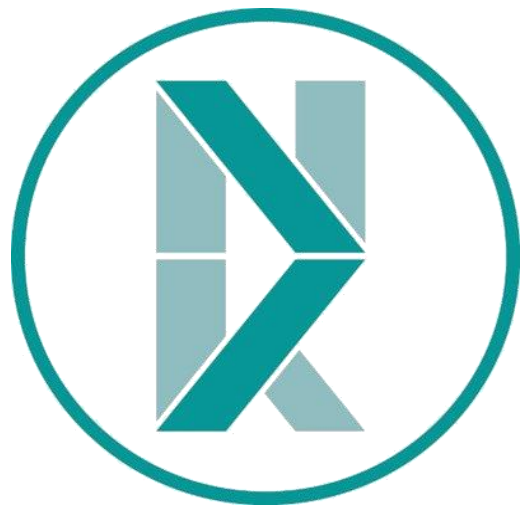


**KEY STAGE 3 KNOWLEDGE ORGANISER**

# **POWER PACK**



**YEAR 9 – TERM 4**

# How do Knowledge Organisers support learning?

## What are Knowledge Organisers?

Knowledge organisers are **one-page documents that contain all of the key vocabulary and information needed to succeed at the highest level for a particular topic or unit.** They are available to all in each department for every subject/qualification. They provide a clear reference point and a backbone of understanding to make learning focused and meaningful. They are printed and glued into exercise books at the start of each topic or unit. Additional copies can also be provided if required.



## What do Knowledge Organisers look like?

Each Knowledge Organiser comprises of a range of colour-coded tables of key vocabulary, definitions, information and summaries with each table's contents numbered. **The colour-coding and numbering makes each piece of content easily identifiable and ensures that learning is incremental and manageable.** All Knowledge Organisers provide information about the Year, Topic/Unit Question and Term. There are also subtle differences that relate to subject-specific requirements.

**HISTORY**

| Year 7 | Term 4 |

How far did the Civil War justify the execution of the King?

1603 Elizabeth I dies. James becomes King of England

1625 Charles I becomes King of England and

1625 Charles marries Henrietta Maria

1629 Charles didn't call parliament

1640 Charles forced to call Parliament

164 The Civil War begins

164 Charles surrenders

1649 Charles put on trial

1653 Oliver Cromwell becomes Lord Protector

1659 Oliver Cromwell dies

1660 Charles II becomes King

CHARLES I		MISCELLANEOUS	
1 Divine Right of Kings	Kings were appointed by God alone.	1 Tyrant	A cruel and oppressive ruler
2 Charge	An accusation, typically one formally made against a prisoner brought to trial.	2 Nobles	Social class normally ranked just below royalty.
3 Verdict	A decision on an issue of fact in a civil or criminal case or an inquest.	3 Customs Duties	Tax paid on goods coming in and out of the country.
4 Trial	A formal examination of evidence by a judge, typically before a jury, in order to decide guilt in a case of criminal or civil proceedings.	4 Militia Ordinance	Claiming the right to appoint military commanders without the king's approval.
5 Death Warrant	An official order for the execution of a condemned person.	5 Treason	The crime of betraying one's country, especially by attempting to kill or overthrow the sovereign or government.
POLITICS AND RELIGION		6 Siege	Military operation in which enemy forces surround a town or building, cutting off essential supplies, with the aim of compelling those inside to surrender.
1 Stuart	Royal house of Scotland, England, Ireland and later Great Britain.	7 New Model Army	Army formed by the Parliamentarians during the Civil War.
<b>*SPEAKING LIKE AN HISTORIAN*</b>			
1 Infer	To come to a conclusion based on evidence and reasoning.	1 Infer	To come to a conclusion based on evidence and reasoning.
2 Protestant	The part of the Christian Church that split away from Rome in the 16 <sup>th</sup> century.	2 Factors	The key, deciding pieces of information to explain an event.
3 Catholic	The Christian church controlled by the Pope in Rome.	3 Historiography	The study of writing history.
4 Puritan	Christians who wanted to worship god in a simple way. They were often strict and didn't trust anything that gave pleasure.	4 Chronology	Arranging events into order by date and/or time.
5 Cavaliers	People who supported the King.	5 Theme	The main idea behind a discussion.
6 Roundheads	People who supported Parliament.	<b>KEY QUESTIONS</b>	
7 House of Lords	The upper house of the Parliament of the United Kingdom.	What kind of King was Charles I?	Why were MPs not happy with Charles?
8 House of Commons	The lower house of the Parliament of the United Kingdom.	Why were Puritans worried when Charles became King and married Henrietta?	Why was Charles forced to call parliament?
9 Lord Protector	A regent in charge of a kingdom during the minority, absence, or incapacity of the sovereign.	What major battles were there in the civil war?	Why was Oliver Cromwell chosen to be Lord Protector?
		What was Charles charged for?	Why was the Monarchy restored after Oliver Cromwell's death?

KEY PEOPLE	
<b>Charles I</b> 1625 - 1649	<ul style="list-style-type: none"> <li>Son of James I and Anne of Denmark.</li> <li>Inherited the High Anglican.</li> <li>Married Catholic French Princess Henrietta Maria.</li> <li>Inherited the divine right of Kings.</li> <li>Confused and took advice from a group of small people (not having the State of Buckingham).</li> <li>Tried to introduce Protestantism into Scotland. Had to pay them if they weren't.</li> <li>Went to York to raise supporters and weapons. He will need to raise for parliament.</li> <li>Surrendered to the Scots.</li> <li>After his defeat, Charles still wanted peace.</li> <li>Charles wouldn't answer the charges put against him.</li> <li>It was at 40 with a good health insurance.</li> <li>Executed by beheading 1649.</li> <li>Was his death in fact executed to keep him worse or he wouldn't allow.</li> </ul>
<b>Oliver Cromwell</b> 1598 - 1658	<ul style="list-style-type: none"> <li>Son of a farmer and trained lawyer.</li> <li>Married to his wife Elizabeth for 38 years and had 8 children (3 of whom died).</li> <li>A Puritan Protestant who enjoyed hunting and music.</li> <li>A Member of Parliament (MP).</li> <li>Excellent Cavalry commander who focused on employing religious men in his army.</li> <li>Had 5000 Royalist soldiers killed and said it was the "head of God".</li> <li>Turned down the chance to be King (became Lord Protector).</li> <li>Invaded Ireland (1650s killed).</li> <li>Based in London and ruled the land.</li> </ul>
<b>Prince Rupert</b> 1619 - 1682	<ul style="list-style-type: none"> <li>Duke of Cumberland.</li> <li>Nephew of Charles I.</li> <li>English - German Army Officer.</li> <li>Cavalry Commander.</li> <li>Had a dog called Boy.</li> </ul>
OTHER KEY PEOPLE	
1 William Laud 1573 - 1633	Appointed Archbishop by Charles. Wanted more ceremony and doctrine in churches.
2 John Bradshaw 1602 - 1659	An English jurist. He is most notable for his role as President of the High Court of Justice for the trial of King Charles I.
3 Thomas Fairfax 1612 - 1671	An English nobleman, peer, politician, general, and Parliamentarian commander-in-chief during the English Civil War.
4 Thomas Wentworth 1593 - 1641	1st Earl of Strafford, an English statesman and a major figure in the period leading up to the English Civil War. He served in Parliament and was a supporter of King Charles I.
5 Edward Montagu 1602 - 1671	2nd earl of Manchester, Parliamentary general in the English Civil War.



## Why are Knowledge Organisers important?

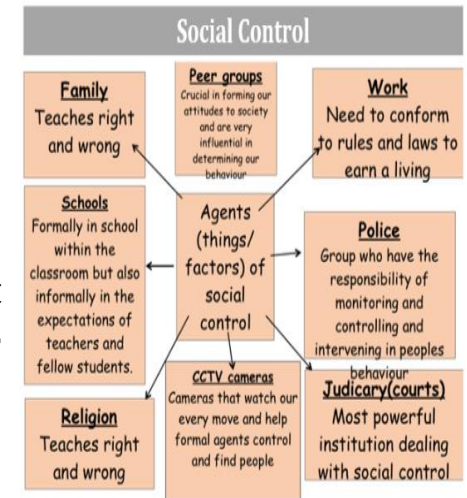
Having all of this **key information in one place makes it easily accessible before during and after the study of a particular unit or topic.** Teachers continuously refer to the content of Knowledge Organisers within lessons and to support independent learning where they can be used to develop and consolidate knowledge. Therefore, Knowledge Organisers form the backbone of learning across the academy.

## How do teachers use Knowledge Organisers?

Each department has carefully created each Knowledge Organiser so that it is **individually tailored to the curriculum taught at North Kesteven.** Teachers have selected the most key building blocks (knowledge and information) for each topic or unit provide clear support to develop knowledgeable and skilled subject experts. The knowledge and information contained on the Knowledge Organiser is carefully shared, identified and practised within and beyond lessons to develop confidence and fluency.

Key Concepts - Algebra			
1	Quadratic	A quadratic expression is of the form $ax^2 + bx + c$	Example of quadratic expressions: $8x^2 - 3x + 7$
2	Factorising Quadratics	$x^2 + bx + c$ find the two numbers that add to give b and multiply to give c.	$x^2 + 7x + 10 = (x + 5)(x + 2)$
3	Difference of Two Squares	An expression of the form $a^2 - b^2$ can be factorised to give $(a + b)(a - b)$	$x^2 - 25 = (x + 5)(x - 5)$ $16x^2 - 81 = (4x + 9)(4x - 9)$
4	Rearranging Formulae	Use inverse operations on both sides of the formula (balancing method) until you find the expression for the letter.	Make x the subject of $y = \frac{2x-1}{x}$ $yx = 2x - 1$ $yx + 1 = 2x$ $\frac{yx + 1}{2} = x$
5	Quadratic	A quadratic expression is of the form $ax^2 + bx + c$	Example of quadratic expressions: $8x^2 - 3x + 7$




English verb (Infinitive)	English past participle	German verb (Infinitive)	German past participle
To stay	stayed	wohnen	gewohnt
To make/do	Made/done	machen	gemacht
To eat	eaten	essen	gegessen
To sleep	slept	schlafen	geschlafen
To play	played	spielen	gespielt
To see	seen	sehen	gesehen





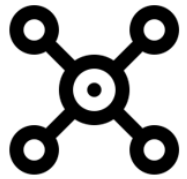
## How do students use Knowledge Organisers?

There is regular testing within lessons on the understanding of the content of each Knowledge Organiser – this is carefully designed into the sequencing of the curriculum and lessons to gradually build and develop rather than overwhelm. Regular independent learning is structured around Knowledge Organisers. **The real beauty of the Knowledge Organiser is its ability to support students and parents independently outside of lessons.**




# - SUPER 6 STRATEGIES -

Strategy	Activity	Imagery
 <h2 style="writing-mode: vertical-rl; transform: rotate(180deg); color: red;">RECALL</h2>	<p><b>3x3x3:</b></p> <ol style="list-style-type: none"> <li>1. Read 3 key words and definitions or pieces of information from one coloured box, 3 from another coloured box, and a final 3 from another coloured box.</li> <li>2. Return to the first 3 words but this time cover up the key words and see if you can recall them by just reading the definitions – repeat for the other 6 words.</li> <li>3. Repeat the previous step but this time cover up the definitions and see if you can recall them by just reading the key word.</li> <li>4. Repeat using a combination of step 2 and step 3.</li> </ol>	
	<p><b>Race to the Bottom/Top:</b></p> <ol style="list-style-type: none"> <li>1. Pick one of the coloured boxes on the <i>Knowledge Organiser</i>.</li> <li>2. Starting from the top, cover the key word and see if you can recall it by reading the definition.</li> <li>3. See how far down the box you can get.</li> <li>4. Repeat but this time cover up the definition and see if you can recall it by just reading the key word.</li> </ol>	

**RECALL** – these two strategies focus on your ability to bring knowledge, vocabulary and key information to mind quickly.

Strategy	Activity	Imagery
 <h2 style="writing-mode: vertical-rl; transform: rotate(180deg); color: blue;">SYNTHESIS</h2>	<p><b>Answer Planning:</b></p> <ol style="list-style-type: none"> <li>1. Write down a key question for the topic on a piece of paper</li> <li>2. Try to recall as many key pieces of vocabulary and knowledge as possible that link to this.</li> <li>3. Use the <i>Knowledge Organiser</i> to see what you have missed.</li> <li>4. Add these in a different colour.</li> </ol>	
	<p><b>Categorising:</b></p> <ol style="list-style-type: none"> <li>1. Pick one of the coloured boxes on the <i>Knowledge Organiser</i> and consider the heading/category.</li> <li>2. Cover up the <i>Knowledge Organiser</i> and on a separate piece of paper, write down as many key words or pieces of information that you can that relate to the heading/category.</li> <li>3. Uncover the <i>Knowledge Organiser</i>, look at what you have missed and add these in a different colour pen.</li> <li>4. Get somebody to test you on the words you have added, and then re-attempt steps 1-3.</li> </ol>	

**SYNTHESIS** – these two strategies focus on applying your knowledge to show your thinking, understanding and reasoning.

Strategy	Activity	Imagery
 <h2 style="writing-mode: vertical-rl; transform: rotate(180deg); color: yellow;">REFLECTION</h2>	<p><b>RAG-rate:</b></p> <ol style="list-style-type: none"> <li>1. On completion of a unit of work get somebody to test you on each aspect of the <i>Knowledge Organiser</i>.</li> <li>2. RAG-rate each piece: Red = don't know it, Amber = partly know it, Green = know it.</li> <li>3. Revisit all Amber pieces frequently, and Red pieces more frequently.</li> <li>4. After a set period of time, RAG-rate the knowledge organiser again and repeat the process.</li> </ol>	
	<p><b>Booster:</b></p> <ol style="list-style-type: none"> <li>1. Revisit a piece of lesson work or an exam answer.</li> <li>2. Use the <i>Knowledge Organiser</i> to locate any key vocabulary or relevant information that could be added to develop the work further.</li> <li>3. Annotate the original piece of work to develop your thinking.</li> <li>4. Re-write or type up the improved version of the work or exam answer.</li> </ol>	

**REFLECTION** – these two strategies focus on improving your existing knowledge and understanding by developing it further.

**CHARACTERS**

1	Andrew	Main character and one half of the dual narrative – meets Jamie after an unfortunate incident with a bear trap.
2	Jamison	Main character and one half of the dual narrative – meets Andrew after he’s hurt and seeking a shelter.
3	Howard	Leader of a group/ cult fighting anything and anyone to survive.
4	Henri	An older lady they find on their travels who is isolated from her family.
5	Chris	Older sibling found at the airport.
6	Desiree	Younger sibling found at the airport.
7	Keith	Younger sibling found at the airport.
8	Danny Rosewood	One of the leaders of a group trying to survive in the apocalypse.
9	Cara	A member of Danny’s gang who becomes significant to Andrew and Jamie!

**KEY VOCABULARY**

1	Dystopia	An imagined place or state in which everything is unpleasant or bad, typically a totalitarian or environmentally degraded one.
2	Anarchy	A state of disorder due to absence or nonrecognition of authority. The absence of government and absolute freedom of the individual, regarded as a political ideal.
3	Apocalypse	An event involving destruction or damage on an awesome or catastrophic scale; the complete final destruction of the world.
4	Juxtaposition	the fact of two things being seen or placed close together with contrasting effect.
5	Benevolent	Well-meaning and kind.
6	Malevolent	Having or showing a desire to cause harm or evil.

**CONTEXT**

1	Key information about the book	The novel is set in a post-apocalyptic world where a super-virus with a 99.99% mortality rate has wiped out most of humanity. The story follows two young boys, Andrew and Jamison (Jamie), as they navigate survival, civilisation, and friendship. Andrew, initially surviving alone and avoiding danger, gets trapped in a bear trap but later finds a cabin where Jamie lives. Jamie, having lost his mother—a physician who had prepared him for survival—has been living off-grid and struggling with loneliness. After forming a strong bond, Andrew and Jamie decide to leave together, facing the harsh and uncertain world ahead.
2	Covid-19	“The book went on submission in February of 2020. It sold on March 13, 2020, which was Friday the 13th and the first day of COVID lockdowns in New York—where my US publisher is based. Philly didn’t lock down until the following Monday. I have to give so much credit to HarperCollins and Hachette for giving me the time to edit this book. My editors and I established very early on how much we would have to change since we were now living through a pandemic. We wanted it to feel realistic, but we didn’t want to have this fictional pandemic parallel too much with the COVID pandemic.” The book has “chilling parallels” to real life. – Erik J Brown.
3	‘The Knife of Never Letting Go’	“I specifically started writing YA after I read The Knife of Never Letting Go by Patrick Ness. That book took so many risks with storytelling and managed to say a lot about human nature and the themes in the book felt very mature.”
4	Erik J Brown	Self proclaimed free writer who writes with vague plot in mind and ‘sees how it goes’ – had to change this when the pandemic hit in the writing of the book. YA writer. This book was his first big hitter.
5	Chernobyl	On April 26, 1986, the Number Four RBMK reactor at the nuclear power plant at Chernobyl, Ukraine, went out of control during a test at low-power, leading to an explosion and fire that demolished the reactor building and released large amounts of radiation into the atmosphere. This has led to thousands of deaths spanning over decades. The area is now completely deserted and considered a hazard for at least the next 20,000 years. Just before writing, the Amazon series of Chernobyl came out on Amazon Prime exploring the horrors of the Chernobyl disaster. This is loosely referenced in the book but is also a real life dystopian horror in our history.

**THEMES**

1	Displacement – the idea of being forced to leave your home, typically because of war, persecution, or natural disaster is prevalent throughout the novel as the boys try to survive.
2	Dystopia – the entire novel is orientated around a dystopian society.
3	Romance – as an LGBT book, the text explores the developing romance between the boys secondary to the themes of dystopia, hope and displacement.
4	Hope – hope is a significant part of the novel as the boys alternate between hopelessness and trying to find the hope in a broken world.
5	Redemption – Andrew is on his journey to redemption throughout the novel – we just don’t know it until close to the end.

**NARRATIVE TECHNIQUES**

1	First Person	Narrator tells events from their own perspective "I/ Me/ We".
2	Second Person	Narrator directly addresses the reader "You" Rarely used in an extended narrative.
3	Third Person	<b>Limited:</b> Story told from the perspective of one character <b>Omniscient:</b> Narrator sees everything and can explore characters' minds. " He/ She/It/They".
4	Retrospective Narration	Past tense, first person narration in which the narrator looks back on historic events.
5	Nonlinear narration	Events are told out of order and jump around in time.
6	Stream of consciousness	Thoughts and feelings depicted in a continuous flow of ideas.

**CONTEXT**

1	Thomas Hardy	Thomas Hardy (1840–1928) was an English novelist and poet known for his themes of fate, social constraints, and rural life. <i>The Withered Arm</i> is a short story set in 19th-century rural England, exploring themes of jealousy, superstition, and the supernatural. It follows Rhoda Brook, a poor milkmaid, who unknowingly curses her former lover's new wife, leading to tragic consequences. The story reflects Hardy's interest in fate, class divisions, and the struggles of women in a rigid society.
2	Kate Chopin	Kate Chopin (1850–1904) was an American writer known for exploring themes of female independence, marriage, and societal expectations in the late 19th century. <i>The Story of an Hour</i> is a short story about Louise Mallard, a woman who briefly experiences a sense of freedom and relief upon hearing of her husband's supposed death, only to die from shock when he returns alive. The story critiques the restrictive nature of marriage for women and explores themes of identity, repression, and the fleeting nature of personal freedom. Chopin's work was ahead of its time, addressing feminist ideas that challenged traditional gender roles.

**KEY VOCABULARY**

1	Protagonist	Main character in a story.
2	Narrator	A character who recounts the events of a story.
3	Plot	The order of events in a story.
4	Exposition	The description of key information at the start of a story.
5	Rising action	Complications in the story which build tension.
6	Climax	The most dramatic part of the story; often an ironic twist or surprise.
7	Foreshadowing	A warning or indication of a future event.
8	Cyclical structure	A narrative structure where the end of the story repeats an element from the beginning of the narrative.
9	Falling action/Resolution	Events fall into place, leading to a conclusion. In a short story, these are often shortened or non-existent.
10	Moral	The key message or learning point of a story.

**CONTEXT**

1	Early Stories	Fables come from the oral tradition and use animal characters to portray morals and how people should behave. Myths were used to explain why the world and nature behaved- they gave reasons for the existence of the world around them.
2	The Story of an Hour	An early feminist story by Kate Chopin, this reflects her belief in the need for women to be independent and free. Written in 1894, before women were emancipated, it portrays life in a male-dominated society and explores themes of freedom, repression and marriage.
3	The Withered Arm	Thomas Hardy had a fatalistic view of the world. This 1888 short story presents characters as victims of a malicious power that propels them towards their inevitable doom. Fate controls their lives.

**CHARACTERS**

1	Prospero	The play's protagonist, and father of Miranda.
2	Miranda	The daughter of Prospero.
3	Ariel	Prospero's spirit helper.
4	Caliban	Another of Prospero's servants.
5	Ferdinand	Son and heir of Alonso.
6	Alonso	King of Naples and father of Ferdinand.
7	Sebastian	Alonso's brother.
8	Gonzalo	An old, honest lord.
9	Trinculo & Stephano	Trinculo, a jester, and Stephano, a drunken butler, are two minor members of the shipwrecked.

**THEMES**

1	Freedom and Slavery	The play explores themes of freedom and imprisonment, with the island acting as a trap where characters, following the shipwreck, have no immediate escape.
2	Empathy and Forgiveness	Empathy, the ability to understand others' feelings, is key to forgiveness, and in The Tempest, some characters display it while others are self-absorbed.
3	Nature Vs Nurture:	The Tempest explores nature versus nurture, contrasting the island's natural beauty with characters like Miranda, symbolising innocence, and Caliban, representing savagery.

**KEY VOCABULARY**

1	Tempest	The violent storm conjured by Prospero to shipwreck his enemies on the island, setting the play's events in motion.
2	Usurpation	The wrongful seizure of power, exemplified by Antonio's betrayal of Prospero.
3	Reconciliation	The process of forgiveness and mending relationships, which is key to the play's resolution.
4	Colonisation	The process by which a country establishes control over a foreign territory, often exploiting its resources and imposing its culture and governance on the indigenous people.
5	Redemption	the act of atoning for past wrongs or mistakes, seeking forgiveness, and achieving moral or spiritual recovery.

**PLOT**

1	Brief synopsis	The Tempest is a play about magic, betrayal, love, and forgiveness, set on an island where Prospero, the ex-Duke of Milan, lives with his daughter, Miranda, and magical creatures. The story unfolds with a storm, a plot to murder the King of Naples, and a romance between Miranda and Ferdinand, culminating in forgiveness and a return home.
2	Key events	<ul style="list-style-type: none"> <li>• A ship is caught in a tempest and begins to sink.</li> <li>• Prospero tells Miranda that he caused the storm.</li> <li>• Ariel fetches Ferdinand, who falls in love with Miranda.</li> <li>• Antonio and Sebastian plot to kill Alonso, the King of Naples.</li> <li>• The ship's jester and butler meet Caliban and feed him alcohol.</li> <li>• Caliban suggests that they should kill Prospero, and Ariel overhears.</li> <li>• Prospero uses magic to scare Alonso and spoil Caliban's plot.</li> <li>• Prospero's daughter, Miranda, marries the son of King Alonso.</li> <li>• Prospero forgives the passengers for their former betrayals.</li> </ul>

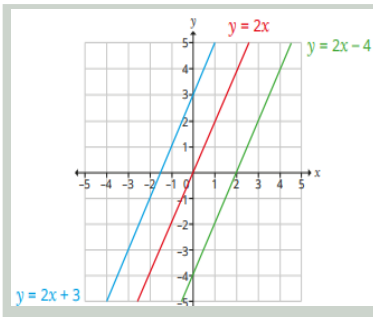
**CONTEXTUAL INFORMATION**

1	William Shakespeare	Born in 1564 in Stratford-upon-Avon, William Shakespeare received a grammar school education but did not pursue formal studies further; he married Anne Hathaway in 1582 and had three children. Around 1590, Shakespeare moved to London, achieving success as a playwright and actor, eventually becoming part-owner of the Globe Theatre and a favourite of both Elizabeth I and James I. Shakespeare retired wealthy and famous to Stratford-upon-Avon, where he died in 1616 at the age of 52.
2	Slavery	Slavery is a central theme in The Tempest, with various forms of servitude creating tension throughout the play. Ariel, an airy spirit, is bound to Prospero's will and promised freedom if he performs his duties, including entrancing the island's visitors. Caliban, depicted as villainous, is also enslaved by Prospero, who took the island from him and maintains control through threats and punishment.
3	Where the play came from	The Tempest was written around 1610–1611, reflecting the era's fascination with exploration, colonisation, and encounters with indigenous peoples, inspired partly by the 1609 shipwreck of the Sea Venture. The play explores themes of survival, power, and control, set against the backdrop of the "New World" and European expansion. The supernatural is central, with Prospero's magic and Ariel's mysticism symbolising Renaissance beliefs in unseen forces and humanity's curiosity about the unknown.
4	Colonialism	The Tempest was written during the Elizabethan era, a time of European exploration and colonisation in regions like the Americas, Africa, and Asia. Colonisation was often justified by portraying indigenous peoples as "savages" needing civilisation, a view reflected in the play. Caliban symbolises colonised peoples, with his treatment by Prospero illustrating themes of control and exploitation.

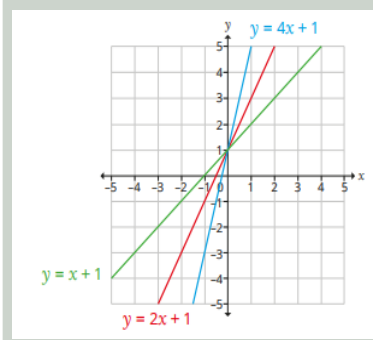
## STRAIGHT LINE GRAPHS

1	Axes	Two perpendicular lines (horizontal x-axis and vertical y-axis) that define the coordinate plane and are used to plot points and graphs.
2	Parallel lines	Lines that maintain a constant distance from each other.
3	Horizontal	Parallel to the horizon (flat or level).
4	Vertical	Positioned up and down, perpendicular to the ground or a horizontal surface.
5	Equation of a line	Relationship between the x- and y-coordinates of all points on a line.
6	y-intercept	Point where a line or curve crosses the y-axis on a graph.
7	Gradient	Measure of how steep a line is, showing the rate of change between two points on a graph.
8	Coefficient	Number in front of a variable indicating the multiple of the variable.
9	Rearrange	Adjust a formula to isolate a specific variable or simplify an expression.
10	Direct proportion	Relationship between two quantities where they increase or decrease at the same rate.
11	Inequality	Statement that shows the relationship between two expressions, where one is greater than, less than or not equal to the other.
12	Region	Set of points defined by one or more inequalities.
13	Satisfy	Find a value that makes an inequality true when substituted into the inequality.

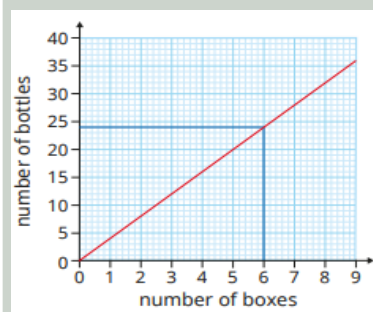
## PARALLEL/SAME GRADIENT



## SAME Y-INTERCEPT



## DIRECT PROPORTION



## RATIO AND PROPORTION

1	Rate	Amount or measure that indicates a multiplicative change.
2	Unit price	Cost of a single unit of a product, found by dividing the total price by the number of units.
3	Conversion	Process of changing a quantity from one unit or form to another.
4	Origin	Where the axes of a graph intersect, at coordinates (0, 0).
5	Linear	Where a relationship or pattern changes at a constant rate, forming a straight line when graphed.
6	Inverse	Opposite effect of.
7	Inverse proportion	Relationship between two quantities where, as one quantity increases at a rate, the other quantity decreases at the same rate.
8	Non-linear relationship	Relationship between variables that is not represented by a straight-line graph.
9	Asymptote	Line that the graph approaches but never touches.
10	Constant	Fixed value that does not change.
11	Variable	Symbol, usually a letter, that can represent any value in mathematical expressions, identities and formulae.
12	Ratio	Comparison of two or more values.
13	Equivalent ratio	Ratios that simplify to the same ratio.
14	Part	Piece of a whole.
15	Whole	Total or complete amount.

## KEY LEARNING POINTS

1	Edible acids	Have a sour taste, e.g. citric acid in flying saucer sweets.
2	Acids and alkalis	Can be corrosive and cause burns (eye protection is essential).
3	Acids and metals	You may see corrosion, bubbles of hydrogen and an increase in temperature.
4	Hydrogen gas	Can be tested with a lit splint and gives a squeaky pop!
5	Metal oxide	Reacts with acid to make a metal salt and water.
6	Non-metal oxides	Make acidic solutions in water.
7	Acids + Base	→ Metal salt + water (neutralisation equation).
8	(s), (l), (g), (aq)	In equations: solid, liquid, gas and aqueous (dissolved in water).
9	Carbon dioxide	Test: turns clear limewater to cloudy when bubbled through.
10	Acid rain (pollution)	Reacts with marble (calcium carbonate) and affects ecosystems.

## KEY EQUIPMENT & USES

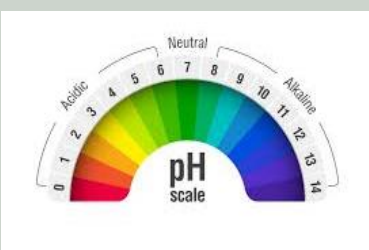
1	Pestle and mortar	A mortar is a heavy bowl; a pestle is a grinding club; used to crush and grind substances.
2	Universal indicator	Either as a solution or on paper; shows the pH as a colour (1 = red; 7 = green; 14 = purple).
3	Evaporating dish	A rounded dish used to crystallise substances.

## INDICATOR EXAMPLES



Cabbage juice can show acids and alkalis.

## UNIVERSAL INDICATOR



UI shows approximate pH values from 0-14.

## WHAT ARE...?

Water =  $H_2O$   
 Hydrogen ions =  $H^+$   
 Hydroxide ions =  $OH^-$   
 Oxide ions =  $O^{2-}$   
 Hydrogen gas =  $H_2$   
 Carbonate ions =  $CO_3^{2-}$   
 Carbon dioxide =  $CO_2$   
 $H^+ + OH^- \rightarrow H_2O$

## KEY VOCABULARY

1	acid, acidic	A solution with a pH < 7.
2	base, alkaline	reacts with an acid to form a compound called a salt.
3	alkali, alkaline	a soluble base with a pH > 7.
4	Litmus paper	Indicates whether a solution is an acid or an alkali.
5	Corrosive	Can damage substances or cause chemical burns.
6	pH scale	From 0 (acidic) to 7 (neutral) to 14 (alkaline).
7	Neutral	A solution with a pH = 7.0
8	Solution	A solid (the solute) dissolved in a liquid (the solvent).
9	Concentration	The mass of a substance in a certain volume of solution.
10	Indicator	A substance which shows the pH by changing colour.
11	Adding to excess	One reactant is left; all others have reacted completely.

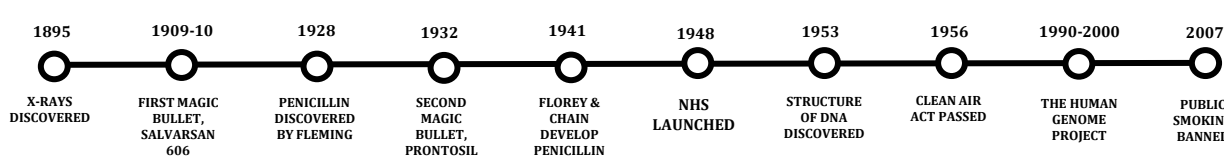
## Step-by-step: making copper sulphate by neutralising copper oxide with sulphuric acid

1	Add copper oxide powder to warm sulphuric acid to and stir.
2	Add copper oxide until no more reacts (copper oxide is said to be "in excess").
3	Filter the copper sulphate solution to remove unused copper oxide.
4	Pour the copper sulphate solution into an evaporating dish and wait until crystals form.



# | Year 9 | Term 4 |

## What are the most significant advancements in modern medicine?



# HISTORY

## GENERAL MEDICINE

1	Hereditary Disease	A disease passed on to children by their parents or other decedents.
2	Double Helix	The twisting shape formed by DNA.
3	Genetics	The study of DNA.
4	Genome	The complete set of DNA containing all of the information to build an organism.
5	Compound	A mixture of two or more different elements.
6	Antibodies	Particles inside the body that can identify and fight off a disease.
7	Biopsy	Where scientists gather samples of body tissue to study in a laboratory.
8	Pharmaceutical Companies	Businesses that produced and sold drugs as treatments.

## MODERN MEDICINE TECHNOLOGY

1	CT Scans	Use advanced x-rays to diagnose tumours and other growths.
2	EKGs	Electro Cardiograms - use electrical impulses to track heart activity.
3	Electron Microscope	Use powerful electron beams to magnify 10,000,000 times.
4	Endoscope	A camera on the end of a thin flexible tube that can be inserted inside the body.
5	Hypodermic Needle	Allow a precise dose to be introduced directly into the bloodstream.
6	Laparoscopic Surgery	Keyhole surgery i.e. using cameras and tiny surgical instruments through small incisions/cuts in the body.
7	MRI Scans	Use magnets and radio waves to create internal images of the body (soft tissue).
8	Bronchoscope	A camera and cutting tool that collects cell samples from the lungs.
9	Radiotherapy	The use of radiation to shrink tumours.
10	Ultrasound Scans	Use sound waves to create internal images of the body (gall stones, kidney stones).

## ILLNESSES & DISEASES

1	Chemotherapy	The injection of chemicals/drugs into the body to shrink tumours before surgery.
2	Mastectomy	Surgery where a person has one or both breasts removed.
3	Penicillin	The first antibiotic using microorganisms rather than chemicals.
4	Prontosil	A compound used to kill bacterial infections such as blood poisoning.
5	Salvarsan 606	The first magic bullet discovered by Hata to cure syphilis.
6	MRSA	A strain of drug-resistant bacteria that is particularly resistant to antibiotics.
7	Compulsory vaccination	Campaigns by the government to vaccinate the public against common diseases.

## BIG IDEAS & THINKING

1	Antibiotic	A treatment that destroys or limits the growth of bacteria in the human body.
2	Magic Bullet	The name given for the first chemical cures that would attack the disease-causing microbes and leave the rest of the body unharmed.
3	Lifestyle Campaigns	Government backed campaigns to promote better diets, heart health, smoking awareness, etc.
4	Lifestyle Factors	The choices we make about how we live our lives regarding diet, smoking, sex, alcohol, etc.
5	National Vaccination Campaign	Government backed campaigns to vaccinate.

## KEY QUESTIONS

1) How did the discovery of the Human Genome Project advance medicine?	2) How have beliefs about lifestyle and health changed since the Middle Ages?	3) How have methods of diagnosis improved since 1900?
4) What impact did magic bullets have on medicine?	5) What was the impact of the NHS?	6) What strategies are used to prevent disease?
7) How was penicillin discovered?	8) What factors enabled the development of penicillin?	9) How is science and technology used to treat lung cancer?

## KEY INDIVIDUALS



ERLICH

- Tested as many compounds as he could to find a cure for syphilis.
- By 1907, he had tested over 600 compounds, but did not find a cure.



HATA

- Retested all of Erlich's compounds.
- Found that compound number 606 cured syphilis.
- The drug used was named 'Salvarsan 606' and was the first *Magic Bullet*.



DOMAGK

- Discovered that a bright red dye called Prontosil killed bacterial infections in mice.
- Tested Prontosil out on his own daughter, who had developed blood poisoning – it cured her!



FLEMING

- One of the first British doctors to use the *Magic Bullet*.
- Worked in WW1 battlefield hospitals and researched infection.
- Accidentally developed *penicillin* in a mouldy petri dish.
- Published his findings when others were looking for chemical treatments (so it went unnoticed).
- He didn't think it could work with humans as his experiments showed that it was ineffective when mixed with human blood.



FLOREY & CHAIN

- Found Fleming's work when conducting research on antibiotics.
- Chain grew penicillin in his laboratory and tested it.
- They tested it on infected mice successfully but couldn't grow enough to test on humans.
- They grew it in whatever they could to test on their first human patient – it worked but they couldn't produce enough to save his life – nevertheless, it was proved effective on humans!



WATSON & CRICK

- An American Biologist and an English physicist.
- Investigated DNA at Cambridge University.
- Used Franklin's and Wilkin's DNA x-rays to build the first model of DNA.
- Published a paper in 1953 suggesting they had discovered the secret of life.
- Watson originally led the Human Genome Project, launched in 1990.



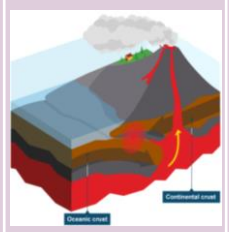
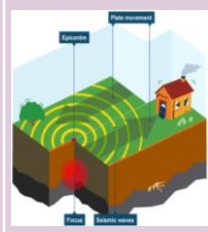

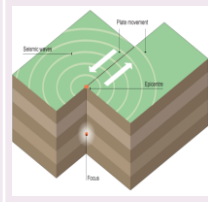
**KEY VOCABULARY**

1	The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
2	The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
3	The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.
4	Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
5	Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
6	Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
7	Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
8	Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.
9	Destructive Plate Margin	When the denser plate subducts beneath the other, friction causes it to melt and become molten magma. The magma forces its way up to the surface to form a volcano. This margin is also responsible for devastating earthquakes.
10	Constructive Plate Margin	Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge.
11	Conservative Plate Margin	A conservative plate boundary occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.
12	Focus	The point at which pressure is released.
13	Seismic waves	Energy waves that ravel out from the focus.
14	Epicentre	The point directly above the focus, where the seismic waves reach first.

**CONVECTION CURRENT SEQUENCE**

1	Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2	When lower parts of the mantle molten rock (Magma) heat up they become less dense and slowly rise.
3	As they move towards the top they cool down, become more dense and slowly sink.
4	These circular movements of semi-molten rock are convection currents
5	Convection currents create drag on the base of the tectonic plates and this causes them to move.

**PLATE BOUNDARIES**

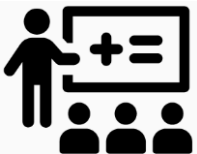
1		3	
2		4	

**MANAGEMENT TECHNIQUES**

1	Warning signs	Small earthquakes are caused as magma rises up. Temperatures around the volcano rise as activity increases. When a volcano is close to erupting it starts to release gases.
2	Monitoring techniques	Seismometers are used to detect earthquakes. Thermal imaging and satellite cameras can be used to detect heat around a volcano. Gas samples may be taken and chemical sensors used to measure sulphur levels.
3	Preparation	Creating an exclusion zone around the volcano. Having an emergency supply of basic provisions, such as food. Being ready and able to evacuate residents. Trained emergency services and a good communication system.

**MANAGEMENT TECHNIQUES**

1	Predicting	Methods include: <ul style="list-style-type: none"> <li>• Satellite surveying (tracks changes in the earth's surface)</li> <li>• Laser reflector (surveys movement across fault lines)</li> <li>• Radon gas sensor (radon gas is released when plates move so this finds that)</li> <li>• Seismometer</li> <li>• Water table level (water levels fluctuate before an earthquake).</li> <li>• Scientists also use seismic records to predict when the next event will occur.</li> </ul>
2	Protection	You can't stop earthquakes, so earthquake-prone regions follow these three methods to reduce potential damage: <ul style="list-style-type: none"> <li>• Building earthquake-resistant buildings</li> <li>• Raising public awareness</li> <li>• Improving earthquake prediction</li> </ul>



**SCHULFÄCHER – SCHOOL SUBJECTS**

1	Sprachen	languages
2	Naturwissenschaft	science
3	Mathe	maths
4	Geschichte	history
5	Erdkunde	geography
6	Kunst	art
7	Musik	music
8	Theater	drama
9	Religion	RE
10	Sport	PE
11	Deutsch	German
12	Englisch	English
13	Französisch	French

**SCHULTASCHE- SCHOOL BAG**

1	Ich habe...	I have
2	Ich habe... gekauft	I have bought (gekauft at end of sentence)
3	einen Radiergummi	rubber
4	einen Bleistift	A pencil
5	einen Kühltisch	A biro / pen
6	ein Etui	A pencilcase
7	Filzstifte	Felt tips

**DIE FRAGE – QUESTION WORDS**

1	Wann?	When?
2	Wieviele?	How many?
3	Um wieviel Uhr?	At what time?
4	Was?	What?

**MEINUNGEN- OPINIONS**

1	Mein Lieblingsfach ist...	My favourite subject is
2	Es nervt mich	It annoys me
3	Ich liebe...	I love
4	Ich hasse....	I hate
5	Ich lerne (nicht) gern	I do/don't like learning....
6	Ich lerne lieber....	I prefer to learn...
7	Am liebsten...	Best of all

**SCHULREGELN – SCHOOL RULES**

1	Wir dürfen keine Schimpfwörter sagen	We are not allowed to swear
2	Wir dürfen keinen Kaugummi kauen.	We are not allowed to chew chewing gum.
3	Wir müssen ruhig sein.	We must be quiet.
4	(un)gerecht	(un)just
5	(un)fair	(un)fair

**KEY QUESTIONS AND EXAMPLE ANSWERS**

<b>Q</b>	Was ist dein Lieblingsfach? What is your favourite subject?	Was darfst du in der Schule nicht machen? What are you not allowed to do at school?
<b>A</b>	Mein Lieblingsfach ist..., weil es interessant und nützlich ist. Der Lehrer ist auch nett. My favourite subject is...because it is useful and interesting and the teacher is also nice.	Wir dürfen kein Handy benutzen, ich finde es doof. We are not allowed to use mobiles, I find it stupid.

**TENSES**



**Past tense (perfect)**

**Already done and completed**

1	Ich habe ...gemacht	I did
2	Ich habe...gelernt	I learnt
3	Ich habe... getragen	I wore
4	Ich bin... gegangen	I went



**Present tense**

**Now**

1	Ich trage / er trägt	I am wearing / he is wearing
2	Ich lerne / er lernt	I am learning / he is learning
3	Ich studiere / er studiert	I am studying / he is studying



**Future tense**

**What will happen**

1	Ich werde...	I will
2	lernen	learn
3	tragen	wear
4	machen	do/make

**Schultag-school day**

1	Die Schule beginnt um 8.45 und endet um 15.15	The school starts at 8.45 and ends at 15.15
2	Nach der Pause	After break
3	Nach der Mittagspause	After lunch
4	Wir haben 5 Stunden pro Tag	We have 5 lessons a day
5	Jede Stunde dauert 60 Minuten	Every lesson lasts 60 minutes
6	Was hast du in der (zweiten) Stunde am Dienstag?	What do you have second lesson on Tuesday?
7	Ich bekomme immer gute Noten.	I always get good grades
8	Ich mag ... (nicht)	I don(n't) like... (plus subject)
9	Ich mache (nicht) gern (Kunst)	I do/don't like doing art

**KEY VOCABULARY**

1	Persecution	Hostile and ill-treatment based on ethnicity, religion or sexual orientation or political beliefs.
2	Genocide	Deliberate killing of many people from a particular nation or ethnic group with that aim of destroying that group.
3	Nazi	A member of the far-right National Socialist German Workers' Party.
4	Jews	A follower of the religion Judaism.
5	Allies	Formally working with another country to help in times of conflict.

**PERSECUTION OF MINORITIES**

1	Ethnic cleansing	A forced removal of a racial, ethnic or religious group from a given area, with the intent of making people in that area the same.
2	Examples of minority groups	Refugees, asylum seekers, migrants, disabled people, LGBTQ+, BME (Black and ethnic minority groups).
3	Refugees	Someone who has been forced to flee their country because of persecution, war or violence.
4	Oppression	Cruel and unjust treatment.

**HUMAN RIGHTS**

1	Universal Declaration of Human Rights	A document that sets out the rights and freedoms of all human beings.
2	Rights	Rules that a person is entitled to live a free and equitable life.
3	Responsibilities	Something that is your job or duty.

**GENOCIDE IN THE MODERN WORLD**

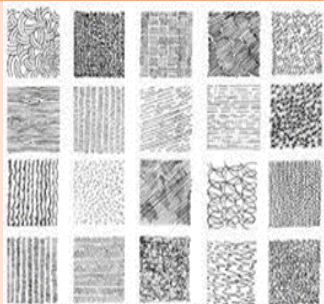
1	Darfur	The genocide in Darfur is not based on religion as both sides are Muslim. The Janjaweed, sponsored by President Bashir's government, are targeting the black African farmers, with the intent to destroy this ethnic group. An international arrest warrant for Bashir was issued in 2009 by the International Criminal Court, for crimes against humanity and war crimes and following this in 2010 a further warrant was issued for crimes of genocide and ethnic cleansing. He is the only sitting head of state wanted for such crimes and events in Darfur have now been taking place for 12 years, yet Bashir still evades justice, even managing to travel internationally without being detained.
2	Rwanda	In just 100 days in 1994, about 800,000 people were slaughtered in Rwanda by ethnic Hutu extremists. They were targeting members of the minority Tutsi community, as well as their political opponents, irrespective of their ethnic origin. A group of Tutsi exiles formed a rebel group, the Rwandan Patriotic Front (RPF), which invaded Rwanda in 1990 and fighting continued until a 1993 peace deal was agreed. On the night of 6 April 1994, a plane carrying then-President Juvenal Habyarimana, and his counterpart Cyprien Ntaryamira of Burundi - both Hutus - was shot down, killing everyone on board. Hutu extremists blamed the RPF and immediately started a well-organised campaign of slaughter. The RPF said the plane had been shot down by Hutus to provide an excuse for the genocide.
3	Armenian genocide	Sometimes called the first genocide of the twentieth century, the Armenian genocide refers to the physical annihilation of Armenian Christian people living in the Ottoman Empire from spring 1915 through autumn 1916. There were approximately 1.5 million Armenians living in the multiethnic Ottoman Empire in 1915. At least 664,000 and possibly as many as 1.2 million died during the genocide, either in massacres and individual killings, or from systematic ill treatment, exposure, and starvation.
4	Cambodia	The Cambodian Genocide was the murder of between 1,500,000 and 3,000,000 Cambodians by the Khmer Rouge (the popular name for the Communist Party of Kampuchea [CPK]), between 1975 and 1979. The Khmer Rouge came to power following a period of civil war and unrest in Cambodia and during Cold War tensions between America, the Soviet Union and Communist China. The Khmer Rouge were led by Pol Pot and held radical totalitarian beliefs. They wanted to create a classless, rural, agricultural society where personal property, currency, religion and individuality did not exist.
5	Bosnia	Following the death of Josip Broz Tito, leaders clinging to ethno-nationalism rose to power across Yugoslavia. Bosnia and Herzegovina, a majority Muslim republic, found itself under attack by Serb and Croat forces in a race for expansionism and power. Once considered a melting pot of cultures in which Jews, Muslims, Christians, Catholics and others lived side by side in peace...the small country found its Bosniak-Muslim population defenceless as the Serb army laid siege to its town and villages to exterminate and "ethnically cleanse" the country of Bosnian Muslims.

KEY VOCABULARY

1	Mind-map	A diagram in which information is represented visually, usually with a central idea placed in the middle and associated ideas arranged around it.
2	Composition	How an image is arranged.
3	Cross hatching	Mark making used to build up tone, usually done with pen.
4	Observational	Drawing from an object or an image, rather than your imagination.
5	Mark Making	The range of different marks and patterns made when drawing, usually to show texture or tone.

**Drawing with biro**

When drawing with biro you can use different marks to show a gradual change tone. Try using lines, dots and dashes and see what happens when you layer then up.



MARK MAKING IDEAS

KEY QUESTIONS TO ANALYSE THE WORK OF OTHERS

1	Who are they? (keep this bit brief and relevant).
2	What is the subject of their work (what can you see?).
3	What formal elements are in their work – colour, line, shape, space, pattern, form, tone, texture..
4	What do you feel is the meaning behind their work?
5	Why are you looking at them?
6	What materials/techniques have been used?

KEY ARTISTS

1	Andrea Joseph	<ul style="list-style-type: none"> <li>An artist and illustrator from South Wales. Her work focuses on every day subject matter. Her work is created with pens, colour pencil, gouache and collage. She creates posters, info graphics and maps using these techniques.</li> </ul>	
2	Jim Dine b. 1935	<ul style="list-style-type: none"> <li>American artist associated with the Pop Art movement. The Pop Artists broke traditions by using everyday common objects as the inspiration for their artworks. Jim Dine made expressive drawings, but sometimes also stuck real objects in his work.</li> </ul>	
3	Michael Craig Martin b. 1941	<ul style="list-style-type: none"> <li>Sir Michael Craig-Martin is an Irish-born contemporary conceptual artist and painter. He is well known for his bold and graphical paintings of everyday objects.</li> </ul>	

**KEY VOCABULARY**

1	Conduction	Heat is transferred from one molecule to another through direct contact with a hot surface.
2	Convection	Hot molecules rise and cooler molecules fall closer to the source of heat.
3	Radiation	Heat is passed by heat or electromagnetic waves from one place to another.

**COOKING METHODS & HEAT TRANSFER**

1	Boiling	Convection
2	Frying	Conduction
3	Grilling	Radiation
4	Baking	Convection
5	Blanching	Conduction
6	Steaming	Convection
7	Sauteing	Conduction

**EFFECTS OF DIFFERENT COOKING METHODS**

	Water/fat/dry heat cooking	Cooking method	Effects on nutrition	Effect on sensory qualities
1	Cooking with fat	Shallow frying	The fat content of the foods will increase. There will be a small loss of water-soluble vitamins from heat (B group vitamins and C).	Produces a crispy texture. It tenderises meat and improves the flavour. Colours can become less bright.
2	Cooking with dry heat	Baking	Baking keeps calcium and iron in the food. Vitamin C and B group vitamins are lost due to the heat.	Baking give a crispy texture and a golden-brown colour. Baking will improve the flavour of baked foods such as bread and baked potatoes.
3	Cooking with water	Blanching	Blanching is very quick, so the loss of nutrients is small. Some B group vitamins, vitamin C, iron and calcium will be lost in cooking water.	Blanching keeps the crisp texture of vegetables. The colour of vegetables is preserved.
4	Cooking with water	Steaming	Food has no contact with water so B group vitamins, vitamin C, iron and calcium will not be lost into the cooking water. There is some loss of water soluble vitamins from the heat.	Steaming gives a light and fluffy texture to food. It cooks fish and seafood gently and stops it breaking up. Fruit and vegetables usually keep their colour.

**KEY VOCABULARY**

1	Design Movement	A Design movement is the collective title given to a group of artefacts/artworks that share the same ideals, style or technical approach.
2	Chronological	A record of events in the order in which they occurred.
3	2D design	Software which allows you to draw digitally.
4	Net	A net is what a 3D shape would look like if it was unfolded.
5	Laser cutter	As the name suggests, laser cutters create patterns and designs by cutting into materials. A powerful laser beam is the source that melts, burns, or vaporizes the material.
6	CAD	Computer Aided Design.
7	CAM	Computer Aided Manufacture.
8	LED	A light emitting diode.
9	Soldering	Soldering is a joining process used to join different types of metals together by melting solder. Solder is a metal alloy usually made of tin and lead which is melted using a hot iron. The iron is heated to temperatures above 600 degrees Fahrenheit which then cools to create a strong electrical bond.

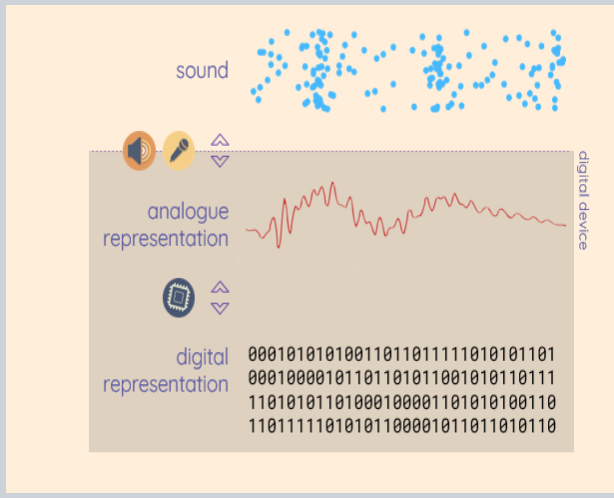
**KEY DESIGN MOVEMENTS & INFLUENCES**

1	Art Nouveau	Linear patterns of Japanese prints. French Post-impressionist art. Arts and Crafts Movement.
2	Art Deco	End of WW1, growth of mass production. Range of international styles coming into the public eye.
3	De Stijl	Means 'The Style' in Dutch. Reaction against the decorative art deco.
4	Memphis	Rebelling against functional modernism. Art Deco. Pop Art.

**KEY DESIGNERS & FEATURES OF THEIR WORK**

1	Art Nouveau	Alphonse Mucha. Louis Comfort Tiffany. Charles Rennie Macintosh.	Floral and decorative patterns. Elegant and graceful lines. Use of traditional materials.
2	Art Deco	Claric Cliff. Eileen Gray. Rene Lalique. Walkter Dorwin Teague.	Stylised geometric shapes. Bold colours often paired with black, chromes and metallic. Sunburst motifs.
3	De Stijl	Theo van doesburg. Piet Mondrian.	Simple. Primary colours. Geometric forms.
4	Memphis	Ettore Sottsass. Michele De Lucchi. Martine Bedine.	Less is Bore principles. Post-modernism design. Bright, colourful and sculptural design. Simple and Abstract forms. Use of non-traditional materials.

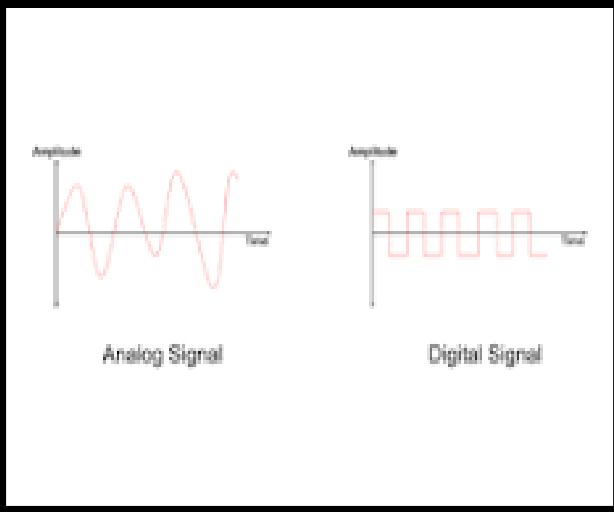
SOUND TYPES



In order for any device to manipulate sound, it needs to 'capture' it and convert it to a suitable form.

Microphones are used to convert sound waves to variations in electric voltage that mirror the variations in air pressure. The electric signal that is produced is an analogue representation of sound.

ANALOGUE VERSUS DIGITAL



Digital signals are transmitted as 1s and 0s, whereas analogue signals are transmitted in waves. One is not necessarily better than another, but one may be preferred over the other depending on the situation.

AUDIO REPRESENTATION KEY WORDS

1	Digital	Digital data is the electronic representation of information in a format or language that machines can read and understand.
2	Analogue	Analogue is sound that you can hear when a person speaks. If this is captured on a device and processed onto a computer, it becomes digital.
3	Resolution	The number of pixels that exist within that image. The higher the resolution, and the richer the pixel count, the more detail and definition you will see.
4	Bits	One binary bit (is the smallest value of data).
5	Sampling	Taking binary bits of sound to recreate a copy of the original sound.
6	Sample Rate	The number of samples taken per second is called the sampling rate .
7	Sample Size	To make a copy or have extra data that is the same.
8	Sound Editor	Software used to convert and edit sound.
9	Bitmap Image	A photographic image that uses pixels to sequence an image.
10	Vector Graphics	Images can be represented as collections of geometrical shapes (each with its own attributes).

AUDIO REPRESENTATION KEY WORDS

1	Red	255, 0, 0
2	Green	0, 255, 0
3	Blue	0, 0, 255



**KEY SKILLS**

1	Characterisation		Developing a deep understanding of characters' motivations, emotions, and relationships to portray them authentically.
2	Improvisation		Using spontaneity to explore alternate interpretations of scenes and uncover hidden nuances in the text.
3	Text Analysis		Breaking down Shakespeare's language, themes, and wordplay to fully grasp the meaning and intentions behind the dialogue.
4	Physicality		Experimenting with movement and body language to bring the comedic and dramatic elements of the characters to life.
5	Voice Work		Practicing vocal techniques to project, articulate, and vary tone, especially with Shakespeare's rhythmic and poetic language.
6	Collaboration		Working effectively with others to build ensemble scenes, interpret relationships, and create dynamic group performances.

**KEY VOCABULARY**

1	Directorial Intent	The decisions in which the director makes to achieve a desired effect.
2	Proxemics	The space between the characters on stage that shows their relationship and emotion.
3	Staging	The blocking and movement that a director has commanded on stage.
4	Tragedy	A genre which generally ends in the demise of the main character.

**3 Strands of Drama lessons**

**Performing:**  
Presenting your drama to an audience.

**Devising:**  
Creating your own performance.

**Appreciation:**  
Understanding and commenting on your own performance and the performances of others.

**strategies**

1	Systematic repetition.
2	Rehearsal discipline.
3	Planning of rehearsal.
4	Respond to feedback.

**CHARACTERS**

1	Viola	The resourceful and intelligent protagonist who disguises herself as Cesario, creating much of the play's comedic confusion.
2	Orsino	The lovesick Duke of Illyria who is obsessed with Lady Olivia but develops a bond with Viola (as Cesario).
3	Olivia	A wealthy noblewoman who mourns her brother's death and unknowingly falls in love with Viola disguised as Cesario.
4	Malvolio	Olivia's pompous steward who becomes the target of a cruel prank due to his self-importance and ambition.
5	Sir Toby	Olivia's mischievous uncle who enjoys drinking, scheming, and mocking others, particularly Malvolio.

**ORDER OF EVENTS**

Act 1	Viola is shipwrecked in Illyria and, believing her twin brother Sebastian is dead, disguises herself as a man named Cesario to serve Duke Orsino. Orsino, in love with Lady Olivia, sends Cesario (Viola) to woo her on his behalf. However, Olivia falls for Cesario, unaware of Viola's true identity.
Act 2	Sebastian, Viola's twin, is revealed to be alive and rescued by a sailor named Antonio. Meanwhile, Malvolio becomes the victim of a prank orchestrated by Maria, Sir Toby, and others, tricking him into believing Olivia loves him.
Act 3	The love triangle deepens as Olivia grows more enamoured with Cesario, and Viola struggles with her feelings for Orsino. Meanwhile, Sir Toby and Sir Andrew challenge Cesario to a comedic duel, further complicating matters.
Act 4	Sebastian arrives in Illyria, and his resemblance to Viola causes confusion. Olivia mistakes Sebastian for Cesario and marries him, believing he is the one she loves.
Act 5	The truth about Viola and Sebastian's identities is revealed. Viola and Orsino realize their love for each other, Sebastian and Olivia remain married, and Malvolio vows revenge after discovering the prank played on him. The play concludes with a celebration of love and marriage.

## CHOREOGRAPHIC DEVICES

1	Repetition	Performing the same action or phrase again.
2	Contrast	Movements or shapes that have nothing in common.
3	Complimentary	Perform actions or shapes that are similar to but not exactly the same as another dancer's.
4	Unison	Two or more dancers performing the same movement at the same time.
5	Canon	When the same movements overlap in time.
6	Contact	Sharing and distributing another dancer's weight.
7	Mirroring	When you perform the movement facing each other and create a mirror image of each other.
8	Accumulation	Repeating and adding actions to generate a phrase. 1,1 2, 1 2 3,
9	Retrograde	Perform the movements in reverse order.
10	Question and answer	One dancer performs an action, another dancer performs a different action in response, as though you were having a conversation.
11	Recombination	Perform your phrase in a different order to how it is performed originally.

## CHOREOGRAPHIC PROCESS

1	Researching	Discovering the context and meaning of a stimulus.
2	Improvising	Exploring or generating movements without planning.
3	Generating	Creating motifs and motif developments that link to your chosen theme.
4	Selecting	Choosing the most effective movements for your choreography.
5	Developing	Taking your initial movement ideas and exploring them further e.g. motif development.
6	Structuring	Putting your movement ideas into the best order to communicate your ideas effectively and have impact on the audience.
7	Refining	Making improvements to your original choreographic ideas.

## MOVEMENT COMPONENTS

1	Actions	Travel, turn, elevation, gesture, stillness, use of different body parts, floor work, transfer of weight.
2	Space	Pathways, levels, directions, size of movement, patterns, spatial design.
3	Dynamics	fast/slow, sudden/sustained, acceleration/deceleration, strong/light, flowing/abrupt.
4	Relationships	lead and follow, mirroring, action & reaction, accumulation, complement & contrast, contact, formations.

## CHOREOGRAPHIC VOCABULARY

1	Stimulus	A dance starting point or idea.
2	Motif	A short phrase of movement that encapsulates a theme.
3	Motif development	Ways in which a movement phrase can be varied.
4	Highlights	Important moments of a dance.
5	Climax	The most significant moment of the dance.
6	Aural Setting	The accompaniment for the dance (music).
7	Choreographic Devises	The elements you uses to develop your dance.

**STRUCTURING A TRACK**

1	Intro	A simple ostinato or loop introduces the song.
2	Build-up	More layers and instruments gradually enter.
3	Main Section	The full texture, including melody, bassline, and harmony.
4	Break down	Removing layers to create contrast.
5	Outro	Ending the piece by fading out or gradually dropping instruments out.

**KEY VOCABULARY**

1	Ostinato	A short, repeating pattern.
2	Loop	A repeated section of music, often using in digital music composition.
3	Motif	A small musical idea that can be developed and repeated.
4	Layering	Adding multiple musical lines to create texture.
5	Tempo	The measurement of the speed of music.
6	Polyrhythm	Two or more contrasting rhythms played at the same time.
7	Texture	How different musical layers interact such as melody and harmony.
8	Ostinati	The plural of ostinato. Taken from Italian language.

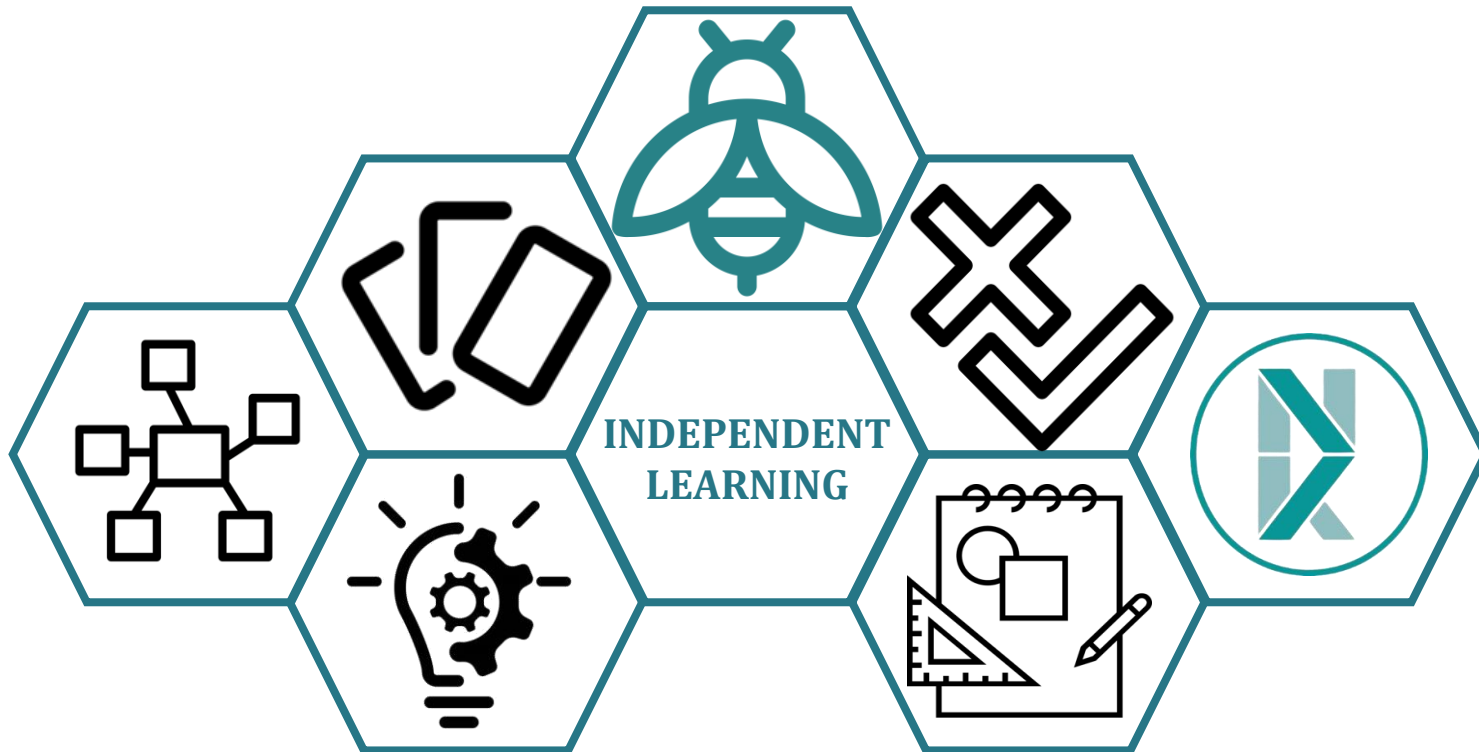
**COMPOSING TIPS**

1	Start with a simple Idea	A rhythmic or melodic loop.
2	Contrast	Change instruments, volume, rhythm, intensity for variety.
3	Listen to examples	All music has ostinati, think of the songs you like that have stand-out repeating patterns.

**CORE CONCEPTS**

1	Ostinato	An ostinato is a short, repeating pattern found in melody, rhythm, or harmony.
2	Creating an ostinato	Simple. Short, how will it fit with other instruments, experiment with pitch and rhythm.
3	Structuring a track	Intro, build up, main section, breakdown, outro.
4	Developing an ostinato	Layering, variation, texture changes, syncopation.

# FULLY UTILISE YOUR KNOWLEDGE ORGANISERS



**Use the following templates alongside the corresponding instructions to carry out your independent work.**



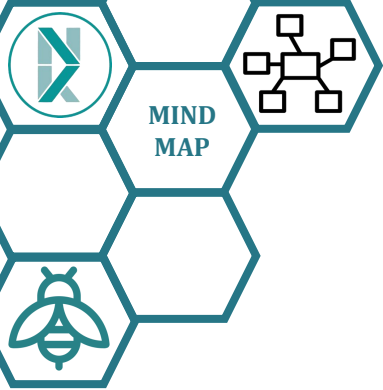
## HOW DO I MAKE USEFUL SKETCH NOTES?

- 1) Pick a focus area for your notes – this could be a topic, theme, exam question, unit question, etc.
- 2) Make notes in a logical order but rather than making detailed written notes, use a range of the following techniques:
  - Use upper case (capital letters) to emphasise particular words.
  - Turn a words into images e.g. the A in shArk turns into a fin;
  - Add images and/or icons into the text;
  - Use diagrams and tables to break down key areas,
  - Use arrows and lines to link different things together;
  - Use different shapes, thought-bubbles, etc.
  - Use a range of colours to emphasise different aspects of your notes/page.



*Once you have completed your sketch note page try photocopying it in black and white and then use colours to RAG-rate the information – you will then create a real focus for your revision by prioritising first the Red and then the Amber!*

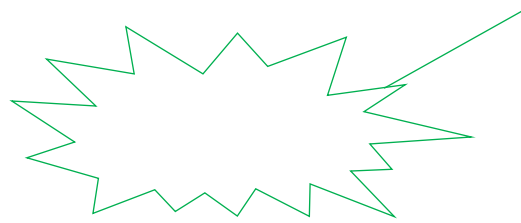




## MIND MAP

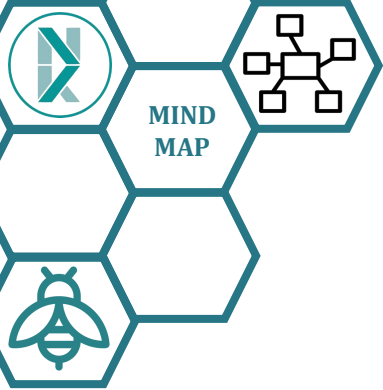
### HOW DO I CREATE AN EFFECTIVE MIND MAP?

- 1) Decide on the overall focus – this could be a topic/unit question, an exam question, key theme, etc – and then write this in the centre of the page.
- 2) Break this down into key areas, factors, ideas, etc and add these as main branches around the centre.
- 3) Break these main branches down further by adding more information – each main branch might break down into several more and each of these into several more.
- 4) Colour-code your branches, highlight key information and add any images, icons, diagrams, etc.
- 5) TOP TIP: Write on your branches and only use the most key information and words – this will help you to fit as much as possible on one page!



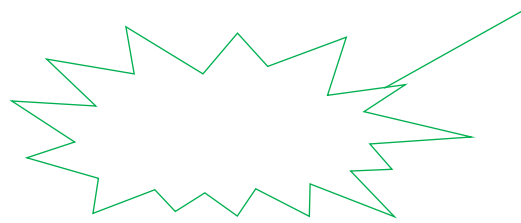
*The aim of a mind-map is to fit as much as possible all on one page! Therefore, avoid writing in full sentences and focus on using the branches to organise your notes.*





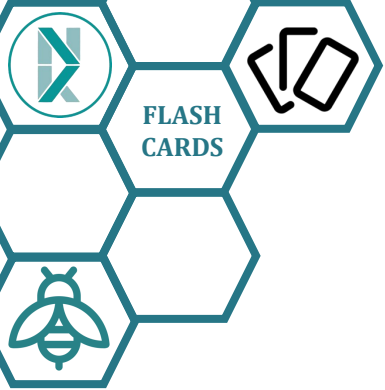
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### HOW DO I MAKE FLASH CARDS?

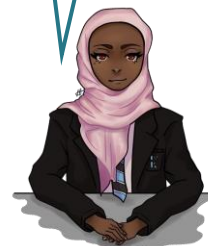
- 1) Think about what you want the focus of each card to be – it could be a key question, piece of vocabulary, exam question, factor, etc.
- 2) Record this on the 'front' card (left-hand column) – adding an image, diagram, some colour, etc, to make it memorable, is helpful. You can also number your cards.
- 3) Think about what information links to this – it could be written notes, an answer to a question, a definition, potential ideas, etc.
- 4) Record this on the 'back card' – try to break it down into bullet-points, use icons and imagery, colour, diagrams, once again to make it memorable.
- 5) Cut your cards out, fold the middle and glue them together – you can now use them to test yourself... or even better, get somebody else to test you.

FRONT (key term or question)

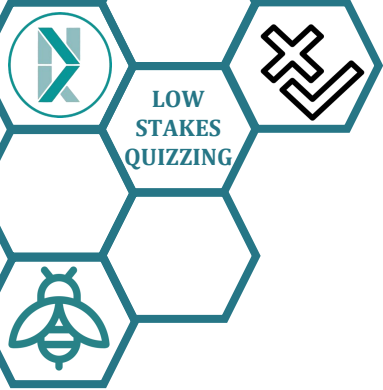
BACK (answer)




Why not RAG-rate your cards?  
(Red = you really don't know,  
Amber = you sort of know, Green = you completely know and understand).  
Then, every time you re-test yourself, you can re-RAG-rate your cards. You could do this along the bottom of each card.







### HOW DO I MAKE AN EFFECTIVE LOW-STAKES QUIZ

- 1) Choose something on your knowledge organiser and write a question where this is the answer – write this in the top box of the card.
- 2) Write 3-5 possible answers in the bottom box' – label these with numbers or letters e.g. a) to e).
- 3) Write the correct answer on the back of the card for future reference, so that you can easily check if you were right or wrong.
- 4) Put your low-stakes quiz somewhere safe and return to it a few days/weeks later - test yourself or get somebody else to test you!





Why not RAG-rate your cards?  
(Red = you really don't know,  
Amber = you sort of know, Green = you completely know and understand).  
Then, every time you re-test yourself, you can re-RAG-rate your cards. You could do this along the bottom of each card.





**EMPOWERING  
POTENTIAL**

**EMPOWERING  
SUCCESS**



**Build foundations first:** Knowledge Organisers provide the key 'foundations' to a topic or unit acts as a vital reminder of the key ideas, facts, information and concepts.



**Retrieve and recall:** the content of Knowledge Organisers are a regular part of the starts of lessons, lesson activities and discussion, self-testing and teacher assessment.



**Revise:** Knowledge Organisers are a fantastic starting point for further revision - they can be used to self-test, develop revision notes, create further revision resources.



**Succeed:** Ultimately, knowledge is power. Utilising the content of a Knowledge Organiser will provide the power to access the next step in learning.