St Margaret Clitherow's Catholic Voluntary Primary Academy

Y2 Maths

Calculation Expectations

This booklet will explain how addition, subtraction, multiplication and division are taught in Year 2. There are two methods given; one for those children 'emerging' and the end of year expectation.

The 'emerging' method is for those children who are still developing their understanding of the four calculations. When children are ready, they will begin to practise the expected method.

If you have any further questions, please contact your child's class teacher.

Overview of calculation methods for Year 2

Addition (+)

Emerging	End of year expectation
Empty number line	Expanded column method

Subtraction (-)

Emerging	End of year expectation
Empty number line	Expanded column method

Multiplication (x)

Emerging	End of year expectation
Array	Empty number line

Division (÷)

Emerging	End of year expectation
Grouping	Empty number line

Addition

Year 2

Addition in Year 2

The following pages suggest strategies to solve adding two 2-digit numbers.

Key Vocabulary

add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, addition, column, tens boundary

Key skills for addition at Year 2

- Add a 2-digit number and units (e.g. 27 + 6)
- Add a 2-digit number and tens (e.g. 23 + 40)
- Add pairs of 2-digit numbers (e.g. 35 + 47)
- Add three single-digit numbers (e.g. 5 + 9 + 7)
- Show that adding can be done in any order (the commutative law).
- Understand the place value of 2-digit numbers (tens and units)
- Practical experience of partitioning numbers
- Compare and order numbers to 100 using < > and = signs.
- Read and write numbers to at least 100 in numerals and words.
- Solve problems with addition, using concrete objects, pictorial representations, involving numbers, quantities and measures, and applying mental and written methods.

Mental skills:

- Count in steps of 2, 3 and 5.
- Count on in tens from any number.
- Recall bonds to 20 and bonds of tens to 100 (30 + 70 etc.)

Addition

Year 2

POS – Add a 2-digit number and a tens numbers.

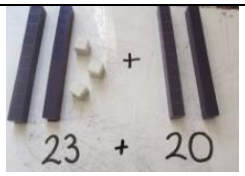
Children should use concrete equipment, hundred squares, empty number lines etc. to build confidence and fluency in mental addition skills.

Key Vocabulary

add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, addition, column, tens boundary

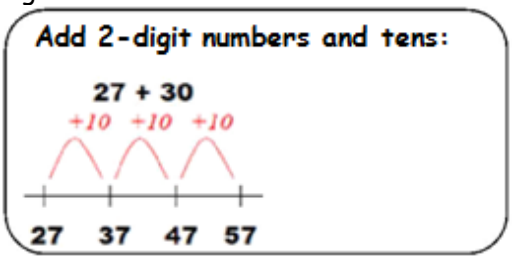
Notes – Children should have a solid understanding of place value and may use equipment or a 100 square to a add tens number.

E.g. 23 + 20

	
Use **Dienes apparatus** to add multiples of ten to a 2-digit number.	Use a **hundred square** to add multiples of ten to a 2-digit number.

Emerging – Use an **empty number line** to add multiples of ten to a 2-digit number.

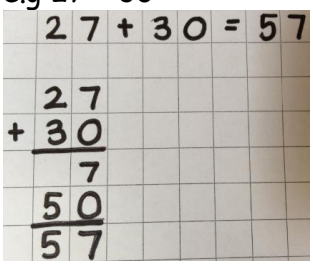
E.g. 27 + 30 =



Steps to success:
-put the **greatest** number first
- add the **tens**

End of year expectation – Use the **expanded column method**

e.g 27 + 30 =



Remind children to keep the numbers in the correct column.

Steps to success:
Add the **units**
Add the **tens**
Add the tens and units

Addition

Year 2

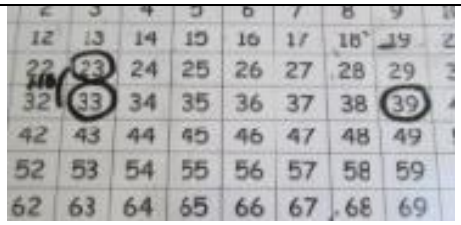
POS – Add two 2-digit numbers.

Key Vocabulary

add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, addition, column, tens boundary

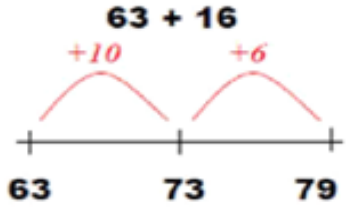
Notes – Children should have a solid understanding of place value and may use equipment or a 100 square to add two 2-digit numbers.

E.g. 23 + 16 =

	
Use **Dienes apparatus** to add multiples of ten to a 2-digit number.	Use a **hundred square** to add multiples of ten to a 2-digit number.

Emerging

Use an **empty number line** to add a 2-digit number to a 2-digit number.

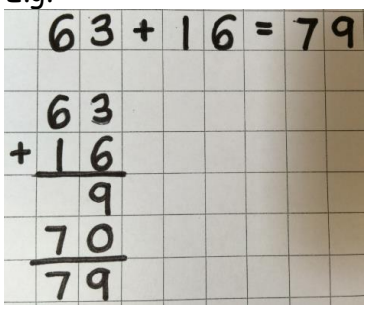


Steps to success:
-put the greatest number first
- partition the second number
-add the tens
-add the units

End of year expectation

When the children have secure place value knowledge, use the **expanded column method**.

E.g.



Steps to success:
Add the units
Add the tens
Add the tens and units

Subtraction

Year 2

Subtraction in Year 2

Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, difference between, how many more, how many fewer / less than, most, least, count back , how many left, how much less is_? ***difference, count on, strategy, partition, tens, units***

Key skills for subtraction at Year 2

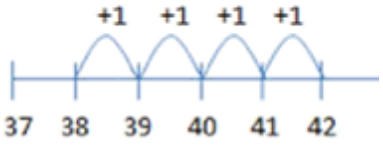
- Recognise the place value of each digit in a two-digit number.
- Subtract using concrete objects, pictorial representations, 100 squares and mentally, including: a two-digit number and ones, a two-digit number and tens, and two two-digit numbers.
- Show that subtraction of one number from another cannot be done in any order.
- Recognise and use inverse relationship between addition and subtraction, using this to check calculations and missing number problems.
- Solve simple addition and subtraction problems including measures, using concrete objects, pictorial representation, and also applying their increasing knowledge of mental and written methods.
- Read and write numbers to at least 100 in numerals and in words.

Mental skills

- Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100.

Mental strategy – subtract numbers close together by **counting on**.

42 – 38 = 4



Steps to success:
-start on the smallest number
-count on to the greatest number
-count the total number of 'hops'

Subtraction

Year 2

POS – Subtract with 2-digit numbers.

Subtract on a number line by counting back, aiming to develop mental subtraction skills.

This strategy will be used for:

- 2-digit numbers subtract units (by taking away / counting back) e.g. 36 — 7
- 2-digit numbers subtract tens (by taking away / counting back) e.g. 48 — 30
- Subtracting pairs of 2-digit numbers e.g. 48 - 23

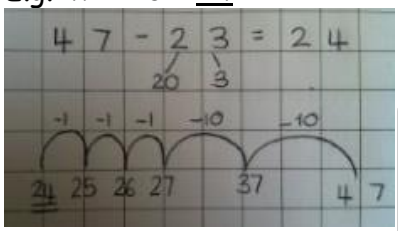
Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, difference between, how many more, how many fewer / less than, most, least, count back , how many left, how much less is_? ***difference, count on, strategy, partition, tens, units***

Notes: Children should have a secure understanding of place value and may use equipment or a 100 square to subtract a 2-digit number.

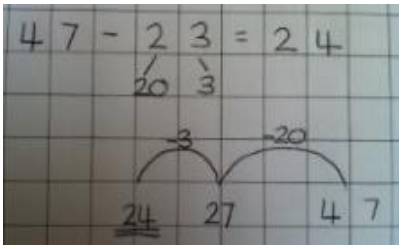
Emerging - Subtract by counting back on an empty number line.

E.g. 47 – 23 = 24

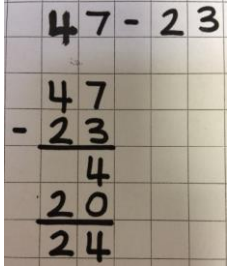


Steps to success:
- partition the 2nd 2-digit number
- start on the greatest number
-subtract the tens
- subtract the units

Children may move towards more efficient jumps back.



End of year expectation – Subtracting using the **expanded column subtraction** method.



Steps to success:
Subtract the units
Subtract the tens
Add the tens and units

Multiplication

Year 2

Multiplication in Year 2

Key Vocabulary

groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, column, row, commutative, sets of, equal groups, times as big as, once, twice, three times…

Key skills for multiplication at Year 2

- Recall and use multiplication facts from the **2, 5 and 10** multiplication tables, including recognising odds and evens.
- Write and calculate number statements **using the x and = signs**.
- Show that multiplication can be done in any order (commutative).
- Solve a range of problems involving multiplication, using concrete objects, arrays, repeated addition, mental methods, and multiplication facts.
- Pupils use a variety of language to discuss and describe multiplication

Mental skills

- Count in steps of 2, 3 and 5 from zero, and in 10s from any number.
- Recall **multiplication facts for 2, 5 and 10** times tables through practice in counting and understanding of the operation.

Multiplication

Year 2

POS – Use repeated addition to calculate mathematical statements for multiplication.

Children should have lots of experience counting on in multiples of 2s, 5s and 10s and record multiplication statements using the appropriate symbols.

Key Vocabulary

groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, column, row, commutative, sets of, equal groups, times as big as, once, twice, three times...

Emerging – Multiply using arrays.

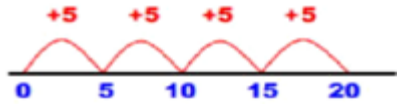
5 x 3 = 15

3 x 5 = 15

Use arrays to help teach children to understand the commutative law of multiplication.
E.g. 3 x 5 is the same as 5 x 3

End of year expectation – Multiply using repeated addition on an empty number line.

E.g. 4 x 5 =



Use the vocabulary "4 lots of 5".

Division

Year 2

÷

Division in Year 2

Key Vocabulary

share, share equally, one each, two each…,group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over

Key skills for division at Year 2

- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the x, ÷ and = signs.
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Mental skills

Be able to count in multiples of 2s, 3s, 5s and 10s from 0.
Recall and use multiplication and division facts for the **2, 5 and 10** multiplication tables.

Division

Year 2

÷

POS – Calculate statements for division.

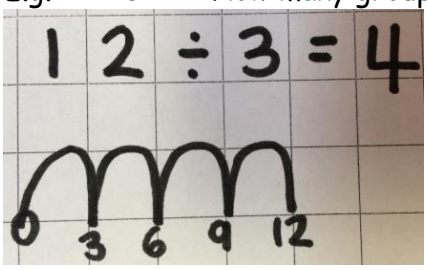
Children should:
Be able to write division number sentences them using the ÷ and = sign.
Be taught to recognise whether problems require sharing or grouping.

Key Vocabulary
share, share equally, one each, two each…,group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over grouping, number line, left, left over

Emerging – Use objects to solve problems involving grouping.
E.g. 12 ÷ 4 = This is asking – "How many groups of 4 are in 12?"

Grouping
How many groups of 4 can be made with 12 stars? = 3 

End of year expectation – grouping using an empty number line.
E.g. 12 ÷ 3 = "How many groups of 3 are in 12?"



Steps to success
Start on 0
Count on in the number you are dividing by
Count the hops