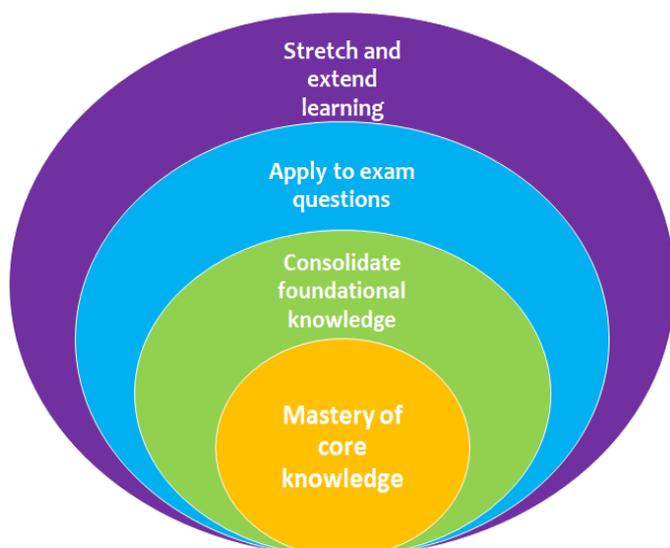




Ark Acton  
Academy

**Year 10**  
**Knowledge**  
**Booklet**  
**Spring 2022**

# What does great independent studying look like?



## **1. Use self quizzing to master core knowledge.**

Give yourself frequent opportunities to practise recalling the core knowledge - this knowledge must be automatic to make rapid progress.

## **2. Consolidate foundational knowledge.**

Use online platforms and revision guides to check you know how this core knowledge fits into a bigger picture. You will receive rewards via assemblies to celebrate how frequently you use these platforms.

- A. [www.hegartymaths.com](http://www.hegartymaths.com): KS3 & KS4 maths
- B. [www.senecalearning.com](http://www.senecalearning.com): English, history, geography, religious studies, music, KS3 science
- C. [www.my-gcse-science.com](http://www.my-gcse-science.com): KS4 biology, physics, chemistry
- D. <https://uk.language-gym.com>: French and Spanish
- E. [www.groklearning.com](http://www.groklearning.com): computer science
- F. [www.quizlet.com](http://www.quizlet.com): all subjects

## **3. Apply your knowledge to practice exam questions**

See your teacher to receive sample exam questions.

## **4. Stretch and extend your learning.**

Independently research the topics you are interested in and read widely around your favourite subjects. The below platforms will help:

- a. [www.startprofile.com](http://www.startprofile.com): careers
- b. [www.thisislanguag.com](http://www.thisislanguag.com): French and Spanish
- c. [www.digitaltheatreplus.com](http://www.digitaltheatreplus.com): access to live theatre
- d. <https://www.newscientist.com/>: news and developments in science
- e. <https://www.britishmuseum.org/collection>: British museum online collection [history, geography and RS].

## **5. Read widely for pleasure: [www.sora.com](http://www.sora.com)**

## **How to use this booklet for self-quizzing**

Self-quizzing is a powerful strategy to get knowledge stuck in your long-term memory. And it's so simple to do!

Watch this video to learn how to self quiz: <https://tinyurl.com/AGFSIL>

How should I self-quiz?

1. Look at no more than 10 terms at a time.
  2. Read the terms and say them over and over again in your head (**without speaking aloud**) for 2-3minutes.
  3. Cover the terms on the following pages with an exercise book, **with a black pen**, write down as many terms and definitions as you remember.
  4. **With a green pen**, uncover the terms and check you have correctly spelled and defined each term. Refine your spelling and definition in blue.
  5. Spend 2-3 minutes reading the terms again and saying them in your head.
  6. Fold your piece of paper so you cannot see the first round of quizzing, cover the terms and write down as many terms and definitions as you remember.
  7. **With a green pen**, uncover the terms and check you have correctly spelled and defined each term. Refine your spelling and definition in blue.
  8. Repeat this process until you can correctly spell and define each term.
- **If you run out of space in your quizzing book, you should use lined paper to complete your self quizzing.**
  - You will be asked to place your quizzing on your desk to show your teacher on the day it is due.

To space your quizzing out to maximise retention of knowledge, change subjects after 40minutes.

# Organising your self-quizzing book

**Date of work completion**

**Date when work is due:**

**Subject**

	Work Completed: 29/3/20	Maths
Attempt 1	<p>Types of transformation: reflection, rotation, enlargement, translation</p> <p>Reflection = mirror image, on opposite side of line, without changing size</p> <p>Enlarge = make bigger or smaller</p> <p>Rotation = turn around a point, without changing size</p> <p>Translate = move? Change position of a shape, without change of size.</p>	<p>Rotation = <del>move</del> <sup>turn</sup> around a point, without changing size</p> <p>translation = change of position, without changing size</p> <p>Types of transformation = reflection, enlargement, rotation, translation. #4</p> <p>Reflection = mirror image on opposite side of line, without change of size.</p> <p>Enlargement = making bigger or smaller.</p>
Attempt 2	<p>Types of transformation: reflection, enlargement, rotation, translation</p> <p>Reflection = mirror image opposite side of <del>line</del> <sup>across</sup> a line, without changing size.</p> <p>Enlargement = make bigger or smaller.</p> <p>Rotation = <del>turn</del> <sup>turn</sup> around a point, no change of size.</p> <p>translation = <del>move</del> <sup>change position</sup>, without change of size. *</p>	<p>Rotation = turn around a point, no change in size</p> <p>Translation = change of position, no change in size.</p> <p>Types of transformation = rotation, reflection, enlargement, translation. #5</p> <p>Rotation = <del>turn</del> <sup>turn</sup> around a point. <sup>no change in size</sup></p> <p>Enlargement = make bigger or smaller.</p> <p>Reflection = mirror image, opposite side of line, no change in size.</p> <p>Translation = change of position, no change of size.</p>
Attempt 3	<p>Types of transformation: reflection, enlargement, rotation, translation</p> <p>Reflection = <del>mirror</del> <sup>mirror</sup> image opposite side <del>of</del> <sup>across</sup> a line, without changing size</p> <p>Enlargement, making bigger or smaller.</p>	<p>Types of transformation = rotation, translation, enlargement, reflection. #6</p> <p>Rotation = <del>turn</del> <sup>turn</sup> around a point, <sup>no size change</sup></p> <p>Translation = change of position. No change in size.</p> <p>Reflection = mirror image on opposite side of line, no size change.</p> <p>Enlargement = make bigger or smaller.</p>

# English

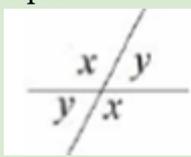
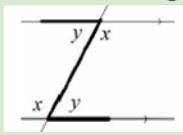
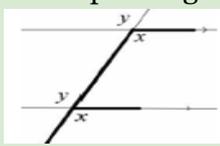
## Spring Knowledge

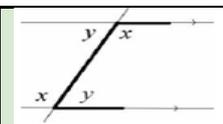
Block A		Block B	
Hamartia	For their downfall: Macbeth's is his ambition.	Duplicitous	Shakespeare presents Macbeth and Lady Macbeth as _____ characters when they pretend to welcome King Duncan into their home but have decided to murder him.
Soliloquy	When Shakespeare gives Macbeth or Lady Macbeth a _____, the audience know that truths will be revealed because there are no other characters on stage to hear them speak.	Transgressive	The murder of King Duncan, Banquo and Macduff's family are all _____ acts because they cross moral boundaries.
Foil	Banquo and Macduff are minor characters who are used by Shakespeare as a _____ because they are loyal soldiers; their moral goodness highlights Macbeth's corrupt soul.	Impressionable	Shakespeare portrays Macbeth as an _____ character when he does not question the witches' prophecy and allows himself to be manipulated by his wife into murdering King Duncan.
Paradox	The witches use _____ to highlight the chaos they will happen as the natural order is broken.	Divine Right of Kings	The Jacobean audience would have believed in _____; a belief that the king is chosen by God and has a direct connection to God.
Regicide	Macbeth carries out _____ in order to gain power even though he knows the consequence is eternal damnation.	The Gunpowder Plot	Shakespeare wrote this play in response to _____ where a group of Catholics led by Guy Fawkes tried to kill James I by blowing up the Houses of Parliament.
Block C		Block D:	
Fair is foul, and foul is fair	The witches' opening line establishing the world is about to be turned upside down.	Will all great Neptune's ocean wash this blood / Clean from my hand?	After Macbeth kills King Duncan, he is overcome with guilt and recognises his life is now changed forever.

Like valour's minion carved out his passage	At the start of the play, other characters speak of Macbeth's bravery on the battlefield when the Norwegian army is beaten.	Upon my head they placed a fruitless crown, / And put a barren sceptre in my gripe	Despite Macbeth becoming king, he is not satisfied because he is heirless and reflects on the witches' prophecy that Banquo's son, Fleance, will become king in the future.
Art not without ambition, but without / The illness should attend it	Lady Macbeth recognises her husband's desire to be king but does not believe he has the ruthlessness to kill King Duncan.	O, full of scorpions is my mind, dear wife!	Macbeth becomes increasingly paranoid and stressed when he is crowned king, worrying that his actions will be exposed.
<b>Block E</b>		<b>Block F</b>	
unsex me here, / And fill me from the crown to the toe top-full / Of direst cruelty!	Lady Macbeth wants her femininity stripped away from her and be replaced by more powerful masculine traits.	Never shake / Thy gory locks at me	After Macbeth orders the murder of Banquo, the other characters witness his mental decline as he calls out to Banquo's ghost at the banquet.
look like the innocent flower, / But be the serpent under't	Lady Macbeth advises her husband to pretend to be a loyal subject to the king and hide their evil, traitorous thoughts.	Are you a man?	Lady Macbeth is shocked by her husband's behaviour in front of their guests and questions his masculinity.
Out, damned spot!	Lady Macbeth begins sleepwalking and hallucinating that she has blood on her hands.	It is a tale / Told by an idiot, full of sound and fury, / Signifying nothing	Once Macbeth is told that his wife is dead, he reflects on the pointlessness of life.
This dead butcher and his fiend-like queen	Malcolm takes his rightful place as the new King of Scotland and ends the play by describing Macbeth and his wife as evil, traitorous characters.		

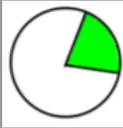
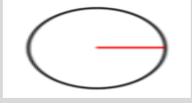
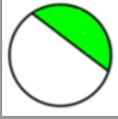
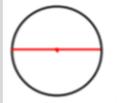
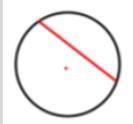
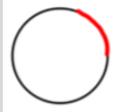
# Mathematics

## Spring Knowledge

Block A		Block B	
Proportion	A relationship between two quantities	Best buy	Deciding which offer is the best value for money
Direct proportion	Two quantities increase at the same rate	Unitary method	Finding the price of one unit and comparing the cost per unit
Indirect proportion	As one quantity increases, the other decreases at the same rate	Exchange rate	The price of one currency in terms of another
Constant of proportionality	A constant number that determines the relationship between the two quantities in a proportion	Conversion graph	A graph used to convert between two units
Block C		Block D	
Acute angle	Less than $90^\circ$	Angles on a straight line	Sum to $180^\circ$
Obtuse angle	Between $90^\circ$ and $180^\circ$	Angles around a point	Sum to $360^\circ$
Reflex angle	More than $180^\circ$	Angles in a triangle	Sum to $180^\circ$
Right angle	Exactly $90^\circ$	Isosceles triangle	The two base angles are equal to each other
		Equilateral triangle	All of the angles are equal to $60^\circ$
Block E		Block F	
Parallel lines	Lines that are equidistant (same distance) from each other	Percent	Out of 100
Vertically opposite angles	Vertically opposite angles are equal 	Multiplier	Used to work out percentage of amount when we have a calculator
Alternate angles	Alternate angles are equal 	Finding 1% of an amount	Divide by 100
Corresponding angles	Corresponding angles are equal 	Finding 10% of an amount	Divide by 10
Co-interior angles	Co-interior angles sum to $180^\circ$	Finding 50% of an amount	Divide by 2



<b>Block G</b>		<b>Block H</b>	
Finding 20% of an amount	Divide by 5	Convert fractions to decimals	Divide the numerator by the denominator using the bus stop method
Finding 25% of an amount	Divide by 4	Convert decimals to fractions	Write as a fraction out of 10, 100 or 1000 and simplify
Percentage change	$\frac{\text{difference}}{\text{original}} \times 100$	Convert percentages to decimals	Divide by 100
Increase by a percentage	Find the percentage and add it to the original amount	Convert decimals to percentages	Multiply by 100
Decrease by a percentage	Find the percentage and subtract from the original amount	Convert fractions to percentages	Convert to decimal and then multiply by 100
		Convert percentages to fractions	Write the percentage over 100 as a fraction
<b>Block I</b>		<b>Block J</b>	
Interest	A fee which is paid for borrowing money	Ratio	A statement of how two numbers compare
Principal	The original amount of money	Simplify a ratio	Divide both parts by their highest common factor
Rate	The percentage of the original that is added on	Scale up a ratio	Multiply both parts by the same number
Simple interest	When the interest remains constant over time	Sharing in a ratio	A method of dividing an amount in a given a ratio
<b>Block K</b>		<b>Block L</b>	
Perimeter	The length on the outside of a shape	Square number	The result when you multiply a number by itself
Area	The space taken by the shape	Right angle triangle	A triangle with a 90° angle
Perpendicular height	The height that is at 90° to the length	Hypotenuse	The longest side in a right-angle triangle. It is always opposite the right angle
Area of square, rectangle and parallelogram	Length × perpendicular height	Pythagoras' theorem	$a^2 + b^2 = c^2$
Area of a triangle			
<b>Block M</b>		<b>Block N</b>	
Circumference	The perimeter of the circle	Sector	The region enclosed by 2 radii and their intercepted arc

			
Radius	The distance from the centre of the circle to the edge 	Segment	The region bounded by a chord and the arc created by the chord 
Diameter	The total distance across the width of a circle through the centre. Double the radius 	Calculating circumference	$\pi \times diameter$
Chord	A straight line whose end points lie on a circle 	Calculating area of circle	$\pi \times radius^2$
Tangent	A straight line which touches the circle at exactly one point 	Compound shape	A shape made up of two or more shapes joined together
Arc	A part of the circumference of a circle 		

# Science

## Spring Knowledge

Block A – The Leaf		Block B – Transport in Plants	
Guard Cells	Surround the stomata and control the opening/closing	Diffusion	Net movement of molecules from area of higher concentration to area of lower concentration
Palisade Mesophyll	Upper layer in the plant leaves made up of closely packed cells that contain many chloroplasts for photosynthesis	Evaporation	Process in which a liquid changes state and turns into a gas
Spongy Mesophyll	Lower layer in the plant leaves that contain some chloroplasts and many large air spaces to give a large surface area for the exchange of gases.	Osmosis	Net movement of water molecules across a selectively permeable membrane from area of high water concentration to area of lower water concentration
Stomata (singular. Stoma)	Openings in the leaves of plants, particularly on the underside, controlled by guard cells, allowing gases to diffuse in/out	Transpiration	The loss of water from leaves by evaporation through the stomata
Xylem	Narrow, hollow, dead tubes supported by lignin. Tissue that transports water and minerals in a plant	Translocation	The transport of dissolved material (sugars) through the plant
Phloem	Tissue in plant that transports products (includes sugars and amino acids) of photosynthesis up and down the plant	Potometer	Equipment used to measure water uptake in a plant in varying conditions
Companion Cells	Cells which support the phloem to carry out translocation.		
Sieve Tube	The conducting cells that, end to end, make up the phloem		
Block C – Carbon Cycle		Block D - Water Cycle	
Photosynthesis	The process by which plants make glucose using water, light and carbon dioxide. Oxygen is also released- <i>removes carbon dioxide from atmosphere</i>	Condensation	Process in which a gas changes state and turns into a liquid
Decomposition	The process of breaking down organic material to release nutrients back into the soil	Precipitation	as water droplets in clouds get heavier, they fall as rain, hail, sleet & snow.
Respiration	The process that takes place in living cells which uses glucose and oxygen to release energy. Water and carbon dioxide are released	Percolation	water trickles through gaps in the soils and rocks
Combustion	The process of burning by heat- <i>releases carbon dioxide into the atmosphere</i>	Evaporation	Process in which a liquid changes state and turns into a gas
Fossilisation	The process by which a fossil is made (fossil is preserved remains or traces of dead organisms)	Fossilisation	The process by which a fossil is made (fossil is preserved remains or traces of dead organisms)

		Factors that increase rate of decay	Temperature, Water (moisture) and Oxygen
<b>Block E – Forces &amp; motion Part 1</b>		<b>Block F – Forces &amp; motion Part 2</b>	
displacement	distance in a given direction	braking distance	the distance travelled by a vehicle during the time it takes for its brakes to act
driving force	force of a vehicle that makes it move (sometimes referred to as motive force)	conservation of momentum	in a closed system, the total momentum before an event is equal to the total momentum after the event. Momentum is conserved in any collision or explosion, provided no external forces act on the objects that collide or explode
effort	the force applied to a device used to raise a weight or move an object	directly proportional	a graph will show this if the line of best fit is a straight line through the origin
forces	a force (in newtons, N) can change the motion of an object	elastic	a material is elastic if it is able to regain its shape after it has been squashed or stretched
friction	the force opposing the relative motion of two solid surfaces in contact	extension	the increase in length of a spring (or a strip of material) from its original length
free-body force diagram	a diagram that shows the forces acting on an object without any other objects or forces shown	gravitational field strength, g	the force of gravity on an object of mass 1 kg (in newtons per kilogram, N/kg). It is also the
magnitude	the size or amount of a physical quantity	inertia	the tendency of an object to stay at rest or to continue in uniform motion
resultant force	a single force that has the same effect as all the forces acting on the object	limit of proportionality	the limit for Hooke's law applied to the extension of a stretched spring

scalar	a physical quantity, such as mass or energy, that has magnitude only (unlike a vector which has magnitude and direction)	mass	the quantity of matter in an object – a measure of the difficulty of changing the motion of an object (in kilograms, kg)
vector	a vector is a physical quantity, such as displacement or velocity, that has a magnitude and a direction (unlike a scalar which has magnitude only)	momentum	this equals mass (in kg) x velocity (in m/s)
acceleration	change of velocity per second (in metres per second per second, m/s <sup>2</sup> )	Newton's second law of motion	the acceleration of an object is proportional to the resultant force on the object, and inversely proportional to the mass of the object
deceleration	change of velocity per second when an object slows down	stopping distance	the distance travelled by the vehicle in the time it takes for the driver to think and brake
tangent	a straight line drawn to touch a point on a curve, so it has the same gradient as the curve at that point	terminal velocity	the velocity reached by an object when the drag force on it is equal and opposite to the force making it move
velocity	speed in a given direction (in metres/second, m/s)	thinking distance	the distance travelled by the vehicle in the time it takes the driver to react
		braking distance	the distance travelled by a vehicle during the time it takes for its brakes to act
<b>Block G – Pressure &amp; SHC</b>		<b>Block H – Energy stores/transfers</b>	
upthrust	the upward force that acts on a body partly or completely submerged in a fluid	Conservation of energy	Energy can never be created or destroyed. In a closed system there is no change in the total amount of energy of energy.
Pressure	Force acting per unit area	Type of energy	The form energy takes
Equation for pressure	Pressure = Force / area	Store of energy	Energy which is held in a system ready to be released in a certain form
Unit for pressure	N/m <sup>2</sup> or Pa	Thermal energy	Energy stored in hot objects.

Atmospheric Pressure	Pressure due to atmospheric gases	Kinetic energy	Energy stored in moving objects.
Equation for pressure in liquid	Pressure = height of liquid x density x gravitational field strength	Chemical energy	Energy stored in chemicals such as fuels.
Specific Heat Capacity definition	Energy needed to raise 1kg of substance by 1°C	Nuclear energy	Aka atomic energy. Energy stored in the nucleus of atoms.
Specific heat capacity depends on	<ul style="list-style-type: none"> <li>Mass of substance</li> <li>What the substance is</li> <li>Energy put into the system.</li> </ul>	Gravitational potential energy (store)	Energy stored in objects based on how high they are.
Calculate specific heat capacity	Change in thermal energy = mass X specific heat capacity X temperature change.	Elastic potential energy (store)	Aka strain energy. Energy stored in bent or stretched objects.
Temperature (in Kelvin) = Temperature (in Celsius) + 273	Temperature (in Kelvin) = Temperature (in Celsius) + 273	Energy transfers	Heating (including using waves) Electrically (with a current in wires) Mechanically (with forces)
Specific Latent Heat	Energy needed to change 1kg of a substance's state	Kinetic energy	$Kinetic\ Energy = \frac{1}{2} mass \times velocity^2$
Specific Latent Heat of Fusion	Energy needed to change 1kg of solid into 1 kg of liquid at the same temperature	Gravitational potential energy	$Gravitational\ Potential\ Energy = mass \times g \times height$ Where g = 10 n/kg on Earth
Specific Latent Heat of Vaporisation	Energy needed to change 1kg of liquid into 1 kg of gas at the same temperature	Work Done	$Work\ Done = Force \times Distance$
		Power	$Power = \frac{Energy}{Time}$
<b>Block I – Metals/Reactivity</b>		<b>Block J – Extraction</b>	
Metal oxides	When a metal reacts with oxygen	Displacement reaction	When a more reactive element replaces a less reactive element in a compound
Reduction	The reaction when oxygen is removed from a substance When a substance gains electrons	Metal ore	A rock with enough metal compound to make it economically worth extracting
Oxidation	The reaction when oxygen is added to a substance When a substance loses electrons	High grade ore	A rock containing a lot of metal compound
Metal + Oxygen --> Metal oxide	Metal oxide is produced. E.g magnesium + oxygen --> magnesium oxide	Low grade ore	A rock containing < 1% of metal compound
The reactivity Series	A list of elements in order of their reactivity (includes metals and carbon and hydrogen)	Extraction	Removal of metals from their compounds using reduction or electrolysis
Metal + Water -->	Metal hydroxide and hydrogen produced. E.g lithium + water --> lithium hydroxide + hydrogen	Reduction	A reaction when oxygen is lost and electrons are gained (metals are reduced in a reaction)
Reactivity	How likely a substance is to lose or gain electrons.	Oxidation	A reaction when oxygen is gained and electrons are lost (non-metals are oxidised in a reaction)

Metal + Acid --> ...	Salt + hydrogen produced. E.g Potassium + nitric acid --> potassium nitrate + hydrogen	Heating with carbon	Method used to extract metals less reactive than carbon
<b>Block K - Extraction of metals</b>		<b>Block L – Electrolysis</b>	
Electrolysis	Method used to extract metals more reactive than carbon	Electrolysis	The breakdown of a substance containing ions by electricity
Phytomining	A process where plants take up metal ions and are burned to collect metal from low grade ores	Molten	A substance which has been melted, a liquid
Bioleaching	A process where bacteria ingest metal compound and leach it out in order for it to be purified	Dissolved	Mixed with a solvent e.g. salt solution is salt and water
Half equation	A reaction which shows the movement of electrons e.g $Al^{3+} + 3e^{-} \rightarrow Al$	Cathode	The negative electrode in electrolysis. Attracts the metals
Compound	A substance made when two or more elements are chemically bonded together	Anode	The positive electrode in electrolysis. Attracts the non-metals
Ionic Compound	A compound made up of a metal (positive ion) and a non-metal (negative ion) form a bond	Electrolyte	A liquid containing free-moving ions which is broken down by passing an electric current in the process of electrolysis
		Half equations	An equation that describes reduction (gain of electrons) or oxidation (loss of electrons)

# Geography

## Spring Knowledge

Block A		Block B	
Ecosystem	The living and non-living parts of an environment and the interrelationships that exists between them	Adaptations	The way that plants and animals evolve to cope with certain environmental conditions such as excessive rainfall
Abiotic	Non-living, e.g. atmosphere, water or heat	Organisms	An individual animal, plant or single-celled life form
Biotic	Living, e.g. trees, animals, humans or plants	Producers	Organisms that obtain their energy from a primary source such as the sun
Biomes	Global scale ecosystems, e.g. tropical rainforests	Consumers	Organisms that obtain their energy by eating other organisms
Biosphere	The regions of the surface and atmosphere occupied by all living things.	Decomposers	Organisms such as bacteria that break down plant and animal matter
Block C		Block D:	
Scavengers	Organisms that consume dead animals and plants	Nutrient Cycling	The recycling of nutrients between living organisms and the environment
Food Chain	A line of linkages between producers and consumers	Temperate Deciduous Forest	Forests made up of broad-leaved trees such as oak that drop their leaves in the autumn.
Food Web	A diagram that shows all the linkages between producers and consumers in an ecosystem.	Evergreen Trees	Trees which do not lose their leaves in the year
Biodiversity	The variety of species in the world, country or local habitat	Stratification	Layering of forests, seen particularly in temperate deciduous forests and tropical rainforests
Productivity	Generation of biomass by photosynthesis	Leaching	The dissolving and removal of nutrients from the soil, often in tropical rainforests because of the heavy rain
Block E		Block F	
Arid	Dry conditions associated with the deserts	Clear Felling	Absolute clearance of all trees from an area
Hot Deserts	Deserts have rainfall of less than 249mm of rainfall per year. Hot deserts around found 30°N and S of the equator	Selective Logging	The cutting down of selected trees, leaving most of the trees intact
Cold Deserts	Deserts have rainfall of less than 249mm of rainfall per year. Cold deserts are found 60°N and S and further from the equator	Slash and Burn	Trees are cut down and the land is cleared by burning before being replanted

Deforestation	The cutting down and removal of trees	Sustainable Management	Development is long lasting and not harmful to the environment
Pollarding	The cutting of trees at shoulder height to promote growth	Carbon Sink	Where forests absorb carbon dioxide from the atmosphere
<b>Block G</b>		<b>Block H</b>	
Endemic	Species of animals which are only found in specific areas of the world	Appropriate Technology	Technology suited to the needs of the local people that combines materials and is environmentally friendly.
Precipitation	Rainfall falling from the atmosphere	Tap Roots	Deep roots which extend underground in search of water
Diurnal	Range between day and night temperatures	Dormant	Sleeping/hibernating for periods of time to conserve energy
Water Table	The level below which the ground is saturated with water	Transpiration	Water evaporating of the surface of vegetation
Overgrazing	Livestock grazing on the land for too long, so it is unable to recover its vegetation.	Desertification	A reduction in the biological productivity of the land which leads to deserts like conditions, e.g. The Sahel
<b>Block I</b>		<b>Block J</b>	
Cash Crops	Growing crops to make money, not for personal consumption		
Monoculture	The farming of a single crop		
Marginal Land	The areas which can only be farmed when conditions are very good (e.g. rainfall)		
Afforestation	Replanting of trees		
Desalination	Industrial process to move salt from seawater		

# History

## Spring Knowledge

<b>Block A: Key Dates (Western Front)</b>		<b>Block B: Key Dates (Western Front)</b>	
1914	World War One begins	1916	The Battle of the Somme
1914	First Battle of Ypres	1917	The Battle of Cambrai
1915	Second Battle of Ypres	April 1917	The Battle of Arras
1915	Blood transfusions introduced	July 1917	The Battle of Passchendaele
1915	Gas masks introduced	November 1918	Armistice signed, World War One ends
<b>Block C: Key Terms (Western Front)</b>		<b>Block D: Key Terms (Western Front)</b>	
No Man's Land	Land between Allied and German trenches in WW1	Shrapnel	Fragments of a bomb, shell or other object thrown out by an infection
Stretcher Bearers	Collected wounded, 16 in each battalion	Stalemate	A situation in which further action or progress seems impossible
Trenches	Long, narrow ditches dug during the First World War	Shell	A type of explosive bomb
Ypres Salient	Area around Ypres where many battles took place	Terrain	Type of ground on which soldiers fight on
Western Front	The area where most fighting took place during World War One, across Belgium and France	Artillery	Heavy military weapons built to aim at a large range
<b>Block E: Key People (Western Front)</b>		<b>Block F: Common Injuries/Illnesses (Western Front)</b>	
James Blundell	Carried out the first human blood transfusion	Trench Fever	Caused by body lice and included flu like symptoms
Richard Lewishon	Discovered adding sodium nitrate to blood could stop it clotting, meaning it could be stored for longer	Trench Foot	Infection caused by soldiers standing in mud/waterlogged trenches
Wilhelm Roentgen	Discovered X-Rays	Shellshock	Known as PTSD today. Mental health condition caused by horrors of the war
Harold Gillies	Developed methods of restoring and rebuilding facial features	Gangrene	When the body decomposes due to

			loss of blood supply
Harvey Cushing	American surgeon, developed new brain surgery techniques	Gas gangrene	Infection that produced gas in Gangrenous wounds
<b>Block G: Common treatments (Western Front)</b>		<b>Block H: Chain of Evacuation (Western Front)</b>	
Debridement	Cutting away dead or infected tissues from around the wound	Regimental Aid Post	Close to the frontline and staffed by a medical officer for those lightly wounded
Blood transfusions	Blood taken from a healthy person and given to a patient	Field ambulance	Provided transport away from the frontline to those more badly wounded
Brain surgery	Magnets used to remove metal fragments	Casualty clearing station	Large, well equipped station, 10 miles from trenches
Amputation	Removal of limb by trauma	Base hospital	Large hospital with an operating theatre and X-Rays for those severely wounded
Plastic surgery	The process of reconstructing parts of the body by the transfer of tissue	RAMC	Organised all medical care on the Western Front
<b>Block I: Types of Sources (Western Front)</b>		<b>Block J: Usefulness of different types of sources (Western Front)</b>	
National Army Records	Key statistics of soldiers on the Western Front	National Army Records	Provides dates of service, record of wounds and effectiveness of treatment
National newspaper reports	Key articles from the war	National newspaper reports	Showed national feeling on the war effort, may be subject to censorship
Government reports	Official reports on the war effort	Government reports	Departmental overview of aspects of the war – where money is being spent. Likely to be very accurate.
Personal accounts	First-hand accounts from soldiers written during the war	Personal accounts	Details feelings as well as facts, may be subject to censorship
Photographs	Pictures of the Western Front	Photographs	Show what is happening in the exact moment
Hospital Records	Information about wounded and treatments in WW1	Hospital Records	Provides specific information on types of illness and methods of treatments
<b>Block K: Key Dates (Elizabeth England)</b>		<b>Block L: Key Dates (Elizabethan England)</b>	
1558	Elizabeth Tudor becomes Queen	1569	Revolt of the Northern Earls
1559	Religious Settlement	1571	Ridolfi Plot
1559	Treaty of Cateau-Cambresis (end of war between England and France)	1586	Throckmorton Plot
1566	Dutch Revolt	1587	Mary, Queen of Scots is executed

1568	Genoese Loan	1588	The Spanish Armada
<b>Block M: Key Terms (Elizabethan England)</b>		<b>Block N: Key Terms (Elizabethan England)</b>	
Parliament	Law-making body made up of MPs and Lords	Nobility	A group of men who held the highest titles below Kings and Queens
Privy Council	A group of special advisors to the monarch	Divine Right	Belief that a monarch's right to rule came from God
Puritan	Extreme protestants	Act of Supremacy	Part of the Religious Settlement; made Elizabeth the Supreme Governor of the Church of England
Protestants	Christians who protested against the Catholic Church. Did not accept the Pope as Head of the Church	Act of Uniformity	Part of the Religious Settlement; established the appearance of Churches and Church services
Catholics	A group of Christians who regarded the Pope as the Head of the Church	Legitimate	Being born in wedlock (your parents being married)

<b>Block O: Key People (Elizabethan England)</b>		<b>Block P: Elizabeth's challenges in 1558 (Elizabethan England)</b>	
Elizabeth I (Elizabeth Tudor)	Last Tudor Monarch, Queen of England 1588-1603. Protestant.	Gender	People did not think a woman was capable of ruling
Mary I (Mary Tudor)	Elizabeth's half-sister, Queen from 1553-1558. Catholic.	Legitimacy	Some people did not see Elizabeth's parent's marriage as valid
Mary, Queen of Scots	Elizabeth's cousin and heir. Catholic and Queen of Scotland.	Religion	Clashes between Catholics/Puritans and Protestants
Philip II	King of Spain, married to Mary Tudor, launched Spanish Armada in 1558	Mary, Queen of Scots	Many Catholics wanted Mary, Queen of Scots on the throne instead of Elizabeth
Sir Francis Drake	Famous privateer, helped defeat Spanish Armada	Foreign threats	The possibility of invasion from Spain or France

# French

## Spring Knowledge

<b>Block A – places in town</b>			
1.Au collège	To school	7.À la piscine	To the swimming pool
2.Au cinema	To the cinema	8.À la patinoire	To the ice rink
3.au centre commercial	To the shopping centre	9.À la bibliothèque	To the library
4.au parc	To the park	10.Chez moi	To mine / my house
5.au theatre	To the theatre	11.Chez toi	To yours / your house
6.au Jardin	To the garden		
<b>Block C – les verbes</b>		<b>Block D: les excuses</b>	
12.Aller	To go	19Je dois	I must
13.Venir	To come	20.Faire du sport	Do sport
14.Regarder	To watch	21.Faire les devoirs	Do homework
15.Voir	To see	22.Faire le lit	Make the bed
16.Jouer des jeux-videos	To play video games	23.Faire la cuisine	Do the cooking
17.Rentrer	To return	24.Faire le jardinage	Do the gardening
18.Lire	To read	25.Faire le ménage	Do the housework
Se detendre	To relax		
Se promener	To go for a walk		
Conduire	To drive		

Manger	To eat		
Sortir	To go out		
<b>Block E – high frequency phrases</b>			
26.Je veux	I want	31.Je vais	I'm going
27.Je voudrais	I would like	32.Si	if
28.J'aimerais	I would like	33.Je suis	I am
29.Je peux	I can	34.Tu es	You are
30.Je ne peux pas	I cannot		

<b>Block G – school subjects = les matières</b>			
35. Les maths	Maths	40.La geographie	Geography
36.La science	Science	41.La technologie	Technology
37.La physique	Physics	42.Le dessin	Art
38.La chimie	Chemistry	43.Le français	French
39.La biologie	Biology	44.L'anglais	English
		45.L'EPS	P.E.
		46.L'histoire	history
<b>Block H – time phrases</b>			
47.normalement	Normally	52.Hier	Yesterday
48.souvent	Often	53.La semaine dernière	Last week

49. quelquefois	Sometimes	54. Le weekend dernier	Last weekend
50. De temps en temps	Occasionally	55. Le mois dernier	Last month
51. toujours	Always	56. Hier	Yesterday
		57. Plus tard	Later
		58. Ce soir	Tonight
		59. Ce weekend	This weekend
		60. Demain	Tomorrow
		61. La semaine prochaine	Next week

**Block I – high frequency phrases**

62. Je pense que	I think that	68. c'était	It was
63. Je crois que	I believe that	69. ça me fait	It makes me (+ verb)
64. Je dirais que	I would say that	70. ça me rend	It makes me (+ adjective)
65. Parce que / car	Because	71. je vais	I go / I'm going
66. puisque	Since	72. Je ne vais pas	I don't go / I'm not going
67. Vu que	Seeing that	73. il va être	It's going to be
J'ai joué	I played	Ce sera	it will be

<b>Block J - verbs</b>		<b>Block K - adjectives</b>	
81.Difficile	Difficult		
82.Facile	Easy		
83.Triste	Sad		
84.Heureux / heureuse	happy		
85.Énervé	annoyed		
Passionant (e) / excitant (e)	exciting		
Pas cher / chère	Cheap		
Gratuit (e)	Free		
chouette	Great		
Bruyant (e)	Noisy		
Tranquille	calm		
Joli (e)	pretty		

# Religious Studies

## Spring Knowledge

Block A		Block B	
monotheism	Belief in one God	omniscient	Quality of God: all-knowing
holy	dedicated or consecrated to God or a religious purpose; sacred.	omnipotent	Quality of God: all-powerful
The Fall	the belief that when Adam and Eve disobeyed God, they 'fell' from perfection and brought evil into a perfect world.	omnibenevolent	Quality of God: all-loving
the Word	The term used at the beginning of John's gospel to describe the Son of God	just	Quality of God: bringing about what is right and fair. Serving justice.
Creation	The act by which God brought the universe into being	Free Will	Christian belief that God gives people the ability to make decisions for themselves
Block C		Block D:	
The Holy Trinity	Belief in God the father, God the son and God the holy spirit	sin	Any action or thought that separates humans from God
God the Father	First person of the Trinity The creator God	sin	Behaviour which is against God's laws and wishes or against principles of morality
God the Son	Second person of the Trinity the title of Jesus within the trinity. Denotes the special relationship between Jesus and God the father	original sin	The first sin of humanity committed by Adam and Eve.
God the Holy Spirit	Third person of the Trinity the inspiring presence of God in the world	Original Sin	An Augustine Christian doctrine that says that everyone is born with a built in urge to do wrong
		doctrine	a belief or set of beliefs held and taught by a Church
Block E		Block F	
the Gospels	the Gospels	Incarnation	God in human form
The problem of Evil	The problem of Evil	the Nicene Creed	A statement of belief used in Christian services
		the Apostles Creed	A statement of belief from the Early Church

<b>Block G</b>		<b>Block H</b>	
agape	Christian love	resurrection	The physical return of Jesus on the third day after he died. Jesus rising from the dead: The central belief of Christianity
crucifixion	Capital punishment used by Romans, nailing someone to a cross to kill them	salvation	Saving of the soul from sin
blasphemy	A religious offence which includes claiming to be God	grace	Unconditional love that God shows to people who do not deserve it
forgiveness	Showing grace and mercy and pardoning someone for what they have done wrong	heaven	The place of eternal joy, the state of being in the presence of God
		hell	The place of eternal suffering, the state of being without God
<b>Block I</b>		<b>Block J</b>	
Satan	Name for the devil. The personification of evil	Church of England	Protestant church set up by Henry V111-church of state in England, rejects papal authority
purgatory	The intermediate state where souls are cleansed in order to enter heaven	Orthodox church	A branch of the Christian church
Day of judgement	A time when the world will end and every soul will be judged by God; rewarded or punished	Protestant	Branch of the Christian church that broke away from the Roman Catholic church
Ascension	Jesus being taken up to heaven on the 40th day after Easter	Quakers	Society of Friends Christian group
Atonement	The action of making amends for wrong doing. Being at one with god	Roman Catholics	The largest Christian group, based in Rome, Pope as its leader
Anglican	A worldwide denomination that includes the Church of England	Methodists	Protestant Christian group
<b>Block K</b>		<b>Block L</b>	
worship	the feeling or expression of reverence and adoration for a deity. Praise, honour or devotopn.	Sacrament	Outward and visible sign of an inward and spiritual grace
secular	Relating to worldly as opposed to religious things	infant baptism	Ceremony to welcome a child into the Christian religion
ecumenical	Relating to worldwide Christian church	believer's baptism	Ceremony to welcome young person/adult into Christian religion using full immersion

agape	a word used in the Bible that describes selfless, sacrificial, unconditional love.	confirmation	Initiation ceremony carried out by a bishop bestowing the gift of the holy spirit
advent	the first season of the Church year, leading up to Christmas and including the four preceding Sundays.		
Christmas	Christmas is traditionally a Christian festival celebrating the birth of Jesus		
Epiphany	the manifestation of Christ to the Gentiles as represented by the Magi (Matthew 2:1–12).		
<b>Block M</b>		<b>Block N</b>	
Easter	the most important and oldest festival of the Christian Church, celebrating the resurrection of Christ	worship	the feeling or expression of reverence and adoration for a deity. Praise, honour or devotopn.
Lent	the period preceding Easter, which is devoted to fasting, abstinence, and penitence in commemoration of Christ's fasting in the wilderness.	prayer	spiritual communion with God , as in supplication, thanksgiving, adoration, or confession.
fasting	abstain from all or some kinds of food or drink		
Paschal candle	a large candle blessed and lit on Holy Saturday and placed by the altar until Pentecost.		
temptation	the desire to do something, especially something wrong or unwise. the tempting of Jesus by the Devil (see Matt. 4).		
<b>Block O</b>		<b>Block P</b>	
pilgrimage	a journey by a believer to a holy site for religious reasons; an act of worship and devotion	Eucharist	Christian ceremony to celebrate the last supper, bread and wine consecrated and consumed
Lourdes	Town in France where the Virgin Mary appeared, place of pilgrimage	alternative names for the Eucharist	Mass, Holy communion, the Lord's Supper and Divine Liturgy
Iona	Island in Scotland, used as a religious retreat	transubstantiation	Change in the bread and wine to become the body and blood of Christ
the Holy Land	Land of Israel		
<b>Block Q</b>		<b>Block R</b>	
liturgical worship	Church service with a set structure of worship	mission	Organised effort to spread the Christian message

non-liturgical worship	Informal structure found in some Church services	Pentecost	In the New Testament, the day that the Holy Spirit descended upon the disciples of Jesus.
Evangelism	Preaching of the faith in order to convert people to that religion	convert	someone who has decided to become committed to a religion and change their faith
the Catechism of Catholic Church	A summary of Roman catholic teaching	Ordination	The process by which someone becomes a priest
penitence	the action of feeling or showing sorrow and regret for having done wrong; repentance.	St Paul	A man who taught the teachings of Jesus- originally Saul of Tarsus before his conversion
<b>Block S</b>		<b>Block T</b>	
Rosary	Set of beads used to count prayers especially in the Roman Catholic Church	food banks	Charity groups collecting donated food to distribute to the poor in Britain
CAFOD	A charity, Catholic agency for Overseas development	Street Pastors	Christian organisation of people working on the city streets at night caring for people who need help or involved in anti-social behaviour
Christian Aid	A charity working in the developing world, providing long term and emergency aid	persecution	hostility and ill treatment, especially because of race, or political or religious beliefs
the Church Army	An evangelistic organisation founded within the church of England	poverty	being without money, food or other basic needs
Tearfund	Christian charity working to relieve poverty in developing countries	reconciliation	The process of making people in conflict friendly again

# Business Studies

## Spring Knowledge

Block A		Block B	
Aims and objectives	Aims are a long-term goal and objectives are the steppingstones to achieve this aim	Break-even	Break-even is the point at which revenue and total costs are the same – the business is making neither a profit nor a loss
Costs	A cost is an outflow of money from a business. There are two types: variables (ones that change) and fixed (don't change)	Margin of safety	The margin of safety is the difference between the current output level and the breakeven point
Revenue	The money received from sales. (Quantity sold x selling price)	Level of output	The number of products a business produces – break-even level of output = how many products the business needs to produce to cover costs.
Profit	The amount of money made after all expenses have been paid. Two types = net and gross	Impact of changes	Increase or decrease in revenue will affect BEP. Similarly, increase or decrease in costs incurred will affect BEP.
Loss	When the costs of a business are greater than the revenue it makes.	Interest rate	The percentage rate charged on a loan or paid on savings. Eg, borrow £100 with an interest rate of £5 = pay back £105.
Block C		Block D:	
Cash	The money that the business has on its premises or in its bank accounts.	Short-term finance	Finance borrowed for up to 12 months.
Cash-flow	The money flowing into and out of a business on a day-to-day basis.	Long-term finance	Finance borrowed for 5 years or more.
Cash-flow forecast	A statement showing the expected cash flow of money into and out of a business over a period.	External finance	Finance raised from sources outside of the business. The main external sources of finance are overdrafts, trade credit, loan, crowd funding and share issues.
Outflows	Money flowing out of a business - Repay bank loans, buy raw materials, Pay staff.	Internal finance	Finance raised from within the business. Main sources are owners' capital, retained profit and sale of assets.
Importance of cash	Cash makes a business more liquid – increase chances of growth and expansion. Limits risk.	Liquidity	The ability of a business to pay its short-term debts.

Block E		Block F	
Liability	The responsibility of the business owners for debts incurred by the business.	Sole trader	A business owned by one individual – can hire employees if necessary.
Limited liability	The owners of a business can only lose the money they have invested in a business if it fails.	Partnership	A business owned by between 2 and 20 partners – profits are split.
Unlimited liability	The owner of a business is responsible for repaying all the debts of a business.	Private limited company	(Ltd) A smaller company that can sell shares to invited people only (friends, family, entrepreneurs)
Implications	Can be easier to set up unlimited liability --> Increases risk.	Franchising	A business that invests in the rights to another person or business to sell goods or services using the same name – EG: Nandos.
Ownership	Owners can opt to run their business as sole traders, partnerships or private limited companies. As the business expands it may wish to change its ownership.	Small business	Businesses that have <50 employees. Usually new businesses.