St Nicholas' Primary

First Level

Numeracy and Mathematics Booklet

A Guide for Parents and Pupils

Introduction

What is Numeracy?

Numeracy is a skill for life, learning and work. Having well-developed numeracy skills allows young people to be more confident in social settings and enhances enjoyment in a large number of leisure activities.

Curriculum for Excellence

The better your child knows the basics, the easier it will be for him/her to make progress. It is important that your child practises these basic facts at home - namely quick recall of number bonds to 20, place value, times tables, measurement, time and money and is encouraged to use them in everyday life.

What is the purpose of the booklet?

This booklet has been produced in collaboration with cluster schools to give guidance to parents/carers on how certain common topics are taught within the Mathematics curriculum following the Curriculum for Excellence guidelines.

The mathematics experiences and outcomes are structured within three main organisers, each of which contains a number of subdivisions:

Number, Money and Measure

- Estimation and rounding
- Number and number processes
- Multiples, factors and primes
- Powers and roots
- Fractions, decimal fractions and percentages
- Money
- Time
- Measurement
- Mathematics – its impact on the world, past, present and future
- Patterns and relationships
- Expressions and equations

Shape, position and movement

- Properties of 2D shapes and 3D objects
- Angle, symmetry and transformation

Information Handling

- Data and analysis
- Ideas of chance and uncertainty

From the early stages, children should experience success in mathematics and develop the confidence to take risks, ask questions and explore alternative solutions without fear of being wrong. Children will be exploring and applying mathematical concepts to understand and solve problems, explaining their thinking and presenting their solutions to others in a variety of ways. At all stages, an emphasis on collaborative learning will encourage children to reason logically and creatively through discussion. Children will show evidence of progress through their skills in collaborating and working independently as they explore and investigate mathematical problems.

As children develop concepts within mathematics there will be continual reinforcement and revisiting in order to maintain progression.

How can this booklet be used?

If you are helping your child with homework, you can refer to the booklet to see what methods are being taught.

Why do some topics include more than one method?

In some cases the method used will be dependent on the level of difficulty of the question.

For mental calculations, children should be encouraged to develop a variety of strategies so that they can select the most appropriate method in any given situation.

There are many opportunities to develop mathematical concepts through other areas of the curriculum or contexts out with school.

Table of Contents

Mathematical Vocabulary for Numeracy Operations

Addition (+)

- add
- total
- and
- plus
- sum of

Subtraction (-)

- less than
- take away
- minus
- subtract
- difference

Equals (=)

- is equal to
- same as
- makes
- will be

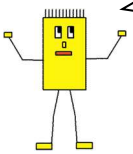
Multiplication (x)

- multiply
- times
- product
- groups of
- lots of

Division (÷)

- divide
- share
- split
- groups of

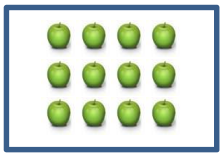
Estimation and rounding

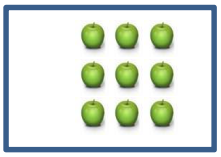


To develop ways of estimating the answer to a calculation or problem, make a sensible guess, work out the actual answer and then check the solution by comparing it with the estimate.

Example 1

I have two trays, one with 12 apples and the other with 9 apples.





How many apples do I have altogether?

12 apples + 9 apples

Both numbers are around 10 so the estimated answer will be around 20.
1 then calculate: 12 + 9 = 21
If this is near the estimate, then my answer is likely to be accurate.

Example 2

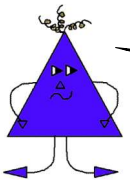
Find the answer to 147 + 229.

Estimate 147 + 229 is about the same as 150 + 230 which is equal to 380.

Then calculate:

$$\begin{array}{rrrr} & 2 & 2 & 9 \\ + & 1 & 4 & 7 \\ \hline & 3 & 7 & 6 \\ \hline & & 1 & \end{array}$$

This is about 380 as estimated, and is therefore likely to be correct.

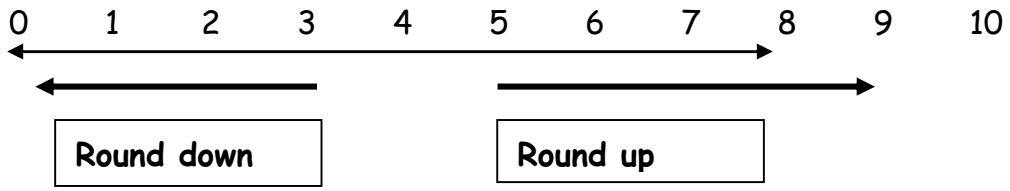


Rounding

By rounding off numbers you can find approximate answers. This is useful when you need a rough answer. It is also useful when you want to check your solution as it shows you if your answer is sensible or if you are a long way out.

Rounding to the nearest 10

When you round to the nearest ten, you don't use any units. You round the number to the nearest ten above it or below it, whichever is the nearer.

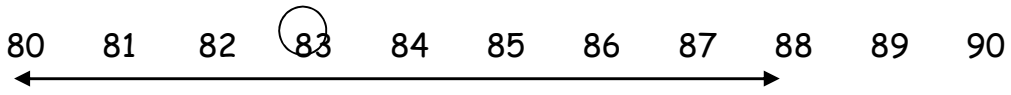


If the unit is 1, 2, 3, or 4, round **down** to nearest 10.

If unit is 5, 6, 7, 8 or 9, round **up** to nearest 10.

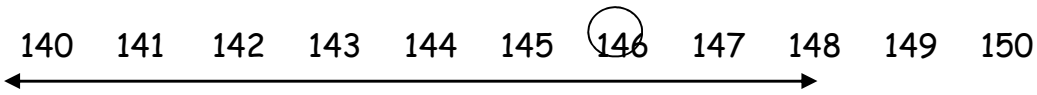
Example 1

83 would be rounded to 80.



Example 2

146 would be rounded to 150



Rounding to the nearest 100

When you round to the nearest hundred, you don't use any tens or units. You round the number to the nearest hundred above it or below it, whichever is the nearer.

140 would be rounded to 100 **262 would be rounded to 300**

HINT

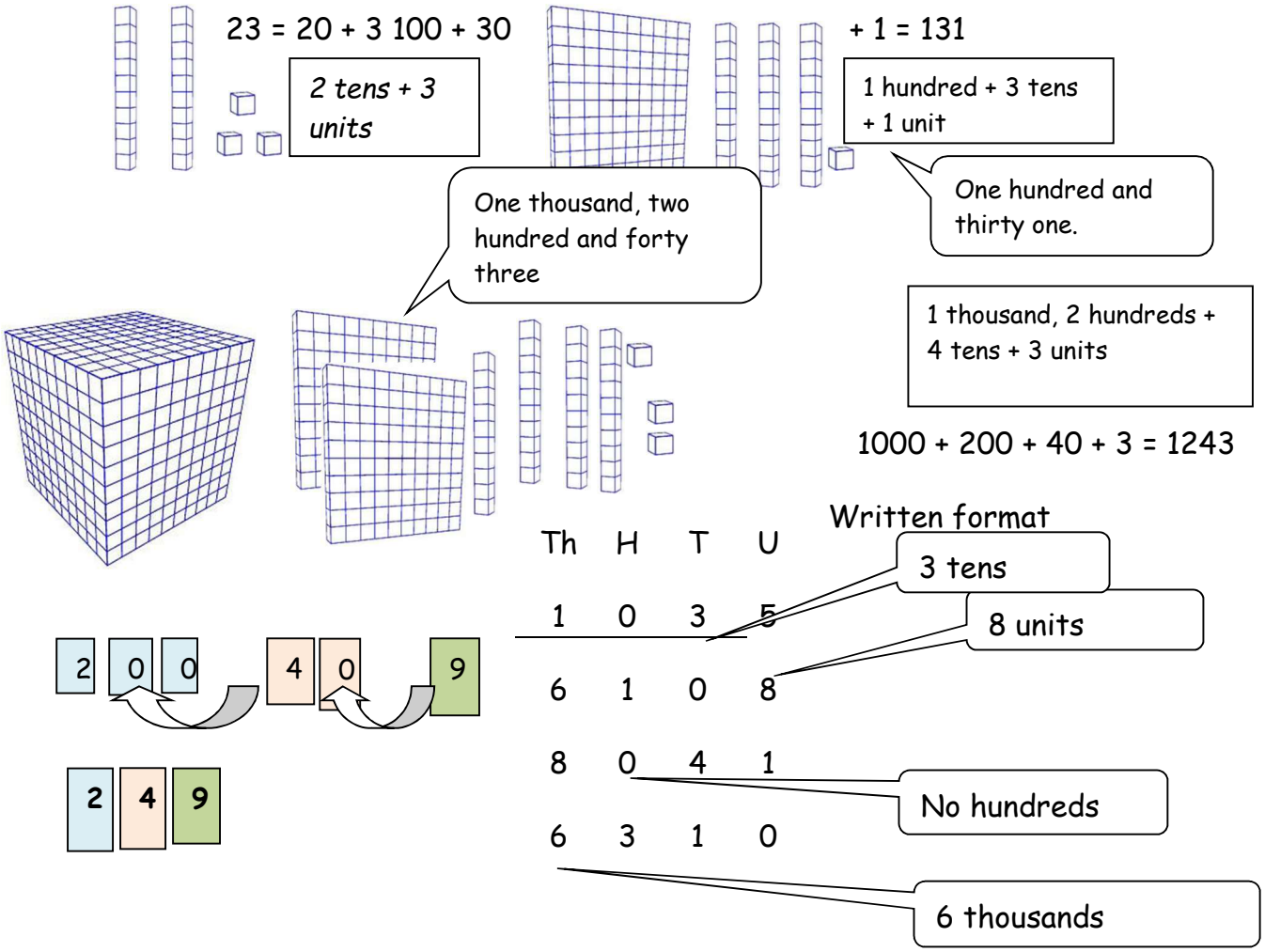
High 5

When a number is right in the middle such as 15, 25, or 55 then the convention is to round it up to the nearest 10. So 15 is rounded to 20, 25 to 30 and so on. This is called a **High 5** to help you remember when rounding.

Place Value

The value of a digit relates to its position. For example, 14, 48 and 426 all contain the digit 4, but the place value of 4 is different in each number. In the number 14, the 4 stands for 4 units. In 48, the 4 stands for 4 tens and in 426 it stands for 4 hundreds.

Concrete materials are used to help children understand that the base ten number system has ten digits (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) that can be arranged to represent larger numbers.



Zero as a place holder

What is the value of the digits in the number 306? (3 hundred, 0 tens and 6 units)

Here is a number sentence. 2000 + ☐ + 40 + 8 = 2748
What number goes ☐ to make this sentence true?
What number equals 3 units + 5 tens + 4 hundreds + 6 thousands?

Addition

Addition is finding the sum of two or more numbers. It can be thought of as counting up or increasing one given number by another.

You need quick recall of number bonds to 10 and then to 20.
You should be able to:

- count on (count from the larger number, eg. 3 and 6. Count from 6 ...7 ...8 9
- make use of the commutative property: 16 + 3 = 19 so 3 + 16 = 19
- use doubles or near doubles 7 + 8 is 7 + 7 = 14 (+1) = 15 or 8 + 8 minus 1
- make up to 10: 5 + 7 is 5 + 5 = 10 10 and 2 more gives 12
- add 10 to a single digit and a two digit number: 7 + 10, 28 + 10 ....
- add a single digit to a teen number: 13 + 4 = 17 is related to 3 + 4 = 7
- add 9: (add 10, take away one) 4 + 9 is 4 + 10 = 14 take away 1 = 13
- add three numbers by looking for pairs which make 10: 4 + 7 + 6 = 10 + 7 = 17

Mental strategies

Example 58 + 34

Method 1 Partitioning: add tens, add units, then add together

50 + 30 = 80 8 + 4 = 12 80 + 12 = 92

Method 2 Bridging: split up the number to be added into tens and units

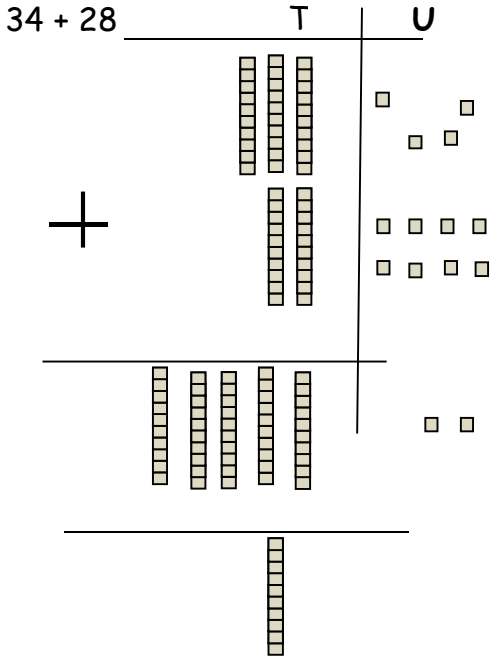
58 + 30 = 88 88 + 4 = 92

Method 3 Round up to the nearest 10, then subtract

58 becomes 60 + 34 = 94 but 60 is 2 too much, so subtract 2:
94 – 2 = 92

Written Method for Addition

34 + 28



3 4
+2 8
6 2
1

Add the units:
4 units plus 8 units is 12 units.
12 units is 1 ten and 2 units.
Write down the units and carry the one ten.
Add the tens:

The same method is used in more difficult calculations.

Subtraction

Subtraction is finding the difference between two numbers or 'taking away' and the answer is the number which is left.

Many steps in subtraction will be introduced:

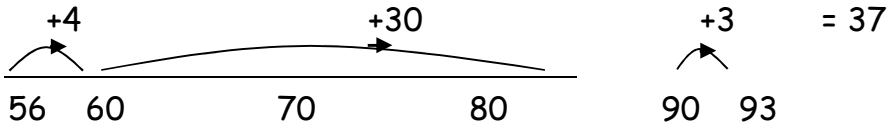
- Subtract a single digit from a teen number: 14 – 3 =
- Subtract a teen number from a teen number by counting on: 18 – 14 = ? 'How many more from 14 up to 18'.
- Subtracting 9 (take off 10 and add 1) 26 – 9 is 29 – 10 = 16 + 1 = 17
- Pausing at 10: 13 – 5 becomes 13 – 3 = 10. Take off another 2 which leave 8.
- Using related facts: 14 – 6 = ? 14 – 6 = 8 because 6 + 8 + 14
- Bridging 10: 27 – 8 becomes 27 – 7 = 20. Take off another 1 which leaves 19.

Mental Strategies

Example Calculate 93 - 56

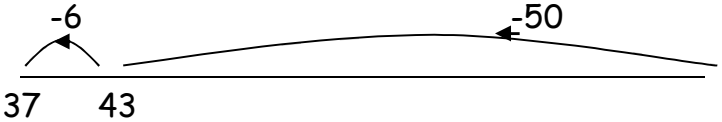
Method 1 Count on

Count on from 56 until you reach 93. This can be done in several ways, for example:



Method 2 Break up the number being subtracted, for example:
subtract 50, then subtract 6

93 - 50 = 43
43 - 6 = 37



Subtraction

- **written method is called decomposition**

Example 1 73 - 26

	T	U
	6 7	1 3
-	2	6
	4	7

73 take away 26.
Subtract the units.
3 units take away 6 units
I cannot do.
Exchange one ten for ten units.
I now have 6 tens and 13 units.
Subtract the units.
13 units take away 6

We do not "borrow and pay back"

Example 2 590 - 386

$$\begin{array}{r} 5\,\cancel{9}^{\,8} \\ 0\,\cancel{}^{\,1} \\ -\,3\,8 \\ \hline 6 \end{array}$$

590 subtract 386.
Zero subtract 6, I cannot do.
Exchange one ten for ten units.
Ten units take away six units equals four units.
Eight tens take away eight tens equals zero tens.

Multiplication

Multiplication is a quick way of adding up equal groups. You may be introduced to all the tables throughout the course of Primary 2 to Primary 4 but should know the facts, and have quick recall, of the 2, 3, 4, 5, and 10 times tables. It is real worthwhile learning the tables backwards, forwards and dodging about as you can save yourself lots of time and trouble for the rest of your life!

4 sets of 3 stars equals 12 stars 3 + 3 + 3 + 3 = 12 4 x 3 = 12

3 sets of 4 triangles equals 12 triangles 4 + 4 + 4 = 12 3 x 4 = 12

Mental Strategies: examples

4 x 17 → 4 x 10 = 40 4 x 7 = 28 → 40 + 28 = 68

4 x 17 → double 17 = 34 → double 34 = 68

11 x 30 → 10 x 30 = 300 → 300 + 30 = 330

Written Method

	T	U
	1	7
x		4
	6	8

17 multiplied by 4.
4 times 7 units is 28 units.
28 is 2 tens and 8 units.
Write the 8 in the units column and carry the 2 tens.
4 times 1 ten is 4 tens plus 2 tens is 6 tens.

Multiplying by Multiples of 10

H	T	U
	1	7
1	7	0

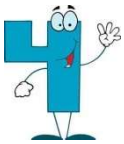
Th	H	T
		6
6	2	0

To multiply by 10 you move every digit **one** place to the left.

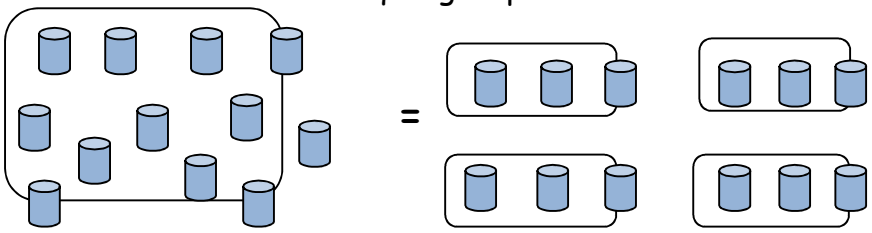
To multiply by 100 you move every digit **two** places to the left.

Division

Division can be thought of as repeated subtraction: "How many times can the second number be taken from the first?" It is dividing into equal groups or sharing. Division is the opposite of multiplication.



Divide 12 cans into 4 equal groups.

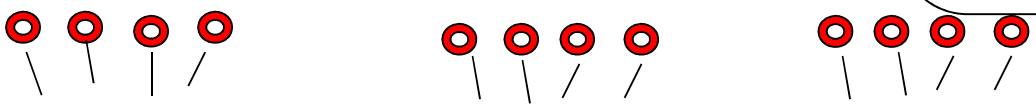


12 ÷ 4 = 3

Language

12 shared equally between 2.
Divide 12 by 2.
12 divided by 2.
Half of 12?
Two times what makes twelve?
How many twos are in twelve?

Share 12 sweets among 3 children.



12 ÷ 3 = 4 They could have 4 sweets each.

Divide by:
10: the answer ends in 0
5: the answer ends in 0 or 5
2: the answer ends in 0, 2, 4, 6, 8
or the number is even.

Link multiplication and division facts

4 x 7 = 28 28 ÷ 4 = 7
7 x 4 = 28 28 ÷ 7 = 4

Written method: is developed from the use of structured materials

Example 1 74 ÷ 6

```
6 | 7 4
  - 6 0    6 X 10
    1 4
  - 1 2    6 X 2
      2        12
```

Seventy four divided by six is what?
Six times ten is sixty, leaving 14.
Six times two is twelve, leaving 2.
Ten add two gives twelve, so there are twelve sixes in seventy-two and seventy-four divided by 6 is twelve remainder two.

Example 2 74 ÷ 6

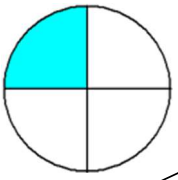
```
    1 2 r 2
6 | 7¹4
```

74 divided by 6
Divide the tens,
6 times what is 7?
6 times one is 6 and one left over.
Divide the units,
6 times what is 14?
6 times 2 is 12 and 2 left over. My answer is 12r2

Fractions

When something is divided into equal parts, each part is called a fraction. A fraction can be expressed as one

The bottom number of a fraction is called the **denominator**.
It is the name of the fraction and tells us

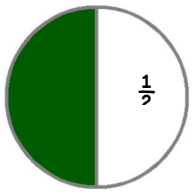


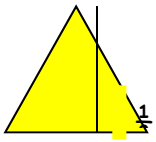
1

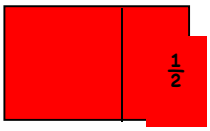
The top number of a fraction is called the **numerator**.

Example

Fold shapes to show a half

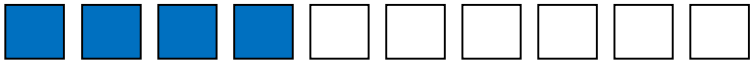






Example

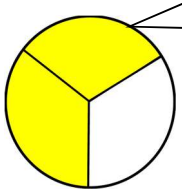
Four tenths



$\frac{4}{10}$

4 of the 10 equal

Eighteen circles altogether.
One third of 18 = 6



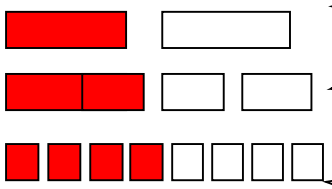
$\frac{2}{3}$ is coloured

$\frac{1}{5}$ of 10 = 2

10 ÷ 5

Equal fractions

One quarter



$\frac{1}{2}$ Half: one of the two halves is coloured

$\frac{2}{4}$ Half: two of the four quarters are coloured

$\frac{4}{8}$ Half: four of the eight eights are coloured

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

Money

Can you recognise all coins? Can you use money to pay for items and work out how much change should receive?

100p = £1
105p = £1.05
110p =
150p = £1.50

£1.10

Fifty pence is written as 50p or £0.50
Five pence is written as 5p or £0.05

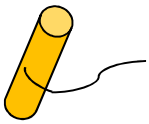
The decimal point separates the pounds from the pence. There are always **two** figures

Example: make amounts up to 10p ...50p ...£1 ...£5

68p = *a 50 pence, a 10 pence, a 5 pence, a 2 pence and a 1 penny coin.*
Investigate how many different combinations of coins and notes that can be used to pay for a toy costing £5.98.

Understand: 5p + 5p + 5p + 5p = 10p + 10p = 20p

Example: change from £1



£0.55

55p (and 5p) is 60p (and 20p) is 80p (and 20p) is 100p or £1. My change is 45p.

Example: Find the difference between two amounts

Ben

I have three pounds. (£3)

I have one pound and sixty pence. (£1.60)

Mark

Who has more money? How much more?

+40p +£1

Difference = £1.40

£1.60 £2 £3

Ben has £1.40 more than Mark.

Time

Time is how long something takes

Days

There are 24 hours in a day.

Weeks

There are seven days in a week.

Days of the week

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

Useful time words

morning
afternoon
evening
today
tomorrow
yesterday
weekends
months
years
calendars
seasons
date
day
night
midday
midnight
am
pm

Months of the year

January
February
March
April
May
June
July
August
September
October
November
December

Can you say this rhyme and remember how many days are in each month?

30 days has September,
April, June and November;
All the rest have 31,
except February alone
which has 28 clear
and 29 in each leap year.

March

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					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						

How many Mondays

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18				22	23
24	25					

On which day of the week is the

How many weeks between Monday

April

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	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	28	30				

What is the date of the second Tuesday in April?

How many weeks between Sunday 3rd

Time

Learning to tell the time can be a challenge.

Time facts to learn:

60 seconds = 1 minute

60 minutes = 1 hour

24 hours = 1 day

7 days = 1 week

52 weeks = 1 year

o' clock
the minute (long) hand points to the 12.

quarter past
the minute (long) hand points to the 3.

half past
the minute (long) hand points to the 6.

quarter to
the minute (long) hand points to the 9.

am and pm

'**am**' times are morning times - between midnight and noon.

'**pm**' times are afternoon and evening times -between noon and midnight).

Digital displays

The first number is the hour.

The numbers after the dots tells you how many minutes.

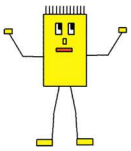
05: 15

Fifteen minutes after.....
Thirty minutes after....
Three hours after.....
Two hours before.....

2:50

3:20

How many minutes are there between the times?



Length

Length is how far it is from one end of something to the other or the distance between two points.

long	longer	longest
short	shorter	shortest

Language

metre **half-metre** **centimetre** **half-centimetre** **kilometre**

Units of Length

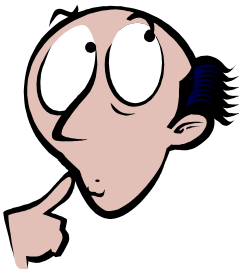
100 centimetre (cm) = 1 metre (m)
1000 metres (m) = 1 kilometre (km)

Estimate

Is your school tie shorter than one metre, longer than one metre or about the same length as one metre?

Is a door shorter than, longer than or about two and a half metres high?

Which is longer – two thousand metres or one and a half kilometres?



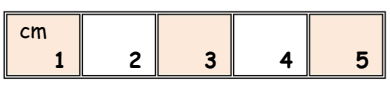
Can you draw a line $8\frac{1}{2}$cm long.

How long is your pencil?

Which is shorter: seven and a half kilometres or six thousand metres?

HINT

When you are measuring the length of something look at your ruler or tape measure carefully. Make sure you start measuring from the beginning of the first centimetre.



Weight

We use balances or scales to find out how heavy something is. We use bathroom scales to weigh ourselves. In the post office they use scales to weigh letters and parcels.

heavy	heavier	heaviest
light	lighter	lightest

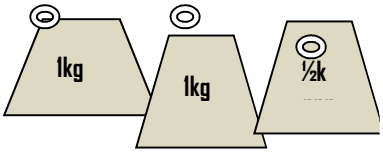
Language

kilogram **half-kilogram** **gram** **weighs about / less than / more than**

Units of Weight

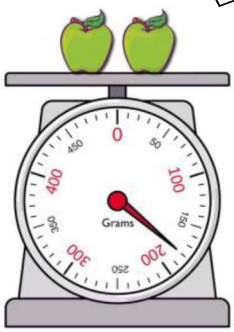
1 kilogram (kg) = 1000 grams (g)

½ kg = 500g



What is the total weight?

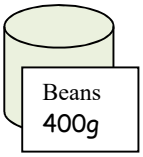
What do the apples weight?



apple
100g

melon
700g

orange
200g



carrots
300g

How many apples would balance ½ kg?

Which 2 items have a total weight of 1kg?

Which 2 items have a total weight of ½kg?

Which 3 items have a total weight of 1kg?

Volume

The volume can be the amount a container can hold and this is sometimes called capacity.

Language

one litre **half-litre** **millilitres** **estimate**

approximately

Units of capacity

1 litre (l) = 1000 millilitres (ml)

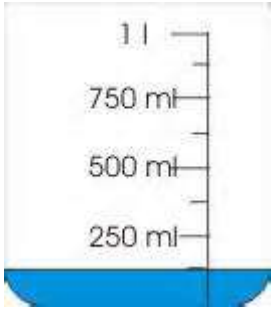
½litre (l) = 500 millilitres (ml)

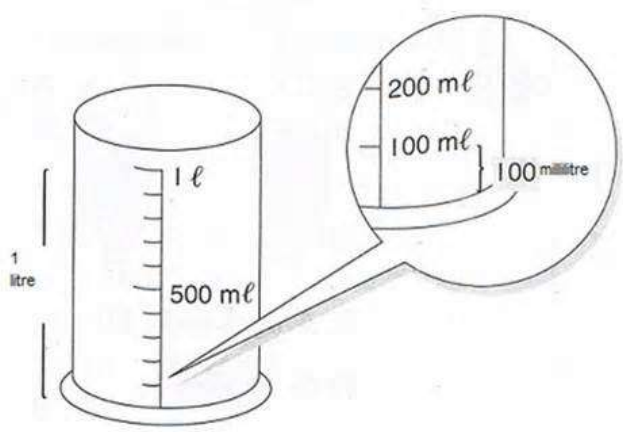
This holds less than ½litre.

Estimate

The jug holds about/more than/less than half a litre.

Can you read millilitre scales?





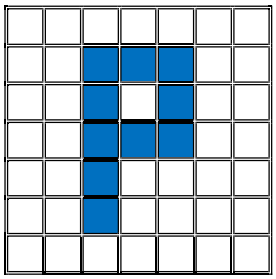
Area

The amount of surface covered by a two dimensional shape.
The area is usually measured in square units.

Language

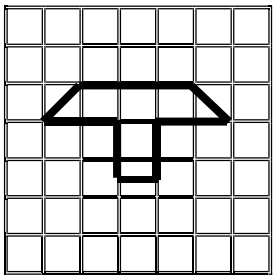
square centimetres **half square centimetres** **area**
approximately

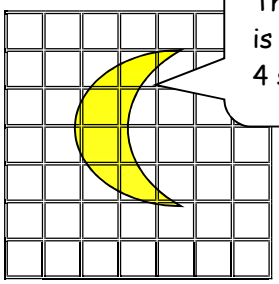
The find the area of this letter count the squares.



Can you make another shape with an area of 10 squares?

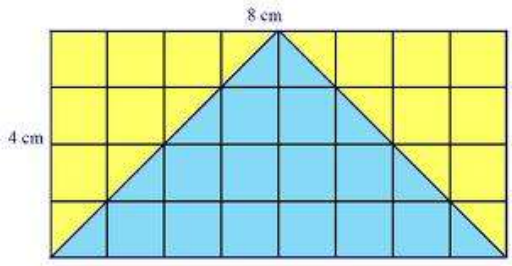
Half-square centimetre





The area of this shape is approximately 4 square units.

The area of this shape is 4 whole square centimetres and 3 half square centimetres. This makes five and a half square centimetres or $5\frac{1}{2}cm^2$



What is the area of this triangle?

HINT
Count the squares in a systematic way, row by row or column by column.

Mathematics – its impact on the world, past and present

Ancient numbers

A long time ago, people counted using their fingers.
Symbols were invented to show the numbers.
The symbols were known as **numerals**.

The Egyptians used this system.

I	II	III	IIII	III II	III III	IIII III	IIII IIII	IIIII IIII	∩
1	2	3	4	5	6	7	8	9	10

50

100

500

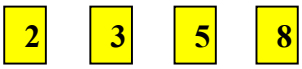
The number system becomes quite complicated when the numbers become large.

Since the way we write numbers comes from the Indians, and then the Arabs, we call it the Hindu-Arabic system. In this system we only have to use these ten numerals:
0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

These numerals are often known as digits.

The number 37 is a two-digit number, using the two digits 3 and the 7.
The number 261 is a three-digit number, using the digits 2, 6 and 1.
Zero is an important digit in our number system. In the number 407, for example, the zero shows that there are no tens, and the number does not become confused with 47.

Challenge



Make four numbered cards: 2, 3, 5, 8
Put any two cards together to make a two-digit number.
It is possible to make 12 different two-digit numbers. Can you find them?

How many different three-digit numbers can you make by choosing three cards from the four?

Patterns and relationships

Extending patterns:

2, 4, 6, 8, _, _

1, 2, 4, 7, _, _, 22

20, 18, _, 14, _, 10

Can you make more patterns and explain the rule?

More complex shape sequences:

.....

Copy, continue and describe sequences of numbers relating to the times tables:

8, 16, 24 ..... **27, 24, 21** .....

Understand that:

4 + 5 = 5 + 4 (commutative property)

5 + 4 + 6 = (5 + 4) + 6 = 5 + (4 + 6) (associative property)

2 x 6 = 6 x 2 (commutative property)

8 + 4 = 12 so 4 + 8 = 12
12 – 8 = 4 12 – 4 = 8

2 x 10 = 20 so 10 x 2 = 20
20 ÷ 2 = 10 20 ÷ 10 = 2

Expressions and equations

Find missing numbers in statements where symbols are used for unknown numbers or operators.

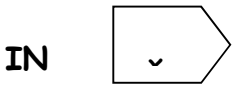
4 + ? = 7 **9 - □ = 4** **4 * 5 + 9**

What is ?
What is □
and what is *

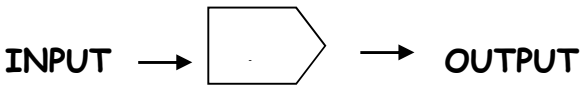
The equals sign acts like a balance:

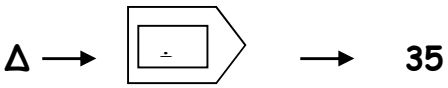
6 + □ = 8 + 4 **14 – 4 = □ + 5**

Use simple function machines for operations like doubling, halving, adding or subtracting.



Can you explain your thinking to others?





I understand what these symbols mean:

(equals) = **(not equal to) ≠**

(less than) < **(greater than) >**

Properties of 2D shapes and 3D objects

Names and properties of 3D objects and 2D shapes

Language of 3D objects

cube **cuboid** **cone** **cylinder** **sphere**

	flat faces	curved faces	edges	vertices
cube	6	0	12	8
cylinder	2	1	2	0

Can you recognise a square-based pyramid, a triangular-based pyramid, a pentagonal-based pyramid and a hexagonal-based pyramid?

Can you build different shapes with 6 cubes?

My shape has 5 flat faces.
It has a square base.
What is it?

Language of 2D shapes

triangle	pentagon	hexagon	octagon	quadrilateral	regular
irregular	equal	sides	angles	horizontal	symmetrical

Sort 2D shapes according to various criteria:

fewer than 4 sides 4 sides more than 4 sides

regular (all sides and angles are equal) ↔ irregular (sides and angles are not equal)

are quadrilaterals ↔ are not quadrilaterals

have 6 or more sides ↔ have fewer than 6 sides

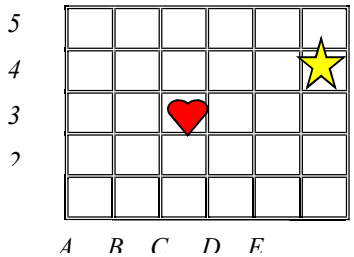
Angle, symmetry and transformation

Can you: describe follow and record routes and journeys using signs, words and angles; use grid references to locate and describe positions; create and recognise symmetrical pictures, patterns and shapes.

Language

position row column co-ordinates grid reference
horizontal/vertical axis compass directions North South
East West whole/half/quarter turn clockwise/anti-clockwise

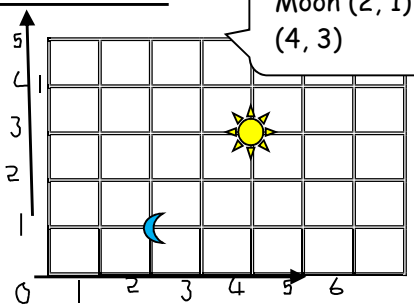
Grid reference



What is at position F4?

What is at position C3?

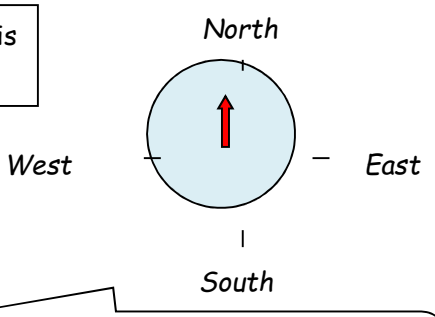
Co-ordinates



Moon (2, 1) Sun (4, 3)

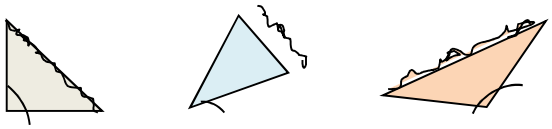
Clockwise and anti-clockwise turns

quarter turn is 90°



Rotate the pointer from North to North anti-clockwise.
One whole turn is 360° (360 degrees)

Comparing and ordering angles

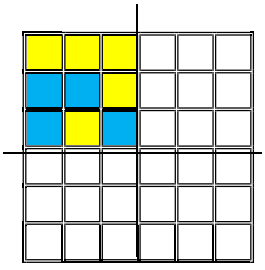


... about a right angle
... greater than a right angle
... smaller than a right angle

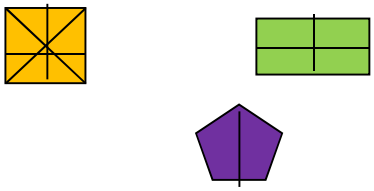
Lines of symmetry

Is this shape symmetrical?

Complete the symmetrical pattern.



Fold or use a mirror to find lines of symmetry.



Data and analysis

Can you: collect information; organise it logically; make a display by creating tables, charts and diagrams; interpret the information and answer questions.

Language

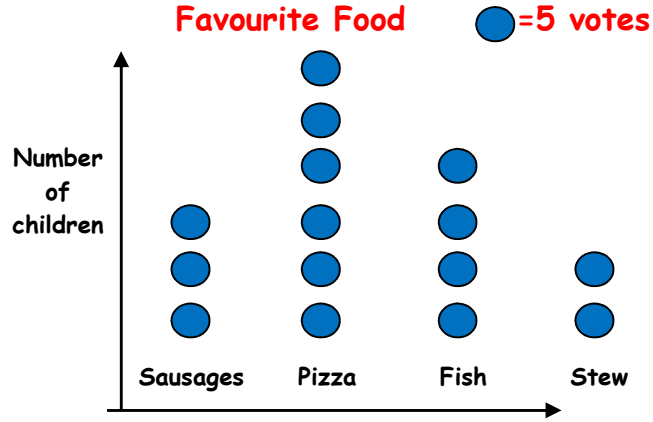
Tally marks	bar chart	frequency table	pictogram	graph
axis/axes	horizontal	vertical	title	label
key	display	Carroll diagram	Venn diagram	interpret

Collecting information

Which sport is the most/least popular?
How many more children like football than table tennis?

Favourite Sport		Total
Netball	𝍸 𝍸 I	11
Football	𝍸 𝍸 III	13
Table Tennis	𝍸 IIII	9
Swimming	𝍸 II	7

Pictogram



Which two favourite foods have a total of 25 votes?
How many children voted for pizza?
How many more votes for pizza than sausages?

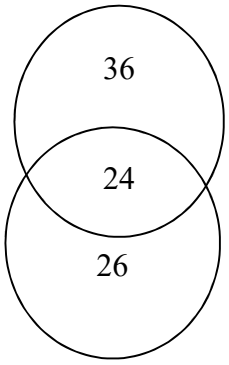
Carroll diagram

	Multiple of 5	Multiple of 5
Even numbers	60 30 20 10	22 14 12 38
Even numbers	25 35 15 5	9 31 27

Multiple of 4

Venn diagram

Where will 32 go?



Even number greater than 22 but less than 35

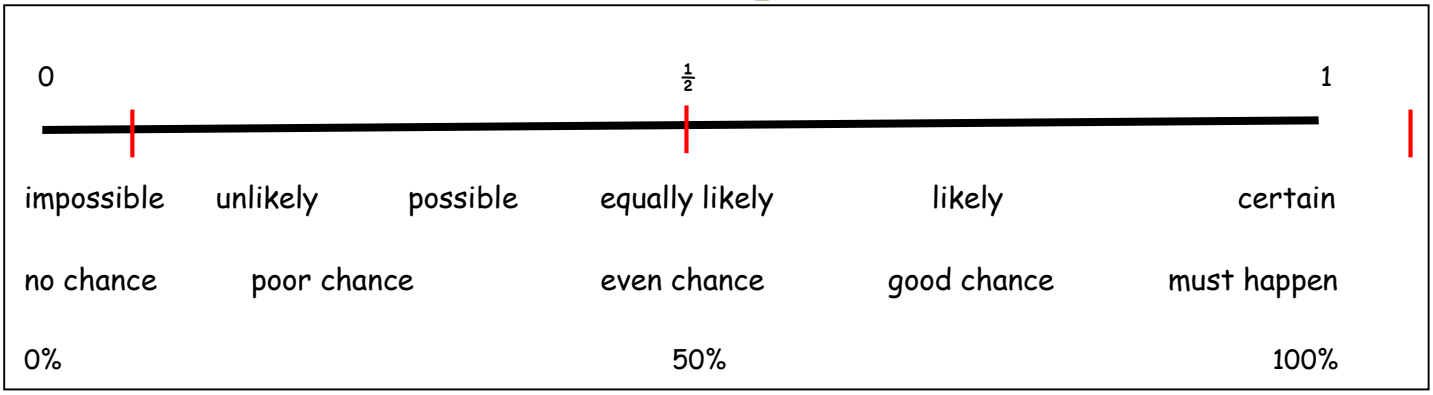
Ideas of chance and uncertainty

Another word for probability is chance. Probability is the measure of how likely something is to happen.

Most people use probability words everyday.

I'll ***definitely*** meet my friend after school.

It's ***impossible*** to finish all my homework before my dinner.



*If something is just as likely to happen as it is not to happen, you say its probability is an **even chance** or "**evens**". You might also call it a "**fifty-fifty**" chance, eg. if you toss a coin, you're equally likely to get heads as tails.*

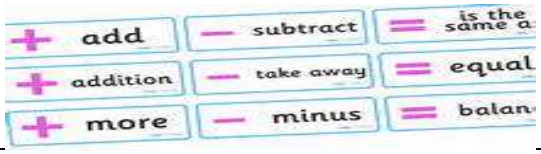
Coin probability

If you toss a coin there are two possibilities: it could land on heads or tails: you're equally likely to get heads as tails. There is an even chance (1 in 2) of it landing on heads and an even chance of tails.

Dice probability

Dice have six sides, each with a different number of spots on it:
1, 2, 3, 4, 5, and 6.

Mathematical Language



adding	Finding the total number of objects in different groups.
addition (+)	To combine 2 or more numbers to get one number (called the sum or the total) Example: 12+76 = 88
am	(ante meridiem) Any time in the morning (between midnight and 12 noon).
angles	Right Angle measures 90°. Acute angle is less than 90°. Obtuse angle is more than 90°.
approximate	An estimated answer, often obtained by rounding to nearest 10, 100 or decimal place.
area	The area is the amount of surface inside the perimeter.
calculate	Find the answer to a problem. It doesn't mean that you must use a calculator!
data	A collection of information (may include facts, numbers or measurements).
decimal number	A number which is partly a whole number and partly a fraction.
decimal point	A point used to separate the whole numbers from the fraction in a decimal number.
denominator	The bottom number in a fraction (the number of parts into which the whole is split).
difference (-)	The amount between two numbers (subtraction). Example: The difference between 50 and 36 is 14: 50 – 36 = 14
digit	A numeral used as part of a number.
division (÷)	Sharing a number into equal parts: 24 ÷ 6 = 4
double	Multiply by 2.
equals (=)	Makes or has the same amount as.
equivalent fractions	Fractions which have the same value. Example $\frac{6}{12}$ and $\frac{1}{2}$ are equivalent fractions.
estimate	To make an approximate or rough answer, often by rounding.
even	A number that is divisible by 2. Even numbers end with 0, 2, 4, 6 or 8.
factor	The factors of a number are those numbers which will divide into it exactly.

fraction	A part of a whole.
greater than (>)	Is bigger or more than. Example: 10 is greater than 6. 10 > 6
least	The lowest number in a group (minimum).
less than (<)	Is smaller or lower than. Example: 15 is less than 21. 15 < 21
maximum	The largest or highest number in a group.
minimum	The smallest or lowest number in a group.
minus (-)	To subtract.
most	The largest or highest number in a group (maximum).
multiple	A number which can be divided by a particular number, leaving no remainder. Example Some of the multiples of 4 are 8, 16, 48, 72
multiply (x)	To combine an amount a particular number of times. Example 6 x 4 = 24
numerator	The top number in a fraction.
odd number	A number which is not divisible by 2. Odd numbers end in 1 ,3 ,5 ,7 or 9.
operations	The four basic operations are addition (+), subtraction, (-) multiplication (x) and division (÷).
place value	The value of a digit dependent on its place in the number. Example: in the number 1573, the 5 has a place value 5 hundred.
pm	(post meridiem) Any time in the afternoon or evening (between 12 noon and midnight).
prime number	A number that has exactly 2 factors (can only be divided by itself and 1). 1 is not a prime number as it only has 1 factor.
product	The answer when two numbers are multiplied together. Example: The product of 5 and 4 is 20.
remainder	The amount left over when dividing a number.
share	To divide into equal groups.
square number	The result of multiplying a number by itself.
subtracting	Taking a number of objects away from a group and counting the number left.
sum	The total of a group of numbers (found by adding).
total	The sum of a group of numbers (found by adding).

Some Useful Resources

Number Lines

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

NUMBER SQUARES

0	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 Square

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

Multiplication Square

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100