sheep and Goats* (Matthew 25) explain that Christians will be judged based on their actions on earth. *The Nicene Creed says that "Jesus will come again to judge the living and the dead."*
13 - Heaven & Hell	Those who have achieved salvation will go to heaven for eternity. Heaven is God's kingdom, reward for passing God's judgement – close to God. Heaven is a place of peace and love, with no conflict or pain or suffering. Heaven inspires Christians to follow God's law and repent of their sins. Heaven gives them hope of justice in the afterlife for suffering in this life. Some believe Heaven is a physical place, others a spiritual state of being with God. Hell is a place of suffering where unrepentant sinners go after judgement. Suffering is through being separated from God and physical torment e.g. burning. Hell is ruled by the devil and his angels. Purgatory is the a Catholic belief. A place where souls go to wait before they can get to Heaven. Hell Quote: *'A place of a fiery furnace, with weeping and gnashing of teeth" (Matthew 13:50).* Heaven Quote *'My Kingdom is not of this world….' (John 18:36). "There are many places in my Fathers house and I have prepared a place for you." (John 14)*

BOX 1: Three dimensional shapes

3D SOLIDS: PRISMS		
Prism	A 3D solid with a consistent **cross section.**	
Cube	**6** faces. **12** edges. **8** vertices.	
Cuboid	**6** faces. **12** edges. **8** vertices.	
Triangular Prism	**5** faces. **9** edges. **6** vertices.	
Cylinder	**3** faces. **2** edges. **No** vertices.	

3D SOLIDS: OTHERS		
Sphere	**1** face. **No** edges. **No** vertices	
Frustum	A frustum is a solid (usually a **cone** or **pyramid**) with the **top removed.**	

PROPERTIES	
Surface	The **outside layer** of an object. It has an area and can be flat or curved.
Face	Any of the individual **flat surfaces** of a solid object.
Edge	For a 3D shape, the **line segment** where two **faces** me et.
Vertex (vertices)	For a 3D shape, **point** where two or more **edges** meet. A **corner**.

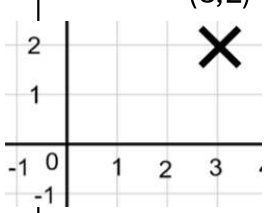
SURFACE AREA		
Surface area	The **total area** of all the **surfaces** on a **3D shape**.	
Surface area method	Find the **area of each face** separately, then **add** them together.	
Surface area of a sphere	$4\pi r^2$	
Surface area of a cone	Curved surface area = Circle base area = **Add** these together.	

2D REPRESENTATIONS OF 3D SHAPES	
Plan	A **2D view** of a 3D solid as viewed from **above**. **Birds-eye view**.
Elevation	The **2D view** of a 3D solid from the **front** or the **side.**
Net	A **pattern** that you can cut and fold to make a **model** of a 3D shape.

VOLUME		
Volume	The amount of **space a 3D shape** takes up.	
Volume units	**mm^3, cm^3, m^3...**	
Prism	Volume = **area of cross section x length**	
Cube	Volume = **one side cubed** (or, **area of square x length of prism**)	$V = l^3$
Cuboid	Volume = **area of rectangle x length of prism**	$V = lbh$
Triangular Prism	Volume = **area of triangle x length of prism**	$V = \frac{lbh}{2}$
Cylinder	Volume = **area of circle x length of prism**	$V = \pi r^2 h$
Pyramid	Volume = **x area of cross section x length**	
Square based pyramid	Volume = **x area of square base x height of pyramid**	$V = \frac{lwh}{3}$
Cone	Volume = **x area of circle base x height of cone**	$V = \frac{\pi r^2 h}{3}$
Sphere	$V = \frac{4}{3}\pi r^3$	

BOX 2: Linear graphs and equations

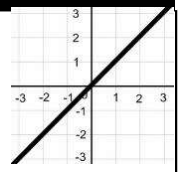
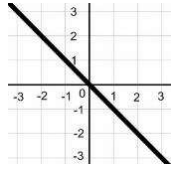
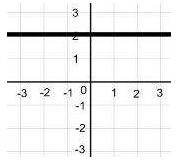
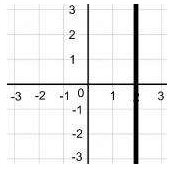
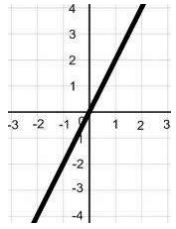
COORDINATES

Axis (plural: axes)	The **x** axis is horizontal. The **y** axis is vertical.
Quadrant	The **four regions** separated by the axes.
Coordinate	Give a **position** of a **point** on a grid. The first number (**x**) moves **left** (-) or **right** (+). The second number (**y**) moves **up** (+) or **down** (-). (**x**, **y**) *e.g. (3,2) means the **point** that is 3 to the right and 2 up from the origin.* 
Origin	The coordinate **(0, 0)**
Line Segment	A line joining **two points**.
Midpoint	The **middle** of a line segment.

Links to: DIRECT PROPORTION

Direct Proportion	If two quantities are in direct proportion, as one increases, the other **increases** at the same rate If y is directly proportional to x, this can be written as **$y \propto x$**
y = kx	An equation of the form **y=kx** represents direct proportion, where k is the **constant of proportionality**.

LINEAR GRAPHS

y = x	Every point on this line, the y coordinate is **equal to** the x coordinate. *e.g. (3,3), (-2,-2), (0,0)*	
y = -x	Every point on this line, the y coordinate is **equal to** the **negative** of the x coordinate *e.g. (3, -3), (-2,2)*	
y = a	These lines are always **horizontal**. *For example y = 2* *Every point on this graph, the y coordinate equals 2* *e.g. (0,**2**), (5,**2**)*	
x = a	These lines are always **vertical**. *For example x = 2* *Every point on this graph, the x coordinate equals 2* *e.g. (**2**,0), (**2**,5)*	
y = kx	These lines always go through the **origin.** *For example y = 2x* *Every point on this graph, the y coordinate is double the x coordinate*	

Links to: SEQUENCES

Linear Sequence	A sequence where the **difference between terms** is the **same** each time, can be increasing or decreasing. Also known as a **Arithmetic** Sequence.

LINEAR GRAPHS

y = mx + c	The general equation of a linear graph, where **m** is the **gradient** and **c** is the **y-intercept.**
Gradient	How **steep** a line is. Can be positive or negative. $\frac{\text{(Change in y)}}{\text{(Change in x)}}$ It gives the **rate of change**.
y- intercept	Where the line **crosses** the **y-axis**

INSTRUCTIONS: EQUATIONS

Solve	**Find the value** of an unknown or variable. We use **inverse** operations and the **balance** method.
Rearrange	**Changing the subject** of a formula. Sometimes called **transposing.** We use **inverse** operations and the **balance** method, like when we solve an equation.
Inverse	The **opposite.**
Balance *an equation*	Do the **same** to **both sides of the "="** We use this to **solve** an equation, or **rearrange** an equation.
Subject *of an equation*	A **single** unknown or variable that everything else is **equal** to.
Solution *of an equation*	A **value** we can put in place of a variable that makes the equation **true.**
Elimination	To **remove** or **get rid** of something.