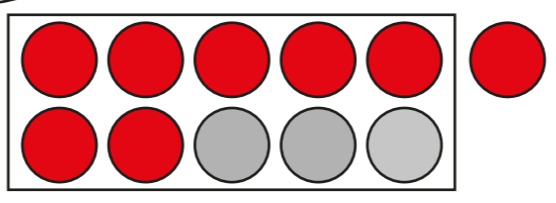


$4 + 1, 6 + 3, 10 + 4$
 Number facts
 Single digit numbers
 Doubles
 Ten and single digits

I just knew it!

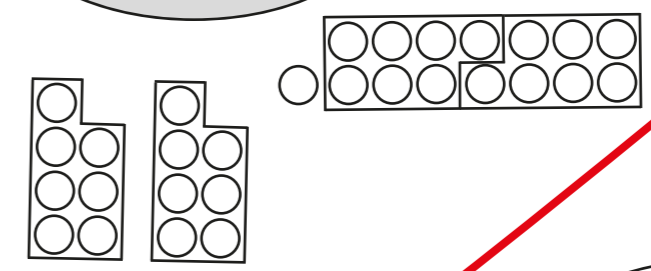
$3 + 7$
 Use known addition facts

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

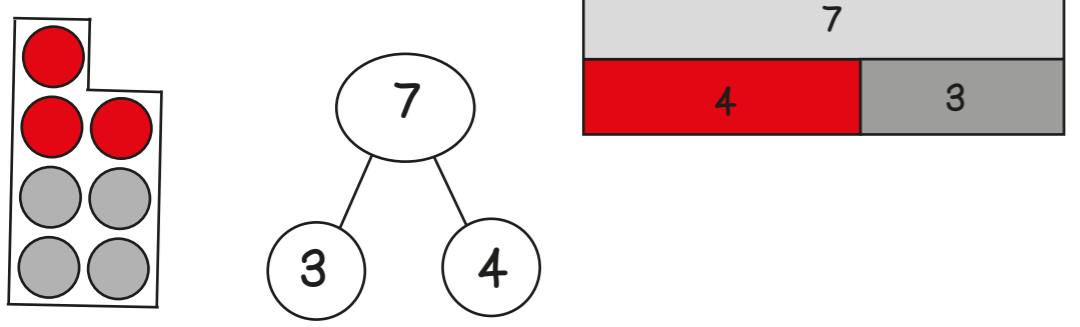


$7 + 8$
 Use near doubles

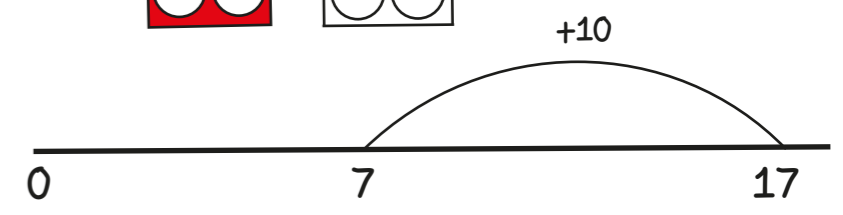
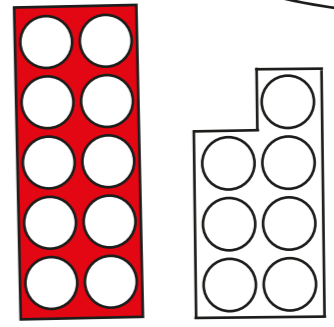
If I know $7 + 7 = 14$
 then I know
 $7 + 8 = 15$
 because it is 1 more



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



$7 + 10$
 Add ten

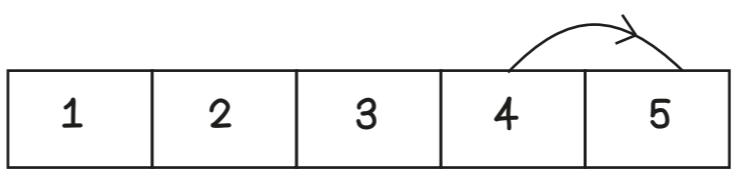


How shall I add?

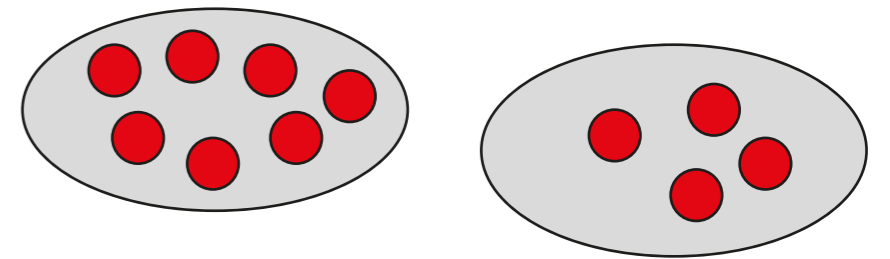
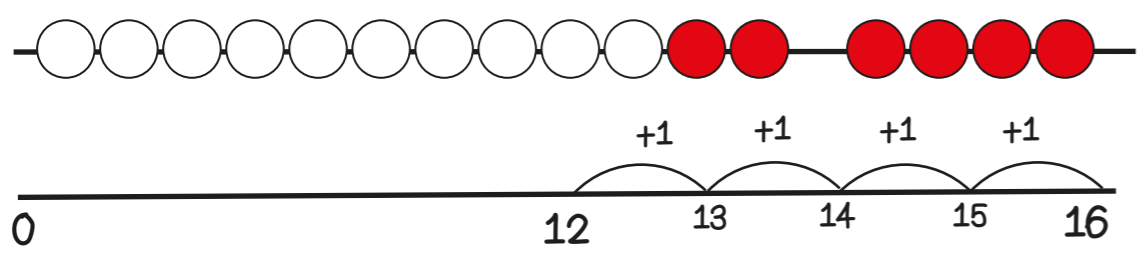
Notice the relationships

$24 + 1$
 Find one more

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



$12 + 4$
 Counting on in 1s



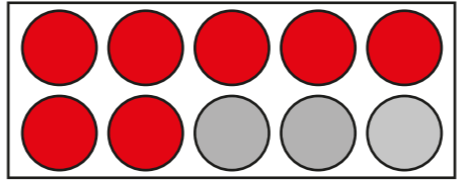
$7 + 4$
 Count all

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

I just knew it!

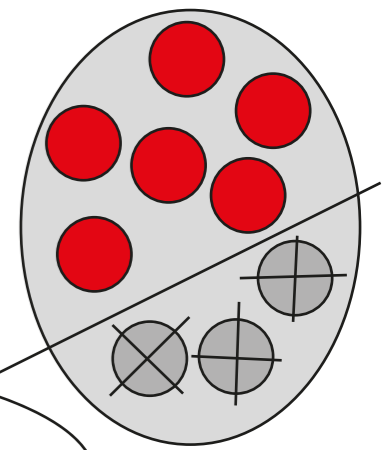
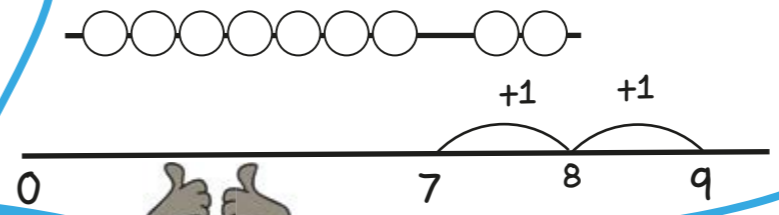
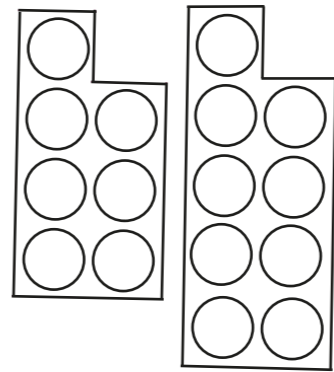
3 + 7
Use known addition facts
to derive subtraction facts

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

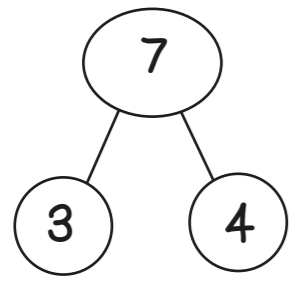
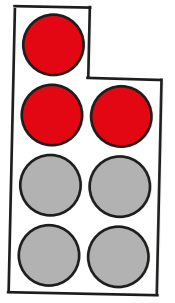


9 - 7
Find the difference between
two numbers

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



7 - 3 = 4
Secure subtraction facts of
single digits and ten



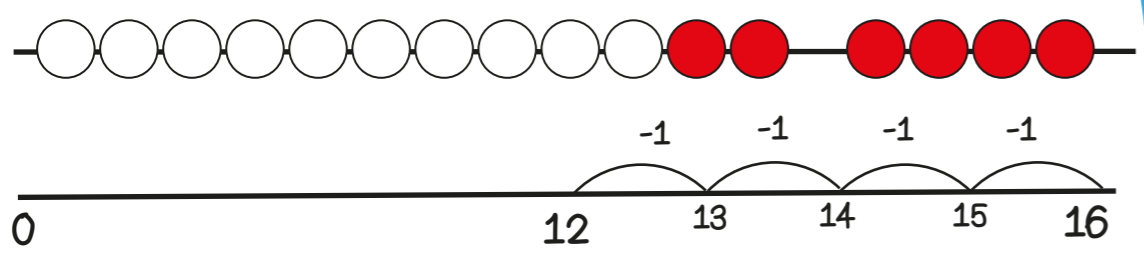
7	
4	3

How shall I subtract?



9 - 3
Take away

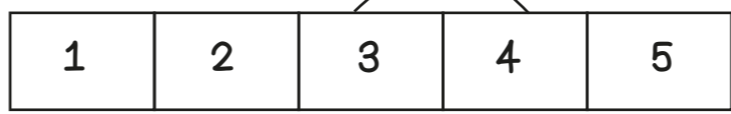
16 - 4
Counting back in 1s



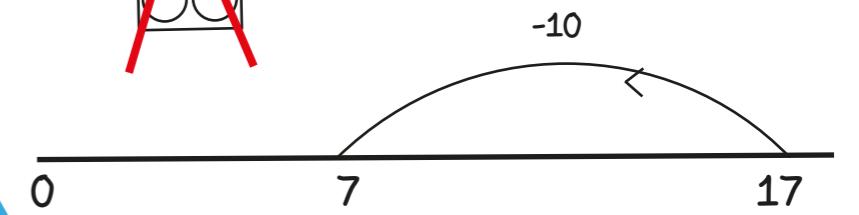
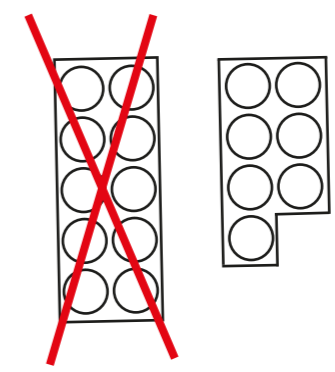
Notice the relationships

23 - 1
Find one less

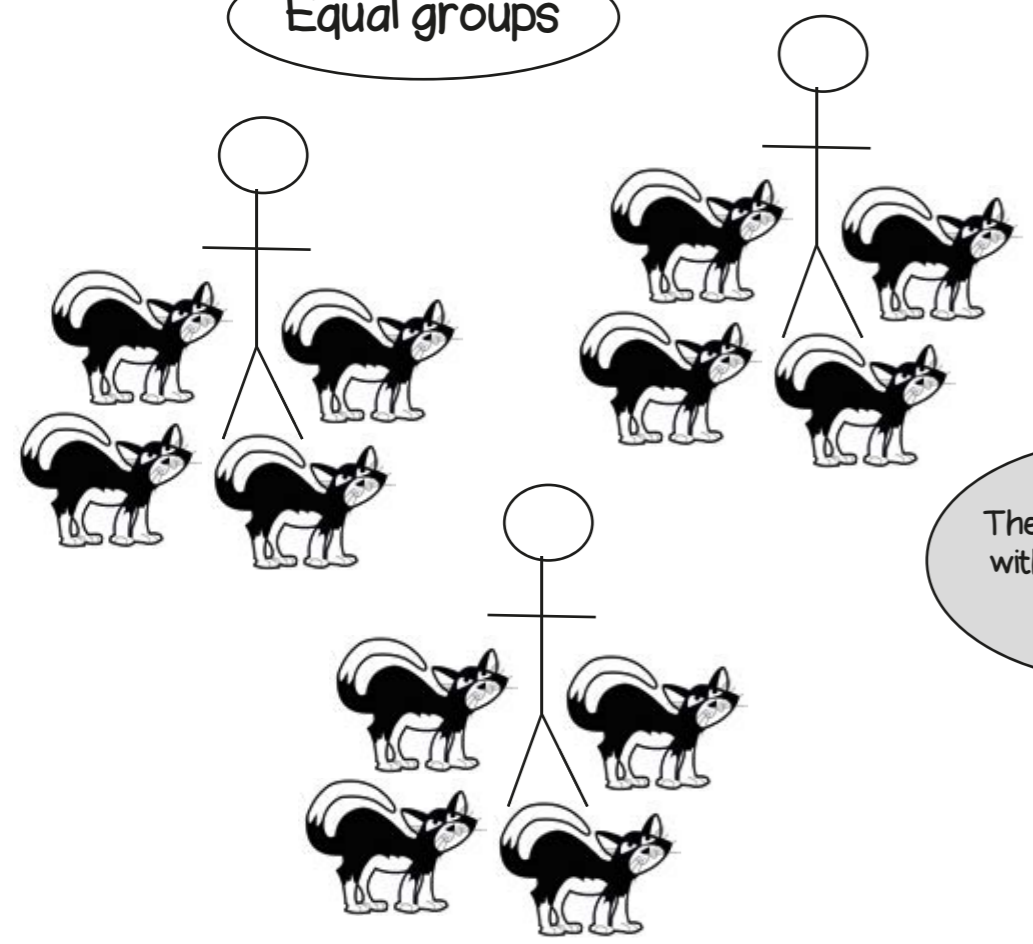
1 less than 4 is 3
1 less than 14 is 13
1 less than 24 is 23



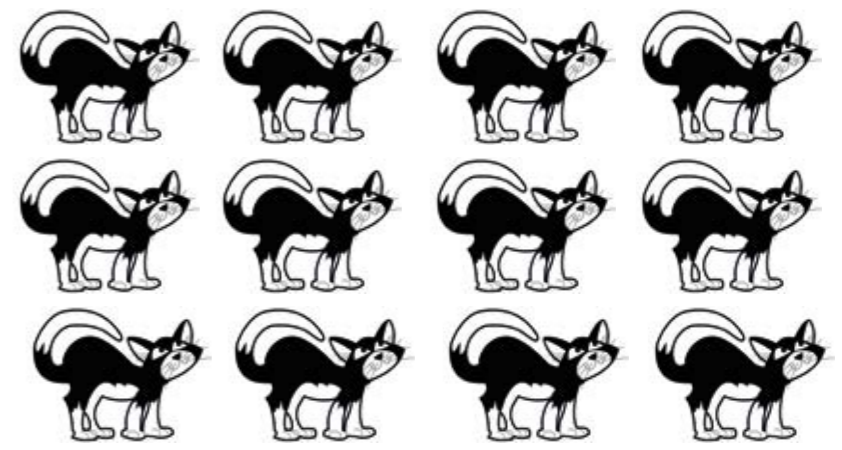
17 - 10
Take away ten



Equal groups



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



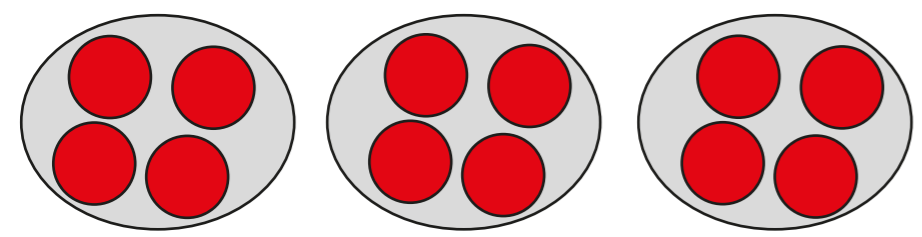
There are 3 groups with 4 cats in each group

Arrays

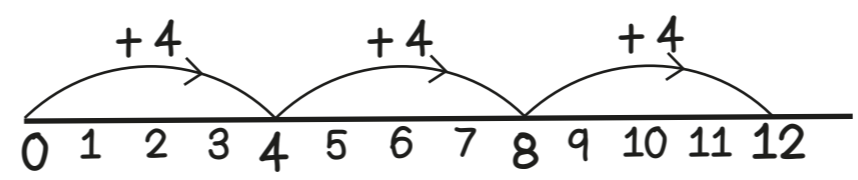
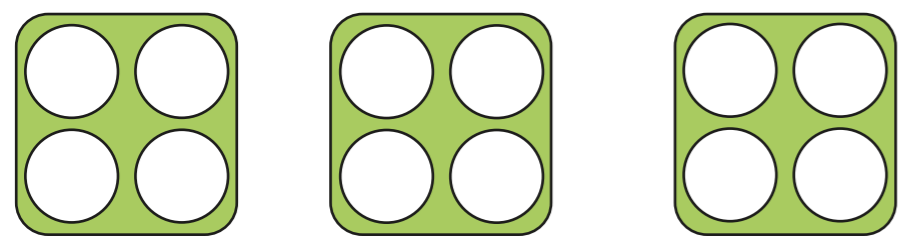
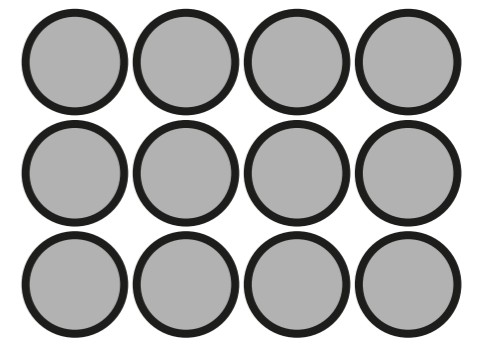
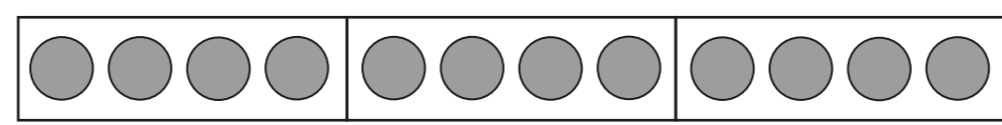
How shall I multiply?

Count in ones

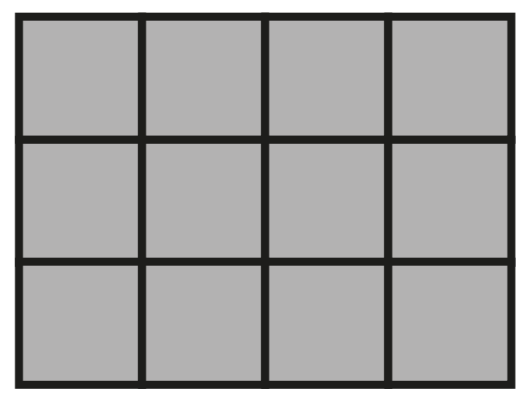
1,2,3,4,5,6,7,8,9,10,11,12



Repeated addition



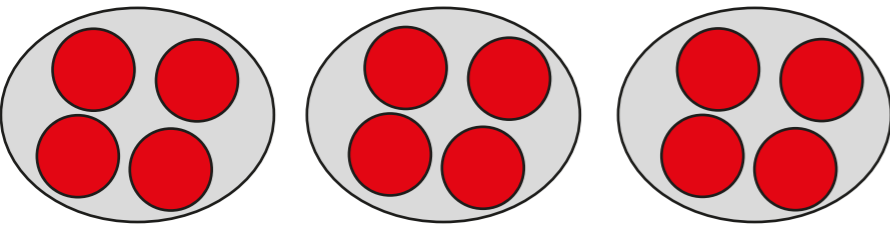
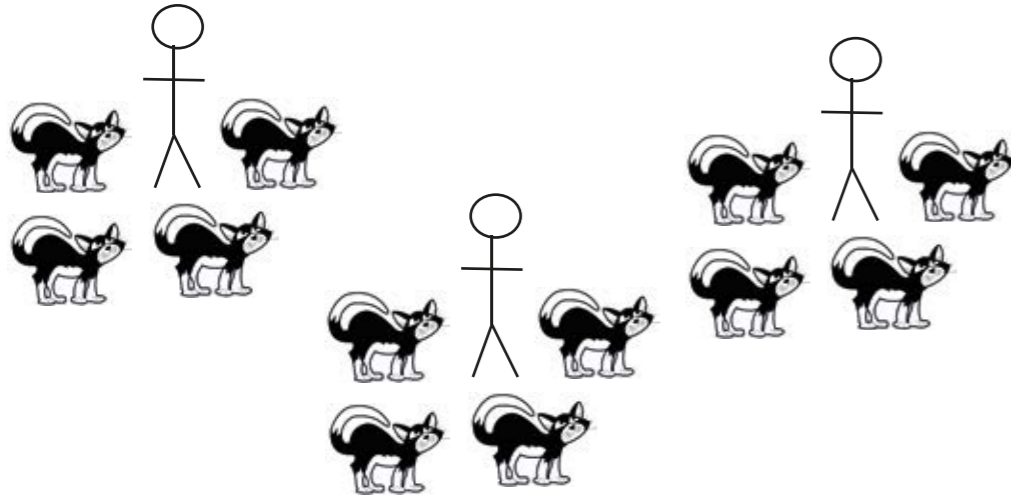
$4 + 4 + 4 = 12$



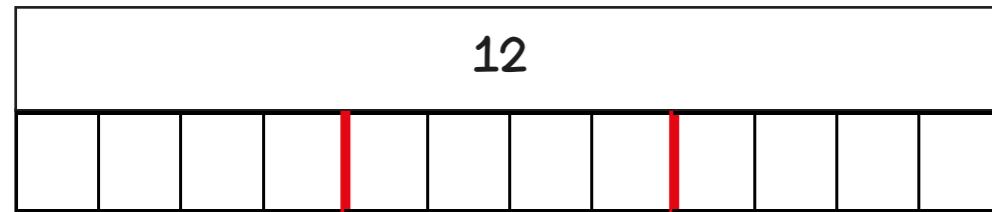
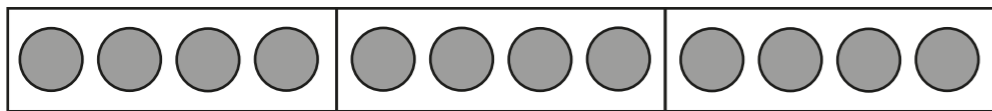
Sharing

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

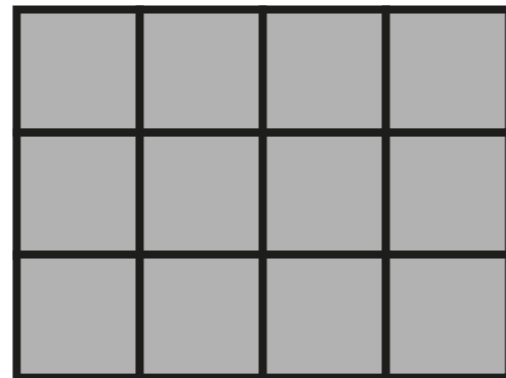
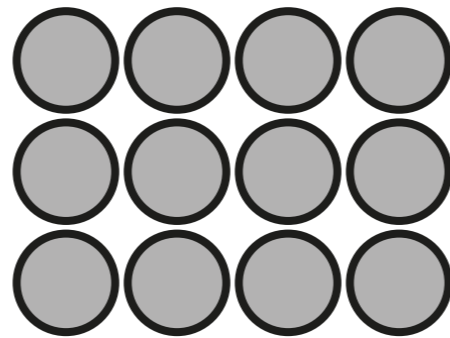


$$12 \div 3 = 4$$

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

How shall I divide?

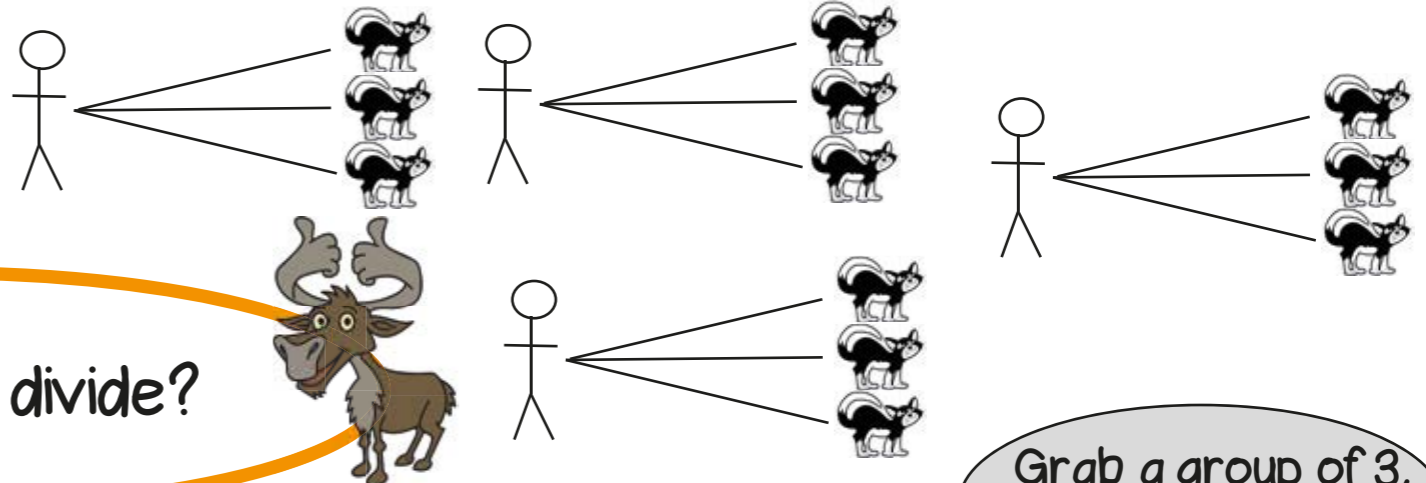
12 can be described as
3 columns of 4
or 4 rows of three



Grouping

How many groups of 3 are there in 12?

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



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

