



Our Lady's Primary School

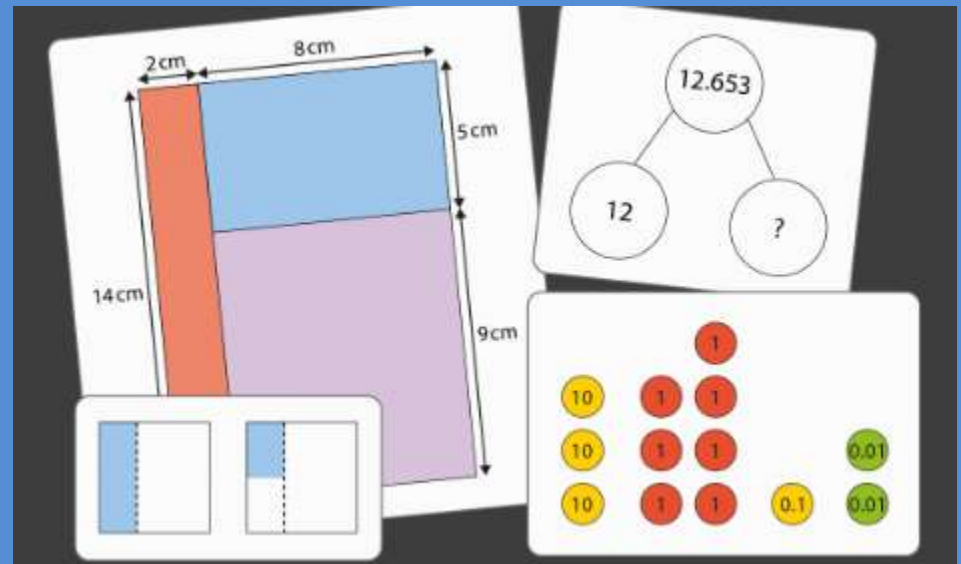
KS2

Parent Workshop

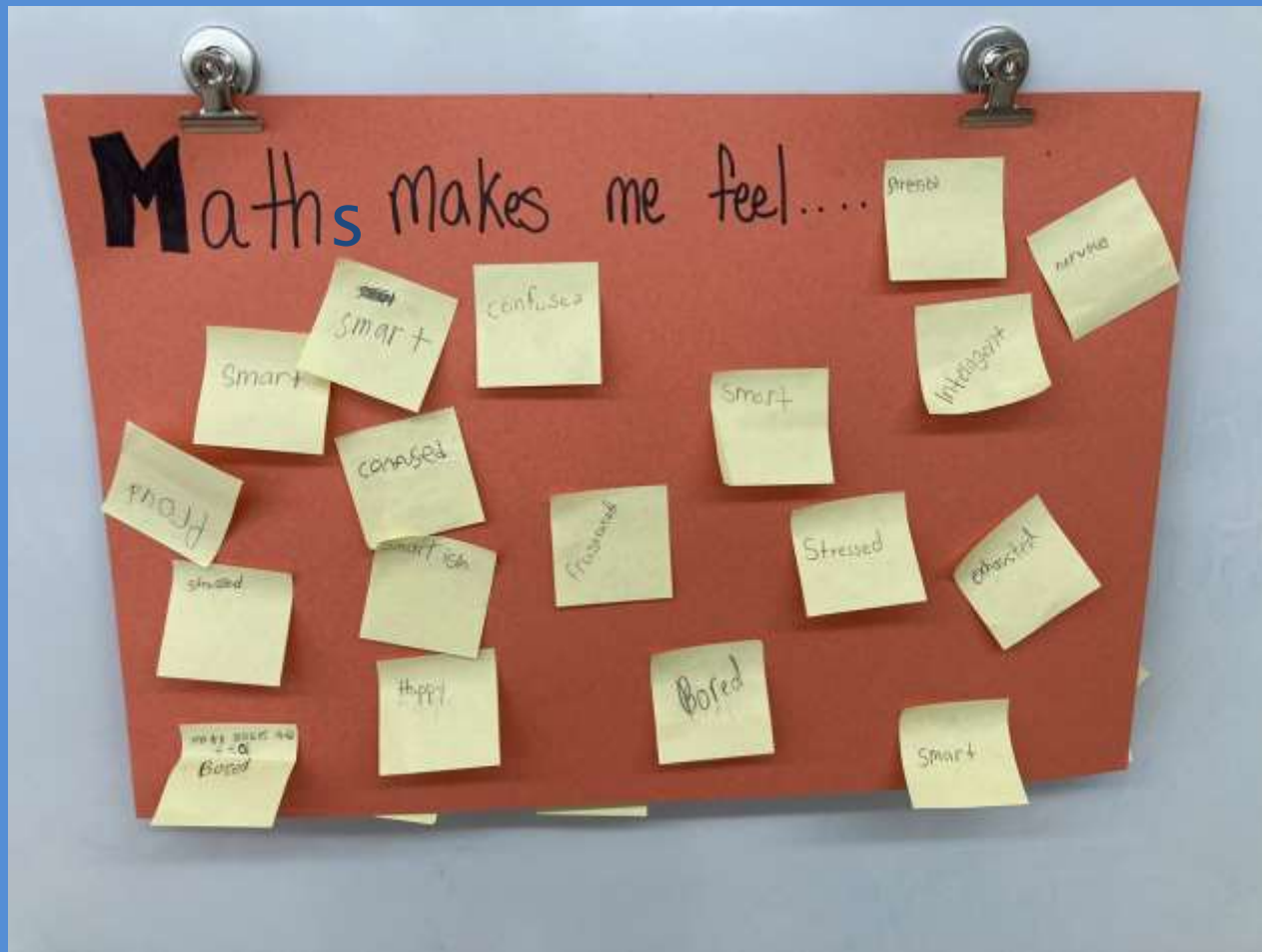
Objectives for today



- ▶ promote “ I can if I work hard “ attitude
- ▶ understand teaching for mastery
- ▶ four calculations
- ▶ questions



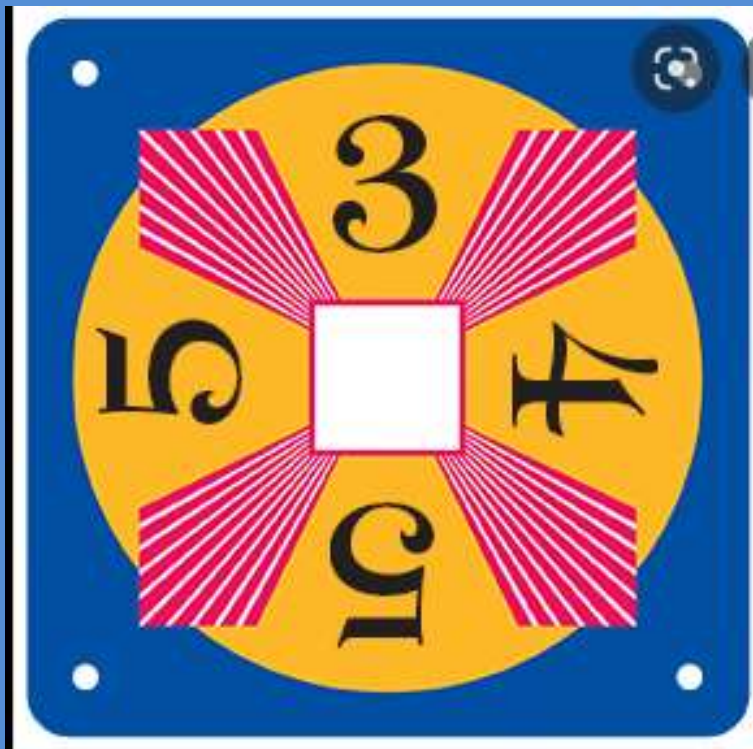
How does Maths make you feel?



Do not be afraid ...of Maths.



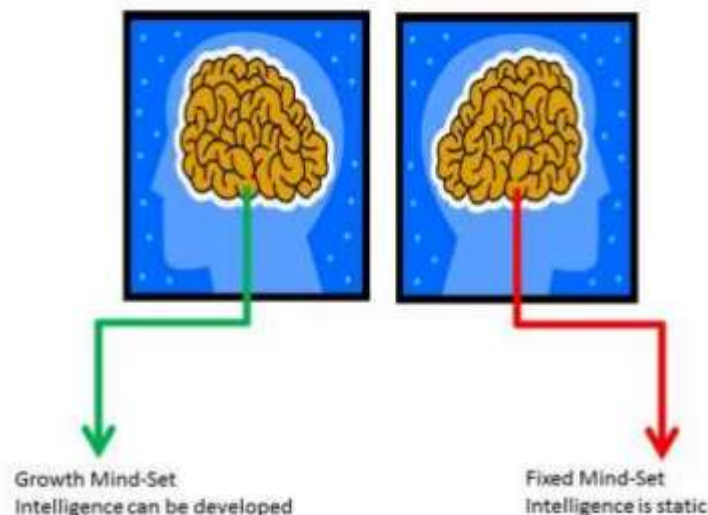
Challenge – **Make 24**





If children hear 'I can't do maths' from parents, teachers, friends they begin to believe it isn't important

People become less embarrassed about maths skills as it is acceptable to be 'rubbish at maths'



Fixed vs Growth mindset

Carol Dweck



*We believe that **everyone** can get better at maths...when they put in the **effort** and work at it.*

- Do not praise children for being clever when they succeed at something, but instead should praise them **for working hard**.
- Children learn to associate **achievement with effort** (which is something they can influence themselves – by working hard!), not 'cleverness' (a trait perceived as absolute and that they cannot change).



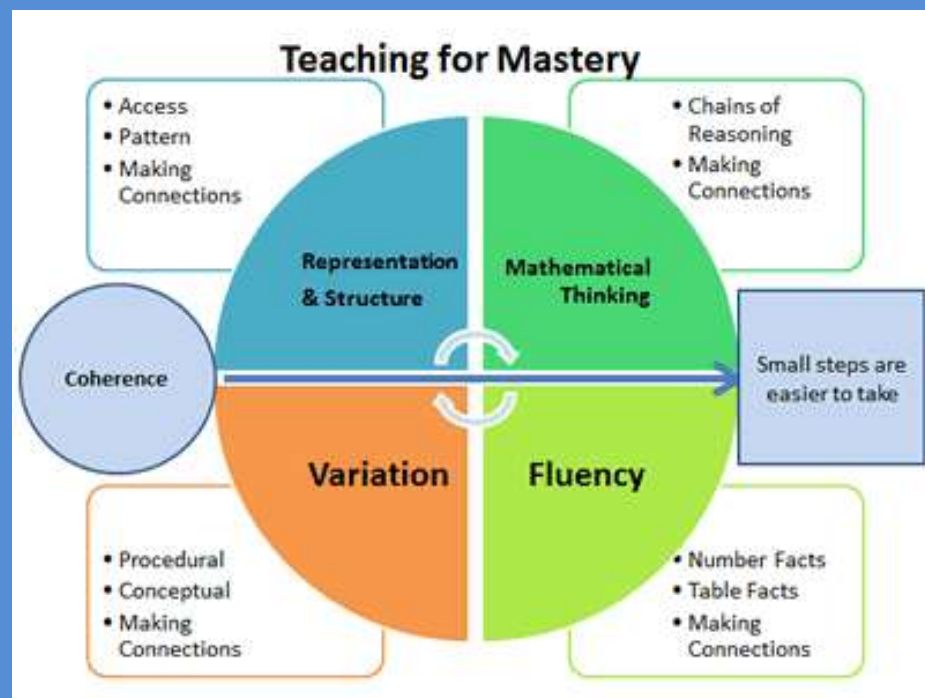
Mastery in Maths

- you know how to do it
- it is automatic
- you can tell others how you did it





We teach children small steps to achieve understanding, to reason and to problem solve.



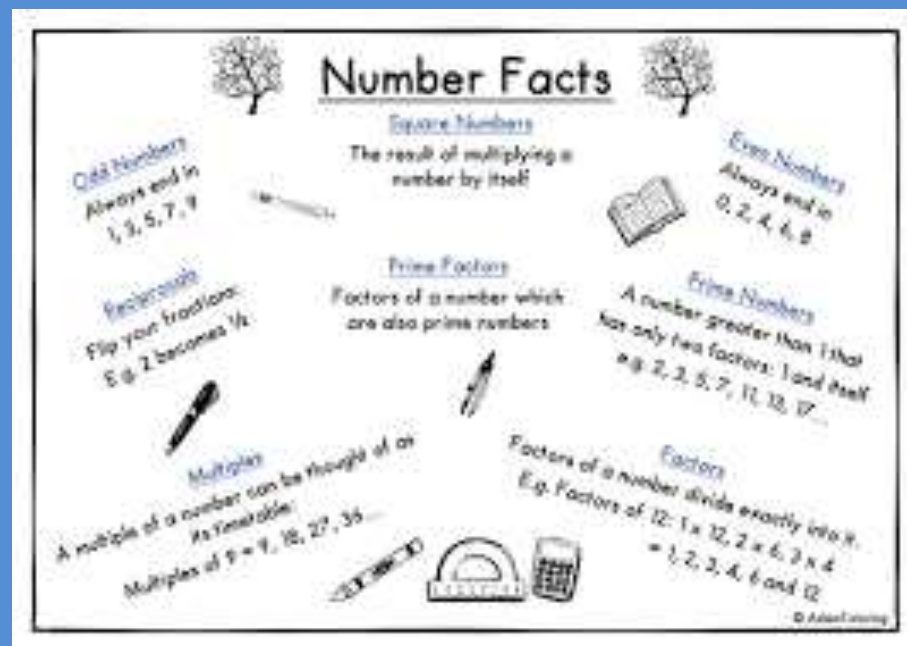


FLUENCY – Number Facts

Fluency in understanding composition of numbers which will help with calculations – foundations built in KS1

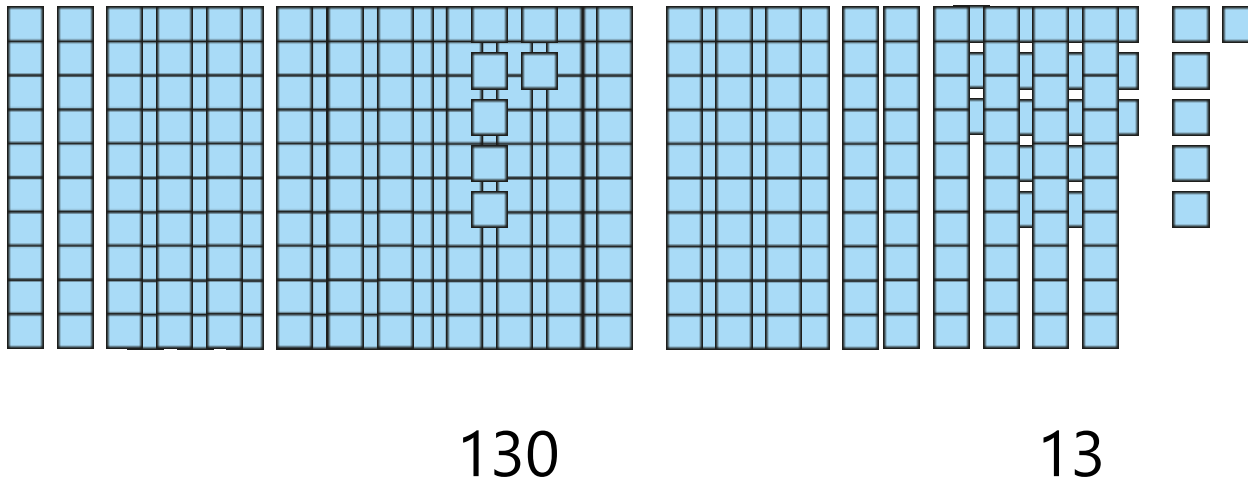
Number Bonds
within 10, 20, 100

Multiplication Tables
up to $\times 12$



Securing mental strategies

$$\begin{array}{r} 87 \\ / \quad \backslash \\ 80 \quad 7 \end{array} + \begin{array}{r} 56 \\ / \quad \backslash \\ 50 \quad 6 \end{array} = 130 + 13 = 143$$

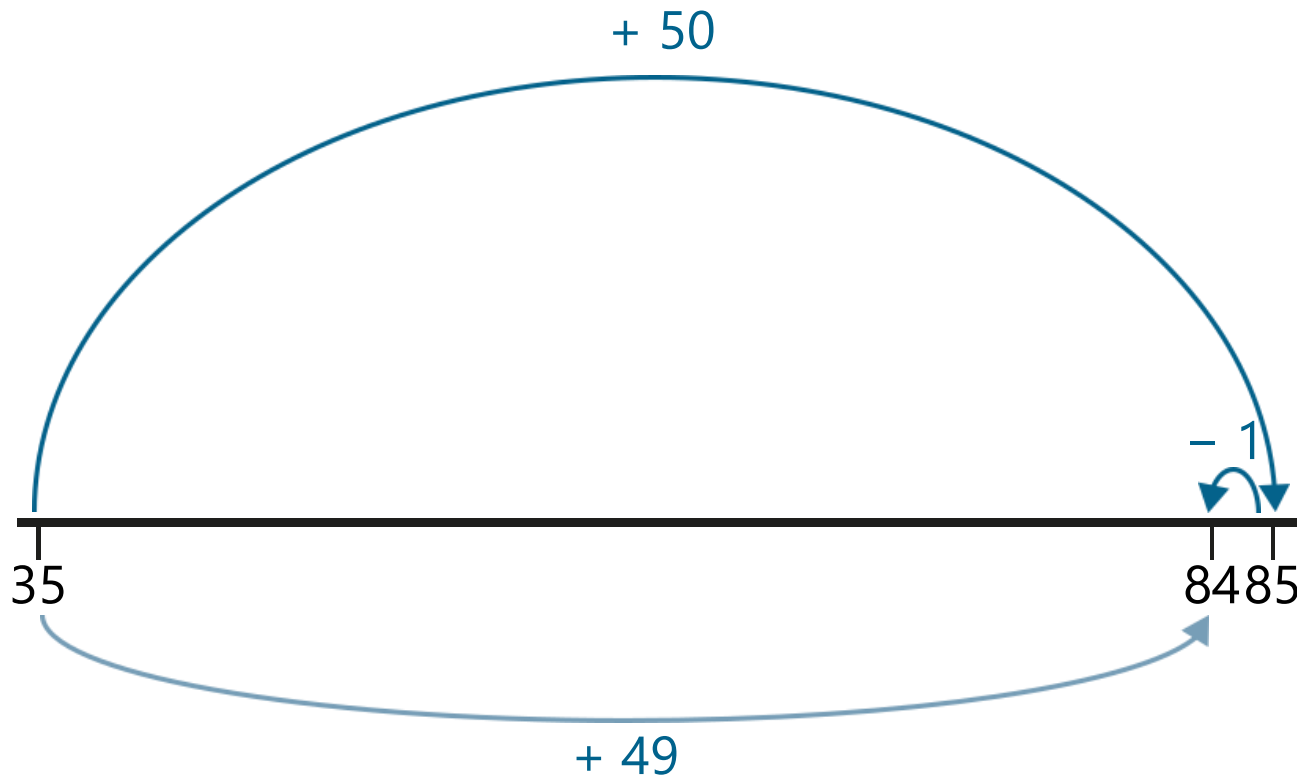


$$\begin{aligned} 35 + 49 &= 30 + 40 + 5 + 9 \\ &= 70 + 14 \\ &= 84 \end{aligned}$$

Method A

Securing mental strategies

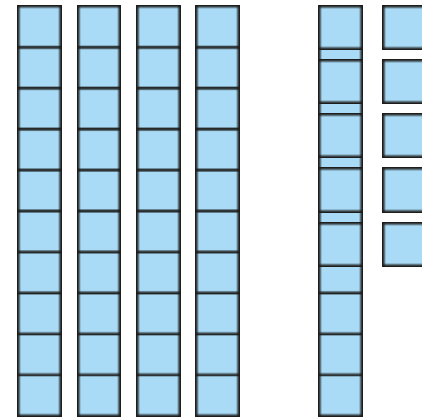
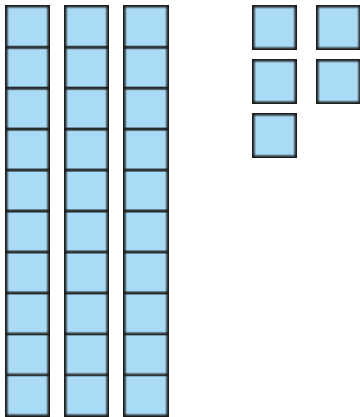
$$35 + 49 = 84$$



Method B

Securing mental strategies

$$35 + 49 = 34 + 50 = 84$$



Method C

Securing mental strategies

$$\begin{array}{r} 35 \\ / \quad \backslash \\ 34 \quad 1 \end{array} + 49 = 34 + 50 = 84$$

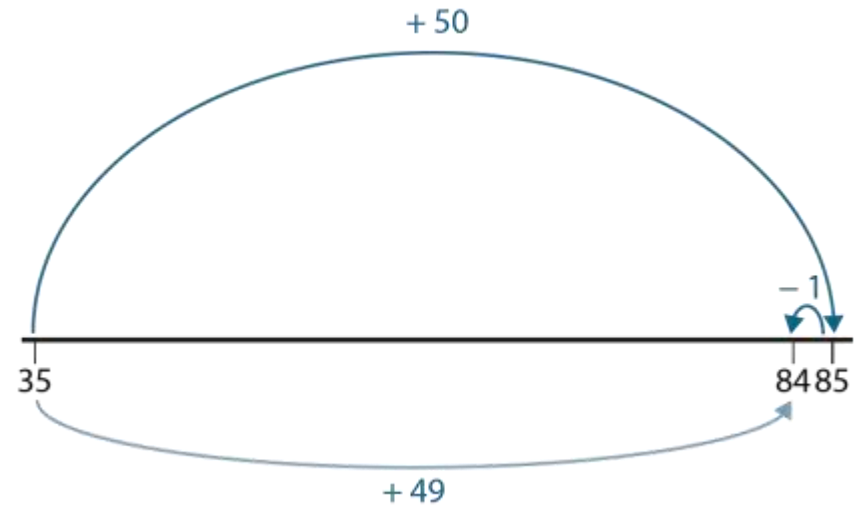
Method C

Securing mental strategies

Method A

$$\begin{aligned} 35 + 49 &= 30 + 40 + 5 + 9 \\ &= 70 + 14 \\ &= 84 \end{aligned}$$

Method B



Method C

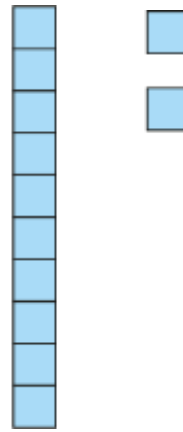
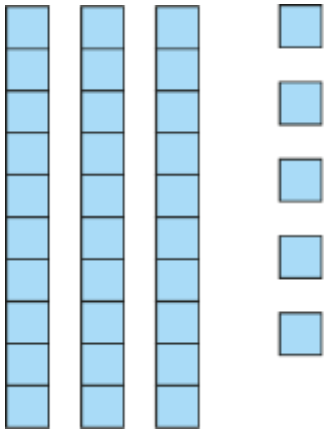


$$\begin{array}{r} 35 \\ 34 \end{array} + 49 = 34 + 50 = 84$$

Calculations

Addition and Subtraction

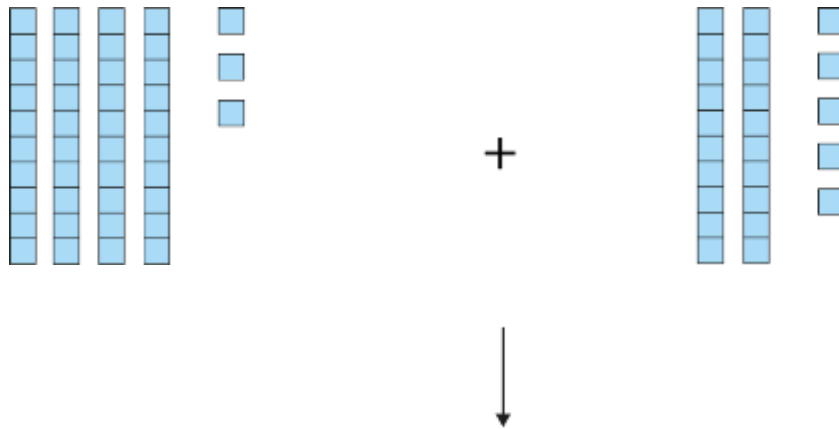
Column addition

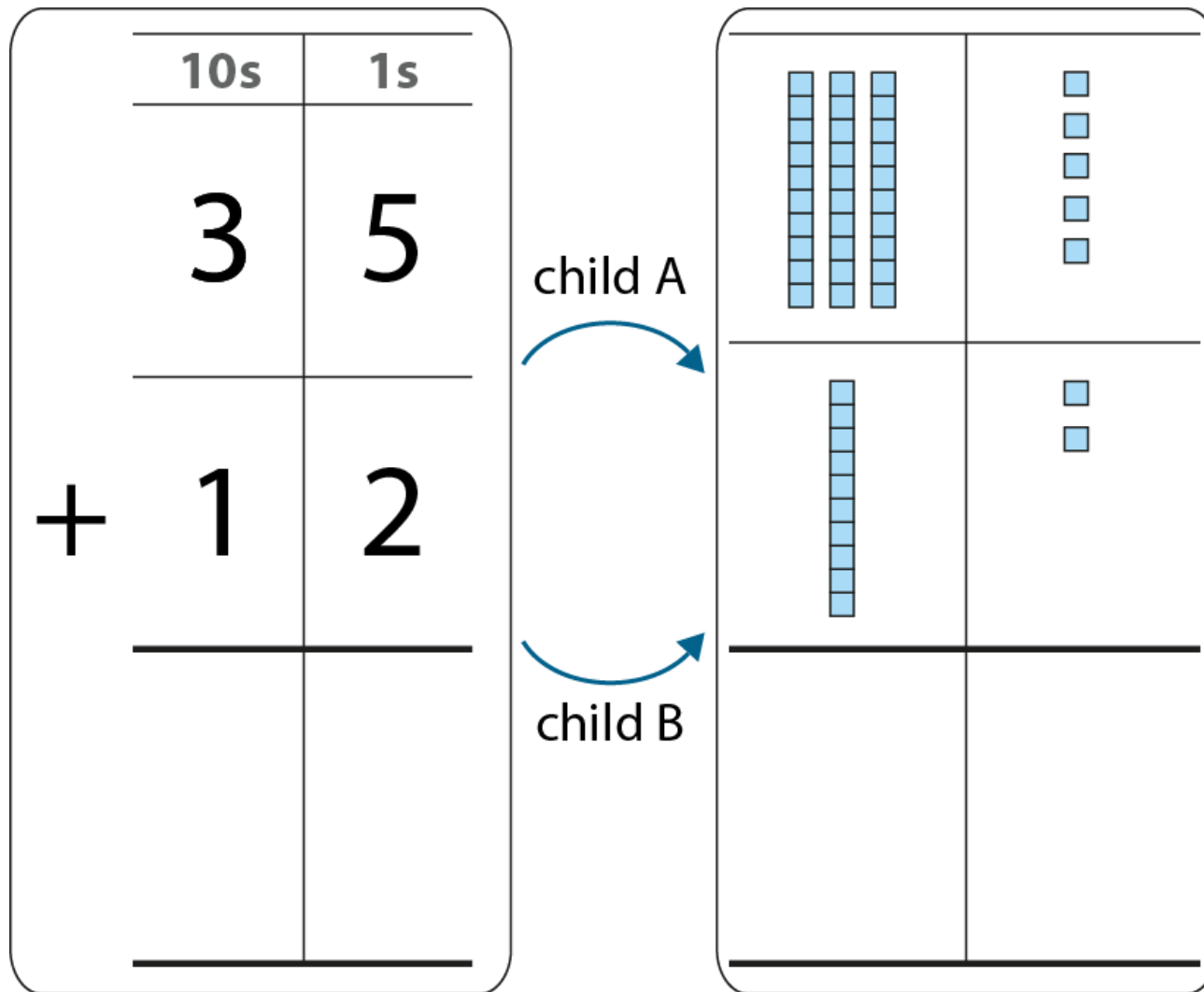


$$\begin{array}{r} 35 \\ + 12 \\ \hline 47 \end{array}$$

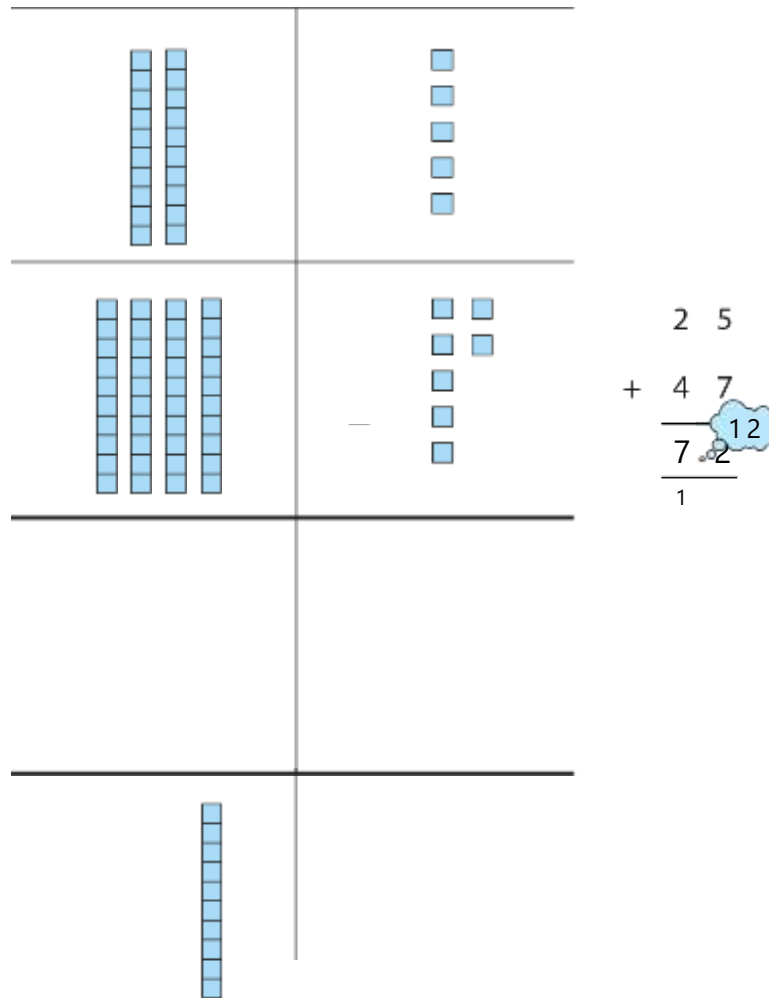


Column addition





Column addition



$$164 + 36$$

$$237 + 156$$

$$349 + 84$$

$$120 + 130$$

Use column addition	Use mental strategies

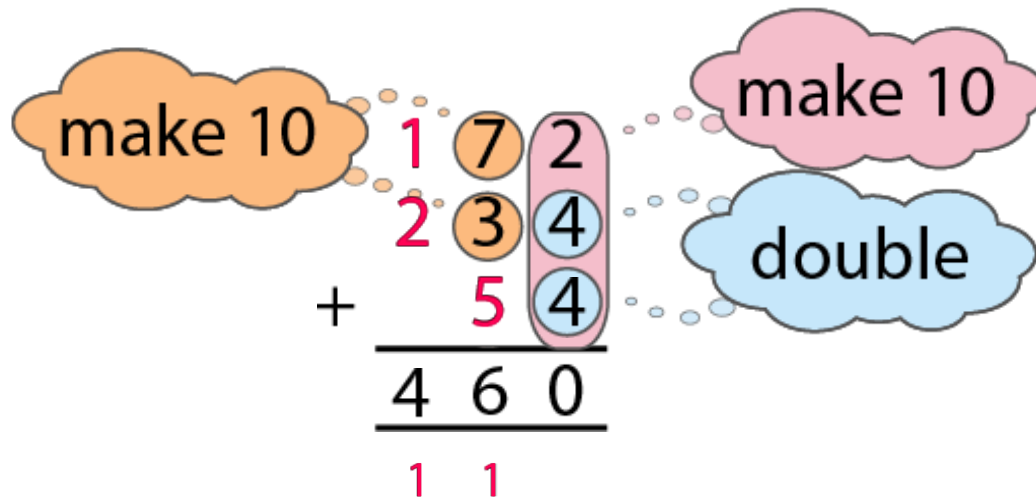
$$416 + 223 + 184 = 823$$

Diagram illustrating column addition for $416 + 223 + 184 = 823$. The numbers are stacked vertically. The first column (ones) has 6, 3, and 4, which sum to 13. A red '1' is written below the 3, and a blue bubble labeled 'make 10' is next to the 4. The second column (tens) has 1, 2, and 8, plus the carry of 1, which sum to 12. A red '1' is written below the 2, and an orange bubble labeled 'make 10' is next to the 8. The third column (hundreds) has 4, 2, and 1, plus the carry of 1, which sum to 8. The final result is 823.

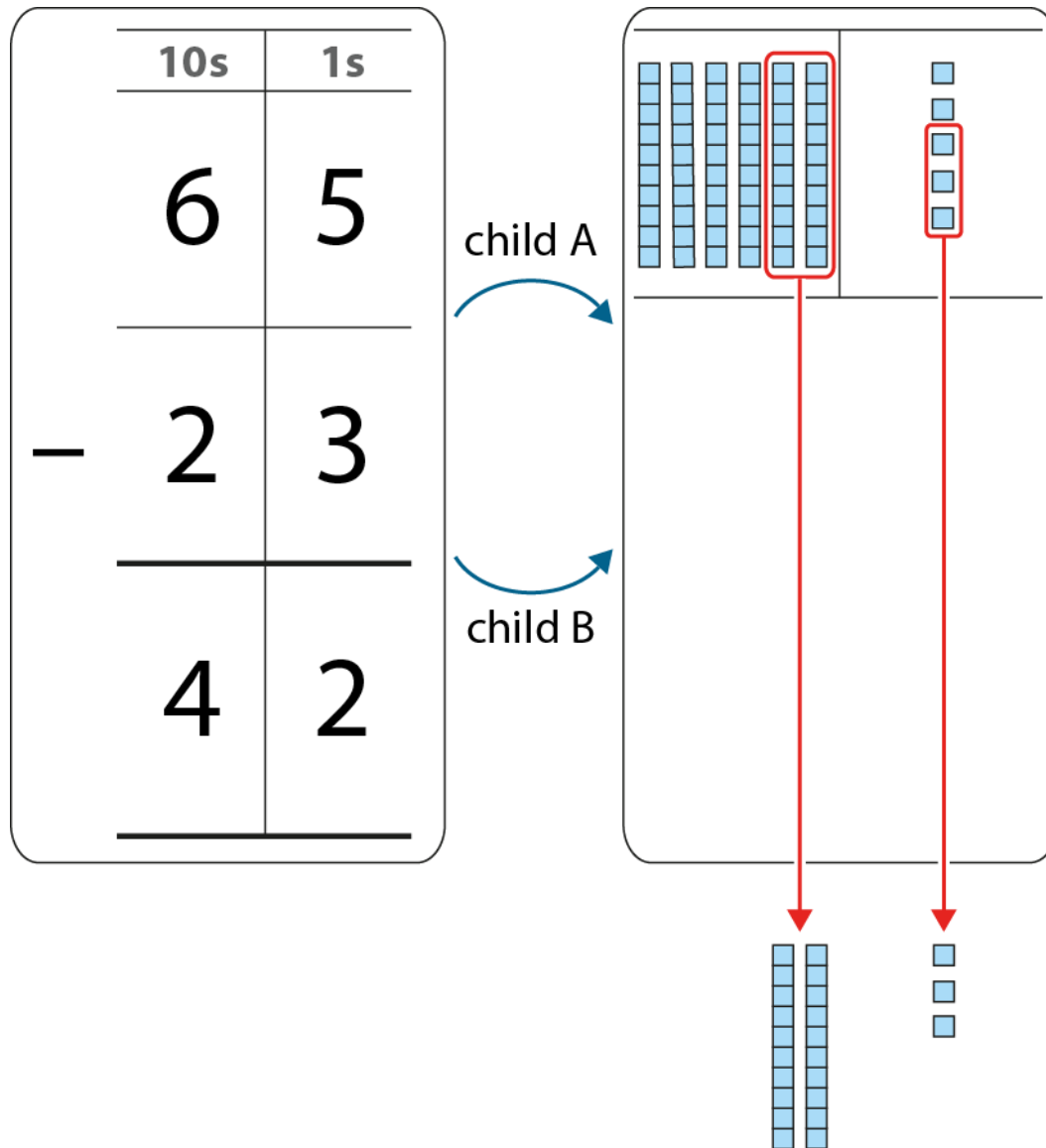
$$15 + 57 + 27 = 99$$

$$\begin{array}{r} 15 \\ 57 \\ + 27 \\ \hline 99 \\ 1 \end{array}$$

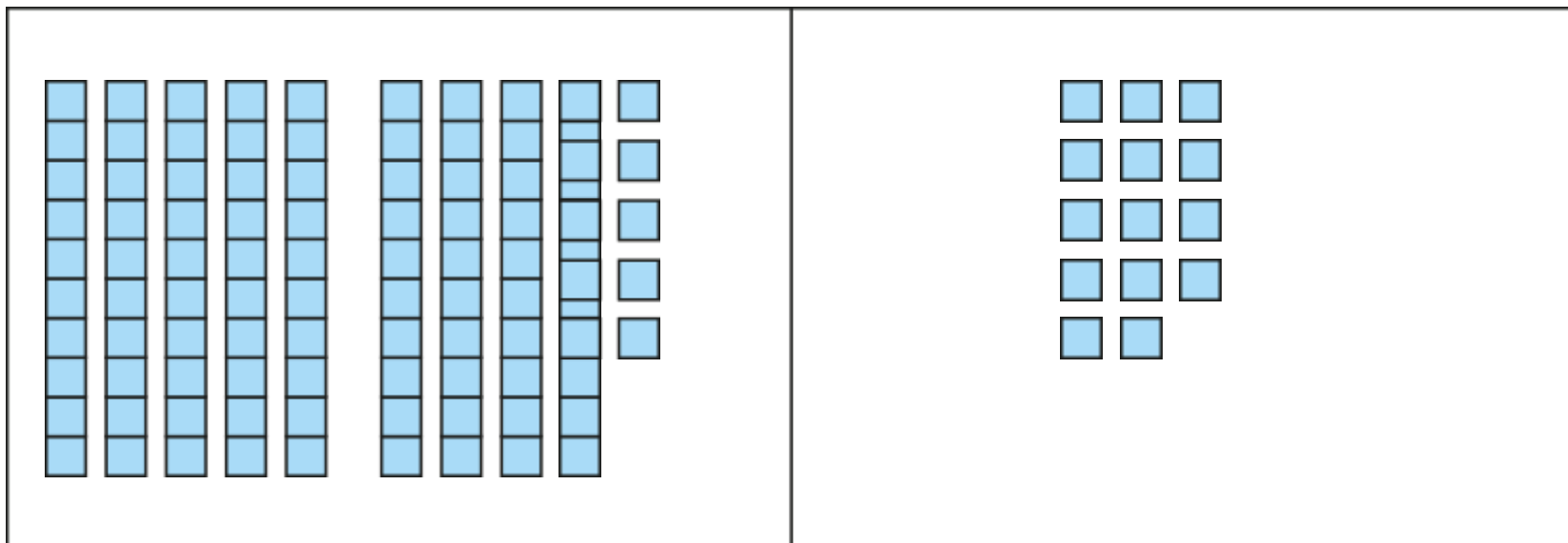
$$172 + 234 + 54 = 460$$



Column subtraction



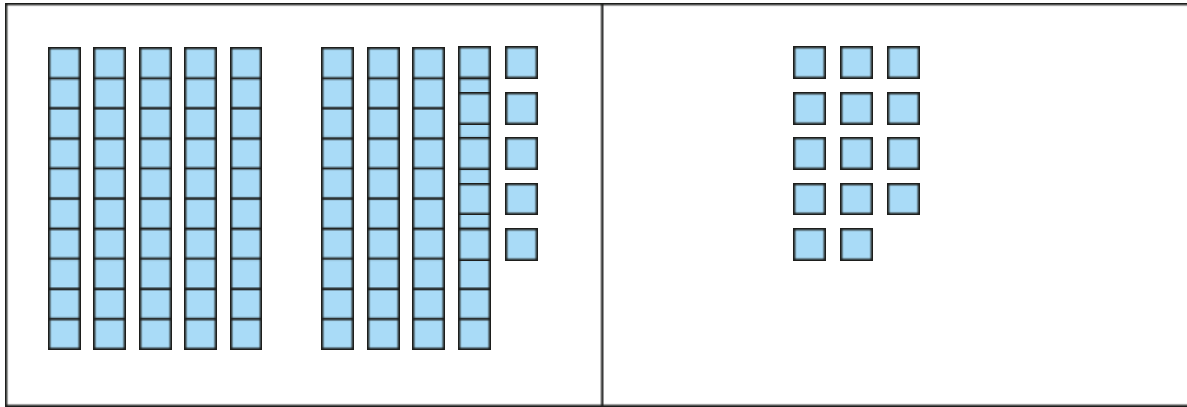
Column subtraction



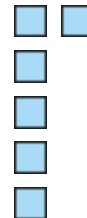
$$94 - 6 = 88$$



Column subtraction

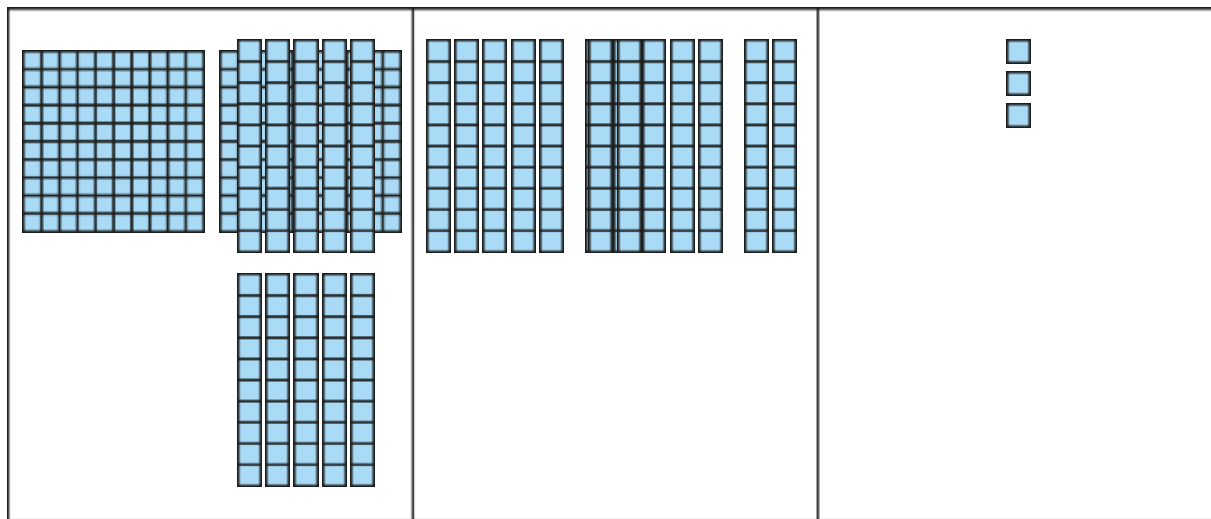


$$94 - 6 = 88$$



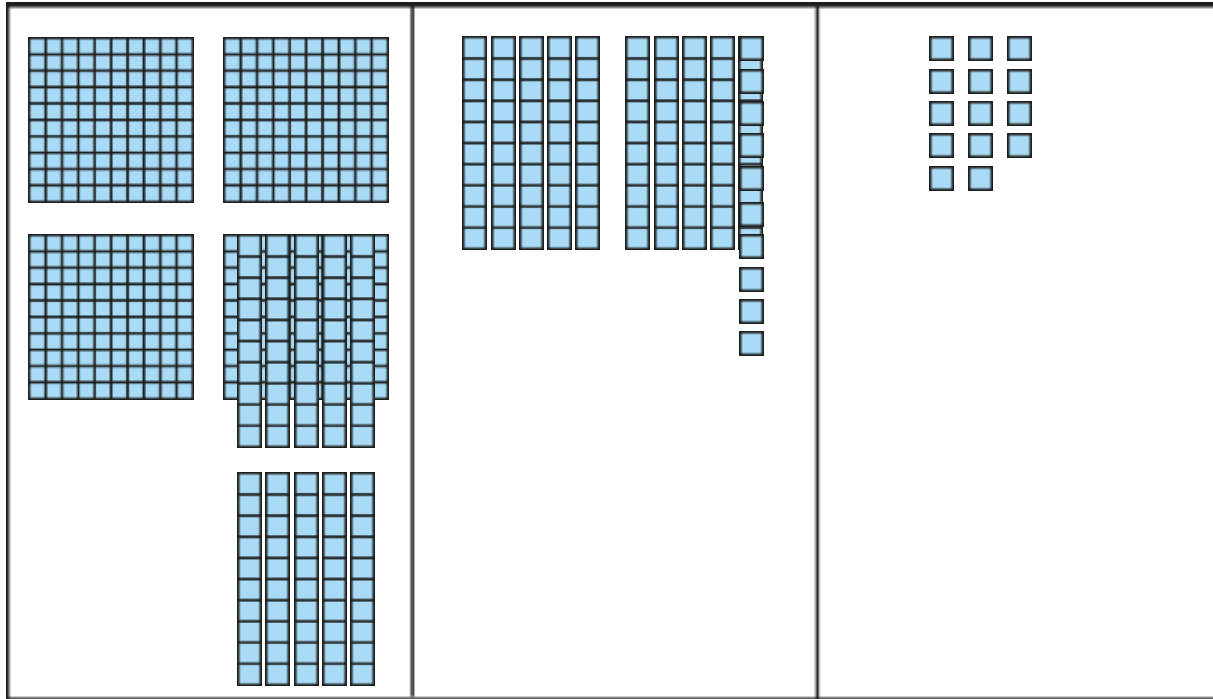
10s	1s
9 8	¹ 4
	6
8	8

Column subtraction

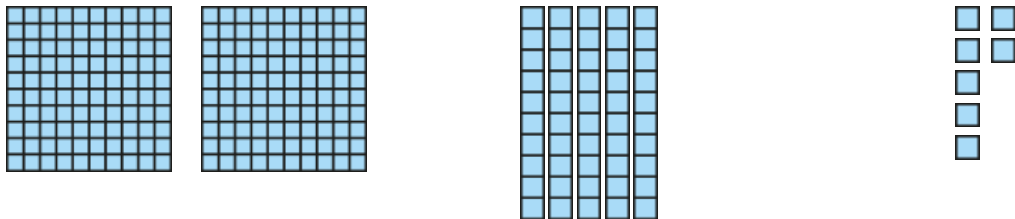


100s	10s	1s
2 ¹	¹ 2	3
1	4	2
0	8	1

Column subtraction



$$\begin{array}{r|c|c}
 100\text{s} & 10\text{s} & 1\text{s} \\
 \hline
 \cancel{4}3 & \cancel{1}09 & 14 \\
 \hline
 - & 2 & 5 & 7 \\
 \hline
 1 & 4 & 7 \\
 \hline
 \end{array}$$

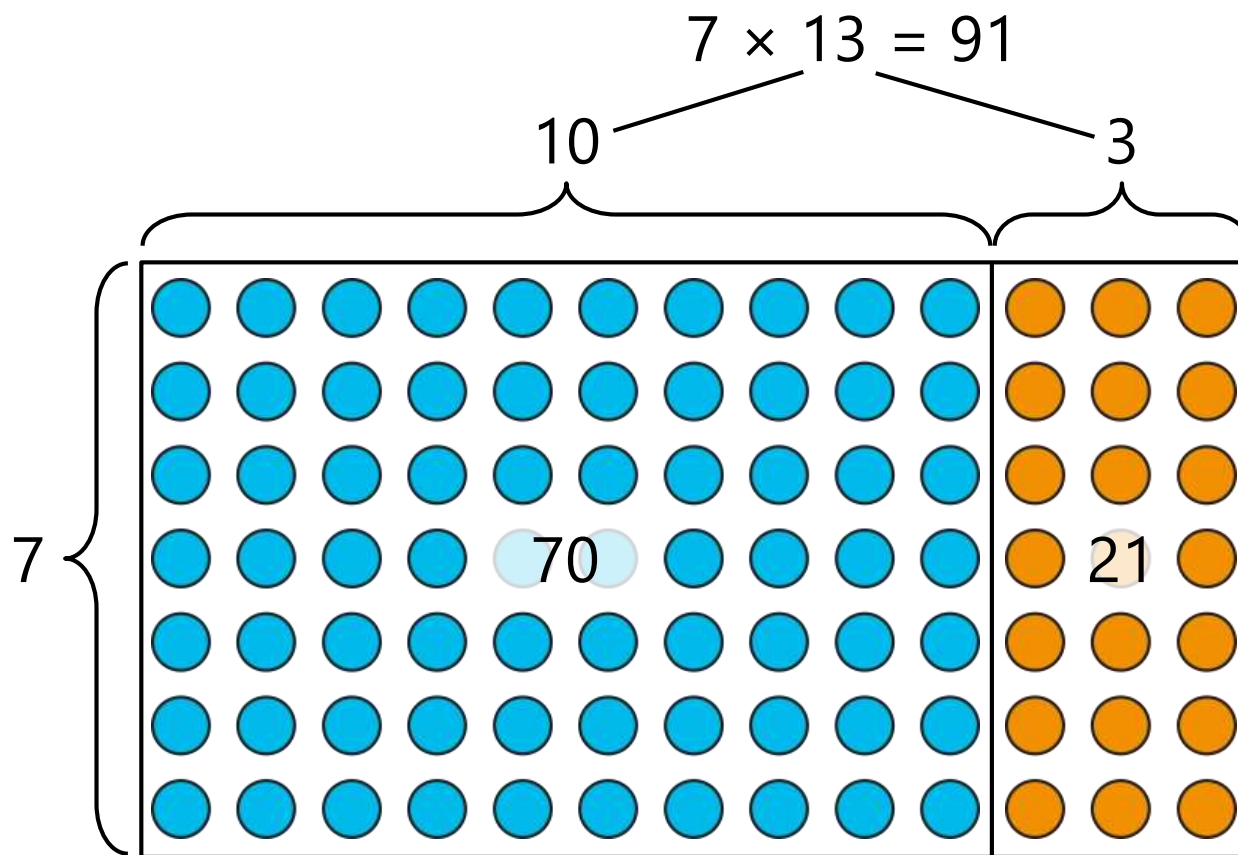


Calculations

Multiplication and Division

Times Tables
FACTS
IS A MUST

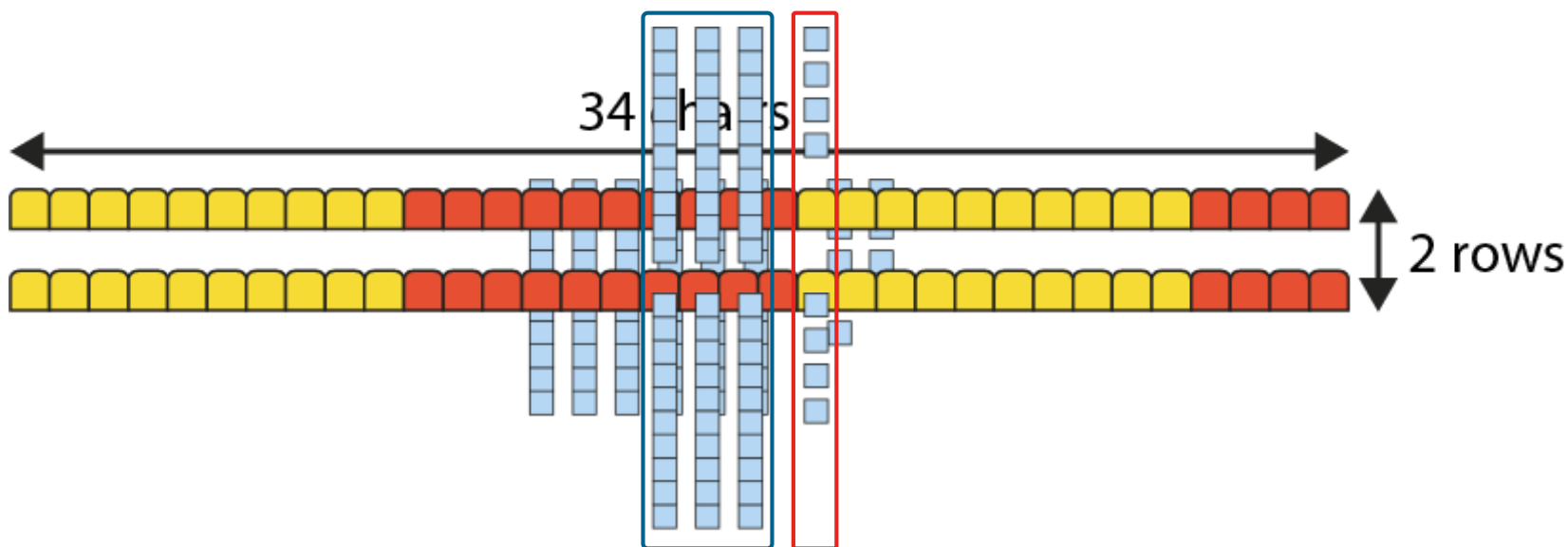
Short multiplication



$$\begin{aligned} 7 \times 13 &= 7 \times 10 + 7 \times 3 \\ &= 70 + 21 \\ &= 91 \end{aligned}$$

Short multiplication

2 rows, each with 34 chairs. How many chairs altogether?



$$\begin{aligned} 34 &= 30 + 4 \\ 34 \times 2 &= 30 \times 2 + 4 \times 2 \\ &= 60 + 8 \\ &= 68 \end{aligned}$$

Short multiplication

Informal written method:

$$\begin{aligned} 34 \times 2 &= 30 \times 2 + 4 \times 2 \\ &= 60 + 8 \\ &= 68 \end{aligned}$$

Expanded multiplication algorithm:

	10s	1s
	3	4
×		2
		8
	6	0
	6	8

$$2 \times 4 \text{ ones} = 8 \text{ ones}$$

$$2 \times 3 \text{ tens} = 6 \text{ tens}$$

1 pack of biscuits costs 84 p. How much do 6 packs cost?

$$\begin{array}{c} 84 \times 6 = \boxed{504} \\ \swarrow \quad \searrow \\ 80 \quad 4 \end{array}$$

$$80 \times 6 = 480$$

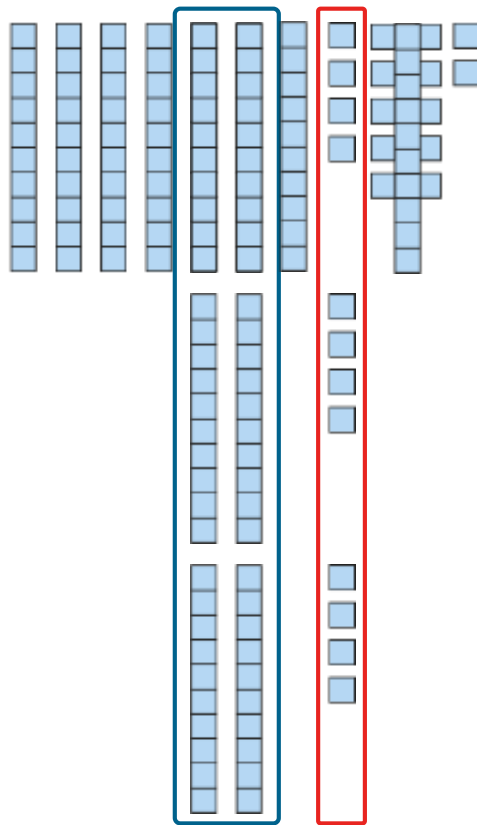
$$4 \times 6 = 24$$

$$480 + 24 = 504$$

6 packs cost 504 p.

Short multiplication

3 rows, each with 24 chairs. How many chairs altogether?



10s	1s
2	4
<hr/>	
	3
<hr/>	
1	2
<hr/>	
6	0
<hr/>	
7	2
<hr/>	

$$3 \times 4 \text{ ones} = 12$$

$$\text{ones} = 1 \text{ ten} + 2 \text{ ones}$$

$$3 \times 2 \text{ tens} = 6 \text{ tens}$$

Short multiplication

	10s	1s
	2	4
×		3
	7	2
	1	

$$3 \times 4 \text{ tens} = 12 \text{ tens}$$

$$6 \text{ tens} + 1 \text{ ten} = 7 \text{ tens}$$

Write "7" below the tens column
and "2" in the ones column.

You need multiplication facts to divide

Multiplication & Division

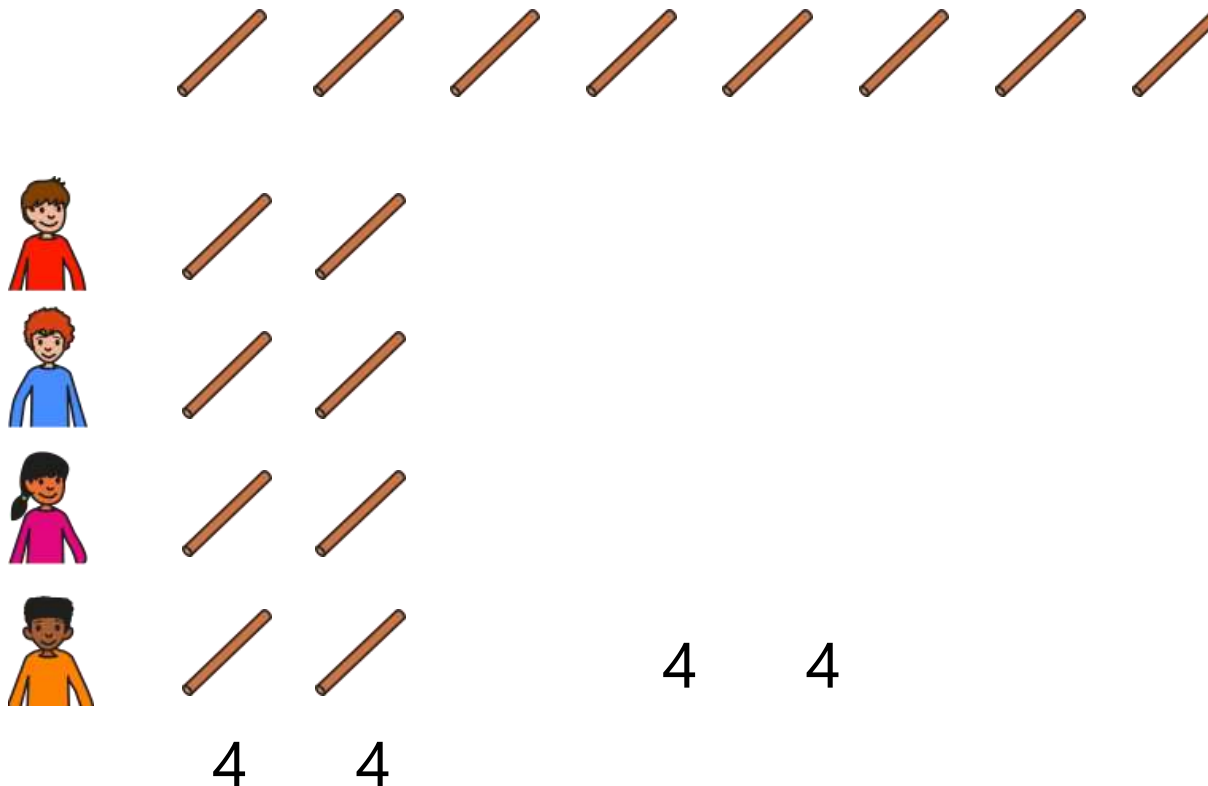
$$7 \times 3 = 7 + 7 + 7 = 21$$

$$\begin{array}{r} 25 \\ \times 15 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \\ \times 42 \\ \hline \end{array}$$

$$\begin{array}{r} 35 \\ 3 \overline{) 105} \\ \underline{- 9} \\ 15 \\ \underline{- 15} \\ 0 \end{array}$$

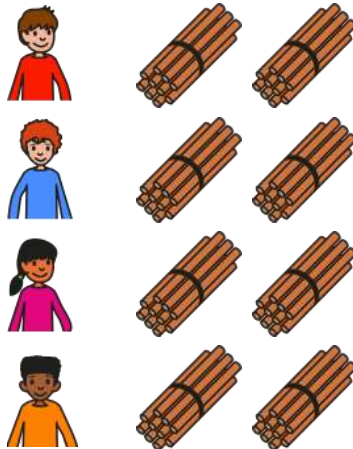
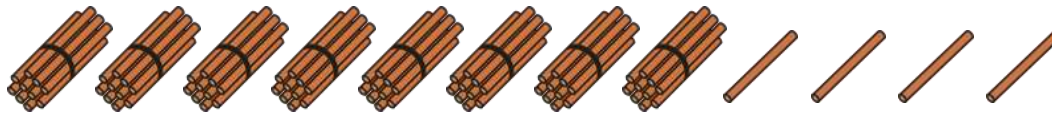
8 sticks shared equally between 4 children.
How many sticks each?



$$8 \div 4 = \boxed{2}$$

84 sticks shared equally between 4 children. How many sticks each?

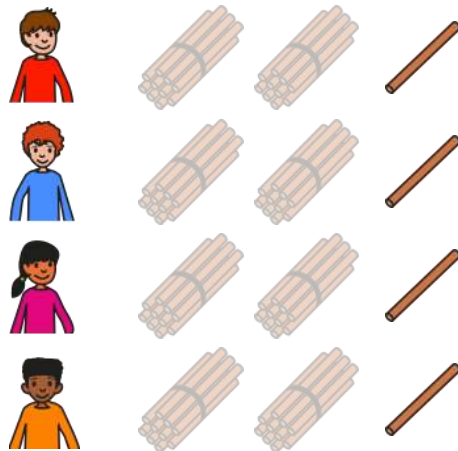
$$84 \div 4 = \square$$



$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \square$$

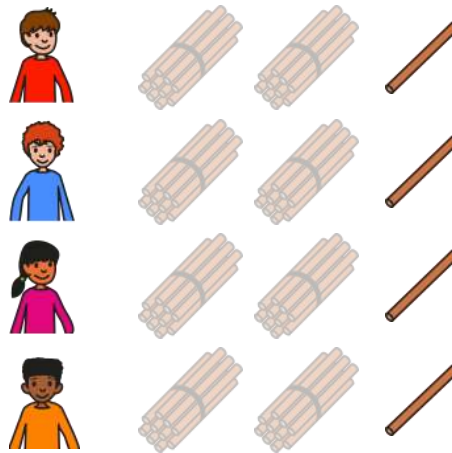


$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

$$4 \text{ ones} \div 4 = 1 \text{ one}$$

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \boxed{21}$$



$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

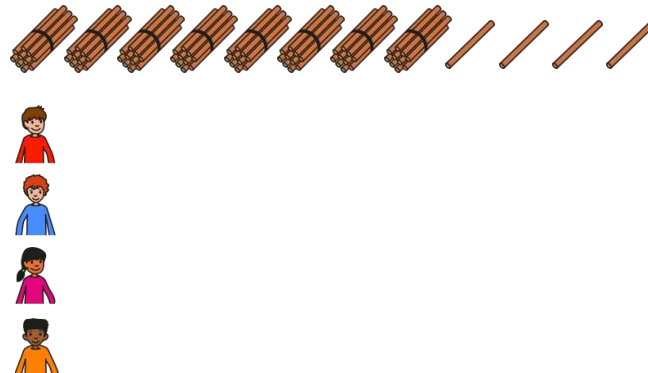
$$4 \text{ ones} \div 4 = 1 \text{ one}$$

$$84 \div 4 = 21$$

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \square$$

Step 1 – write the divisor and dividend:



10s 1s

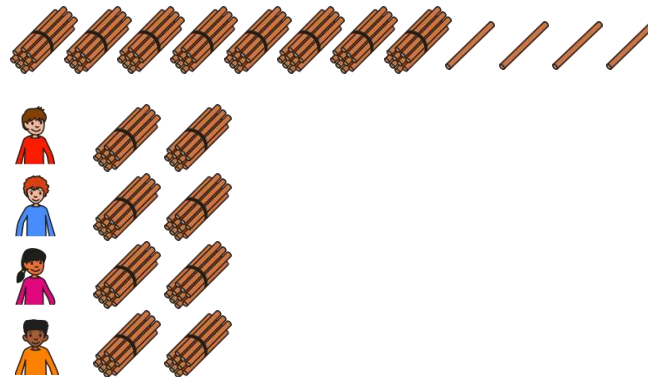
$$\begin{array}{r} 4 \overline{) 84} \end{array}$$

84 divided by 4.

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \square$$

Step 1 – Step 2 the division on a 10s dividend:



10s 1s

$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

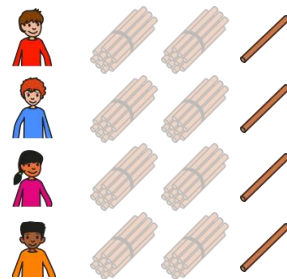
$$\begin{array}{r} 4 \overline{) 84} \end{array}$$

8 tens divided by 4 is equal to 2 tens.

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \square$$

Step 2—share the 10s:



10s 1s

$$\begin{array}{r} 2 \\ 4 \overline{) 84} \end{array}$$

$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

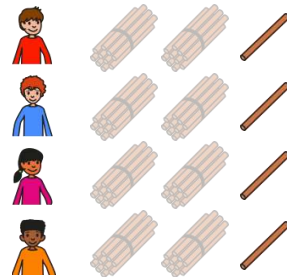
$$4 \text{ ones} \div 4 = 1 \text{ one}$$

8 tens divided by 4 is equal to 2 tens.

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \square$$

Step 3 ~~Summarise~~ the 1s:



10s 1s

$$\begin{array}{r} 2 \quad 1 \\ 4 \overline{) 84} \end{array}$$

$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

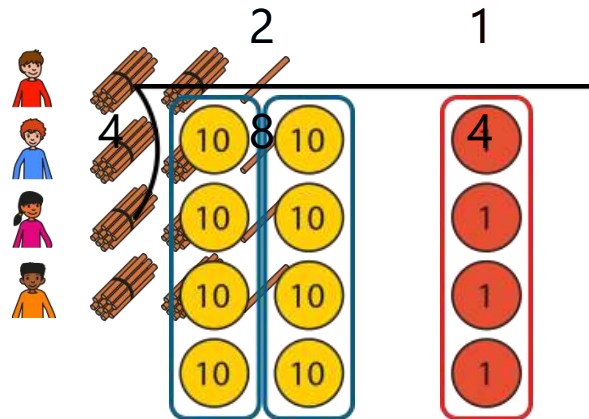
$$4 \text{ ones} \div 4 = 1 \text{ one}$$

4 ones Each child gets 21 sticks. 1 one.

84 sticks shared equally between 4 children. How many sticks each?

$$84 \div 4 = \boxed{21}$$

Summary
10s **1s**



$$\begin{array}{r} 21 \\ 4 \overline{) 84} \end{array}$$

$$8 \text{ tens} \div 4 = 2 \text{ tens}$$

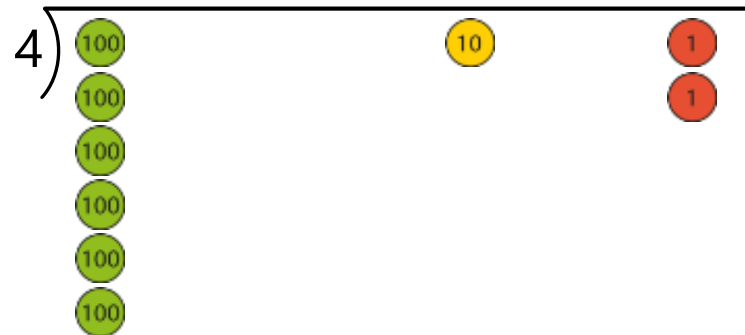
$$4 \text{ ones} \div 4 = 1 \text{ one}$$

Each child gets 21 sticks.

$$612 \div 4 = \boxed{}$$

Step 1 – writing the divisor and the dividend:

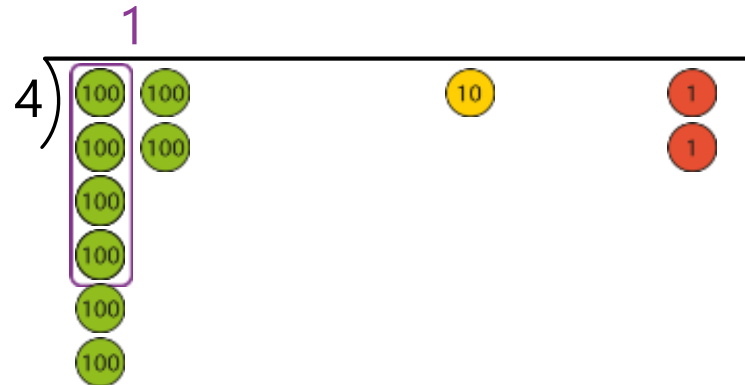
$$4 \overline{) 612}$$



$$612 \div 4 = \boxed{}$$

Step 1 – writing the dividend: Step 2 – sharing the 100s:

$$\begin{array}{r} 1 \\ 4 \overline{) 612} \end{array}$$

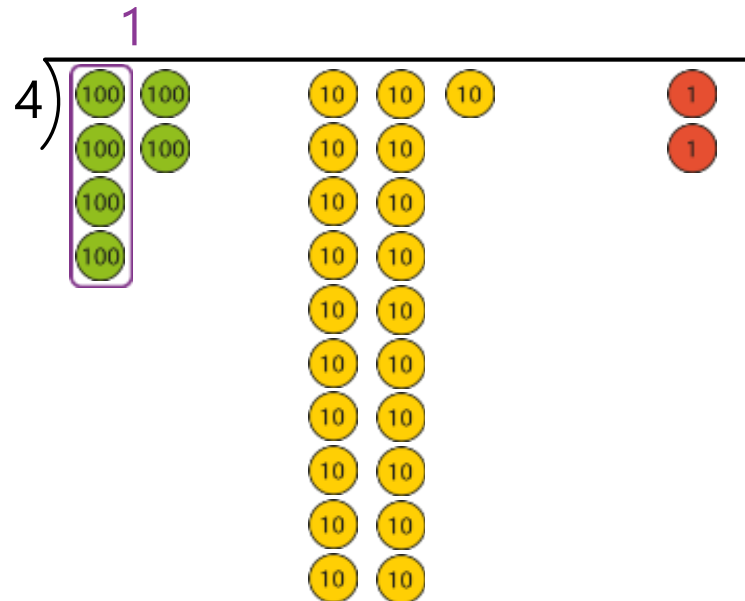


6 hundreds \div 4 = 1 hundred r 2 hundreds

$$612 \div 4 = \boxed{}$$

Step 2 – showing the 100s:

$$\begin{array}{r} 1 \\ 4 \overline{) 612} \end{array}$$

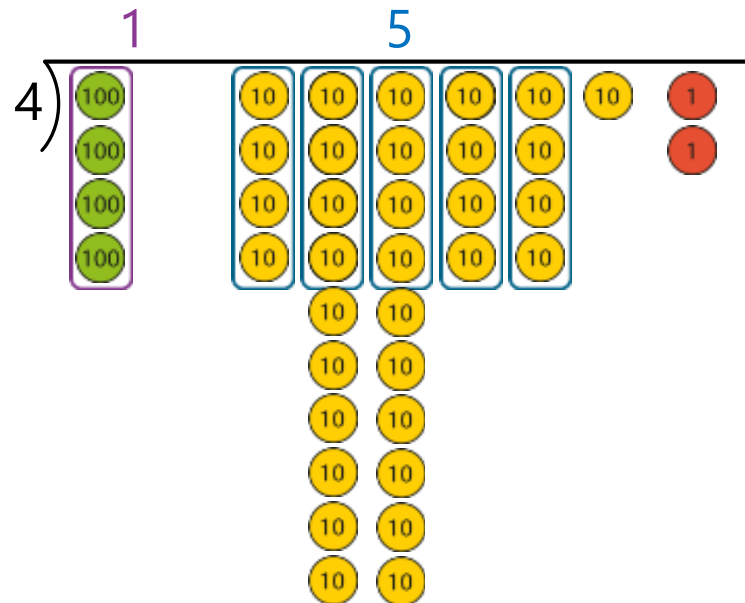


6 hundreds $\div 4 = 1$ hundred r 2 hundreds
2 hundreds = 20 tens

$$612 \div 4 = \boxed{}$$

Step 3 sharing the 10s:

$$\begin{array}{r} 1 \quad 5 \\ 4 \overline{) 612} \end{array}$$



6 hundreds $\div 4 = 1$ hundred r 2 hundreds

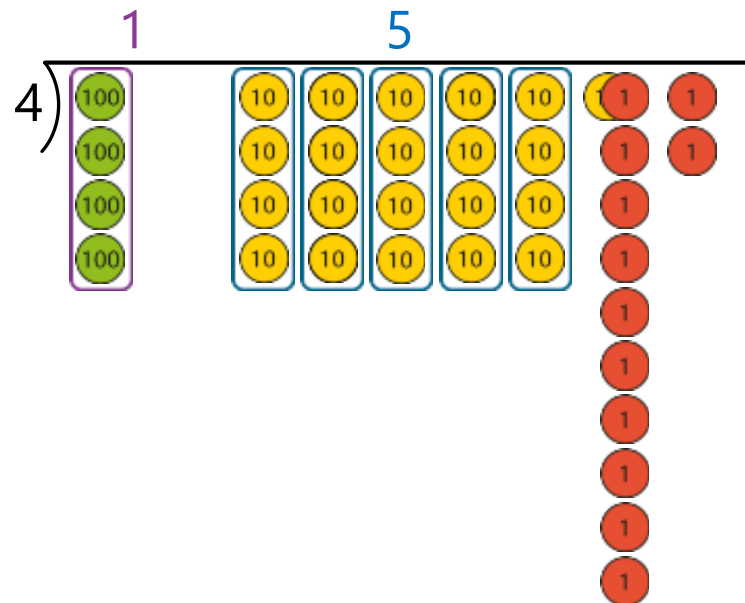
2 hundreds = 20 tens

21 tens $\div 4 = 5$ tens r 1 ten

$$612 \div 4 = \boxed{}$$

Step 4 5 sharing the tens:

$$\begin{array}{r} 1 \quad 5 \\ 4 \overline{) 612} \end{array}$$



6 hundreds $\div 4 = 1$ hundred r 2 hundreds

2 hundreds = 20 tens

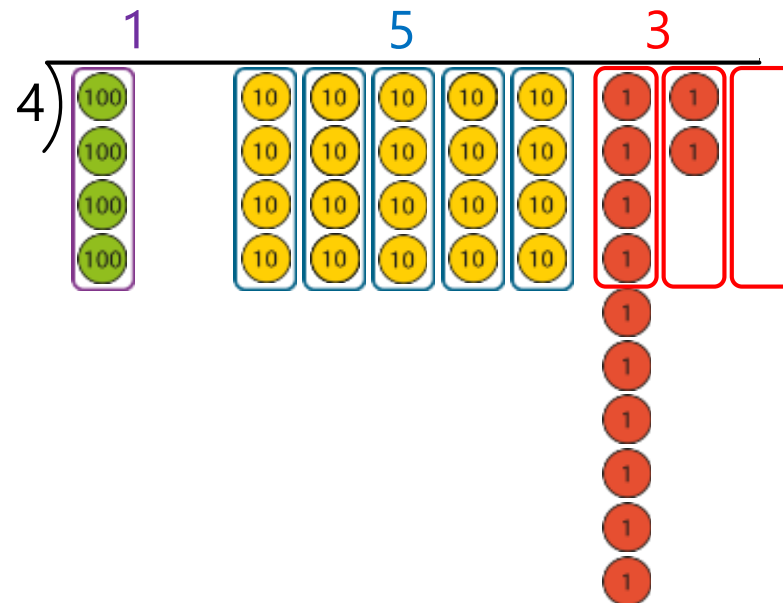
21 tens $\div 4 = 5$ tens r 1 ten

1 ten = 10 ones

$$612 \div 4 = \boxed{153}$$

Step 5 - sharing out:

$$\begin{array}{r} 1 \quad 5 \quad 3 \\ 4 \overline{) 612} \end{array}$$



6 hundreds $\div 4 = 1$ hundred r 2 hundreds

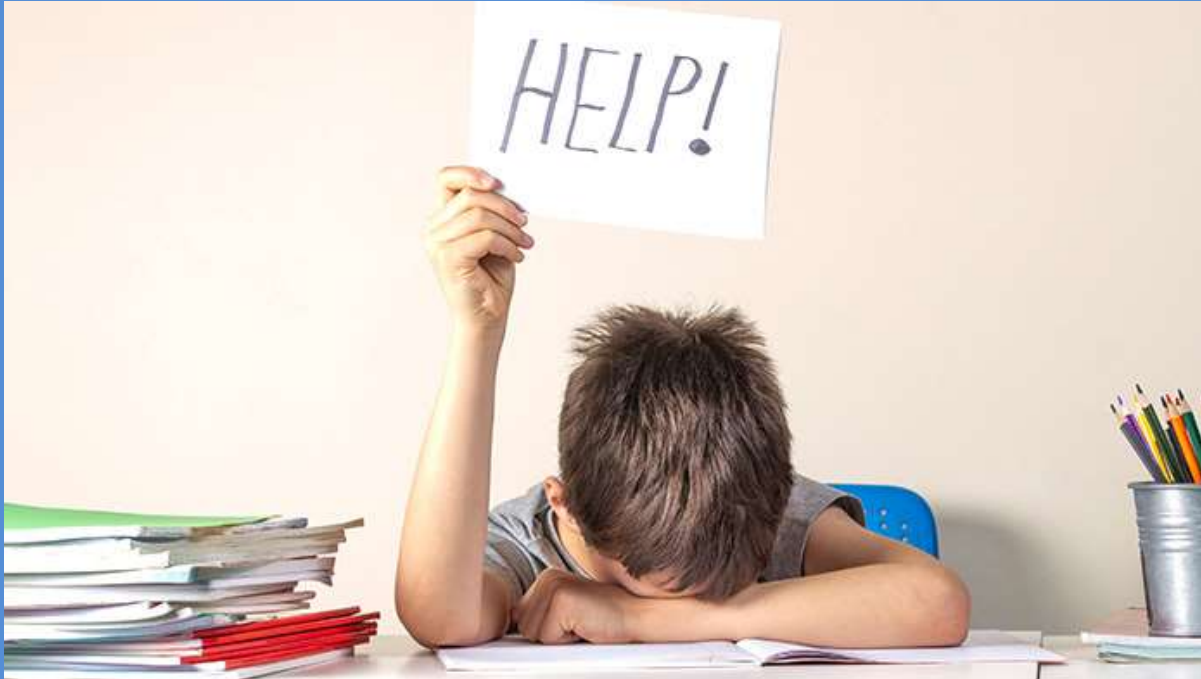
2 hundreds = 20 tens

21 tens $\div 4 = 5$ tens r 1 ten

1 ten = 10 ones

12 ones $\div 4 = 3$ ones

We are done !!!



Brain Freeze

I want to go home!!!!!!

Please check our Calculation Policy [Calculation Policy](#)

Sumdog - logins set up for children

<https://www.sumdog.com/en/>

TTRS Rockstars – multiplication focus

<https://ttrackstars.com/>

Froggy Club – number facts 5minute challenges

<https://www.our-ladys.hereford.sch.uk/froggy-maths-club/>

Topmarks - various games

<https://www.topmarks.co.uk/maths-games/7-11-years/mental-maths>

NRICH – more challenging thinking <https://nrich.maths.org/primary>

Thank you for listening

Questions...

