Year 2 Mathematics Parents Information Support Booklet

'be kind, be honest and have courage to live life in all its fullness' John 10:10

Autumn Knowledge Organisers– Year 2

Number and Place Value — Knowledge Organiser

Key Vocabulary

- hundreds
- tens
- ones
- zero
- place value
- greater than
- less than
- order
- partition
- digit

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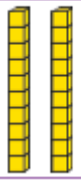
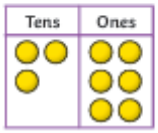
2-Digit Numbers

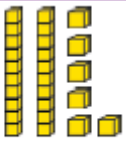
26

twenty	six
	
20	6

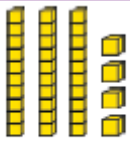
Compare Numbers

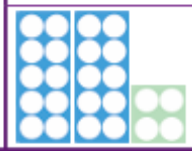


36 = 36
equals



26 < 34
less than





24 > 19
greater than

Counting

Counting in 2s

0	2	4	6	8	10	12	14	16	18	20

Counting in 3s

0	3	6	9	12	15	18	21	24	27	30

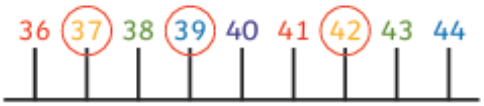
Counting in 5s

0	5	10	15	20	25	30	35	40	45	50

Counting in 10s

0	10	20	30	40	50	60	70	80	90	100

Order Numbers



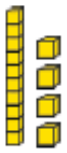
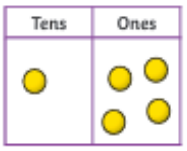
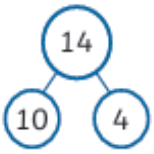
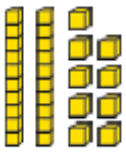
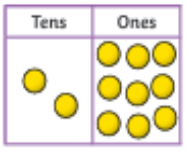
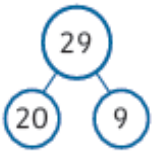
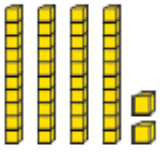
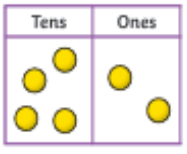
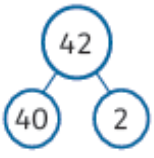
37 < 39 < 42

45	48	52	53	61

smallest — greatest

Number and Place Value — Knowledge Organiser

Read, Write and Represent Numbers to 100

14	fourteen	one ten four ones				
29	twenty-nine	two tens nine ones				
42	forty-two	four tens two ones				

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Block 2– Addition and Subtraction

Addition and Subtraction — Knowledge Organiser

Key Vocabulary

- Add
- Total
- Make
- Plus
- Sum
- More
- Altogether
- Difference
- Leave
- Subtract
- Difference between
- Less
- Minus
- Take away
- Mentally, Orally
- Column Addition
- Column Subtraction
- Estimate
- Inverse operation
- Solve problems
- Number facts
- Place Value

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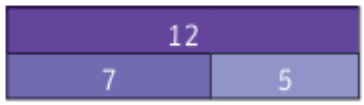
Addition and Subtraction Bonds to 20

15 + 5 = 20
20 – 5 = 15
20 – 15 = 5



7 + 5 = 12
12 – 5 = 7
12 – 7 = 5

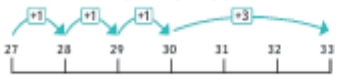
4 + 3 = 7

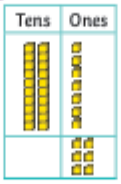
15 – 7 = 8

Methods

Add 2-digit and 1-digit

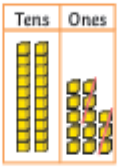
27 + 6 = 33





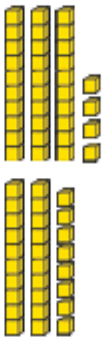
Subtract 1-digit from 2-digit

33 - 6 = 27



Add 2-digit numbers

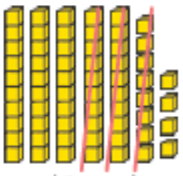
34 + 28 = 62



3 tens and 4 ones
add
2 tens and 8 ones
equals
5 tens and 12 ones
becomes
6 tens and 2 ones

Subtract 2-digit numbers

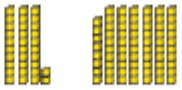
62 – 28 = 34



6 tens and 2 ones becomes
5 tens and 12 ones subtract
2 tens and 8 ones equals
3 tens and 4 ones

Addition and Subtraction Bonds to 100

2 + 8 = 10
so 20 + 80 = 100



32 + 68 = 100
3 tens and 2 ones + 6 tens and 8 ones
= 9 tens and 10 ones = 10 tens =one hundred

Vocabulary and home learning

How many?

Count on/back

Which number comes after

Greater than/less than

Use your child's toys to practise their counting skills. They may need to touch each toy or put them in a straight line as they count.

Listen to them counting out loud.

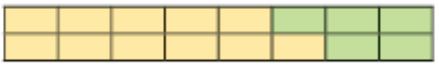
Block 2– Addition and Subtraction

Addition and Subtraction — Knowledge Organiser

Mental Methods

Compare Number Sentences

6 + 4 < 6 + 5



5 + 3 = 6 + 2

Related facts

5 + 4 = 9 so 50 + 40 = 90

Add 3 1-digit numbers

9 + 5 + 3 = 17

More or Less/ Add and Subtract 1s and 10s

Add and subtract 1s

24 + 1 = 25

24 + 2 = 26

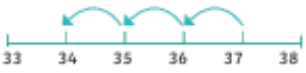
24 + 3 = 27

24	25	26	27	28	29	30	31

37 – 1 = 36

37 – 2 = 35

37 – 3 = 34



There are 7 flowers in a vase. One more is added. Now there are 8 flowers.

10 More or Less

30	40	50	60	70	80
47	57	67	77	87	97

The ones digit stays the same.

10 less	Number	10 more
1	11	21
34	44	54

Take care when crossing hundreds:

86	96	106	116

Add and Subtract 10s

10	30	50	70	90
3	33	63	93	

Tens	Ones

27
+ 40
67

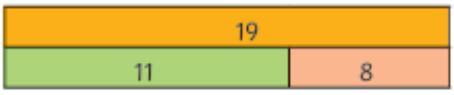
Tens	Ones

72
- 30
42

Crossing hundreds:

74	94	114	134

Check Calculations



19 – 8 = 11 can be checked using 8 + 11 = 19

32 + 5 = 82 x Spot that 5 tens have been added not 5 ones

28 – 26 = 12 x Spot that 28 and 26 are very close together, so difference won't be 12.

37 – 4 = 41 x Spot that if subtracting 4 the answer will be smaller.

68 – 40 = 64 x Spot that 4 ones have been subtracted and not 4 tens.

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Vocabulary and home learning

Create number stories where your child has to use their toys/ counting objects to create the calculations with objects.

E.g. I have 15 pencils and pens in my pencil case. 5 are coloured pencils, the rest are pens. How many are pens?

Practise the language of addition and subtraction:

Add, plus, how many in total

take away, subtract, how many

Left? Practise writing a calculation with an equals sign =.

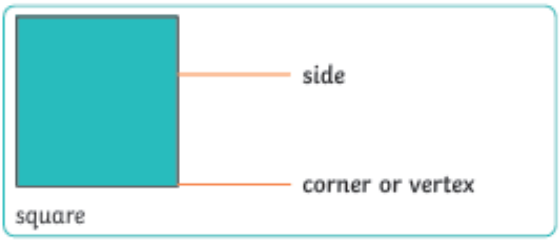
Block 3– Shape

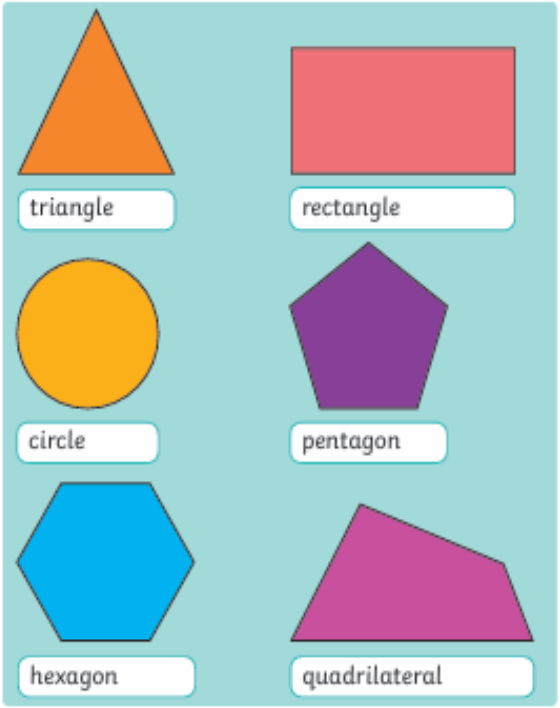
Geometry: Properties of Shape — Knowledge Organiser

Key Vocabulary

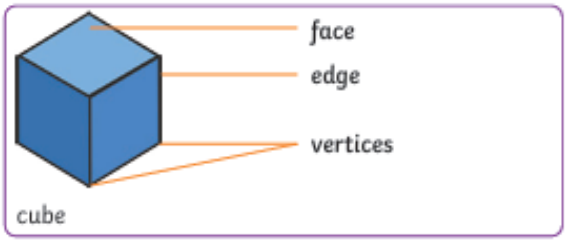
- two-dimensional (2D)
- three-dimensional (3D)
- flat
- solid
- corner
- apex
- vertex
- vertices
- side
- edge
- face
- curved
- straight
- round
- line of symmetry
- vertical
- pattern

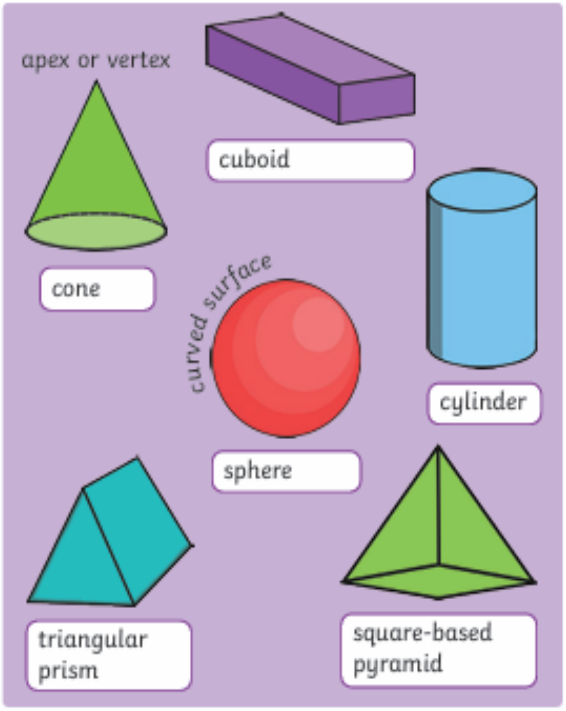
Recognise and Describe 2D Shapes





Recognise and Describe 3D Shapes





Vocabulary and home learning

Practise spotting shapes in everyday life.

Practise drawing shapes using a ruler and templates.

Learn the vocabulary. Play a guess my shape game asking your child to ask questions about its properties.

Spring Block 1– Money

Money — **Knowledge Organiser**

Key Vocabulary
pence
pound
coin
note
total
amount
change
difference
price
cost
pay
owe

Pence


1p — 1 penny


2p — 2 pence


5p — 5 pence


10p — 10 pence


20p — 20 pence


50p — 50 pence

Pounds


£1 — 1 pound


£2 — 2 pounds


£5 — 5 pounds


£10 — 10 pounds


£20 — 20 pounds


£50 — 50 pounds

Pounds and Pence

Equal Amounts


20p = 20p = 20p


£1 = £1 = £1

Compare Amounts


75p > 74p

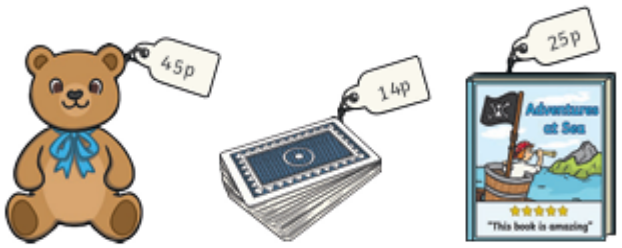

£9 and 50p < £10

Vocabulary and home learning

Practise counting coins and giving change. Play shops.

Money — **Knowledge Organiser**

Find the Total



Lucy bought a teddy bear and some playing cards.

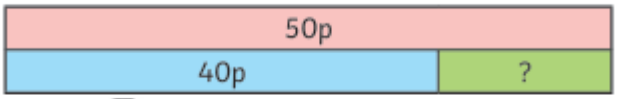
45p	+	14p	=	59p

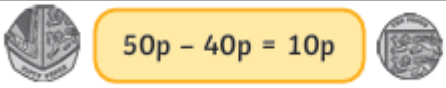
Timek bought two books.

25p	+	25p	=	50p

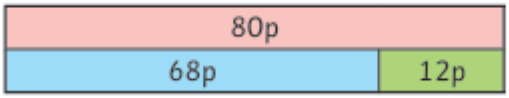
Find the Change

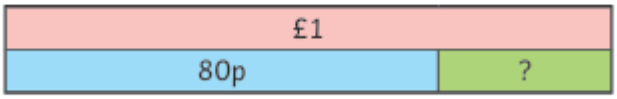
Lucy bought a jigsaw with a 50p coin. How much change did she get?

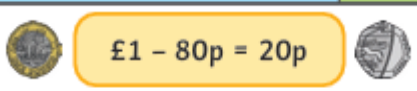



50p – 40p = 10p

Timek bought a plant and a toy car. He paid with a £1 coin. How much change did he get?






£1 – 80p = 20p

Spring Block 2 Multiplication And Division

Multiplication and Division — Knowledge Organiser

Key Vocabulary

- groups
- equal groups
- lots of
- arrays
- repeated addition
- multiplication
- times tables

Recognise Equal Groups

5 equal groups with 3 in each group

2 equal groups with 4 in each group

4 equal groups of 10

6 equal amounts of 5 pence

Make Equal Groups

Make 4 equal groups.

Add Equal Groups

2 + 2 + 2 + 2 = 8 apples

The Multiplication Symbol

4 × 2 = 8
2 × 4 = 8
8 apples

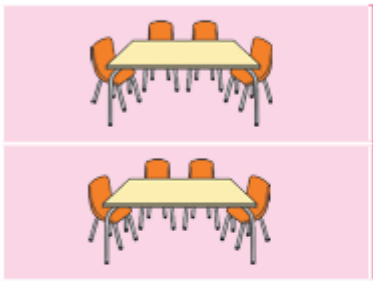
2 x 5 = 10
5 x 2 = 10
10 cookies

Practise drawing tables facts as arrays (see the dotty pattern below)

Multiplication and Division — Knowledge Organiser

Multiplication from Pictures

4 lots of 2 = 8



2 lots of 4 = 8

Use Arrays

4 rows of 10 = 40
10 columns of 4 = 40

The 2 Times Table

6 lots of 2 = 12

2	4	6	8	10	12	14	16	18	20	22	24

The 5 Times Table

9 lots of 5 = 45

5	10	15	20	25	30	35	40	45	50	55	60

The 10 Times Table

7 lots of 10p = 70p

10	20	30	40	50	60	70	80	90	100	110	120

Spring Block 3– Length and Height

Length and Height — Knowledge Organiser

Key Vocabulary

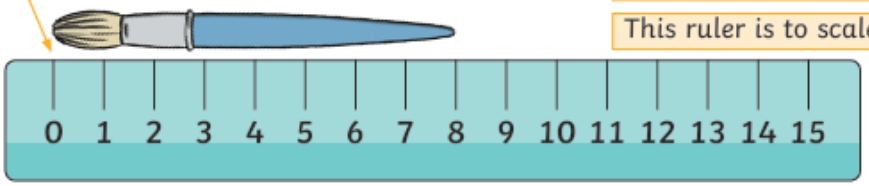
length
long
short
height
tall
measure
ruler
tape measure
metre stick
centimetre (cm)
metre (m)
compare
order

Measuring in Centimetres

Measure from zero.

This ruler measures in **centimetres (cm)**. The paintbrush is 8cm long.

This ruler is to scale.



Measuring in Metres

We can measure the length or height of larger objects in **metres (m).**
The girl is 1m and 20cm tall.

We can use metre sticks, trundle wheels or tape measures.
1 metre = 100 centimetres

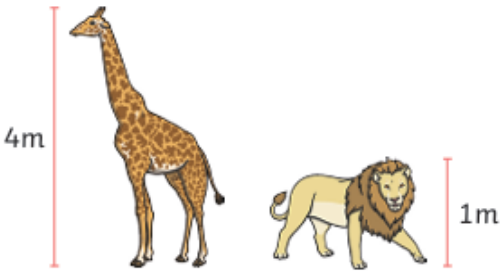
Vocabulary and home learning Practise estimating, measuring and comparing the length and height of toys.

Length and Height — Knowledge Organiser

Comparing Height

The giraffe is **taller** than the lion.
The lion is **shorter** than the giraffe.

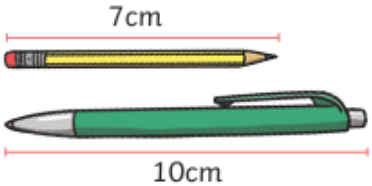
4m >1m



Comparing Length

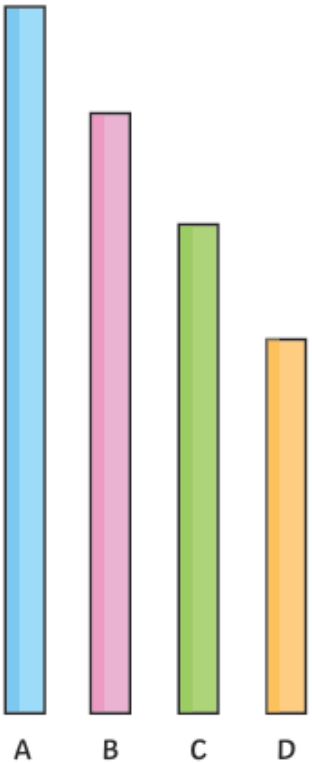
The pencil is **shorter** than the pen.
The pen is **longer** than the pencil.

7cm<10cm



Ordering Length

The straws are in order from **longest** to **shortest**.



A is the **longest**.
D is the **shortest**.
B is **longer** than C.
C is **shorter** than A.

Spring Block 4– Mass, Capacity and Temperature

Mass, Capacity and Temperature — Knowledge Organiser

Key Vocabulary

- mass
- gram
- kilogram
- lighter
- heavier
- capacity
- volume
- millilitre
- litre
- temperature
- Celsius
- degrees

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Mass

We use scales to measure **grams**.

A gram is a small unit of measurement that we use to measure how heavy or light something is.

We can write gram as **g**.

We measure the following using grams:

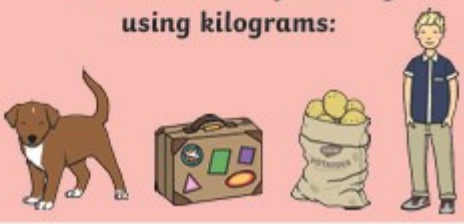
15g > 10g

We also use scales to measure **kilograms**.

A kilogram is a larger unit of measurement that we use to measure how light or heavy something is.

We can write kilogram as **kg**.

We measure the following using kilograms:



1kg < 3kg

Mass, Capacity and Temperature — Knowledge Organiser

Capacity

Capacity is the amount of liquid a container can hold.

Volume is how much liquid is in the container.

Millilitres

We can use a measuring cylinder to measure very small volumes.

We measure these in millilitres. We write this as ml.

1000ml = 1l

Litres

We can use a jug to measure larger volumes.

We measure these in litres. We write this as l.

1000ml = 1l

quarter full | half full | full

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25ml < 250ml **10l > 2l**

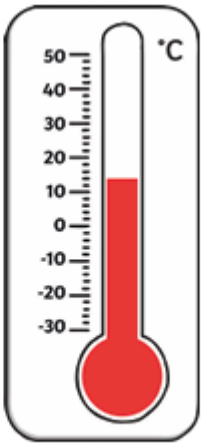
Temperature

Temperature is a measure of heat.

Thermometers are used to measure temperature.

We usually measure temperature in **degrees Celsius (˚C)** but some parts of the world use degrees Fahrenheit (˚F).

We can measure the temperature of air, liquids or objects using a thermometer.



Most thermometers have small tubes and a bulb of liquid at the bottom. The hotter the temperature, the higher the liquid from the bulb rises in the tube. There are markings along the side of the glass tube that show the temperature.

Spring Block 4– Mass, Capacity and Temperature

Vocabulary and home learning

heavier, lighter

mass

weighing scales

Use your child's small toys to practise weighing them using any weighing scales. Look for real life examples where weighing occurs e.g. at the doctors or vets, or in the kitchen cooking.

Show your child that lots of packaging/food/drink has the weight displayed.

Summer Block 1 Fractions

Fractions — Knowledge Organiser

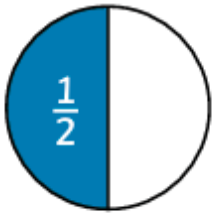
Key Vocabulary

- fraction
- part
- whole
- equal
- share
- half
- quarter
- third
- equivalent
- numerator
- denominator

Recognising Unit Fractions

Half

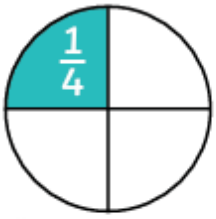
A whole split into two equal parts.

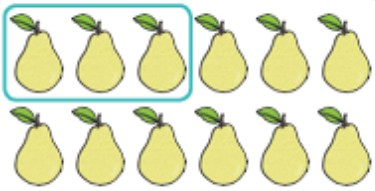


$\frac{1}{2}$ of 8 = 4

Quarter

A whole split into four equal parts.

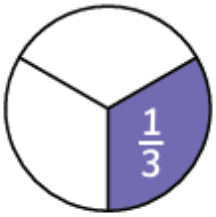




$\frac{1}{4}$ of 12 = 3

Third

A whole split into three equal parts.



$\frac{1}{3}$ of 6 = 2

Non-unit Fractions

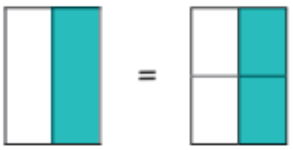
$\frac{2}{3}$

$\frac{3}{4}$

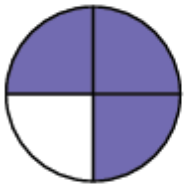
Fractions — Knowledge Organiser

Equivalent Fractions

$\frac{1}{2} = \frac{2}{4}$



Numerator and Denominator



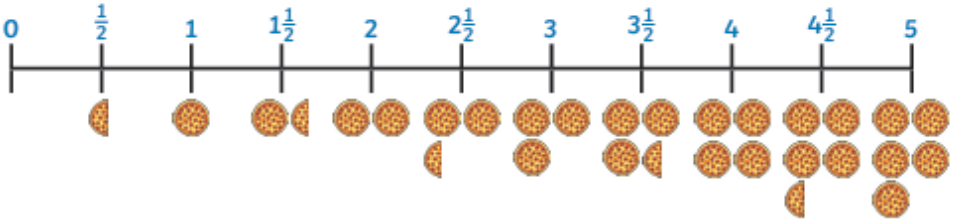
$\frac{3}{4}$

Numerator
How many equal parts of the whole are needed?

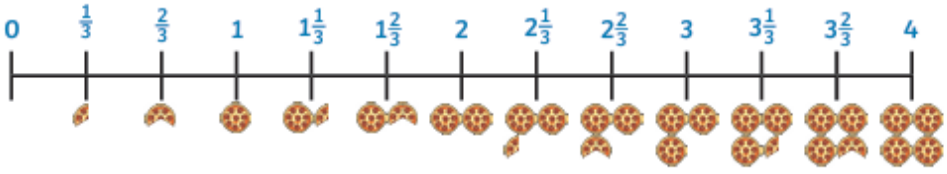
Denominator
How many equal parts are in the whole?

Counting in Fractions

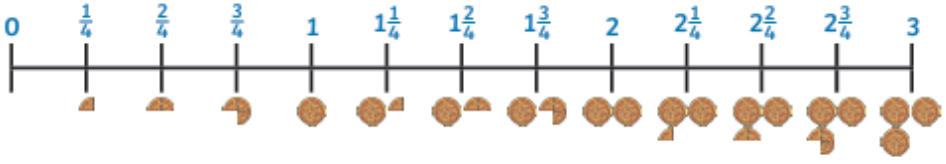
Halves



Thirds



Quarters



Summer Block 1 Fractions

Vocabulary and home learning

Equal

Half

Part

Whole

Practise finding half of 2,4,6,8 toys by moving them into two groups.

Practise cutting cakes or pizzas into halves and quarters.

It is helpful to use rectangular shapes if using pictures as circles can be tricky to draw.

Use purple Mash BBC or Hit the Button website to play fractions games on the computer.

Summer Block 2 Time

Time — Knowledge Organiser

Key Vocabulary

- time
- clock
- hours
- minutes
- hand
- o'clock
- half past
- quarter past
- quarter to
- five minutes
- duration
- shorter
- longer

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O'Clock and Half Past

half past twelve	one o'clock	half past one	two o'clock	half past two	three o'clock	half past three	four o'clock
half past four	five o'clock	half past five	six o'clock	half past six	seven o'clock	half past seven	eight o'clock
half past eight	nine o'clock	half past nine	ten o'clock	half past ten	eleven o'clock	half past eleven	twelve o'clock

Past and To

o'clock

quarter past

half past

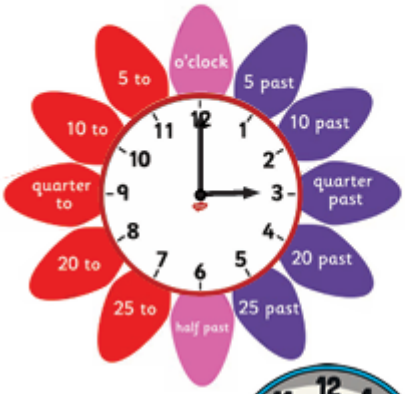
quarter to

Vocabulary and Home learning **Buy a cheap watch and practise every day.**

Tell the time to the hour and half hour, quarter-past and quarter-to

Time — Knowledge Organiser

Telling Time to 5 Minutes



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.

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

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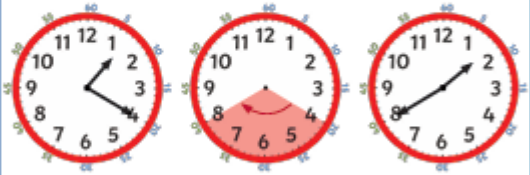
O'Clock and Half Past

There are **60 minutes** in an hour.

There are **24 hours** in a day.

Find Durations of Time



20 minutes has passed.

Compare Durations of Time

Compare the time using the vocabulary 'longer' and 'shorter'.

Summer Block 3 Statistics

Statistics — Knowledge Organiser

Key Vocabulary

- data
- interpret
- key
- tally chart
- pictogram
- block diagram
- table
- total
- compare
- symbol

Tally Charts

Tally marks look like this:

The fifth mark goes across diagonally, like a gate.

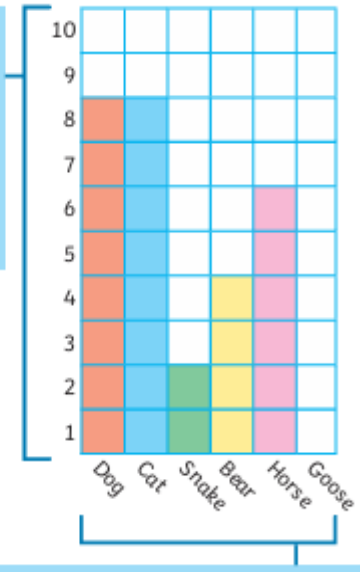
A tally chart is one way of collecting data using tally marks.

Eye Colour	Tally	Total
brown	𝍸 |	6
blue	𝍸 |||	8
green	|||	3
grey	|||	4
hazel	𝍸	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.

Statistics — Knowledge Organiser

Pictograms

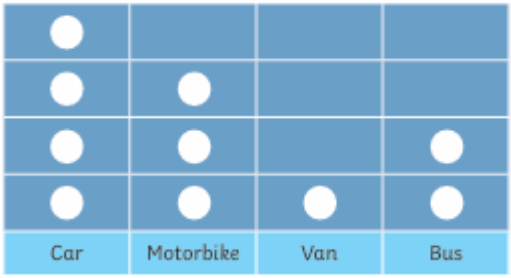
Pictograms use pictures or symbols to represent data. Each picture or symbol can represent one item or more than one. The key shows what each symbol represents.

Favourite Colour

Key
● = 1 child

Here is an example of a pictogram with a different scale.

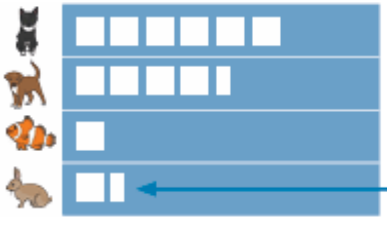
Traffic Survey



Key ● = 5 vehicles

This pictogram uses one symbol to represent 2 pets.

Class 1's Pets

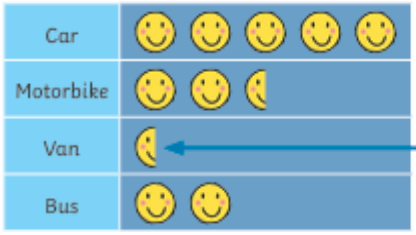


Key
■ = 2 pets

To represent 1 pet, a picture of half a square is used.

This pictogram has one symbol to represent 10 children.

Ways of Travelling to School



Key
☺ = 10 children

To represent 5 children, a picture of half a face is used.

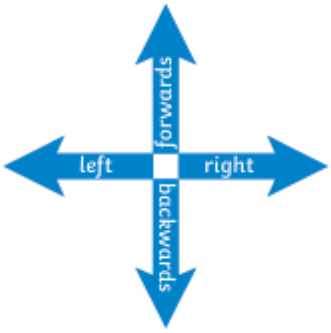
Summer Block 4 Position and Direction

Position and Direction — Knowledge Organiser

Key Vocabulary

- forwards
- backwards
- left
- right
- north
- south
- east
- west
- quarter turn
- half turn
- three-quarter turn
- clockwise
- anticlockwise
- pattern
- sequence

Describing Straight-Line Movement



Left and Right
The hand that makes an **L** shape is the **left hand**.

Describing Turns


quarter turn


half turn


three-quarter turn


full turn

clockwise

anticlockwise

If the turn is in the same direction as the hands of a clock, it is **clockwise**.

If the turn is in the opposite direction to the hands of a clock, it is **anticlockwise**.

Vocabulary and home learning

Use the language of position to describe location.

Use maps and look at the position of countries.

Real Life Maths!

Encourage your child to see Maths as skills essential to life, not just a lesson. Look at all these examples!

Real Life Maths Involve your child in as many problem-solving activities as possible.

- **shopping** — counting, estimating, rounding, budgeting, percentages giving change, adding, subtracting, multiplying, dividing, comparing,
- **Playing games** — counting, estimating comparing, subitising, sequencing
- **Planning an outing** — estimating, rounding, budgeting, timing using timetables, distance, journey time, dividing; adding subtracting dividing multiplying, working out change and cost.
- **Cooking a meal** — Proportion and ratio, measuring, estimating; timing, ordering dividing multiplying adding.
- **Using a TV guide** — Reading tables, data handling/ interpretation, time estimation, rounding, telling the time.