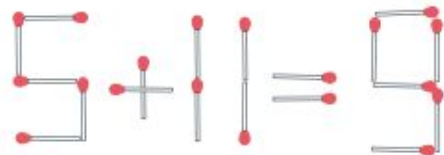
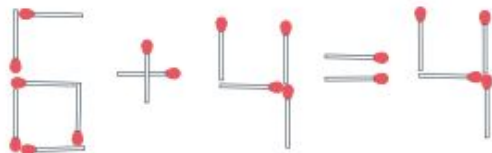


Addition and Subtraction Meeting

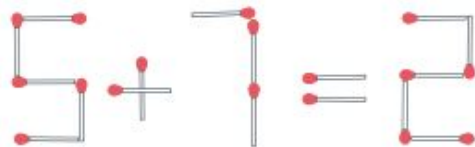
Puzzle 3: Can you move one matchstick in these equations to make them true?





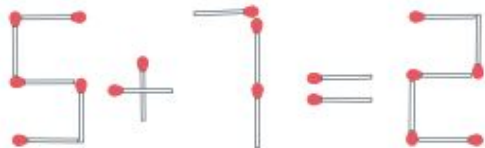
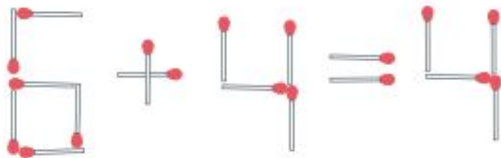
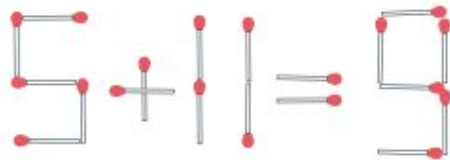








Puzzle 3: Can you move one matchstick in these equations to make them true?



Puzzle 3: Completed Matchstick Solutions



The matchstick from '11' has been moved to form '4'.
 $5 + 4 = 9$.



Move the top-right matchstick in '6' to make '0'.
The new equation is:
 $0 + 4 = 4$.



A matchstick from '+' was moved to '5' to form '7' and '9'.
The new equation is:
 $9 - 7 = 2$.

Addition and Subtraction meeting

- Look at the methods children are taught and how these develop over time.
- Look at some of the mathematical language and resources that children use when explaining their thinking.
- Discuss how addition and subtraction are applied throughout the wider maths curriculum including problem-solving and reasoning.

Numicon



number line



Counters

counting
stick or
metre rule



multilink

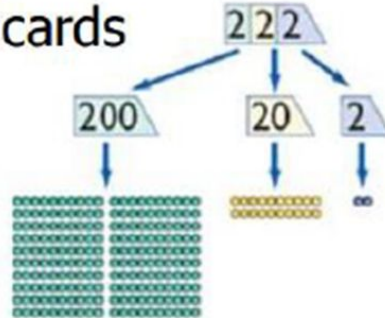


hundred square

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



place value
cards



Dienes blocks
base-ten blocks

bead string



Articulate:

Describe



Articulate:

Describe



Vocabulary

Exchange

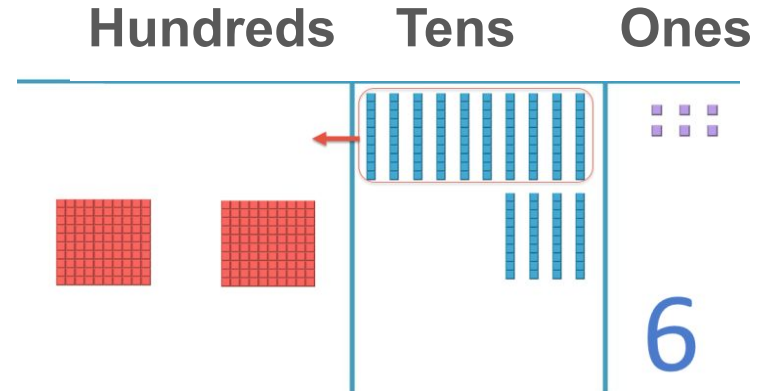
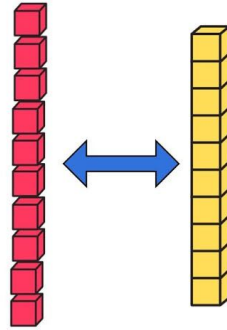
Regroup

Bridging

Ones

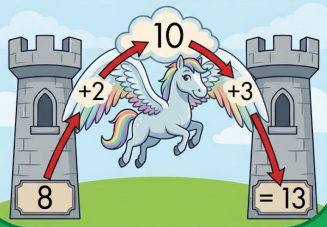
Tens

Hundred



Bridging through 10.
First make the number up to 10.
Then count on what's left.

For Example: $8 + 5 =$
 $8 + 2 = 10$
 $10 + 3 = 13$



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Vocabulary

Thousand

Ten thousands

Hundred thousands

One million

Place Value Chart

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Vocabulary

Decimal

Tenth

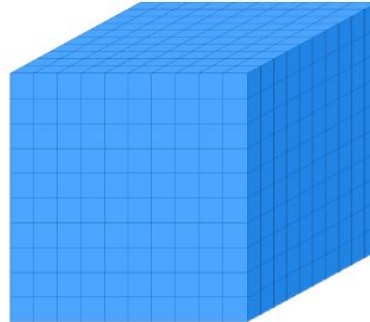
Hundredth

Thousandth

Decimal Place Value Chart

Thousands	Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
				.			

0.001 or $\frac{1}{1000}$



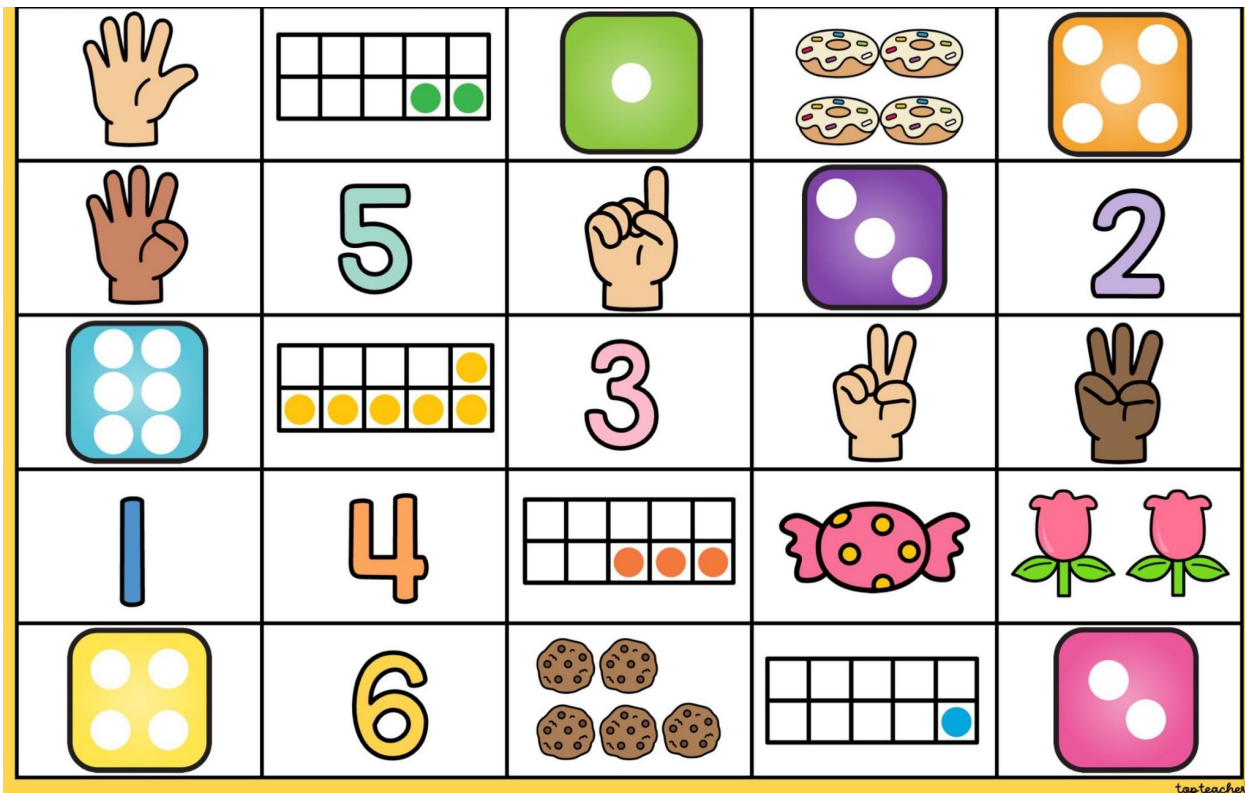
EYFS does not use a specific calculation policy but these are the end of year expectations!

Number

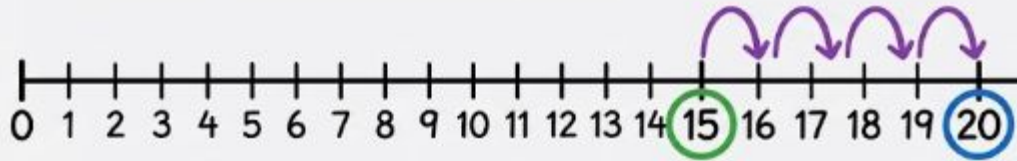
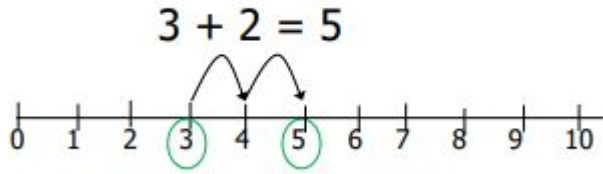
- Deep understanding to 10
- Subitise
- Recall number bonds

Numerical Patterns

- Count beyond 10
- Compare quantities
- Explore patterns



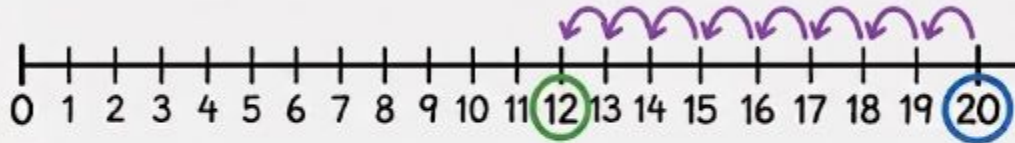
Year 1 - Addition



$$\textcircled{15} + 5 = 20$$

Year 1 - Subtraction

$$7 - 4 = 3$$



$$\textcircled{20} - 8 = \textcircled{12}$$

Tens	Ones

Tens	Ones
	
	

40 + 9

Year 2 - Addition

$$28 + 26 =$$

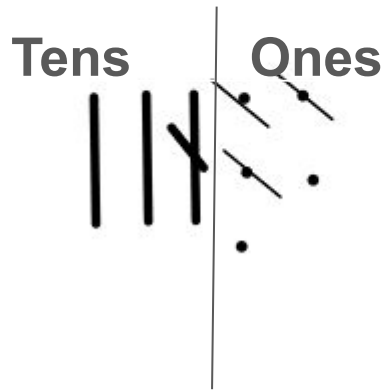
Tens	Ones

$$28 + 26 =$$

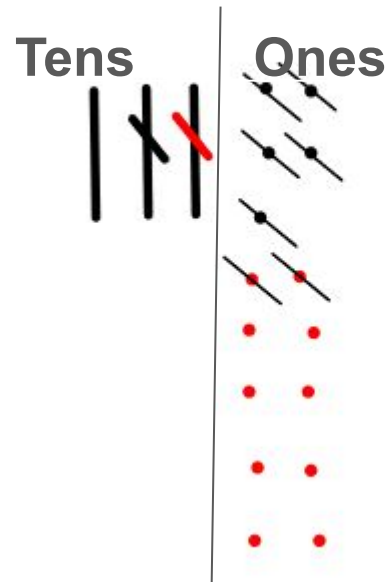
Tens	Ones
	●●●●
	●●●●
50	+ 4

Year 2 - Subtraction

$$35 - 13 =$$



$$35 - 17 =$$



Year 3 - Addition

Expanded column method



$$\begin{array}{r} \text{HTO} \\ 235 \\ + \\ \text{HTO} \\ 162 \end{array}$$

$$\begin{array}{r} 200 + 30 + 5 \\ + 100 + 60 + 2 \\ \hline 300 + 90 + 7 = 397 \end{array}$$

$$\begin{array}{r} \text{HTO} \\ 348 \\ + \\ \text{HTO} \\ 129 \end{array}$$

$$\begin{array}{r} 10 \\ 300 + 40 + 8 \\ + 100 + 20 + 9 \\ \hline 400 + 70 + 7 = 477 \end{array}$$

Year 3 - Addition

Expanded column method



$$\begin{array}{r} \text{HTO} \\ 697 \end{array} + \begin{array}{r} \text{HTO} \\ 281 \end{array}$$

$$\begin{array}{r} \text{HTO} \\ 697 \end{array} + \begin{array}{r} \text{HTO} \\ 281 \end{array}$$

$$\begin{array}{r} 100 \\ + 600 + 90 + 7 \\ 200 + 80 + 1 \\ \hline 900 + 70 + 8 = 978 \end{array}$$

Year 3 - Addition

Expanded column method



$$\begin{array}{r} \text{HTO} \\ 477 \end{array} + \begin{array}{r} \text{HTO} \\ 264 \end{array}$$

$$\begin{array}{r} 100 \quad 10 \\ 400 + 70 + 7 \\ + 200 + 60 + 4 \\ \hline 700 + 40 + 1 \end{array} = 741$$

Year 3 - Subtraction

Expanded column method

$$\begin{array}{r} \text{TO} \quad \text{TO} \\ 82 - 59 \end{array}$$

$$\begin{array}{r} 70 \quad 12 \\ \cancel{80} + \cancel{2} \\ 50 + 9 \\ - \quad 20 + 3 \\ \hline \hline \end{array} = 23$$

$$\begin{array}{r} \text{HTO} \quad \text{HTO} \\ 316 - 174 \end{array}$$

$$\begin{array}{r} 200 \quad 110 \\ \hline \cancel{300} + \cancel{10} + 6 \\ - \quad 100 + \cancel{70} + \cancel{4} \\ \hline 100 + 40 + 2 \\ \hline \hline \end{array} = 142$$

The tens and ones digits will not change when you add a multiple of 100.

H T O

Agree - 100 has zero tens and zero ones.

$$458 + 100 =$$

$$400 + 50 + 8$$

$$\underline{100 + 0 + 0}$$

$$\underline{500 + 50 + 8 = 558}$$

Year 4 - Addition
Formal column method

Th	H	T	O		Th	H	T	O
2	3	4	1	+	1	6	1	3

	2	3	4	1
+	1	6	1	3
	3	9	5	4

Year 4 - Addition

Formal column method

$$\begin{array}{r} \text{Th H T O} \\ 2\ 2\ 5\ 4 \\ + \quad 1\ 6\ 3\ 8 \\ \hline 3\ 8\ 9\ 2 \end{array}$$

$$\begin{array}{r} \text{Th H T O} \\ 3 \ 2 \ 6 \ 4 \\ + \quad \quad \quad \\ \text{Th H T O} \\ 2 \ 4 \ 5 \ 9 \\ \hline 5 \ 7 \ 2 \ 3 \end{array}$$

When I add 80 to 1356, only the tens digit will change.

Th H T O

Challenge - I know that $80 + 50$ will be greater than 100 so the hundreds will also have to change.

$$1356 + 80 =$$

$$\begin{array}{r} 1 \\ 1356 \\ + \quad 80 \\ \hline 1436 \end{array}$$

Year 4 - Addition

Formal column method

1

	Tens	Ones	Tenths	Hundredths
	1	8	· 4	2
+		5	· 3	7
	2	3	· 7	9

Year 4 - Subtraction

Formal column method

	Th	H	T	O
	6	9	8	7
-	1	3	5	2
	<u>5</u>	<u>6</u>	<u>3</u>	<u>5</u>

			6	
	9	4	7	12
-	<u>2</u>	<u>2</u>	<u>3</u>	<u>8</u>
	<u>7</u>	<u>2</u>	<u>3</u>	<u>4</u>

			7	
	6	8	17	4
-	<u>2</u>	<u>5</u>	<u>8</u>	<u>2</u>
	<u>4</u>	<u>2</u>	<u>9</u>	<u>2</u>

Year 5 - Addition

		8	5	3	2
+		7	3	1	5
	1	5	8	4	7

Handwritten addition problem on a grid. The grid has 6 columns and 4 rows. The first row contains place value labels: Tth, Hth, T, O. The second row contains the numbers 3, 2, 2, 9, 4. The third row contains the numbers + 3, 4, 5, 1, 5. The fourth row contains the sum 6, 6, 8, 0, 9. A red circle is drawn around the tens column (the second column from the left).

$$\begin{array}{r}
 52.827 \\
 + 25.111 \\
 \hline
 77.938
 \end{array}$$

Year 5 - Subtraction

$$\begin{array}{r} 4 \\ \cancel{5}^{12} 8 2 4 \\ - 2 5 4 1 2 \\ \hline 2 7 4 1 2 \end{array}$$

Year 6

$$\begin{array}{r} 1 1 \\ 238396 \\ 446423 \\ + \hline 684819 \end{array}$$

$$\begin{array}{r} 4 \qquad \qquad 3 \\ \cancel{5}1282\cancel{4}15 \\ - 254128 \\ \hline 274117 \end{array}$$

Stem sentences

Self discovery/correction

How do you know?

Prove it!

Convince me

Thank you for your time.

Puzzle 3: What do my drinks add up to?

$$\begin{array}{c} \text{Glass with drink and orange slice} \\ + \\ \text{Glass with drink and orange slice} \\ + \\ \text{Glass with drink and orange slice} \\ + \\ \text{Glass with drink and orange slice} \end{array} = 28$$

$$\begin{array}{c} \text{Cup of coffee} \\ + \\ \text{Cup of coffee} \\ + \\ \text{Glass with drink and orange slice} \end{array} = 17$$

$$\begin{array}{c} \text{Cup of coffee} \\ + \\ \text{Mug of coffee} \end{array} = 9$$

$$\begin{array}{c} \text{Glass with drink and orange slice} \\ + \\ \text{Cup of coffee} \\ + \\ \text{Mug of coffee} \\ - \\ \text{Glass with drink and orange slice} \end{array} = ?$$

9