

8 + 7, 9 + 9, 14 + 3
 Number facts
 Single digit numbers
 Doubles
 Teens and single digits

I just knew it!

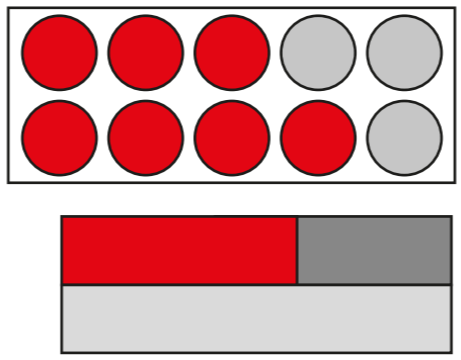
13 + 17
 Use known facts
 30 + 70

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

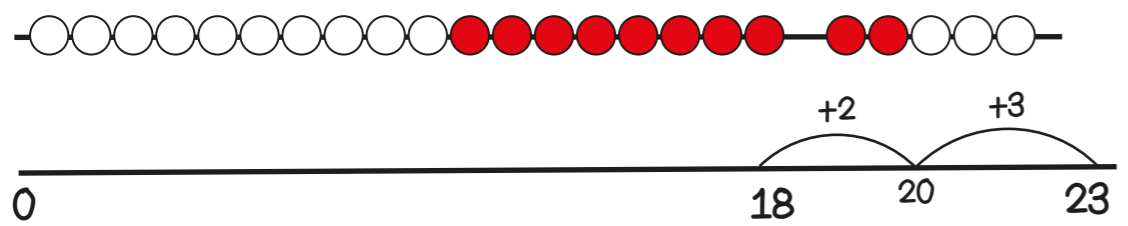
If I know 3 + 7 = 10
 then I know
 13 + 17 is 2 tens more

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

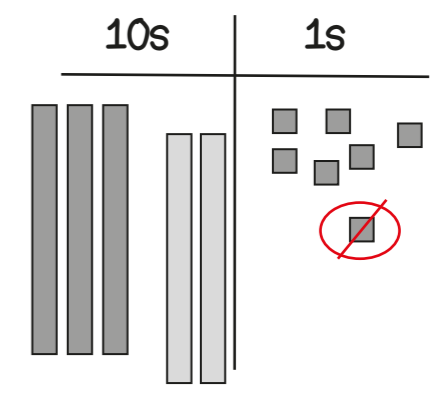


5 + 18
 Greatest number first
 then bridge

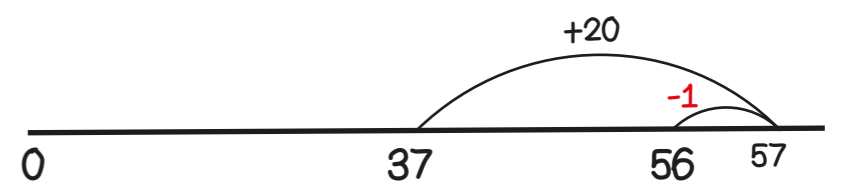


How shall I add?

37 + 19
 Round then adjust

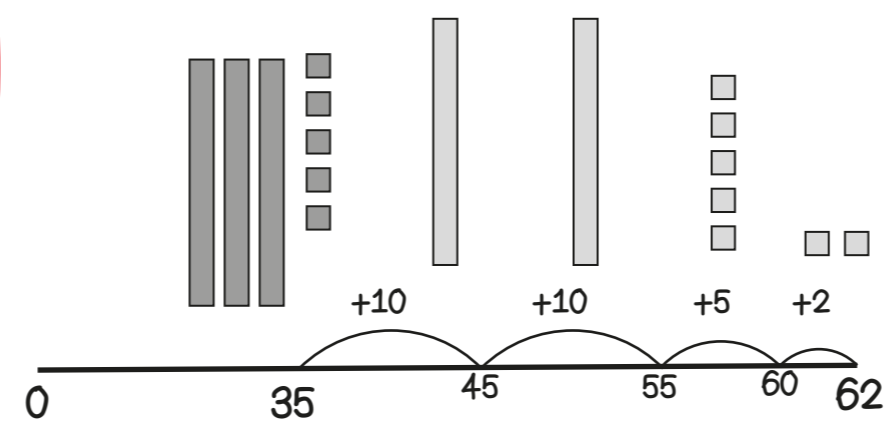
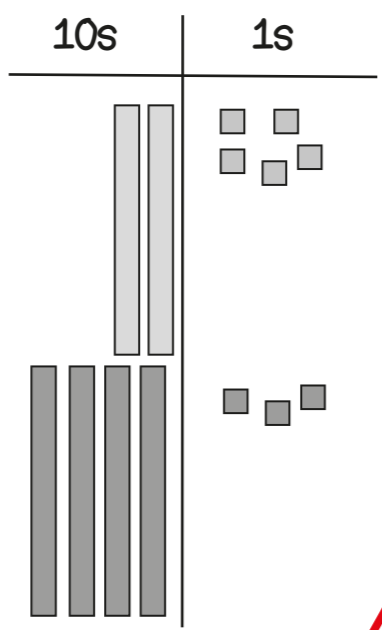


Add 20 then subtract 1



25 + 43
 Partition and recombine

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



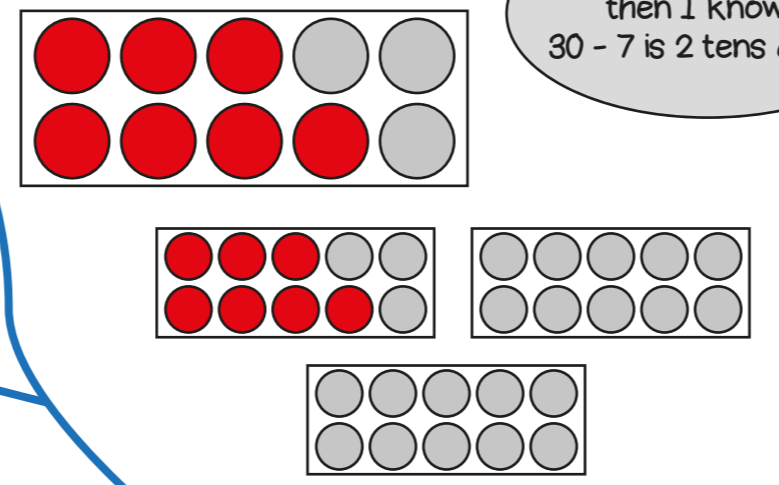
35 + 27
 Count on in tens then ones

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

I just knew it!

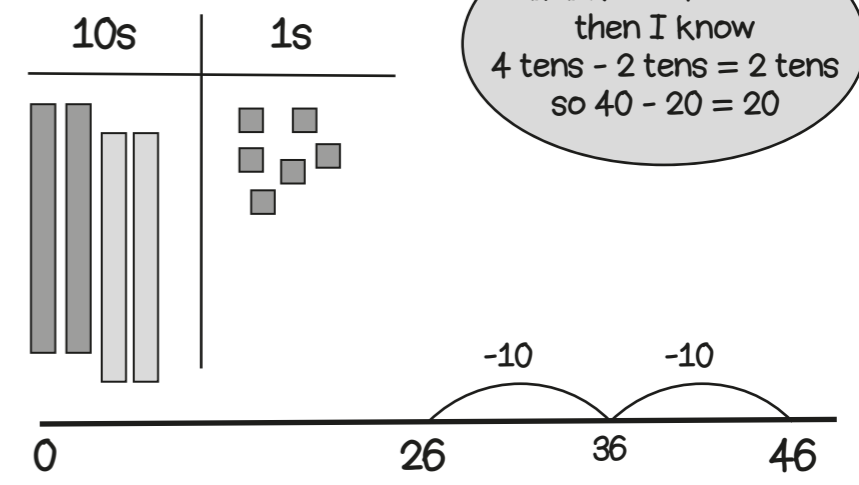
30 - 7
 Use known facts
 100 - 70

If I know $10 - 7 = 3$
 then I know
 $30 - 7$ is 2 tens and 3

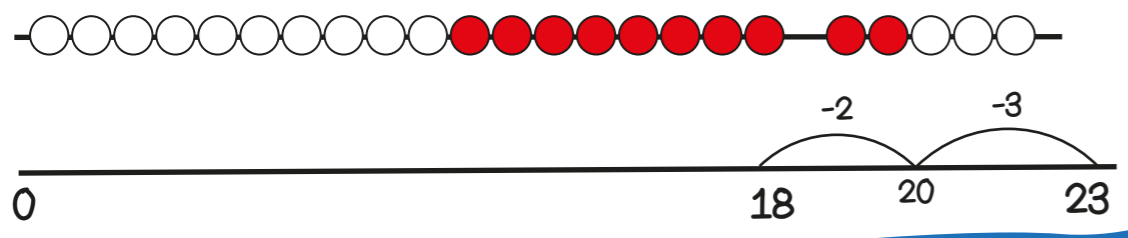


46 - 20
 Count back: multiples of ten

If I know $4 - 2 = 2$
 then I know
 $4 \text{ tens} - 2 \text{ tens} = 2 \text{ tens}$
 so $40 - 20 = 20$

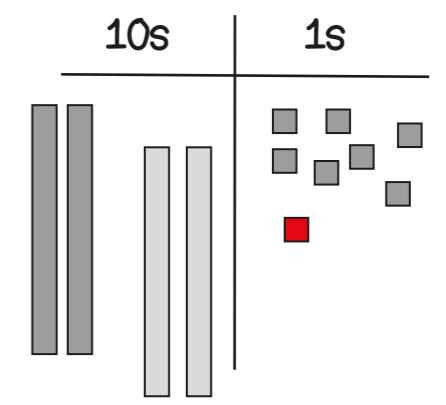


23 - 5
 Count back: bridge through
 a multiple of ten

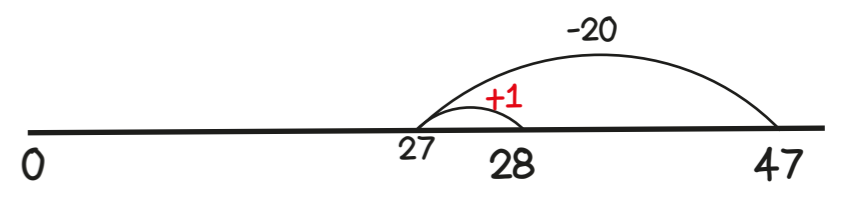


How shall I subtract?

47 - 19
 Round then adjust

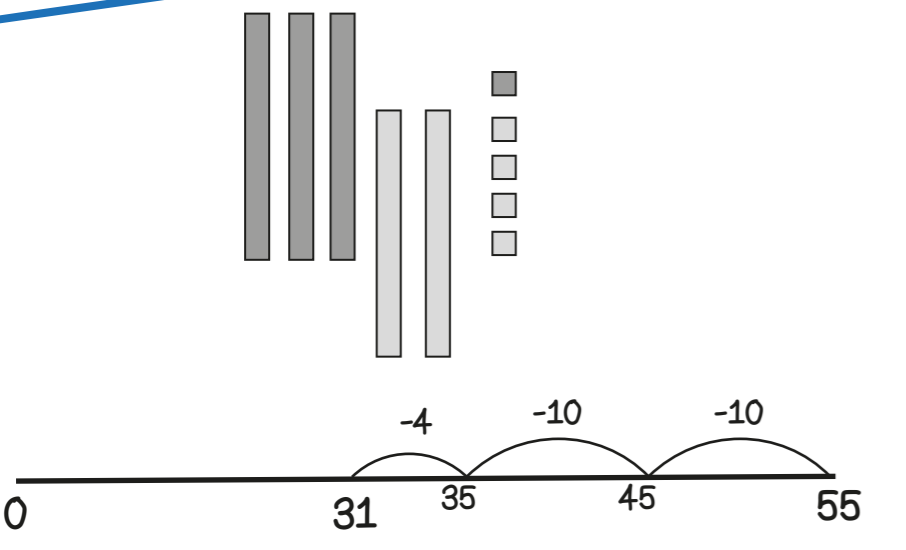
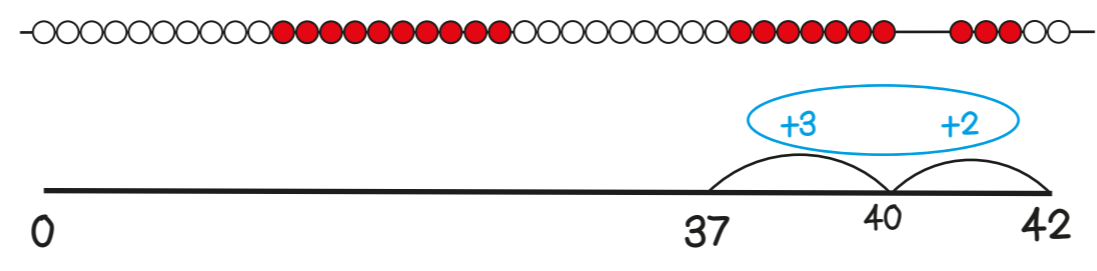
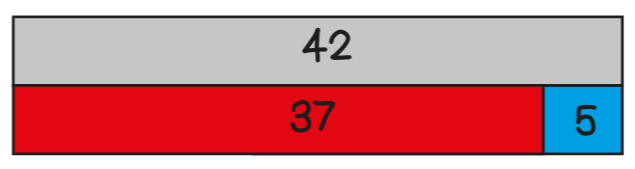


Take away 20 then **add 1**



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

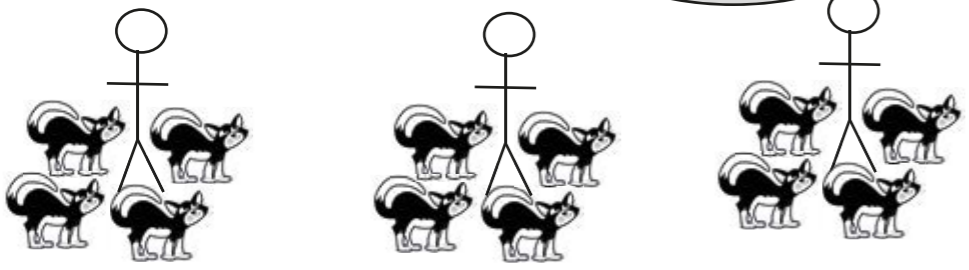
42 - 37
 Find the difference between
 two numbers



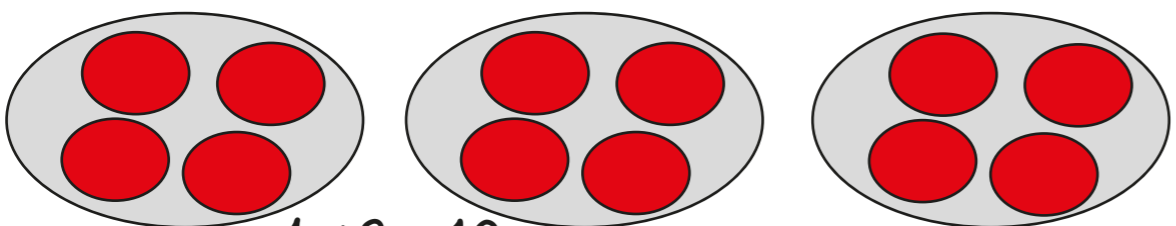
55 - 24
 Count back in tens then ones

Equal groups

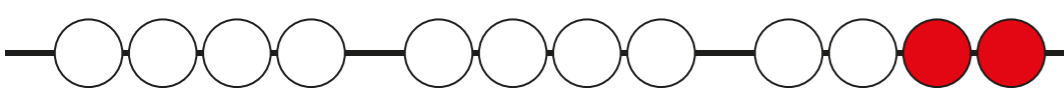
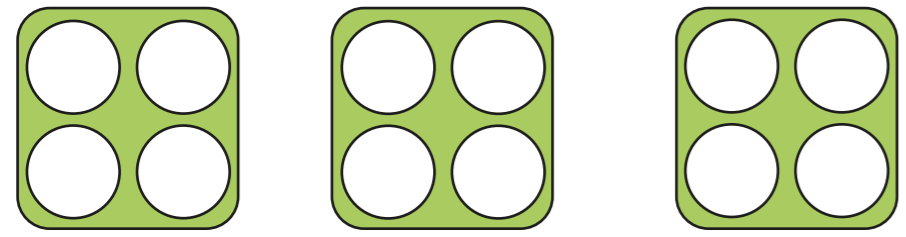
There are 3 groups with 4 cats in each group



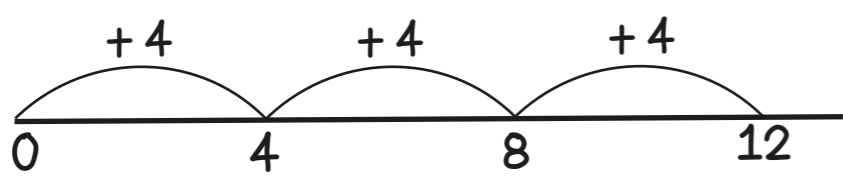
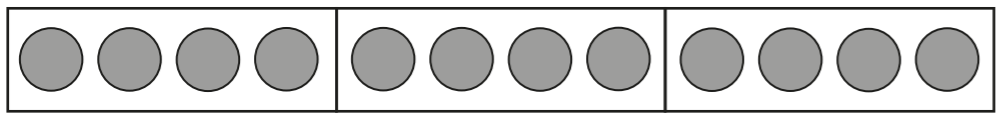
Four cats, multiplied by 3



$4 \times 3 = 12$



Repeated addition



$4 + 4 + 4 = 12$

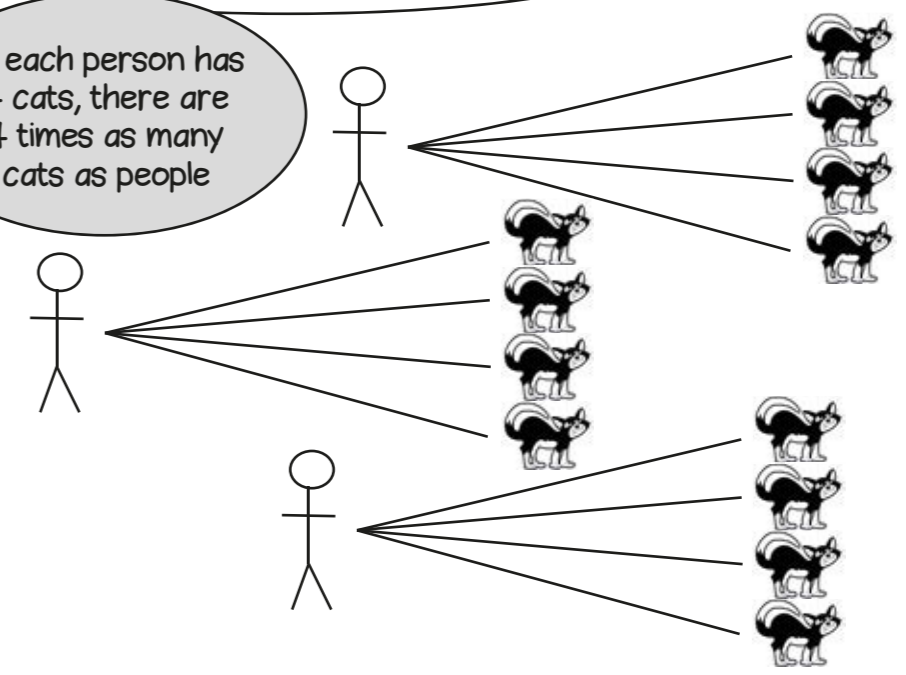
3 people each have 4 cats. How many cats are there in total?

Recall of 2x, 5x and 10x tables

People	Cats
1	4
2	8
3	12

One to many correspondence

If each person has 4 cats, there are 4 times as many cats as people



How shall I multiply?

Count in ones

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

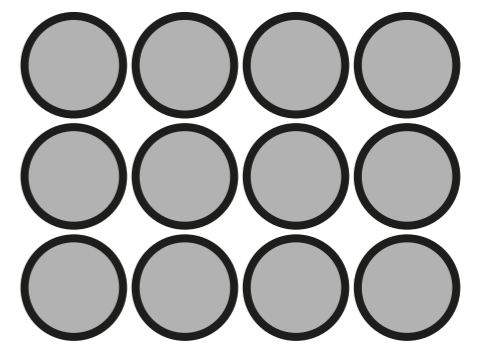
Count in twos

2, 4, 6, 8, 10, 12

Use a known fact

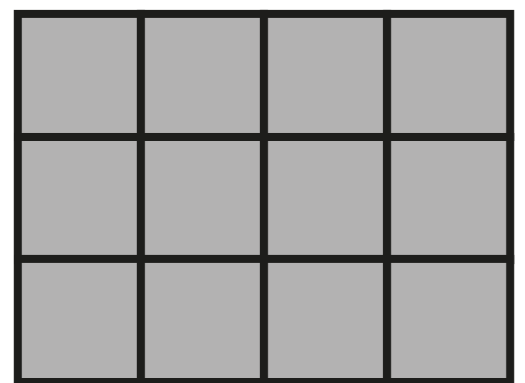
If 2 x 3 is 6, then 4 x 3 is double 6.

Arrays



$4 \times 3 = 12$

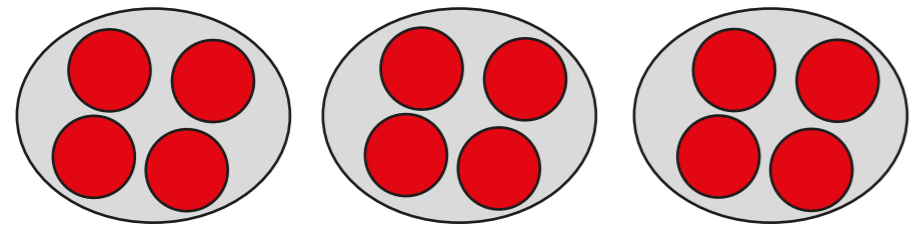
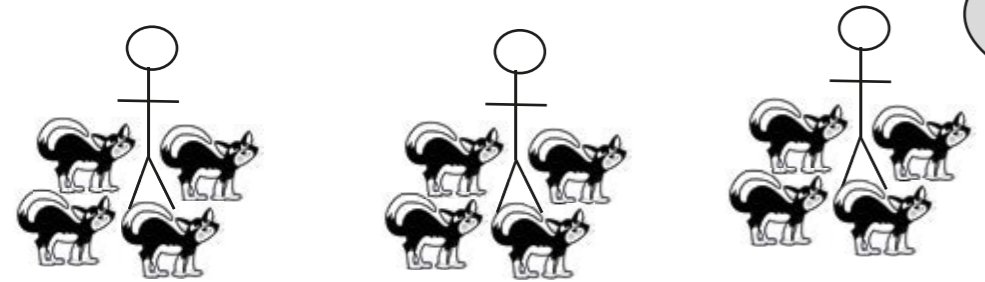
$3 \times 4 = 4 \times 3$



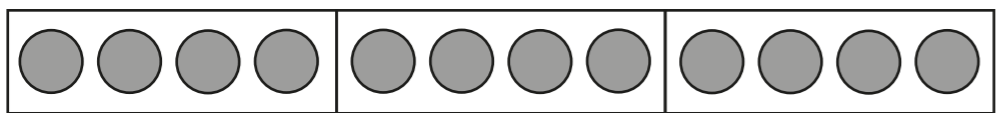
Sharing

12 shared into 3 equal groups

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



Bar model



12		
4	4	4

Link to fractions.
One third of 12 is 4

$12 \div 3 = 4$

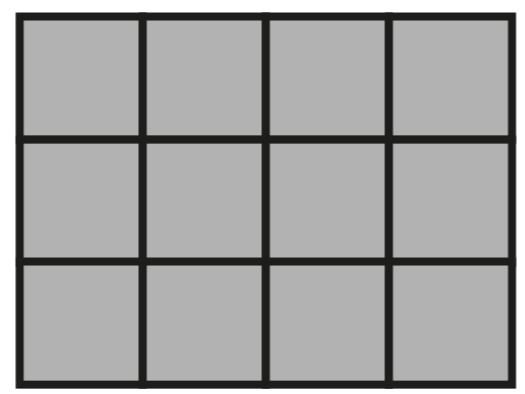
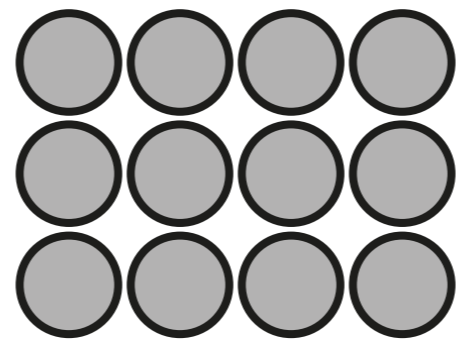
Recall and use 2x, 5x and 10x tables

1 for you, 1 for you,
1 for you...

Grab a group of 3,
grab a group of 3...

How shall I divide?

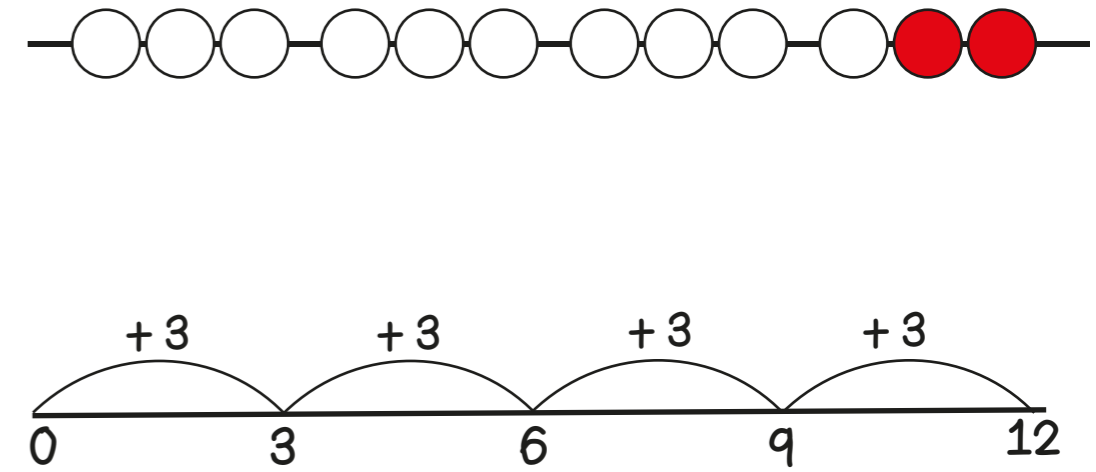
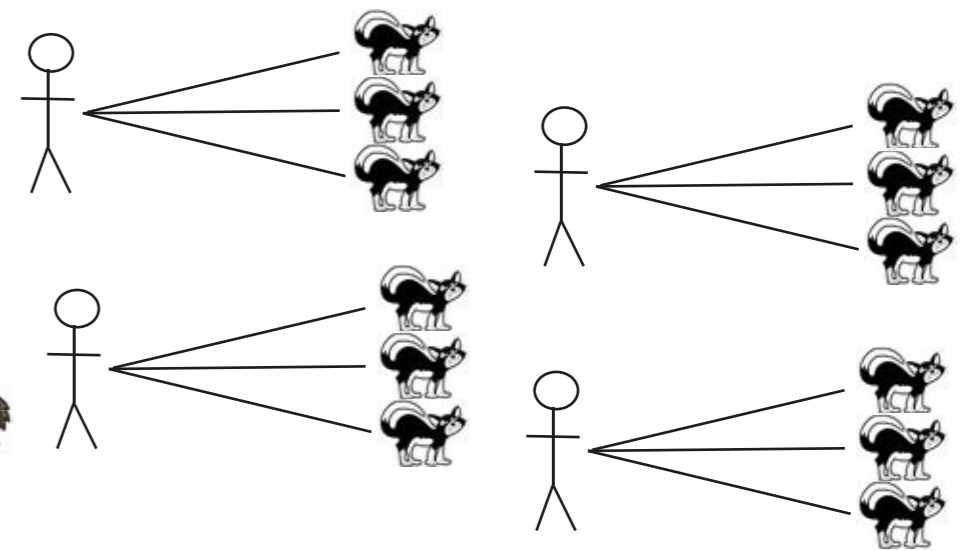
12 can be described as
3 columns of 4
or 4 rows of three



Grouping

How many groups of 3 are there in 12?

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



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