Supporting Maths Mastery Skills

Year 2

This booklet aims to show you, as simply as possible, how to help your child in Maths.

ADDITION

In Year 2, pupils can continue to record addition calculations on a number line, then they can start to partition larger numbers enabling the children to add the tens first, then the ones and finally reaching the answer. They will use the part-part whole and bar models to show their method. At this stage the children will explore a range of manipulatives.

Objective & Strategy	Concrete	Pictorial	Abstract
Adding multiples of ten	50= 30 = 20 Model using dienes and bead strings	3 tens + 5 tens = _____ tens 30 + 50 = _____ Use representations for base ten.	20 + 30 = 50 70 = 50 + 20 40 + □ = 60
Use known number facts Part part whole	Children explore ways of making numbers within 20	20 □ + □ = 20 20 – □ = □ □ + □ = 20 20 – □ = □	□ + 1 = 16 16 – 1 = □ 1 + □ = 16 16 – □ = 1
Using known facts	□□ + □□ = □□ □□ □□□ + □□□ = □□□□□	∴ + ∴ = ∴ ||| + |||| = ||||||| ■■ + ■■ = ■■■■	3 + 4 = 7 *leads to* 30 + 40 = 70 *leads to* 300 + 400 = 700
Bar model	3 + 4 = 7	7 + 3 = 10	23 25 ? 23 + 25 = 48

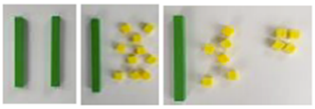
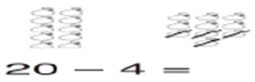
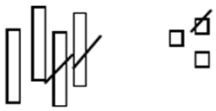
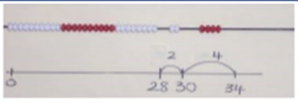
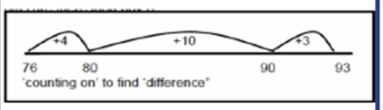
Objective & Strategy	Concrete	Pictorial	Abstract
Add a two digit number and ones	17 + 5 = 22 Use ten frame to make 'magic ten Children explore the pattern. 17 + 5 = 22 27 + 5 = 32	Use part part whole and number line to model. 17 + 5 = 22 3 2 20 16 + 7 +4 +3 16 20 23	17 + 5 = 22 Explore related facts 17 + 5 = 22 5 + 17 = 22 22—17 = 5 22—5 = 17 22 17 5
Add a 2 digit number and tens	25 + 10 = 35 Explore that the ones digit does not change	27 + 30 +10 +10 +10 27 37 47 57	27 + 10 = 37 27 + 20 = 47 27 + □ = 57
Add two 2-digit numbers	Model using dienes , place value counters and numicon	+20 +5 47 67 72 Or +20 +3 +2 47 67 70 72 Use number line and bridge ten using part whole if necessary.	25 + 47 20 + 5 40 + 7 20 + 40 = 60 5+ 7 =12 60 + 12 = 72
Add three 1-digit numbers	Combine to make 10 first if possible, or bridge 1o then add third digit	+ + Regroup and draw representation. + = 15	4 + 7 + 6 = 10 + 7 10 = 17 Combine the two numbers that make/ bridge ten then add on the third.

SUBTRACTION

In Year 2, children will continue to use a number line to subtract but will focus on the difference in value between the numbers. They will then use the method of partitioning the tens and the ones.

25 - 13 =

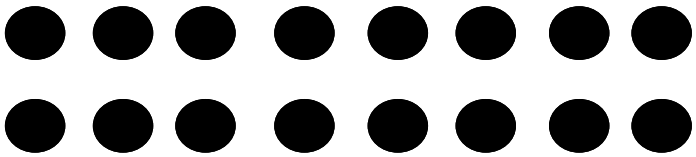
25 - 13
20 - 10 = 10
5 - 3 = 2
10 + 2 = **12**

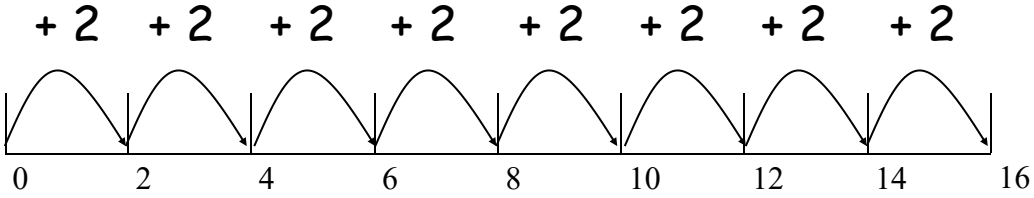
Objective & Strategy	Concrete	Pictorial	Abstract
Regroup a ten into ten ones	 Use a PV chart to show how to change a ten into ten ones, use the term 'take and make'	 20 — 4 =	20—4 = 16
Partitioning to subtract without regrouping. *'Friendly numbers'*	34—13 = 21  Use Dienes to show how to partition the number when subtracting without regrouping.	Children draw representations of Dienes and cross off.  43—21 = 22	43—21 = 22
Make ten strategy *Progression should be crossing one ten, crossing more than one ten, crossing the hundreds.*	 34—28 Use a bead bar or bead strings to model counting to next ten and the rest.	 Use a number line to count on to next ten and then the rest.	93—76 = 17

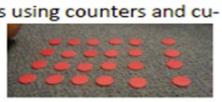
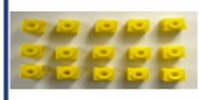
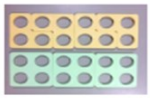
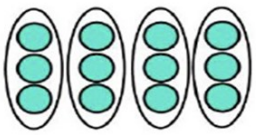
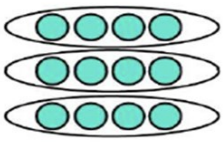
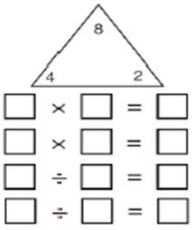
MULTIPLICATION

In Year 2, the children will begin with doubling numbers and repeated addition. Then they are expected to use arrays and extend to numbers lines.

$$8 \times 2 = 16$$

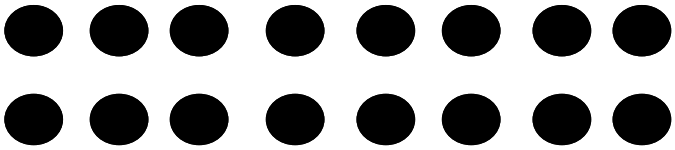




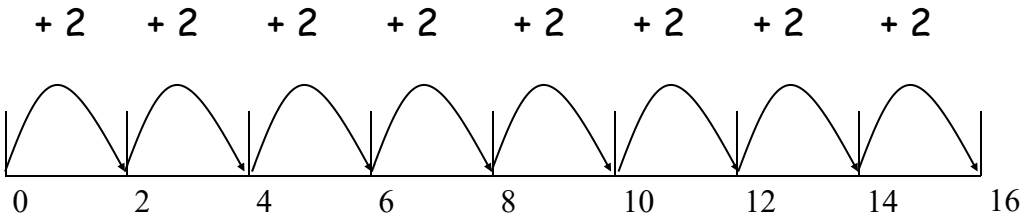
Objective & Strategy	Concrete	Pictorial	Abstract
Multiplication is commutative	Create arrays using counters and cubes and Numicon.    Pupils should understand that an array can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.  	Use representations of arrays to show different calculations and explore commutativity.  	$12 = 3 \times 4$ $12 = 4 \times 3$ Use an array to write multiplication sentences and reinforce repeated addition.  $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$
Using the Inverse *This should be taught alongside division, so pupils learn how they work alongside each other.*			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8÷ 2 Show all 8 related fact family sentences.

DIVISION

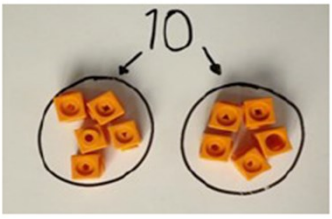
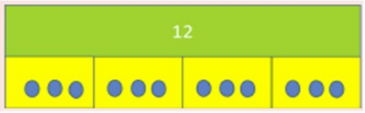
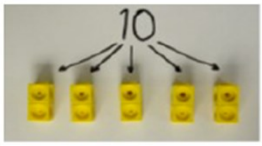
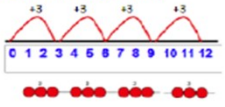
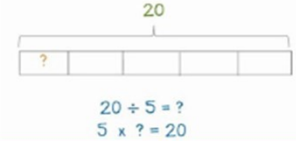
In Year 2, children will record their divisions just like multiplication using arrays or number lines. The children will be taught to recognise whether the problems require sharing or grouping.



16 ÷ 2 = 8



(I start at zero and count in 2's until I get to 16)

Objective & Strategy	Concrete	Pictorial	Abstract
Division as sharing	 I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  8 ÷ 2 = 4 Children use bar modelling to show and support understanding.  12 ÷ 4 = 3	12 ÷ 3 = 4
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.  	Use number lines for grouping  12 ÷ 3 = 4 Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.  20 ÷ 5 = ? 5 x ? = 20	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group? 

Year 2 I can statements

By the end of year 2 your child should be able to achieve the following I can statements

Number – Place Value

- I can count in steps of 2s, 3s and 5s from 0.
- I can count in 10s from any given number, forwards and backwards.
- I can recognise place value in two-digit number (10s, 1s).
- I can identify, represent and estimate numbers using different representations, including a number line.
- I can compare and order numbers up to 100 using <, > and =.
- I can read and write numbers to at least 100 in numerals and in words.
- I can use place value and number facts to solve problems.

Number – Addition and Subtraction

- I can recall and use addition/subtraction facts to 20 and derive related facts up to 100.
- I can solve problems with addition and subtraction, using concrete objects and pictorial representations.
- I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s.
- I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 10s.
- I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including: 2 two-digit numbers.
- I can add 3 one-digit numbers.
- I can show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot.
- I can use the inverse relationship between addition and subtraction.

Number – Multiplication and Division

- I can recall multiplication and division facts for the 2×, 5× and 10× tables, including recognising odd and even numbers.
- I can calculate mathematical statements using x, ÷ and = signs.
- I can show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot.
- I can solve problems involving x and ÷ and using materials, arrays, repeated addition and mental methods.

Please help your child become familiar with their times tables.

1 x 1 = 1 2 x 1 = 2 3 x 1 = 3 4 x 1 = 4 5 x 1 = 5 6 x 1 = 6 7 x 1 = 7 7 x 1 = 8 9 x 1 = 9 10 x 1 = 10 11 x 1 = 11 12 x 1 = 12	1 x 2 = 2 2 x 2 = 4 3 x 2 = 6 4 x 2 = 8 5 x 2 = 10 6 x 2 = 12 7 x 2 = 14 8 x 2 = 16 9 x 2 = 18 10 x 2 = 20 11 x 2 = 22 12 x 2 = 24	1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 4 x 3 = 12 5 x 3 = 15 6 x 3 = 18 7 x 3 = 21 8 x 3 = 24 9 x 3 = 27 10 x 3 = 30 11 x 3 = 33 12 x 3 = 36

1 x 5 = 5 2 x 5 = 10 3 x 5 = 15 4 x 5 = 20 5 x 5 = 25 6 x 5 = 30 7 x 5 = 35 8 x 5 = 40 9 x 5 = 45 10 x 5 = 50 11 x 5 = 55 12 x 5 = 60	1 x 10 = 10 2 x 10 = 20 3 x 10 = 30 4 x 10 = 40 5 x 10 = 50 6 x 10 = 60 7 x 10 = 70 8 x 10 = 80 9 x 10 = 90 10 x 10 = 100 11 x 10 = 110 12 x 10 = 120

Useful websites to help enhance your child's learning at home:

Number Blocks
BBC iPlayer - Numberblocks

KS1 BBC Bite Size
KS1 Maths - England - BBC Bitesize

Kids Maths Games
Kids Math Games Online - Free Interactive Learning Activities, Fun Educational Resources

Top Marks Maths
http://www.topmarks.co.uk/maths-games/5-7-years/counting

ICT Maths Games
Learn to Count with fun Counting Games for KS1 Children (topmarks.co.uk)

Primary Games (some free games)
Primary Games :: Maths Games and Interactive Resources for the Primary Classroom

Times Table Rock Stars
Times Tables Rock Stars – Times Tables Rock Stars (ttrockstars.com)

Apps
One minute white rose maths