Myton Park Primary Maths; Calculations and Number – Archimedes Hub Resources

Year 4

Addition

Mental Strategies

Children should continue to count regularly, on and back, now including multiples of 6, 7, 9, 25 and 1000, and steps of 1/100.
The number line should continue to be used as an important image to support thinking, and the use of informal jottings should be encouraged where appropriate.
Children should continue to partition numbers in different ways.

They should be encouraged to choose from a range of strategies:

- Counting forwards and backwards: 124 – 47, count back 40 from 124, then 4 to 80, then 3 to 77
- Reordering: 28 + 75, 75 + 28 (thinking of 28 as 25 + 3)
- Partitioning: counting on or back: 5.6 + 3.7, 5.6 + 3 + 0.7 = 8.6 + 0.7
- Partitioning: bridging through multiples of 10: 6070 – 4987, 4987 + 13 + 1000 + 70
- Partitioning: compensating – 138 + 69, 138 + 70 - 1
- Partitioning: using 'near' doubles - 160 + 170 is double 150, then add 10, then add 20, or double 160 and add 10, or double 170 and subtract 10
- Partitioning: bridging through 60 to calculate a time interval – What was the time 33 minutes before 2.15pm?
- Using known facts and place value to find related facts.

Vocabulary

Subtraction

Children should continue to count regularly, on and back, now including multiples of 6, 7, 9, 25 and 1000, and steps of 1/100.
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They should be encouraged to choose from a range of strategies:

- Counting forwards and backwards: 124 – 47, count back 40 from 124, then 4 to 80, then 3 to 77
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- Partitioning: counting on or back: 5.6 + 3.7, 5.6 + 3 + 0.7 = 8.6 + 0.7
- Partitioning: bridging through multiples of 10: 6070 – 4987, 4987 + 13 + 1000 + 70
- Partitioning: compensating – 138 + 69, 138 + 70 - 1
- Partitioning: using 'near' doubles - 160 + 170 is double 150, then add 10, then add 20, or double 160 and add 10, or double 170 and subtract 10
- Partitioning: bridging through 60 to calculate a time interval – What was the time 33 minutes before 2.15pm?
- Using known facts and place value to find related facts.

Vocabulary

Multiplication

Mental Strategies

Children should continue to count regularly, on and back, now including multiples of 6, 7, 9, 25 and 1000, and steps of 1/100.
Become fluent and confident to recall all tables to x 12
Use the context of a week and a calendar to support the 7 times table (e.g. how many days in 5 weeks?)
Use of finger strategy for 9 times table.

Multiply 3 numbers together
The number line should continue to be used as an important image to support thinking, and the use of informal jottings should be encouraged.
They should be encouraged to choose from a range of strategies:

- Partitioning using x10, x20 etc
- Doubling to solve x2, x4, x8
- Recall of times tables
- Use of commutativity of multiplication

Vocabulary

Factor

Generalisations

Children given the opportunity to investigate numbers multiplied by 1 and 0.

When they know multiplication facts up to x12, do they know what x13 is? (i.e. can they use 4x12 to work out 4x13 and 4x14 and beyond?)

Some Key Questions

Division

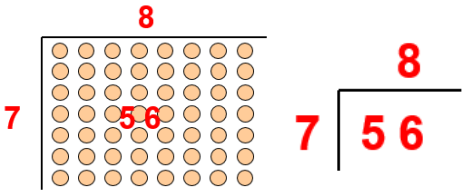
Children should experience regular counting on and back from different numbers in multiples of 6, 7, 9, 25 and 1000.
Children should learn the multiplication facts to 12 x 12.

Vocabulary

see years 1-3
divide, divided by, divisible by, divided into
share between, groups of
factor, factor pair, multiple
times as (big, long, wide …etc)
equals, remainder, quotient, divisor
inverse

Towards a formal written method

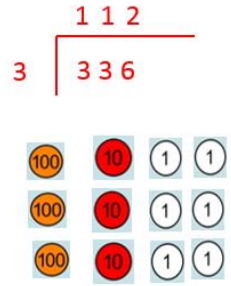
Alongside pictorial representations and the use of models and images, children should progress onto short division using a bus stop method.



Place value counters can be used to support children apply their knowledge of grouping. Reference should be made to the value of each digit in the dividend.

Each digit as a multiple of the divisor

'How many groups of 3 are there in the hundreds column?'
'How many groups of 3 are there in the tens column?'

add, addition, sum, more, plus, increase, sum, total, altogether, double, near double, how many more to make..? how much more? ones boundary, tens boundary, hundreds boundary, thousands boundary, tenths boundary, hundredths boundary, inverse, how many more/fewer? Equals sign, is the same as. **Generalisations** Investigate when re-ordering works as a strategy for subtraction. Eg. 20 – 3 – 10 = 20 – 10 – 3, but 3 – 20 – 10 would give a different answer. **Some Key Questions** What do you notice? What's the same? What's different? Can you convince me? How do you know?	add, addition, sum, more, plus, increase, sum, total, altogether, double, near double, how many more to make..? how much more? ones boundary, tens boundary, hundreds boundary, thousands boundary, tenths boundary, hundredths boundary, inverse, how many more/fewer? Equals sign, is the same as. **Generalisations** Investigate when re-ordering works as a strategy for subtraction. Eg. 20 – 3 – 10 = 20 – 10 – 3, but 3 – 20 – 10 would give a different answer. **Some Key Questions** What do you notice? What's the same? What's different? Can you convince me? How do you know?	What do you notice? What's the same? What's different? Can you convince me? How do you know?	'How many groups of 3 are there in the units/ones column?'  When children have conceptual understanding and fluency using the bus stop method without remainders, they can then progress onto 'carrying' their remainder across to the next digit. **Generalisations** True or false? Dividing by 10 is the same as dividing by 2 and then dividing by 5. Can you find any more rules like this? Is it sometimes, always or never true that □ ÷ Δ = Δ ÷ □? Inverses and deriving facts. 'Know one, get lots free!' e.g.: 2 x 3 = 6, so 3 x 2 = 6, 6 ÷ 2 = 3, 60 ÷ 20 = 3, 600 ÷ 3 = 200 etc. Sometimes, always, never true questions about multiples and divisibility. (When looking at the examples on this page, remember that they **may not** be 'always true'!) E.g.: • Multiples of 5 end in 0 or 5. • The digital root of a multiple of 3 will be 3, 6 or 9.

			• The sum of 4 even numbers is divisible by 4.