

## Year 8 Maths Curriculum Plan

	Key questions	Overview of the module	Assessment	Cross Curricular Skills	Suggested reading material and websites:
Module 1 Numbers	<ul> <li>Show me two (three-digit) numbers with a highest common factor of 18. And another. And another. And another</li> <li>Show me two numbers with a lowest common multiple of 240. And another. And another</li> <li>Jenny writes 7.1 × 10<sup>-5</sup> = 0.000071. Kenny writes 7.1 × 10<sup>-5</sup> = 0.000071. Who do you agree with? Give reasons for your answer.</li> </ul>	<ul> <li>use the concepts and vocabulary of prime numbers, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation theorem</li> <li>round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures)</li> <li>interpret standard form <i>A</i> × 10<sup>n</sup>, where 1 ≤ <i>A</i> &lt; 10 and <i>n</i> is an integer</li> </ul>	Students will sit a short diagnostic assessment at before the start of each topic to inform teaching. The unit finishes with an End of Unit Test. The department emails results to parents including improvements highlighted in pink. Students complete full corrections on tests to ensure they understand the entire unit before moving on.	Literacy: Prime Prime factor Prime factorisation Product Venn diagram Highest common factor Lowest common multiple Standard form Significant figure Thinking Skills: Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.	www.kerboodle.com         www.mymaths.co.uk/         www.khanacademy.org/         https://campus.mangahigh.com         www.bbc.co.uk/education/subjects/z38pycw         https://nrich.maths.org/



Convince me that -	apply the four	Students will sit a	Literacy:	www.kerboodle.com
37 = 4		short diagnostic	Negative number	
Show me an	formal written methods,	assessment at before	Directed number	www.mymaths.co.uk/
	to integers, decimals	the start of each topic	Improper fraction	
calculation	and simple fractions	to inform teaching.	Top-heavy fraction	www.khanacademy.org/
involving addition	(proper and improper),		Mixed number	
0	and mixed numbers -	The unit will be	Operation	https://campus.mangahigh.com
numbers and the	all both positive and	followed by an end of	Inverse	
solution -10. And	negative	unit assessment.	Long multiplication	www.bbc.co.uk/education/subjects/z38pycw
another. And	use conventional		Short division	
another	notation for priority of	These assessments	Power	https://nrich.maths.org/
Create a Carroll	operations, including	are stored and	Indices	
diagram with	brackets, powers, roots	marked on a system	Roots	
'addition',	and reciprocals	called MiniTest. This		
'subtraction' as the		allows us to track the	Thinking Skills:	
column headings		progress made	Students are supported to	
		throughout the topic.	develop high level	
			problem solving skills,	
negative numbers'				
as the row		unit assessment will	mathematical concepts to	
headings. Ask		be emailed to parents	a range of unforeseen,	
pupils to create (if		and students as well	multi-step problems. They	
possible) a		as being recorded in	will also be encouraged to	
calculation that		their work book.	infer the meaning of new	
can be placed in			vocabulary and deduce	
each of the four			different methods of	
			working.	
think it is not				
possible, explain				
	<ul> <li>37 = 4</li> <li>Show me an example of a calculation involving addition of two negative numbers and the solution -10. And another another. And another</li> <li>Create a Carroll diagram with 'addition', 'subtraction' as the column headings and 'one negative number', 'two negative number', 'two negative number', 'two negative numbers' as the row headings. Ask pupils to create (if possible) a calculation that can be placed in each of the four positions. If they</li> </ul>	<ul> <li>37 = 4</li> <li>Show me an example of a calculation involving addition of two negative numbers and the solution -10. And another. And another</li> <li>Create a Carroll diagram with 'addition', 'subtraction' as the column headings and 'one negative number', 'two negative number', 'two negative number', 'two negative numbers' as the row headings. Ask pupils to create (if possible) a calculation that can be placed in each of the four positions. If they think it is not possible, explain why. Repeat for multiplication and</li> <li>A - 7 = 4</li> <li>Show me an example of a calculation involving addition of a construction of the four possible, explain why. Repeat for multiplication and</li> </ul>	<ul> <li>37 = 4</li> <li>Show me an example of a calculation involving addition of two negative numbers and the solution -10. And another. And another</li> <li>Create a Carroll diagram with 'addition', 'subtraction' as the column headings and 'one negative number', 'two negative numbers' as the row headings. Ask pupils to create (if possible) a calculation that can be placed in each of the four positions. If they think it is not possible, explain why. Repeat for multiplication and</li> <li>operations, including formal written methods, to integers, decimals and simple fractions including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative</li> <li>use conventional notation for priority of operations, including brackets, powers, roots and reciprocals</li> <li>the row headings and 'one negative numbers' as the row headings. Ask pupils to create (if possible) a calculation that can be placed in each of the four possible, explain why. Repeat for multiplication and</li> </ul>	<ul> <li>37 = 4</li> <li>Show me an example of a calculation involving addition of two negative numbers and the solution -10. And another</li> <li>Create a Carroll diagram with 'sabtraction' as the column headings and 'one negative number', 'two negative number', 'two negative numbers' as the row headings. Ask pupils to create (if possible) a calculation that can be placed in each of the four positions. If they think it is not possible, explain why. Repeat for multiplication and</li> <li>Operations, including formal with 'sabtraction' as the row headings. Is to create (if possible) a calculation that can be placed in each of the four possible, explain why. Repeat for multiplication and</li> </ul>



Module 3	Give an example	measure line	Students will sit a	Literacy:	www.kerboodle.com
	of a shape and its	segments and angles	short diagnostic	Similar, Similarity	
Visualising	enlargement (e.g.	in geometric figures,	assessment at before	Enlarge, enlargement	www.mymaths.co.uk/
and	scale factor 2) with	including interpreting	the start of each topic	Scaling	www.mymatho.oo.uk
Constructing	the guidelines	maps and scale	to inform teaching.	Scale factor	www.khanacademy.org/
Constructing	drawn on. How	drawings and use of	to morn teaching.	Centre of enlargement	www.kilaliacademy.org/
	many different	bearings	The unit will be	Object	https://campus.mangahigh.com
	ways can the	<ul> <li>identify, describe and</li> </ul>	followed by an end of	Image	<u>maps.//campus.mangangn.com</u>
	scale factor be	<ul> <li>Identify, describe and construct similar</li> </ul>	unit assessment.	Scale drawing	www.bbc.co.uk/education/subjects/z38pycw
	derived?	shapes, including on	unit assessment.	Bearing	
	<ul> <li>Show me an</li> </ul>	coordinate axes, by	These assessments	Plan, Elevation	https://nrich.maths.org/
	<ul> <li>Show me an example of a</li> </ul>	considering	are stored and		<u>maps,//mon.maths.org/</u>
	sketch where the	0	marked on a system	Thinking Skills:	
		enlargement	called MiniTest. This	Students are supported to	
	bearing of A from B is between 90°	<ul> <li>interpret plans and</li> </ul>	allows us to track the	develop high level	
	and 180°. And	elevations of 3D	progress made	problem solving skills,	
		shapes	throughout the topic.	applying challenging	
	another. And	• use scale factors,	throughout the topic.	mathematical concepts to	
	another	scale diagrams and	A copy of the end of	a range of unforeseen,	
	The bearing of A	maps	unit assessment will	multi-step problems. They	
	from B is 'x'. Find		be emailed to parents	will also be encouraged to	
	the bearing of B		and students as well	infer the meaning of new	
	from A in terms of			vocabulary and deduce	
	'x'. Explain why		as being recorded in their work book.	different methods of	
	this works.		their work book.		
	<ul> <li>Provide the plan</li> </ul>			working.	
	and elevations of				
	shapes made from				
	some cubes.				
	Challenge pupils				
	to build the shape				
	and place it in the				
	correct orientation.				



Understanding Risk	<ul> <li>Show me an example of an event and outcome with a probability of 0. And another. And another</li> <li>Always / Sometimes / Never: if I pick a card from a pack of playing cards then the probability of picking a club is ¼</li> <li>Label this (eightsided) spinner so that the probability of scoring a 2 is ¼. How many different ways can you label it?</li> </ul>	<ul> <li>relate relative expected frequent to theoretical probability, using appropriate languand the 0 - 1 probability scale</li> <li>record describe a analyse the frequent of outcomes of probability experiments using tables</li> <li>construct theoreti possibility spaces single experiment with equally likely outcomes and us these to calculate theoretical probabilities</li> <li>apply the property the probabilities of exhaustive set of outcomes sum to</li> </ul>	age assessment at before the start of each topic to inform teaching. The unit will be followed by an end of unit assessment. These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic. A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.	Literacy: Probability, Theoretical probability Event Outcome Impossible, Unlikely, Evens chance, Likely, Certain Equally likely Mutually exclusive Exhaustive Possibility space Experiment Thinking Skills: Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.	www.kerboodle.com www.mymaths.co.uk/ www.khanacademy.org/ https://campus.mangahigh.com www.bbc.co.uk/education/subjects/z38pycw https://nrich.maths.org/
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Module 5 Algebraic Proficiency	<ul> <li>Convince me a<sup>0</sup> = 1.</li> <li>What is wrong with this statement and how can it be corrected: 5<sup>2</sup> × 5<sup>4</sup> = 5<sup>8</sup> ?</li> <li>Jenny thinks that if y = 2x + 1 then x = (y - 1)/2. Kenny thinks that if y = 2x + 1 then x = y/2 - 1. Who do you agree with? Explain your thinking.</li> </ul>	<ul> <li>use and interpret algebraic notation, including: <i>a</i><sup>2</sup><i>b</i> in place of <i>a</i> × <i>a</i> × <i>b</i>, coefficients written as fractions rather than as decimals</li> <li>understand and use the concepts and vocabulary of factors</li> <li>simplify and manipulate algebraic expressions by taking out common factors and simplifying expressions involving sums, products and powers, including the laws of indices</li> <li>substitute numerical values into scientific formulae</li> <li>rearrange formulae to change the subject</li> </ul>	Students will sit a short diagnostic assessment at before the start of each topic to inform teaching. The unit will be followed by an end of unit assessment. These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic. A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.	Literacy: Product Variable Term Coefficient Common factor Factorise Power Indices Formula, Formulae Subject Change the subject Thinking Skills: Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.	<pre>www.kerboodle.com www.mymaths.co.uk/ www.khanacademy.org/ https://campus.mangahigh.com www.bbc.co.uk/education/subjects/z38pycw https://nrich.maths.org/</pre>
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Module 6 Fractions Decimals and Percentages	<ul> <li>Without using a calculator, convince me that 3/8 = 0.375</li> <li>Show me a fraction / decimal / percentage equivalent. And another. And another</li> <li>What is the same and what is different: 2.5, 25%, 0.025, ¼ ?</li> </ul>	<ul> <li>work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 or 3/8)</li> </ul>	Students will sit a short diagnostic assessment at before the start of each topic to inform teaching. The unit will be followed by an end of unit assessment. These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic. A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.	Literacy: Fraction Mixed number Top-heavy fraction Percentage Decimal Proportion Terminating Recurring Simplify, Cancel Thinking Skills: Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.	www.kerboodle.com www.mymaths.co.uk/ www.khanacademy.org/ https://campus.mangahigh.com www.bbc.co.uk/education/subjects/z38pycw https://nrich.maths.org/
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