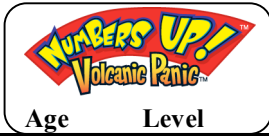
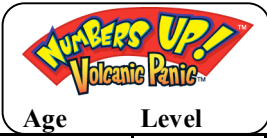


## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



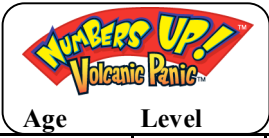
Age	Level	NSW Level	Multiplication	Division	Ratio
7	8	1	Identify equal groups of objects Label the number of objects in a group or row Label the number of objects in a row or collection	Share a group of objects equally Differentiate between an equal share and an unequal share	<i>NSW Mathematics K-6 Syllabus does not list separate outcomes for the substrand Ratio &amp; Proportion. Ratio is considered to be part of the Multiplication substrand in the Primary syllabus and part of the Fractions, Decimals and Percentages substrand in the Secondary syllabus.</i>
7	8	2	Identify equal groups or rows and find their totals Label groups to show how many there are altogether	Use repeated subtraction to divide a group of objects	
8	9	3	Read and interpret the multiplication sign in number sentences Use the multiplication sign to make labels for equal groups	Share a group of up to 100 objects into equal groups with or without remainders	

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



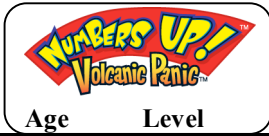
Age	Level	NSW Level	Multiplication	Division	Ratio
8+	10	4	Recognise and recall multiplication facts involving groups of 2 and 4 Read and interpret the vertical form of the multiplication algorithm	Use repeated subtraction to divide a group of up to 100 objects with or without remainders	
9+	11+	5	Memorise multiplication facts involving 10, 5, 1 and 0	Share a group of up to 1 000 objects into equal groups with or without remainders	
10	11+	6	Recall multiplication facts involving 3, 6 and 9	Use repeated subtraction to divide a group of up to 1 000 objects	

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



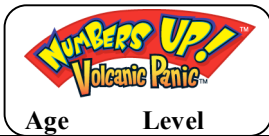
Age	Level	NSW Level	Multiplication	Division	Ratio
10-11	15+	7	Recall multiplication facts involving 8 and 7	Recognise, mane and use the division symbol Relate multiplication and division number sentences Read a division number sentence	
11+	18+	8	Understand the terms <i>factor</i> and <i>multiple</i> Understand and use square numbers	Read and write a number sentence using a division sign where the number being divided does not exceed 100	
All levels	All levels	9	Estimate and calculate multiplication problems using everyday situations and examples	Recall the basic division facts up to 100	

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



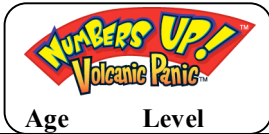
Age	Level	NSW Level	Multiplication	Division	Ratio
		10	Understand the link between concrete and symbolic forms of multiplication	Divide a 2-digit number by a single digit number with or without trading Divide a 2-digit number by 10 with or without trading	
11+	16+	11	Estimate and calculate the product of 1-digit x 2-digit numbers and 1-digit x 3-digit numbers Multiply 2- and 3-digit numbers by one-digit numbers using the contracted form of the algorithm	Divide a number with 3 or more digits by a single digit divisor with or without trading Divide a number with 3 or more digits by 10 with or without trading	
		12	Make reasonable estimates of 2-digit x 2-digit and 2-digit x 3-digit problems		

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



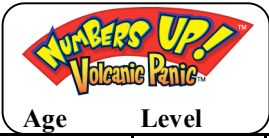
Age	Level	NSW Level	Multiplication	Division	Ratio
12	18+	NS2. 3	<p>Skip-count by 3's, 4's, 6's, 7's, 8's, or 9's.</p> <p>Link multiplication and division facts using groups or arrays</p> <p>Use the commutative property of multiplication</p> <p>Use known facts to work out unknown facts</p> <p>Use relationships and patterns to work out unknown facts</p> <p>Apply the inverse relationship of multiplication and division to check computations</p> <p>Make estimates to check reasonableness of answers</p> <p>List multiples for a given number</p> <p>Find square numbers</p> <p>Determine factors for a given number</p> <p>Use factorisation to solve multiplication and division problems</p> <p>Record remainders to division problems</p> <p>Interpret the remainder in the context of a word problem</p>	<p><i>The NSW Mathematics Years 7-10 Syllabus lists outcomes for Multiplication and Division in a combined format</i></p>	

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



Age	Level	NSW Level	Multiplication	Division	Ratio
		NS3. 3	<p>Record remainders as fraction or decimals</p> <p>Multiply 3- and 4-digit numbers by one-digit numbers</p> <p>use mental strategies</p> <p>Divide a number with 3 or more digits by a single-digit divisor using mental strategies</p> <p>Use mental strategies to multiply or divide a number by 100 or by a multiple of 10</p> <p>Find solutions to questions involving mixed operations</p> <p>Use and interpret remainders in answers to division problems</p>		
	19+	NS4. 1	<p>Use the notation for square root and cube root</p> <p>Recognise the link between squares and square roots and cubes and cube roots</p> <p>Use an appropriate non-calculator method to divide 2- and 3-digit numbers by a 2-digit number</p> <p>Use mental strategies related to associativity and commutativity to</p>		

## NSW Mathematics K-9 Curriculum Objectives Addressed Within Numbers Up! Volcanic Panic



Age	Level	NSW Level	Multiplication	Division	Ratio
			solve multiplication problems		
	23+	NS4.2	Recognise the direction and magnitude of an integer Multiply and divide directed numbers Use grouping symbols as an operator Apply order of operations to simplify expressions		