		Уд	ear 1		
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
 Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Practical with Dienes 	 Represent and use number subtraction facts within 2 Bonds to 5, 10, 20 Add and subtract one-dig 20, including zero. 	0	 Solve one step problems using multiplication. Focus on twos, fives and tens – lots of counting in multiples of 2, 5 and 10. 	Solve one step problems using division.	Recognise, find and name a half as one of two equal parts (objects, shapes and quantities).
equipment/ Arrow cards. • Use of 100 square.	and count on/back.	– put a number in your head	 Concrete - Pictorial - Abstract 	 Concrete - Pictorial - Abstract 	
✓ 36, 37, 38, 39, <u>?</u> ✓ 52, 51, 50, 49, <u>?</u>	 Practical with Dienes eq cubes etc. 	uipment, number lines, unifix	'X' as 'lots of'		
✓ 99, 98, ? , 96, 95		$ \begin{array}{c cccc} & 9 & 3 \\ \hline & 12 & \\ \hline & 9 & \\ \hline & 12 & \\ \hline & 9 & \\ \hline & 3 & \\ \hline & 12 & \\ \hline & 3 & \\ \hline & 12 & \\ \hline & 9 & \\ \hline & 3 & \\ \hline & 12 & \\ \hline & 9 & \\ \hline & 9 & \\ \hline & 12 & \\ \hline & 9 & \\$	3 x 5 (3 lots of 5 through sharing / grouping): 3 x 5 = 30	(Concrete, before using/drawing circles/pictures): $ \begin{array}{cccccccccccccccccccccccccccccccccc$	Recognise, find and name a quarter as one of four equal parts (objects, shapes and quantities)
		o find/solve missing numbers	Arrays $3 \times 2 = 6 \qquad 2 \times 3 = 6$ $2 \qquad 3$ $3 \times \times$	* Arrays $ 10 \div 2 = 5 $ $ \begin{array}{cccc} $	* Lots of different examples of halves and quarters. * Very practical when finding fractions of quantities: \(\frac{1}{4} \) \(\frac{1}{6} \) \(1

		Ye	ar 2	3.4040	5
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
 Recognise the place value of each digit in a two – digit number (tens, ones). T O 2 3 	fluently, and derive and use related facts to 100. Mastering from Year 1, use number lines; 100 squares (+/-) and Dienes to support understanding. Use of 100 square to +/- 10 and multiples of 10.		 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. (Connect the tables). Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and 		Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape set of objects or quantity (including $\frac{1}{2}$ from Year 1)
20 + 3 Partition in different ways: $23 = 20 + 3$	3 + 7 = 1030 + 70 = 100 7 + 3 = 1070 + 30 = 100 $\Rightarrow 36 + 33$ $\Rightarrow 30 + 6 + 30 + 3$	30 - 14	equals (=) signs. Show that multiplication	of two numbers can be utative) and division of one	* Concrete objects shared - pictorial - abstract.
23 = 10 + 13	> 60 + 9 = 69		Use inverse Commutative law 6 x 5 = 30	relationships: $30 \div 5 = 6$	white := 5 (Use division array strategy
Compare and order numbers from 0 up to 100; use <, > and = signs	Bar model to visualise part missing numbers/ inverse o	whole relationship and finding perations:	5 x 6 = 30 Calculating u	30 ÷ 6 = 5	3 4 40 = 40=4 = 10
69 < 96 42 > 24	23	16	******		(weed 3 Lets of 10+10+10 or 10×3
33 = 33	> + 16 = 39	> 39 = 23	X X X X X X X X X X X X X X X X X X X	x x x x x x x x x x x x x x x x x x x	= 30
 Identify, represent and estimate numbers using different representations 	> 39 = 23 + (Moving the missing digit)	\Rightarrow 16 = 23 (Moving the missing digit)	$4 \times 5 = 20$ $5 \times 4 = 20$	25 crosses shared between 5 = 5 in a group.	
(including the number line)	Introduce formal column method:	Introduce formal column method:	6 x = 30	$25 \div 5 = 5$ Introducing remainders:	
e.g.:	(*Place value focus) Left TO (No carrying) + 1 5 8 9	(*Place value focus) TO (No 8 7 decomposition) -42 45	30 = x 6		
Position: 22, 45, 61, 78 on the number line above.	+ 3 8 * Small carrying + 3 8 * Small carrying + 3 8 * Signal below the 1 * Une is the middle of the column	# '3 - 2 6 + 1	(Introduce to Y3 formal short multiplication when ready)	X X X X X X X 19 ÷ 5 = 3 c + (Introduce to Y3 formal short division when ready).	

	- 1	Ye	ar 3	107 104.00 1154.00	
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
 Recognise the place value of each digit in a three – digit number H T O 3 7 6 376 = 300 + 70 + 6 (Partitioning – in different ways). Compare and order numbers to 1000 425 < 452 362 > 326 Greater than equal to and less 	 ❖ Add and subtrace ❖ Three digit not 373 + 8 ❖ Three digit not 428 + 3 	t numbers mentally: Imber and ones 74 <u>6</u> – <u>5</u> Imber and tens 0 6 <u>3</u> 2 – <u>2</u> 0 Imber and hundreds	 Recall and use multiplicati 3, 4 and 8 mul Write and calculate ma 	on and division facts for the liplication tables. thematical statements for n and division. missing number problems.	* Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one digit numbers or quantities by 10. \[\frac{1}{10}, \frac{2}{10}, \frac{3}{10} \] Place value focus \(\div 10\), digits get 10 times smaller as they move one place to the right. \[T \ O \\ \div \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
530 ? 550	an	l nverse operations to check swers. ng number problems	multiples of 2, 3, 4, 5, 8, 10, 50 and 100*.	8 9 6 9 1	$\begin{array}{c} 3 \\ 4 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8$
; 30	(Use of the bar model - 35	use for all 4 operations)			equivalent fractions (with diagrams) $ \sqrt[3]{\frac{1}{3}} = \sqrt[3]{\frac{2}{6}} $ $ \frac{3}{5} \times 3 = \frac{q}{15} $

				♦ Add and subtract
				fractions with the same
				denominator within one
			a a	whole
				$\frac{3}{10} + \frac{4}{10} = \frac{1}{10}$
				$\frac{6}{9} - \frac{2}{9} = \frac{4}{9}$
				Compare and order unit
				fractions
				Ascending
				$\frac{1}{10}$, $\frac{1}{9}$, $\frac{1}{8}$, $\frac{1}{7}$
	7			Descending
		*		1/2, 1/3, 1/4, 1/5
				Compare and order
				fractions with the same
				denominator
				4/10/10
			- XI	

		Ye	ar 4		
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
* Recognise the place value of each digit in a four—digit number The Heart To Quarter To Quart	operations) *Movin	? = 129 - 16 129 = ? + 16 find missing numbers and	Recognise and use factor pairs and commutativity in mental calculations 8	* Formal written method Short division 8968:4 4 2 2 4 2 4 8 9 6 8 9 256:7 1 3 2 2 2 2 7 9 2 5 6 small remainders	* Recognise and show, using diagrams, families of common equivalent fractions 3 - 6 - 9 - 12 8 - 16 - 24 - 32 6 - 24 - 32 * Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 67 - 68 - 69 - 70 100 - 100 - 100 639, 0.40, 0.41 * Finding unit and non-unit fractions (Y3): 3 - 6 - 49 - 49 - 7 2 - 1 × 3 2 \ * Add and subtract fractions with the same denominator 10 - 10 - 10 6 + 7 - 13 / 8 - 15 / 8 Improper and mixed number * Find the effect of dividing a one or two digit number by 10 or 100 *Place value of numbers focus Each column gets 10 times smaller to the right:

		HTO. th x 9 9-100 0.09
		* 42 0 · 4 2
		Round decimals with one decimal place to the nearest whole number: (a) 3 = 9 Rounding to the nearest whole one-circle the ones' digit — affected by the previous digit \(\frac{1}{2} \)
		Compare numbers with the same number of decimal places (up to two)
		36-42 > 36-24
		739.16 < 739-67

		Ye	ar 5	•	
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
number to 1,000,000 Steps of: 10, 100, 1000, 10 000, 100 000 and 1 000 000 (From any number) 47,759, 47,659, 47,559 (-100) 353,262, 354,262, 355,262(+1000) * Identify, represent and estimate numbers using different representations	different numbers of decimal places and link to money Y4). Use rounding to check of determine, in the conti	* Subtract whole numbers with more than four digits using formal written methods of column subtraction *Place value focus* Decomposition — exchanging across columns. 7/3 2,6 1/5 — 4 5 1, 0 2 9 2 8 1 6 1 6 (Small digits recorded to the left and cross /) (Decimal numbers — taking note of the decimal point). Inswers to calculations and ext of a problem, levels of	* Multiplying numbers up to 4 digits by a one or two digit number using the formal written method Short column multiplication 4763 x 9 142.867 (Small carrying figure below the line in the middle of the column) *Long multiplication — multiplying by two digit numbers* 326 x 24 1304 1304 place holder—place value	0 20 6	* Identify equivalent fractions, including tenths and hundredths * Recognise mixed number and improper fractions (convert between) 6 1 1 9 4 2 4 Large whole number – not to be mistaken as part of fraction. * Add and subtract fractions with the same denominator and denominators that are multiples of the same
(Y4) (Variety of representations) Round any number up to 1 000 000 to the nearest 10, 100 or 1000, 10 000 and 100 000 5 and above rounding rule* To 10: Rounding to 07: 70 10, circle the tens digit — affected by the previous digit To 1000: Rounding to 09265: 4000 10,000 circle the ten	5264 + 4935 5264 + 4935 5264 + 4935 10199 Use rounding to check: 5264 + 4935 ≈ 5300 + 4900=10,200 ◆ Use of the bar model to understane ◆ Add and subtract numbe	uracy: $3487 - 1326$ $3 + 87$ -1326 $2 + 61$ Use rounding to check $3 + 87 - 1326$ $\approx 3500 - 1300 = 2,200$ of find missing numbers and defeationships. The remaining of the second o	*Carrying figures need to be very small in the middle of the column – not to be confused with the main figures. * Multiply whole numbers and those involving decimals by 10, 100, 1000 (Place value understanding – not using column method) *Moving digits across columns – each column moving left gets 10 times bigger in value: X 10 (digits move 1 place left) X 1000 (digits move 3 places left)	*Carrying figures written small* * Divide whole numbers and those involving decimals by 10, 100, 1000 (Place value understanding — not using short division) *Moving digits across columns — each column moving right gets 10 times smaller in value: ÷ 10 (digits move 1 place right) ÷100 (digits move 2 places right)	number $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$ $\frac{4}{7} + \frac{5}{7} = \frac{9}{7} \text{ or } \frac{2}{7} $ $\frac{3}{4} + \frac{5}{8} = \frac{6}{8} + \frac{5}{8} = \frac{11}{8} \text{ or } \frac{2}{3} $ $\frac{4}{6} - \frac{1}{3} _{(x_2)} = \frac{4}{6} - \frac{2}{6} = \frac{2}{6} = \frac{1}{3}$ Read and write decimals as fractions:

		TTh Eac L G G G G G G G G G G G G	739 x 100 = 73, 900 67.42 x 1000 = 67, 420 The Heart Tool the X ch column getting 10 x greater in value to the left. Understand terms 'factor', imultiple' and 'prime', square' and 'cube' numbers and use them to construct equivalent statements 4 x 35 = 2 x 2 x 35 3 x 270 = 3 x 3 x 9 x 10 = 9 ² x 10 Recognise and use square numbers (6 ² = 6 x 6 = 36) and cube numbers (3 ³ = 3 x 3 x 3 = 27) and the notations.	la la	* Multiply proper fractions and mixed numbers by whole numbers $\frac{3}{4} \times 5 = \frac{15}{4} = 3\frac{3}{4}$ $\frac{1}{4} \times 5 = \frac{45}{4} = 11\frac{1}{4}$ * Round decimals with two decimal places to the nearest whole number $10 \cdot 63 = 18$ And to one decimal place $372 \cdot 46 = 372.5$ * Read, write, order and compare numbers with up to three decimal places $17.369 < 17.639$ $4.32774.273$ * Write percentages as a fraction (denominator of 100) and as a decimal $16 = \frac{1}{100} = 0.01$ $83\% = \frac{83}{100} = 0.83$ * Find non-unit fractions of numbers/quantities (Y3): $\frac{3}{7} = \frac{49}{7} = \frac{49}{7} = 7$ $\frac{3}{7} = \frac{49}{7} = \frac{49}{7} = \frac{49}{7} = 7$
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	N 4444	120	ar o		
Place Value	Addition	Subtraction	Multiplication	Division	Fractions
* Read, write, order and compare numbers to at least 10,000,000 and determine the value of each digit TM M HTh TTh Th H T 0 7 3, 4 6 7, 2 9 5 13,000,000 60,000 1,000 * Round any whole number to a required degree of accuracy *5 and above rounding rule* To 100: 3068 = 3800 To 1,000,000: 30,439 = 9000 To 1,000,000: 30,439 = 9000 *Circle the place value position you are round to — this is affected by the previous digit* * Count forwards or backwards in steps of powers of 10 for any given number up to 1,000 000 (Y5) Steps of: 10, 100, 1000, 1000, 1000, 1000, 1000 000	(Small carrying figure below the line in the middle of the column) Include decimal points and examples with money: 6, 5 3 2 . 9 + 3 9 6 . 2 8 6, 9 2 9 . 1 8 (Include more than 2 numbers) * Use rounding to check determine, in the condact determine, in the condact determine in the condact de	* Subtract whole numbers with more than four digits using formal written methods of column subtraction (Y5) *Place value focus* Decomposition — exchanging across columns. *1	* Multiply multi-digit numbers up to 4 digits by a two digit number = short column multiplication 4763 x 9 Wt 42,867 (Small carrying figure below the line in the middle of the column) * By a two digit number = long multiplication 4326 x 24 for 0 as a place the need for 0 as a place holder - place value focus. *Carrying figures need to be very small in the middle of the column - not to be confused with the main figures*. * Multiply numbers by 10, 100 and 1000 giving answers up to 3 dp (Y5) (Place value understanding - not using column method) (also in fractions aspect)	* Divide numbers up to 4 digits by a one (Y5) or two digit number using the formal written method of short division *Carrying figures written small* 2 4 0 2 cl 4 9 6 0 9 25 7 8 30 5 50 *Expressing answers with remainders as fractions, decimals or by rounding – depending on the context* * Divide numbers up to 4 digits by a two digit whole number using the formal written method of long division (with remainders) *Keep digits aligned correctly* 0 3 1 2 c 5 2 5 7 8 0 5 - 7 5 100 - 1 5 5 5 5 0 5 5	Supplify fractions * Use common factors to simplify fractions * $\frac{2}{8} = \frac{4}{10} = \frac{2}{5}$ * Compare and order fractions *Find the lowest common denominator* * Add and subtract fractions (Express as improper and mixed number) *Same denominator: $\frac{7}{8} = \frac{5}{8} = \frac{2}{8} = \frac{1}{4}$ • Different denominators: (x2) * Different denominators: (x2) * Multiply simple pairs of proper fractions 4 × 2/6 × 3/6 = 16/30 = 15/3 * Dividing fractions 4 × 2/5 × 6/5 × 6/5 × 6/5 × 6/5 Dividing fractions 4 × 5/2 = 20/12 = 5/3 = 1/3

y, represent and
ite numbers using
nt representations

(Variety of representations)

Perform mental calculations, including with mixed operations and large numbers = written horizontally

$$16.4 + 3.3 = 19.7$$

$$12, 462 - 2,300 = 10, 162$$

* Use their knowledge of the order of operations to carry out calculations involving all four operations:

BODMAS

*Moving digits across columns each column moving left gets 10 times bigger in value: X 10 (digits move 1 place left) X100 (digits move 2 places left)

$$739 \times 100 = 73,900$$

 $67.42 \times 1000 = 67,420$

X 1000 (digits move 3 places left)

TTh Th H T O.t h

Each column getting 10 x greater in value to the left.

. Understand terms 'factor', 'multiple' and 'prime', 'square' and 'cube' numbers and use them to construct equivalent statements(Y5) $4 \times 35 = 2 \times 2 \times 35$

$$3 \times 270 = 3 \times 3 \times 9 \times 10$$

= $9^2 \times 10$

Recognise and use square numbers $(6^2 = 6 \times 6 = 36)$ and cube numbers $(3^3 = 3)$ $x \ 3 \ x \ 3 = 27$) and the notations (Y5)

Divide whole numbers and those involving decimals by 10, 100, 1000 (Y5) (also in fractions aspect) (Place value understanding - not using short division)

*Moving digits across columns - each column moving right gets 10 times smaller in value:

+ 10 (digits move 1 place right) ÷100 (digits move 2 places right) ÷1000(digits move 3 places right)

 $964.2 \div 1000 = 0.9642$

TTh Th H T O . t h

Each column getting 10 x smaller in value to the right.

ers *By a whole number
$$\frac{3}{5} \div 2 = \frac{3}{10}$$
0,
$$\frac{2}{5} \div 4 : \frac{2}{20} = \frac{1}{10}$$
ace *Finding non-unit fractions

of numbers/quantities (Y3)

3 - 2 = 30

git in numbers given to 3 dp / Read, write and compare up to 3 dp (Y5) T D. t h th

. Identify the value of each

Use equivalences between simple fractions, decimals and percentages

. Identify equivalent fractions (including tenths and hundredths) (Y5)

Round decimals with two dp to the nearest whole number

5 and above rounding rule 319.63 = 318

And to 1 dp (Y5) 482.96:482.5