MATHS IN KEY STAGE 1

AIMS OF THE WORKSHOP

- ✓ To know what the government expected standard is for Year One and Year Two.
- ✓ To know more about what we do at Village in Maths
- ✓ To get some ideas to do at home.

WHAT THE NATIONAL CURRICULUM SAYS

- The National Curriculum for Mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

MATHS AT VILLAGE INFANTS

WHAT HAPPENS IN YEAR 1 AND 2?

- In **Year 1 and Year 2** they have whole class lessons, daily.
- **Interventions** take place in the afternoons.
- Children are Working towards the Year 1/2 standard, Expected or Greater Depth within the Year 1/2 curriculum
- They are assessed by Key Performance indicators (taken from the National Curriculum)- See next slide

WORKING TOWARDS THE YEAR 1 CURRICULUM

Number and Place Value	
Recognise dots on a dice	
Count to 20 forwards and backwards	
Read numbers 0 to 10 in random order.	
Read, Write and order numbers 0 to 10	
Number - addition and subtraction	
Know some number bonds within 10	
Add one digit numbers to 10 (potentially to 20)	
Subtract one digit numbers to 10 (potentially to 20)	
Solve one step problems using concrete or pictorial representation	
Number facts	
One more	
One less	
Number bonds within 5	
Related subtraction facts for bonds within 5	
Measurement	
Recognise and know the value of different coins up to 20p	
Geometry – position and direction	
describe position, direction and movement, including whole, half	
Geometry – properties of shapes	
Point to a triangle, circle, square and rectangle.	

WORKING AT EXPECTED WITHIN THE YEAR 1 CURRICULUM

Number and Place Value	
Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	
Count, read and write numbers to 100 in numerals	
Count in twos	
Count in fives	
Count in tens	
identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	
read and write numbers from 1 to 20 in numerals and words.	
Identify tens and ones in a given number	
Number - addition and subtraction	
Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	
add and subtract one-digit and two-digit numbers to 20, including 0	
Represent and use number bonds within 10.	
Know related number facts to number bonds within 10	
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as ? = – 9.	
Number – multiplication and division	
Know and pictorially represent sharing (between 2)	
Know and pictorially represent lots of/groups	
Geometry – properties of shapes	
2-D shapes [rectangles, squares, circles and triangles]	
3 -D shapes [cuboids, cubes, pyramids and spheres].	

Measurement	
lengths and heights [for example, long/short, longer/shorter, tall/ short, double/half]	
Mass/weight [for example, heavy/light, heavier than, lighter than]	
capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	
time [for example, quicker, slower, earlier, later]	
Tell the time to o'clock and half past,	
Recognise and use language relating to dates, including days of the week, weeks, months and years	
Recognise and know the value of different coins and notes.	
Geometry – position and direction	
describe position, direction and movement, including whole, half, quarter and three-quarter turns.	
Number – fractions, sharing and grouping	
Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity	
Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity	
Vocabulary Name and write - + =	

WORKING AT GREATER DEPTH WITHIN YEAR 1 CURRICULUM

Number and Place Value	
Compare 2 numbers by stating the difference between how many tens and ones	
Know number bonds within 20	
Know related facts for number bonds within 20	
Use number bond partners to work out missing number (sub)	
Number - addition and subtraction	
Work out missing number sub calculations within 20 (using the inverse)	
Use number bonds to add and sub mentally.	
Add more than 2 numbers together.	
To be able to explain how you got to your answer	
Number – multiplication and division	
To be able to show multiplication as a symbol and number sentence	
To be able to show division as a symbol and number sentence	
Measurement	
Tell the time to half past and quarter past	
Say months that come before and after	
Say which out of two coins is worth the most/least.	
Geometry – properties of shapes	
Name some properties of 2D shapes	
Name some properties of 3D shapes	
Vocabulary Use/Name and match x and ÷ to correct language	

WORKING TOWARDS THE YEAR 2 CURRICULUM

Number – number and place value	
I can count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	
I can recognise the place value of each digit in a two-digit number (tens, ones) use structured resources to support	
I can read and write numbers to at least 100 in numerals and in words	
Recall at least 4 of the 6 number bonds and associated facts	
Number - addition and subtraction	
I can recall and use addition and subtraction facts to 20 fluently	
I can add and subtract numbers using concrete objects, pictorial representations, and mentally:	
a two-digit number and ones	
a two-digit number and tens	
Geometry – properties of shapes	
Recognise 2d shapes	
Recognise 3d shapes	
Measurement	
know the value of different coins	

WORKING AT EXPECTED WITHIN THE YEAR 2 CURRICULUM

Number – number and place value
I can partition two-digit numbers into different combinations of tens and ones and demonstrate my method using concrete apparatus, pictorial representations or explaining my method verbally.
Number - addition and subtraction
I can add 2 two-digit numbers and demonstrate my method using concrete apparatus, pictorial representations or explaining my method verbally.
I can subtract 2 two-digit numbers and demonstrate my method using concrete apparatus, pictorial representations or explaining my method verbally.
I can recall of number bonds to and within 10 and use these to reason with and calculate bonds to and within 20- recognising associated relationships
Number - multiplication and division
I can recall and use multiplication and division facts for the 2x multiplication table
I can recall and use multiplication and division facts for the 5x multiplication table
I can recall and use multiplication and division facts for the 10x multiplication table
I can show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
I can solve problems involving multiplication and division in context.
Number- Fractions
I can identify and write 1/3, 1/4, 1/2, 2/4, 3/4 and know that all parts must be equal parts of the whole
Measurement
I can read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given
I can use different coins to make the same amount
I can read the time on the clock to the nearest 15 minutes
Geometry –properties of shapes
I can identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
I can identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces

WORKING AT GREATER DEPTH WITHIN YEAR 2 CURRICULUM

I can solve word problems that involve more than one step
The pupil can solve more complex missing number problems (e.g. 14 + − 3 = 17; 14 + Δ = 15 + 27).
Measurement
I can tell and write the time to five minutes,
Geometry – properties of shapes
I can describe similarities and differences of 2d and 3d shapes using their properties.
Reasoning
I can reason about addition
I can use x facts to make deductions outside known multiplication facts

KEY AIMS OF THE MATHS CURRICULUM

- **Fluent recall** of **mental maths facts** e.g. number bonds. Knowing 4 and 6 makes 10, 3 and 7 makes 10
- To **reason** mathematically – children need to be able to **explain** the mathematical concepts with number sense; they must explain **how** they got the answer and **why** they are correct.
- **Problem solving** – applying their skills to real-life contexts.

GOOD PRACTICE IN MATHEMATICS

- All children need to learn maths in a real life context.

  As well as knowing double 4 is 8. Children need to be able to do the following:

  There are 4 sheep in the farm. In a field there was twice the amount of sheep. How many sheep are there in the field?

- Children need to be able to explain how they have calculated or solved a problem and prove it.

- In the curriculum, written calculations are taught at an earlier age. The mental methods are essential for supporting pupils understanding of these written calculations.

Looking at the 100 square.

Focusing on numbers before 20. Then beyond 20!

Teen and Ty-Children can get confused between numbers like 13 and 30- due to them sounding similar

Great for 1 more 1 less.

Towards the end of the year 10 more 10 less

THE IMPORTANCE OF VISUALISING IN YEAR 1

1 less

1 more

10 more

10 less

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

Looking at the 100 square.

1 more 1 less

10 more 10 less

Using to add and subtract two 2 digit numbers

THE IMPORTANCE OF VISUALISING IN YEAR 2

1 less

1 more

10 more

10 less

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

OTHER METHODS

- To ensure children are secure in their number we use these methods for adding and taking away:
  - 100 square (see previous slides)
  - Number line

  e.g. 14+11=25

  - Partitioning e.g. 14+11=25
    - 10+10=20
    - 4+1-5
    - 20+5=25

HOW YOU CAN HELP AT HOME

- Counting (forwards, backwards, different steps, any given no, 10s)
- Number bonds to 20.
- Telling the time (to 15 minutes).
- The ability to estimate. (rounding included)
- To use maths in a real life context.
- Cooking.
- Shopping (money).
- Practise times tables and the division facts.
- Board Games.

OTHER ACTIVITIES TO DO AT HOME

- **Dice game**
  - Throw the dice the first time for the tens, Throw the dice a second time for the ones to create a 2 digit number.
  - Throw the dice twice and get your child to add the numbers together
  - Throw the dice the first time for the tens, Throw the dice a second time for the ones to create a 2 digit number. Repeat and get your child to add the numbers together

- **Card game**
  - making a total e.g. 10/20/and more (link to number bonds)

OTHER ACTIVITIES TO DO AT HOME

- I'm thinking of a number-using the 100 square
  - E.g. My number is even (get your child to identify the even numbers and the pattern). My number is more than 20 but less than 30. What number could it be?.
  - E.g. My number is even (get your child to identify the even numbers and the pattern). My number is more than 20 but less than 50. It is a multiple of 5 (get your child to identify the numbers in the 5 x tables-that they end on 5 or 0) What number could it be?
- Pick a number card- what can you tell me about this number
  - E.g. odd or even, how many digits, 1 less, 1 more, 10 more 10 less

TARGETS- MATHS FLUENCY CLOUDS

- Individual personalised targets-these will be in your child's maths book and reading diary so they can practise at home.
- Teaching mathematical skills and encouraging fluency .
- Progressive (helps with any gaps).

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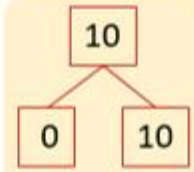
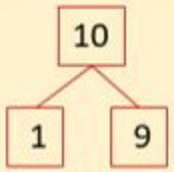
Number bonds to 10

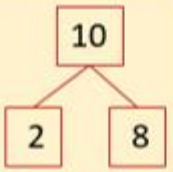
Related facts for Bonds to 10



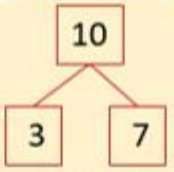
0 + 10 = 10
10 + 0 = 10
10 – 0 = 10



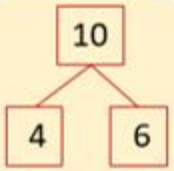
1 + 9 = 10
9 + 1 = 10
10 – 1 = 9
10 – 9 = 1



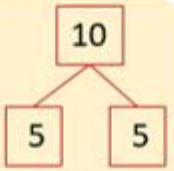
2 + 8 = 10
8 + 2 = 10
10 – 8 = 2
10 – 2 = 8



3 + 7 = 10
7 + 3 = 10
10 – 7 = 3
10 – 3 = 7



4 + 6 = 10
6 + 4 = 10
10 – 6 = 4
10 – 4 = 6



5 + 5 = 10
10 – 5 = 5

HOW TO HELP AT HOME – USEFUL WEBSITES

Purple mash
Bbc bitesize ks1
Topmarks e.g. hit the button