

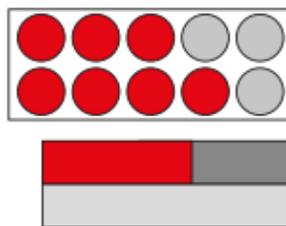
$8 + 7, 9 + 9, 14 + 3$
 Number facts
 Single digit numbers
 Doubles
 Teens and single digits

I just knew it!

$13 + 17$
 Use known facts
 $30 + 70$

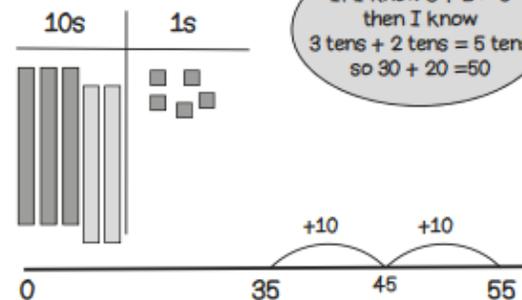
If I know $3 + 7 = 10$
 then I know
 $3 \text{ tens} + 7 \text{ tens} = 10 \text{ tens}$

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

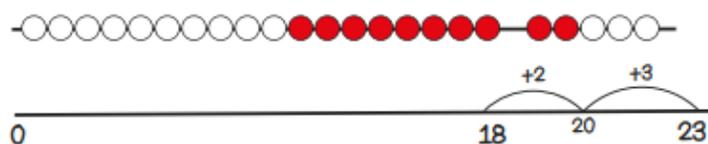


$35 + 20$
 Add multiples of ten

If I know $3 + 2 = 5$
 then I know
 $3 \text{ tens} + 2 \text{ tens} = 5 \text{ tens}$
 so $30 + 20 = 50$



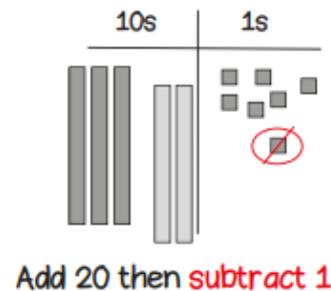
$5 + 18$
 Greatest number first
 then bridge



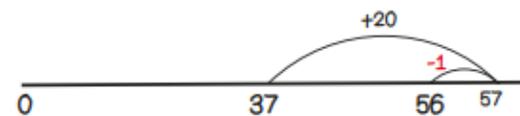
How shall I add?



$37 + 19$
 Round then adjust

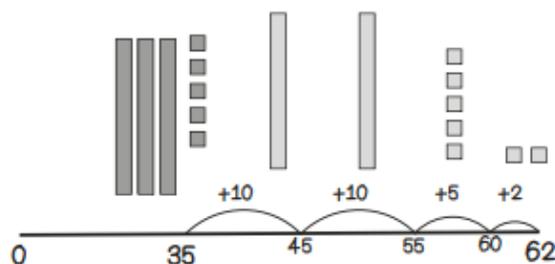
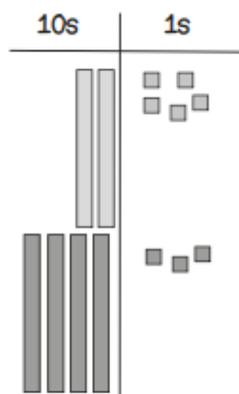


Add 20 then **subtract 1**



$25 + 43$
 Partition and recombine

$$\begin{array}{l} 25 + 43 \\ \textcircled{20} + \textcircled{5} + \textcircled{40} + \textcircled{3} \\ \textcircled{60} + \textcircled{8} = 68 \end{array}$$

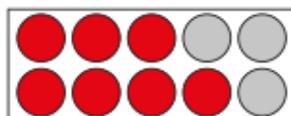


$35 + 27$
 Count on in tens then ones

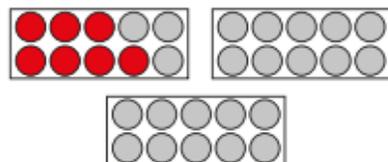
9 - 4, 13 - 5, 18 - 9
Number facts
Single digit numbers
Halves
Teens and single digits

I just knew it!

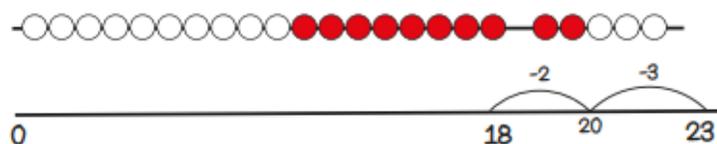
30 - 7
Use known facts
100 - 70



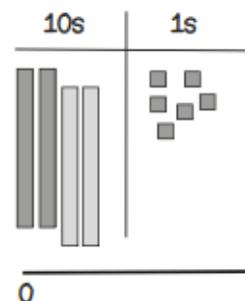
If I know $10 - 7 = 3$
then I know
 $30 - 7$ is 2 tens and 3



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



46 - 20
Count back: multiples of ten

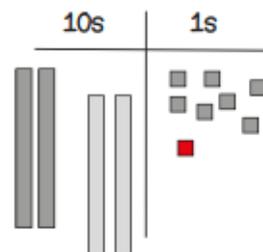


If I know $4 - 2 = 2$
then I know
4 tens - 2 tens = 2 tens
so $40 - 20 = 20$

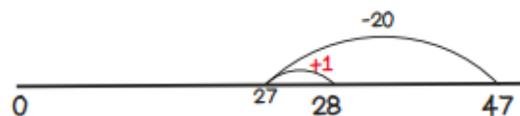
How shall I subtract?



47 - 19
Round then adjust

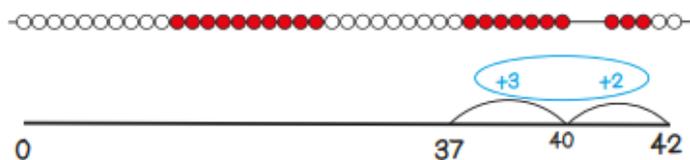
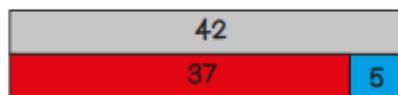


Take away 20 then **add 1**

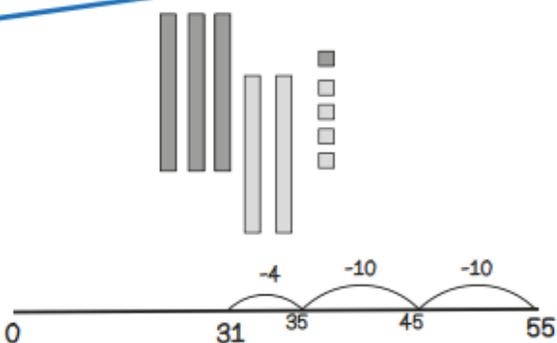


42 is 5 more than 37,
37 is 5 less than 42 so
the difference between
37 and 42 is 5

42 - 37
Find the difference between
two numbers

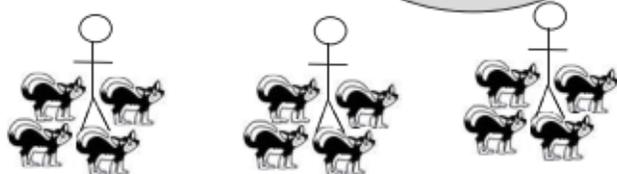


55 - 24
Count back in tens then ones

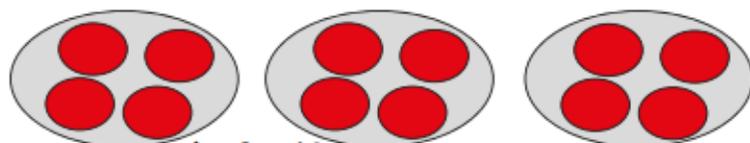


Equal groups

There are 3 groups with 4 cats in each group



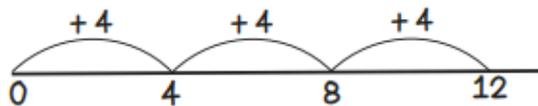
Four cats, multiplied by 3



$$4 \times 3 = 12$$



Repeated addition



$$4 + 4 + 4 = 12$$

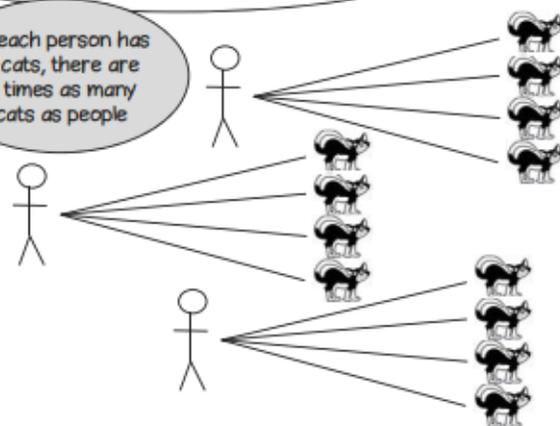
3 people each have 4 cats.
How many cats are there in total?

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

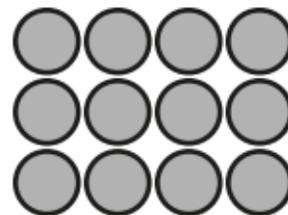
Count in twos

2, 4, 6, 8, 10, 12

Use a known fact

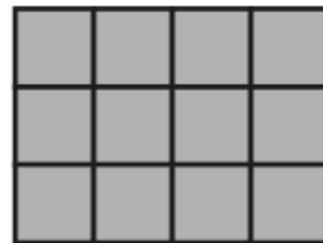
If 2 x 3 is 6, then
4 x 3 is double 6.

Arrays



$$4 \times 3 = 12$$

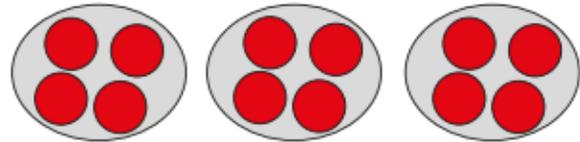
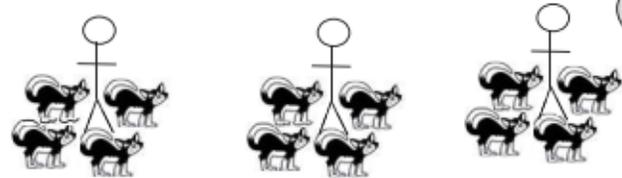
$$3 \times 4 = 4 \times 3$$



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

$12 \div 3 = 4$

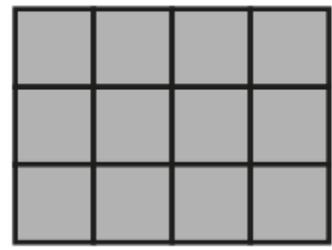
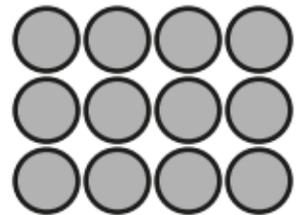
Recall and use 2x, 5x and 10x tables

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

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

How shall I divide?

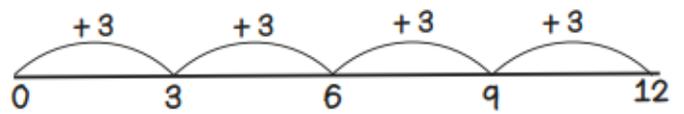
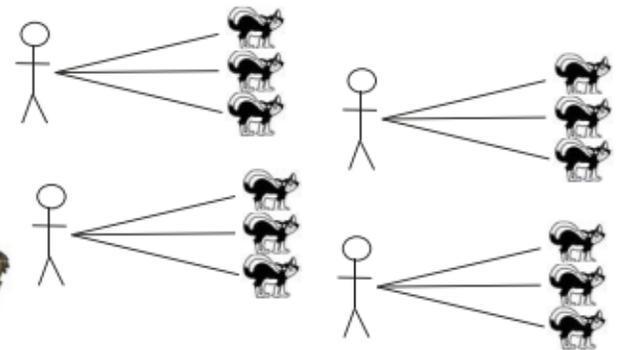
12 can be described as
3 columns of 4
or 4 rows of three



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 $12 \div 3 = 4$