

Fact Families



20



17

3

$$17 + 3 = 20$$

$$20 - 3 = 17$$

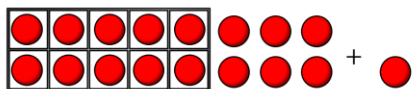
$$3 + 17 = 20$$

$$20 - 17 = 3$$

Add and subtract 1s



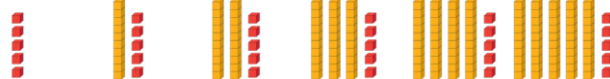
$$6 + 1 = 7$$



$$16 + 1 = 17$$

6 and 1 are a number bond to 7
So 16 and 1 are a number bond to 17

Add and subtract 10s



5

15

25

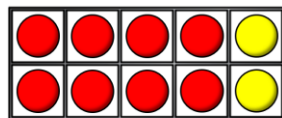
35

45

55

Add to the next 10

Complete the sentences to match the ten frame.



There are 8 red counters.

There are 2 yellow counters.

There are 10 counters altogether.

$$8 + 2 = 10$$

Add to a 10



$$10 + 1 = 11$$

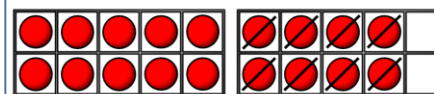
$$20 + 1 = 21$$

$$30 + 1 = 31$$

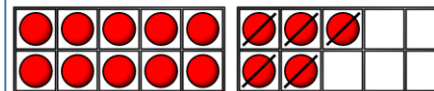
Year 1 (Mixed)

Addition and Subtraction (within 100)

Subtract to a 10

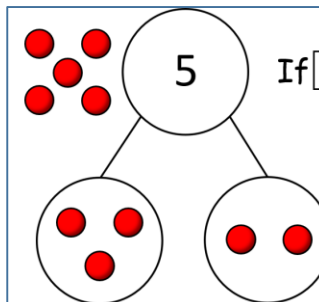


$$18 - 8 = 10$$



$$15 - 5 = 10$$

Missing Numbers



If 5 is the whole and 3 is a part, the other part must be 2

$$3 + 2 = 5$$

Vocabulary

Addition add plus total altogether total
how many more?
Tens ones
greater than
less than
Counting on
Subtraction subtract minus take counting back number bonds difference patterns missing number whole part part exchange

Compare number sentences

$$3 + 2$$

$$3 + 6$$

What do you notice?

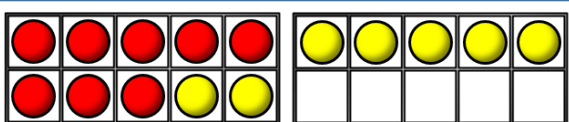
6 is greater than 2, so 3 + 6 is greater than 3 + 2



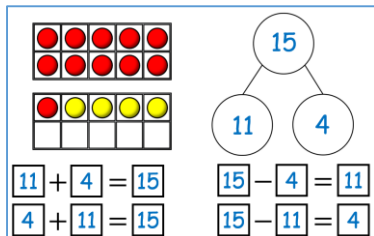
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

$$15 - 7 = 8$$

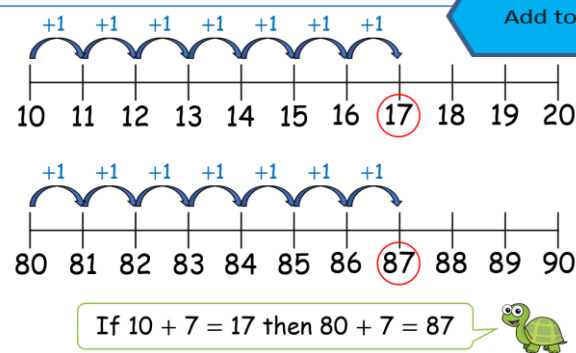
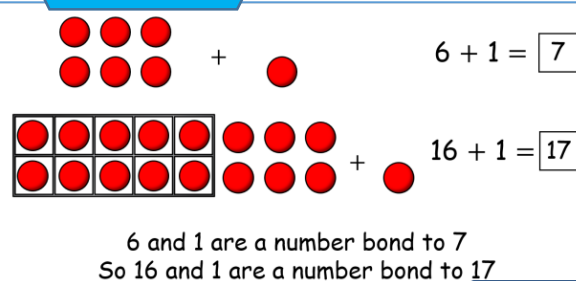
Subtract across a 10



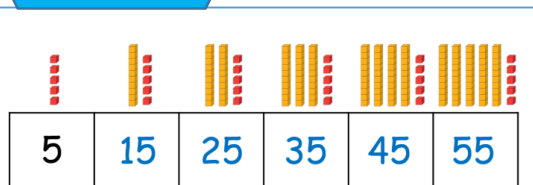
Related facts



Add and subtract 1s



Add 10s

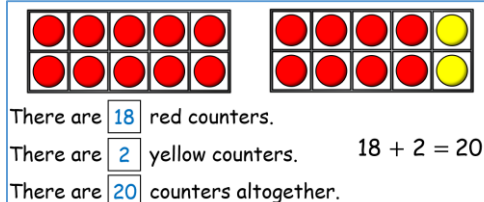


$$\boxed{3} + \boxed{6} = \boxed{9}$$

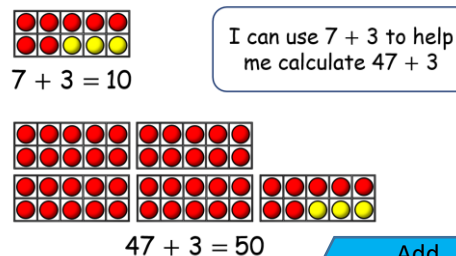
$$\boxed{30} + \boxed{60} = \boxed{90}$$

Year 2 (Mixed) Addition and Subtraction (within 100)

Add to the next 10

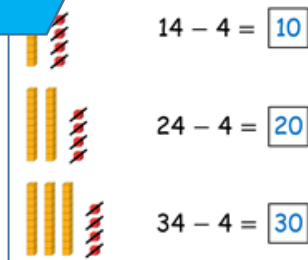


Calculate 47 + 3

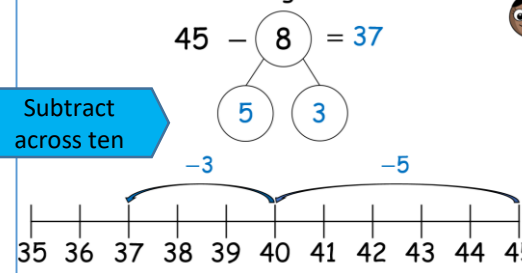


Add across ten

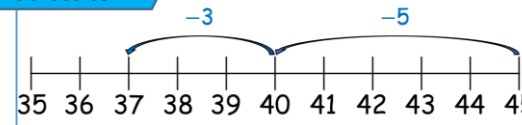
Subtract to a 10



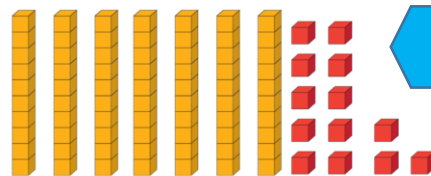
Sam is working out 45 - 8



Subtract across ten



Use base 10 to calculate 73 - 25

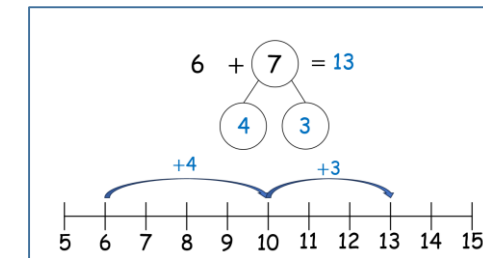
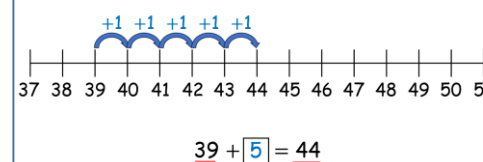


I need to exchange 1 ten for 10 ones.

$$73 - 25 = 48$$

Add and subtract 2 digit numbers across 10s

Missing Numbers

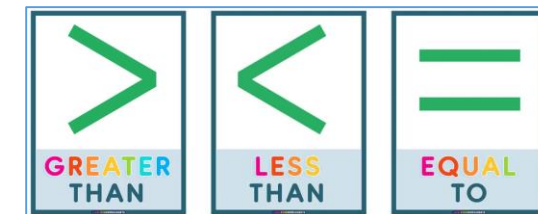


Vocabulary
Addition add plus total altogether total how many more?
Tens ones
greater than
less than
Counting on
Subtraction subtract minus take counting back number bonds exchange difference patterns missing number whole part

Compare number sentences

$$96 - 19 < 96 - 14$$

$$75 - 18 > 75 - 23$$



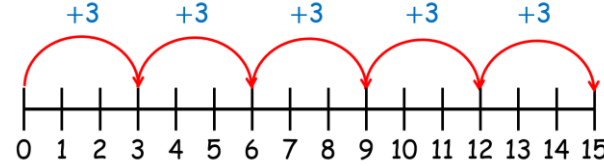
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Equal and unequal groups

Year 1 Mixed Multiplication and Division (page 1)

Count in 2s 5s and 10s

Counting in 3s



Counting in 10s



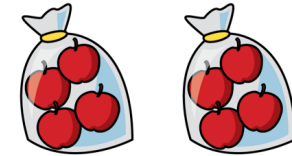
Multiplication

There are 4 vases with 2 flowers in each vase. There are 8 flowers altogether.



$$2 + 2 + 2 + 2 = 8$$

$$4 \times 2 = 8$$



2 lots of 4 is equal to 8

2 multiplied by 4 = 8

$$2 \times 4 = 8$$



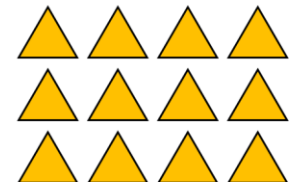
"lots of"

"groups of"

"multiplied by"

"times"

Repeated Addition



$$4 + 4 + 4 = 12$$

$$3 \times 4 = 12$$

$$3 + 3 + 3 + 3 = 12$$

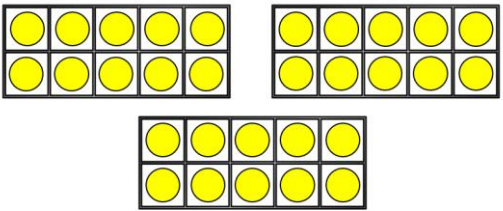
$$4 \times 3 = 12$$

Vocabulary
 Equal
 unequal groups
 same different
 altogether
 repeated addition
 multiplication
 multiply x symbol
 lots of
 multiplied by
 array
 pattern
 row column
 division
 ÷ symbol
 share sharing
 times-table
 double half half
 odd even

The groups are **equal**.
 There are 5 cubes in each group.

The groups are **unequal**.
 There are a **different number** of cubes in each group.

There are 3 **equal groups** with 10 in each group.



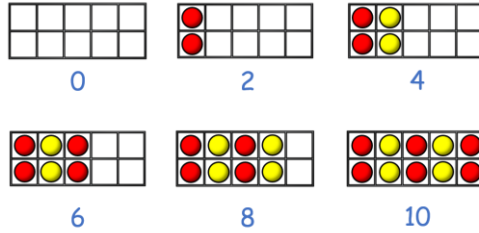
Add equal groups

There are 6 **equal groups** with 3 in each group.

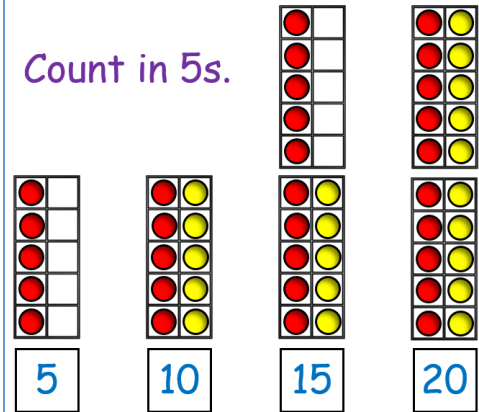
There are 18 cubes **altogether**.

$$3 + 3 + 3 + 3 + 3 + 3 = 18$$

Count in 2s



Count in 5s.



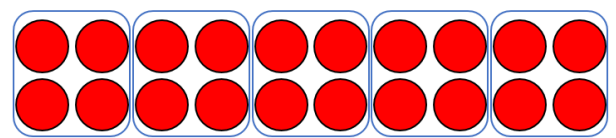
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



Make equal groups -
grouping

20 divided by 4 is equal to 5

$$20 \div 4 = 5$$

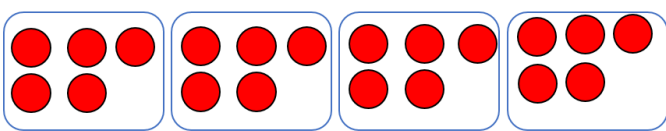


There are 20 counters altogether.
I have put them into equal groups of 4
There are 5 groups.

Make equal groups -
sharing

20 divided by 4 is equal to 5

$$20 \div 4 = 5$$



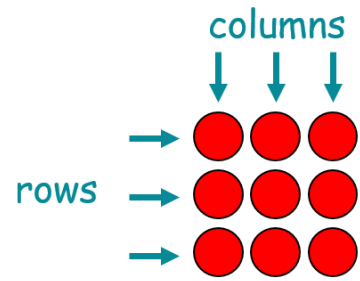
There are 20 counters altogether.
I have shared them into 4 equal groups.
There are 5 in each group.

Year 1 Mixed Multiplication and Division (page 2)

Multiply
by 2, 5
and 10

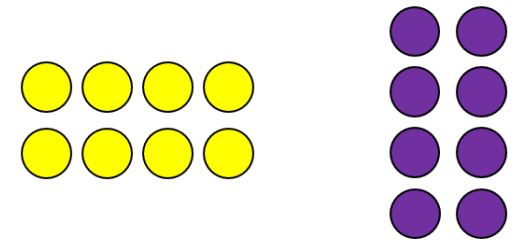
An array

Made up of equal rows and columns

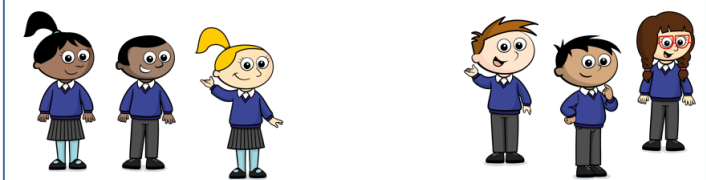


Arrays

Arrays to show 4×2

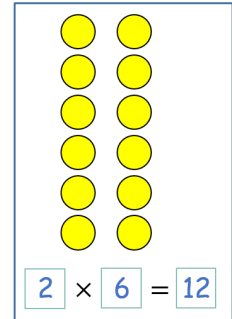
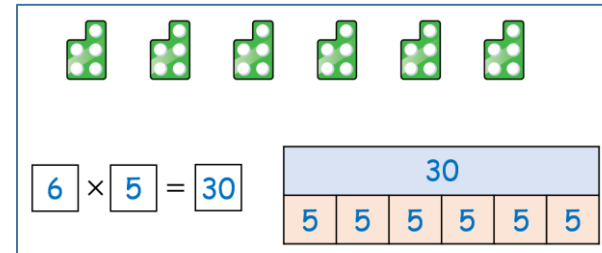
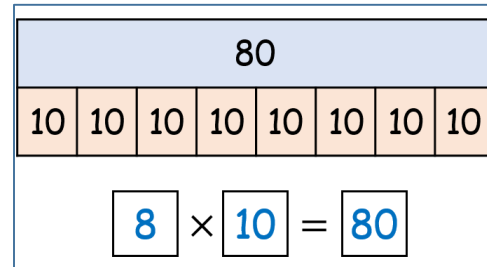


The children are split into 2 equal teams.



There are 6 children altogether.
There are 2 equal groups.
There are 3 in each group.

$$6 \div 2 = 3$$





Year 1 Mixed Multiplication and Division (page 3)

Odd and Even
Numbers

Doubles



$$5 + 5 = 10$$

$$5 \times 2 = 10$$

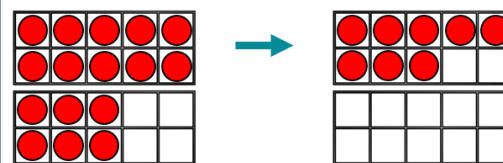
$$\text{Double } 5 = 10$$

Halving



$$10 \div 2 = 5$$

$$\text{Half of } 10 = 5$$



$$16 \div 2 = 8$$

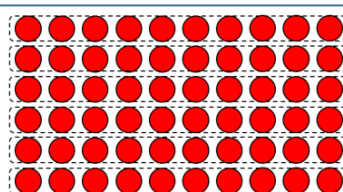
$$\text{Half of } 16 = 8$$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Even numbers have 2, 4, 6, 8 or 0 in the ones column.

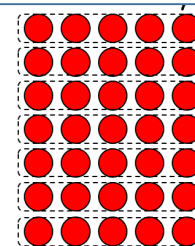
Odd numbers have 1, 3, 5, 7 or 9 in the ones column.

Divide by 5 and
10



$$10 \times 6 = 60$$

$$60 \div 10 = 6$$



$$5 \times 7 = 35$$

$$35 \div 5 = 7$$



$$1 + 1 = 2$$

$$2 + 2 = 4$$

$$3 + 3 = 6$$

$$4 + 4 = 8$$

$$5 + 5 = 10$$



$$6 + 6 = 12$$

$$7 + 7 = 14$$

$$8 + 8 = 16$$

$$9 + 9 = 18$$

$$10 + 10 = 20$$

Here are 30 cookies.



There are 30 cookies altogether.

There are 5 equal groups of 6

$$30 \div 5 = 6$$



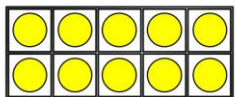
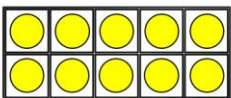
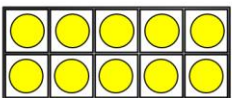
Equal and
unequal
groups



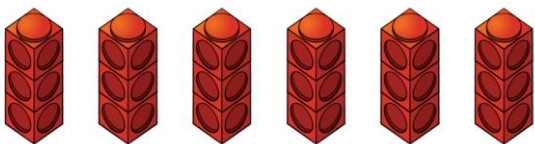
The groups are **equal**.
There are 5 cubes in each group.



The groups are **unequal**.
There are a **different number** of
cubes in each group.



There are 3 **equal groups** with
10 in each group.



There are 6 **equal groups** with
3 in each group.

There are 18 cubes **altogether**.

$$3 + 3 + 3 + 3 + 3 + 3 = 18$$

Add
equal
groups

Year 2 Mixed Multiplication and Division (page 1)

Multiplication



"lots of"
"groups of"
"multiplied by"
"times"

There are **4 vases** with **2 flowers** in
each vase. There are **8 flowers**
altogether.



$$2 + 2 + 2 + 2 = 8$$

$$4 \times 2 = 8$$



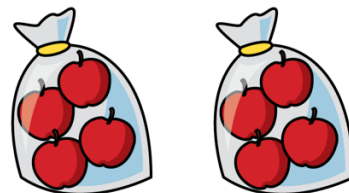
$$3 \times 4 = 12$$

"3 lots of 4 is equal to 12"

"3 groups of 4 is equal to 12"

"3 multiplied by 4 is equal to 12"

"3 times 4 is equal to 12"



2 **lots of** 4 is equal to 8

2 **multiplied by** 4 = 8

$$2 \times 4 = 8$$

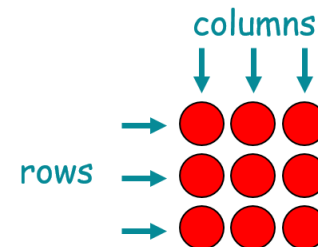
Vocabulary

Equal
unequal groups
same different
altogether
repeated addition
multiplication
multiply x symbol
lots of
multiplied by
array
pattern
row column
division
÷ symbol
share sharing
times-table
double half half
odd even

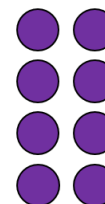
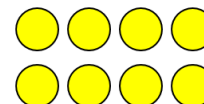
Arrays

An **array**

Made up of **equal rows** and **columns**



Arrays to show **4 x 2**

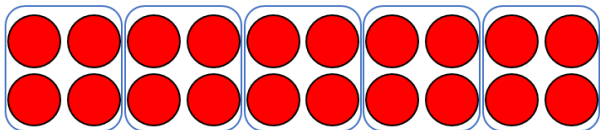




Make equal groups - grouping

20 divided by 4 is equal to 5

$$20 \div 4 = 5$$



There are 20 counters **altogether**.

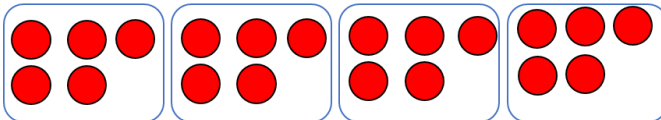
I have put them into **equal groups** of 4

There are 5 groups.

Make equal groups - sharing

20 divided by 4 is equal to 5

$$20 \div 4 = 5$$



There are 20 counters **altogether**.

I have **shared them** into 4 equal groups.

There are 5 in each group.

Year 2 Mixed Multiplication and Division (page 2)

There are 15 cookies altogether.

I have put them into equal groups of 3

There are 5 groups.



Grouping

$$15 \div 3 = 5$$

total

number in each group

number of groups

There are 15 cookies altogether.

They are shared into 3 equal groups.

There are 5 in each group.



Sharing

$$15 \div 3 = 5$$

total

number of groups

number in each group

The children are split into 2 **equal** teams.



There are 6 children **altogether**.

There are 2 **equal groups**.

There are 3 in each group.

$$6 \div 2 = 3$$

Odd and Even Numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

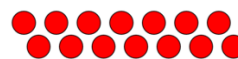
Even numbers have 2, 4, 6, 8 or 0 in the ones column.

Odd numbers have 1, 3, 5, 7 or 9 in the ones column.

Divide by 2

Grouping

Here are 14 counters.



Put them into groups of 2



There are 7 equal groups of 2

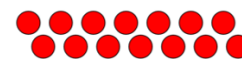
$$14 \div 2 = 7$$

amount in each group

number of groups

Sharing

Here are 14 counters.



Put them into 2 equal groups.



There are 2 equal groups of 7

$$14 \div 2 = 7$$

number of groups

amount in each group



Year 2 Mixed Multiplication and Division (page 3)

Times tables

Doubles



$5 + 5 = 10$

$5 \times 2 = 10$

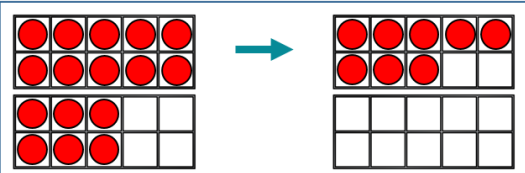
Double 5 = 10

Halving



$10 \div 2 = 5$

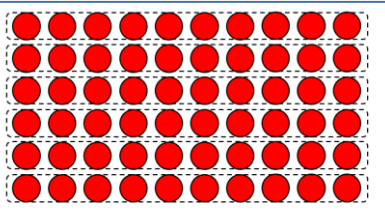
Half of 10 = 5



$16 \div 2 = 8$

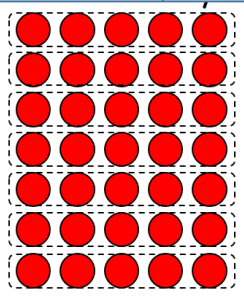
Half of 16 = 8

Divide by 5 and 10



$10 \times 6 = 60$

$60 \div 10 = 6$



$5 \times 7 = 35$

$35 \div 5 = 7$

2 times table

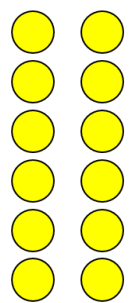
- $1 \times 2 = 2$
- $2 \times 2 = 4$
- $3 \times 2 = 6$
- $4 \times 2 = 8$
- $5 \times 2 = 10$
- $6 \times 2 = 12$
- $7 \times 2 = 14$
- $8 \times 2 = 16$
- $9 \times 2 = 18$
- $10 \times 2 = 20$
- $11 \times 2 = 22$
- $12 \times 2 = 24$

5 times table

- $1 \times 5 = 5$
- $2 \times 5 = 10$
- $3 \times 5 = 15$
- $4 \times 5 = 20$
- $5 \times 5 = 25$
- $6 \times 5 = 30$
- $7 \times 5 = 35$
- $8 \times 5 = 40$
- $9 \times 5 = 45$
- $10 \times 5 = 50$
- $11 \times 5 = 55$
- $12 \times 5 = 60$

10 times table

- $1 \times 10 = 10$
- $2 \times 10 = 20$
- $3 \times 10 = 30$
- $4 \times 10 = 40$
- $5 \times 10 = 50$
- $6 \times 10 = 60$
- $7 \times 10 = 70$
- $8 \times 10 = 80$
- $9 \times 10 = 90$
- $10 \times 10 = 100$
- $11 \times 10 = 110$
- $12 \times 10 = 120$



$2 \times 6 = 12$



$1 + 1 = 2$ $2 + 2 = 4$ $3 + 3 = 6$ $4 + 4 = 8$ $5 + 5 = 10$

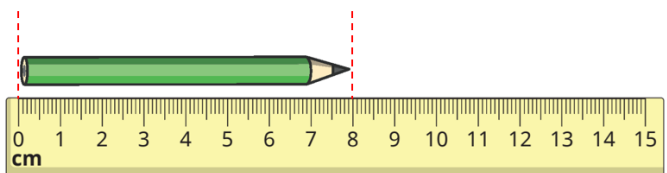


$6 + 6 = 12$ $7 + 7 = 14$ $8 + 8 = 16$ $9 + 9 = 18$ $10 + 10 = 20$



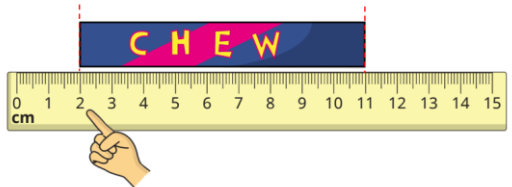
Measuring in cm

We can measure **length** and **height** in **centimetres** using a ruler.



The start is lined up with 0 cm.
 The end is lined up with 8 cm.
 The **length** of the pencil is 8 cm.

How long is the chew bar?



The start is lined up with 2 cm.
 The end is lined up with 11 cm.
 The length of the chew is 9 cm.
 $11 - 2 = 9$

Year 2 Mixed Length and Height

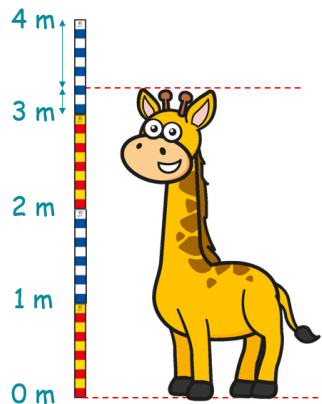
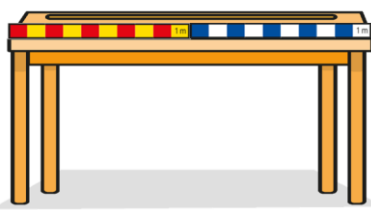
Measuring in metres

We can also measure length and height in **metres**.



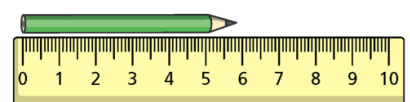
Which is longer, 1 cm or 1 m?

What is the length of the desk? 2 m



The **height** of the giraffe, to the nearest metre is 3m

Compare Length and Height



The pencil is 6 cm long.



The pen is 9 cm long.

9 is greater than 6

The pen is **longer** than the pencil.



The bus is 5 m long.



The car is 3 m long.

The car is **shorter** than the bus.

The bus is **longer** than the car.



The bear is 9 cm tall.

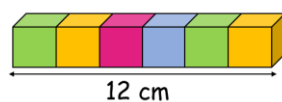


The bottle is 12 cm tall.

The bear is **shorter** than the bottle.

The bottle is **taller** than the bear.

This wall of blocks is 12 cm long.



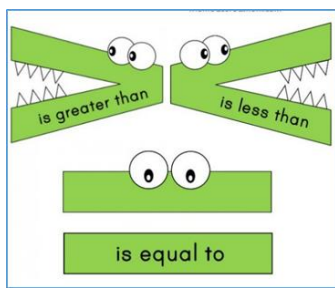
What is the length of each block?
 There are 6 blocks.

$$12 \div 6 = 2$$

Each block is 2cm long.

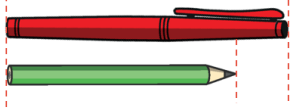
Vocabulary
 Length height
 centimetres cm
 metres m
 measure
 longer than
 longest
 shorter than
 shortest
 taller tallest
 greater than
 less than
 equal to
 > < =

Solving problems





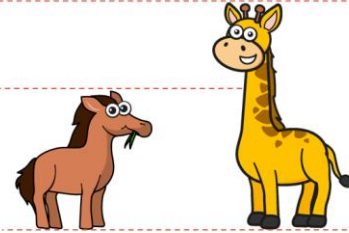
Compare length and height



The pen is **longer** than the pencil.

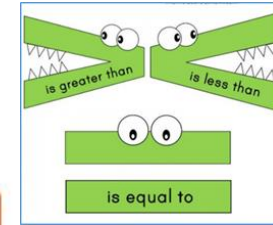
The pencil is **shorter** than the pen.

Year 1 Mixed Length and Height



The giraffe is **taller** than the horse.

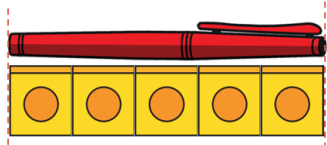
The horse is **shorter** than the giraffe.



Vocabulary
longer
shorter
taller
difference
is the same
is equal to
greater than
less than
compare
measure
unit of
measure
centimetre
cm
length
height

Measure length using objects

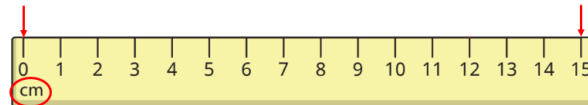
How long is the pen?



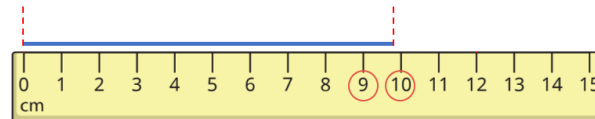
The pen is 5 cubes long.

Measure length in centimetres

We can measure length and height in **centimetres** using a **ruler**.

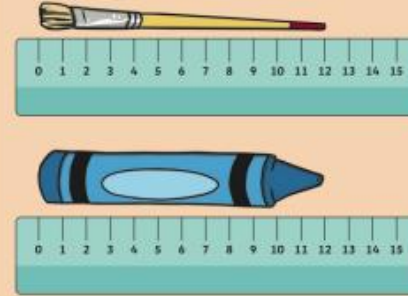


How long is the line?

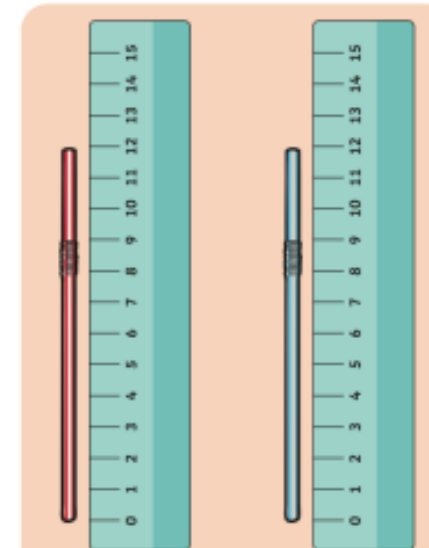


The line is 10 cm long to the nearest centimetre.

The same length.



The same height.



Measuring in metres

We can also measure length and height in **metres**.



Which is longer, 1 cm or 1 m?



Year 1 and 2 Mixed Statistics

Vocabulary
tally chart
table
pictogram
most popular
least popular
block diagram
represent
symbol
category
key
similar
different

Tally charts

Tally marks look like this:



The fifth mark goes diagonally, like a gate.

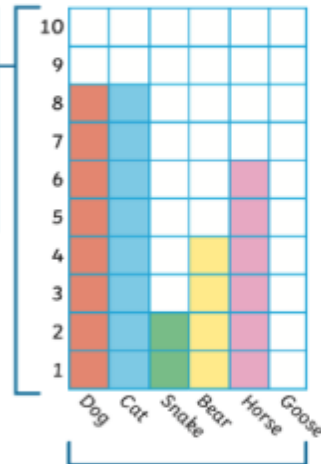
A tally chart is one way of collecting data using tally marks

Eye Colour	Tally	Total
brown		6
blue		8
green		3
grey		4
hazel		5

Block diagram

A block diagram represents data using blocks. One block represents one item.

In this block diagram, the y-axis, which is vertical, shows the number of items.



In this block diagram, the x-axis, which is horizontal, shows the types of items.

The blocks can go vertically or horizontally.

Tables

Item	Tally
ruler	
pencil	
rubber	

Item	Total
ruler	17
pencil	20
rubber	10

Pictograms

Pictograms use pictures or symbols to represent data. Each picture or symbol can represent one item or more than one. The key shows what each symbol represents.

Favourite Colour



Key
● = 1 child

The pictogram shows the colour of cars in a car park.

Key ▲ = 10 cars

Colour	Number of cars	Total
red	▲ ▲ ▲ ▲ ▲	50
black	▲ ▲	20
white	▲ ▲ ▲	30

How many cars are there in total?

$$50 + 20 + 30 = 100$$