Maths cafe

Tuesday 29/11/21

Focusing on number: Addition, Subtraction, Multiplying and Dividing

Nov 29-20:24

Maths at Westwood Farm

Maths at Westwood Farm

Maths Lead: Mrs Catherine Wakeham (KS1) & Mrs Laura Hooke (KS2)

Intent

At Westwood Farm Schools, we follow the National Curriculum for Mathematics. We believe it is an essential life skill and our wish is that all children enjoy maths and become confident mathematicians who thrive on challenge.

The main strands in the programme of study for mathematics are:

number, measure, geometry and statistics.

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Implementation

We use White Rose as a teaching tool. This allows children to make small steps to move through the following aspects of mathematical thinking:

Fluency - having number sense, understanding how numbers relate to each other, seeing how numbers can be split and put together in different ways and having knowledge of number facts and efficient methods to calculate.

Problem Solving - drawing on problem solving skills such as working systematically, trial and improvement, logical reasoning and spotting and exploring patterns. Problems often have multiple solutions.

Reasoning - thinking through mathematical problems logically and systematically and involves using and applying their mathematical knowledge to explain or justify a solution.

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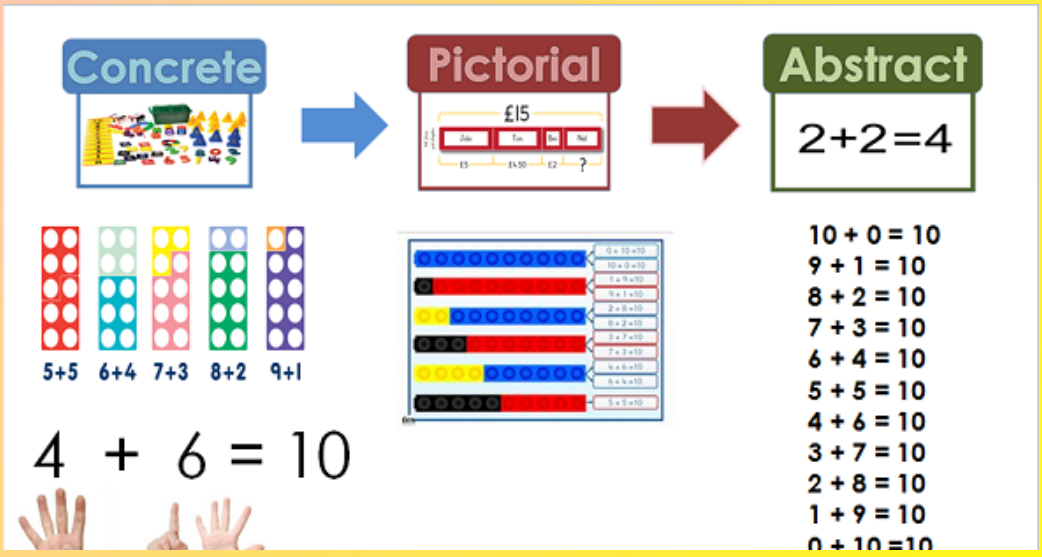
CPA

Alongside the White Rose sequence, the CPA approach is a highly effective in supporting children to develop a deep and sustainable understanding of maths.



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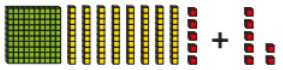
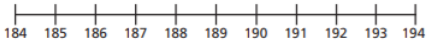
Add 3-digit and 1-digit numbers – crossing 10

1 a) Work out 185 + 7

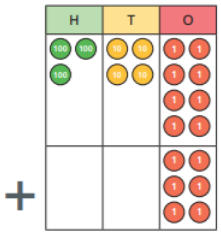


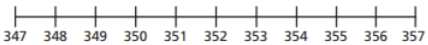


185 + 7 = ☐

How did you work this out?

b) Work out 348 + 6



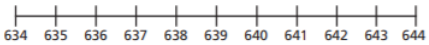


348 + 6 = ☐

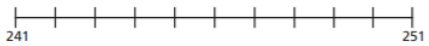
2 Work out these additions.

Use two jumps on the number lines.

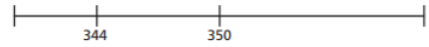
a) 635 + 8 = ☐



b) 242 + 9 = ☐



c) 344 + 7 = ☐



3 Work out the additions.

a) 295 + 6 = ☐

b) 662 + 8 = ☐

c) 8 + 424 = ☐

d) ☐ = 825 + 9

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4 a) Circle the calculations with an answer that ends in a zero.

426 + 6	422 + 5	427 + 3
429 + 1	420 + 8	423 + 7

b) Write the missing digits.

376 + ☐ = 380 53_ + 5 = 540

219 + ☐ = 220 2 + 65_ = 660

5

When you add a 3-digit and a 1-digit number together, only the ones digit in the 3-digit number will change.

Is Whitney correct? _____

Explain your answer.

_____

_____

6 Work out the missing digits.

a) 34_ + 7 = 352

b) 725 + ☐ = 731

c) 45_ + 3 = 462

d) 9 + 17_ = 1_8

e) 34_ + 7 = 3_5

f) __5 + 8 = 323

7 Arrange the digit cards to make a sum where the answer is a multiple of 5

1	7	8	9

Find 4 different sums.

☐☐☐ + ☐ = ☐

☐☐☐ + ☐ = ☐

☐☐☐ + ☐ = ☐

☐☐☐ + ☐ = ☐

8 Mo has £232 in his bank account.

Rosie has £237 in her bank account.

Mo puts £9 into his bank account.

Rosie puts some money into her account.

Now they both have the same amount of money.

How much did Rosie put into her account?

☐

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Number

Year 1:

Statutory requirements

Pupils should be taught to:

- 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 multiples of twos, fives and tens
- given a number, identify one more and one less
- 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.

Year 6:

Statutory requirements

Pupils should be taught to:

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.

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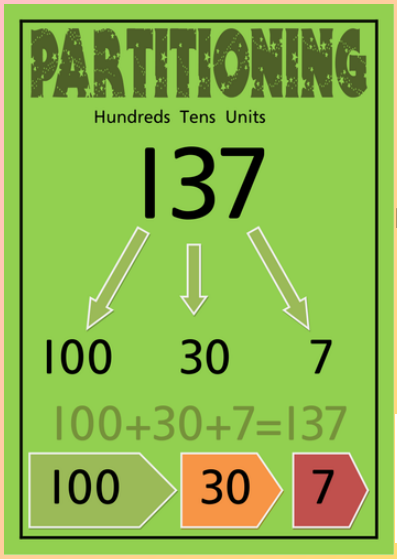
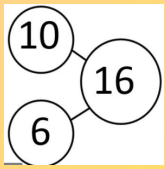
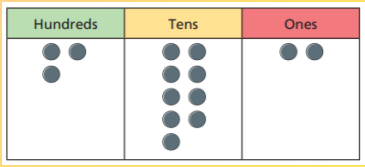


Count as much as you can: forwards, backwards, in 1s, 10s, 2s, 5s, etc

Part part whole





Rounding Poem

Find your place
Look next door
5 or greater, add one more
All digits in front stay the same
All digits behind, zero's your name

Example:

Round to nearest ten

63 → 60
65 → 70
524 → 520
528 → 530

Round to nearest hundred

435 → 400
462 → 500
7328 → 7300
7356 → 7400

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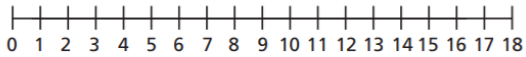
Addition

Year 1:

Statutory requirements

Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9.



b) 4 + 9 = ☐

Year 6:

- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

	5	6	2	1	
+	5	7		7	9
	1		3	2		8

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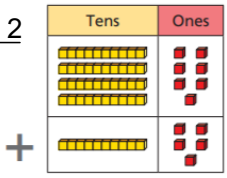
Year 2



	T	O
	6	3
+	1	9

Add the ones.

☐ ones + ☐ ones = ☐ ones

☐ ones = ☐ ten + ☐ ones

Add the tens.

☐ tens + ☐ tens = ☐ tens

Complete the addition.

☐ + ☐ = ☐

Year 3

	H	T	O
	100 100 100	10 10 10	1 1 1 1 1 1
+	100 100	10 10 10 10 10 10 10	1 1 1 1 1 1

526 + 294

Year 4

Dexter is playing a computer game.

The table shows the number of points he gets in each round.

Round	1	2	3
Number of points	3,550	2,175	1,895

a) How many points does Dexter have at the end of Round 2?

Year 5

Here are two number cards.

800	?

The sum of the two cards is 2,900

What is the difference between the two cards?

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		Th	H	T	O	
		9	8	4	5	
	–	6	2	1	6	

		4	6	8	3	2	
	–	1	9	0	2	4	

A common mistake →

Annie is calculating 3,467 – 2,148

Here are her workings.

		Th	H	T	O	
		3	4	6	7	
	–	2	1	4	8	
		1	3	2	1	

Do you agree with Annie? _____

Complete the models.

a)

b)

23,000		
12,365	4,017	

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Multiplication and division

Year 1:

Statutory requirements

Pupils should be taught to:

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

Year 6:

Statutory requirements

Pupils should be taught to:

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations

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Write two multiplications for this array.

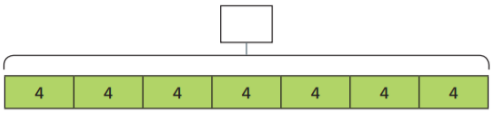
× =

× =

Year 3

x3 x4 x6 x8

Fill in the missing number.



What multiplication is represented?

Complete the multiplication.

× =

Year 2

x2 x5 x10

How much money does Ron have?

Complete the multiplication.

× =

Ron has p.

Complete the column multiplications.

Tens	Ones
10 10	1 1 1 1
10 10	1 1 1 1
10 10	1 1 1 1

	T	O
	2	4
×		3

Multiplying

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Year 4 All times tables

	H	T	O
	1	0	8
×			6

Year 5

HTh	TTh	Th	H	T	O
			2	4	5

245 × 100 =

245 × 1,000 =

		2	1
×		1	6
	1_1	2	6
	2	1	0

(×)

(×)

Complete the multiplications.

a) 142 × 31 =

Year 6

		1	2	3	5
×			5	3	

Number – Prime Numbers, Factors, Multiples

EZY MATHS

Prime numbers

A Number is Prime if it has exactly 2 factors: 1 and itself

No other number can divide into it exactly

1 is not a prime number

2 is the only even prime number

Prime numbers up to 50

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

Really useful for Prime Factor Decomposition, HCF and LCM

Factors

The factors of a number are the numbers which divide into it exactly

No remainder when divided by a factor

Factor Pairs

1 is a factor of all whole numbers

Factors of 24

1 × 24
2 × 12
3 × 8
4 × 6

1, 2, 3, 4, 6, 8, 12, 24

Multiples

A number that features in the times table of another number

The product of two integers will produce a multiple

Close link to factors

Times table knowledge important

Multiples of 9

9, 18, 27, 36, 45, 54, 63, 72, 81, 90 ...

Multiples of 7 between 30 and 60

~~7~~, ~~14~~, ~~21~~, ~~28~~, 35, 42, 49, 56, 63, 70

Common factors

Common multiples

Primes to 100

Squares and cubes

Order of operations

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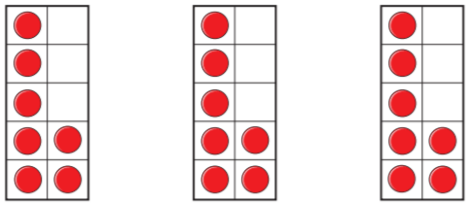
Year 2 x2 x5 x10

The ten frames show equal groups.

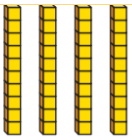
a)



There are ☐ equal groups with ☐ in each group.

Complete the divisions.

Use base 10 to help you.



a) 40 ÷ 2 = ☐

c) 40 ÷ 5 = ☐

b) 40 ÷ 4 = ☐

d) 40 ÷ 10 = ☐

Did you have to make any exchanges?

Year 3 x3 x4 x6 x8

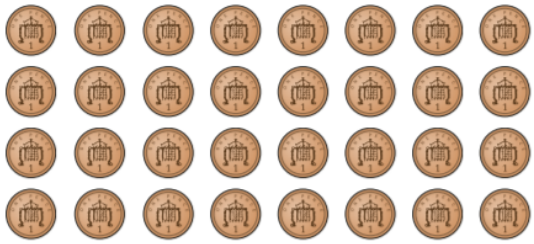
Use repeated subtraction to complete the divisions.

Use the number lines to help you.

a) 23 ÷ 4 = ☐ remainder ☐

32 coins are shared between 8 people.

How many coins does each person get?



Complete the division.

☐ ÷ ☐ = ☐

Dividing

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70 ÷ 5 = ☐

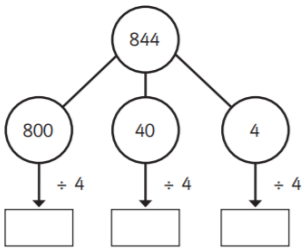
71 ÷ 5 = ☐

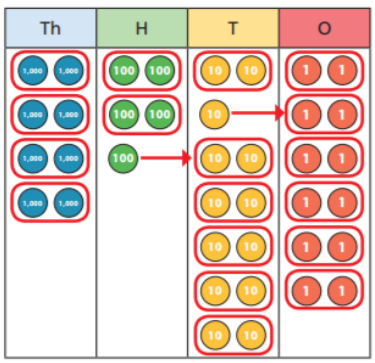
72 ÷ 5 = ☐

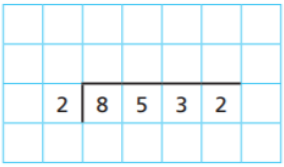
73 ÷ 5 = ☐

74 ÷ 5 = ☐

Year 4



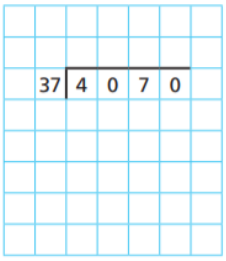


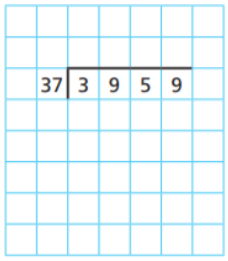


Year 5

Use these multiples of 37 to complete the long divisions.

37	74	111	148	185	222	259	296	333





Year 6

HTh	TTh	Th	H	T	O
	1	6	0	0	0

16,000 ÷ 100 = ☐

HTh	TTh	Th	H	T	O
		9	0	0	0

9,000 ÷ 1,000 = ☐

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