

Addition and Subtraction

Knowledge Organiser

Key Vocabulary

add

total

plus

sum

more

altogether

difference

subtract

less

minus

take away

column addition

column subtraction

exchange

estimate

inverse operation

solve problems

number facts

place value

Addition and Subtraction Methods

3-digit and 1-digit numbers

Not crossing 10s

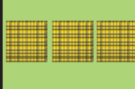
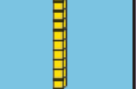
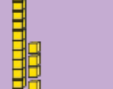
$$268 - 4 = 264$$

Hundred	Ten	Ones
		

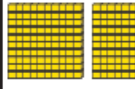
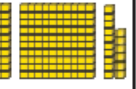
$$343 + 6 = 349$$



Crossing 10s (Exchanging)

324		
300	20	4
300	10	14
		

$$316 + 8 = 324$$

316	8
	

$$324 - 8 = 316$$

3-digit and 2-digit numbers

Add and subtract tens

Hundred	Ten	Ones
		

$$451 + 3 \text{ tens} = 481 \quad (5 + 3 = 8)$$

$$451 - 4 \text{ tens} = 411 \quad (5 - 4 = 1)$$

Crossing 10s (Exchanging)

$$258 + 80 = 338$$

- Column method
- Count in 10s mentally
- Add 100, subtract 20

Crossing 10 and 100

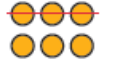
$$\begin{array}{r} 368 \\ +73 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 368 \\ -73 \\ \hline 295 \end{array}$$

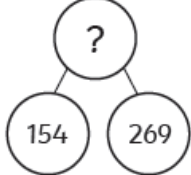
3-digit numbers

Not crossing

$$679 - 351 = 328$$

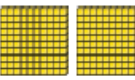
Hundred	Ten	Ones
		

Crossing 10s (Exchanging)

	$\begin{array}{r} 269 \\ +154 \\ \hline 423 \\ 11 \end{array}$
$\begin{array}{r} 514 \\ -268 \\ \hline 246 \end{array}$	$\begin{array}{r} 4101 \\ -514 \\ \hline 246 \end{array}$

Add and Subtract 100s

$$284 + 300 = 584$$

Hundred	Ten	Ones
		
		

Fractions

Knowledge Organiser

Key Vocabulary

numerator

denominator

unit fraction

non-unit fraction

equivalent

halves

thirds

quarters

fifths

sixths

eighths

tenths

decimal tenths

Recognising Fractions



$\frac{3}{8}$

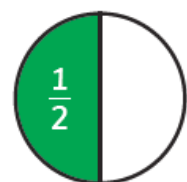
Numerator

How many equal parts of the whole are needed?

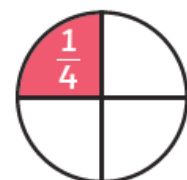
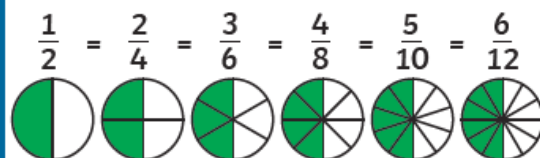
Denominator

How many equal parts are in the whole?

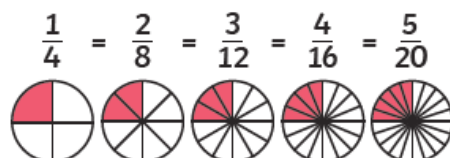
Equivalent Fractions



is equal to...



is equal to...



Comparing Fractions

$\frac{1}{3}$

Less than

$\frac{2}{3}$

$\frac{4}{5}$

Greater than

$\frac{3}{5}$

1

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{3}$

$\frac{1}{3}$

$\frac{1}{4}$

$\frac{1}{4}$

$\frac{1}{4}$

$\frac{1}{4}$

$\frac{1}{5}$

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Key Vocabulary

metre (m)

centimetre (cm)

millimetre (mm)

height

length

width

perimeter

further/furthest

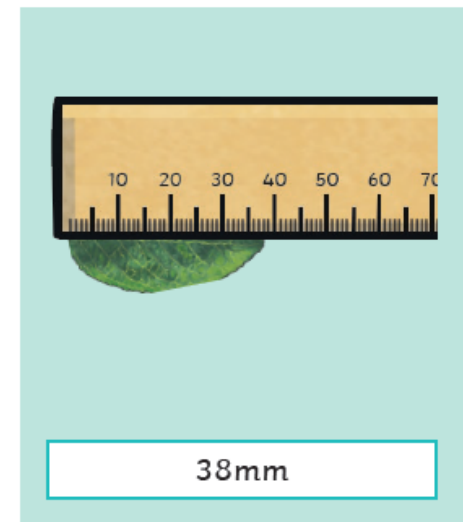
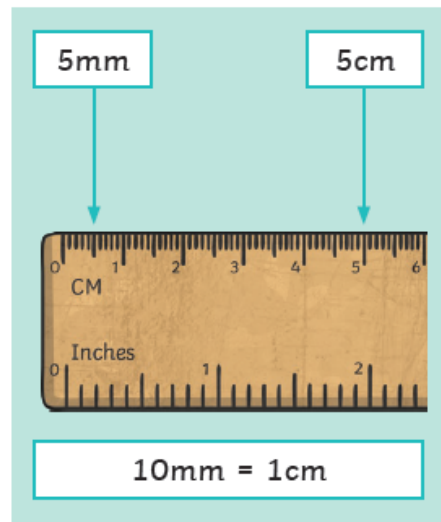
higher/highest

longer/longest

shorter/shortest

taller/tallest

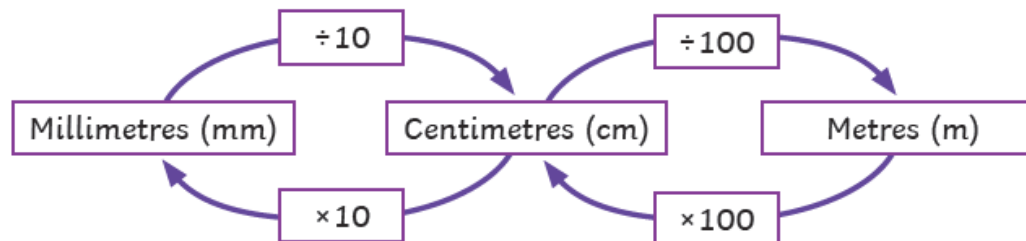
Measure Length



Equivalent Length

100 centimetres = 1 metre

10 millimetres = 1 centimetre



317cm	
300cm	17cm
3m	17cm
3m 17cm	

Mass and Capacity

Knowledge Organiser

Key Vocabulary

mass

gram

kilogram

capacity

volume

millilitre

litre

lighter

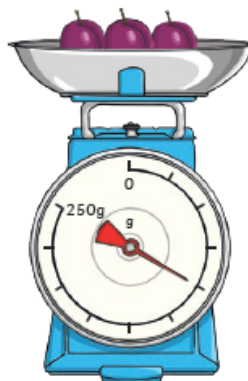
heavier

Measure and Compare Mass

Scales can be used to measure grams.

A gram is a unit of measurement that is used to measure the mass of something.

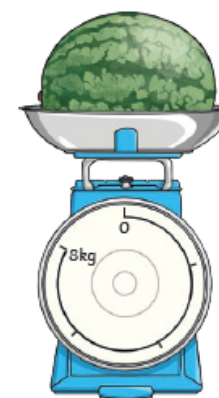
Grams can be written as **g**.



Scales can be used to measure kilograms.

A kilogram is a unit of measurement that is greater than a gram. It is also used to measure the mass of something.

Kilograms can be written as **kg**.



$$1000\text{g} = 1\text{kg}$$

To compare mass, we can use the words 'heavier' and 'lighter'.

Measure and Compare Capacity

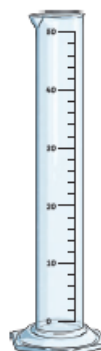
Capacity is the amount of liquid a container can hold.

Volume is how much liquid is in the container.

Measuring cylinders can be used to measure smaller volumes.

Smaller volumes are measured in millilitres.

Millilitres can be written as **ml**.



Measuring jugs can be used to measure larger volumes.

Greater volumes are measured in litres.

Litres can be written as **l**.

$$1000\text{ml} = 1\text{l}$$



To compare capacities, we can use the word 'full'.

Money		Knowledge Organiser							
Key Vocabulary		UK Coins							
amount		       							
change		1p 2p 5p 10p 20p 50p £1 £2							
coin		one penny coin two pence coin five pence coin ten pence coin twenty pence coin fifty pence coin one pound coin two pound coin							
combinations		UK Notes							
convert		   							
note		£5 £10 £20 £50							
pence		five pound note ten pound note twenty pound note fifty pound note							
penny									
pounds		Pounds and Pence				Convert Pounds and Pence			
value									
		£3 and 25 pence				£52 and 13 pence			
						 120 pence 100 pence is £1 120 pence is £1 and 20 pence.			

Multiplication and Division

Knowledge Organiser

Key Vocabulary

times tables

multiply by

divide by

array

fact families

regrouping

Multiplication and Division Facts (3, 4 and 8 multiplication tables)

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

3 x Tables

$1 \times 3 = 3$
 $2 \times 3 = 6$
 $3 \times 3 = 9$
 $4 \times 3 = 12$
 $5 \times 3 = 15$
 $6 \times 3 = 18$
 $7 \times 3 = 21$
 $8 \times 3 = 24$
 $9 \times 3 = 27$
 $10 \times 3 = 30$
 $11 \times 3 = 33$
 $12 \times 3 = 36$
 $3 \div 3 = 1$
 $6 \div 3 = 2$
 $9 \div 3 = 3$
 $12 \div 3 = 4$
 $15 \div 3 = 5$
 $18 \div 3 = 6$
 $21 \div 3 = 7$
 $24 \div 3 = 8$
 $27 \div 3 = 9$
 $30 \div 3 = 10$
 $33 \div 3 = 11$
 $36 \div 3 = 12$

4 x Tables

$1 \times 4 = 4$
 $2 \times 4 = 8$
 $3 \times 4 = 12$
 $4 \times 4 = 16$
 $5 \times 4 = 20$
 $6 \times 4 = 24$
 $7 \times 4 = 28$
 $8 \times 4 = 32$
 $9 \times 4 = 36$
 $10 \times 4 = 40$
 $11 \times 4 = 44$
 $12 \times 4 = 48$
 $4 \div 4 = 1$
 $8 \div 4 = 2$
 $12 \div 4 = 3$
 $16 \div 4 = 4$
 $20 \div 4 = 5$
 $24 \div 4 = 6$
 $28 \div 4 = 7$
 $32 \div 4 = 8$
 $36 \div 4 = 9$
 $40 \div 4 = 10$
 $44 \div 4 = 11$
 $48 \div 4 = 12$

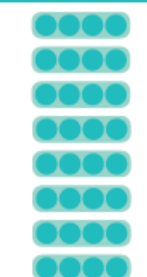
8 x Tables

$1 \times 8 = 8$
 $2 \times 8 = 16$
 $3 \times 8 = 24$
 $4 \times 8 = 32$
 $5 \times 8 = 40$
 $6 \times 8 = 48$
 $7 \times 8 = 56$
 $8 \times 8 = 64$
 $9 \times 8 = 72$
 $10 \times 8 = 80$
 $11 \times 8 = 88$
 $12 \times 8 = 96$
 $8 \div 8 = 1$
 $16 \div 8 = 2$
 $24 \div 8 = 3$
 $32 \div 8 = 4$
 $40 \div 8 = 5$
 $48 \div 8 = 6$
 $56 \div 8 = 7$
 $64 \div 8 = 8$
 $72 \div 8 = 9$
 $80 \div 8 = 10$
 $88 \div 8 = 11$
 $96 \div 8 = 12$

Write and Calculate Mathematical Statements

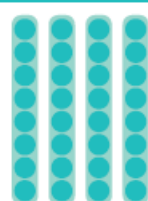
$$4 \times 8 = 32$$

$$32 \div 8 = 4$$



$$8 \times 4 = 32$$

$$32 \div 4 = 8$$



$$5 \times 3 = 15$$

$$15 \div 3 = 5$$



$$3 \times 5 = 15$$

$$15 \div 5 = 3$$

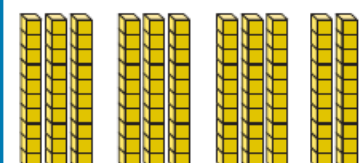


Related Calculations

$$3 \times 4 = 12$$



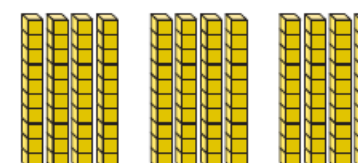
$$30 \times 4 = 120$$



$$4 \times 3 = 12$$



$$40 \times 3 = 120$$



Number and Place Value

Knowledge Organiser

Key Vocabulary

hundreds

tens

ones

zero

place value

greater than

less than

order

more

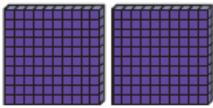
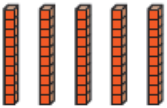
less

partition

digit

3-Digit Numbers

256

two hundred	fifty	six
		
200	50	6

Counting in 4s and 8s

0	4	8	12	16	20	24	28	32	36	40
---	---	---	----	----	----	----	----	----	----	----

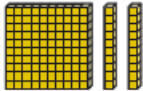
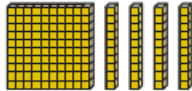
0	8	16	24	32	40	48	56	64	72	80
---	---	----	----	----	----	----	----	----	----	----

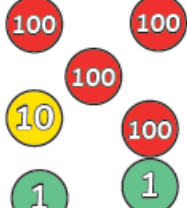
Counting in 50s and 100s

0	50	100	150	200	250	300	350	400	450	500
---	----	-----	-----	-----	-----	-----	-----	-----	-----	-----

0	100	200	300	400	500	600	700	800	900	1000
---	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

10 and 100 More or Less

Ten Less		Ten More
		
120	130	140

One Hundred Less		One Hundred More
		
212	312	412

Properties of Shapes

Knowledge Organiser

Key Vocabulary

quarter turn

half turn

three-quarter turn

angle

right angle

acute

obtuse

horizontal

vertical

parallel

perpendicular

polygon

two-dimensional

three-dimensional

flat face

curved surface

edge

curved edge

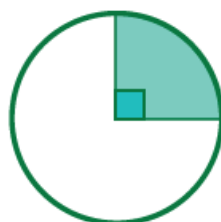
vertex

vertices

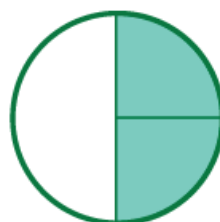
apex

Turns and Angles

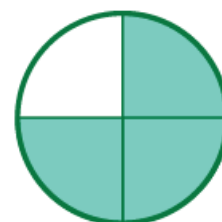
Angles can be used as a description of a turn.



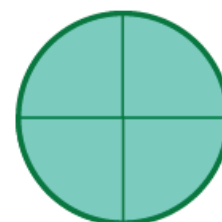
$\frac{1}{4}$ turn



$\frac{1}{2}$ turn



$\frac{3}{4}$ turn



1 turn



clockwise



anticlockwise

An angle is created when two straight lines meet at a point or intersect.

Right Angle



Acute Angle
Less than 90°



Obtuse Angle
Greater than 90° and
less than 180°



Type of Lines

horizontal



vertical



parallel



perpendicular



Statistics

Knowledge Organiser

Key Vocabulary

data

pictogram

symbol

bar chart

horizontal axis

vertical axis

axes

scale

intervals

table

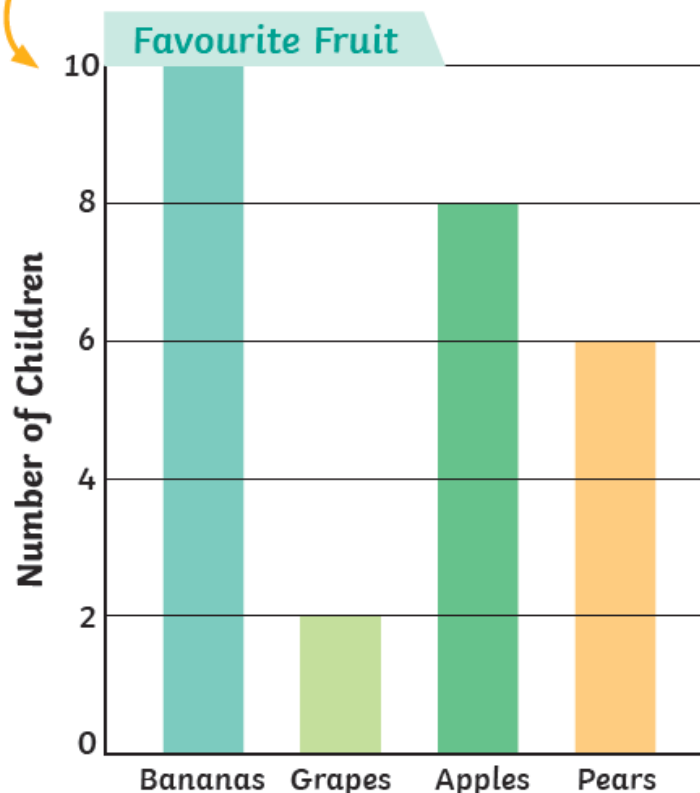
interpret

Bar Charts

Bars are used to show the data in each category. There must be a gap between each bar. Bar charts can have different scales.

vertical axis

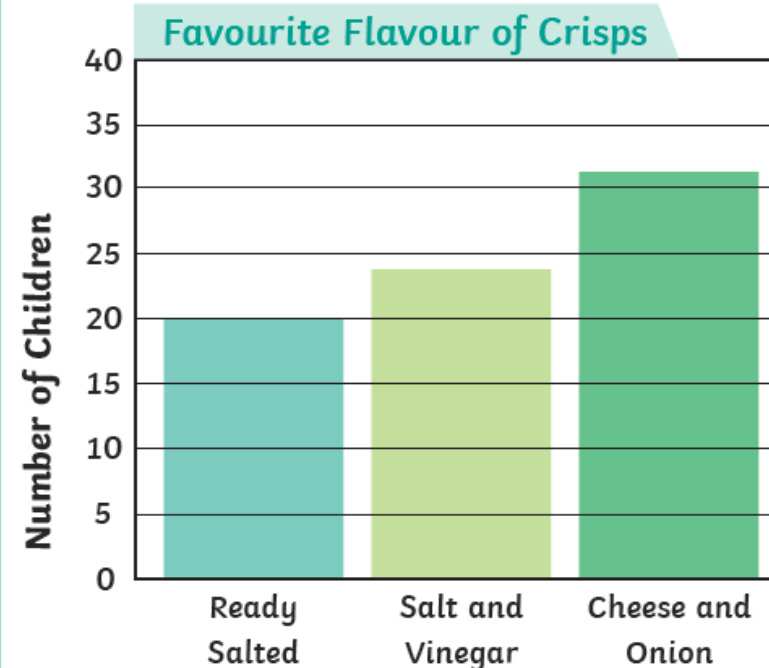
The scale on this bar chart counts in twos.



horizontal axis

Fruit

The scale on this bar chart counts in fives.



The scale on the bar chart depends on the range of the data.

Favourite Flavour of Crisps

Time

Knowledge Organiser

Key Vocabulary

12-hour time

24-hour time

Roman numerals

analogue

digital

hours

minutes

seconds

o'clock

half past

quarter past

quarter to

midday

midnight

noon

Analogue and Digital Clocks



Minute Hand

The long hand points to the minutes past or the minutes to the hour.

Hour Hand

The short hand points to the hour. If this hand is pointing between hours, it is either past the earlier hour or to the later hour.



twelve
o'clock



quarter past
twelve

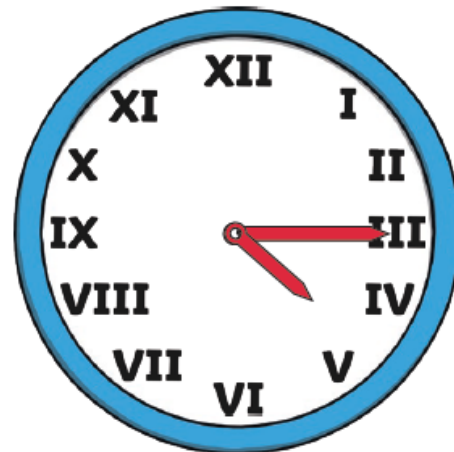


half past
twelve



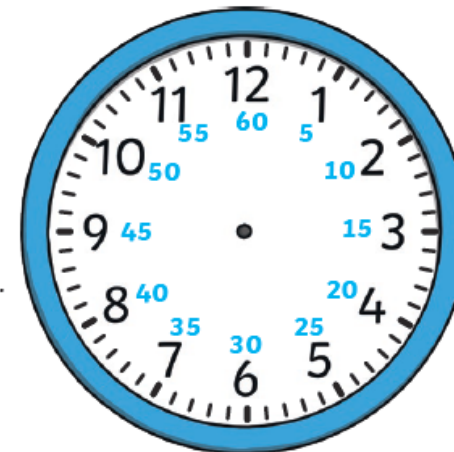
quarter to
one

Time and Roman Numerals



Hours, Minutes and Seconds

There are
60 seconds
in an minute.



There are
60 minutes
in an hour.