Year 5

Autumn Term – The Escape Room
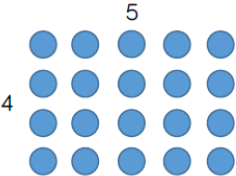
Objectives	Approximate number of lessons (70 total)	Investigations/variation	Context
▪ Determine the value of each digit of numbers up to 1 000,000	5	Use counters to make these numbers on the place value chart. 32,651 456,301 50,030 Can you say the numbers out loud? Add <, > or = to make the statements correct. The population of Halifax is ▮ than the population of Wakefield. Double the population of Brighouse ▮ t than the population of Halifax.	Large numbers linked to visitors coastal landmarks – populations, areas etc. Read and write these numbers and identify value of digits.
▪ Read and write numbers to 1,000,000			

▪ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (m.o. starter)	4	Daniel writes the first five numbers of a sequence. They are 3,666, 4,666, 5,666, 6,666, 7,666 The 10th term will be 15,332 because I will double the 5th term. Daniel Is he correct? Explain why.	Large numbers linked to visitor numbers for coastal landmarks – populations, areas etc. Read and write these numbers and identify value of digits.
▪ Compare and order numbers to 1,000,000		Write or = to make the statements correct. 600,000 + 80,000 ◯ 618,000 10,000 less than 723,000 ◯ 722,000 999,999 ◯ one million 50,000 ◯ half a million	
• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	5	At a festival, 218,712 people attend across the weekend. Tickets come in batches of 100,000 How many batches should the organisers buy? Explain why this goes against the rounding rule. Nrich Space Distances The circumference of Earth is 24,901 miles. Round this distance to the nearest 1,000 miles. Round this distance to the nearest 10,000 miles. Which is the better approximation to use?	Round population numbers of coastal areas and compare these to areas in our locality.

Roman Numerals	3	Here is a date written in Roman numerals. XXI / IX / MMXV What day of the month is shown? What month is shown? What year is shown? © WRM Films MCMXL © White Rose Studios MMIX In what year was the older film made? In what year was the more recent film made? How long was there between the making of the two films?	
▪ add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	6	□4□3□ + 2□5□2 78529 Gina makes a 5-digit number. Mike makes a 4-digit number. The difference between their numbers is 4,365 What could their numbers be?	Costings linked to residential visit. Costings linked to enterprise – The Escape Room
▪ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy		The children from West Pool Junior School all go on a whole school trip to a museum. There are 30 children in each year group and all 4 year groups go. The cost for each child is as follows:	Costings linked to residential visit. Costings linked to enterprise – The Escape Room

		<table><tr><td>Cost of ticket</td><td>£9.95</td></tr><tr><td>Cost of coach</td><td>£7.63</td></tr><tr><td>Cost of lunch</td><td>£3.32</td></tr></table> What is the approximate cost for each individual child?	
• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	5	When Claire opened her book, she saw two numbered pages. The sum of these two pages was 317. What would the next page number be? A milkman has 250 bottles of milk. He collects another 160 from the dairy and delivers 375 during the day. How many does he have left? Nrich Maze 100	Costings linked to residential visit. Costings linked to enterprise – The Escape Room
• Missing numbers calculation		327 + ☐ < 700 48 + 37 > 38 + ▲ Give an example of what ▲ could be. Give an example of what ▲ could not be. What must be true about ▲ ?	
▪ identify multiples	4	Circle the multiples of 5. 25 32 54 40 175 3000 What do you notice about the multiples of 5? Clare's age is a multiple of 7 and is 3 less than a multiple of 8. She is younger than 40. How old is Clare?	
▪ Identify factors, including finding all factor pairs of a number, and common factors of two numbers		If you have twenty counters, how many different ways of arranging them can you find? How many factors of twenty have you found? E.g. A pair of factors of 20 are 4 and 5.	

		5 4 True or False? The bigger the number, the more factors it has. <u>Sometimes, Always, Never:</u> An even number has an even amount of factors Sometimes, Always, Never: An odd number has an odd amount of factors I am thinking of two 2-digit numbers. Both of the numbers have a digit total of 6 Their common factors are 1, 2, 3, 4, 6, &12 What are the numbers? Nrich Factors and multiple pairs	
• know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19	3	Use counters to find the factors of the following numbers. 5, 13, 17, 23 What do you notice about the arrays? A prime number has 2 factors, one and itself. A composite number can be divided by numbers other than 1 and itself. Sort the numbers into the table. 5 15 9 12 3 27 24 30 I am thinking of two 2-digit numbers. Both of the numbers have a digit total of 6	

		Their common factors are 1, 2, 3, 4, 6, & 12 What are the numbers? Find all the prime number between 10 and 100, Sort them in the table below. | End in a 1	End in a 3	End in a 7	End in a 9
				  What is the same about the groups? Why do no two-digit prime numbers end in an even number? Why do no two-digit prime numbers end in a 5?	
recognise and use square numbers and the notation for squared (2)	1	How many ways are there of arranging 36 counters? Explain what you notice about the different arrays. How many different squares can you make using counters? What do you notice? Are there any patterns? Find the first 12 square numbers. Prove that they are square numbers.	
recognise and use cube numbers, and the notation for cubed (3)	1	Use multilink cubes and investigate how many are needed to make different sized cubes. How many multilink cubes are required to make the first cubed number? The second? Third? Can you predict what the tenth cubed number is going to be? Complete the following table. 33 3 × 3 × 3 	3^3	$3 \times 3 \times 3$	27
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5^3	$5 \times 5 \times 5$	
	$6 \times 6 \times 6$	
4^3		
		8		

multiply whole numbers and those involving decimals by 10, 100 and 1000	2 +mental/oral starters	Rosie has £300 in her bank account. Louis has 100 times more than Rosie in his bank account. How much more money does Louis have than Rosie? Emily has £1020 in her bank account and Philip has £120 in his bank account. Emily says, 'I have ten times more money than you.' Is Emily correct? Explain your reasoning.	
divide whole numbers and those involving decimals by 10, 100 and 1000	2 +mental/oral starters	Match the calculation to the answer: 64, 640, 6,400 64,000 ÷ 10 640 ÷ 10 640,000 ÷ 1000 6,400 ÷ 100 6400 ÷ 10 64,000 ÷ 1000 64,000 ÷ 100 640,000 ÷ 10 How do you know? Do any of the calculations have the same answers? Is there an answer missed out? Explain what you have found.	
▪ Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.	3	Here are some fraction cards. All of the fractions are equivalent. A +B =16 Calculate the value of C. $\frac{4}{A}$ $\frac{B}{C}$ $\frac{20}{50}$	
● Compare and order fractions whose denominators are multiples of the same number.	5	Complete the missing values on the number line. Eva and Alex each have two identical pizzas.	

Eva says, I have cut each pizza into 6 equal pieces and eaten 8

Alex says, I have cut each pizza into 9 equal pieces and eaten 15

Who ate the most pizza?
Use a drawing to support your answer.

| • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ | 5 | Spot the mistake

$\frac{27}{5} = 5\frac{1}{5}$

$\frac{27}{3} = 8$

$\frac{27}{4} = 5\frac{7}{4}$

$\frac{27}{10} = 20\frac{7}{10}$

What mistakes have been made?
Can you find the correct answers?

Fill in the missing numbers.
How many different possibilities can you find for each equation?

$2\frac{\square}{8} = \frac{\square}{8}$

$2\frac{\square}{5} = \frac{\square}{5}$ | |

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	6	https://nrich.maths.org/12937?utm_source=primary-map Fraction addition https://nrich.maths.org/12955?utm_source=primary-map Fraction subtraction Farmer Staneff owns a field. He plants carrots on $\frac{1}{3}$ of the field. He plants potatoes on $\frac{2}{9}$ of the field. He plants onions on $\frac{5}{18}$ of the field. What fraction of the field is covered altogether?	