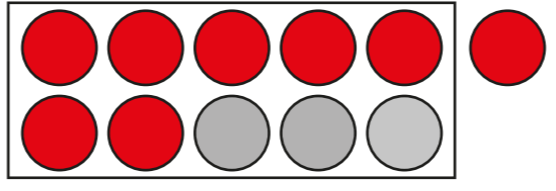4 + 1, 6 + 3, 10 + 4
Number facts
Single digit numbers
Doubles
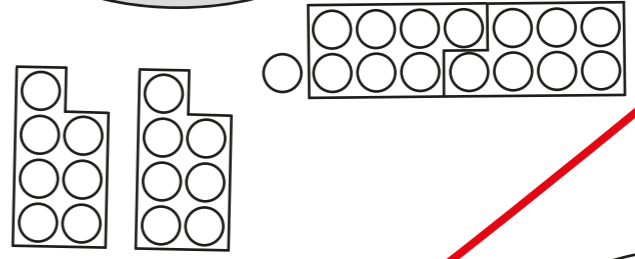Ten and single digits

I just knew it!

3 + 7
Use known addition facts

If I know 3 + 7 = 10
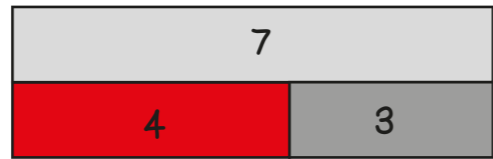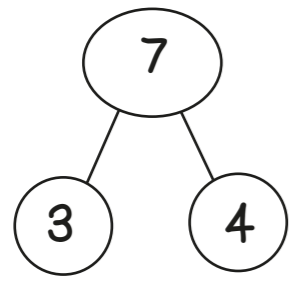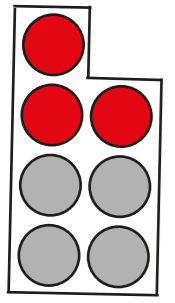then I know
3 + 8 = 11
because it is 1 more

7 + 8
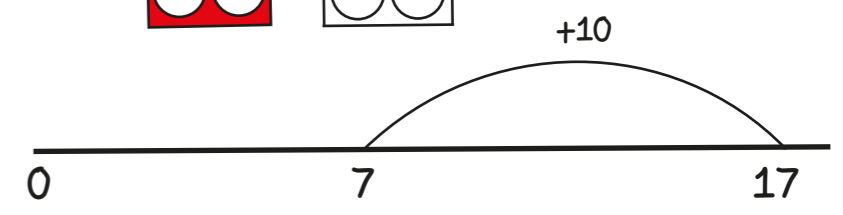Use near doubles

If I know 7 + 7 = 14
then I know
7 + 8 = 15
because it is 1 more

7 = 3 + 4
Secure addition bonds of
single digits and ten

7
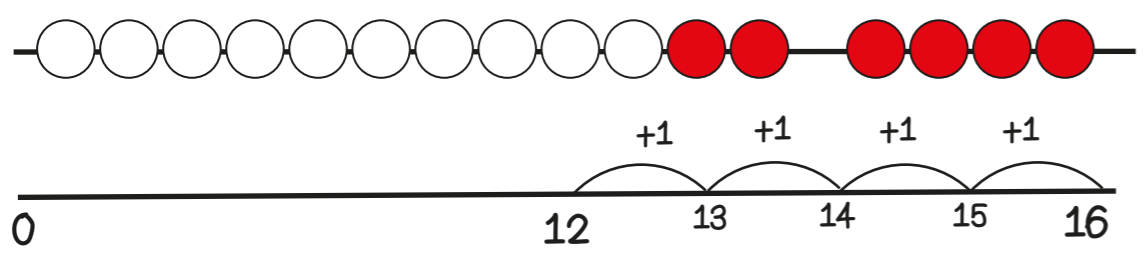
7

3   4

7
4   3

How shall I add?

7 + 10
Add ten

+10

0   7   17
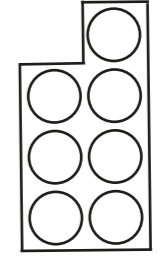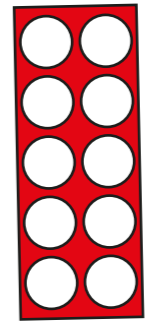
12 + 4
Counting on in 1s

+1   +1   +1   +1

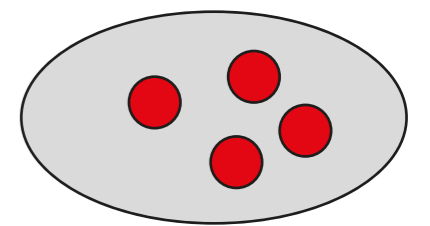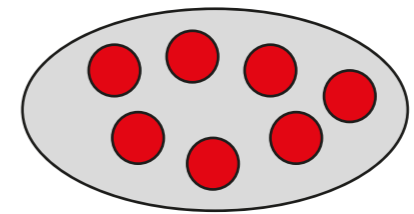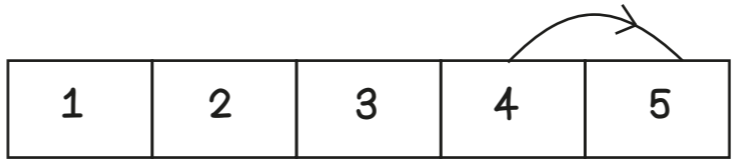0   12   13   14   15   16

Notice the relationships

24 + 1
Find one more

1 more than 4 is 5
1 more than 14 is 15
1 more than 24 is 25

1   2   3   4   5

7 + 4
Count all

Can Do maths

How shall I subtract?
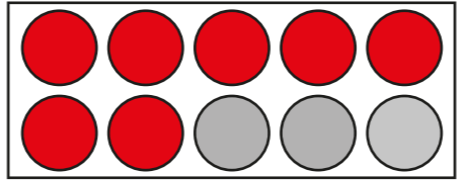
5 - 1, 7 - 3, 10 - 6
Number facts
Single digit numbers
Teens subtract single digits

I just knew it!

3 + 7
Use known addition facts
to derive subtraction facts

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

9 - 7
Find the difference between
two numbers

9 is 2 more than 7
7 is 2 less than 9 so
the difference
between 7 and 9 is 2

+1 +1
0   7   8   9
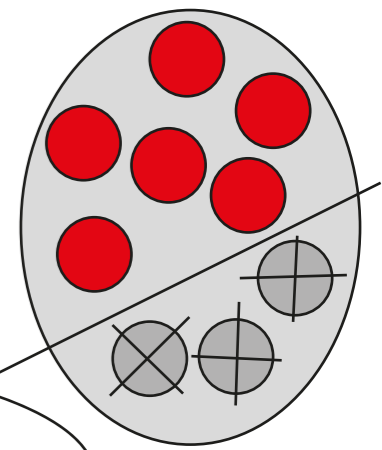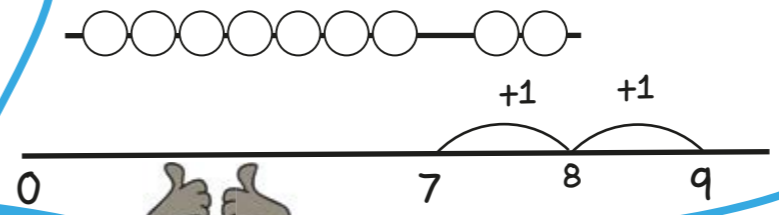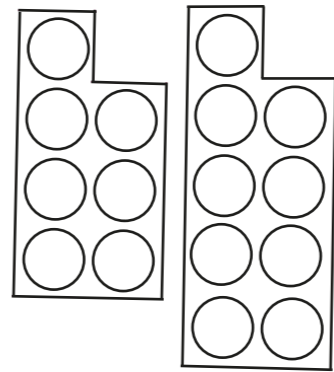
7 - 3 = 4
Secure subtraction facts of
single digits and ten

7	
4	3

7
3   4
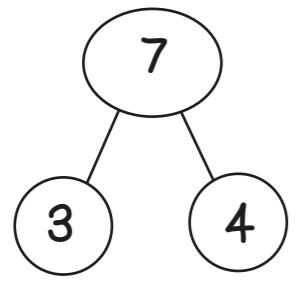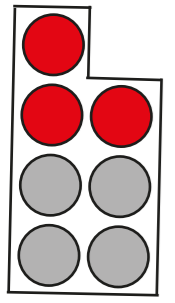
9 - 3
Take away

16 - 4
Counting back in 1s

-1   -1   -1   -1
0   12 13 14 15 16
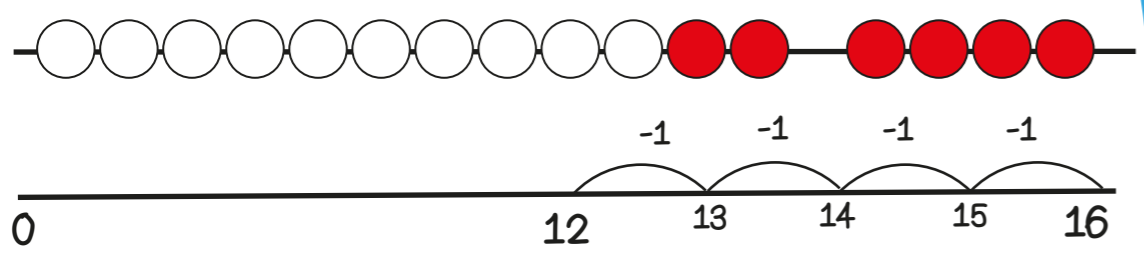
Notice the relationships

23 - 1
Find one less

1 less than 4 is 3
1 less than 14 is 13
1 less than 24 is 23

1	2	3	4	5

17 - 10
Take away ten

-10
0   7   17

Can Do Maths

© Liz Hopkins
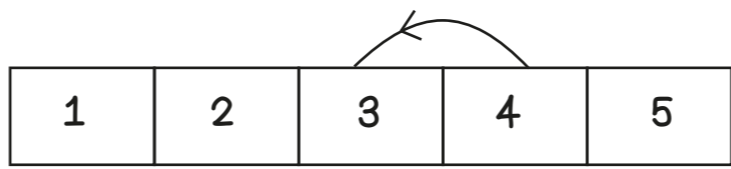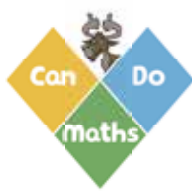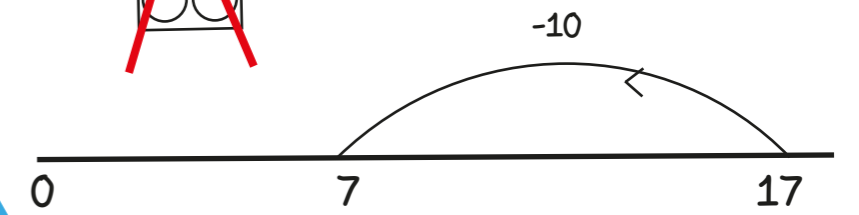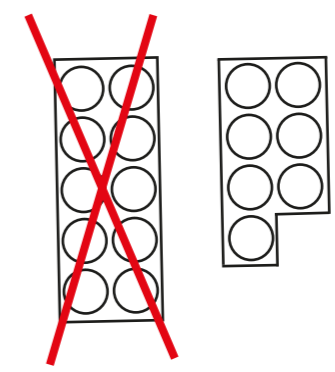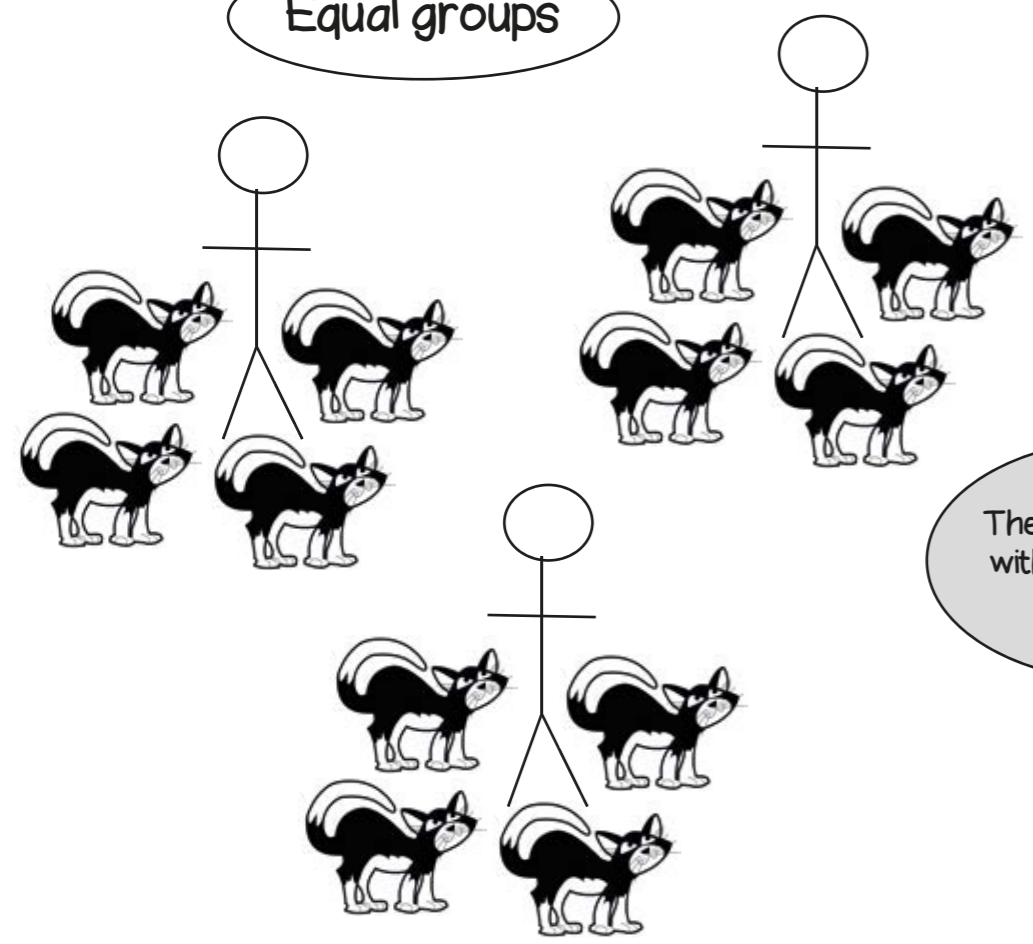
Equal groups

3 people each have 4 cats.
How many cats are
there in total?
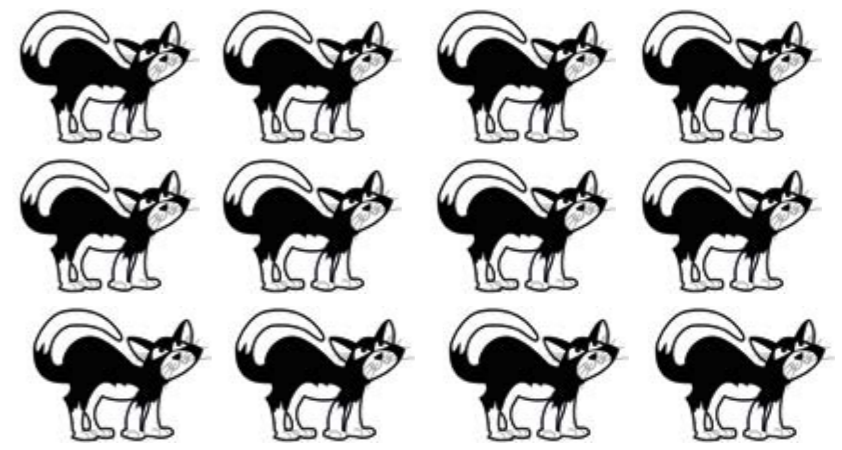
There are 3 groups
with 4 cats in each
group

Arrays

How shall I multiply?
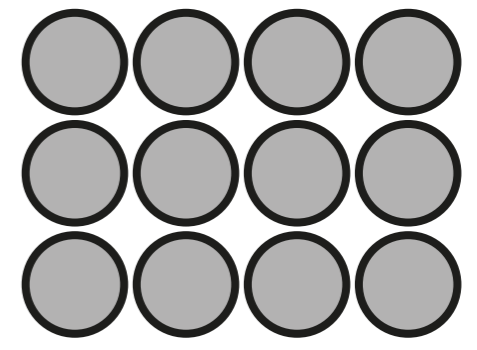
Count in ones

1,2,3,**4**,5,6,7,**8**,9,10,11,**12**
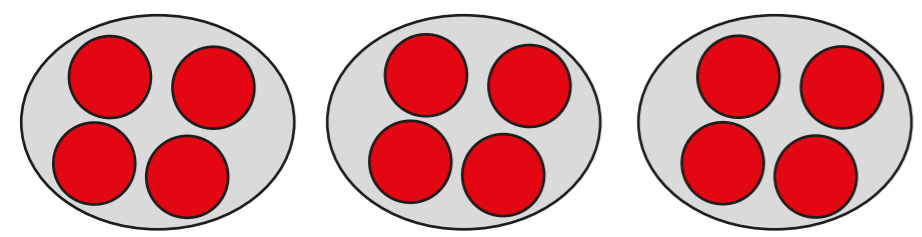
Repeated addition
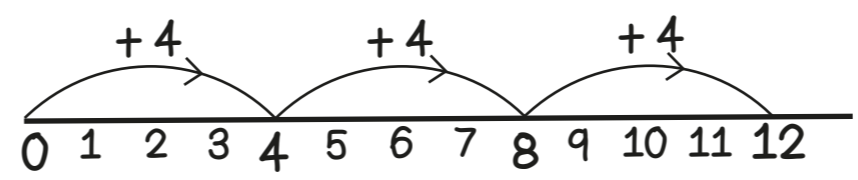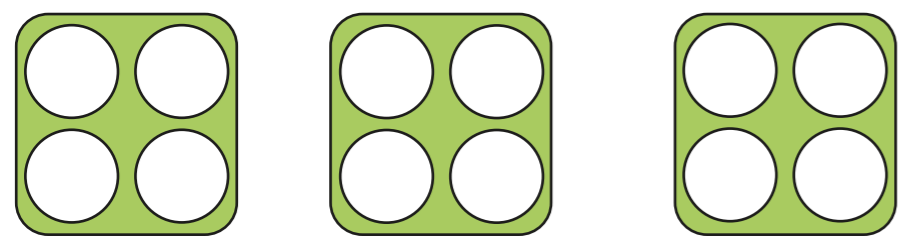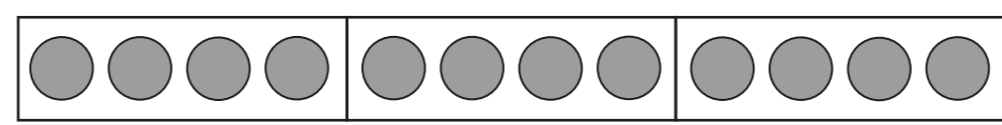
+4   +4   +4
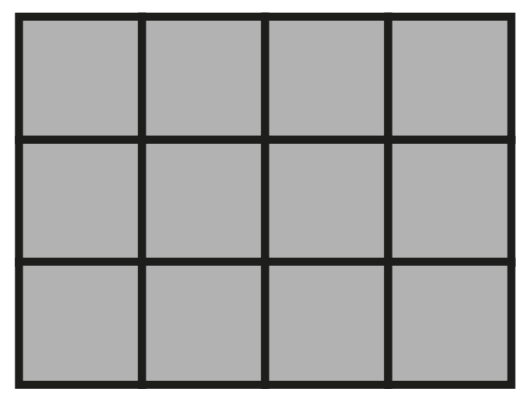
0 1 2 3 **4** 5 6 7 **8** 9 10 11 **12**

4 + 4 + 4 = 12

Can Do Maths

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Sharing

12 shared into 3 equal groups

$12 \div 3 = 4$

Grouping

How many groups of 3 are there in 12?
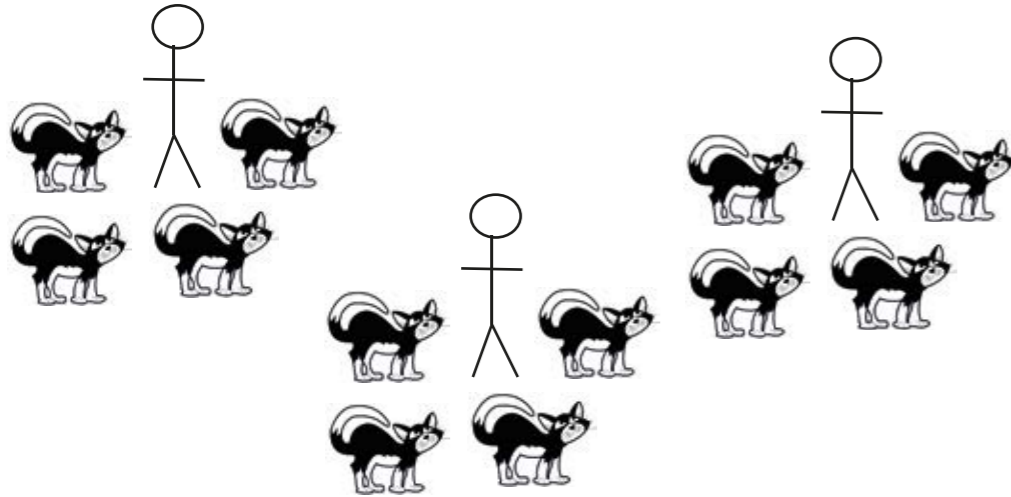
There are 12 cats.
Three people each have the same number of cats.
How many do they have each?

There are 12 cats.
Each person owns 3 cats.
How many people are there?

1 for you, 1 for you, 1 for you...
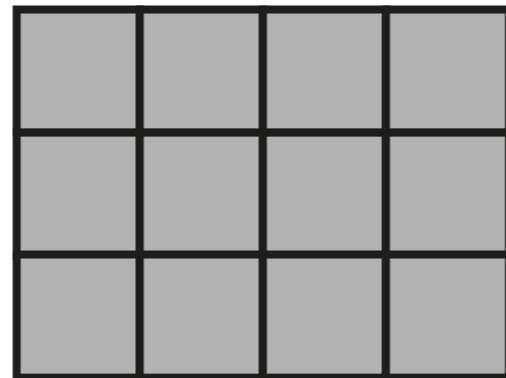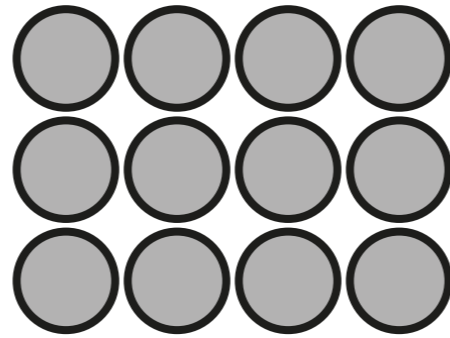
How shall I divide?
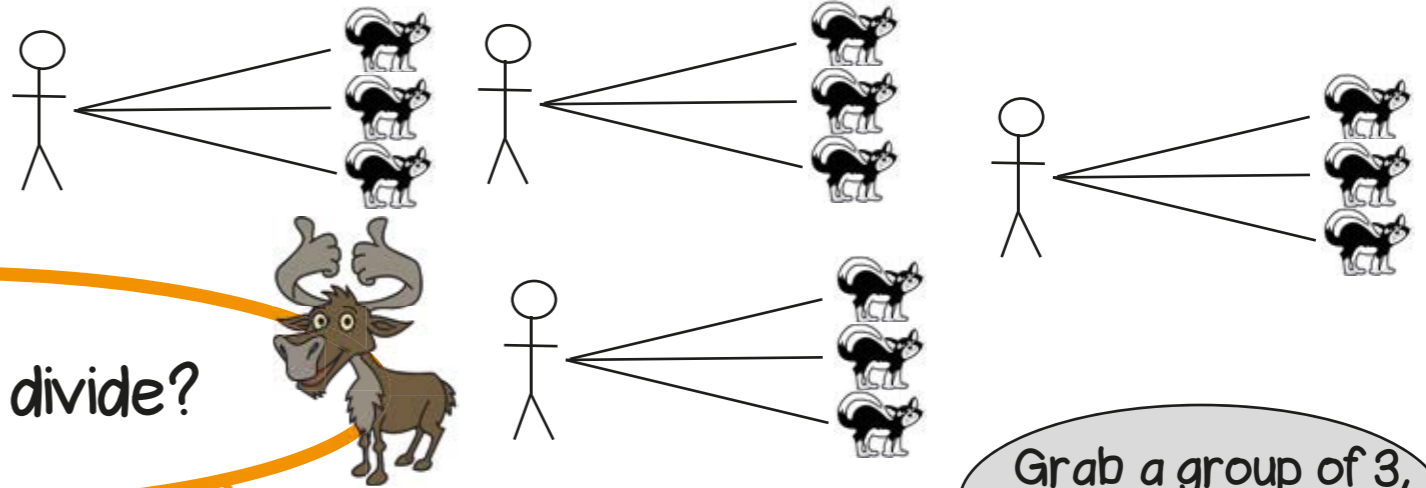
Grab a group of 3, grab a group of 3...

Bar model

12 can be described as 3 columns of 4 or 4 rows of three

12

+3   +3   +3   +3

0 1 2 3 4 5 6 7 8 9 10 11 12

Can Do Maths

How shall I add?
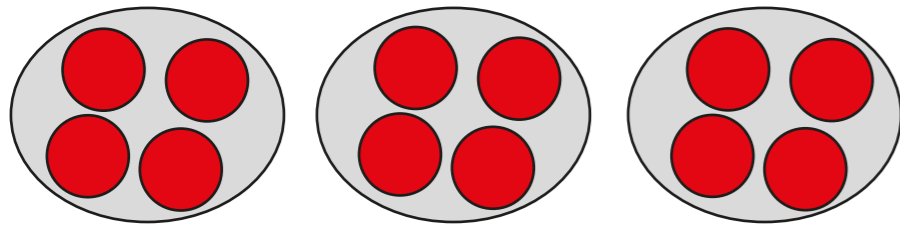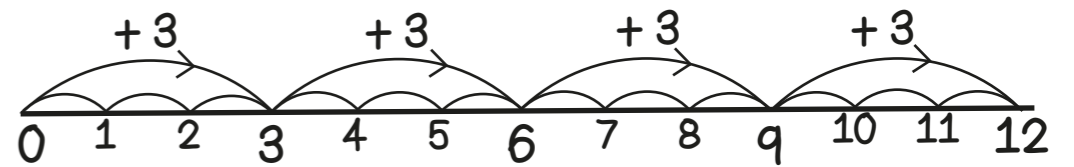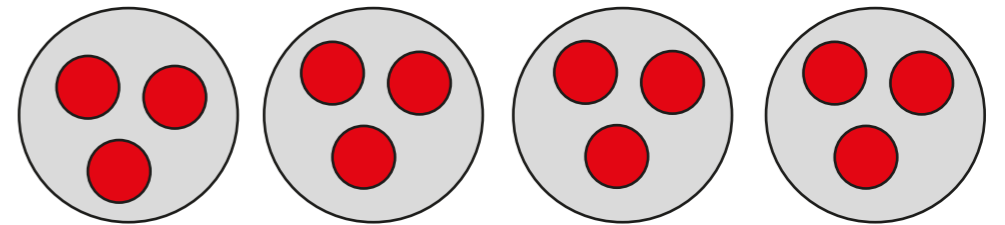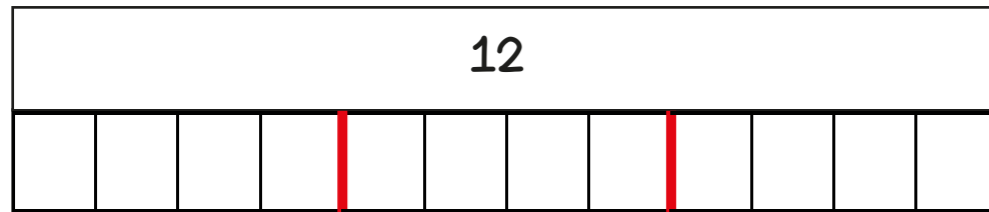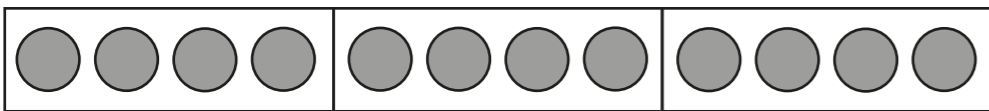
8 + 7, 9 + 9, 14 + 3
Number facts
Single digit numbers
Doubles
Teens and single digits

I just knew it!

13 + 17
Use known facts
30 + 70

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

If I know 3 + 7 = 10
then I know
13 + 17 is 2 tens more

35 + 20
Add multiples of ten

If I know 3 + 2 = 5
then I know
3 tens + 2 tens = 5 tens
so 30 + 20 = 50

10s   1s

+10   +10
0 .... 35 ... 45 ... 55
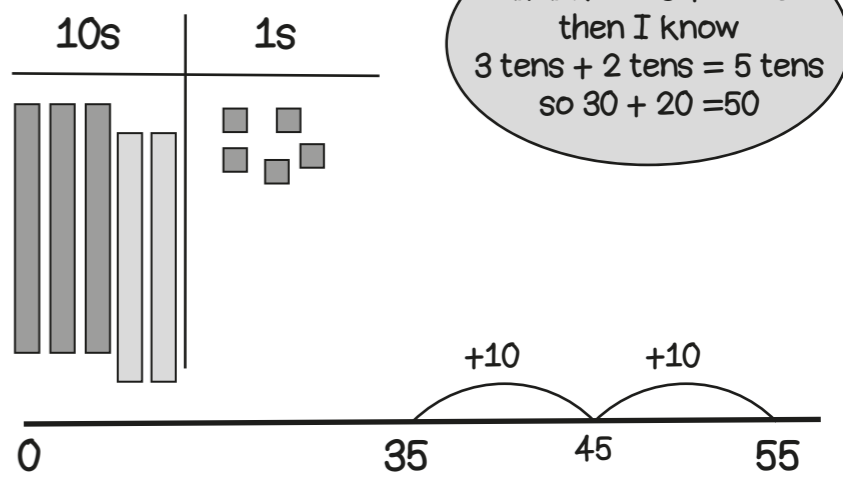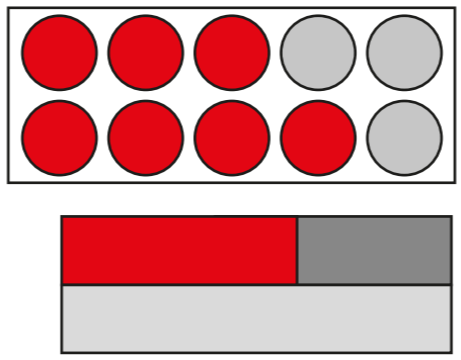
5 + 18
Greatest number first
then bridge

+2   +3
0 .... 18 20 23
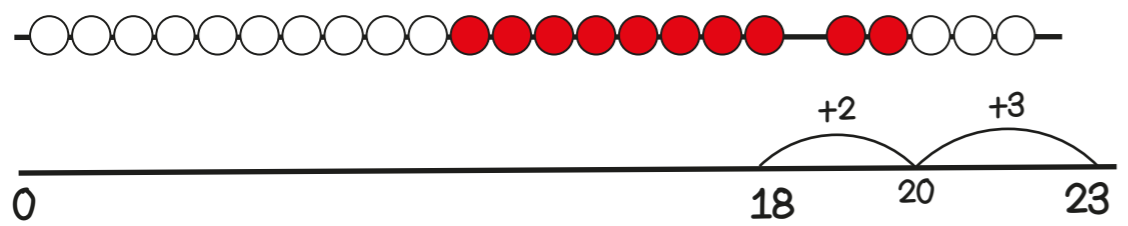
25 + 43
Partition and recombine

25 + 43
20 + 5 + 40 + 3
60 + 8 = 68

10s   1s

37 + 19
Round then adjust

10s   1s

Add 20 then subtract 1

+20
-1
0 .... 37 ... 56 57

+10   +10   +5   +2
0 ... 35 ... 45 ... 55 ... 60 62
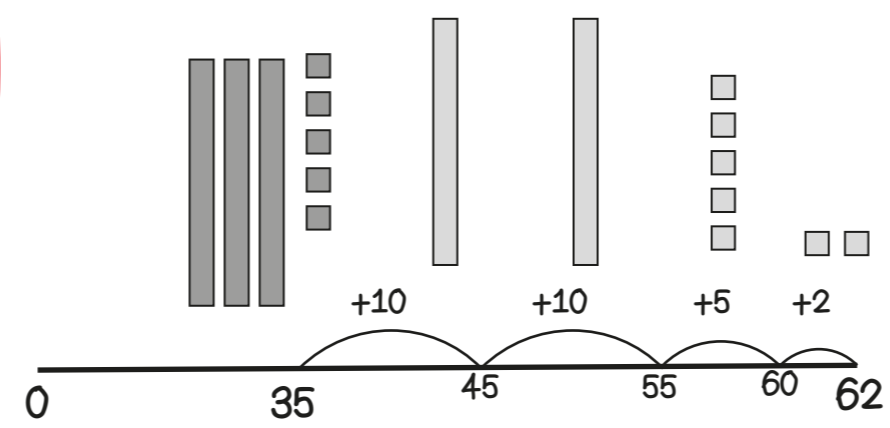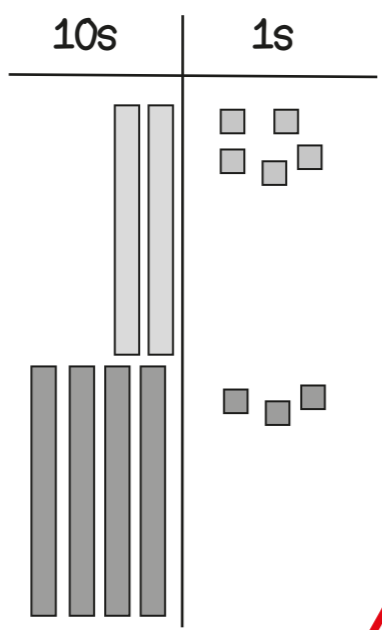
35 + 27
Count on in tens then ones

Can Do Maths

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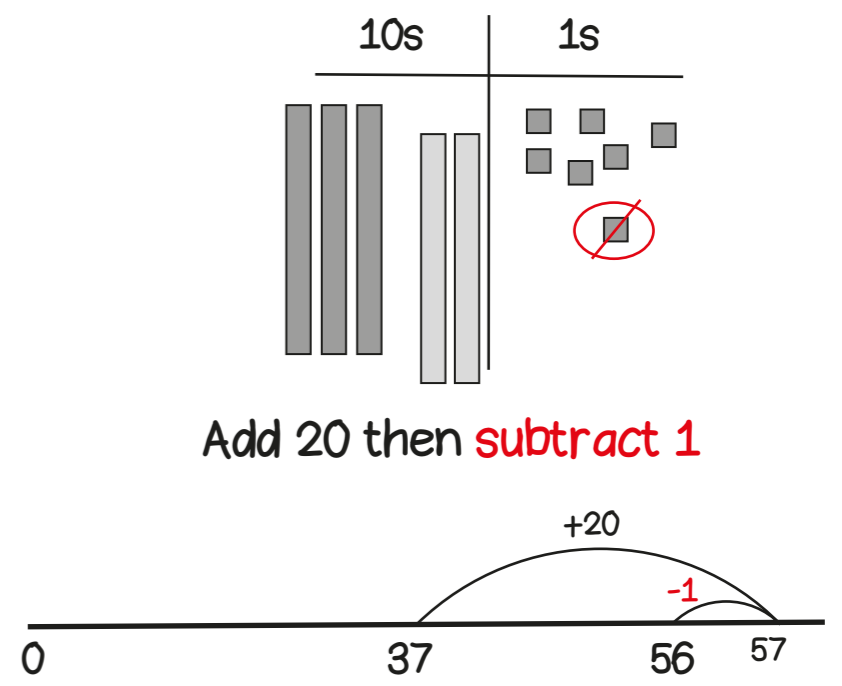
9 – 4, 13 – 5, 18 – 9
Number facts
Single digit numbers
Halves
Teens and single digits

I just knew it!

30 – 7
Use known facts
100 – 70
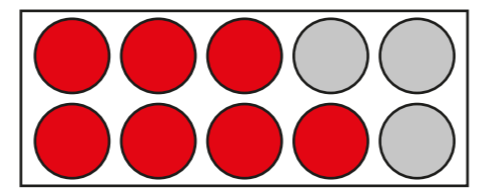
If I know 10 – 7 = 3
then I know
30 – 7 is 2 tens and 3
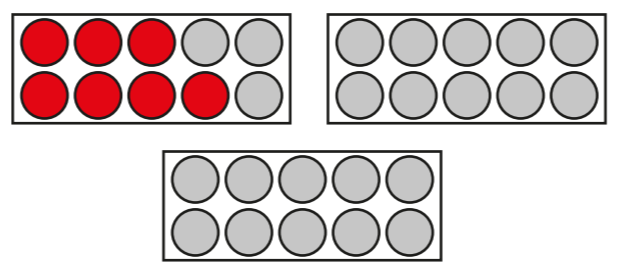
46 – 20
Count back: multiples of ten
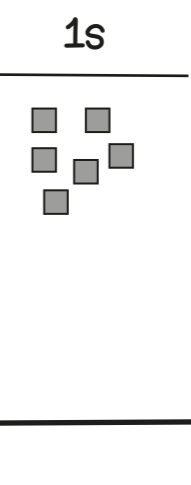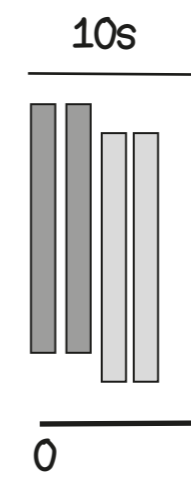
If I know 4 – 2 = 2
then I know
4 tens – 2 tens = 2 tens
so 40 – 20 = 20

10s   1s

-10   -10

0   26   36   46

23 – 5
Count back: bridge through
a multiple of ten

-2   -3

0   18   20   23
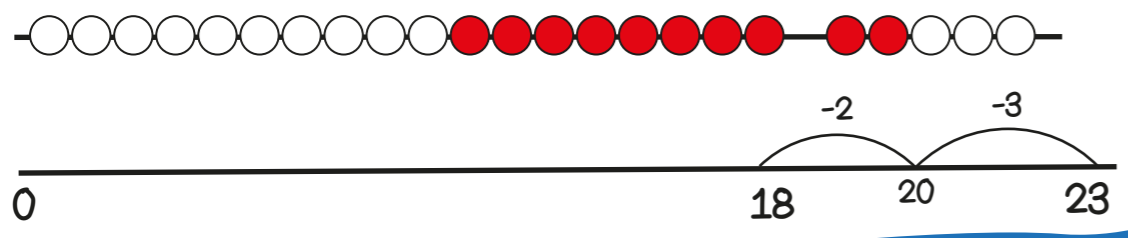
How shall I subtract?

47 – 19
Round then adjust

10s   1s

Take away 20 then add 1

-20

+1

0   27 28   47

-4   -10   -10

0   31   35   45   55
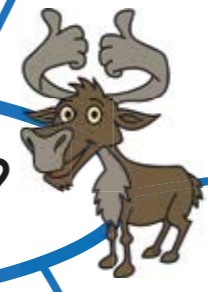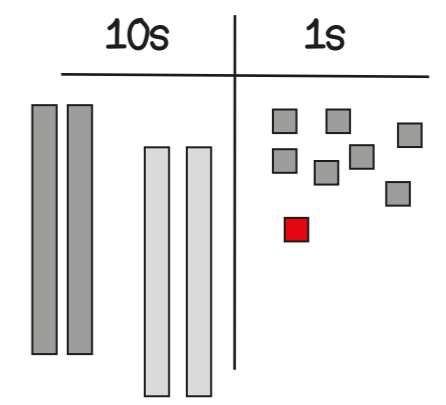
55 – 24
Count back in tens then ones

42 is 5 more than 37,
37 is 5 less than 42 so
the difference between
37 and 42 is 5

42 – 37
Find the difference between
two numbers

42

37   5

+3   +2

0   37   40   42

can Do maths
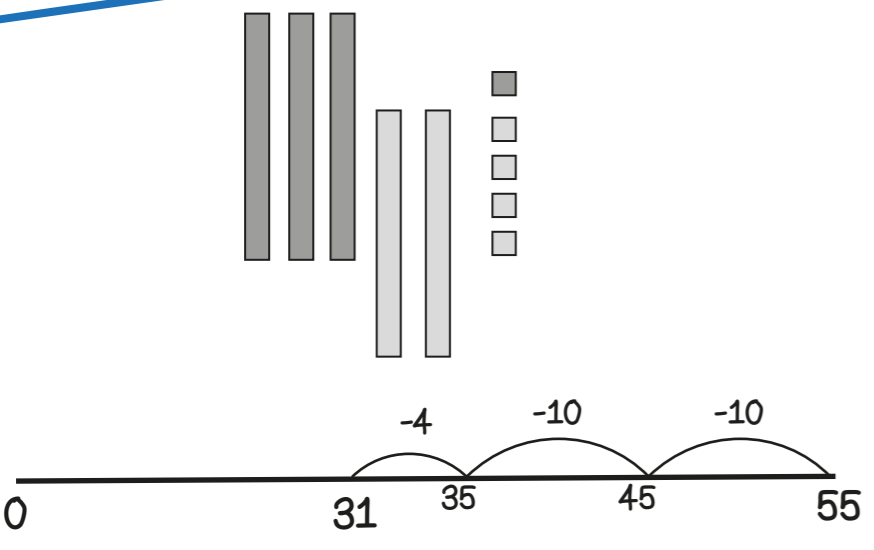
Equal groups

There are 3 groups with 4 cats in each group

3 people each have 4 cats. How many cats are there in total?

One to many correspondence

If each person has 4 cats, there are 4 times as many cats as people
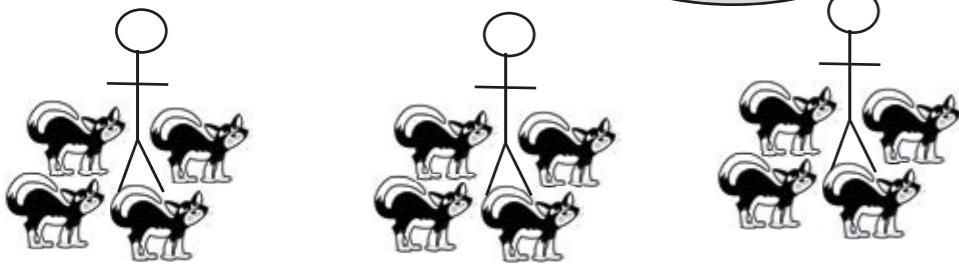
Four cats, multiplied by 3
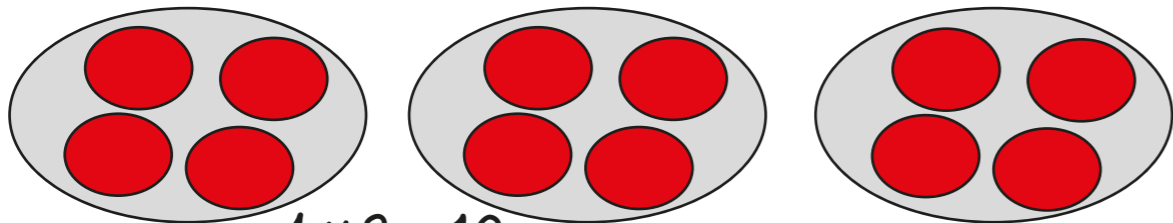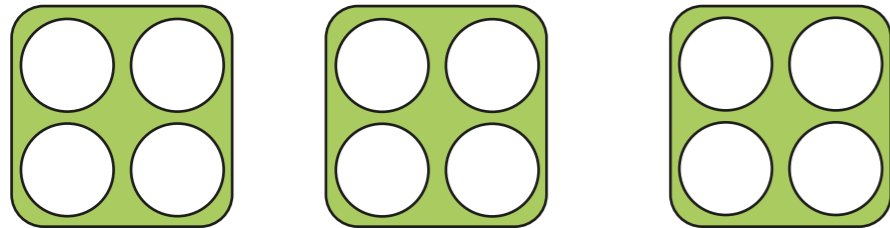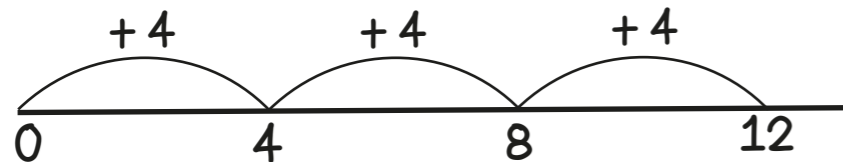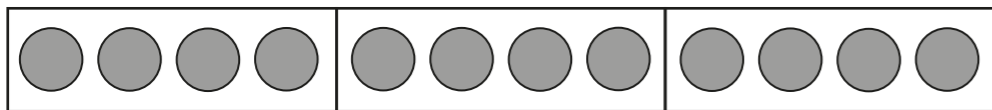
Recall of 2x, 5x and 10x tables

$4 \times 3 = 12$

People	Cats
1	4
2	8
3	12

Arrays

$4 \times 3 = 12$

$3 \times 4 = 4 \times 3$

Repeated addition

How shall I multiply?

| 4 | 4 | 4 |

+4   +4   +4

0   4   8   12

$4 + 4 + 4 = 12$
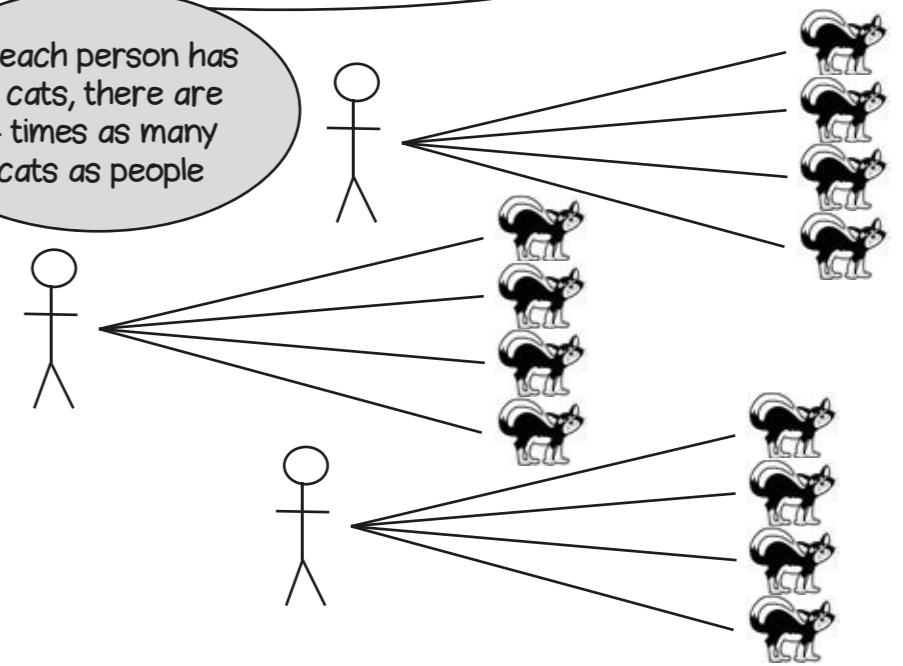
Count in ones

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Count in twos

2, 4, 6, 8, 10, 12

Use a known fact

If 2 x 3 is 6, then
4 x 3 is double 6.
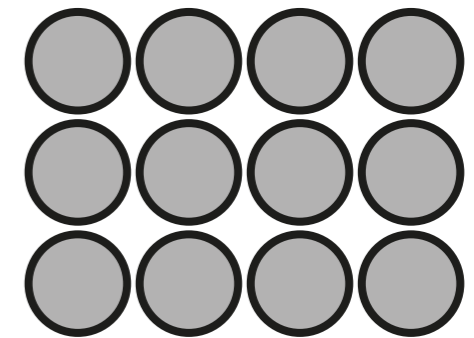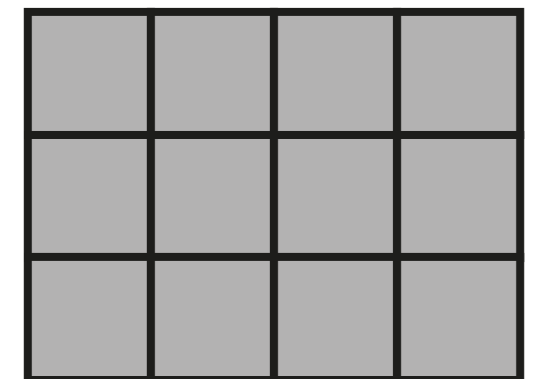
Can Do Maths

2

Sharing

12 shared into 3 equal groups

$12 \div 3 = 4$

Recall and use 2x, 5x and 10x tables

Grouping

How many groups of 3 are there in 12?

There are 12 cats.
Three people each have the same number of cats.
How many do they have each?

1 for you, 1 for you, 1 for you…

Grab a group of 3, grab a group of 3…

There are 12 cats.
Each person owns 3 cats.
How many people are there?

How shall I divide?

12 can be described as
3 columns of 4
or 4 rows of three

Bar model

12		
4	4	4

+3   +3   +3   +3

0   3   6   9   12
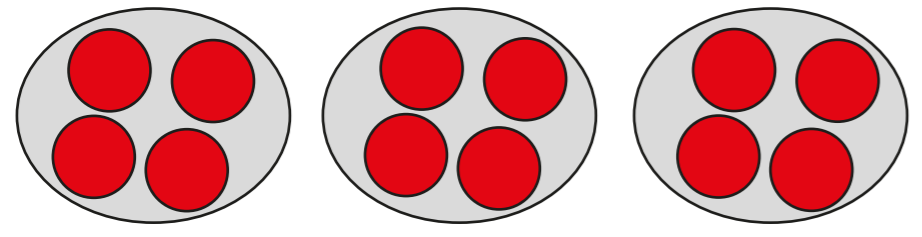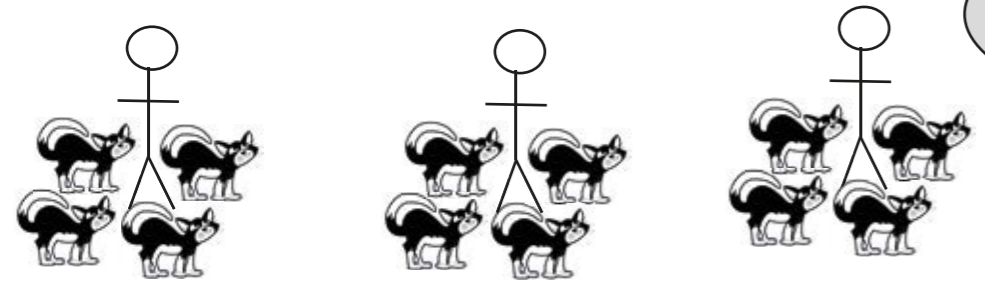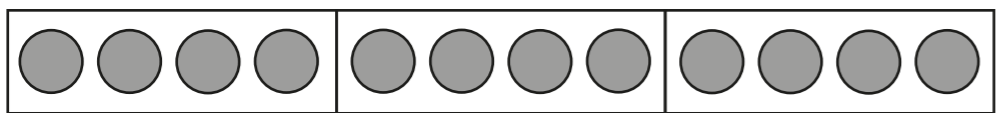
Link to fractions.
One third of 12 is 4

If I know 3 x 4 = 12
then I know $12 \div 3 = 4$

CanDo Maths

How shall I add?
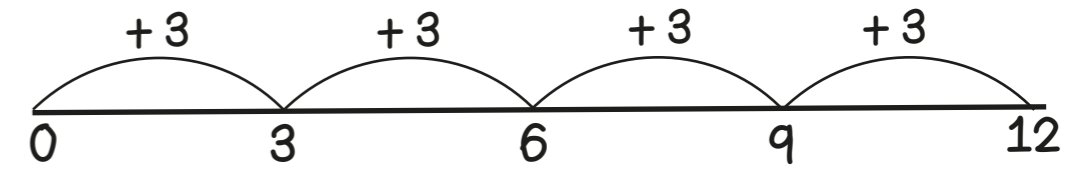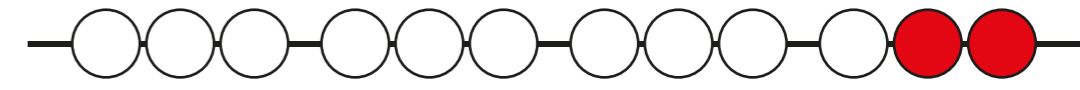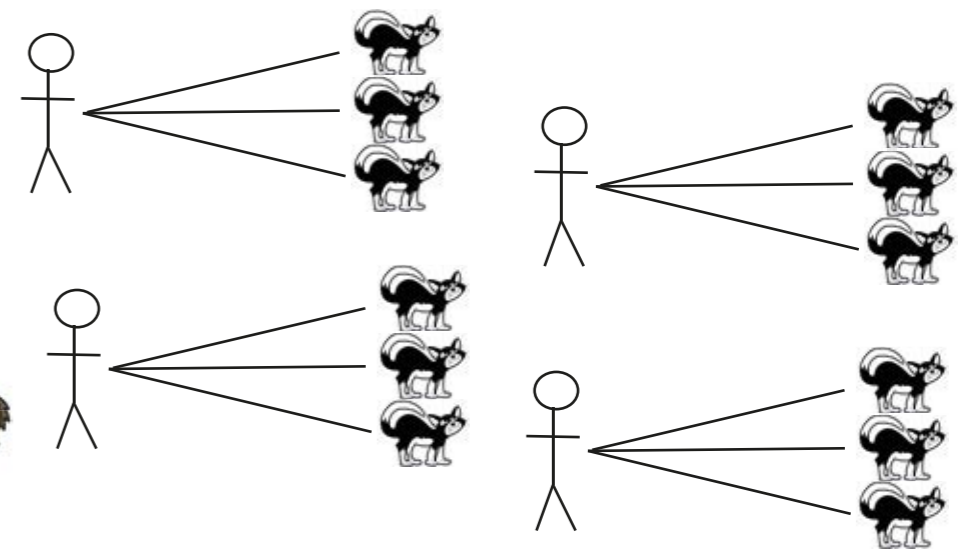
8 + 7, 9 + 9, 14 + 3
Number facts
Single digit numbers
Doubles
Tens to make 100

I just knew it!

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

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

100s | 10s | 1s

+100   +100
0   325   525

150 + 80
Bridging boundaries
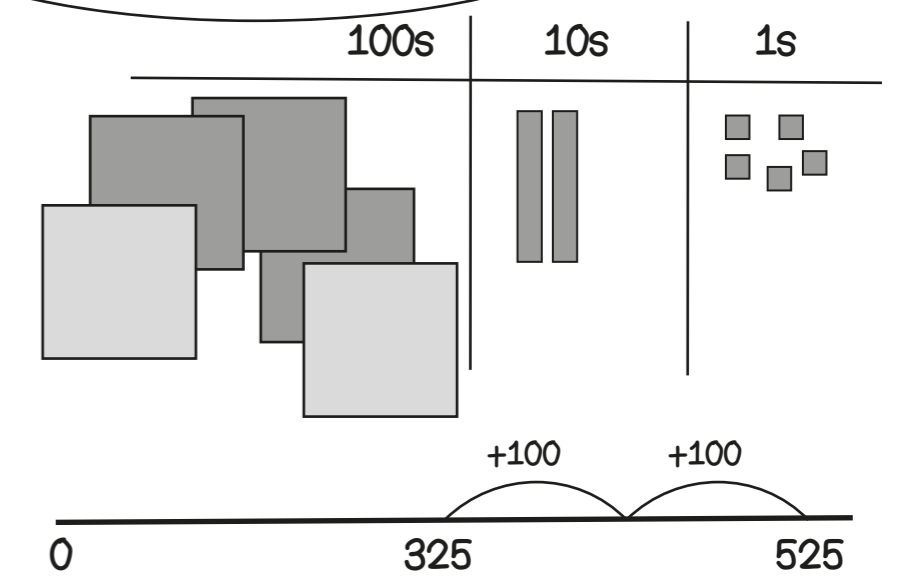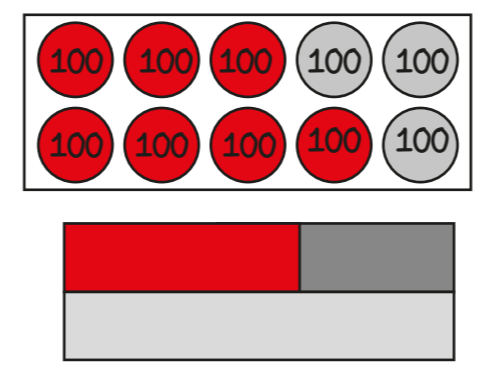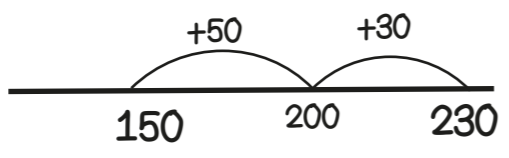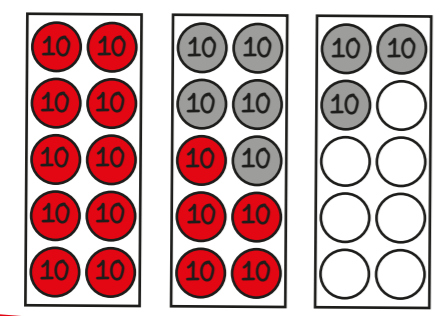
+50   +30
150   200   230

262 + 152
Formal written method

100s | 10s | 1s
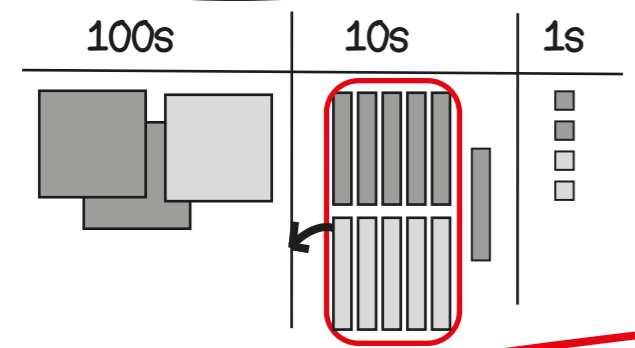
6 tens add 5 tens
= 11 tens or 110

```
  2 6 2
+ 1 5 2
-------
  4 1 4
    1
```

250 + 360
Partition and recombine

100s | 10s | 1s
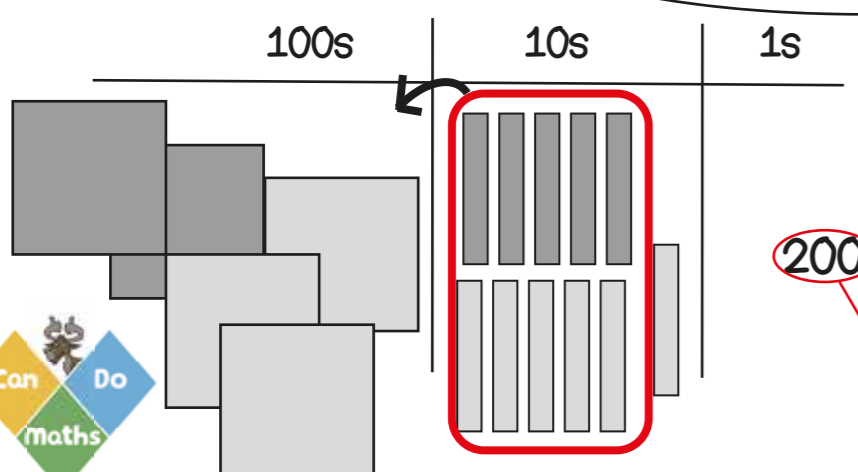
200 + 50 + 300 + 60

500 + 110 = 610

+100   +100   +50
0   235   335   435   485
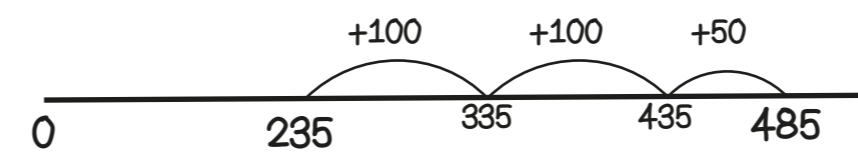
235 + 250
Count on in hundreds then tens

237 + 199
Round then adjust

100s | 10s | 1s

Add 200 then subtract 1

+200
-1
0   237   436   437

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15 - 8, 18 - 5
Number facts
Single digit numbers
Teens and single digits

I just knew it!

240 - 7
Use known facts
1000 - 700

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

100 100 100 100 100
100 100 100 100 100
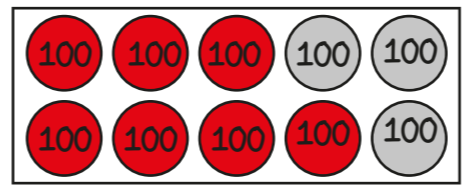
525 - 300
Take away multiples of ten
and a hundred

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

100s | 10s | 1s

-100 -100 -100
225 525
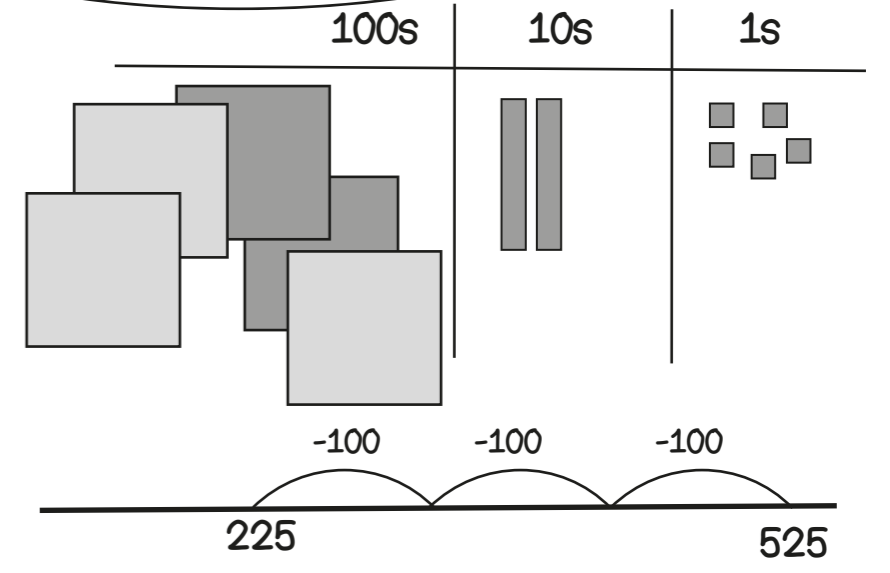
230 - 80
Bridging boundaries
by counting back in efficient steps
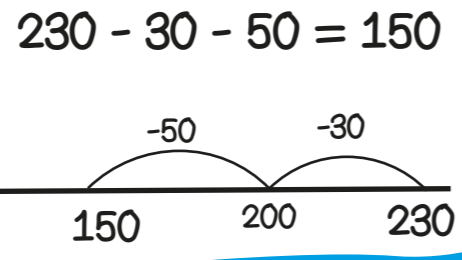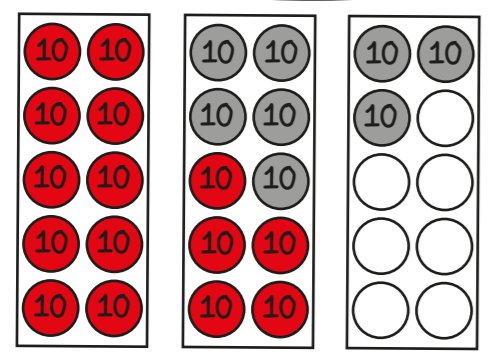
0 - 7 = 3

If I know 10 - 7 = 3
then I know
any multiple of 10,
take away 7 leaves
3 in the ones.

230 - 30 - 50 = 150

-50 -30
0 150 200 230

How shall I subtract?

435 - 199
Round then adjust

100s | 10s | 1s
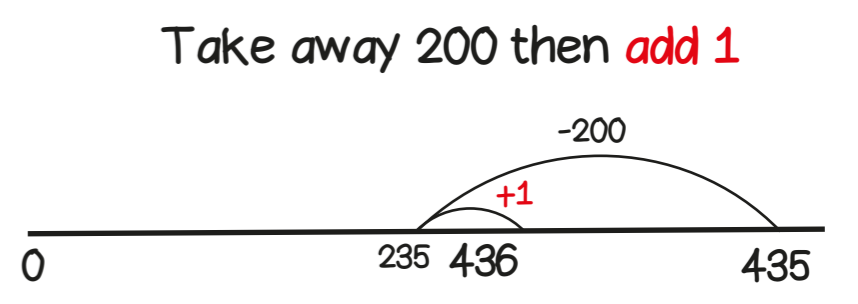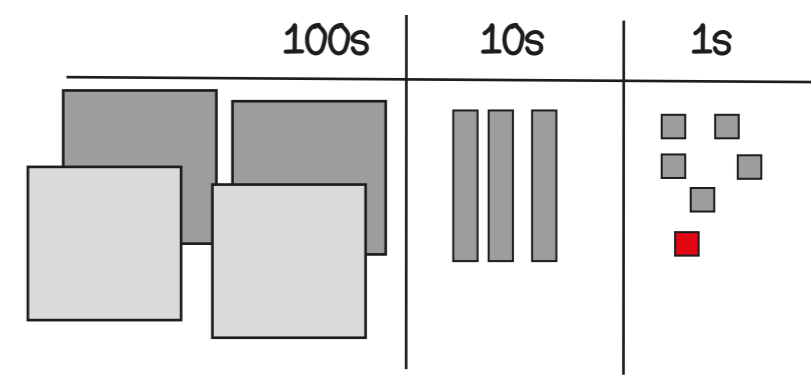
234 - 152
Formal written method

$$\begin{array}{r} {}^1\!2\,{}^1\!3\,4 \\ -\,1\,5\,2 \\ \hline 1\,8\,2 \end{array}$$

234 = 100 + 130 + 4

100s | 10s | 1s

+4 +5
326 330 335
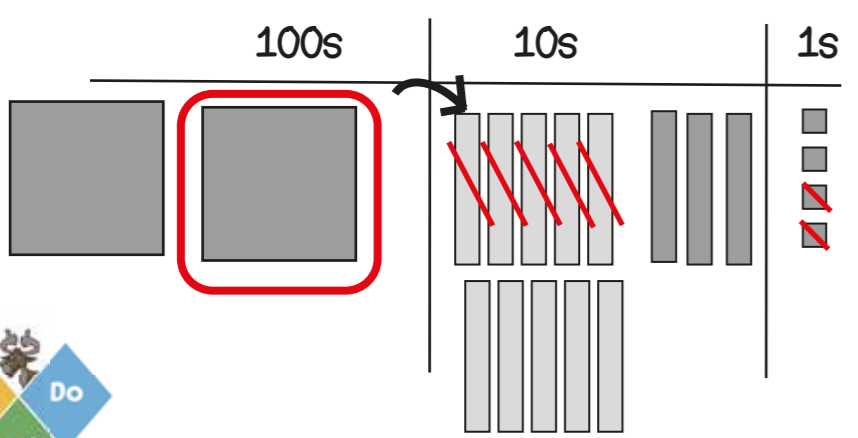
335 - 326
Find the difference
between two numbers

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

335
326 | 9

Take away 200 then add 1

-200
+1
0 235 436 435

Can Do Maths

How shall I multiply?
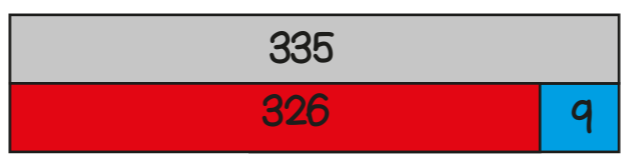
Rapid recall of 2x, 5x, 10x (year 2) 3x, 4x, 8x (year 3) multiplication tables

Multiply by 10

100s	10s	1s
		▪ ▪

2
↓ x10
20
↓ x10
200

6 x 4
Use known facts and place value

40 is ten times greater than 4
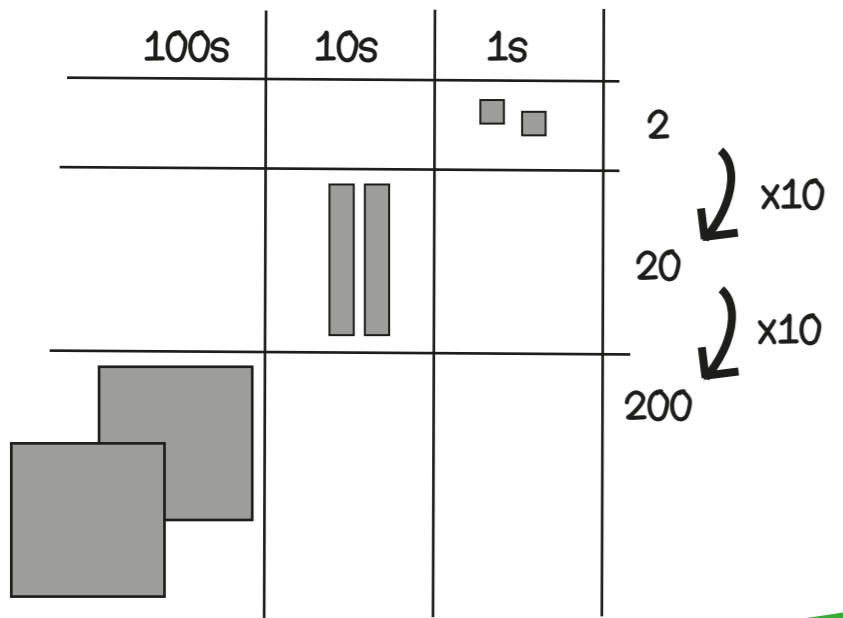
6 x 4 = 24
60 x 4 = 240
6 x 40 = 240

6 x ⑩ x ④
= ㉔ x ⑩

8 x 3
Repeated addition

8 + 8 + 8 =
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3

8	8	8

+8   +8   +8
0   8   16   24
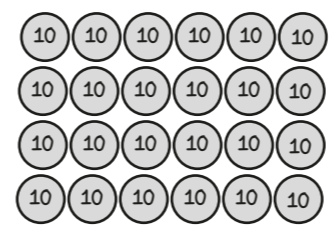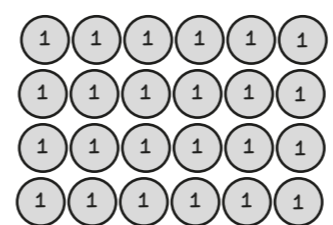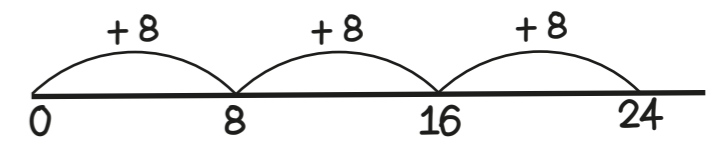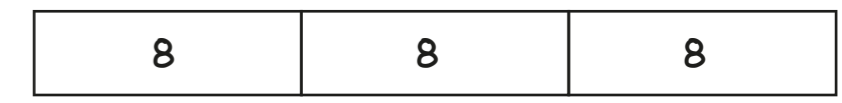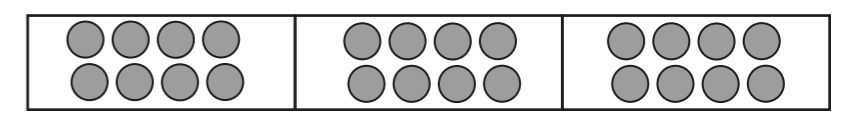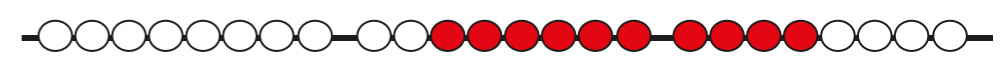
Arrays

If I know 3 x 8 then I know 8 x 3

Scaling

The red tower is 3 times taller than the grey tower

24cm
8cm
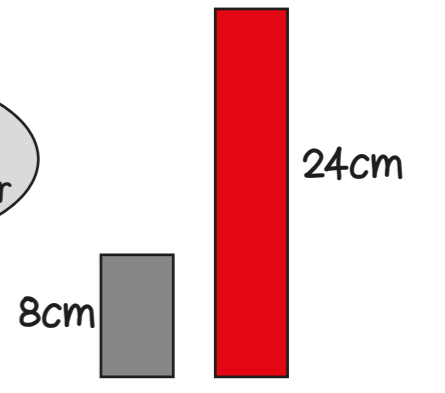
5 x 18
Double and halve

5 x 18
= 5 x 2 x 18 ÷ 2
= 10 x 9
= 90

18
10 ___ 5
___ 9

17 x 4
Partition and recombine

10 x 4 + 7 x 4
40 + 28 = 68
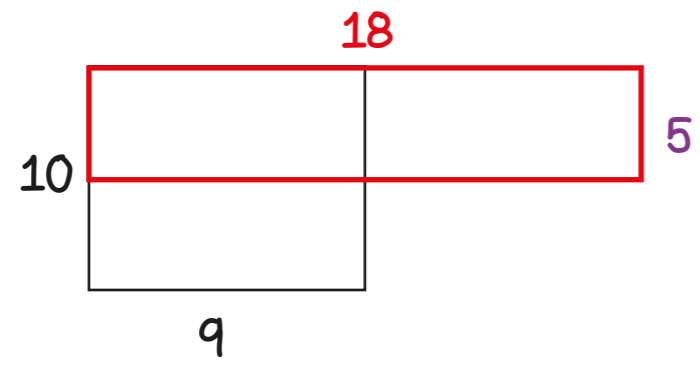
17 x 4
1 0 \ 7

40   28

17 x 4
Formal written method

	10	7
4	40	28

17
x 4
68
2

Can Do Maths
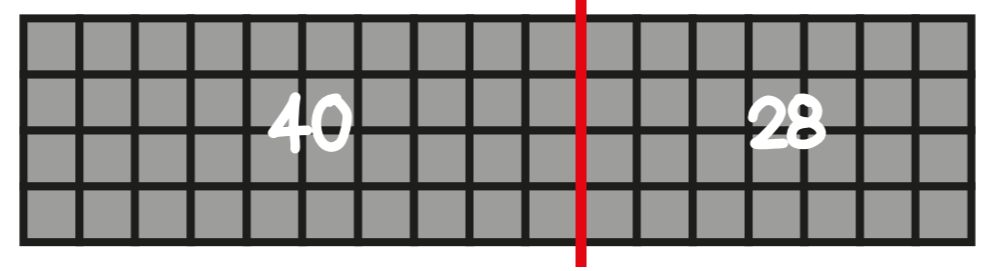
Known facts:
Use 2x, 5x, 10x (year 2) 3x, 4x, 8x (year 3) multiplication tables to derive division facts

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

240 is ten times greater than 24

$24 \div 4 = 6$
$240 \div 40 = 6$
$240 \div 4 = 60$

24 biscuits shared between 4 people means they will get 6 biscuits each.
If there are 10 times as many people and 10 times as many biscuits, how many biscuits each now?

How many 40s are there in 240?

$240 \div 40$
Repeated addition

$240 \div 40 = 6$
How many steps of 40 make 240?

$+40 \quad +40 \quad +40 \quad +40 \quad +40 \quad +40$
$0 \quad 40 \quad 80 \quad 120 \quad 160 \quad 200 \quad 240$
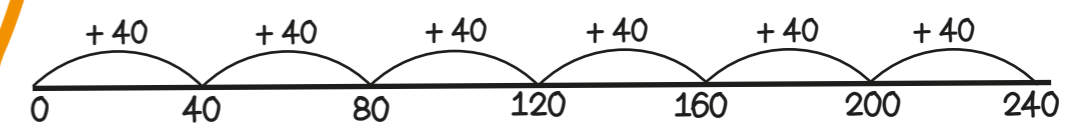
$200 \div 10$
Divide by 10

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

100s	10s	1s

200 $\div 10$
20 $\div 10$
2

A tenth of ▮ is ▪

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

How shall I divide?

$45 \div 3$
Sharing equally

10s	1s

10s	1s
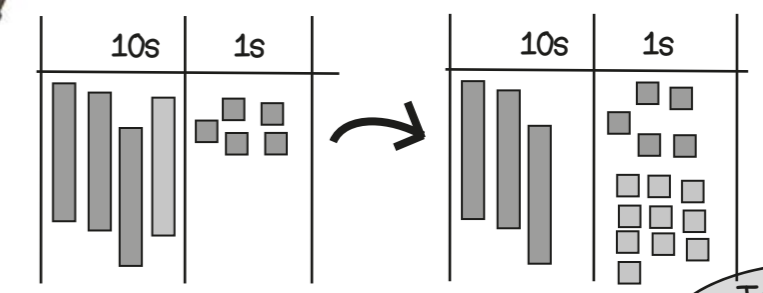
Ten for you, ten for you, ten for you...

45
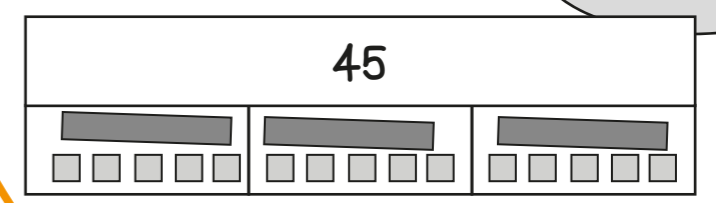
$52 \div 4$
Partition and recombine

ten lots and the rest

$52 \div 4$
40   12
$\div 4$ $\div 4$
10   +   3   =   13
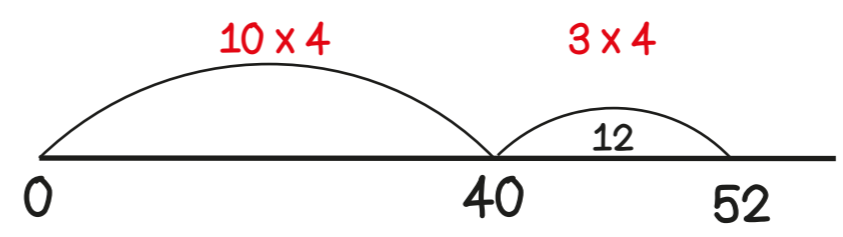
Link to fractions

$42 \div 6$
Double and halve

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

$42 \div 6 = 21 \div 3$

42					
7	7	7	7	7	7

21		
7	7	7

10 x 4   3 x 4
12
0   40   52

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Can Do Maths

0.9 + 0.9, 74 + 26
Number facts
Single digit decimals
Doubles
Bonds of 100

I just knew it!

7 + 8
Use known facts

If I know 7 + 8 = 15
then I know
0.7 + 0.8 = 1.5

70 + 80 = 150
700 + 800 = 1,500
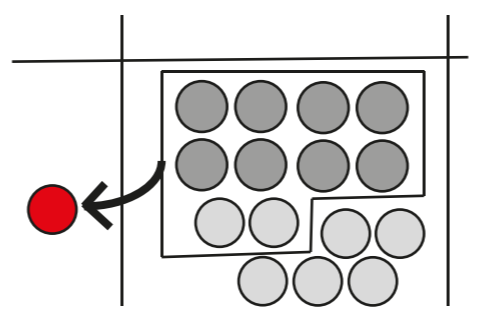
2,403 + 3,020
Use place value to add

If I know 2 + 3 = 5
then I know
2000 + 3000 = 5 000

I have noticed, one number has no hundreds or ones, the other has no tens.

1000s	100s	10s	1s

1.6 + 0.7
Bridge through boundaries
by counting in efficient steps
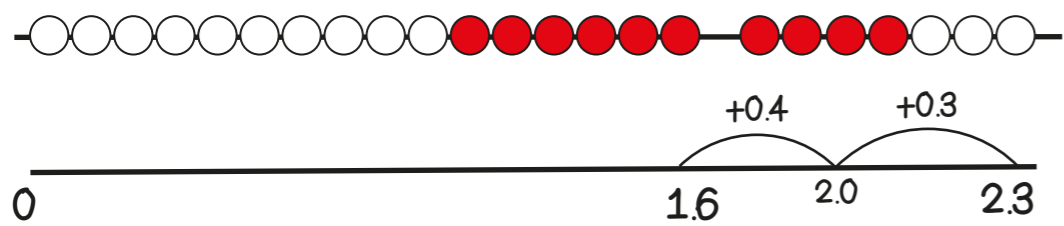
+0.4   +0.3

0   1.6   2.0   2.3

How shall I add?
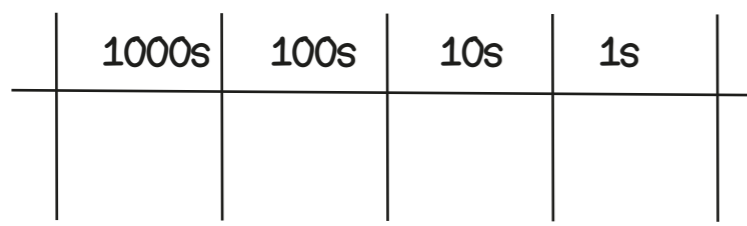
5,250 + 2,360
Partition and recombine

5000 + 200 + 50 + 2000 + 300 + 60

7000 + 500 + 110 = 7610
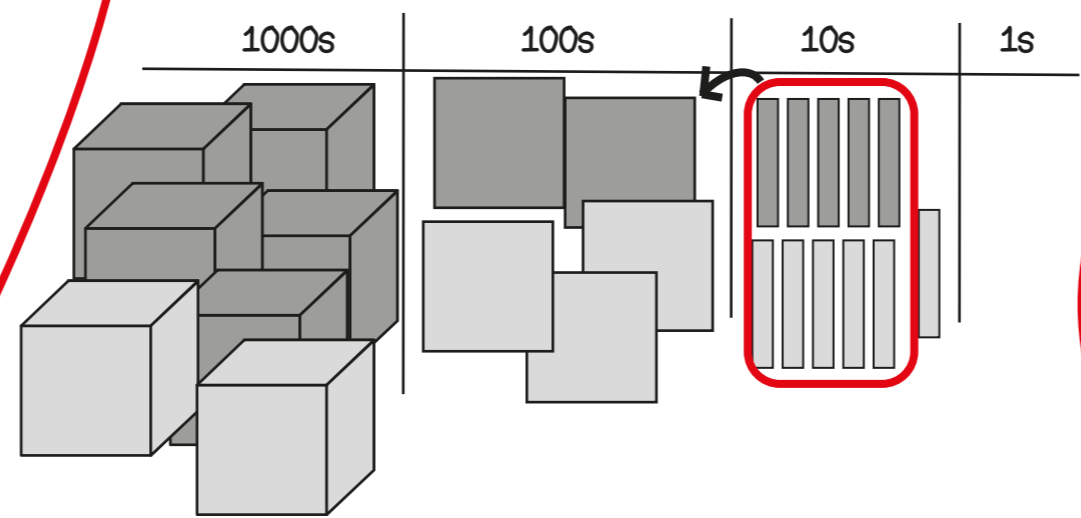
3,356 + 1,998
Round then adjust

1000s	100s	10s	1s

Add **2,000** then *take away 2*

+2,000
-2
3,356   5,354   5,356

5354	
3356	2000

5,748 + 3,374
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$$5,748$$
$$+\ 3,374$$
$$\overline{9,122}$$
$$\ \ 1\ \ 1\ \ 1$$

1000s	100s	10s	1s

1000s	100s	10s	1s

Can Do Maths

How shall I subtract?
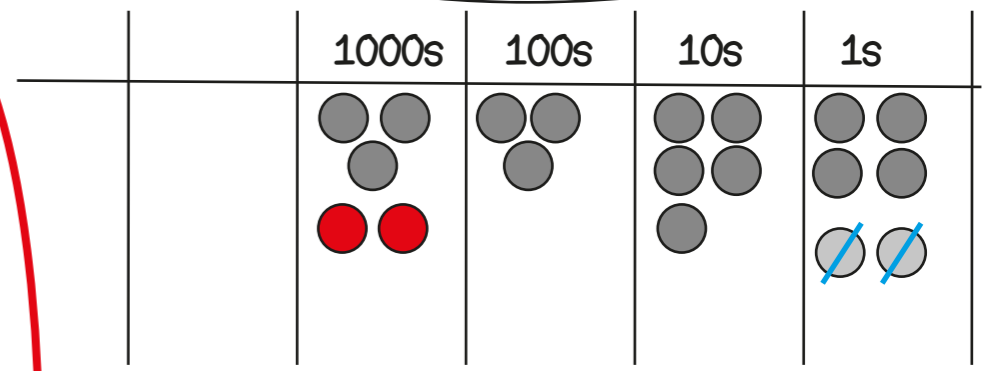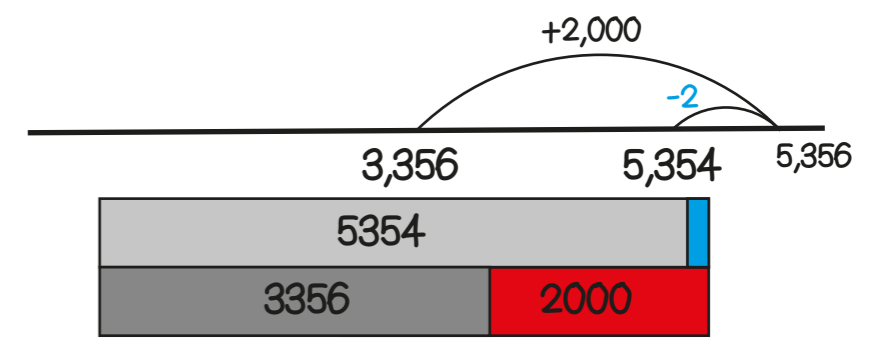
13 - 5, 1.8 - 0.8
Number facts
Single digit numbers
Halves
Wholes and tenths

I just knew it!

15 - 8 = 7
Use known facts

If I know 15 - 8 = 7
then I know
1.5 - 0.8 = 0.7

150 - 80 = 70
1500 - 800 = 700
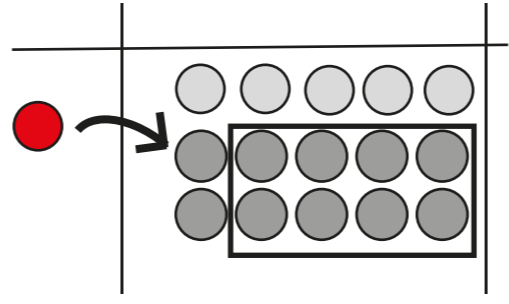
6,342 - 3,020
Use place value to subtract

By using place value counters it is easy to see how to take away

1000s	100s	10s	1s

1.5 - 0.7
Bridge through boundaries
by counting in efficient steps

- 0.2   - 0.5
0.8   1.0   1.5

4.56 - 1.99
Round then adjust

1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s

Take away 2 then add one hundredth
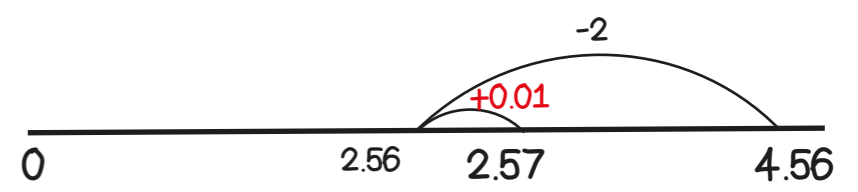
-2
+0.01
0   2.56   2.57   4.56

5,352 - 2,136
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$4\ ^14\ ^1$
5,352
- 2,436
2,916

1000s	100s	10s	1s

4007 - 3998
Find the difference between two numbers

+2   +7
3,998   4,000   4,007

4,007
3,998   9

Can Do Maths

4

Known facts: Rapid recall of all multiplication tables up to 12 x 12

6 x 4
Use known facts and place value

40 is ten times greater than 4

6 x 4 = 24
60 x 4 = 240
60 x 40 = 2400
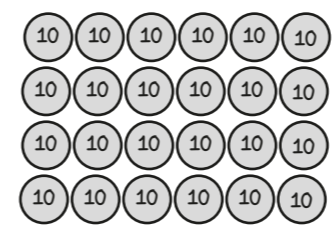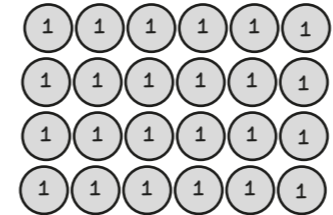
6 x 10 x 4 x 10

= 24 x 100

0.6 is ten times smaller than 6

6 x 4
Use known facts and place value

0.6 x 4 = 2.4
4 jumps of 0.6

+ 0.6   + 0.6   + 0.6   + 0.6

0   0.6   1.2   1.8   2.4

0.6 x 4 = 24 tenths
0.6 x 4 = 2.4

0.6   1

4

2.34 x 100
Multiply by 10, 100

1000s	100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s

2.34

x10

23.4

x10   x100

234
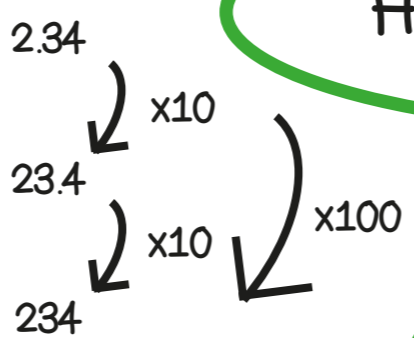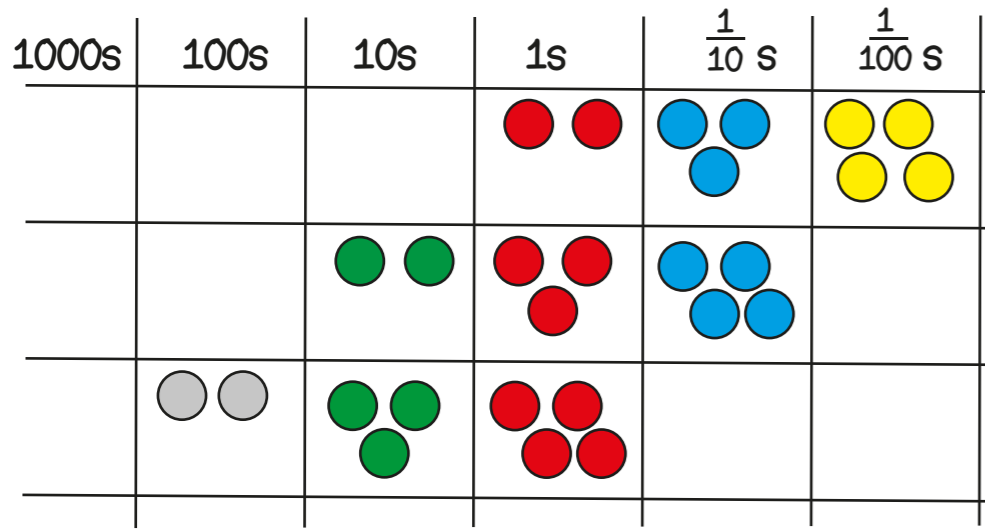
How shall I multiply?
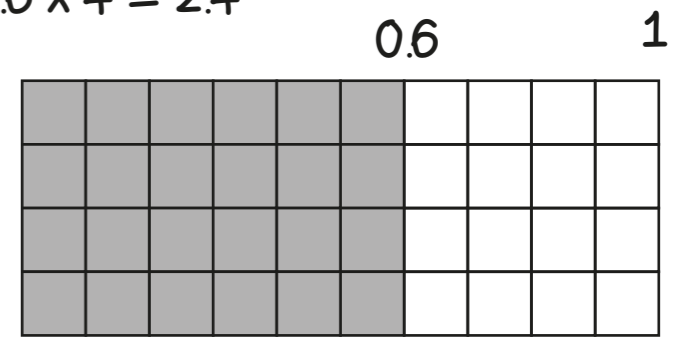
7 x 36
Use the distributive law

7 x 36

= 7 x 30 + 7 x 6
= 210 + 42
= 252

36
30   6
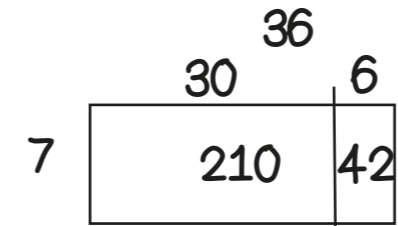
7   210   42

36 x 7
Formal written method

	30	6
7	210	42

36
x   7
252
4

2 x (5 x 6) = (2 x 5) x 6
2 x 30 = 10 x 6
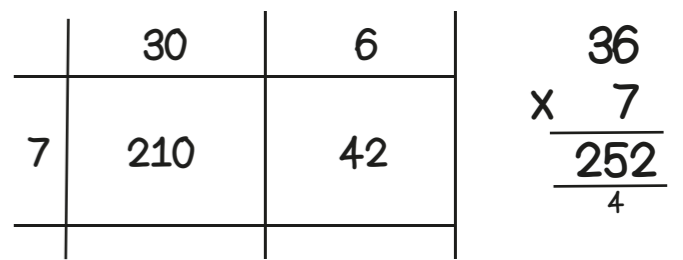
45 x 6
Use factors and commutativity

Write as factors then re-order

45 x 6
= 5 x 9 x 6
= 5 x 6 x 9
=   30 x 9
= 270

236 x 7

2 0 0   3 0   6

x7   x7   x7

1400   +   210   +   42 = 1652

Can Do Maths

Known facts:
Use recall of all multiplication tables up to 12 x 12 to derive division facts

24 ÷ 4
Use known facts and place value

240 is ten times greater than 24

$24 \div 4 = 6$
$240 \div 40 = 6$
$2400 \div 400 = 6$

$$2400 \div 400 = \frac{24 \times 100}{4 \times 100}$$

$$\frac{24}{4} = 6$$

24 biscuits shared between 4 people means they will get 6 biscuits each.
If there are 100 times as many people and 100 times as many biscuits, how many biscuits each now?

60 is ten times greater than 6

2400 ÷ 60
Use known facts and place value

$2400 \div 60 = 40$
How many steps of 60 make 2400?

10 x 60   10 x 60   10 x 60   10 x 60

0   600   1200   1800   2400

24 ÷ 100
Divide by 10, 100

100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s
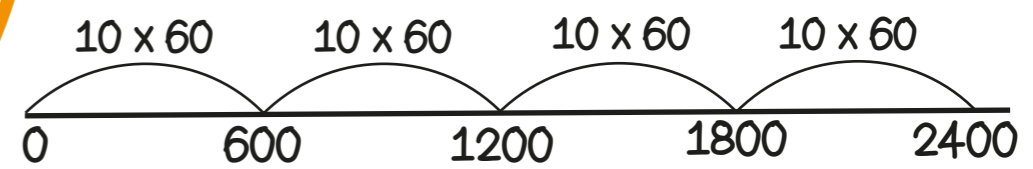
24
÷10
2.4
÷10
0.24
÷100
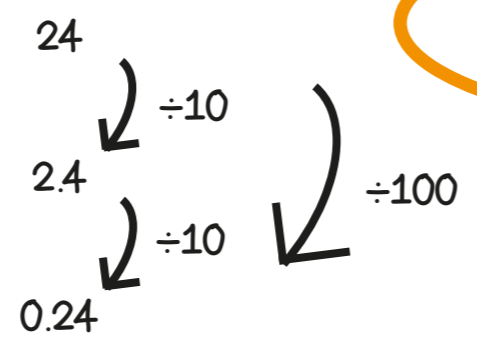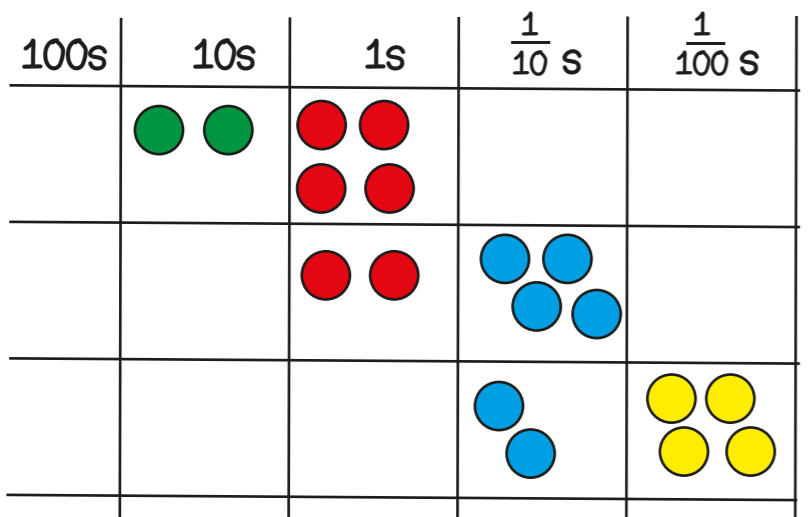
How shall I divide?

732 ÷ 6
Formal written method

100s	10s	1s

$$6\overline{)7^13\ 2} \quad \begin{array}{c} 1 \end{array}$$

100s	10s	1s

$$6\overline{)7^13^12} \quad \begin{array}{c} 1\ 2\ 2 \end{array}$$
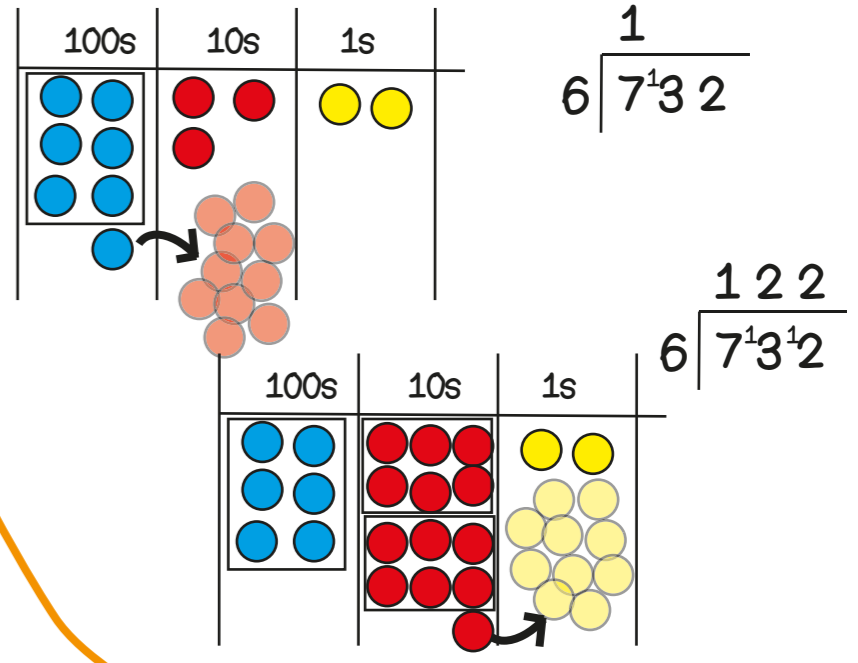
516 ÷ 12
Using factors

$516 \div 3 \div 4$

496 ÷ 8
Partition and recombine

$496 \div 8$

480   16

÷ 8   ÷ 8

60   +   2   =   62

60 x 8   2 x 8

0   480   496

516		
172	172	172
43 43 43 43		

Can Do Maths

How shall I add?
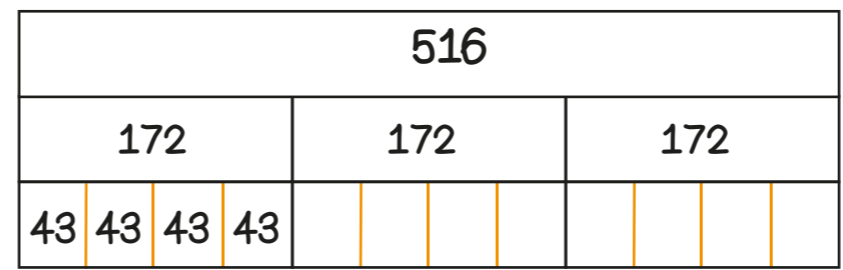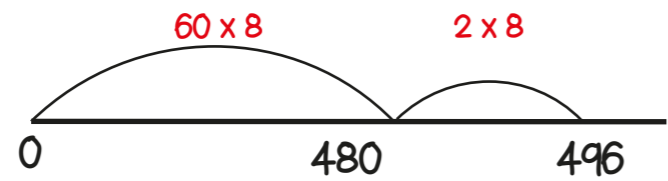
0.8 + 0.7, 45 + 45
Number facts
Single digit decimals
Doubles
Bonds of 1 and 100

I just knew it!

Rapid fluency of 2 digit add 2 digit numbers

7 + 8
Use known facts

If I know 7 + 8 = 15 then I know 0.7 + 0.8 = 1.5
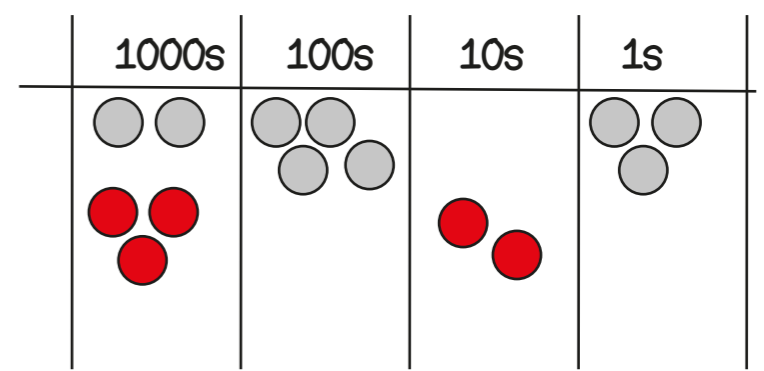
7,000 + 8,000 = 15,000
70,000 + 80,000 = 150,000
700,000 + 800,000 = 1,500,000
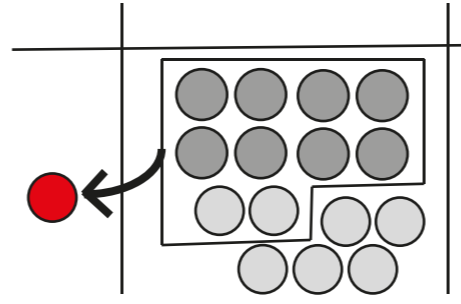
12,403 + 3,020
Use place value to add

If I know 2 + 3 = 5 then I know 2000 + 3000 = 5 000

I have noticed, one number has no hundreds or ones, the other has no tens.

10,000s	1000s	100s	10s	1s
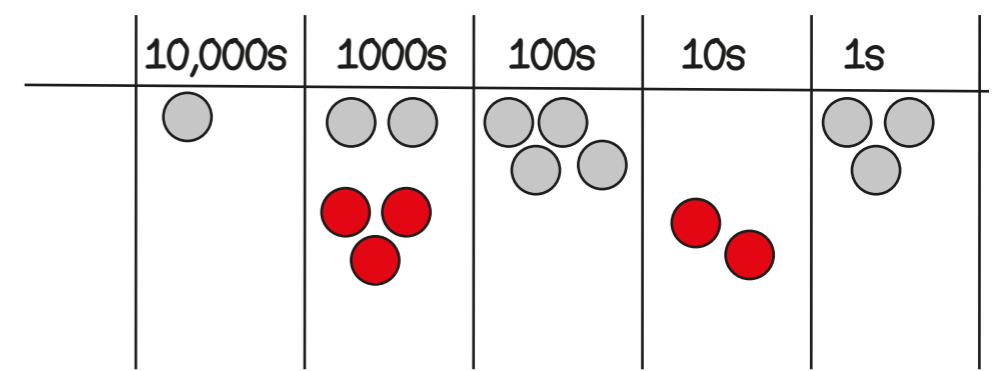
0.016 + 0.007
Bridge through boundaries
by counting in efficient steps

+0.004   +0.003

0   0.016   0.020   0.023
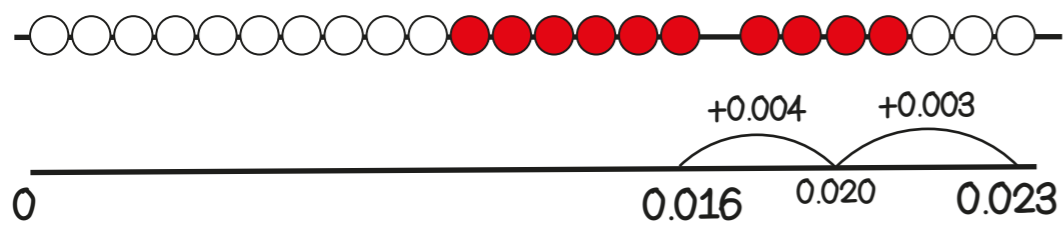
25,748 + 46,374
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$$\begin{array}{r} 25,748 \\ + 46,374 \\ \hline 72,122 \\ \end{array}$$
1 1 1 1

10,000s	1000s	100s	10s	1s
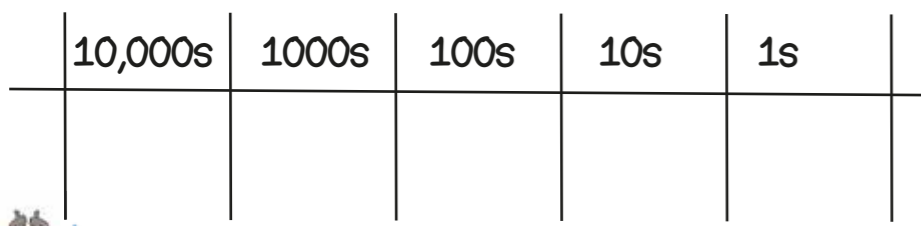
35,040 + 22,070
Partition and recombine

30,000 + 5,000 + 40 + 20,000 + 2,000 + 70

50,000 + 7,000 + 110 = 57,110

10,000s	1000s	100s	10s	1s
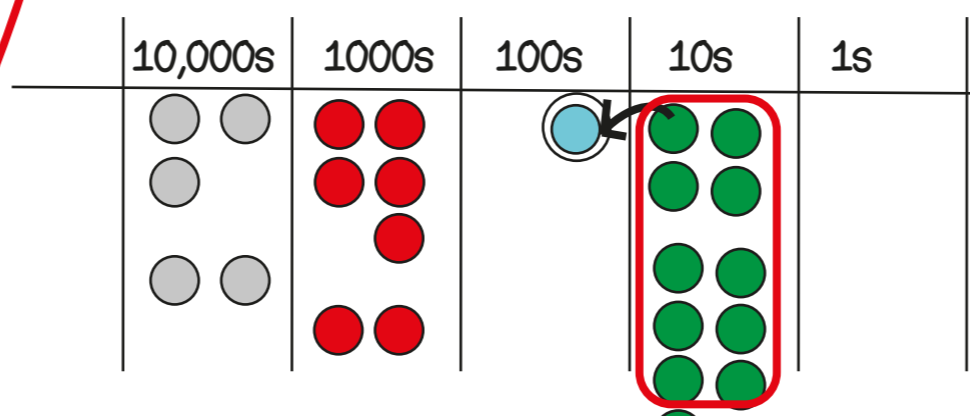
32,356 + 19,998
Round then adjust

10,000s	1000s	100s	10s	1s
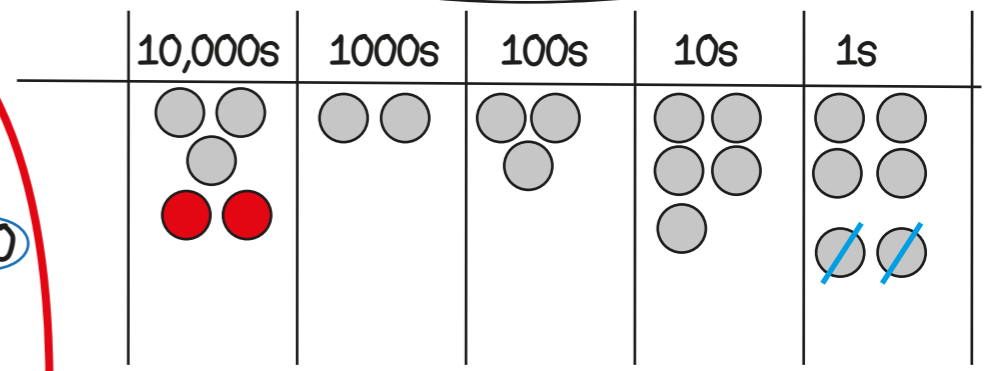
Add 20,000 then subtract 2

+20,000
-2

0   32,356   52,354   52,356

52,354	
32,356	20,000

How shall I subtract?
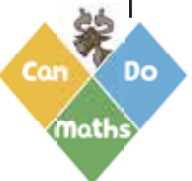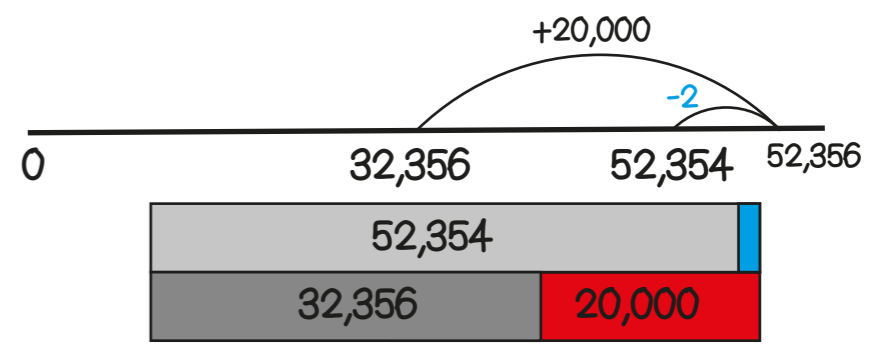
9 – 4, 13 – 5, 18 – 9
Number facts
Single digit decimals
Halves
Subtract from 1 and 100

I just knew it!

Rapid fluency of 2 digit subtract 2 digit numbers

15 – 8 = 7
Use known facts

If I know 15 – 8 = 7 then I know 1.5 – 0.8 = 0.7

15,000 – 8,000 = 7,000
150,000 – 80,000 = 70,000
1,500,000 – 800,000 = 700,000
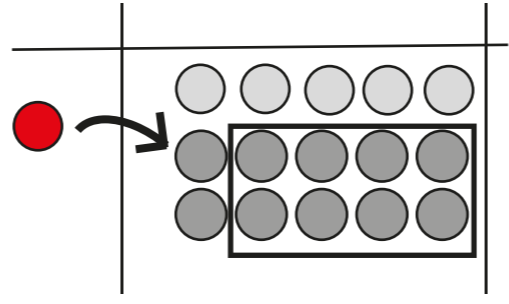
40,012 – 3,005
Use place value to subtract

5 less than 12 is 7 Now it is easy to take away 3000

If I know 40 – 3 = 37 then I know that 40 thousand take away 3 thousand is 37 thousand

40,000 = 4 tens of thousands or 40 thousands
12 = 1 ten and 2 ones or 12 ones

40,012 = 40 thousands and 12 ones
take away 3 thousands and 5 ones
equals 37 thousands and 7 ones.

0.54 – 0.17
Bridge through boundaries
by counting in efficient steps

– 0.03   – 0.04   – 0.1
0.16   0.40   0.44   0.54
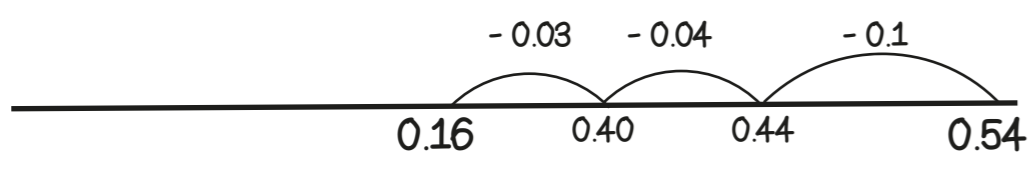
45,748 – 26,374
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$$\begin{array}{r} {}^{3}\!\!\!/4\,{}^{1}5,{}^{6}\!\!\!/7\,{}^{1}48 \\ -\ 26,374 \\ \hline 19,374 \end{array}$$

10,000s	1000s	100s	10s	1s

20,045 – 19,989
Find the difference between two numbers

+11   +45
19,989   20,000   20,045
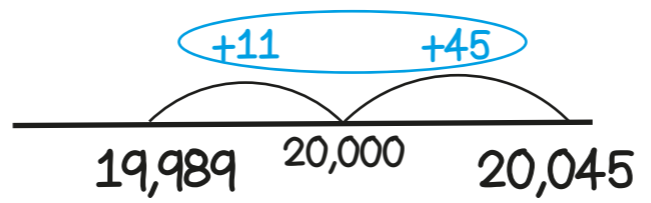
| 20,045 | |
| 19,989 | 56 |

43,453 – 19,998
Round then adjust

10,000s	1000s	100s	10s	1s
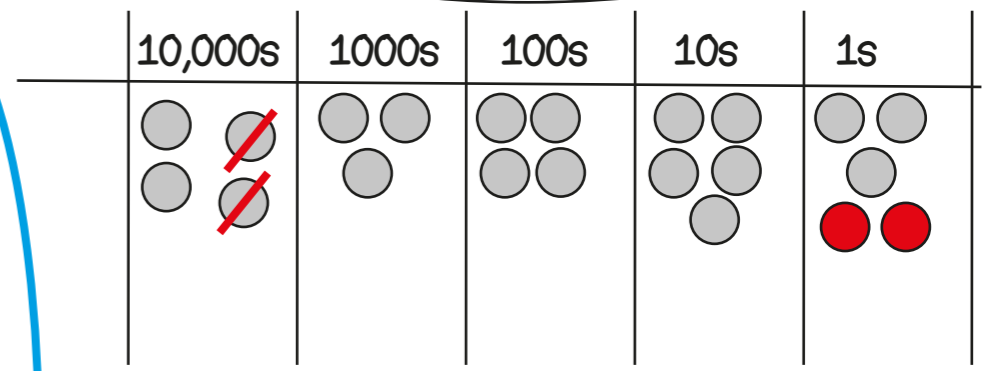
Take away 20,000 then add 2
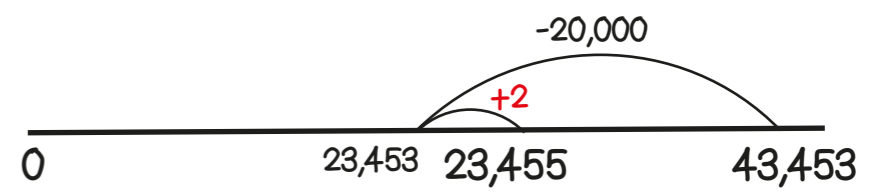
–20,000
+2
0   23,453 23,455   43,453

Can Do Maths

5

Known facts: Rapid recall of all multiplication tables up to 12 x 12

6 x 4 Use known facts and place value
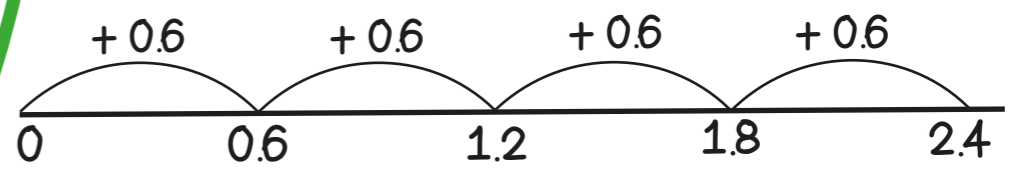
40 is ten times greater than 4

$$6 \times 4 = 24$$
$$60 \times 4 = 240$$
$$60 \times 40 = 2400$$

6 x 10 x 4 x 10

= 24 x 100

1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1

10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10
10	10	10	10	10	10

0.6 is ten times smaller than 6

6 x 4 Use known facts and place value

$$0.6 \times 4 = 2.4$$
4 jumps of 0.6

+ 0.6   + 0.6   + 0.6   + 0.6

0   0.6   1.2   1.8   2.4

$$0.6 \times 0.4 = 24 \text{ hundredths}$$
$$0.6 \times 0.4 = 0.24$$

2.34 x 1000 Multiply by 10, 100, 1000

1000s	100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s

2.34
23.4   x10
234   x10   x100
2340   x10

How shall I multiply?

0.6   1

0.4

1
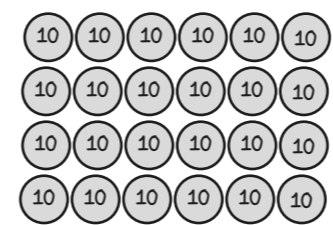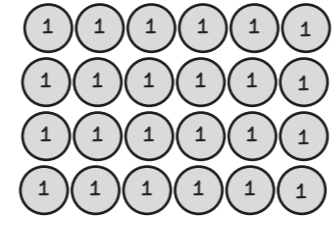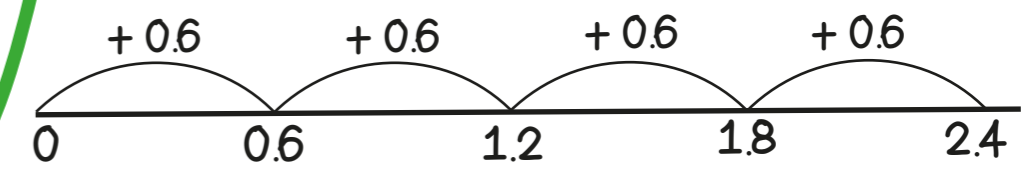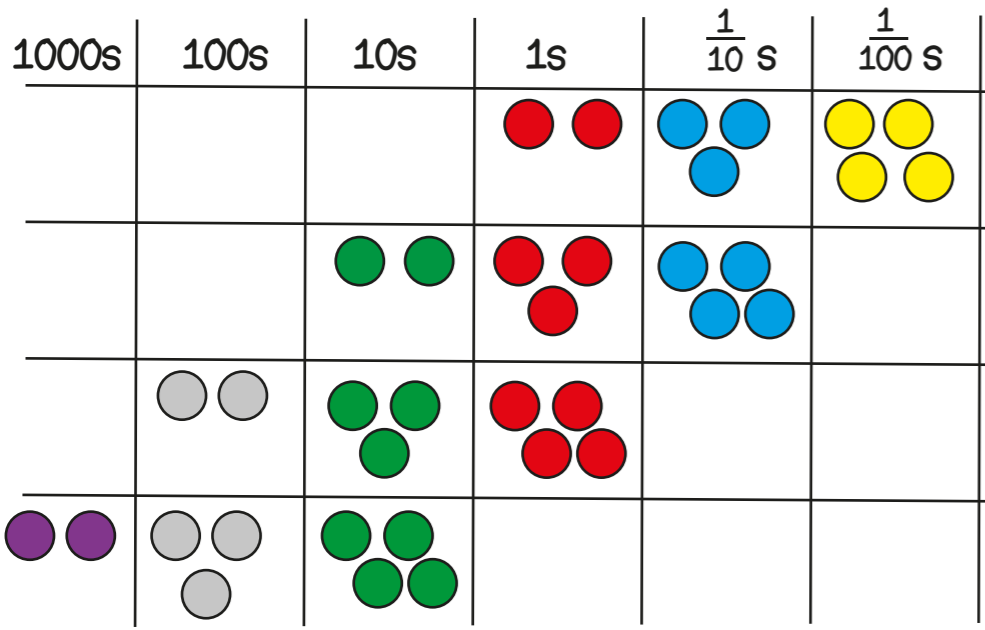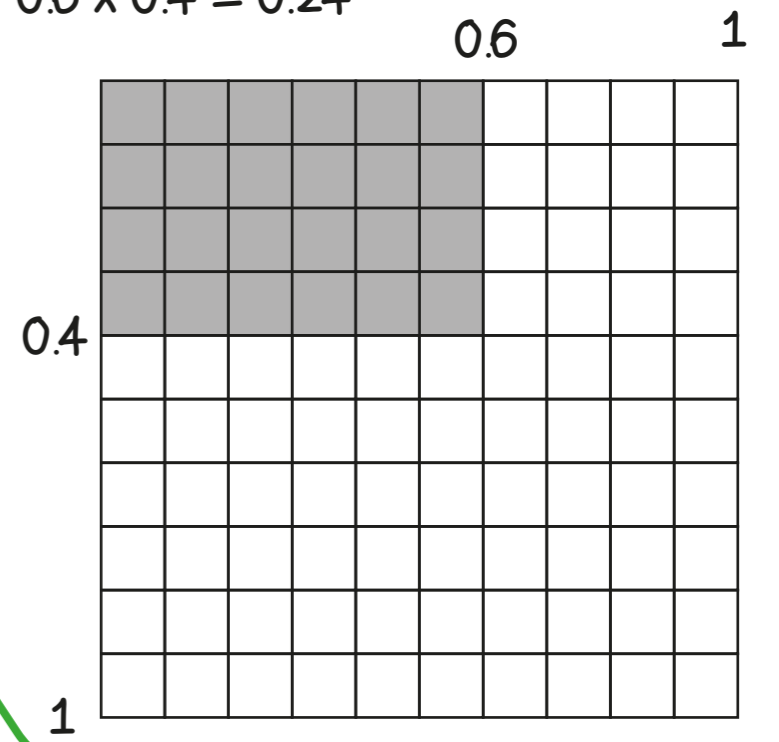
423 x 4 Partition and recombine

423 x 4

4 0 0	2 0	3
x4	x4	x4
1600	80	12

1600 + 80 + 12 = 1692

15 x 42 Using factors and distributive law

15 x 48
Factor pair
= 15 x 6 x 8
= 90 x 8
= 720

6   8   15

15 x 14
= 15 x 6 + 15 x 8
= 90 + 120
= 210

14
6   8

15
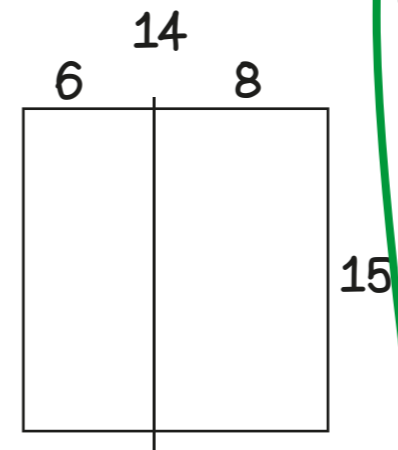
427 x 38 Formal written method

	400	20	7
30	12,000	600	210
8	3,200	160	56

427
x 38
3416
12810
16226

Can Do Maths

Known facts:
Use recall of all multiplication tables up to 12 x 12 to derive division facts

Include calcuations where remainders occur

24 ÷ 4
Use known facts and place value

24,000 is a thousand times greater than 24

0.6 is ten times smaller than 6

2.4 ÷ 0.6
Use known facts and place value

$24 \div 4 = 6$
$240 \div 40 = 6$
$2400 \div 400 = 6$
$24{,}000 \div 4000 = 6$

$24{,}000 \div 400 = \dfrac{24 \times 1000}{4 \times 100}$

$\dfrac{240}{4} = 60$

24 biscuits shared between 4 people means they will get 6 biscuits each.
If there are 1000 times as many people and 1000 times as many biscuits, how many biscuits each now?

$2.4 \div 0.6 = 4$
How many steps of 0.6 make 2.4?

+ 0.6   + 0.6   + 0.6   + 0.6

0   0.6   1.2   1.8   2.4

24 ÷ 1000
Divide by 10, 100, 1000
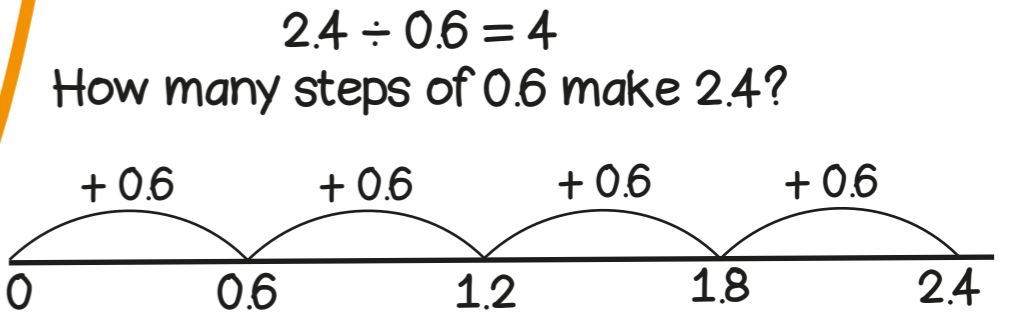
How shall I divide?

5724 ÷ 4
Formal written method
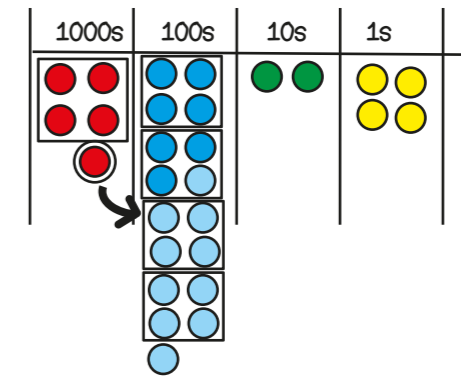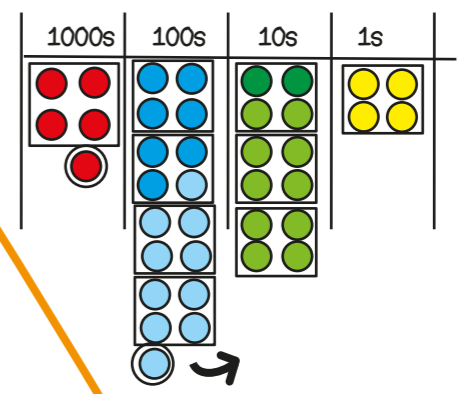
100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s	$\frac{1}{1000}$ s

24

2.4   ÷10

0.24   ÷10   ÷1000

0.024   ÷10

1000s | 100s | 10s | 1s

$\begin{array}{r} 1\ 4 \\ 4\overline{)5^17\ 2\ 4} \end{array}$

496 ÷ 8
Partition and recombine

$496 \div 8$

480   16

÷ 8   ÷ 8

60   +   2   =   62

60 x 8   2 x 8

0   480   496

1512 ÷ 24
Using factors

$1512 \div 6 \div 4$

1000s | 100s | 10s | 1s

$\begin{array}{r} 1\ 4\ 3\ 1 \\ 4\overline{)5^17^12\ 4} \end{array}$
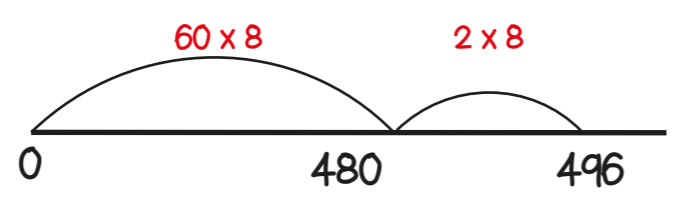
1512					
252	252	252	252	252	252
63 63 63 63					

44 + 56, 27 + 27
Number facts
Single digit decimals
Doubles
Bonds of 1 and 100

I just knew it!

Rapid fluency of 2 digit add 2 digit numbers

17 + 17
Use known facts

If I know 17 + 17 = 34 then I know 1.7 + 1.7 = 3.4

$17,000 + 17,000 = 34,000$
$170,000 + 170,000 = 340,000$
$1,700,000 + 1,700,000 = 3,400,000$
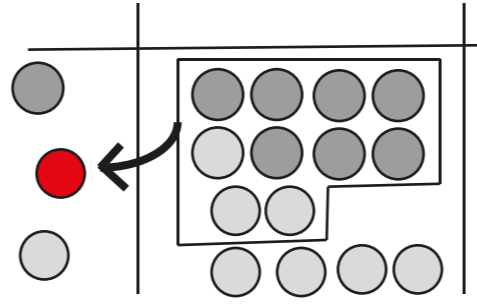
1,102,403 + 50,020
Use place value to add

I have noticed, one number has no hundreds or ones, the other has no tens.

1,000,000s	100,000s	10,000s	1000s	100s	10s	1s
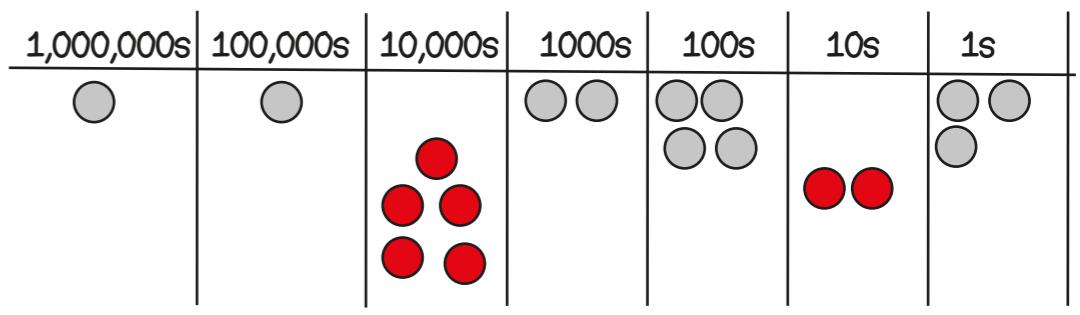
0.028 + 0.015
Bridge through boundaries
by counting in efficient steps

+0.01   +0.002   +0.003

0   0.028   0.038   0.040   0.043

How shall I add?

432,356 + 99,000
Round then adjust

100,000s	10,000s	1000s	100s	10s	1s
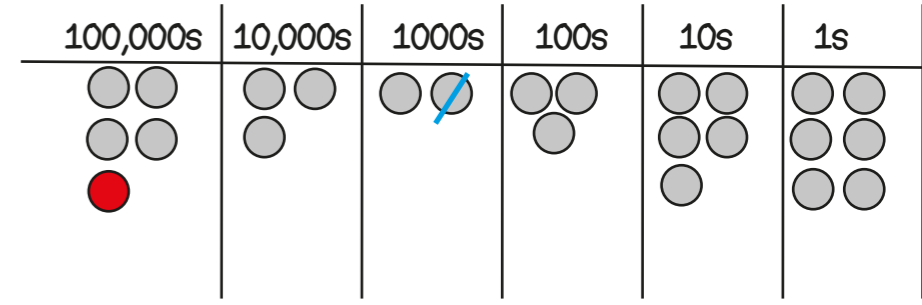
Add 100,000 then take away 1,000

307,040 + 206,070
Partition and recombine

$300,000 + 7,000 + 40 + 200,000 + 6,000 + 70$

$500,000 + 13,000 + 110 = 513,110$

100,000s	10,000s	1000s	100s	10s	1s

325,748 + 246,374
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$325,748$
$+ \ 246,374$
$572,122$
   1 1 1 1

100,000s	10,000s	1000s	100s	10s	1s

+100,000

−1000

0   432,356   531,356   532,356

531,356

432,356   100,000

Can Do Maths

How shall I subtract?

0.9 – 0.4, 100 – 65
Number facts
Single digit decimals
Halves
Bonds of 1 and 100

I just knew it!

Rapid fluency of 2 digit subtract 2 digit numbers
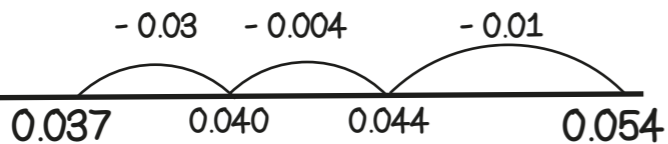
36 – 18 = 18
Use known facts

If I know 36 – 18 = 18 then I know 3.6 – 1.8 = 1.8

36,000 – 18,000 = 18,000
360,000 – 180,000 = 180,000
3,600,000 – 1,800,000 = 1,800,000
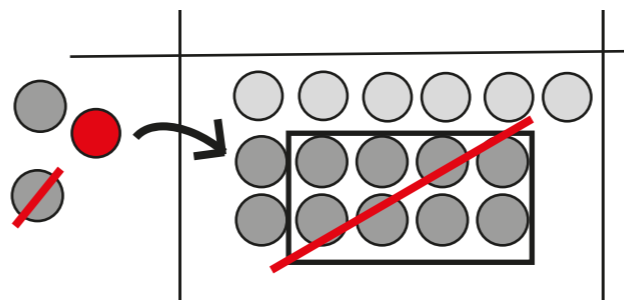
400,032 – 30,005
Use place value to subtract

5 less than 32 is 27

400,000 = 4 hundreds of thousands or 400 thousands
400 – 30 = 370 so 400,000 – 3,000 = 370,000

400,032 = 400 thousands and 32 ones take away 30 thousands and 5 ones = 370,027

0.054 – 0.017
Bridge through boundaries by counting in efficient steps

– 0.03   – 0.004   – 0.01
0.037   0.040   0.044   0.054

243,453 – 99,900
Round then adjust

100,000s	10,000s	1000s	100s	10s	1s

Take away 100,000 then add 100
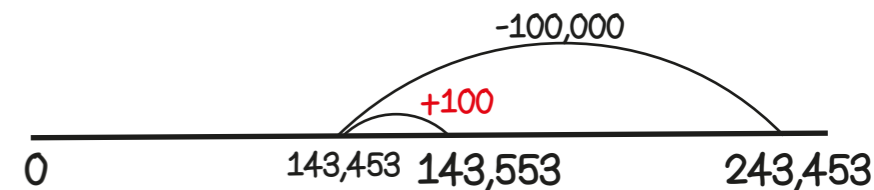
–100,000
+100
0   143,453   143,553   243,453
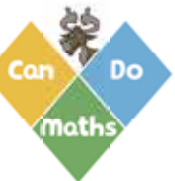
445,748 – 126,374
Formal written method

Exchange ten of these for one of those!

Regroup and rename

$$\begin{array}{r} {}^{3}4{}^{1}5{}^{6}7{}^{1}48 \\ +\ 126{,}374 \\ \hline 319{,}374 \end{array}$$

100,000s	10,000s	1000s	100s	10s	1s

200,450 – 199,989
Find the difference between two numbers

+11   +450
199,989   200,000   200,450

200,450	
199,989	461

Can Do Maths

How shall I multiply?

Known facts:
Rapid recall of all multiplication tables up to 12 x 12

6 x 4
Use known facts and place value

40 is ten times greater than 4

60 x 40 = 2400
600 x 400 = 240,000
6000 x 4000 = 24,000,000

6 x 10 x 4 x 10
= 24 x 100

0.6 is ten times smaller than 6

6 x 4
Use known facts and place value

0.06 x 4 = 0.24
4 jumps of 0.06

+ 0.06   + 0.06   + 0.06   + 0.06

0   0.06   0.12   0.18   0.24
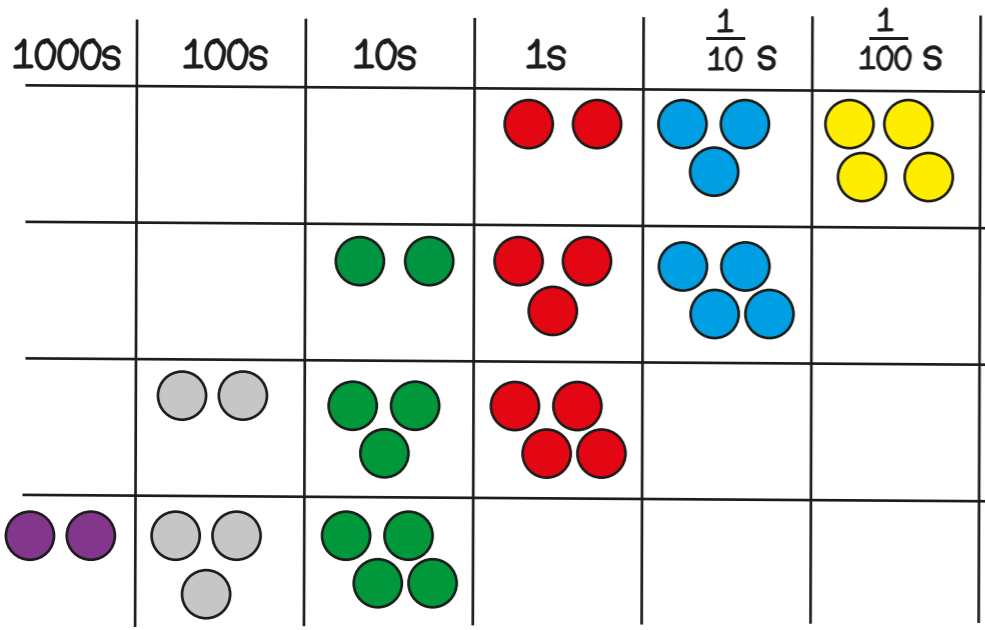
0.6 x 0.4 = 24 hundredths
0.6 x 0.4 = 0.24
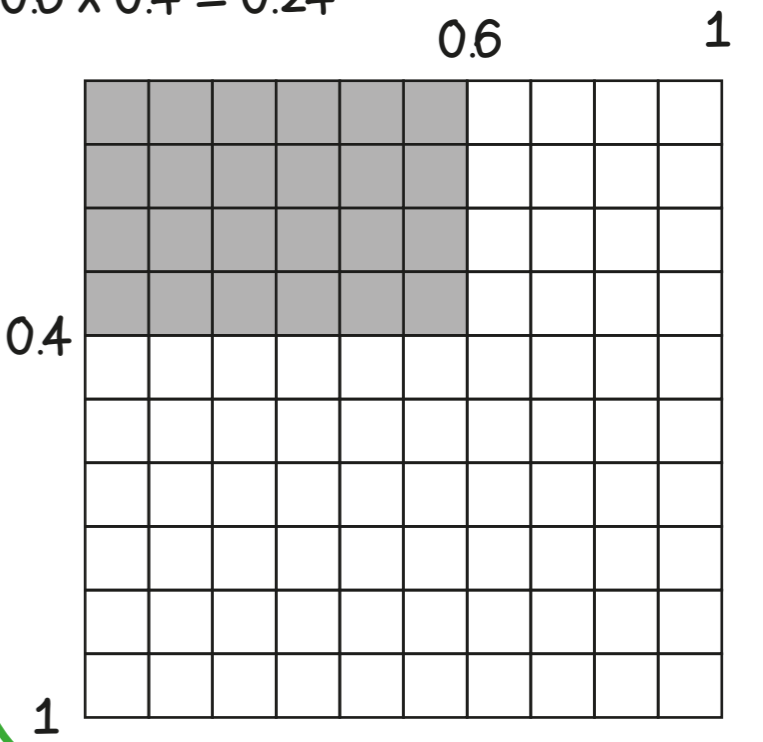
0.6   1

0.4

1

2.34 x 1000
Multiply by 10, 100, 1000

1000s	100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s

2.34
↓ x10
23.4
↓ x10   ↘ x100
234
↓ x10
2340
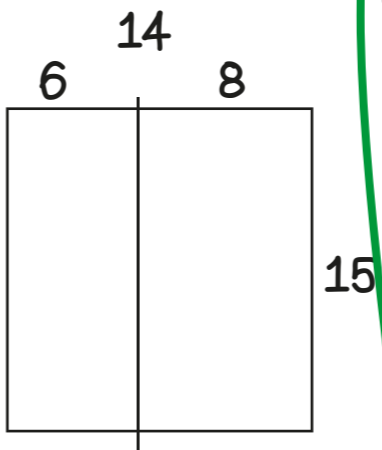
4203 x 4
Partition and recombine

4203 x 4

4 0 0 0   2 0 0   3

x4   x4   x4

16,000   +   800   +   12   =   16,812

15 x 42
Using factors and distributive law

15 x 48
Factor pair
= 15 x 6 x 8
= 90 x 8
= 720

6
8   15

15 x 14
= 15 x 6 + 15 x 8
= 90 + 120
= 210

14
6   8

15

2427 x 38
Formal written method

2427
x 38
19416
   3 2 5
72810
   2 2
92226
 1 1

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Can Do Maths

Known facts:
Use recall of all multiplication tables up to 12 x 12 to derive division facts

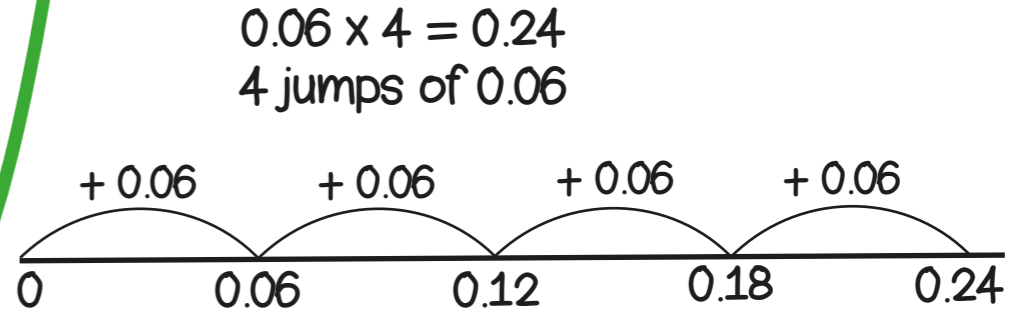Include calcuations where remainders occur

24 ÷ 4
Use known facts and place value

240 is ten times greater than 24

0.6 is ten times smaller than 6

2.4 ÷ 0.6
Use known facts and place value

$240 ÷ 40 = 6$
$2400 ÷ 400 = 6$
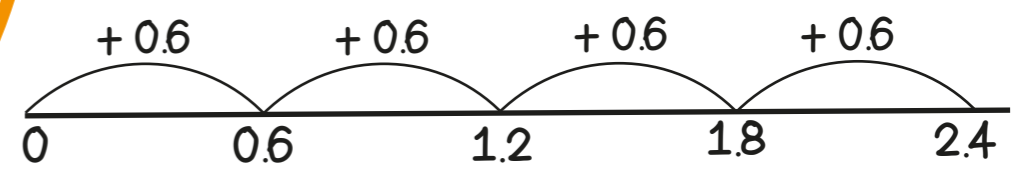$24,000 ÷ 4000 = 6$
$240,000 ÷ 40,000 = 6$
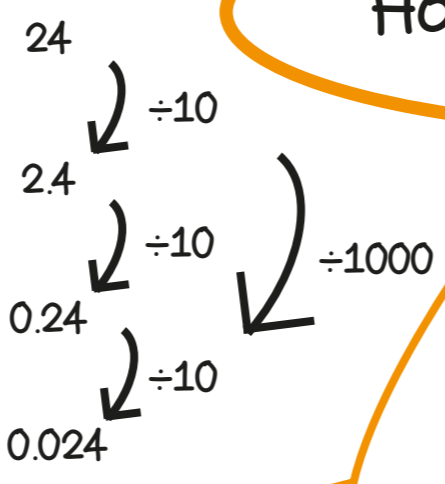$2,400,000 ÷ 400,000 = 6$

24 biscuits shared between 4 people means they will get 6 biscuits each.
If there are 10 times as many people and 10 times as many biscuits, how many biscuits each now?

$240,000 ÷ 400 = \dfrac{24 \times 10,000}{4 \times 100}$

$\dfrac{2400}{4} = 600$

$2.4 ÷ 0.6 = 4$
How many steps of 0.6 make 2.4?

+ 0.6   + 0.6   + 0.6   + 0.6

0   0.6   1.2   1.8   2.4

24 ÷ 1000
Divide by 10, 100, 1000

7182 ÷ 21
Formal written method

100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s	$\frac{1}{1000}$ s

24
÷10
2.4
÷10   ÷1000
0.24
÷10
0.024

1000s	100s	10s	1s

$\begin{array}{r} 1\ 4\ 3\ 1 \\ 4\overline{)5^17^12\ 4} \end{array}$

How shall I divide?

1512 ÷ 24
Using factors

4960 ÷ 8
Partition and recombine

$4960 ÷ 8$

4800   160

÷ 8   ÷ 8

600   +   20   =   620

600 x 8   20 x 8

0   4800   4960

$1512 ÷ 6 ÷ 4$

1512					
252	252	252	252	252	252
63 63 63 63					

$\begin{array}{r} 3\ 4\ 2 \\ 21\overline{)7\ 1\ 8\ 2} \\ 6\ 3 \\ \hline 8\ 8 \\ 8\ 4 \\ \hline 4\ 2 \\ 4\ 2 \\ \hline 0 \end{array}$

Can Do Maths