2024/25

Cycle 3 Knowledge Navigator

Year 8

Name:

Form:

Morning Meeting Homework

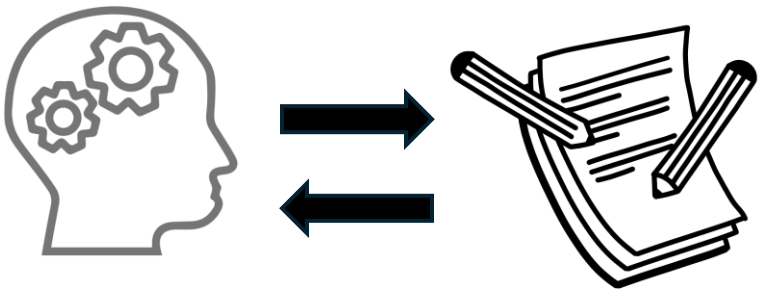
Purpose: to memorise and recall key facts from previous learning

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!



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100% Sheets	
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1		Homework Schedule	CYCLE 3	Year 8

	Week 1		Week 2		Week 3		Week 4		Week 5	
Monday	**31/3/25**	French	**21/4/25**		**28/4/25**	French	**5/5/25**		**12/5/25**	French
Tuesday	**1/4/25**	Science: P + S box 1 & 2	**22/4/25**	Science: P + S box 3 & 4	**29/4/25**	Science: P + S box 3	**6/5/25**	Science: H + D box 1 & 2	**13/5/25**	Science: H + D box 3 & 4
Wednesday	**2/4/25**	History: Section A	**23/4/25**	Geography: box 1	**30/4/25**	History: Section B	**7/5/25**	Geography: box 2	**14/5/25**	History: Section C
Thursday	**3/4/25**	*English – box A* *Maths - Sparx*	**24/4/25**	*English – box B* *Maths - Sparx*	**1/5/25**	*English – box C* *Maths - Sparx*	**8/5/25**	*English – box D* *Maths - Sparx*	**15/5/25**	*English – box E* *Maths - Sparx*
Friday	**4/4/25**		**25/4/25**		**2/5/25**		**9/5/25**		**16/5/25**	

	Week 6		Week 7		Week 8		Week 9		Week 10	
Monday	**19/5/25**	French	**2/6/25**	French	**9/6/25**	French	**16/6/25**	French	**23/6/25**	French
Tuesday	**20/5/25**	Science: H + D box 5,6 & 7	**3/6/25**	Science: E & M box 1 & 2	**10/6/25**	Science: E & M box 3 & 4	**17/6/25**	Science: E & M box 1 & 4	**24/6/25**	Science: P + S box 1 & 2
Wednesday	**21/5/25**	Geography: box 3	**4/6/25**	History: Section D	**11/6/25**	Geography: box 4	**18/6/25**	History: Section E	**25/6/25**	Geography: box 5
Thursday	**22/5/25**	*English – box A* *Maths - Sparx*	**5/6/25**	*English – box B* *Maths - Sparx*	**12/6/25**	*English – box C* *Maths - Sparx*	**19/6/25**	*English – box D* *Maths - Sparx*	**26/6/25**	*English – box E* *Maths - Sparx*
Friday	**23/5/25**		**6/6/25**		**13/6/25**		**20/6/25**		**27/6/25**	

	Week 11		Week 12		Week 13	
Monday	**30/6/25**	French	**7/7/25**	French	**14/7/25**	French
Tuesday	**1/7/25**	Science: P + S box 2 & 4	**8/7/25**	Science: H + D box 1 & 2	**15/7/25**	Science: E & M box 1 & 2
Wednesday	**2/7/25**	History: Section F	**9/7/25**	Geography: box 6	**16/7/25**	History: Section A
Thursday	**3/7/25**	*English – box A* *Maths - Sparx*	**10/7/25**	*English – box B* *Maths - Sparx*	**17/7/25**	*English – box C* *Maths - Sparx*
Friday	**4/7/25**		**11/7/25**		**18/7/25**	

DIXONS COTTINGLEY ACADEMY

2 French	Travel and Tourism	CYCLE 3	Year 8

Week 1		Week 2		Week 3		Week 4	
Countries		**Nationalities**		**Weather**		**Forms of Travel**	
aux États-Unis	in/to the USA	marocain	Moroccan	le météo	the weather forecast	en avion	by plane
au Maroc	in/to Morrocco	belge	Belgian	il fait beau	it's nice	en train	by train
en Suisse	in /to Switzerland	chinois	Chinese	il y fait du soleil	it's sunny	en autobus	by bus
en Espagne	in/to Spain	francophone	French speaking	il fait chaud	it is hot	en car	by coach
en Angleterre	in/to England	québécois	From Québec (Canada)	il fait froid	it is cold	en voiture	by car
au Pays de Galles	in/to Wales	suisse	Switzerland	il pleut	it's raining	en bateau	by boat
en Tunisie	in/to Tunisia	arabe	Arabic	il neige	it's snowing	en TGV	by high speed train
en Belgique	in/to Belgium	africain	African	il fait du vent	it's windy	à pied	on foot
en Écosse	in/to Scotland	mondial	global	la pluie / la neige	rain / snow	à vélo	by bike
la Manche	the Channel			le brouillard	fog	à métro	by underground

Week 5				Week 6		Week 7	
Places to stay/facilities				**Verbs**		**Activities**	
un gite	a holiday home	une vue	a view	rester	to stay	aller à la montagne	to go to the mountains
une tente	a tent	une piscine	a swimming pool	louer	to hire	aller à un parc d'attractions	to go to an amusement park
un château	a castle	la plage	the beach	partir	to leave	visiter un musée	to visit a museum
un chalet	a wooden house in the mountains	la climatisation	air con	voler	to steal	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	faire une promenade	to go on a walk
une chambre	a room	un grand lit	a double bed	dormir	to sleep	faire les magasins	to go shopping
une île	an island	la porte	door	passer du temps	to spend time	faire du tourisme	to do tourist activities
un spectacle	a show	l'accueil	reception / welcome	voyager	to travel	sortir en ville	to go out into the town
le pont	the bridge	l'étage	floor	perdre	to lose	essayer voir	to try to see

3 French	Identity and Relationships	CYCLE 3	Year 8

Week 8		Week 9		Week 10	
Relationships - Verbs		**Relationships – Family members and friends**		**Relationships – Family members and friends**	
sourire	to smile	mon père/ ma mère	my dad/mum	ma copine/mon copain	my friend
rire	to laugh	mon grand-père	my grand-father	mon petit copain/ma petite copine	my boyfriend/girlfriend
connaître	to know	mon cousin/ma cousine	my cousin	ma famille	my family
naître	to be born	mon oncle/ma tante	my uncle/auntie	mon beau père/ma belle mère	my step dad/mum
mourir	to die	mon neveu/ma nièce	my niece	mon ami/mon amie	my friend
choisir	to choose	mon fils/ ma fille	my son/daughter	mon/ma/mes	my
mentir	to lie	mon frère/ma soeur	my brother/sister	ton/ta/tes	yours
rencontrer	to meet	mon mari/ma femme	my husband	son/sa/ses	his/hers
ressembler à	to look like	mon/ma partenaire	my partner	leur/leurs	theirs

Week 11		Week 12		Week 13	
Physical Description		**Relationships - Adjectives**		**Improve Relationships**	
les cheveux/les yeux	hair/ eyes	gentil/gentille	kind	encourager	to encourager
petit(e)/grand(e)	small / tall	méchant(e)	mean	améliorer	to improve
de taille moyenne	of average height	paresseux/paresseuse	lazy	discuter	to discuss
fort	strong	timide/bavard(e)	shy/chatty	parler	to talk
court	short	drôle/sympa	funny/kind	écouter	to listen
joli(e)/ moche	pretty / ugly	actif/active	active	passer du temps	to spend time
belle/beau	beautiful / handsome	embêtant(e)	annoying	comprendre	to understand
jeune	young	fier/fière	proud	respecter	to respect
vieux/vieille	old	sérieux/sérieuse	serious	promettre de	to promise to

4 SCIENCE	PARTICLES AND SOLUTIONS	CYCLE 3	Year 8

1. Particle model

Properties of solids, liquids and gases can be described in terms of particles in motion but with differences in the arrangement and movement of these same particles: closely spaced and vibrating (solid), in random motion but in contact (liquid), or in random motion and widely spaced (gas).

Observations where substances change temperature or state can be described in terms of particles gaining or losing energy.

A substance is a solid below its melting point, a liquid above it, and a gas above its boiling point.

Particle: A very tiny object such as an atom or molecule, too small to be seen with a microscope.

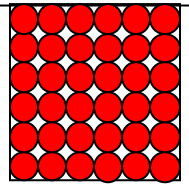
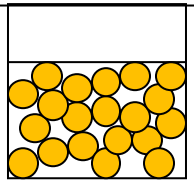
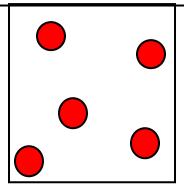
Particle model: A way to think about how substances behave in terms of small, moving particles.

Diffusion: The process by which particles in liquids or gases spread out through random movement from a region of high concentration to a region of low concentration.

Gas pressure: Caused by collisions of particles with the walls of a container.

Density: How much matter there is in a particular volume, or how close the particles are.

2. Properties of solids, liquids and gases

Solids	Liquids	Gases
Have a fixed shape	Take the shape of their container	Take the shape of their container
Have a fixed volume	Have a fixed volume	Don't have a fixed volume
Cannot be compressed	Cannot be compressed	Can be compressed easily
Cannot flow	Can flow	Can flow
		

3. Separating mixtures

Pure substance: Single type of material with nothing mixed in.

Mixture: Two or more pure substances mixed together, whose properties are different to the individual substances.

Solvent: A substance, normally a liquid, that dissolves another substance.

Solute: A substance that can dissolve in a liquid.

Dissolve: When a solute mixes completely with a solvent.

Solution: Mixture formed when a solvent dissolves a solute.

Soluble (insoluble): Property of a substance that will (will not) dissolve in a liquid.

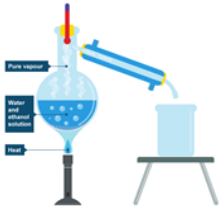
Solubility: Maximum mass of solute that dissolves in a certain volume of solvent.

Filtration: Separating substances using a filter to separate an insoluble solid from a filtrate (solution).

e.g. separating sand and water

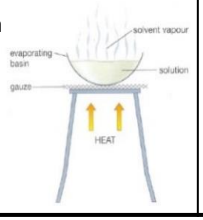
Distillation: Separating substances by boiling and condensing liquids.

e.g. separating water and alcohol



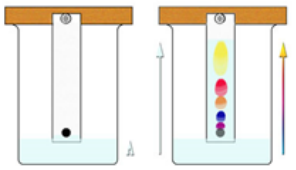
Evaporation: A way to separate a solid dissolved in a liquid by the liquid turning into a gas.

e.g. separating water from salt water



Chromatography: Used to separate different coloured substances.

e.g. separating different dyes in ink



4. Changes of state

Evaporate: Change from liquid to gas at the surface of a liquid, at any temperature.

Boil: Change from liquid to a gas of all the liquid when the temperature reaches boiling point.

Condense: Change of state from gas to liquid when the temperature drops to the boiling point.

Melt: Change from solid to liquid when the temperature rises to the melting point.

Freeze: Change from liquid to a solid when the temperature drops to the melting point.

Sublime: Change from a solid directly into a gas.

5 SCIENCE	HEALTH AND DISEASE	CYCLE 3	Year 8

1. Microbes

Microbes	Uses	Dangers
Bacteria	Used in the production of milk and cheese	Food poisoning, common cold, cholera, tuberculosis
Fungus	Yeast used in bread and alcohol production	Athlete's foot
Virus	Currently no positive uses	HIV/AIDS, chicken pox, meningitis, influenza ('flu)

2. Natural defences

Bodies defence	Function
Nose	Nose hair trap microbes
Eyes	Contain a substance which destroy bacteria
Lungs	Mucus - sticks to the microbes cilia sweep them away
Stomach	Contains hydrochloric acid kills microbes found on food
Skin	Barrier to prevent microbes entering the body
Blood	Carry white blood cells which produce antibodies

3. Vaccination – dead or a weakened version of a disease used to provide immunity to a particular disease.

1. A disease is weakened or killed
2. This is then injected into the patient
3. White blood cells produce different antibodies to attack the disease
4. Eventually the correct shaped antibody is produced
5. The body can now produce the right antibodies to fight the disease
6. Certain white blood cells remain in the blood to produce the correct antibodies quicker if re-infected with the same pathogen.

4. Antibiotics

Antibiotics are used to treat bacterial infection (and only bacterial infections). e.g. Penicillin
Antibiotic resistance occurs when bacteria can resist the damage caused by antibiotics.
This can be caused by oversubscribing by Doctors, subscribing for non-bacterial pathogens, or not completing the course of medication.

5. Smoking

Cigarettes contain several dangerous, three of the most dangerous are:
Nicotine – is the addictive chemical in cigarettes that affects the brain.
Tar – is a carcinogenic (cancer causing) chemical. It can also coat the airways and alveoli, making gaseous exchange difficult.
Carbon monoxide – irreversibly binds to red blood cells, taking the place of oxygen molecules. This means the heart has to work harder to supply the same amount of oxygen & the person is more likely to get out of breath.

6. Alcohol

Short-term effects	Long-term effects
Relaxes the body	Liver cirrhosis (damage)
Slows down reaction times	Brain damage
Slurred speech	Heart attack
Blurred vision	Increased weight
Increased confidence	Kidney damage

7. Drugs

Depressant	Stimulant	Hallucinogen
Slows down the messages to the brain e.g. alcohol, cannabis	Speeds up the messages to the brain e.g. caffeine, cocaine	Distorts a person's perceptions of reality (hallucinations)
Effects of depressants: Slowed thinking/ reactions, slowed muscular activity. Long term damage to liver, brain, kidney	Effects of stimulants: More energetic, difficulty sleeping, memory loss, damage liver and brain	Effects of hallucinogens: hallucinations, can cause increased heart rate, high blood pressure and dilated pupils

6 SCIENCE	ELECTRICITY AND MAGNETISM	CYCLE 3	Year 8

1. Current

Current is a movement of electrons and is the same everywhere in a series circuit. Current divides between loops in a parallel circuit, combines when loops meet, lights up bulbs and makes components work.

Around a charged object, the electric field affects other charged objects, causing them to be attracted or repelled. The field strength decreases with distance.

Two similarly charged objects repel, two differently charged objects attract.

Negatively charged: An object that has gained electrons as a result of the charging process.

Positively charged: An object that has lost electrons as a result of the charging process.

Electrons: Tiny particles which are part of atoms and carry a negative charge.

Charged up: When materials are rubbed together, electrons move from one surface to the other.

Electrostatic force: Non-contact force between two charged objects.

Current: Flow of electric charge, in amperes (A).

In series: If components in a circuit are on the same loop.

In parallel: If some components are on separate loops.

Field: The area where other objects feel an electrostatic force.

2. Voltage and resistance

In a series circuit, voltage is shared between each component. In a parallel circuit, voltage is the same across each loop.

Components with resistance reduce the current flowing and shift energy to the surroundings.

Calculate resistance using the formula: **resistance (Ω) = potential difference (V) ÷ current (A).**

Potential difference (voltage): The amount of energy shifted from the battery to the moving charge, or from the charge to circuit components, in volts (V).

Resistance: A property of a component, making it difficult for charge to pass through, in ohms (Ω).

Electrical conductor: A material that allows current to flow through it easily, and has a low resistance.

Electrical insulator: A material that does not allow current to flow easily, and has a high resistance.

3. Electromagnets

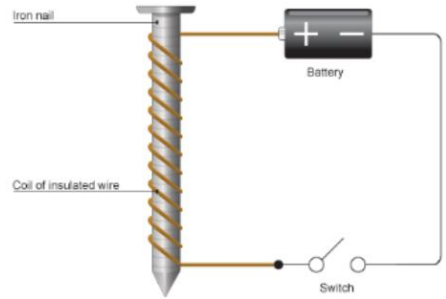
An electromagnet uses the principle that a current through a wire causes a magnetic field. Its strength depends on the current, the core and the number of coils in the solenoid.

The magnetic field of an electromagnet decreases in strength with distance.

Electromagnet: A non-permanent magnet turned and off by controlling the current through it.

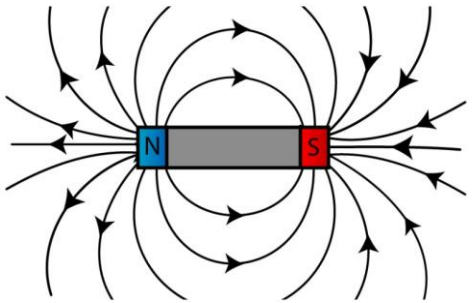
Solenoid: Wire wound into a tight coil, part of an electromagnet.

Core: Soft iron metal which the solenoid is wrapped around.



4. Magnetism

Magnetic materials (Iron, cobalt and nickel), electromagnets and the Earth create magnetic which can be described by drawing field lines to show the strength and direction. The stronger the magnet, and the smaller the distance from it, the greater the force a magnetic object in the field experiences.



Two 'like' magnetic poles repel and two 'unlike' magnetic poles attract.

Field lines flow from the north-seeking pole to the south-seeking pole.

Magnetic force: Non-contact force from a magnet on a magnetic material.

Permanent magnet: An object that is magnetic all of the time.

Magnetic poles: The ends of a magnetic field, called north-seeking (N) and south-seeking poles (S).

Section A – Key Words

Plantation – a large farm where a single crop was grown usually cotton, tobacco or sugar

Middle Passage – the journey the enslaved took across the Atlantic Ocean, it took 8-12 weeks and 1 in 4 died due to poor conditions

Slave – Someone who is captured and forced to work for another without pay, considered property

Transatlantic – The trade of goods and people across the Atlantic Ocean and back

Abolitionist - Someone who campaigned to end slavery

Auction - The process by which enslaved people were sold for a profit, the healthier and stronger the slave a better price

Underground Railroad – A network of people who would help enslaved people escape

Trade – To buy and sell goods

Slave Master – A person who owned people and forced them to work

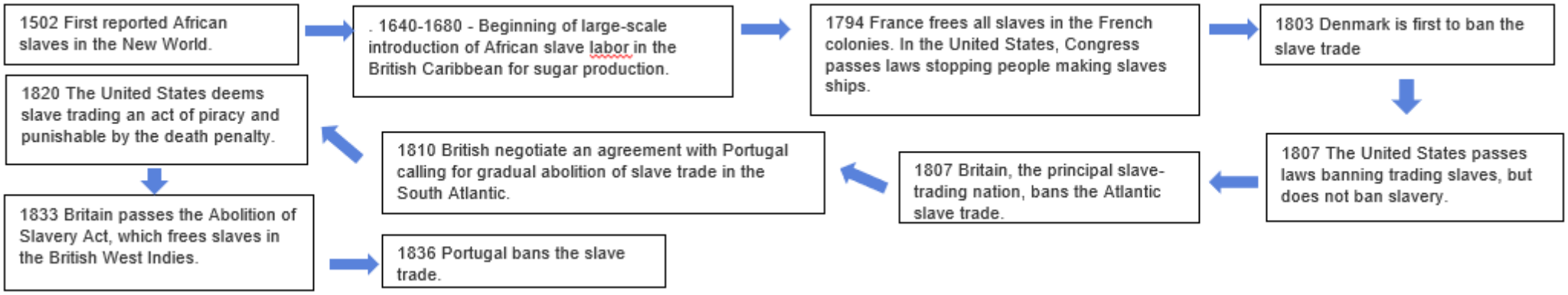
Section B – The Transatlantic Slave Trade

- In the 17th & 18th Century Europeans and Americans began to make money from **trading African slaves.**
- They were transported from Africa to the Americas were they were traded or sold for **sugar, tobacco and rum.**
- These products were taken back to **Europe** and sold. The profits were used to buy metal goods particularly guns which were taken back to Africa to trade for more slaves. This was called the **Triangular Slave and it was very profitable.**
- As the demand for these products increased, more people were enslaved to produce them

Capture

- African traders would raid villages and capture people, they would then put them in chains and march them to the coast
- At the coast, the African Tribesmen would exchange them for guns and other metal goods
- The captured Africans would be held in a slave fort for weeks until they were transported
- Conditions were harsh and brutal, many were beaten

Section C - Chronology



Section D – Impact of Slavery

Wealth and Jobs – All the goods sold abroad, and all the jobs brought back to Britain made the country very rich. People said Britain would be 'ruined' if the slave trade stopped. Many people relied on it for jobs merchants, ship builders or manufacturers using the cheap cotton

Empire Building – Many feared that if Britain did not take part in the slave trade they would be overtaken by other countries that did for example France. Many believed that Africans were better off being traded by the British than any other country. As a result Britain became very rich and allowed them to seize African countries as colonies.

Racism – Many thought that white people were superior to those of colour. They said Africans were only fit to work as slaves. This meant that even after slavery was abolished ideas of racism persisted in segregation and violence.

Africans – 12 million African people were forcibly removed from their home. It transformed previously prosperous societies into poverty and reliance on European influence. Europeans also brought new diseases such as Typhus and TB to African killing many more. Enslaved Africans lost their connections to families, language, culture even their own names

Section E – Abolitionists

Thomas Clarkson:

- Set up 1787 the 'Society for Effecting the Abolition of the Slave Trade'
- Collected a range of evidence proving how immoral and cruel slavery was including the Brookes diagram and leg-irons
- Spoke to people involved in the trade (e.g. ships doctors) to use as evidence against the trade
- Travelled 7000 miles around the country and making speeches

Olaudah Equiano

- ex-slave who used his own life story to explain the horrors of slavery. the book he wrote included a petition.
- Was enslaved as a child in Africa but bought his freedom in 1766
- lobbied [tried to persuade] MPs to end slavery
- Travelled around the country giving speeches about his experiences
- Was part of the Abolition group Sons of Africa

Section F - Resistance

1791 – St Domingue (owned by French)

- rebellion led by Toussaint L'Overture
- slaves on the island attacked plantation buildings and set fire to the farms
- slaves gained controlled of the north of the island
- French troops never regained control and France banned slavery in 1794

This terrified British slave owners.

1816 – Barbados (owned by British)

- Rebellion spread to a third of the island and 70 plantations
- Slaves burnt down a quarter of the islands sugar crop
- Rebellion was crushed, 1000 rebels were killed in the fighting and 200+ were later executed

1831 Jamaica (British)

- Revolt led by Samuel Sharpe started with a slave strike but escalated to involve 20,000 slaves attacking plantations and taking control
- Revolt was crushed but it took until January 1832.

The British government and plantation owners now saw the dangers and costs of slavery and feared an all-out war

Week	Key Knowledge to learn	
1 – Key Terms	**Development** - to improve a place → e.g. better education, health care and jobs **Sustainable** - sustainable development → does not harm planet for future people **GDP** - Gross Domestic Product → total money made in a country → in one year → shown in dollars **GNI** - Gross National Income → same as GDP → but also includes money from business in foreign countries → shown in dollars. **LIC** - Low Income Countries → poorest countries → low GNI → e.g. Nepal **NEE** - Newly Emerging Economies→getting richer→medium GNI→e.g. India **HIC** - High Income Countries → richest countries → high GNI → e.g. The UK	
2 – Measuring Development	**Birth rate** - number of live births (per 1,000 people) → high in LICs **Death rate** - number of deaths (per 1,000 people) → high in LICs **Infant Mortality** - number of babies who do not survive to age of 1 (per 1,000 live births) **Life expectancy** - average age that a person is likely to live to (in a particular place) **People per doctor** - percentage of people who have access to a doctor **Literacy rate** - percentage of people who can read and write **Safe Water** - percentage of people who have access to safe, clean water **HDI** - Human Development Index → combines wealth, health and education data → gives score between 1 and 0 → 1 = most developed	
3 – Development Gap and Globalisation	**Development gap** - when one place is more developed than another → development gap **Causes of uneven Development** **Physical factors** → harsh climate, natural disasters, raw materials **Economic factors** → debt, wars, corruption **Historical factors** → colonisation→ slavery, resources removed	**<u>Globalisation</u>** **Goods** - items that can be bought and sold **Trade** - buying and selling of raw materials, manufactured goods and services **Import** - buying goods from abroad **Export** - selling goods to another country **Manufacturing –** making things in factories **Industry** - processing raw materials and manufacturing goods (in factories) **Globalisation** - increases in movements of goods, people and communication

11 Geography	Dynamic Countries	CYCLE 3	Year 8

Week	Key Knowledge to learn	
4 – The Clark Fisher Model	**Industrial Structure -** percentage of people working in each of the four employment sectors **Primary -** getting raw materials from the land and sea e.g. farming → low pay **Secondary -** making products from raw materials e.g. car manufacturing **Tertiary -** service industries → e.g. doctors and teachers → higher pay **Quaternary -** ICT and research e.g. computer designers and scientists	**Pre-industrial -** employment → mostly primary e.g. farming, mining, fishing (LICs) **Industrial -** employment → mostly secondary e.g. manufacturing (NEEs) **Post-industrial -** employment → mostly tertiary e.g. doctors (HICs) **Clark Fisher Model - g**raph → shows how industrial structure changes as country develops
5– The Demographic Transition Model	**Population - number of people living in a place** **Population Pyramid -** shows population structure e.g. number of males/females, age groups **Natural Increase -** when birth rate is higher than death rate → population increases **Natural Decrease -** when death rate is higher than birth rate → population decreases **DTM -** Demographic Transition Model → graph → shows how population changes as a country develops	**DTM stage 1** → e.g. Tribes → birth and death rates are high → population low → lots of disease and famine, no contraception **DTM stage 2** → e.g. Afghanistan → birth rate high, death rate decreasing → population increasing → more money for healthcare and food **DTM stage 3** → e.g. Nigeria → birth rate and death rate decreasing → population increasing→ better living conditions, more contraception **DTM stage 4** → e.g. The UK → birth rate and death rate low → population high → free vaccinations → infant mortality rate is low **DTM stage 5** → e.g. Japan → birth rate below death rate → population decreasing → death rate increasing slightly → aging population
6 – Comparing the UK and China		

	China (NEE)	UK (Europe) → HIC
population	1.3 billion	66 million → increasing slowly
GNI per capita	$18,000	$39,507 (per person)
DTM	Stage 4	stage 4
life expectancy	76 years	81 years
literacy rate	96%	99%
people per doctor	2 doctors for every 1,000 people	1 doctor for every 357 people
HDI	0.75	0.92

12 English	Shakespeare- Othello	CYCLE 3	Year 8

Box A: Shakespeare' Plays	
Stage directions	this is an instruction in the text of a play indicating the movement, position, or tone of an actor, or the sound effects and lighting
Dialogue	The conversation between two or more characters in a play
Aside	remarks made by characters which only the audience can hear
Soliloquy	where a character speaks their thoughts aloud to the audience
Rhyme	Where similar sounds are used at the ends of words.
Iambic Pentameter	A type of poetic rhythm that has 10 syllables per line, alternating between unstressed and stressed beats (e.g. "Shall I compare thee to a summer's day?").
Blank Verse	Unrhymed iambic pentameter, which is the most common style of Shakespeare's plays.
Dramatic Irony	When the audience knows something that the characters do not, creating tension or humour.

Box B: Big Ideas in 'Othello'	
Racism	Discrimination based on skin colour, affecting how others view Othello. Despite being a respected general, Othello is treated as an outsider in Venetian society, with characters using racist insults against him, which fuels his insecurity and helps Iago manipulate him.
Patriarchy	a society or organisation where men are more powerful. In Jacobean society, fathers or later husbands saw women as a possession.
Hierarchy	The uneven distribution of power where a small number of people hold the majority of the power
Trust and Deception	The danger of trusting the wrong person, as Othello believes Iago over Desdemona.
Manipulation	Controlling others through lies or trickery, seen in Iago's actions.

Box C: Features of Shakespearean Tragedy	
Tragic Hero	A noble character with great qualities, but with a fatal flaw, like Othello's jealousy.
Hamartia (tragic flaw)	A weakness or mistake that leads to the hero's downfall, as Othello's trust in Iago causes his destruction.
Peripetia (reversal of fortune)	A turning point where the hero's situation suddenly worsens, seen when Othello shifts from loving husband to jealous murderer.
Anagnorisis (recognition)	The moment the hero realises their mistake, as Othello understands Iago's deceit too late.
Catharsis	The audience feels pity and fear as they watch Othello's tragic downfall.
Death and Tragic Ending	The play ends in multiple deaths, including Othello taking his own life in guilt and despair.
Fate and Freewill	Othello's downfall is influenced by both his choices and Iago's manipulations, raising the question of destiny versus control.
Villainous Antagonist	A ruthless character who drives the tragedy, with Iago using lies and manipulation to destroy Othello.

Box D: Word Classes	
Noun	A word that represents a person, place, thing, or idea.
Verb	A word that expresses an action, occurrence, or state of being.
Adjective	A word that describes or modifies a noun.
Adverb	A word that modifies a verb, adjective, or other adverb.
Pronoun	A word that takes the place of a noun (e.g., he, she, it).
Conjunction	A word that connects words, phrases, or clauses (e.g., and, but, or).
Preposition	A word that shows the relationship between a noun/pronoun and other words in a sentence.

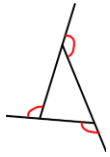
Box E: Literary Techniques	
Metaphor	A direct comparison between two unrelated things, suggesting that they share common characteristics.
Simile	A comparison using "like" or "as" to highlight similarities between two different things.
Imagery	Vivid and descriptive language that appeals to the senses (sight, sound, taste, touch, smell).
Personification	Giving human qualities to non-human entities (animals, objects, etc.).

Week 1	Week 2	Week 3	Week 4	Week 5
1. novel	1. category	1. malt	1. concentration	1. disposable
2. thankfully	2. abundance	2. successful	2. cynical	2. replaceable
3. praise	3. competence	3. interesting	3. employable	3. financier
4. notice	4. impeach	4. heavier	4. incorrectly	4. exaggerate
5. survive	5. trotting	5. entertained	5. homicide	5. exhume
6. hypocrite	6. abide	6. deficit	6. military	6. squabble
7. sufficient	7. carried	7. horrific	7. grumbly	7. unappealing
8. dictionary	8. commit	8. elite	8. quaint	8. further
9. expression	9. quiescent	9. orchid	9. principal	9. clumsily
10. words	10. dwell	10. surprising	10. pedestrian	10. architect
Week 6	**Week 7**	**Week 8**	**Week 9**	**Week 10**
1. angel	1. gently	1. goblet	1. policy	1. hibiscus
2. scene	2. motherhood	2. escaping	2. definitely	2. breath
3. tangible	3. equilateral	3. ordinary	3. prescription	3. generic
4. agility	4. demolished	4. joking	4. shackle	4. emboss
5. dye	5. reason	5. residual	5. revolutionary	5. field
6. friends	6. goodnight	6. moult	6. effective	6. laziness
7. zodiac	7. fibrous	7. shoulder	7. relied	7. sensation
8. levitate	8. honour	8. slapped	8. favour	8. technicality
9. yielding	9. directions	9. compel	9. hurriedly	9. conservation
10. marriage	10. wasp	10. measure	10. chemistry	10. achieving
Week 11	**Week 12**	**Week 13**		
1. exemplify	1. finicky	1. colloquial		
2. minerals	2. draught	2. loathe		
3. cinema	3. recede	3. people		
4. familiar	4. litigious	4. wastage		
5. temperamental	5. colossal	5. miniature		
6. vessel	6. opticians	6. improbable		
7. levelling	7. voila	7. winning		
8. gigantic	8. harry	8. financial		
9. receiving	9. cell	9. investigations		
10. happier	10. wriggled	10. hungrily		

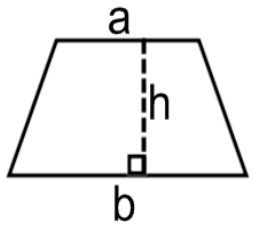
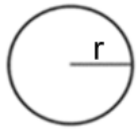
BOX 1: Angles in parallel lines and polygons

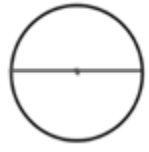
ANGLES IN PARALLEL LINES	
Alternate angles	Are **equal**
Corresponding angles	Are **equal**
Co-interior angles	Add to **180°**

ANGLES IN POLYGONS			
Shape	Sides	Interior Angle	Exterior Angle
Triangle	3	add to **180°**	add to **360°**
Quadrilateral	4	add to **360°**	add to **360°**
Pentagon	5	add to **540°**	add to **360°**
Hexagon	6	add to **720°**	add to **360°**
Heptagon (or Septagon)	7	add to **900°**	add to **360°**
Octagon	8	add to **1080°**	add to **360°**
Nonagon	9	add to **1260°**	add to **360°**
Decagon	10	add to **1440°**	add to **360°**

ANGLES IN POLYGONS: FACTS	
Polygon	A **2D shape** with 3 or more **straight** sides
Regular polygon	A polygon with **sides** that are all **equal** and **angles** that are all **equal.**
Interior angle	An angle **inside** a polygon
Sum of interior angles	**(n – 2) x 180°** Where n is the number of sides
Exterior angle 	The angle formed **outside** a polygon when **one side is extended.** Interior angle + exterior angle = **180°**, because they made a **straight line.**
Sum of exterior angles	**360°**

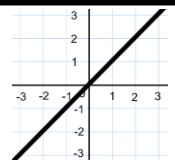
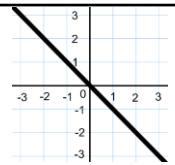
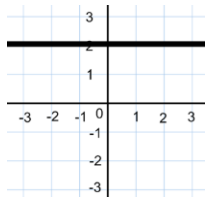
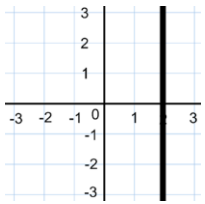
BOX 2: Area of trapezia and circles

AREA		
Area	The amount of **space** a **2D shape** takes up	
Area units	**mm^2, cm^2, m^2, ...**	
Area of a trapezium	$A = \frac{1}{2}(a+b)h$ Area = **half the sum of the parallel sides, multiplied by the distance between them**	
Circle	$A = \pi r^2$ Area = **pi x radius²**	

CIRCLE DEFINITIONS		
Radius	The distance from the **centre** of a circle to the **edge**. (it is **half** the diameter)	
Diameter	The total distance across the **width** of a circle through the **centre**. (it is **double** the radius)	
Sector	The **region** of a circle enclosed by two **radii** and an **arc**.	

BOX 3: Line symmetry and reflection

TRANSFORMATIONS	
Reflection 	Reflection means to **flip** a shape over a **shape,** The shape does not change size (**congruent**). To reflect a shape, you need a **mirror line.**
Invariant points	Points on a line or shape which **do not move** when a specific transformation is applied

Links to: 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 = mx + c	The general equation of a linear graph, where **m** is the **gradient** and **c** is the **y-intercept.**	

BOX 5: Measure of location

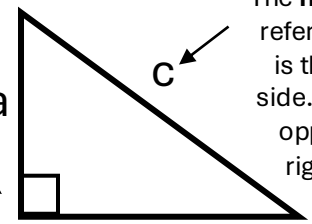
AVERAGES	
Mean	Method: **Add all the amounts together then divide by the number of amounts**
Mode	The value which **occurs the most.** Bi-modal is where there are **two modes.** There is **no mode** when all the values appear the same number of times in a data set.
Modal Class	In grouped data, the class (group) with the **highest frequency**
Median	The **middle value (halfway)** through the data set. Method: **put the data in numerical order, crossing numbers at each end. Then state the middle value.** If two numbers are left, **add the two numbers together, then divide by 2.**

SPREAD OF DATA	
Range	A measure of **spread** calculated by: **the largest value subtract the smallest value**

BOX 6: Pythagoras' Theorem

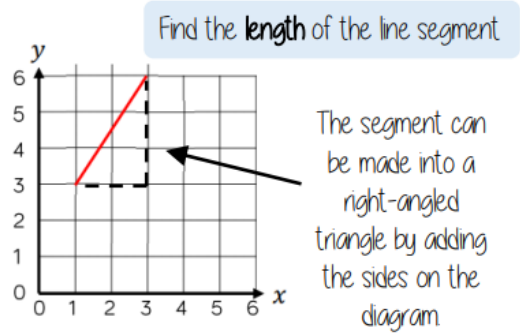
Pythagoras's Theorem	
Pythagoras's Theorem	A relationship between the **3 sides** on a **right-angled triangle**
Pythagoras' Theorem	$a^2 + b^2 = c^2$
Pythagoras's Theorem in 3D	$a^2 + b^2 + c^2 = h^2$

Pythagoras' Theorem only works with right-angled triangles



The **hypotenuse**, referred to as c, is the longest side. It is always opposite the right-angle.

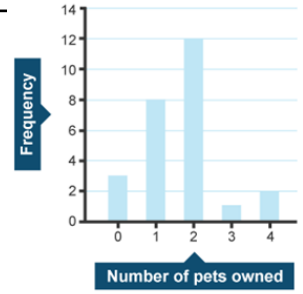
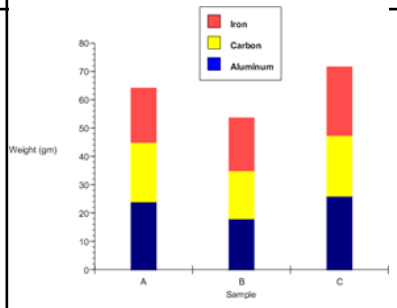
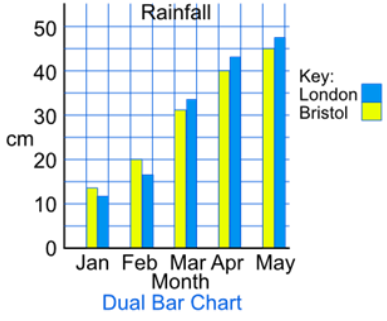
Pythagoras' theorem on a coordinate axis

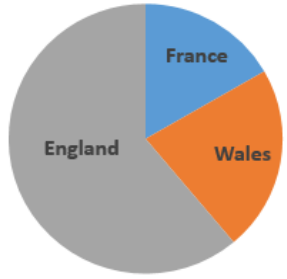


Be careful to check the scale on the axes

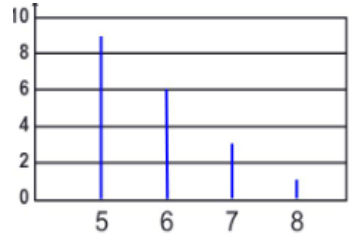
BOX 4: The data handling cycle

DISPLAYING CATEGORICAL DATA

Frequency	The **number of times** an event or a value occurs	
Frequency table	A table, usually a tally, showing the **totals** of data.	
Bar chart	A chart where the **height** of the bars represents the frequency. There are **gaps** between bars.	
Compound / composite bar chart	A bar chart showing data **stacked on top** of each other.	
Comparative / dual bar chart	A bar chart showing data **side by side**	

Pictogram	A chart where each **picture** represents a set frequency It has a **key** to tell you what each picture is worth.	
Pie Chart	A chart where the size of the **sector** of the circle represents the frequency	

DISPLAYING UNGROUPED DISCRETE NUMERICAL DATA

Vertical line graph	Like a bar chart, but the bars have no width, they are just **straight lines** up the page.	

Area	Key Knowledge to learn
1 The problem of evil	• The problem of evil is the idea that God cannot be all loving and all powerful if evil exists. • If God is loving he would want to stop evil and if God is all powerful then he can stop evil. However, because evil exists, God cannot be all loving and all powerful. • The theory above is known as the inconsistent triad as all three concepts (Evil, omnipotence and omnibenevolence) are inconsistent. • Evil is generally defined as any and all pain and suffering. To help explore this problem its important to understand the Two types of evil: moral and natural evil. **Moral evil** - evil caused by human actions/choices. For example, murder. **Natural evil** – Evil caused by natural events. For example, earthquakes.
2 The Freewill defence	• The freewill defence is a logical argument developed by Alvin Plantinga as a response to the problem of evil. • The freewill defence revolves around the idea of human freewill as the reason for evil in the world. • Alvin argued that for God to create humans with freewill that would never choose evil is illogical and that evil is a result of our free will. This means that we do not always use our free will for good, but sometimes use it to bring about evil. • Some support the freewill defence as it shows that evil is the result of human exploiting freewill and not because of God. • Some people criticise the freewill defence by arguing that it only accounts for moral evil but not natural evil. Natural evil is not caused by human freewill but rather nature itself.
3 Hicks' soul making theodicy	• Hick's idea of soul making is a theodicy developed by John Hick and is based on the idea that humans are imperfect beings in the beginning, so that they can grow and develop into the likeness of God. This means to be morally and spiritually developed. • According to this approach, God created the world to be imperfect from the start. • Hick argued that the hardships in life (evil) humans develop virtues (good characteristics). According to Hick good characteristics that we obtain from hardship is infinitely better than virtues God could have instilled in us from scratch. • To help humans develop good characteristics, Hick mentions that there is a distance of knowledge between what God knows and what we know. Hicks called this 'epistemic distance.' • Hick believe epistemic distance is important as if knew what God knows, we would have no choice but to always do the right thing and, actually it's important that we go ahead and make mistakes and learn from them and learn from the mistakes of others. The more humans exercise their freewill the more opportunities to do the right thing. • However, some criticise Hick's theory and suggest that this much evil and suffering

Area	Key Knowledge to learn
4 Augustine theodicy about the problem of evil.	• St Augustine (354-430) based his theodicy on key Biblical passages: Genesis 3 and Romans 5:12-20. Augustine argues that evil must come from somewhere and that it came from the disobedience from Adam and Eve. • Augustine argues that God i perfect and the word reflects that perfection. Humans were created with freewill and sin and death entered the world through Adam and Eve at the fall in Genesis 3, and their disobedience in taking and eating 'the fruit of the knowledge of good and evil'. • Augustine stated that 'Evil has no positive nature; but the loss of good has received the name evil'. This means that the sin of Adam and Eve has brought disharmony in both humanity and creation. Natural evil is the consequence of this disharmony. • According to Augustine, God is justified in not intervening because the suffering is a consequence of human action. • Many criticise Augustine's theory as it is a religious approach to answering the problem of evil. Many people support the idea of evolution which gives a different account of human nature.
5 Christian views/teachings about the problem of evil.	• Some Christians support Augustine's theodicy about Adam and Eve bringing evil and suffering to this world because of their disobedience. • Many Christians believe evil and suffering is a part of God's wisdom. This means God must have a reason for allowing evil and suffering but the reason is beyond human understanding. • God has given people freewill. He has shown people how they should obey the ten commandments and follow Jesus' life and teachings. It is then up to human beings to decide whether or not to follow God's instructions • Many Christians believe evil and suffering in this life is a preparation for heaven. Evil and suffering gives people the chance to become better people and improve their souls. • Some Christians believe that God disciplines us just as a human father might discipline his children. Our suffering, therefore, is God's punishment, and is a sign to us that we should repent.
6 Muslim views/ teachings about the problem of evil	• The Quran teaches that evil originates from the refusal of Shaytan (Satan/ the Devil) to bow down to Adam when ordered by Allah. Shaytan is also called Iblis. • For his disobedience, Iblis was cast out of Heaven by Allah. He vowed that in revenge he would spend eternity trying to tempt humans to do evil. • Many Muslims believe they are only on Earth for a short time. This life is a test from Allah where they must endure evil and suffering as preparation for Paradise. • In the Quran Allah says that he forgave Adam and Eve when they were tempted by Shaytan and ate the forbidden fruit. • Muslims believe when they see people who are suffering, they should treat them with mercy. When they see evil actions, they should ensure that justice is done. • Muslims see a purpose in evil and suffering as Allah is in control of everything. The purpose could be Allah's way of educating them, retribution for a wrong they have committed and as a test.

BOX A: WHAT IS SERIALISM?

- Created by rebellious composers in the 1920's
- It was created in response to composers feeling constrained by music of the day.
- One of the ways of rebelling was to create music which sounded like chaos.
- One of the techniques of serialism was using 'chromatism' which uses all 12 notes, this can sound unpleasant to the ear.

BOX B: WHAT IS MINIMALISM?

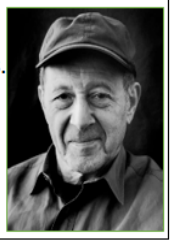
- Also created by rebellious composers in the 1960's
- It was created in response to Serialism composers and went away from the chaotic nature of Serialism.
- As opposer to Serialism, Minimalism uses 'Diatonic' harmony which uses specific notes that are pleasing to the ear.
- Minimalism creates musical 'cells' which are repeated.

BOX C: ARNOLD SCHOENBERG

- Born in 1874 in Austria
- Was the director of a composition at a very popular school in Berlin, Germany.
- Moved to the United Staes in 1933 after he was warned that the Nazis didn't like his music.
- Was terrified of the number 13 and died on Friday 13th 1951.

BOX D: STEVE REICH

- Born in 1936 in New York City, USA
- Studied Philosophy at university before studying composition.
- Reich used technology in his compositions such as two recordings played at the same times that go in and out of sync.
- Reich is still working to this day and considered to be one of the foremost modern composers.



BOX E: KEY WORDS

Chromaticism – Using all 12 notes.
Tone Row – A sequence of notes using all 12 pitches.
Pitch – How high or low a note is.
Tempo – The speed of the piece of music.
Timbre – Different instrumental sounds.
Inversion – When you flip a tone row upside down.
Retrograde – When you reverse a tone row.
Phase Shift – When rhythms shift from being in sync to being out of sync.

BOX B: KEY WORDS

- Beat - A single 'pulse' that musicians feel to stay in time with each other
- Unison - When performers perform the same thing at the same time
- Guitar - Stringed instrument with 6 strings
- Bass - Stringed instruments with 4 strings
- Chord - When 2 or more notes are played together
- Dynamics - How loud or quiet the music is
- Accuracy - How correct the musical performance is
- String - Metal wire used by guitars to create notes
- Fret - Thin metal lines on the guitar neck to change the note
- Lyrics - The words that are sung by a singer
- Chorus - Catchiest section of the song which is usually the loudest
- Ensemble - A group of musicians
- Warm Up - A simple performance or exercise at the start of rehearsal so you don't hurt yourself

BOX 1: Databases Vocabulary

Database: Somewhere where we can store lots of different types of information.
Table: Somewhere where we store information inside our database. A database can have more than 1 of these.
Field: A category of information in our database e.g. Name, Eye Colour etc.
Record: An individual row of information in a table.
Form: Something we can create that makes adding, deleting, and editing records easier.
Report: Allows us to neatly show some information. We can change the layout, colour, add images etc.
Query: Allows us to pick out certain bits in a database. Can be simple or complex.

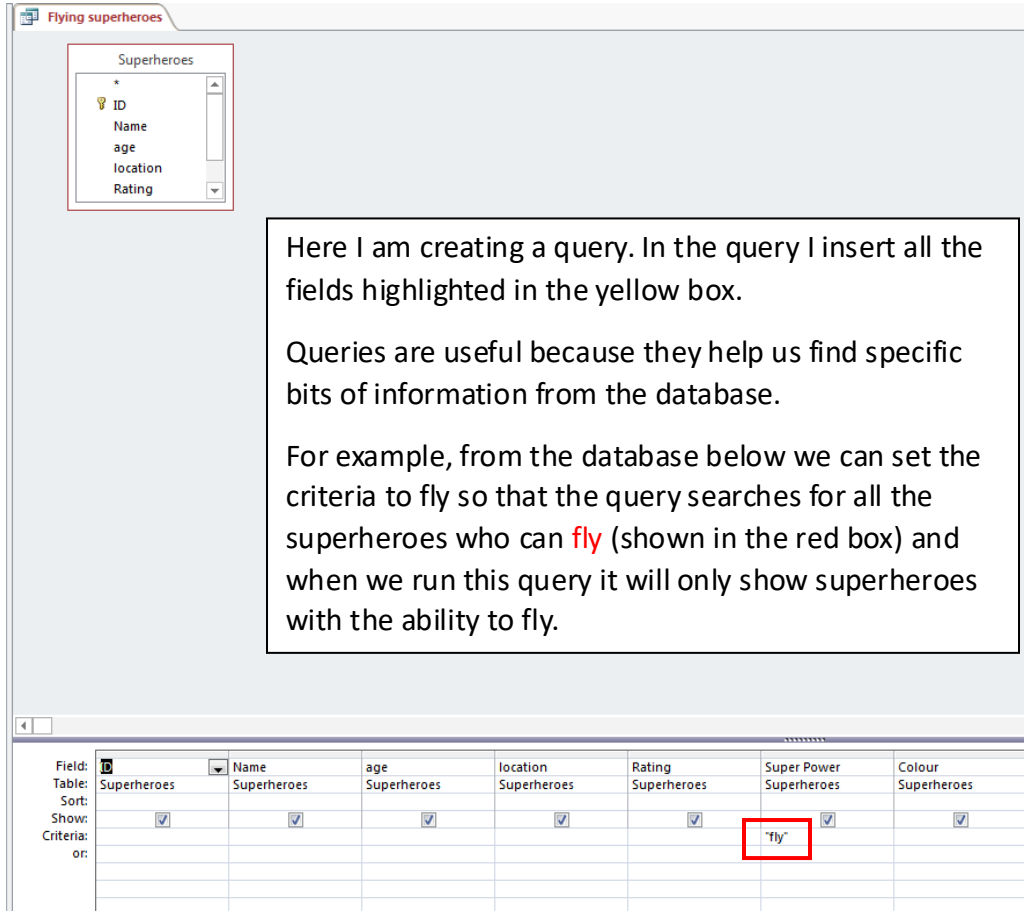
BOX 2: Database Reports

This is a report showing all the superheroes with a rating of over 7. This shows the same information as a query, but the layout is a lot better and more organised.

Superheroes with a 7- Rating 24 April 2015 08:47:03

ID	Name	Main Superpower	Main colour	Location	Secret identity	Rating
2	Superman	Fly	Blue	Metropolis	Clark Kent	4
3	Batman	Intelligence	Black	Gotham	Bruce Wayne	6
5	IronMan	Fly	Red	New York	Tony Stark	6
7	Robin	Intelligence	Green	Gotham City	Mr Grayson	5
8	The Thing	Strength	Orange	New York	Unknown	7

BOX 3: Database Query



Here I am creating a query. In the query I insert all the fields highlighted in the yellow box.

Queries are useful because they help us find specific bits of information from the database.

For example, from the database below we can set the criteria to fly so that the query searches for all the superheroes who can fly (shown in the red box) and when we run this query it will only show superheroes with the ability to fly.

BOX 1: Small Basic Vocabulary

A **programming language** is a special language programmers use to develop applications, or other set of instructions for computers to run.
Syntax error is where there is a mistake in the line of code entered and Small basic wouldn't understand what you are trying to do.
A **variable** is a place where information can be stored.
A **Loop** will carry on carrying out a certain task until the objective of that task has been met. They are useful because they save time for the person writing the program as they don't have to write lots of code out.
An **IF Statement** is a programming conditional statement that, if proved true, performs a function or displays information

BOX 2:

All the symbols below can be used in rules for IF Statements.

=	Equals
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal
<>	Not equal

BOX 3:

Below is an example of a loop being used in Small Basic to make a square.

```
For i = 1 To 4
Turtle.Move(100)
Turtle.Turn(90)
EndFor
```

BOX 4: Understanding how Small Basic code works

1. This line asks the use the question "what is your name".

2. Here, the answer the user gives will be saved under the variable called 'username'.

3. This will leave a blank line in your code.

4. This will allow the programme to respond to the user. The programme will say 'hello' and then enter the username the name entered.

```
1 Textwindow.WriteLine("What's your name?")
2 Username = TextWindow.Read()
3 TextWindow.WriteLine("")
4 Textwindow.WriteLine("Hello, "+Username)
5
6 Textwindow.WriteLine("What's your favourite food?")
7 food = TextWindow.Read()
8 TextWindow.WriteLine("")
9 Textwindow.WriteLine("Ah, I like" +food)
```

Line 6 to line 9: Now I have created another question and another variable called 'food'. The user enters the answer to the question and the programme responds to it.

Line 1: This line asks the use the question "what is your favourite food".

Line 2: Here, the answer the user gives will be saved under the variable called 'food'.

Line 3: This is the 'if' statement. IF the answer to the question is 'yes' then print the message written on line 4

Line 4: This is the message that will be printed if the answer to the questions is 'yes'. The question asked is "do you like pizza?"/

```
1 TextWindow.Write("Do you like pizza? ")
2 food=TextWindow.read()
3 If (food = "yes") Then
4   TextWindow.WriteLine("Me too!" )
5 Else
6   TextWindow.WriteLine ("what's wrong with you?")
7 Endif
8
```

Line 5: Else means that if the answer given isn't yes, then print the message on line 6.

Line 6: the message to be printed if the user doesn't say "yes" to the question is "what's wrong with you".

Line 7: This ends all the code.

Box A – Romeo and Juliet Plot	Box B – Romeo and Juliet Characters	Box C – Romeo and Juliet Characters
• A fight breaks out between Capulet and Montague servants. • Paris asks for Juliet's hand in marriage. • Romeo and Juliet fall in love and get married in secret. • Tybalt starts a street fight and Romeo is banished from Verona. • Friar Lawrence and Juliet make a plan to reunite her with Romeo. • Romeo kills himself, then Juliet does the same. Capulets and Montagues agree to stop fighting.	**Montagues** Romeo Lord Montague (Father) Lady Montague (Mother) Benvolio (Cousin) **Capulets** Juliet Lord Capulet (Father) Lady Capulet (Mother) Tybalt (Cousin)	**Others** Nurse (Juliet's Maid) Friar Lawrence Mercutio (Romeo's best friend)

Box D – Romeo and Juliet themes	Box E – Skills Techniques	Box F - Stagecraft
Themes: Love Fate Duality (Opposites) Style: Melodrama / exaggerated Genre: Tragedy	**Explorative Strategies** Still Image Thought Track Physical Theatre Conscience Alley Cross Cut **Movement Skills** Body Language Facial Expression Gesture Physicality Gait	**Vocal Skills** Accent Volume Pitch Pace **Interaction Skills** Eye Contact Proxemics Levels

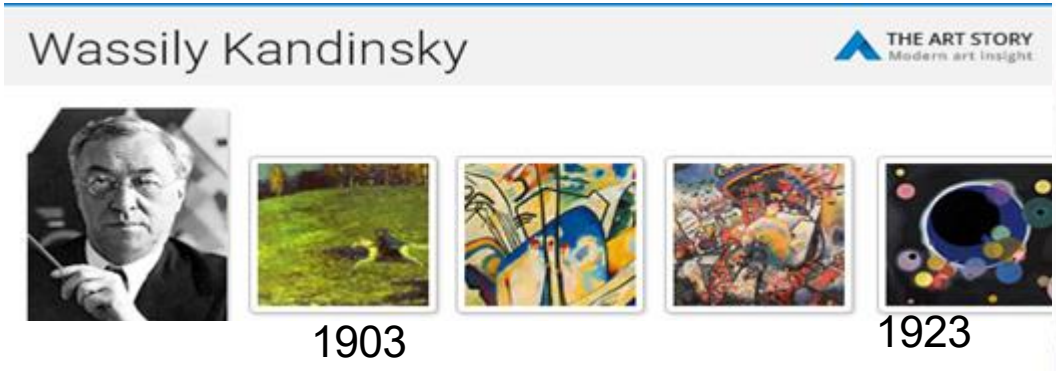
Section A- ARTIST INFORMATION

Wassily Kandinsky was born in Moscow, Russia on December 16, 1866. He grew up in the Russian city of Odessa where he enjoyed music and learned to play the piano and the cello. Kandinsky would remark later that, even as a child, the colours of nature dazzled him. Both music and colours would have a huge impact on his art later in life.

Kandinsky went to college and then became a law teacher. However, when he was thirty he decided to change careers and become an artist. He attended art school at Munich, Germany. Early on his art was influenced by painters like Claude Monet as well as music composers and philosophers.

In 1909 Kandinsky began to think that painting didn't need a particular subject, but that shapes and colours alone could be art. Over the next several years he would start to paint what would become known as Abstract Art. Kandinsky was one of the founding fathers of Abstract Art.

Kandinsky felt that he could express feelings and music through colours and shapes in his paintings. For example, he thought that yellow had the crisp sound of a brass trumpet and that certain colours placed together could harmonize like chords on a piano. The shapes he was most interested in were the circle, triangle, and the square. He thought the triangle would cause aggressive feelings, the square calm feelings, and the circle spiritual feelings.



His work became increasingly abstract until only formal elements- line, colour, shape were used

Key terms:

Expressive art- showing thought or feeling/emotion by the application of the brush strokes or the colours used.
Non figurative - without recognisable figures or objects eg just shape and colour
Figurative art.- showing recognisable figures or objects eg.people, houses
Abstract Art - Non figurative, art that only uses the formal elements to give meaning
Composition- The plan or layout, - where things go in a picture
Formal Elements- the parts that make up a piece of art…line, shape and colour are the main elements that Kandinsky uses

Line
A mark made by a pointed tool such as a brush, pen or stick; a moving point.

Shape
A flat, enclosed area that has two dimensions, length and width. Artists use both geometric and organic shapes.

Color
Is one of the most dominant elements. It is created by light. There are three properties of color; Hue (name,) Value (shades and tints,) and Intensity (brightness.)

Section B - FORMAL ELEMENTS

Kandinsky used shape , lines and colour to express emotion or meaning rather than trying to to make objects look real. His art was termed ABSTRACT because he did not show recognisable objects in his work. He particularly used colour to express what he was feeling and he wanted to use colour to make his viewers feel emotion, too....just like when you listen to music.

DESIGN PRINCIPLES -how the elements are arranged to make the picture look good or show feeling and mood

MOVEMENT
Elements might jump or fall or follow and lead us around a picture suggesting movement

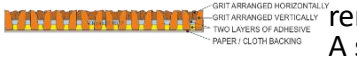
EMPHASIS
Some elements stand out more

BALANCE
Elements on one side are equal to or linked to something on the other side.

BOX 1: Health and Safety

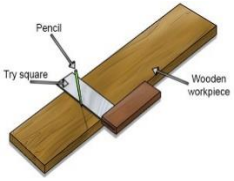
BOX 2: Finishing Tools/Equipment

Glass Paper
Used to remove scratches from the surface of wood. Glass paper is available in a wide range of grades for removing deep scratches to fine surface finishing.



Disc/Belt Sander
Used to sand and shape the edges of wood. The sanding disc/Belt is very course and will remove waste quickly. A sliding fence can be used when sanding at a required angle.

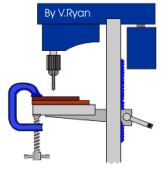
BOX 3: Marking out tools



Try square
For marking out accurate right angles and checking if work is square when gluing up.

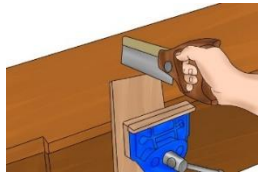
BOX 4: Clamping and holding tools

Machine Vice
For holding work securely when drilling holes on the pillar drill.



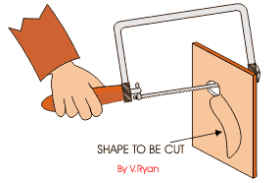
G CRAMP USED TO SECURE MATERIAL TO THE TABLE BEFORE DRILLING

G Clamp/Cramp
Used to hold work together whilst gluing and holding work securely on a bench or pillar drill.



Woodworking Vice
To hold the wood securely when cutting, chiseling, drilling etc.

BOX 5: Cutting and shaping tools



Coping Saw
Used for making curved cuts in wood.

Tenon Saw
Used for making straight cuts in wood.

Bench Hook
To hold the wood securely when making straight cuts with the Tenon Saw.

Pillar Drill
To drill holes into wood, metal and plastic.

Forstner Bit
For drilling large, flat bottomed holes into wood.

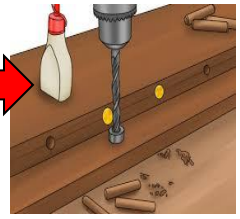
Wood joints can be either **PERMANENT** or T**EMPORARY** depending on the type and if glue is used.

BOX 6: Permanent Jointing Techniques

***Permanent Joint*:**
When we do not want to take the pieces apart again E.G. Glues & Jointing

The Dowel Joint
A dowel is a cylindrical rod, usually made from wood, plastic, or metal. Dowels are commonly used as structural reinforcements in furniture.

Accurate drilling of holes for wooden dowels. Dowel joint is then assembled using PVA glue

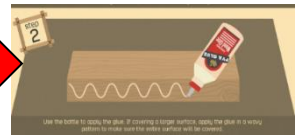


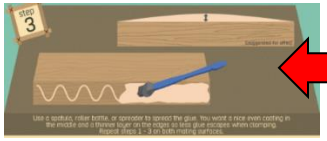
PVA or Wood Glue used to make permanent joints with wood.

Glued Joints

1. Ensure pieces fit together correctly and are smooth and free of any dust.

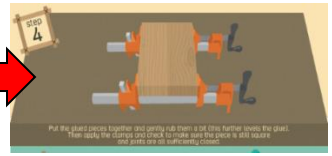
2. Apply wood glue/PVA to wood joint and ensure enough is applied to cover entire surface.





3. Spread glue using a spatula to evenly cover the entire surface.

4. Carefully apply pressure to the glued joint using clamps. Check the joint has closed up fully.



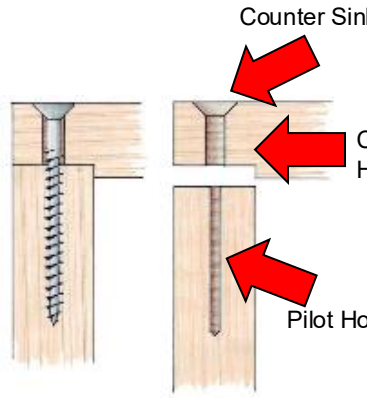
5. Remove excess glue with a damp cloth and allow the glue to dry over night.

BOX 7: Temporary Jointing Techniques

Temporary Joint:
When we will, or might need to take pieces apart again E.G. Screws and nails

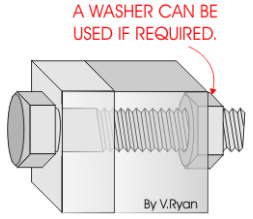
Wood Screws
A screw is a type of fastener typically made from metal with an external thread, Screws are available in a wide range of shapes/sizes and are commonly used to fasten wood together.

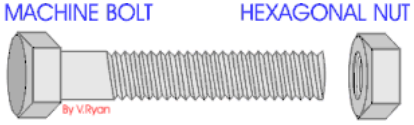
Wood screws are driven into the wood using a screwdriver or cordless screw driver/drill



Wood screws are are available in different head types including slotted, phillips & pozidriv.

Nuts & Bolts
Nuts and Bolts are used to join wood, metal and plastic together temporarily and can be taken apart if required. Many steel structures, including buildings, are simply bolted together. For example, the Eiffel Tower in Paris was originally a temporary structure and after twenty years it was to be dismantled.





Spanners are used to tighten the nuts and bolts, holding the parts together securely.

Wing nuts have two wings protruding from the nut, this makes it very easy to tighten/loosen by hand .