Year 1 Maths

Parent's workshop

#bestschoolyearever

Every school has a Calculation policy where it shows you how each of the 4 operations will be taught across the school. Here is a brief overview of ours for Year 1 but I will show you some of these in much more detail.

ARTHUR BUGLER PRIMARY SCHOOL

Calculation Policy

A Mathematical Calculation Policy explaining how we teach the four operations of number.

+ - x ÷

#bestschoolyearever

Calculation Policy Guidance

Year 1

Addition

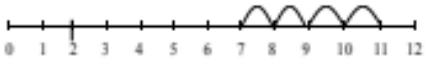
+ = signs and missing numbers

3 + 4 = □ □ = 3 + 4
3 + □ = 7 7 = □ + 4
□ + 4 = 7 7 = 3 + □
□ + ∇ = 7 7 = □ + ∇

Promoting covering up of operations and numbers.

Number lines (numbered)

7 + 4



Recording by - drawing jumps on prepared lines

constructing own lines

(Teacher model number lines with missing numbers)

(Teachers model jottings appropriate for larger numbers)

Children should: ·
Have access to a wide range of counting equipment, everyday objects, number tracks and number lines, and be shown numbers in different contexts.
· Read and write the addition (+) and equals (=) signs within number sentences.
· Interpret addition number sentences and solve missing number problems, using concrete objects and number line addition to solve them: 8 + 3 = 15 + 4 = 5 + 3 + 1 = _ + _ =

Subtraction

Pictures / marks

Sam spent 4p. What was his change from 10p?

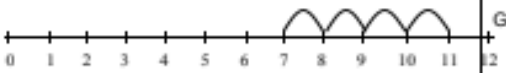
- = signs and missing numbers

7 - 3 = □ □ = 7 - 3
7 - □ = 4 4 = □ - 3
□ - 3 = 4 4 = 7 - □
□ - ∇ = 4 4 = □ - ∇

Number lines (numbered)

11 – 7

The difference between 7 and 11
(Counting up)



Recording by - drawing jumps on prepared lines
- constructing own lines

(Teachers model jottings appropriate for larger numbers)

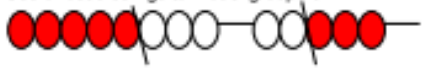
Multiplication

Pictures and symbols

There are 3 sweets in one bag.
How many sweets are there in 5 bags?

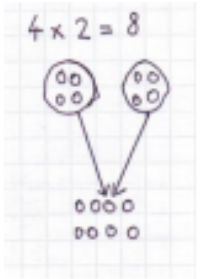
(Recording on a number line modelled by the teacher when solving problems)

Use of bead strings to model groups of.



Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Arrays and repeated addition
Also through the use of pictures and hands on activities



Grouping and sharing

Introduce mathematical vocabulary of multiply and divide.

Doubles up to 10

Children to learn number bonds

Informal jottings only - no formal written methods at Year 1

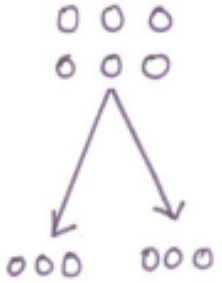
Counting in 2s, 5s and 10s

Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Division

Understand division as sharing and grouping

Ideas modelled through pictures, drawings and by using counters, etc.



Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Halving numbers to 20

Informal jottings only - no formal written methods at Year 1

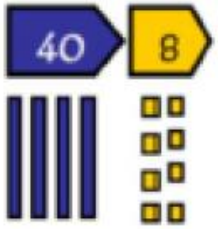
Children to work through the school number bonds scheme

#bestschoolyearever

Addition

Concrete resources:

- 100 square
- Number lines
- Bead strings
- Straws
- Dienes
- Place value cards
- Place value dice
- Place value counters
- Numicon



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

#bestschoolyearever

- Here at ABP we use the White Rose Hub as a resource and scheme to help the children understand and flourish within the Maths curriculum. They always learn with concrete materials first, then pictorially and then in an abstract way where they are required to use their knowledge and apply it to a new situation. We will have a look at some examples together.

- The teaching and expectations of Maths has dramatically changed since we all left school. Gone are the days where children are given worksheets and expected to do hundreds of ‘sums’. Now it is all about understanding a concept then using and applying it in a variety of contexts.

Notes and Guidance

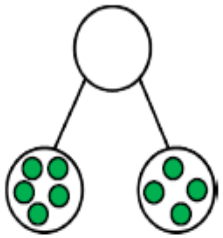
Children need to understand that a number can be partitioned into two or more parts. This will help them with number bonds and addition.
They will be introduced to the part-whole model to show this concept clearly, and should get used to seeing it in different orientations.
Children should use and understand the language part, part, whole.

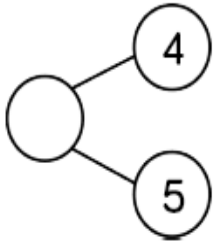
Mathematical Talk

What does whole mean?
What does part mean?
How can we represent the whole/parts?
Are the parts smaller or larger the more you partition them? Why?
Can zero be a part?
Can the parts be swapped around?
Can the whole be swapped with a part?

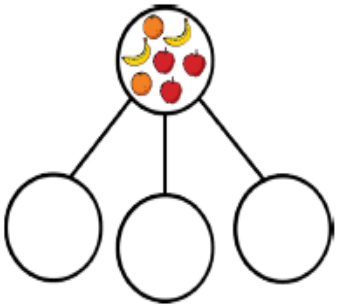
Varied Fluency

- Complete the part-whole models by drawing counters and then writing the numerals.





- Here are seven pieces of fruit.



Put the fruit into a part-whole model.
Complete the sentences.
_____ is the whole.
_____ is a part, _____ is a part and _____ is a part.

- Draw the part-whole model that represents the stem sentences.
A part is 4
A part is 3
The whole is 7

#bestschoolyearever

Reasoning and Problem Solving

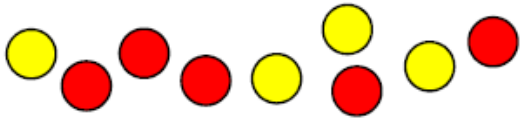
There are 6 animals.  How many different ways can you sort the animals? Complete a part-whole model for each way. Can you partition the animals into more than 2 groups?	Various answers. E.g. Brown & not brown 4 legs & 2 legs Multiple groups could be the type of animal. Part-whole models should accurately represent children's sorting.
4 is the whole. How many different part-whole models can you draw to show this? Use different numbers for the parts each time. Are any the same? Why?	4 and 0, 0 and 4 1 and 3, 3 and 1 2 and 2 Children should recognise 4 and 0 and 0 and 4 being the same etc.

Work in groups of up to 8 children. Can you split yourselves into different groups? Think of different ways to group yourselves: hair colour, eye colour, gender, shoe size etc. Complete a part-whole model for each way. Can you partition into more than 2 groups?	Children may split themselves into groups in many different ways. E.g. hair colour, month of birth, shoe size, gender etc. Part-whole models should accurately represent children's sorting.

#bestschoolyearever

Varied Fluency

Here are some counters.

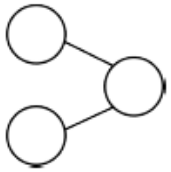


Group the counters by colour.
Fill in the gaps in the sentence and say it out loud.

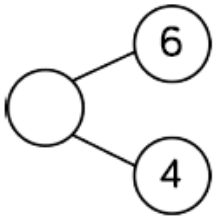
_____ red counters plus _____ yellow counters is equal to _____ counters.

Complete the part-whole model and the number sentence.

□ + □ = □



Use cubes to solve the following calculations.



5 + 3 = □

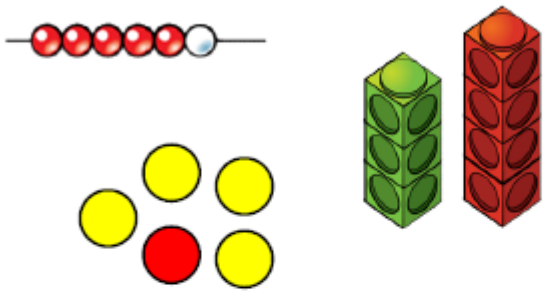
8 + 1 = □

52

- Each sub section builds upon the learning from the previous section. We try describe this to children as learning being like climbing a staircase. Sometimes you need to stay on the same stair until you are really confident with that concept. The next step is always a little harder as you can see here.

#bestschoolyearever

Reasoning and Problem Solving



____ + ____ = 6

Which of the images could help to complete the number sentence? Explain why.

Can you think of a number sentence for each of the other two images?

The bead string as there are 6 beads in total, 5 red and 1 white, so
5 + 1 = 6 or
1 + 5 = 6

The cubes could represent
3 + 4 = 7 or
4 + 3 = 7

The counters could represent
4 + 1 = 5 or
1 + 4 = 5

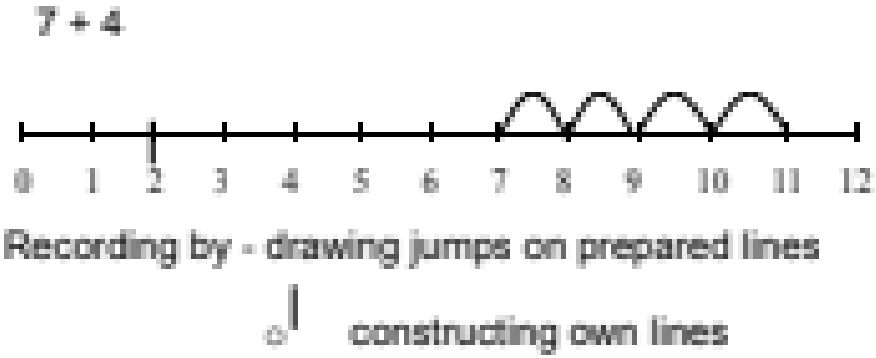
As you can see again the children need to problem solve in order to show their understanding of the concept.

Reasoning features very highly in the Mats curriculum and is an expectation that children will develop these skills. It is vital the children can articulate their understanding of a concept.

Here are some ways you may see addition recorded in your child's book.

Addition in Year 1

Number lines (numbered)



Using a 100 square

- Number bonds

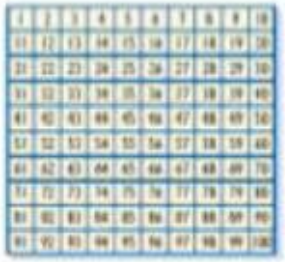
- Key focus on how do they know

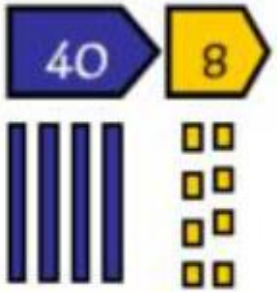
#bestschoolyearever

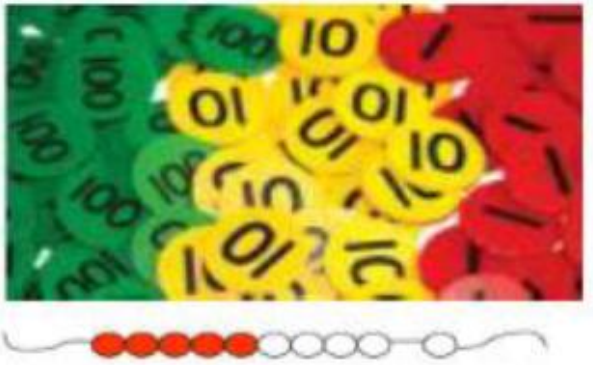
Subtraction

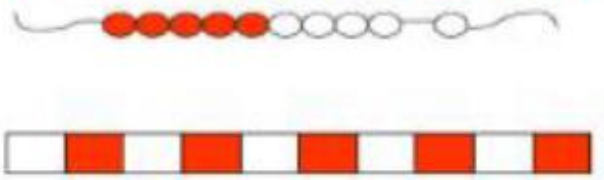
Concrete resources:

100 square
Number lines
Bead strings
Straws
Dienes
Counting stick
Place value dice
Place value cards
Place value counters









subtract
count on
count back
fewer
less
minus
take away
difference

#bestschoolyearever

Once again it follows the same precedent as before. You need to ensure they understand a concept before moving on.

How Many Left? (1)

Notes and Guidance

Children are introduced to the language of subtraction rather than the subtraction symbol being explored straight away.
'Taking away' is used in a range of real life contexts such as flying away and eating.
The use of zero is important so children know that when nothing is taken away the whole remains the same.

Mathematical Talk

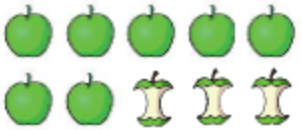
How many objects were there to start with? Do we need to count all or can we count on?
What could the story be? How many did we start with?
What number can we use to show that nothing has gone away/been taken away?

Varied Fluency

There were 7 birds in a tree and 3 flew away.
Complete the sentences.

At first there were ___ birds. Then ___ flew away. Now there are ___ birds in the tree.

Complete the sentences to create a story and draw a part-whole model.

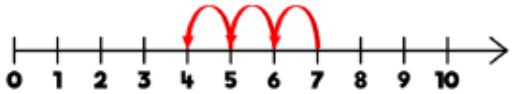


At first there were ___ apples.
Then ___ were eaten.
Now there are ___ apples.

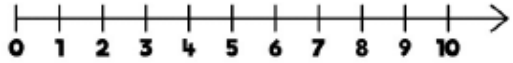
#bestschoolyearever

Varied Fluency

Complete:

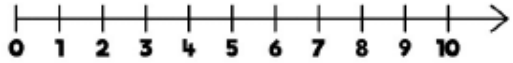


$7 - 3 = \_\_$



$4 - 4 = \_\_$

Use the number line to count back and match the calculations with the same answers.



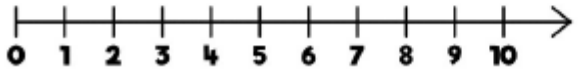
$7 - 3 = \_\_$	$6 - 6 = \_\_$	$10 - 6 = \_\_$
$5 - 0 = \_\_$	$9 - 4 = \_\_$	$4 - 4 = \_\_$

Can you think of any other number sentences which could match them?

I count backwards from 9
How many steps does it take to get to two?
Show this in a number sentence.

Once the children have explored the concept using concrete materials they then begin to use more formal written methods such as these.

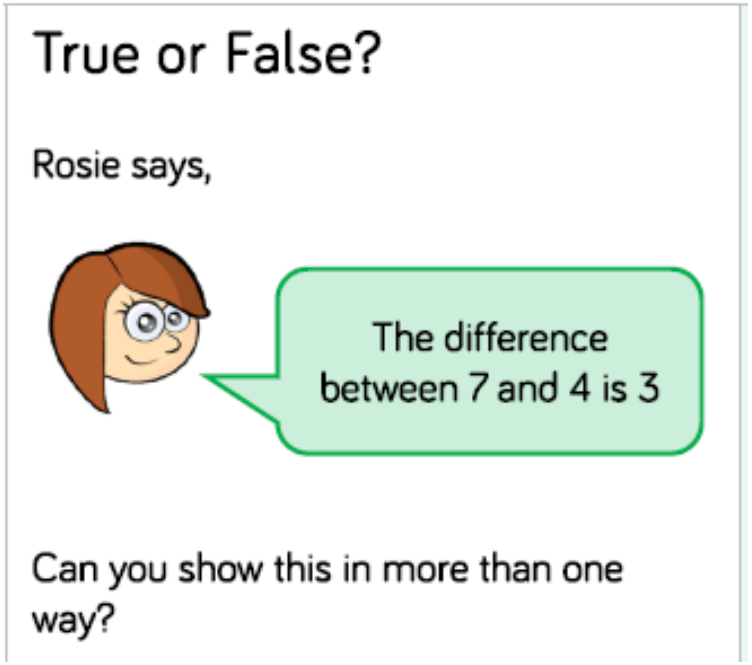
Reasoning and Problem Solving

Eva is calculating 7 – 2 and does this by counting backwards on a number line. She gets an answer of 6  What mistake has she made? What should the answer be?	The bottom two on the right should be: 5 = 7 – 2 and 2 = 7 – 5
The answer is 2 How many ways can you get to this by counting backwards on this number line? 	10 – 8, 9 – 7, 8 – 6 etc.

- Now we are back to reasoning and explaining how you know.

#bestschoolyearever

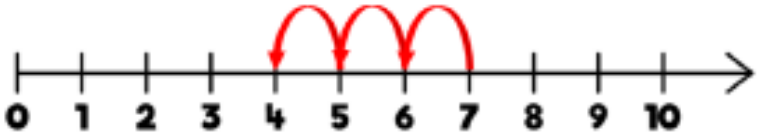
Two numbers have a difference of 4 The larger number is less than 10 What could the two numbers be?	9 and 5 8 and 4 7 and 3 6 and 2 5 and 1 4 and 0



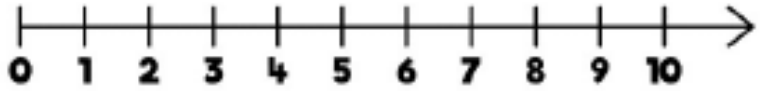
- When the learning is clearly embedded it again moves on to harder concepts.

Here are some ways you may see subtraction recorded in your child's book.

Subtraction Year 1



$7 - 3 = \_\_$



$4 - 4 = \_\_$

- Using a 100 square
- Number bonds
- Key focus on how do they know

#bestschoolyearever

Other Key Areas in Maths in Year 1

- Number bonds to 10 and 20
- Writing the numbers 1 – 10
- Learning to count in 2s, 5s and 10s

How Can Parents Help?

- Be enthusiastic. Let your child see how excited you are about solving a problem.
- Provide time and talk about problem solving. Be patient with your child. Let them work at their own pace. Talk, talk, talk! Talk about options, strategies and ideas for problem solving.
- Reinforce risk taking. Children need a great deal of security to risk being wrong. When they begin to realize that they can learn from their mistakes, they will try harder to complete the problem.
- Reward perseverance. Instant success is not always possible in learning mathematics. Encourage children to keep trying by asking them questions that will lead them in the right direction.
- Use children's experiences. As often as possible, base problems on children's everyday experiences at school and at home.

The best way for your children to become good problem solvers is for them to solve problems, lots of problems! Also, it benefits children to think about how they solved the problem afterwards. In this way they may use their particular strategy to solve similar problems in the future. There are no best ways of solving a problem. We are interested in what makes sense to each individual. Here are some strategies to try with your child: ~ act it out ~ use objects or models ~ make a drawing ~ make a graph or chart ~ make a list ~ guess and check ~ sort and order items ~ look for a pattern ~ look for all possibilities ~ solve a simpler problem ~ choose an operation ~ think logically, use what you know.

Good websites to use at home

- https://mathseeds.co.uk/
- https://www.topmarks.co.uk
- https://www.oxfordowl.co.uk/for-home/kids-activities/fun-maths-games-and-activities/
- https://gb.education.com/games/first-grade/math/
- http://www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml
- https://nrich.maths.org/9412

#bestschoolyearever