My Maths Book

At the end of Key Stage 1 children are expected to: develop confidence and mental fluency with whole number, counting and place value; understand the four operations (add, subtract, multiply and divide); and increase their understanding of shape and measure. This book outlines all of the content Year 1 children need to know correctly by the end of the year in order to reach age-related expectations in Year 1 for Maths. This booklet is for your information to work through at home; **it does not need to be sent to school.**

Number and Place Value

By the end of Year 1 children will be working between 0 and 100. They are expected to:

- Count to 100, forwards and backwards, starting at 0 or from any given number
- Count, read and write numbers to 100 in numerals
- Find one more and one less of a number to 100
- Represent numbers using objects and pictures
- Use language such as equal to, more than, less than, most, least, fewer and greater
- Count in multiples of 2, 5 and 10 forwards and backwards

Hundred 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

Addition and Subtraction

By the end of Year 1 children are expected to:

- Recognise the addition (+), subtraction (-) and equals (=) signs
- Read, write and understand how to complete one step addition sentences and problems
- Read, write and understand how to complete one step subtraction sentences and problems
- Add and subtract one digit and two digit numbers to 20
- Understand the relationship between addition and subtraction (inverse) *e.g. if 6 + 3 = 9 then 9 – 3 = 6*
- Know the number bonds to 10 mentally and related subtraction facts
- Know the number bonds to 20 mentally and related subtraction facts
- Partition numbers to 10 in different ways *e.g. how many ways can you make 7? What is 4 add 5? What number would you add to 3 to make 6? What is 8 take away 2?*

Examples of one step addition sentences to 20:

4 + 2 =	10 + 3 =	8 + 7 =
11 + 5 =	12 + 7 =	8 + 11 =
13 + 5 =	9 + 8 =	4 + 14 =

Examples of one step subtraction sentences to 20:

5 – 3 =	9 – 4 =	8 - 5 =
18 - 4 =	14 – 9 =	12 – 6 =
19 - 12 =	15 - 7 =	13 - 11 =

Number bonds to 10:

0 + 10 = 10	1 + 9 = 10	2 + 8 = 10	3 + 7 = 10
4 + 6 = 10	5 + 5 = 10	6 + 4 = 10	7 + 3 = 10
8 + 2 = 10	9 + 1 = 10	10 + 0 = 10	

Number bonds to 10 related subtraction facts:

10 - 0 = 0	10 – 9 = 1	10 – 8 = 2	10 – 7 = 3
10 – 6 = 4	10 – 5 = 5	10 – 4 = 6	10 – 3 = 7
10 – 2 = 8	10 – 1 = 9	10 – 10 = 0	

Number bonds to 20:

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

Number bonds to 20 related subtraction facts:

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

Multiplication and Division

By the end of Year 1 children are expected to:

- Solve one step problems involving multiplication using concrete objects and arrays
- Solve one step problems involving division using concrete objects and pictorial representations to group and share
- Double and half numbers and quantities

Examples of multiplication sentences (children use objects or arrays to work these out):

2 lots of 3 =	6 multiplied by 5 =	8 lots of 3 =
4 times 4 =	7 lots of 2 =	5 times 7 =

Here is an example of an array:

6

4

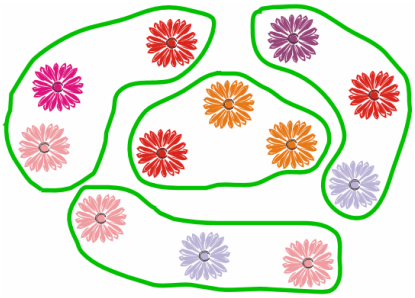
4 lots of 6 = 24

(as there are 24 dots drawn)

Examples of division sentences (children use objects or pictorial representations to group or share):

4 shared into 2 =	6 shared between 3 =	12 grouped into 4 =
3 shared into 1 =	10 shared between 5 =	20 grouped into 2 =

Here is an example of grouping:

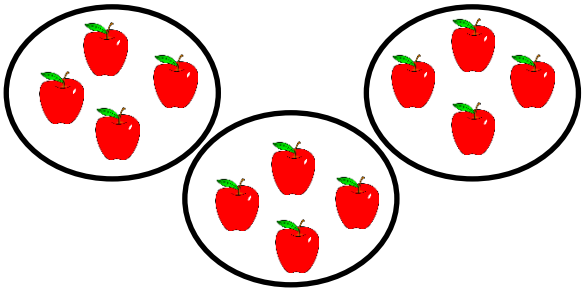


12 grouped into 3 = 4

12 flowers are grouped in 3's.

There are 4 groups.

Here is an example of sharing:



12 shared between 3 = 4

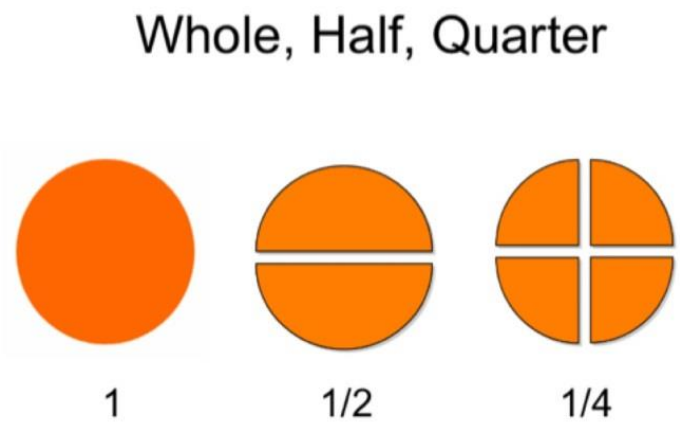
12 apples are shared one at a time into 3 circles. There are 4 in each circle.

Fractions

By the end of Year 1 children are expected to:

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

Example for a shape:



Example for a quantity:

Half of 2 = 1	Quarter of 4 = 1
Half of 4 = 2	Quarter of 8 = 2
Half of 6 = 3	Quarter of 12 = 3
Half of 8 = 4	Quarter of 16 = 4

They will recognise that to work out a half they share into 2 and to work out a quarter they must share into 4. They can use sharing or grouping to work this out.

Measurement

By the end of Year 1 children are expected to compare, describe and solve problems for all measurements below:

- Length and height (long/short, longer/shorter, tall/short, double/half)
- Mass and weight (heavier/lighter, heavier than/lighter than)
- Capacity and volume (full, empty, more than, less than, half full/half empty, quarter full)
- Time (quicker/slower, earlier/later)

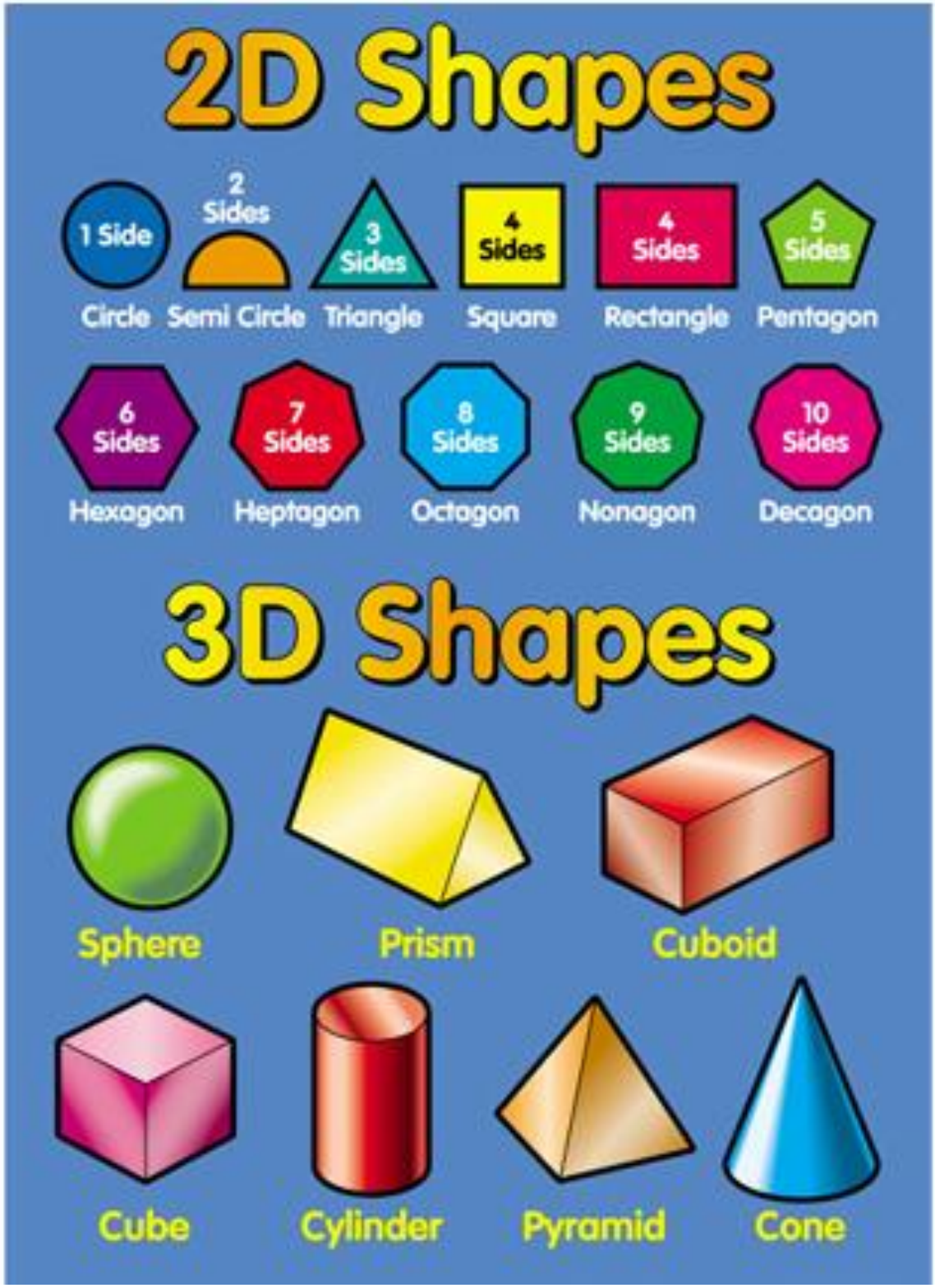
In addition to this, they must also be able to:

- Know the days of the week, months of the year, and years in the correct order *e.g. 2015, 2016, 2017, 2018*
- Sequence events in chronological order using language such as before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening
- Tell the time to the hour and half past the hour
- Draw the hands on the clock to show o'clock and half past
- Recognise and know the value of all coins and notes

Geometry

At the end of Year 1 children are expected to:

- Recognise and name common 2D shapes
- Recognise and name common 3D shapes
- Describe different positions, directions and movement including half, quarter and three quarter turns



Spelling

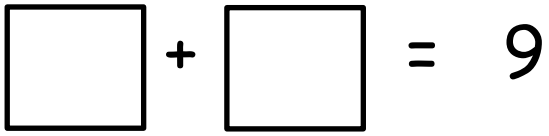
Year One children should be able to spell numbers to 20 in words.

one	two	three	four
five	six	seven	eight
nine	ten	eleven	twelve
thirteen	fourteen	fifteen	sixteen
seventeen	eighteen	nineteen	twenty

Using and Applying

Children might be asked to show their understanding with greater depth. This means they are secure on the mathematical knowledge they are expected to know for the end of Year One expectations and can apply it to a mathematical problem with reasoning.

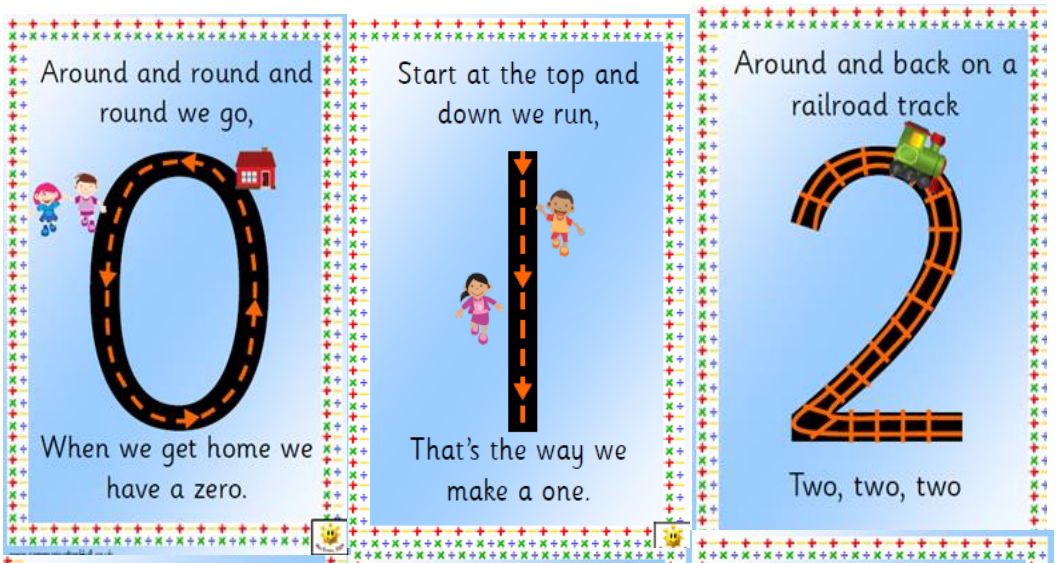
- Here is an example of a mathematic problem:
  Fill in the missing numbers in the number sentence below. Is there more than one way to solve this?

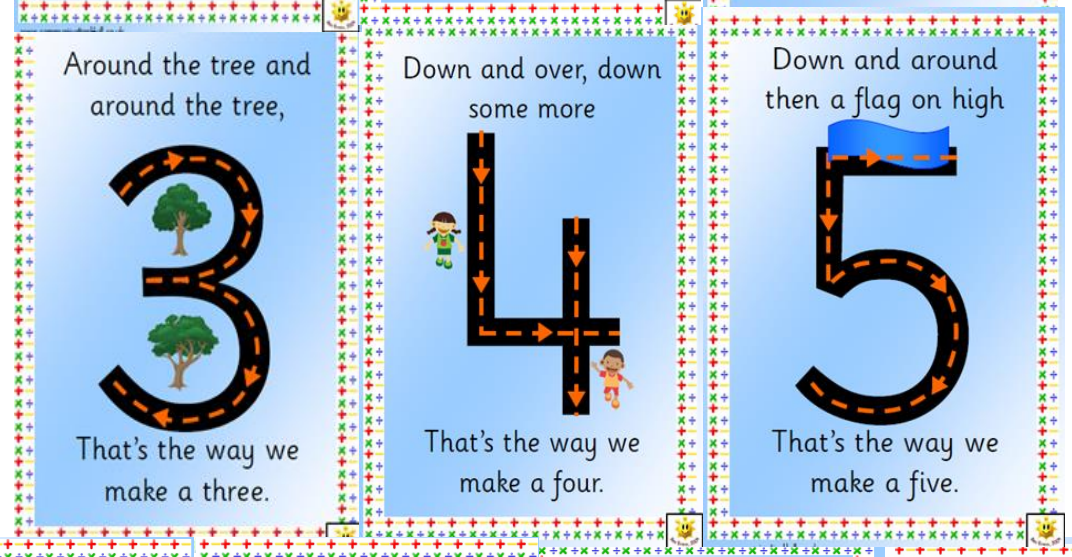


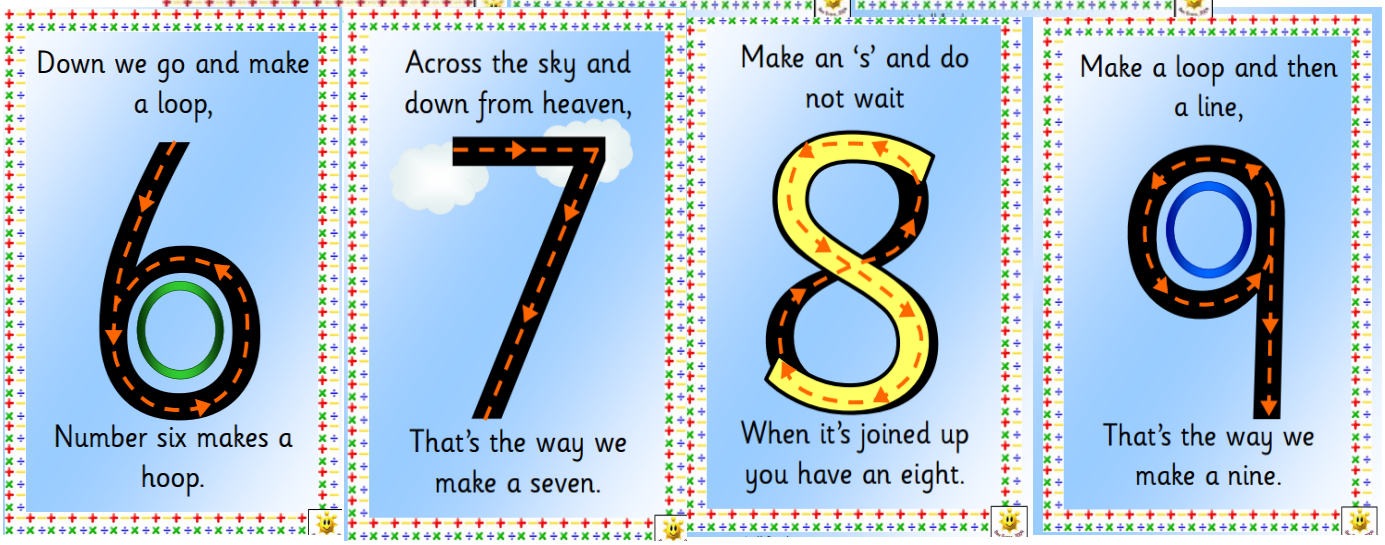
- They can also be in the form of worded problems. Examples of these for addition and subtraction are:
  James has 6 apples and Mary has 8 apples. How many apples do they have altogether?
  13 people are on the bus and 5 people get off. How many people are still on the bus?

Number Formation

In Year One, children should be forming **all** numbers correctly in their work. Here are the rhymes we use at Hook Infant School to help support this:

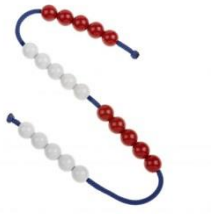
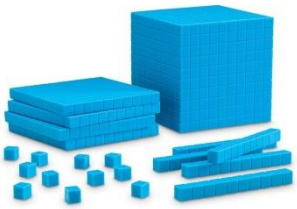
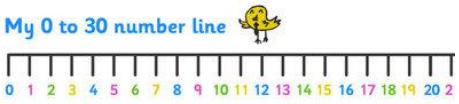
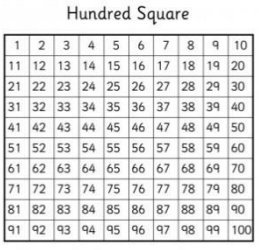






Resources

To help children build on their mathematical understanding they need to be able to visualise mathematical concepts. Here are a range of resources we use to support this:

Resource	Mathematical concept
 Counters  Multilink  Bead string	Counting Addition and subtraction Multiplication Sharing and grouping Fractions of a quantity
 Numicon  Dienes (tens and ones)	All of the above, as well as supporting place value and partitioning numbers.
 Number lines  Hundred Square	Counting Recognising where a number is in the number system Addition and subtraction Multiplication

You are not expected to have these resources at home! There are many objects around the home you use every day that can support children's understanding of number. Examples are:

- Pasta
- Marbles
- Buttons
- Lego
- Straws (bundle into tens and ones)
- Coins
- Pegs
- Bottle tops

and lots more!