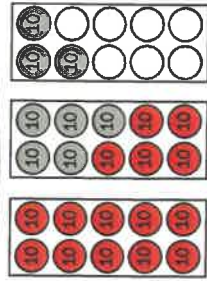


8 + 7, 9 + 9, 14 + 3
Number facts
Single digit numbers
Doubles
Tens to make 100

I just knew it!

$$150 + 80$$

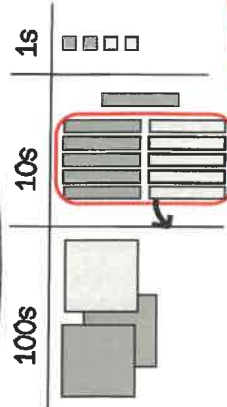
Bridging boundaries



$$\begin{array}{r} 150 \\ +50 \\ \hline 200 \\ +30 \\ \hline 230 \end{array}$$

$$262 + 152$$

Formal written method

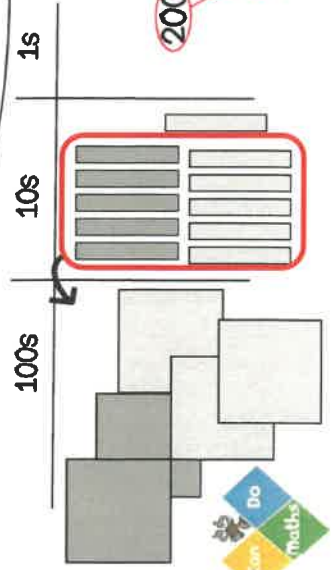


$$\begin{array}{r} 262 \\ +152 \\ \hline 414 \end{array}$$

6 tens add 5 tens
= 11 tens or 110

$$250 + 360$$

Partition and recombine



$$200 + 50 + 300 + 60 = 500 + 110 = 610$$

How shall I add?

243 + 7
Use known facts
300 + 700

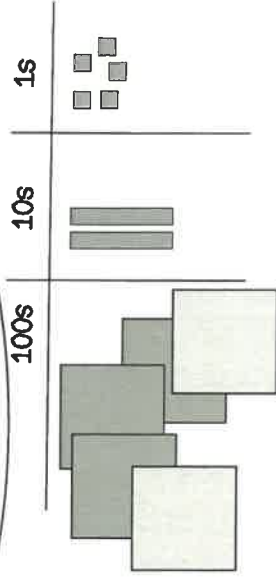
If I know 3 + 7 = 10
then I know
3 hundreds + 7 hundreds
= 10 hundreds

If I know 3 + 7 = 10
then I know
243 + 7 makes the
next multiple of 10



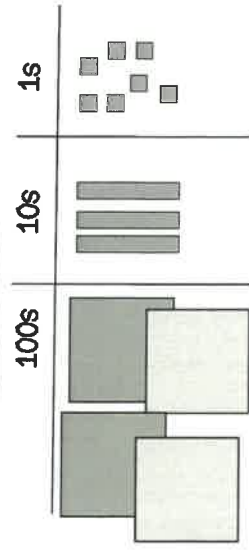
$$325 + 200$$

Add multiples of ten and hundred



$$\begin{array}{r} 325 \\ +200 \\ \hline 525 \end{array}$$

237 + 199
Round then adjust



Add 200 then subtract 1

$$\begin{array}{r} 237 \\ +200 \\ \hline 437 \\ -1 \\ \hline 436 \end{array}$$

235 + 250
Count on in hundreds then tens

$$\begin{array}{r} 235 \\ +200 \\ \hline 435 \\ +50 \\ \hline 485 \end{array}$$

If I know 3 + 2 = 5
then I know
3 hundreds + 2 hundreds
= 5 hundreds

15 - 8, 18 - 5

Number facts

Single digit numbers

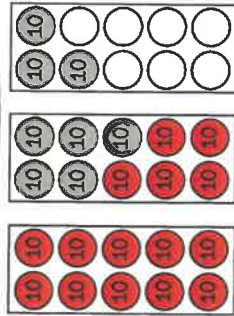
Teens and single digits

I just knew it!

230 - 80

Bridging boundaries

by counting back in efficient steps



$$230 - 30 - 50 = 150$$

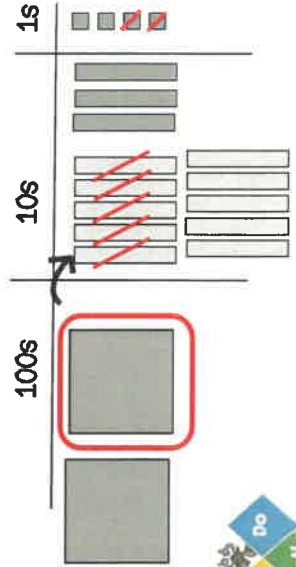


234 - 152

Formal written method

$$\begin{array}{r} 234 \\ -152 \\ \hline 182 \end{array}$$

$$234 = 100 + 130 + 4$$



240 - 7

Use known facts

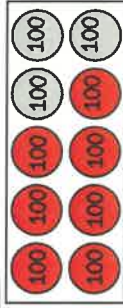
1000 - 700

If I know $10 - 7 = 3$

then I know

10 hundreds - 7 hundreds

= 3 hundreds



$$30 - 7 = 3$$

If I know $10 - 7 = 3$

then I know

any multiple of 10,

take away 7 leaves

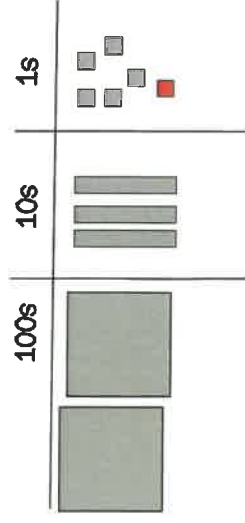
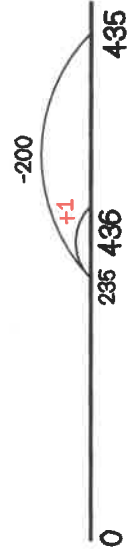
3 in the ones.

How shall I subtract?



$$435 - 199$$

Round then adjust

Take away 200 then **add 1**

$$335 - 326$$

Find the difference

between two numbers

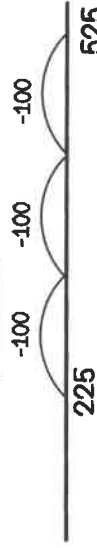
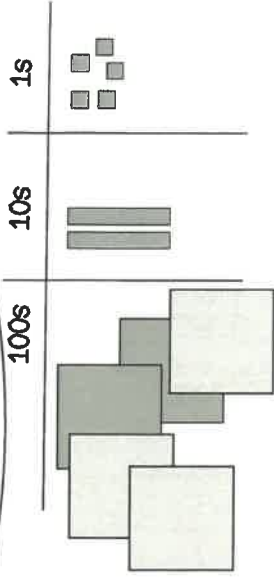
335 is 9 more than 326
326 is 9 less than 335
so the difference between
them is 9



$$525 - 300$$

Take away multiples of ten

and a hundred

If I know $5 - 3 = 2$

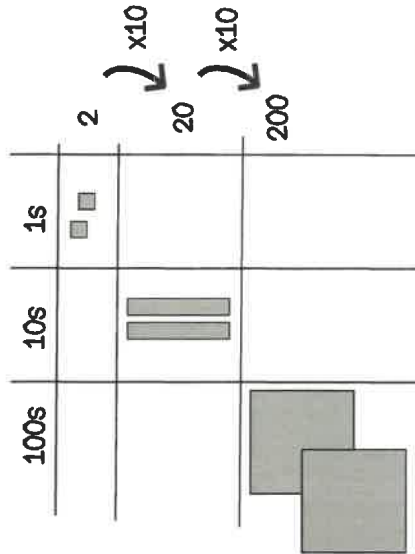
then I know

5 hundreds - 3 hundreds

= 2 hundreds

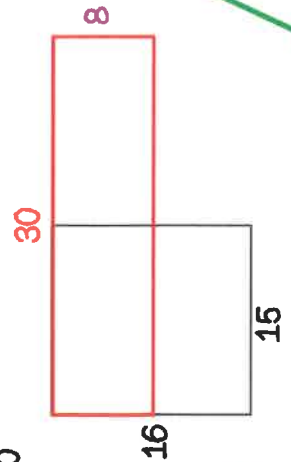
Rapid recall of
2x, 5x, 10x (year 2)
3x, 4x, 8x (year 3)
multiplication tables

Multiply by 10



15 x 16
Double and halve

$$\begin{aligned}
 15 \times 16 &= 15 \times 2 \times 8 \div 2 \\
 &= 30 \times 8 \\
 &= 10 \times 3 \times 8 \\
 &= 10 \times 24 \\
 &= 240
 \end{aligned}$$

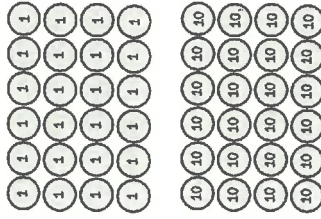


6 x 4
Use known facts
and place value

$$\begin{aligned}
 6 \times 4 &= 24 \\
 60 \times 4 &= 240 \\
 6 \times 40 &= 240
 \end{aligned}$$

$$\begin{aligned}
 6 \times 10 \times 4 &= 24 \times 10 \\
 &= 240
 \end{aligned}$$

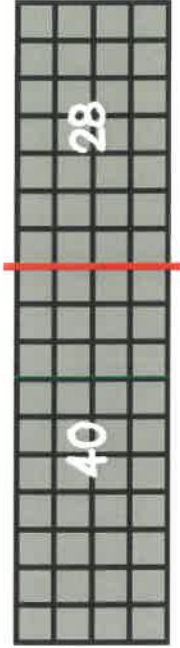
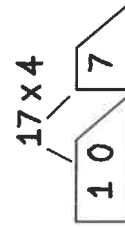
40 is ten times
greater than 4



How shall I multiply?

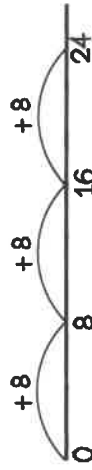
17 x 4
Partition and recombine

$$\begin{aligned}
 10 \times 4 + 7 \times 4 \\
 40 \times 28 = 68
 \end{aligned}$$



8 x 3
Repeated addition

$$\begin{aligned}
 8 + 8 + 8 &= \\
 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3
 \end{aligned}$$



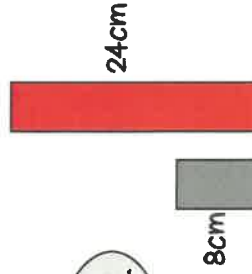
Arrays

If I know 3×8
then I know 8×3



Scaling

The red tower is
3 times taller
than the grey tower



17 x 4
Formal written method

$$\begin{array}{r}
 17 \\
 \times 4 \\
 \hline
 68 \\
 \hline
 \end{array}$$

10	7
4	28

Known facts:

Use 2x, 5x, 10x (year 2)
3x, 4x, 8x (year 3)
derive division facts

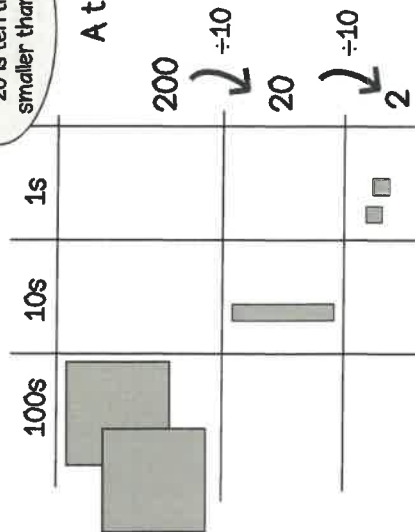
$24 \div 4$
Use known facts
and place value

240 is ten times
greater than 24

$$\begin{aligned} 24 \div 4 &= 6 \\ 240 \div 40 &= 6 \\ 240 \div 4 &= 60 \end{aligned}$$

$200 \div 10$
Divide by 10

$200 \div 10 = 20$ so
20 is ten times
smaller than 200

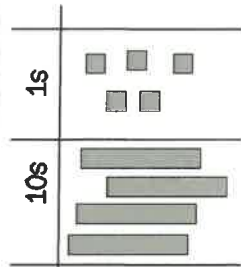


A tenth of $\square$ is $\square$

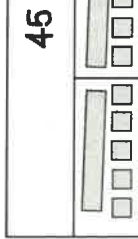
A tenth of 1 is 1 tenth
so $1 \div 10 = \frac{1}{10}$

How shall I divide?

$45 \div 3$
Sharing equally



Ten for you,
ten for you,
ten for you...



Link to fractions

$$52 \div 4$$

Partition and recombine

ten lots and the rest

$$\begin{array}{r} 52 \div 4 \\ 40 \quad 12 \\ \div 4 \quad \div 4 \\ 10 \quad + \quad 3 = 13 \end{array}$$

If there are half as many
biscuits and half as many
people...

Double and halve

$$42 \div 6 = 21 \div 3$$

7	7	7	7	7	7	42
7	7	7	7	7	21	
7	7	7	7	7	7	7

$$10 \times 4 \quad 3 \times 4$$

