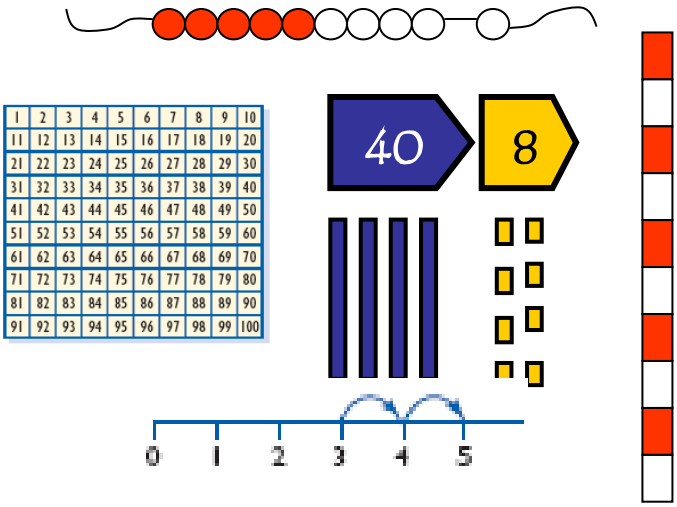
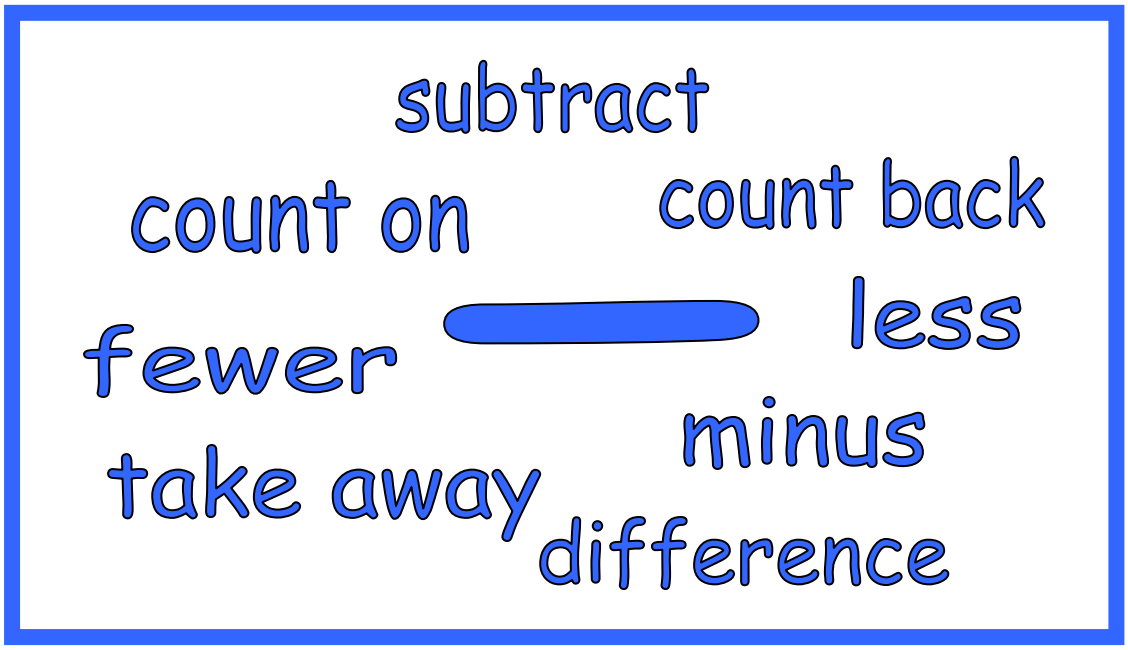
Calculation Policy

Subtraction



Models and Images
Counting apparatus
Place value apparatus
Place value cards
Number tracks
Numbered number lines
Marked but unnumbered lines
Hundred square
Empty number lines.
Counting stick
Bead strings
Models and Images Charts
ITPs – Number Facts, Counting on and back in ones and tens, Difference



Counting:

Year R (Early learning goal)

- Children count reliably with numbers from one to 20

Year 1

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals, count in different multiples including 1s, 2s, 5s and 10s

Year 2

- count in steps of 2s, 3s, and 5s from 0, and count in 1s and 10s from any number, forward or backward

Year 3

- count forward and backward in multiples of 1s, 2s, 3s, 4s, 5s, 8s, 10s, 50s, and 100s;
- count up and down in 10ths, 1/4s and 1/2s - recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10

Year 4

- count forward and backward in multiples of 1-10s, 25s, 50s, 100s and 1000s;
- count backwards through zero to include negative numbers;
- count up and down in 10ths, 100ths, 1/4s, and 1/2s - recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten

Year 5

- count forward or backward in multiples of 1-10s, 25s, 50s, 100s, 250s, 1000s, 10 000s, 100 000s and into negative numbers;
- Count in 10ths, 100ths, 1/4s and 1/2s.

Year 6

- count forward or backward in multiples of 1-10s, 25s, 50s, 100s, 250s, 500s, 1000s, 10 000s, 100 000s and into negative numbers.
- Count in 10ths, 100ths, 1/4s, 1/2s and in decimals such as 0.1s, 0.01s, 0.2s, 0.25s, 0.5s.

Recall of times tables and its associated division facts:

Year 2: 2, 5 and 10

Year 3: 2, 3, 4, 5, 6, 8, 10

Year 4: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Year 5: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Year 6: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Use the following 100 squares to provide visual aid as children get used to the position of numbers in relation to each other in our number system when counting.

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

0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0
7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0
9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10

10	20	30	40	50	60	70	80	90	100
110	120	130	140	150	160	170	180	190	200
210	220	230	240	250	260	270	280	290	300
310	320	330	340	350	360	370	380	390	400
410	420	430	440	450	460	470	480	490	500
510	520	530	540	550	560	570	580	590	600
610	620	630	640	650	660	670	680	690	700
710	720	730	740	750	760	770	780	790	800
810	820	830	840	850	860	870	880	890	900
910	920	930	940	950	960	970	980	990	1000

100	200	300	400	500	600	700	800	900	1000
1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
3100	3200	3300	3400	3500	3600	3700	3800	3900	4000
4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
5100	5200	5300	5400	5500	5600	5700	5800	5900	6000
6100	6200	6300	6400	6500	6600	6700	6800	6900	7000
7100	7200	7300	7400	7500	7600	7700	7800	7900	8000
8100	8200	8300	8400	8500	8600	8700	8800	8900	9000
9100	9200	9300	9400	9500	9600	9700	9800	9900	10000

Provide children with opportunities to investigate and discover the patterns on a multiplication square. Allow them to realise the commutative nature of multiplication and how division facts can be derived from known multiplication facts.

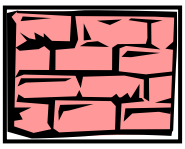
X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Reception

Early learning goal:
Children count reliably with numbers from 1 to 20, place them in order and say which number is one less than a given number. Using quantities and objects, they subtract two single-digit numbers and count back to find the answer.

Begin to count backwards in familiar contexts such as number rhymes or stories

Five fat sausages frying in a pan …



Ten green bottles hanging on the wall...

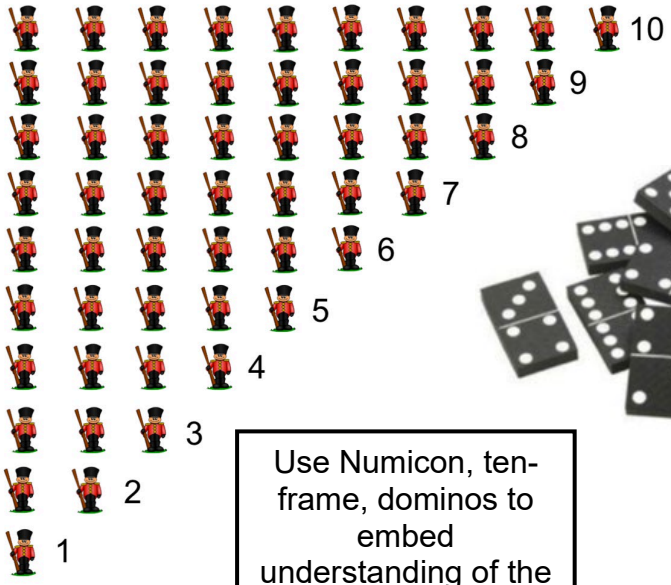
10, 9, 8, 7 . . .

Continue the count back in ones from any given number

Begin to relate subtraction to 'taking away '. Children physically take away teddies.

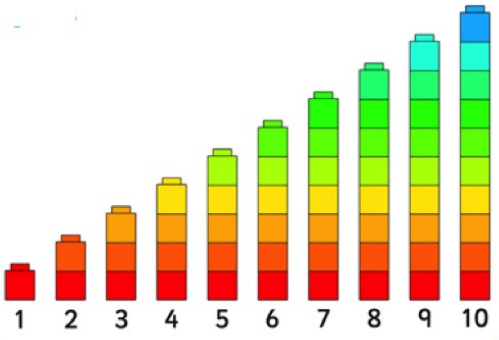
…'Three teddies take away two teddies leaves one teddy'

Find one less than any number.

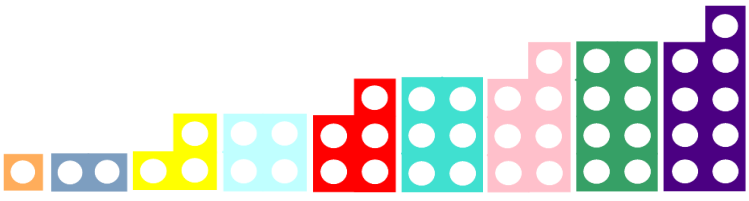


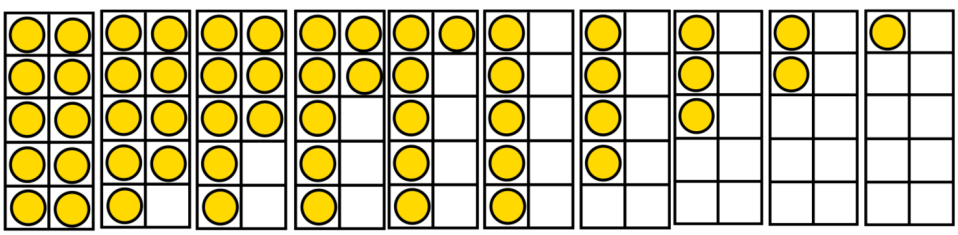
What is the number before 8?

1	2	3	4	5	6	7	8	9	10

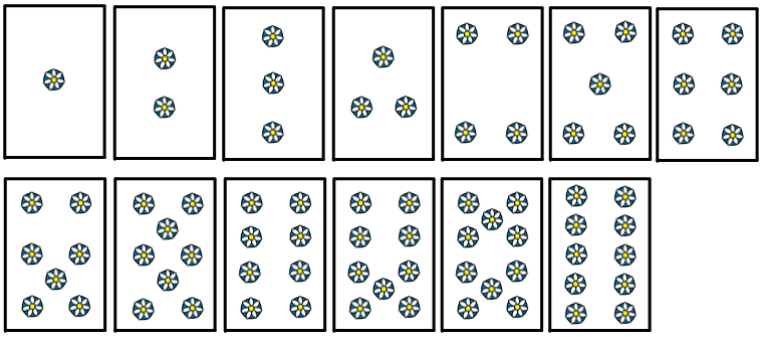


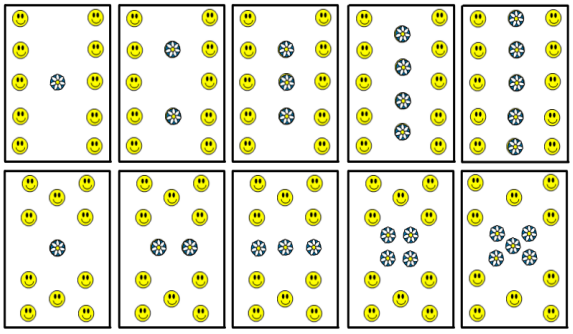
Use Numicon, ten-frame, dominos to embed understanding of the concept, subtraction.





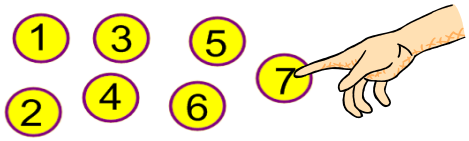
Use cluster cards to cover up (hide) some of the clusters within and relate this to subtraction.





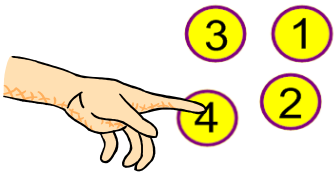
Children will begin to develop their ability to subtract by using practical equipment to count out the first number and then remove or take away the second number to find the solution by counting how many are left e.g. 7 – 3. Those who are ready, may recall their calculations using a number sentence.

Step 1.



Step 2.

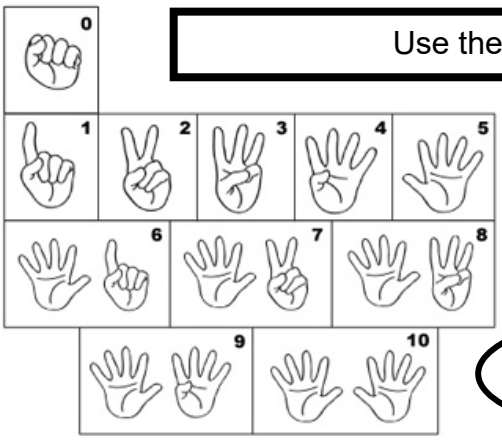
Step 3.



7 - 3

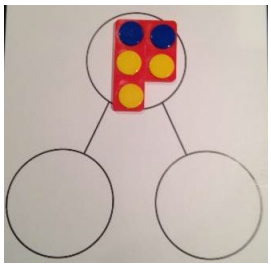
…one, two, three, four!
7 take away 3 is 4!

Those who are familiar with the smaller number clusters, should be encouraged to say the number of counters left without having to count it.

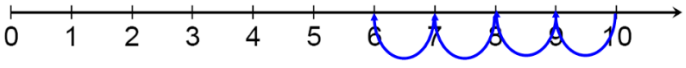


Use their knowledge of number clusters to take away.

' five take away two is three!'

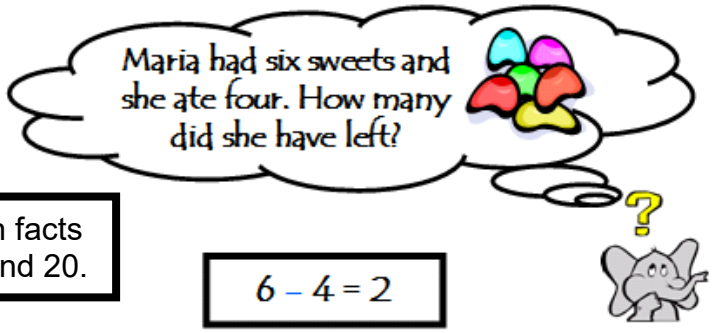


Count backwards along a number line to take away.

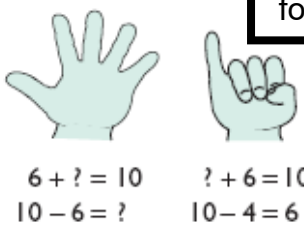


Year 1

Begin to use the – and = symbols to record mental calculations in a number sentence

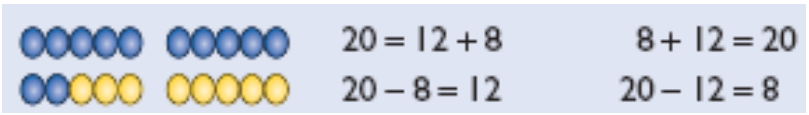


Know by heart subtraction facts for numbers within to 10 and 20.



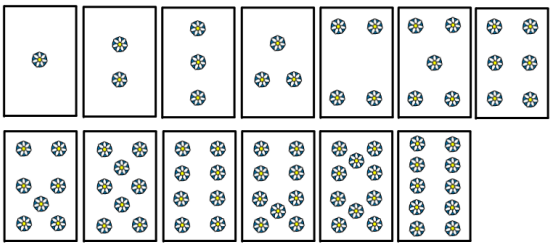
$6 + ? = 10$ $? + 6 = 10$
$10 - 6 = ?$ $10 - 4 = 6$

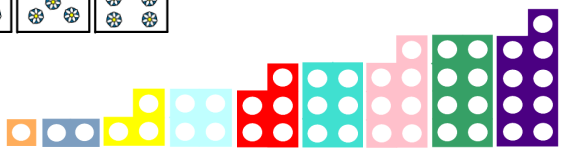
$6 - 4 = 2$



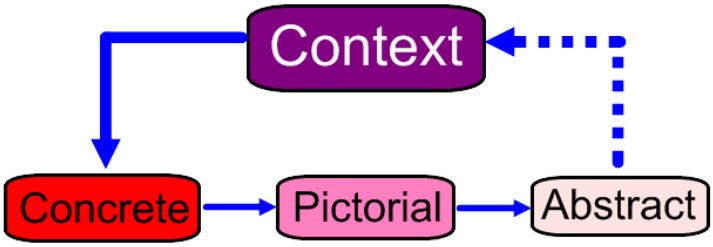
$20 = 12 + 8$ $8 + 12 = 20$
$20 - 8 = 12$ $20 - 12 = 8$

Continue with the use of cluster cards and Numicon activities in order for children to develop the skill of decomposing and recomposing numbers mentally and to help with calculating on a number line.





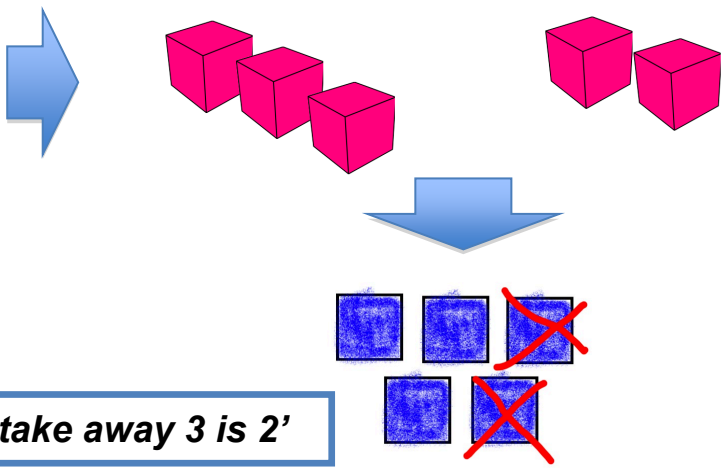
The introduction of a new mathematical concept should follow this cycle.



Introduction through a familiar context will engage learners immediately and provide the relevant links through their journey in understanding the concept taught.

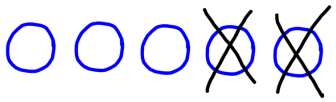
1. Pupils taught the concept of 'taking away' using varied number stories linked to picture books and every day life.

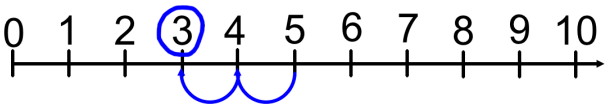
5 birds on the tree,
2 fly away, 3 left.

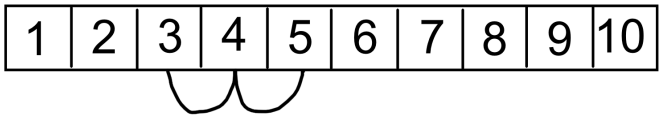


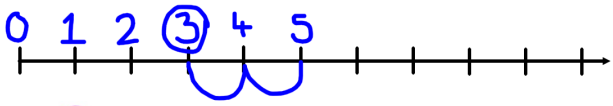
...'five take away 3 is 2'

Subtract single digits by drawing and crossing off; counting back on a number track; on a marked; then an unmarked number line.







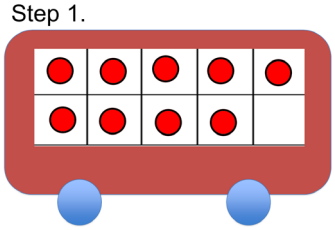


$5 - 2 = 3$

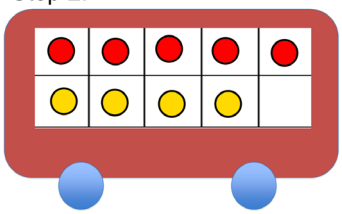
2. 1d – 1d using the ten-frames.

9 children on the bus, 4 children get off. How many left?

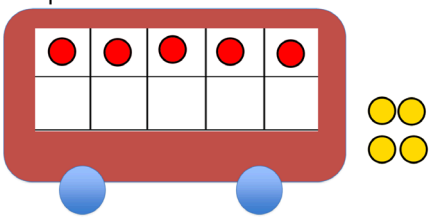
Step 1.



Step 2.



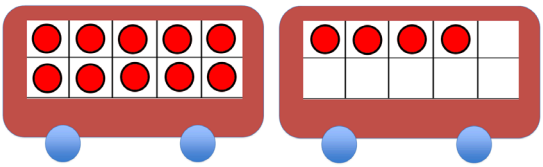
Step 3.



2. 2d – 1d using the ten-frames.

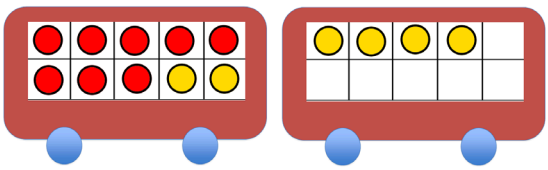
Step 1.

14 - 6



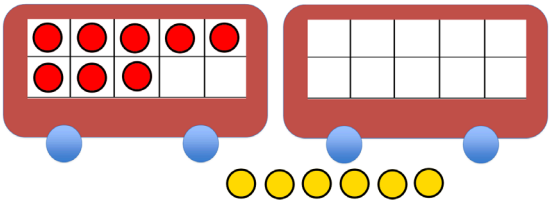
Step 2.

14 - 6



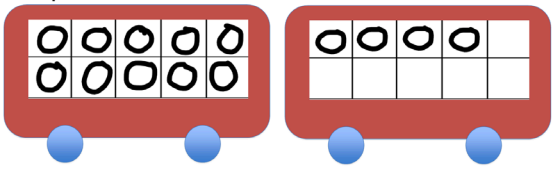
Step 3.

14 - 6

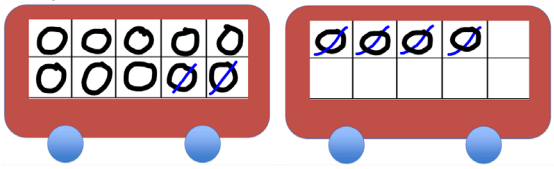


2. Jottings making 10 first using the ten-frames.

Step 1.



Step 2.



$14 - 6 = 8$

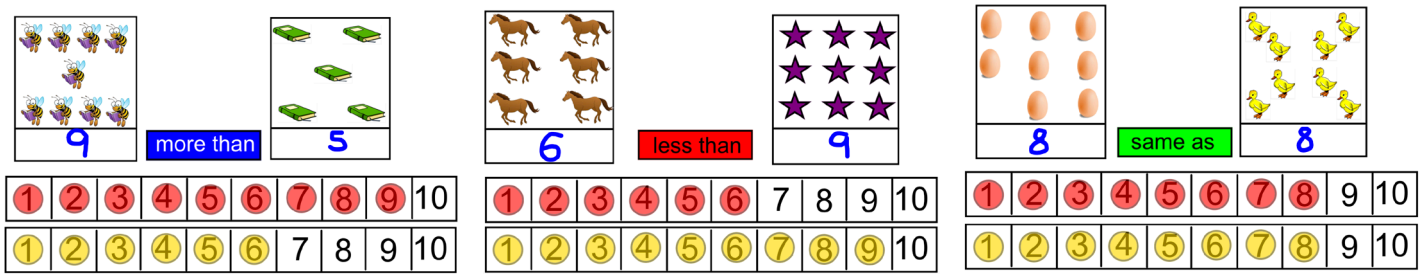
$2 \quad 4$

$14 - 4 = 10$

$10 - 2 = 8$

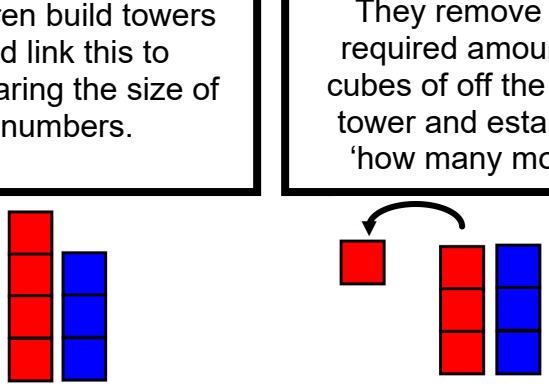
2. Pupils taught the concept of 'difference' through a sequence of lessons that help children compare numbers in various different ways.

Pupils pick cluster cards and compare them using counters and number track.



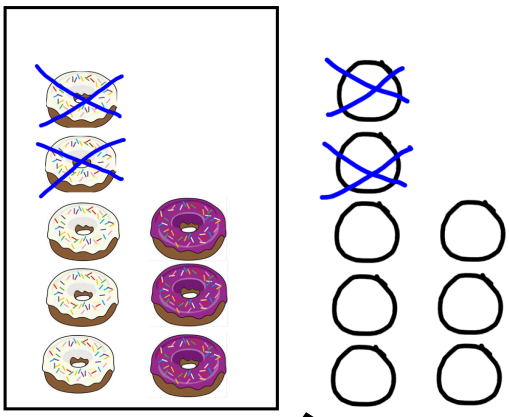
Children build towers and link this to comparing the size of numbers.

They remove the required amount of cubes of off the taller tower and establish 'how many more'.



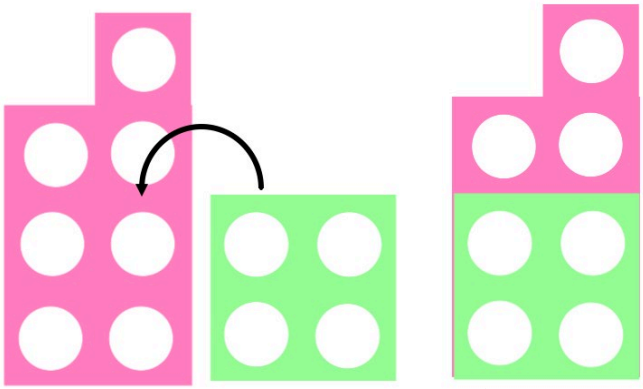
… one, two. There are (2) more cubes in the red tower than in the blue tower.
I know that (5) is (2) more than (3).

Linked to using picture cards then jottings.



… one, two.
I know that (5) is (2) more than (3).
I know that the difference between (5) and (3) is (2).

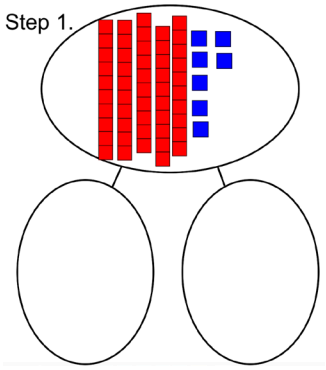
Children explore the same using Numicon.

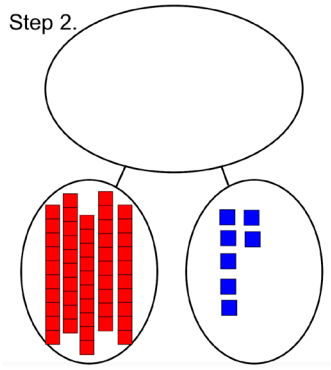


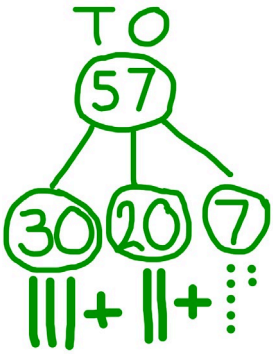
… one, two, three.
I know that (7) is (3) more than (4).
I know that the difference between (7) and (4) is (3).

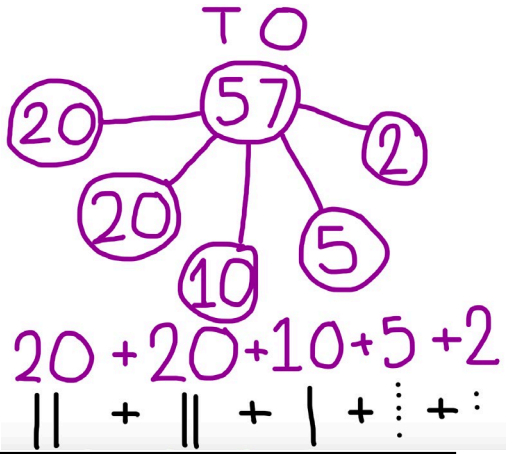
Year 2

Children explore partitioning two digit numbers in various ways.





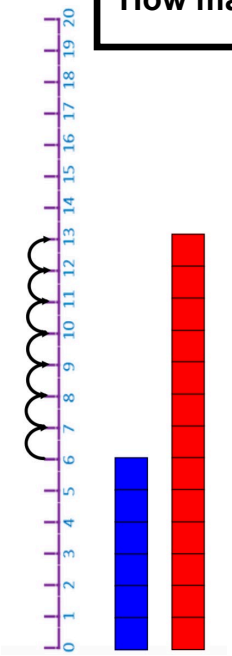


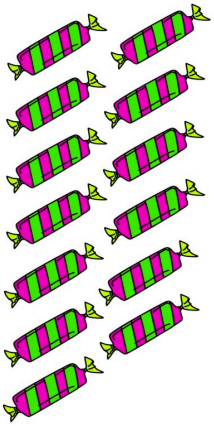


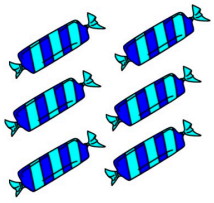
Subtracting using a number – line.

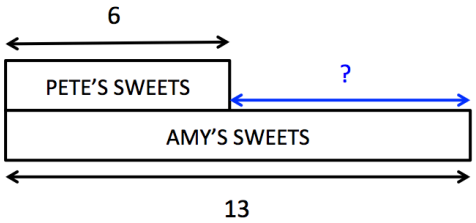
Children continue exploring the idea of difference through varied contexts and with the use of concrete apparatus, which is then linked to the more abstract number line work.

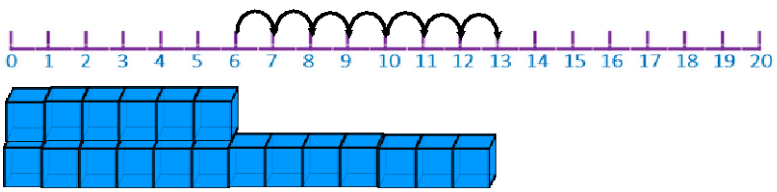
Amy has 13 sweets, Pete has 6 sweets.
How many more sweets does Amy have than Pete?











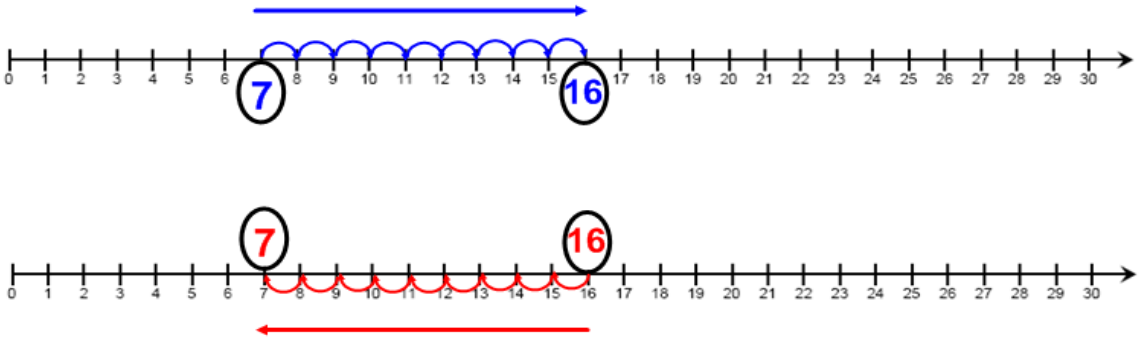
1) The steps are recorded by counting up from the smaller to the larger number to find the difference.

Children are taught to write the bigger number first when writing the number sentence. They then circle both numbers on the number line.

> **When this is first taught, teachers should model both, counting on and back on the number line so that children can see that the answer is the same.**

Starting with the smallest number, children count on. They count the number of jumps.

16 – 7 = 8



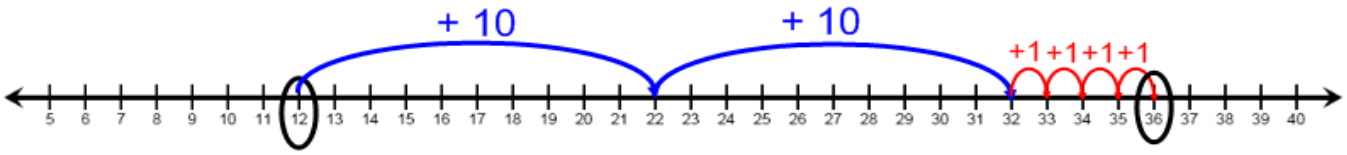
2) Finding the difference between two 2 digit numbers by counting on in tens first, then counting on in 1s using a marked number line.

36 - 24 = 12

In order for children to be able to do this, they must have a secure knowledge of 'ten more than' any number. Provide children with laminated 100 squares to help them establish whether they can make a jump of ten.

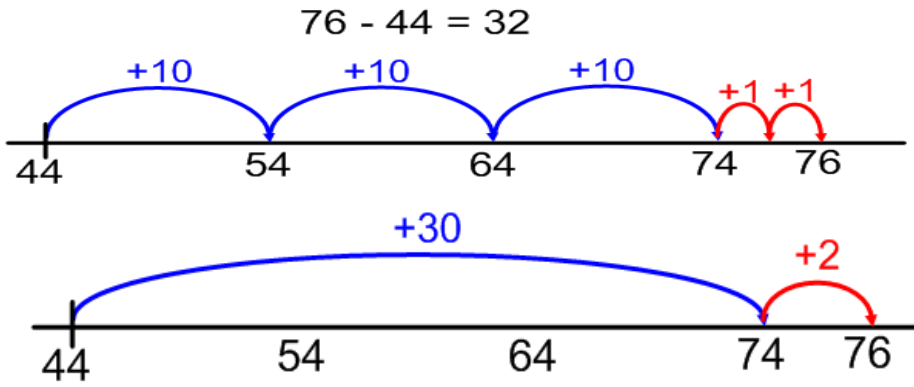
3) Finding the difference between two 2 digit numbers by counting on in tens first, then counting on in 1s using a marked number line. The calculation becomes more complicated as children are having to make two jumps of ten.

36 - 12 = 24



4) Finding the difference between two 2-digit numbers by counting on using an empty number line.

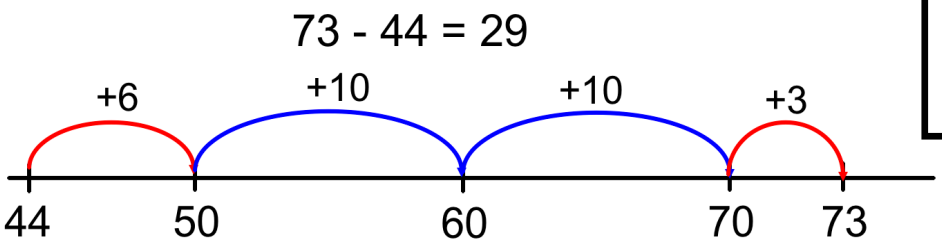
Children are taught to jump in tens and ones from the smaller number to get to the larger number. The jumps are added to get the answer.



Mental maths suggestion:
Counting choir and counting using meter stick.

76 - 44 = 32

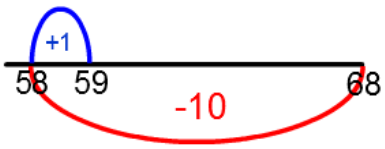
5) Finding the difference using their knowledge of number bonds to the next multiple of 10.



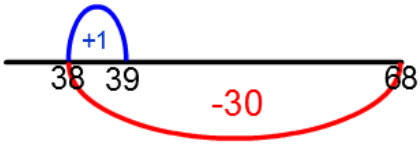
Essential knowledge:
Being able to decompose and recompose any number under 10.

Mental maths strategies of subtraction

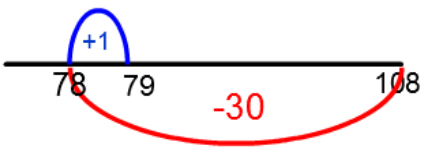
Round and adjust subtraction



68-9=59
68-10=58
58+1=59

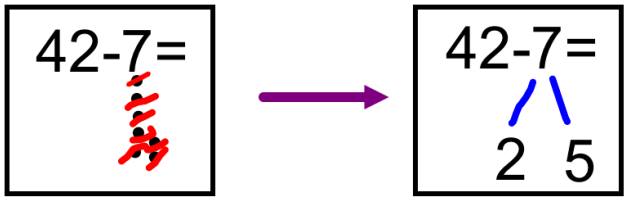


68-29=39
68-30=38
38+1=39



108-39=79
108-30=78
78+1=79

Subtraction using bridging.

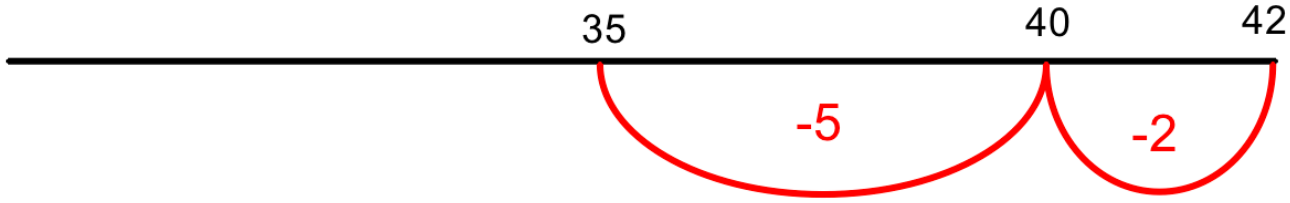


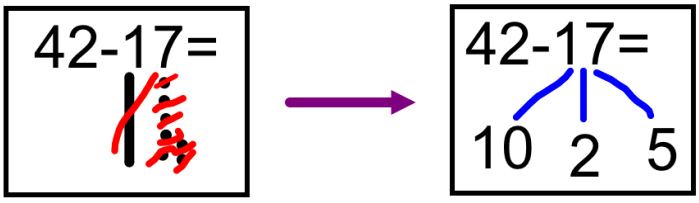
42-7= 35

42-2=40

40-5= 35

Children can use jottings to help keep track of how much they subtracted, however the aim is that children use their knowledge of single digit partitioning to break down the subtrahend into chunks when subtracting.





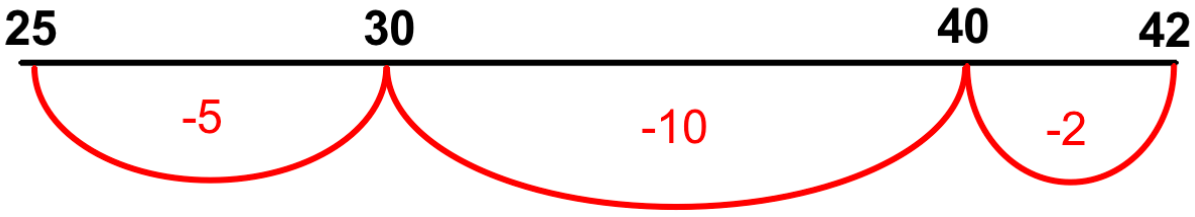
42-17= 35

42-2=40

40-10=30

40-5= 25

Children can use jottings to help keep track of how much they subtracted, however the aim is that children use their knowledge of partitioning to break down the subtrahend into chunks when subtracting.



Years 3, 4, 5 and 6
Formal written method of subtraction

1) 67 – 32 =

$$\begin{array}{r} 67 \\ -\ 32 \\ \hline 35 \end{array}$$

2) 74 – 27 =

$$\begin{array}{r} {\scriptstyle 6}\,{\scriptstyle 1} \\ \cancel{7}\,\cancel{4} \\ -\ 27 \\ \hline 47 \end{array}$$

3) 741 – 367 =

$$\begin{array}{r} {\scriptstyle 6}\,{\scriptstyle 13}\,{\scriptstyle 1} \\ \cancel{7}\,\cancel{4}\,1 \\ -\ 367 \\ \hline 374 \end{array}$$

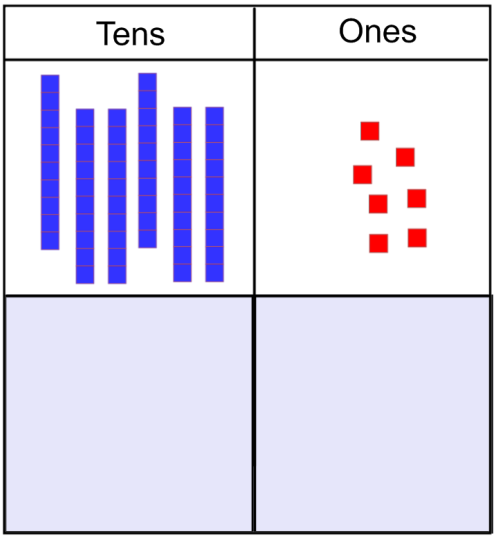
4) 501 – 278 =

$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9}\,{\scriptstyle 1} \\ \cancel{5}\,\cancel{0}\,3 \\ -\ 278 \\ \hline 225 \end{array}$$

Column subtraction should be introduced together with apparatus using a Place Value grid to provide full understanding. Procedural method should be taught alongside conceptual

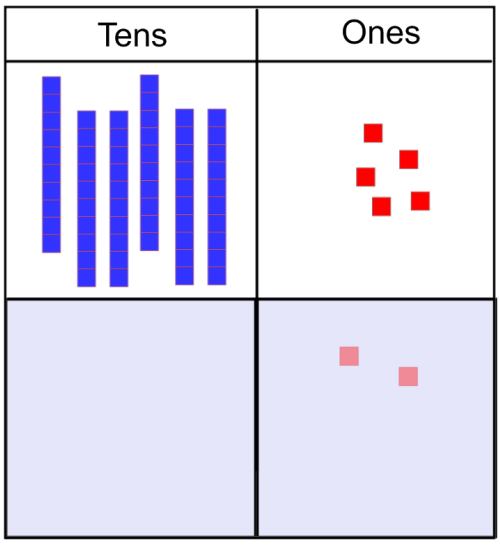
1) Children use the Place value grid to place Dienes into the 'recycling bin' below as they take away Ones and Tens subsequently.

Step 1.



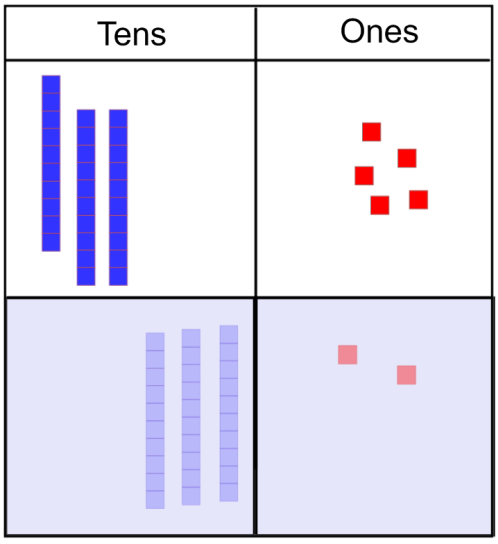
$$\begin{array}{r} 67 \\ -\ 32 \\ \hline \end{array}$$

Step 2.



$$\begin{array}{r} 67 \\ -\ 32 \\ \hline 5 \end{array}$$

Step 3.

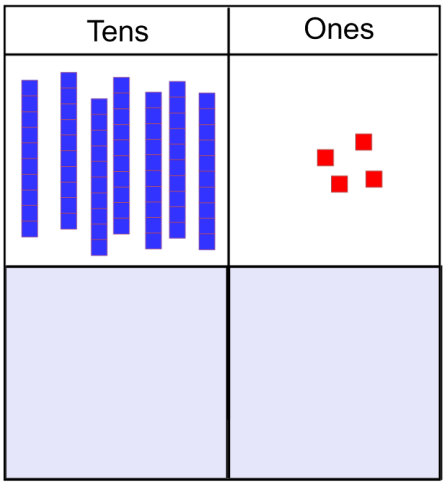


$$\begin{array}{r} 67 \\ -\ 32 \\ \hline 35 \end{array}$$

2) Children use Dienes to take one Ten from the Tens column and exchange this into ten Ones. They can see that there are only 6 Tens left in Tens column and 14 ones in the Ones column. Subtraction happens by children dragging Dienes into the 'recycling bin' Ones first, then Tens.

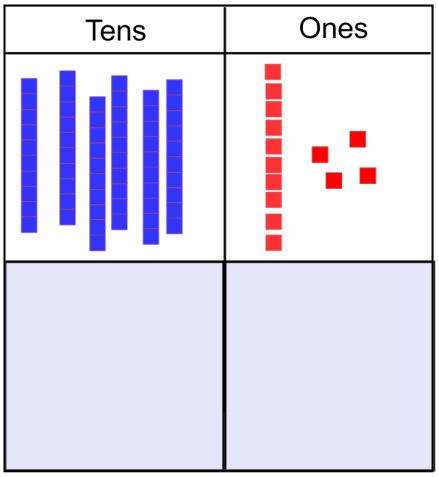
Use vocabulary of 'exchanging' ten ones to one ten.

Step 1.



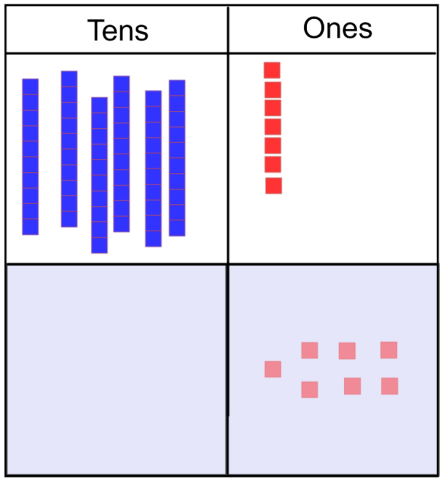
$$\begin{array}{r} 7\ 4 \\ -\ 2\ 7 \\ \hline \end{array}$$

Step 2.



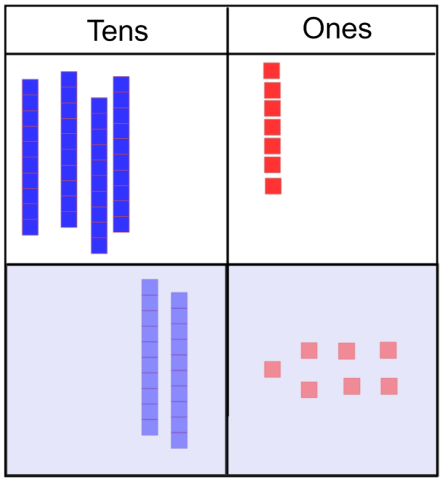
$$\begin{array}{r} 6\ \not{7}^{1}\ 14 \\ -\ 2\ 7 \\ \hline \end{array}$$

Step 3.



$$\begin{array}{r} 6\ \not{7}^{1}\ 14 \\ -\ 2\ 7 \\ \hline 7 \end{array}$$

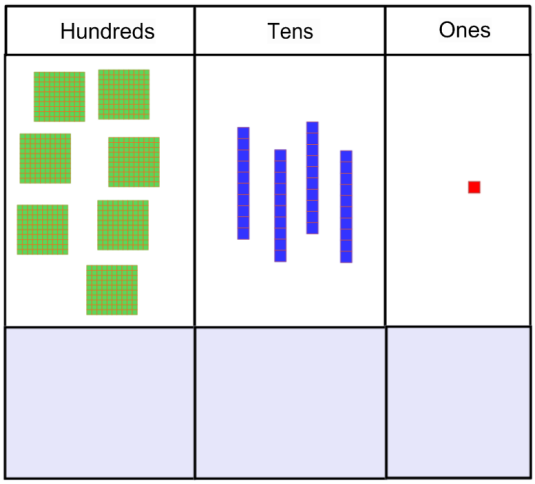
Step 4.



$$\begin{array}{r} 6\ \not{7}^{1}\ 14 \\ -\ 2\ 7 \\ \hline 4\ 7 \end{array}$$

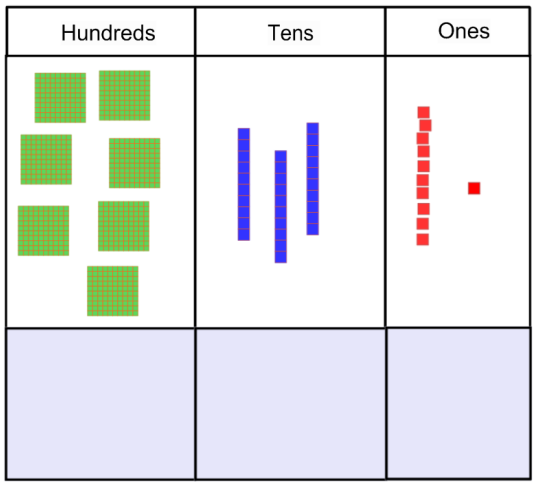
3) Children use the same method of exchange but this is now extended to the Hundreds column. Subtraction happens by children dragging Dienes into the 'recycling bin' Ones first, then Tens.

Step 1.



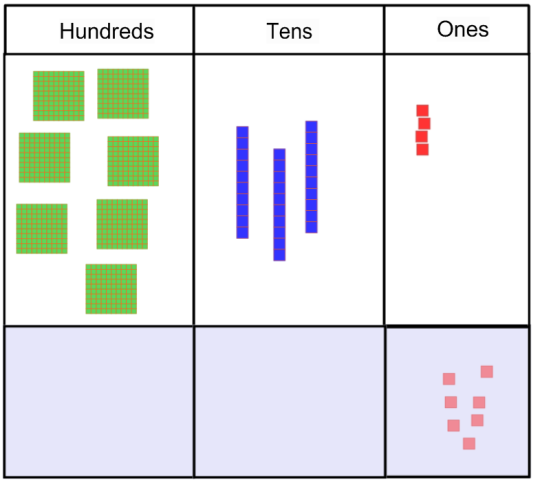
$$\begin{array}{r} 7\ 4\ 1 \\ -\ 3\ 6\ 7 \\ \hline \end{array}$$

Step 2.



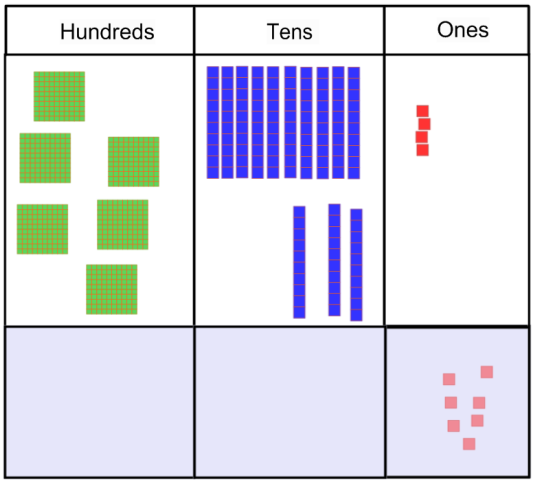
$$\begin{array}{r} 7\ \not{4}^{3}\ \not{1}^{1} \\ -\ 3\ 6\ 7 \\ \hline \end{array}$$

Step 3.



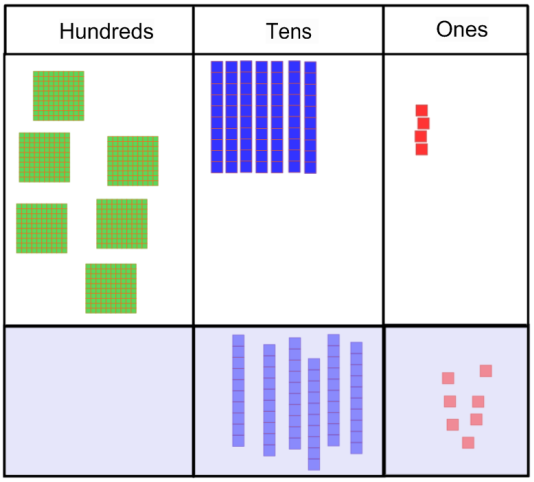
$$\begin{array}{r} {}^{3}\cancel{7}\,{}^{1}\cancel{4}\,1 \\ -\;3\;6\;7 \\ \hline \qquad\quad 4 \end{array}$$

Step 4.



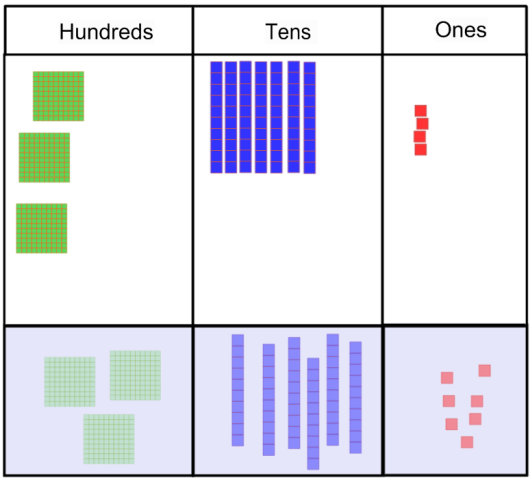
$$\begin{array}{r} {}^{6}\cancel{7}\,{}^{13}\cancel{4}\,{}^{1}\cancel{1} \\ -\;3\;6\;7 \\ \hline \qquad\quad 4 \end{array}$$

Step 5.



$$\begin{array}{r} {}^{6}\cancel{7}\,{}^{13}\cancel{4}\,{}^{1}\cancel{1} \\ -\;3\;6\;7 \\ \hline \qquad 7\;4 \end{array}$$

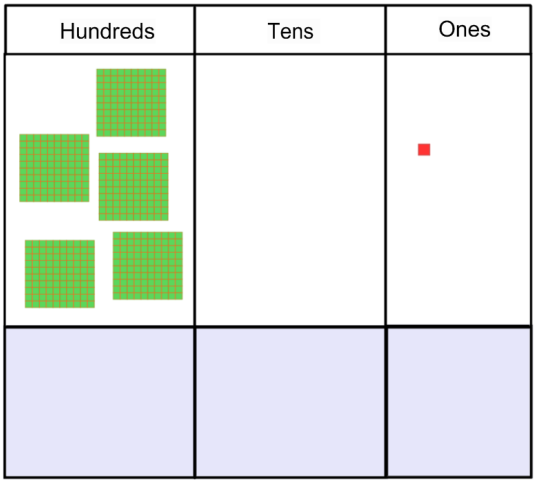
Step 6.



$$\begin{array}{r} {}^{6}\cancel{7}\,{}^{13}\cancel{4}\,{}^{1}\cancel{1} \\ -\;3\;6\;7 \\ \hline 3\;7\;4 \end{array}$$

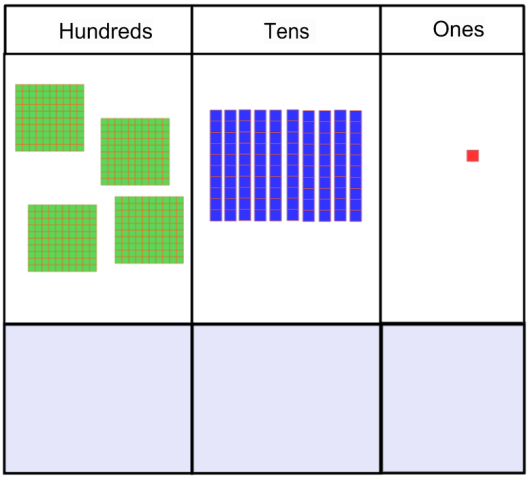
4) The method becomes further complicated when there are zero Tens or Ones.

Step 1.



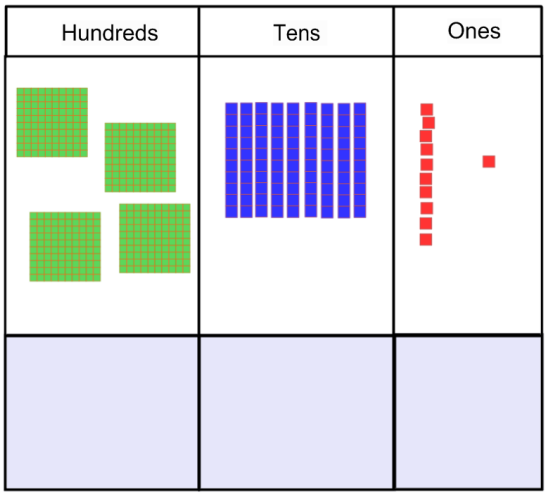
$$\begin{array}{r} 5\;0\;1 \\ -\;2\;7\;8 \\ \hline \end{array}$$

Step 2.



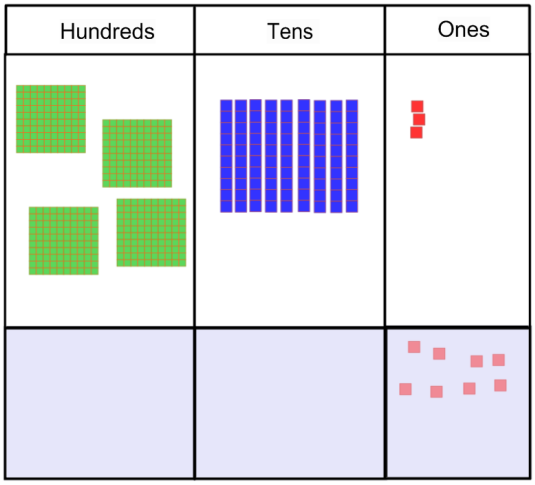
$$\begin{array}{r} {}^{4}\cancel{5}\,{}^{1}10\;1 \\ -\;2\;7\;8 \\ \hline \end{array}$$

Step 3.



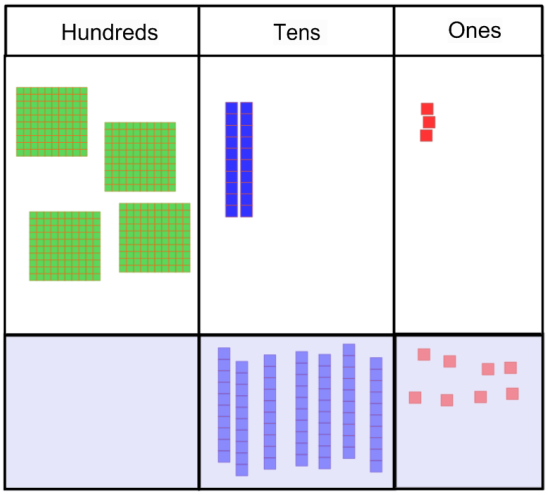
$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9}\,{\scriptstyle 1}\,{\scriptstyle 1} \\ 5\,\not{0}\,\not{1}\,1 \\ -\;2\;7\;8 \\ \hline \end{array}$$

Step 4.



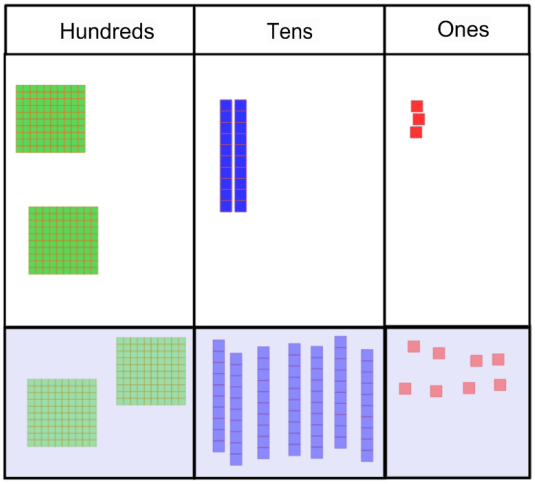
$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9}\,{\scriptstyle 1}\,{\scriptstyle 1} \\ 5\,\not{0}\,\not{1}\,1 \\ -\;2\;7\;8 \\ \hline \qquad 3 \end{array}$$

Step 5.



$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9}\,{\scriptstyle 1}\,{\scriptstyle 1} \\ 5\,\not{0}\,\not{1}\,1 \\ -\;2\;7\;8 \\ \hline \qquad 2\;3 \end{array}$$

Step 6.



$$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9}\,{\scriptstyle 1}\,{\scriptstyle 1} \\ 5\,\not{0}\,\not{1}\,1 \\ -\;2\;7\;8 \\ \hline 2\;2\;3 \end{array}$$

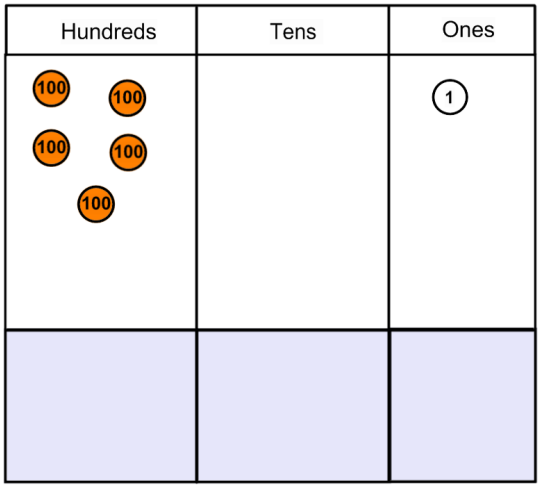
Children should be encouraged to use inverse operations to check if their answer is correct. This gives them opportunity to practise both operations (addition and subtraction) at the same time. Explicit teaching needs to point out that if they add the number they took away to the amount left they should end up with the original amount. Have children practise this by moving the Dienes back to where they started to give children conceptual understanding of this.

The below example illustrates how this is done without using concrete apparatus.

Calculation:	**Checking using the inverse**
$\begin{array}{r} {\scriptstyle 4}\,{\scriptstyle 9} \\ \not{5}\,\not{0}\,3 \\ -\;2\;7\;8 \\ \hline 2\;2\;5 \end{array}$	$\begin{array}{r} 2\;7\;8 \\ +\;2\;2\;5 \\ \hline 5\;0\;3 \\ \hline \not{1}\;\not{1} \end{array}$

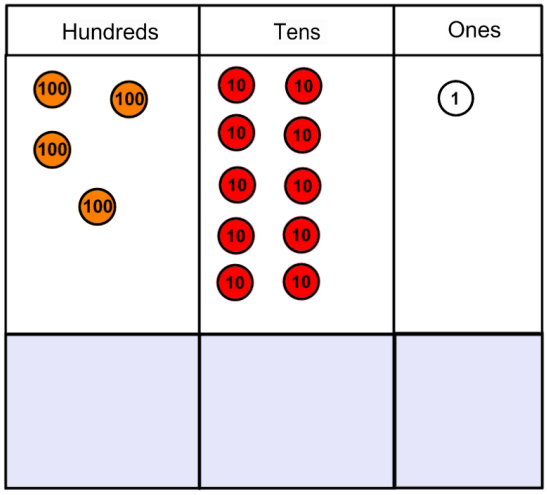
When they have sufficient understanding of what each digit in a number represents with the use of Dienes, children use Place Value counters to calculate larger numbers.

Step 1.



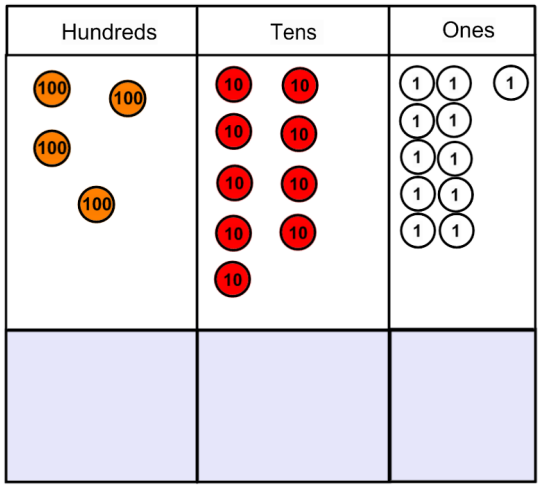
$$\begin{array}{r} 5\,0\,1 \\ -\;2\,7\,8 \\ \hline \end{array}$$

Step 2.



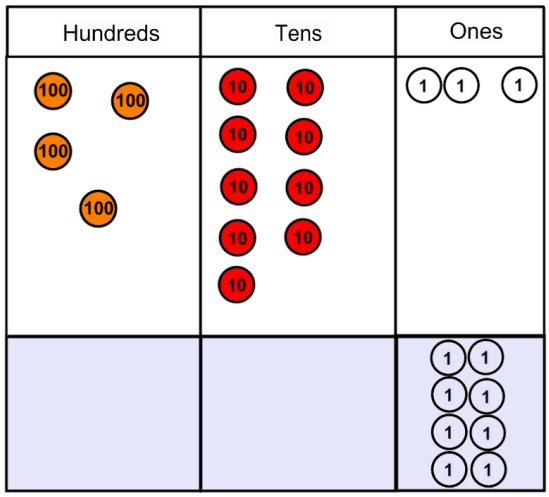
$$\begin{array}{r} \overset{4}{\cancel{5}}\,\overset{1}{1}0\;1 \\ -\;2\,7\,8 \\ \hline \end{array}$$

Step 3.



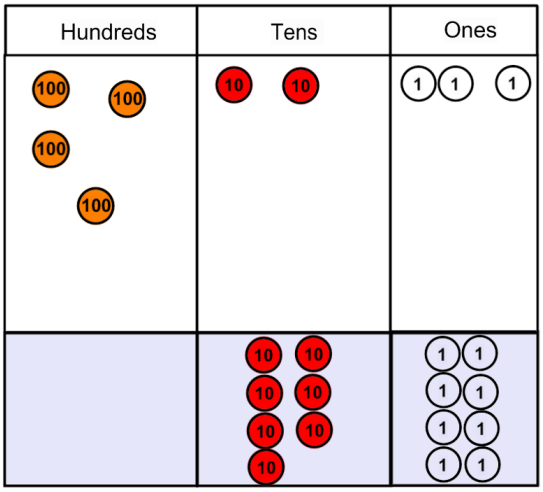
$$\begin{array}{r} \overset{4}{\cancel{5}}\,\overset{1}{\cancel{1}}\overset{9}{0}\,\overset{1}{1}1 \\ -\;2\,7\,8 \\ \hline \end{array}$$

Step 4.



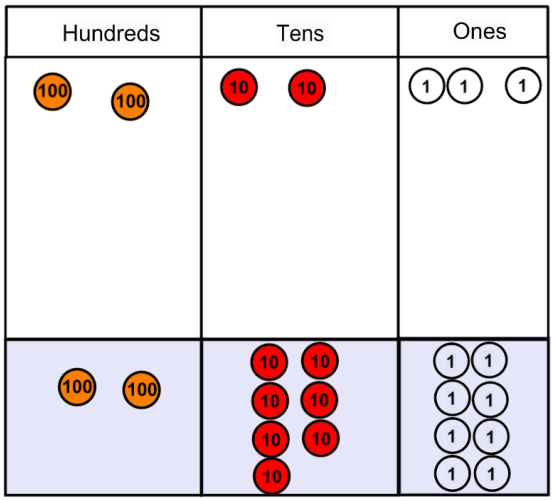
$$\begin{array}{r} \overset{4}{\cancel{5}}\,\overset{1}{\cancel{1}}\overset{9}{0}\,\overset{1}{1}1 \\ -\;2\,7\,8 \\ \hline 3 \end{array}$$

Step 5.



$$\begin{array}{r} \overset{4}{\cancel{5}}\,\overset{1}{\cancel{1}}\overset{9}{0}\,\overset{1}{1}1 \\ -\;2\,7\,8 \\ \hline 2\;3 \end{array}$$

Step 6.

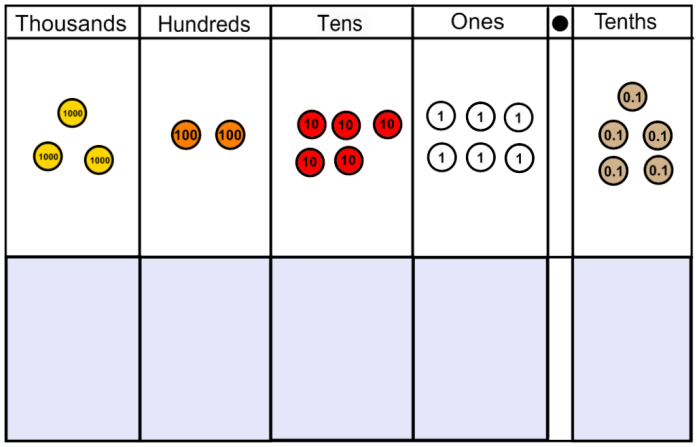


$$\begin{array}{r} \overset{4}{\cancel{5}}\,\overset{1}{\cancel{1}}\overset{9}{0}\,\overset{1}{1}1 \\ -\;2\,7\,8 \\ \hline 2\;3 \end{array}$$

Extend this knowledge to much larger numbers which also includes decimals.
When subtracting decimal numbers, children must carefully align the numbers so that the decimal points are underneath each-other. Use the method demonstrated below to subtract.

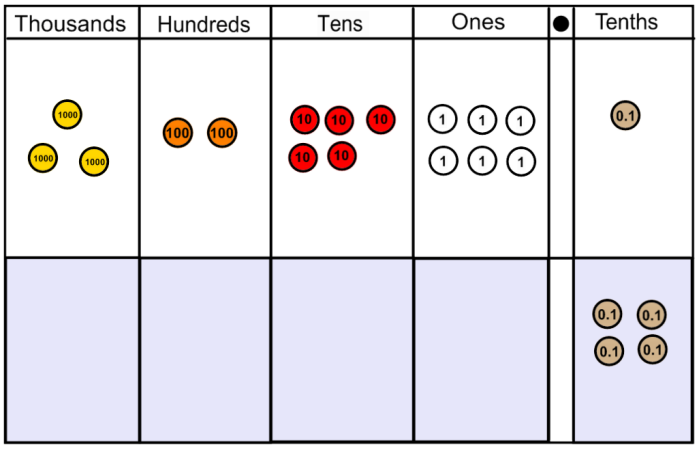
Step 1.

$$\begin{array}{r} 3\ 2\ 5\ 6\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \end{array}$$



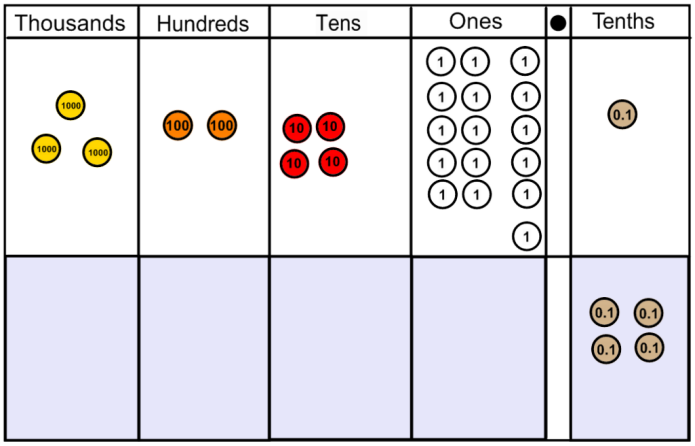
Step 2.

$$\begin{array}{r} 3\ 2\ 5\ 6\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \\ \hline .\ \ 1 \end{array}$$



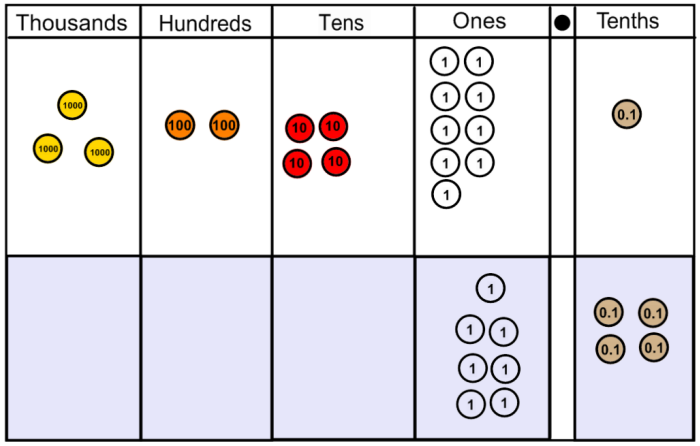
Step 3.

$$\begin{array}{r} 3\ 2\ \cancel{5}16\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \\ \hline .\ \ 1 \end{array}$$



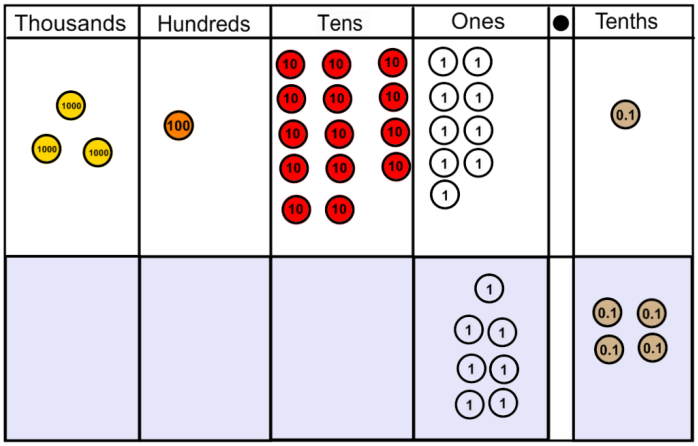
Step 4.

$$\begin{array}{r} \overset{4}{\cancel{5}}16\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \\ \hline 9\ .\ 1 \end{array}$$



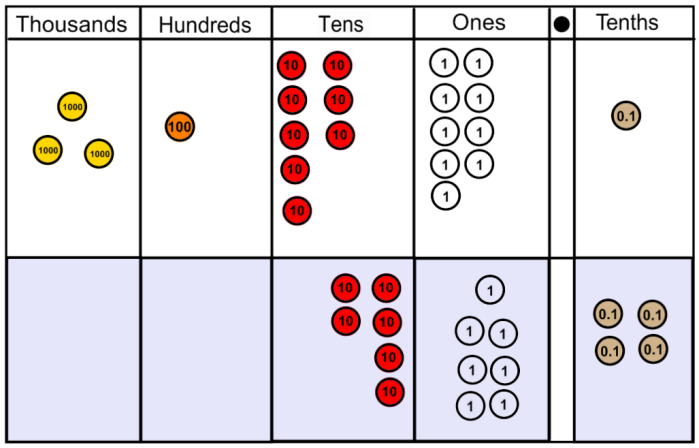
Step 5.

$$\begin{array}{r} 1\ \overset{14}{\cancel{5}}16\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \\ \hline 9\ .\ 1 \end{array}$$



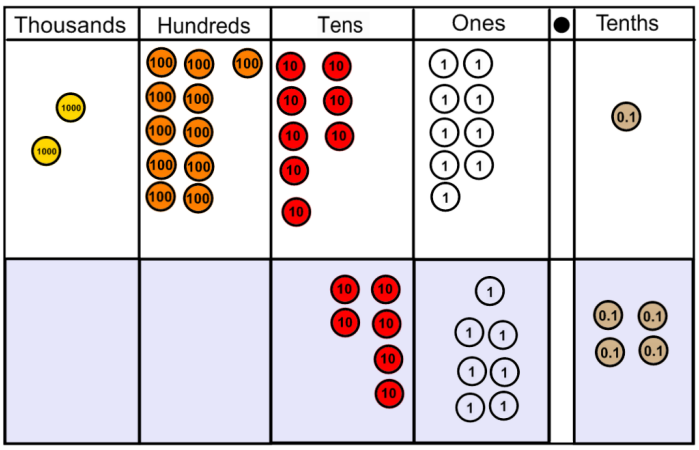
Step 6.

$$\begin{array}{r} 1\ \overset{14}{\cancel{5}}16\ .\ 5 \\ -\ \ 5\ 6\ 7\ .\ 4 \\ \hline 8\ 9\ .\ 1 \end{array}$$



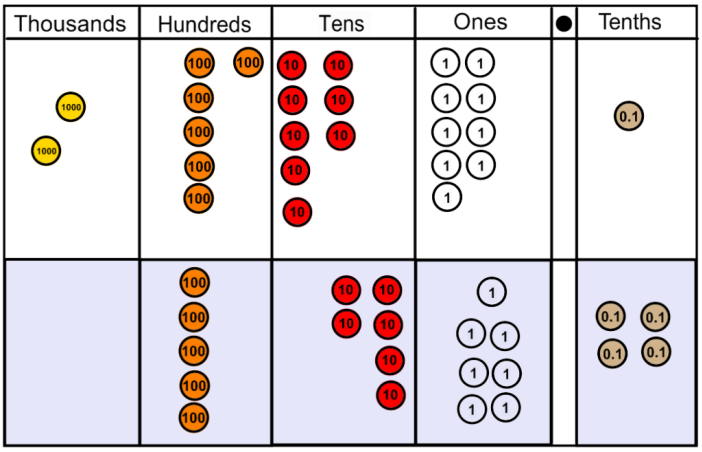
Step 7.

$$\begin{array}{r} 2\ 11\ 14 \\ 3\ 2\ 5\!\!\not{1}\!\!\not{4}\ .\ 5 \\ -\ 5\ 6\ 7\ .\ 4 \\ \hline 8\ 9\ .\ 1 \end{array}$$



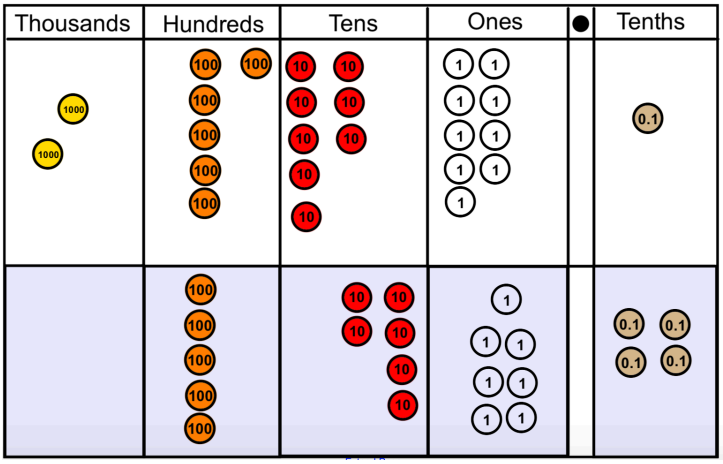
Step 8.

$$\begin{array}{r} 2\ 11\ 14 \\ 3\ 2\ 5\!\!\not{1}\!\!\not{4}\ .\ 5 \\ -\ 5\ 6\ 7\ .\ 4 \\ \hline 6\ 8\ 9\ .\ 1 \end{array}$$



Step 9.

$$\begin{array}{r} 2\ 11\ 14 \\ 3\ 2\ 5\!\!\not{1}\!\!\not{4}\ .\ 5 \\ -\ 0\ 5\ 6\ 7\ .\ 4 \\ \hline 2\ 6\ 8\ 9\ .\ 1 \end{array}$$



PLEASE NOTE THAT ONCE COLUMN SUBTRACTION IS TAUGHT, IT OFTEN BECOMES CHILDREN'S DEFAULT METHOD TO SUBTRACT NUMBERS EVEN IF A CALCULATION COULD BE SOLVED USING A MENTAL METHOD MUCH FASTER.

THEREFORE, KEEP PRACTISING VARIOUS MENTAL MATHS STRATEGIES FOR CALCULATIONS ALONGSIDE THE SHORT WRITTEN METHODS AND ENCOURAGE CHILDREN TO DECIDE WHICH IS THE MOST EFFICIENT METHOD FOR A PARTICULAR SET OF NUMBERS.

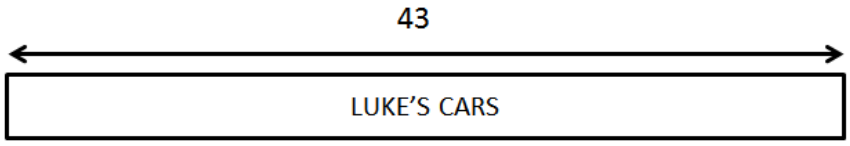
For example, when calculating mentally using smaller numbers, teachers should model counting on using an empty number line or subtracting a multiple of 10 and adjusting by one or two.

When calculating with time and finding time-differences, the number line method should be used EVERY TIME.

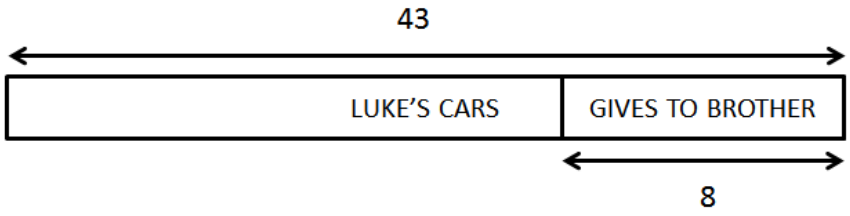
Problem solving involving subtraction using the bar model method

Luke has 43 toy cars. He gives 8 to his brother.
How many toy cars has he got left?

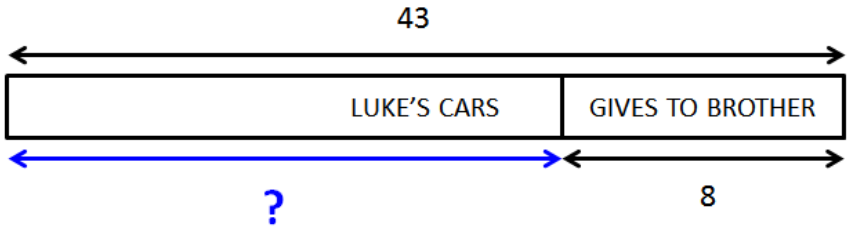
Step 1.



Step 2.



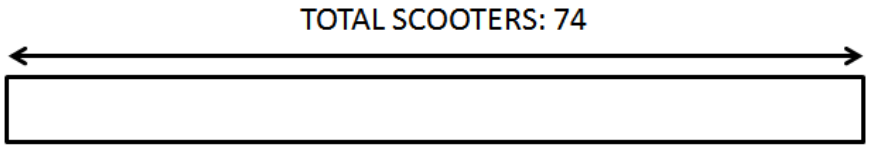
Step 3.



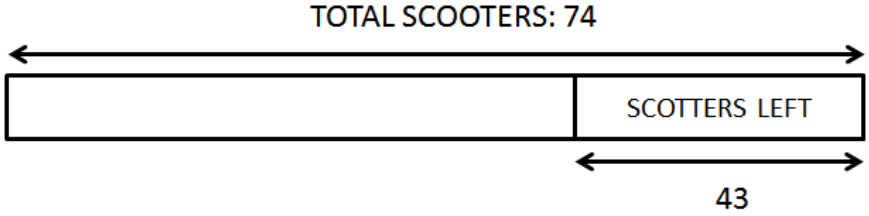
Step 4. **43 – 8 = 35**

The local bicycle shop has 74 scooters.
The shop sells some of them and has 43 scooters left.
How many scooters did the bicycle shop sell?

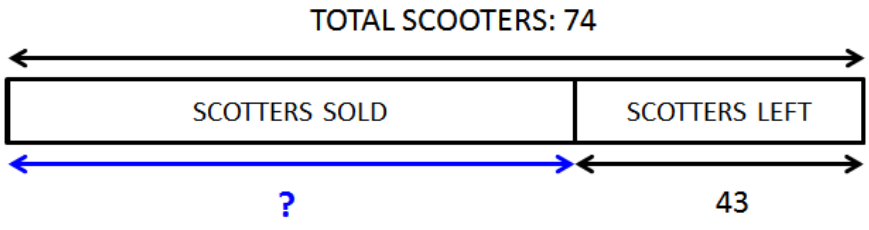
Step 1.



Step 2.



Step 3.

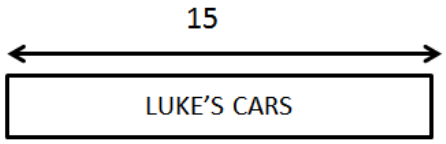


Step 4. **74 – 43 = 31**

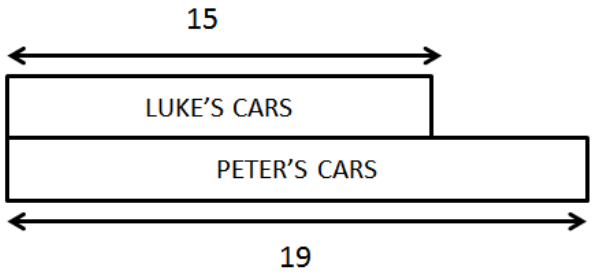
This type of question provides opportunities for children to compare two particular amounts.

Luke has 15 toy cars. Peter has 19 toy cars.
How many more toy cars does Peter has than Luke?

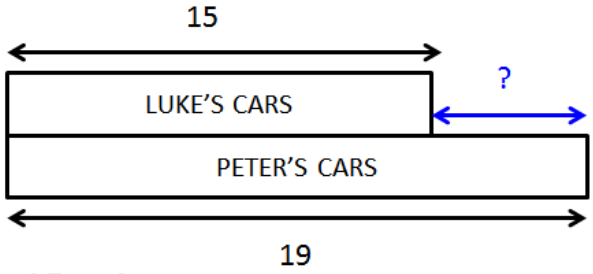
Step 1.



Step 2.



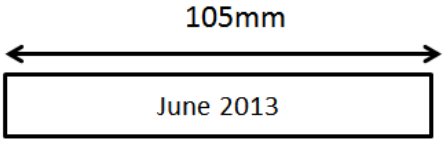
Step 3.



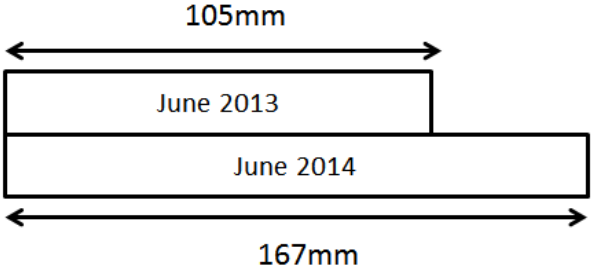
Step 4. **19 - 15 = 4**

In the month of June 2013, 105mm of rain fell compared to 167mm in June 2014. What is the difference in the amount of rain fell between these years?

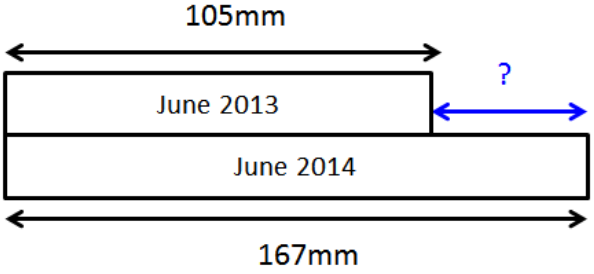
Step 1.



Step 2.



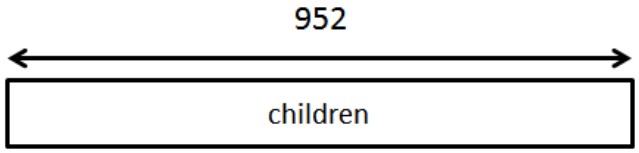
Step 3.



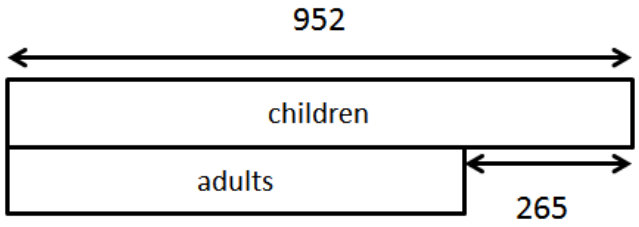
Step 4. **167mm – 105mm = 62mm**

In a survey it was found that 952 children prefer watching a funny movie. 265 fewer adults than children prefer watching a funny movie. How many adults prefer watching a funny movie?

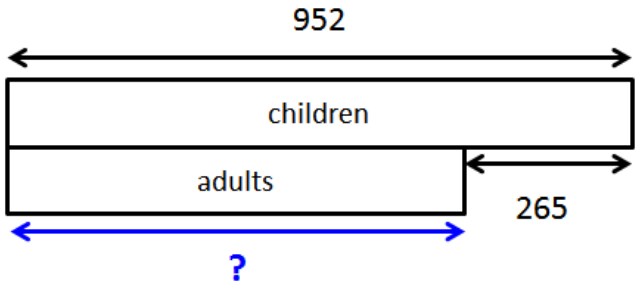
Step 1.



Step 2.



Step 3.



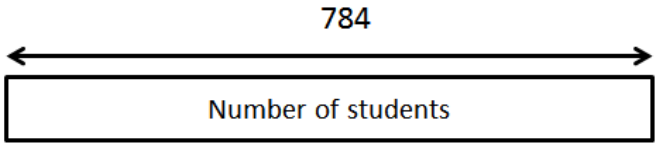
Step 4. **952 - 265 = 678**

In a high school there are 784 students. 325 students are boys.

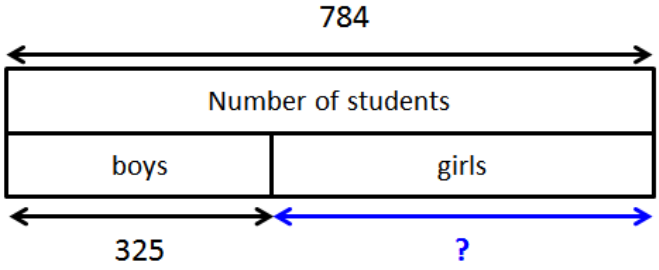
a. How many girls are in the school?

b. How many more girls than boys are in the school?

a) Step 1.



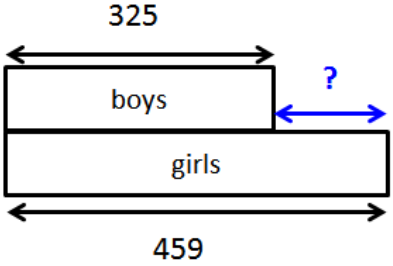
a) Step 2.



Step 3.

784 – 325 = 459

b) Step 1.



b) Step 2. **459 – 325 = 134**