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

Myton Park Primary School

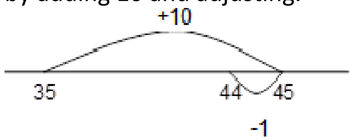
## Year 2

### Addition

**Mental Strategies**

Children should count regularly, on and back, in steps of 2, 3, 5 and 10. Counting forwards in tens from any number should lead to adding multiples of 10.

Number lines should continue to be an important image to support mathematical thinking, for example to model how to add 9 by adding 10 and adjusting.




Children should practise addition to 20 to become increasingly fluent. They should use the facts they know to derive others, e.g using 7 + 3 = 10 to find 17 + 3= 20, 70 + 30 = 100

They should use concrete objects such as bead strings and number lines to explore missing numbers – 45 + = 50.

As well as number lines, 100 squares could be used to explore patterns in calculations such as 74 +11, 77 + 9 encouraging children to think about 'What do you notice?' where partitioning or adjusting is used.

Children should learn to check their calculations, by using the inverse.

They should continue to see addition as both combining groups and counting on.

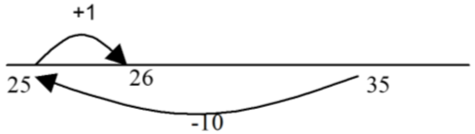
They should use Dienes to model partitioning into tens and ones and learn to

### Subtraction

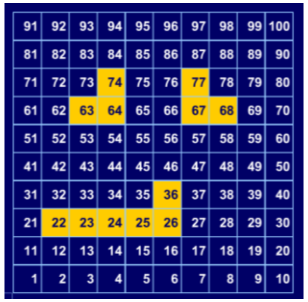
**Mental Strategies**

Children should count regularly, on and back, in steps of 2, 3, 5 and 10. Counting back in tens from any number should lead to subtracting multiples of 10.

Number lines should continue to be an important image to support thinking, for example to model how to subtract 9 by adjusting.




Children should practise subtraction to 20 to become increasingly fluent. They should use the facts they know to derive others, e.g using 10 - 7 = 3 and 7 = 10 - 3 to calculate 100 - 70 = 30 and 70 = 100 - 30.




As well as number lines, 100 squares could be used to model calculations such as 74 – 11, 77 – 9 or 36 – 14, where partitioning or adjusting are used. On the example above, 1 is in the bottom left corner so that 'up' equates to 'add'.

### Multiplication

**Mental Strategies**

Children should count regularly, on and back, in steps of 2, 3, 5 and 10.

Number lines should continue to be an important image to support thinking, for example

Children should practise times table facts

2 x 1 =

2 x 2 =

2 x 3 =

Use a clock face to support understanding of counting in 5s.

Use money to support counting in 2s, 5s, 10s, 20s, 50s

**Vocabulary**

multiple, multiplication array, multiplication tables / facts

groups of, lots of, times, columns, rows

**Generalisation**

Commutative law shown on array (video)

Repeated addition can be shown mentally on a number line

Inverse relationship between multiplication and division. Use an array to explore how numbers can be organised into groups.

**Some Key Questions**

What do you notice?

What's the same? What's different?

Can you convince me?

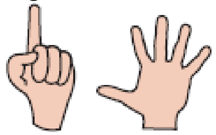
How do you know?

### Division

**Mental Strategies**

Children should count regularly, on and back, in steps of 2, 3, 5 and 10.

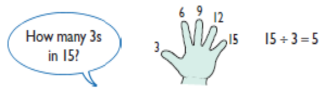
Children who are able to count in twos, threes, fives and tens can use this knowledge to work out other facts such as 2 × 6, 5 × 4, 10 × 9. Show the children how to hold out their fingers and count, touching each finger in turn. So for 2 × 6 (six twos), hold up 6 fingers:



> Touching the fingers in turn is a means of keeping track of how far the children have gone in creating a sequence of numbers. The physical action can later be visualised without any actual movement.

This can then be used to support finding out 'How many 3's are in 18?' and children count along fingers in 3's therefore making link between multiplication and division.

Children should continue to develop understanding of division as sharing **and** grouping.




*15 pencils shared between 3 pots, how many in each pot?*

partition numbers in different ways e.g. 23 = 20 + 3 = 10 + 13.

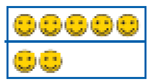
**Vocabulary**

+, add, addition, more, plus, make, sum, total, altogether, how many more to make…? how many more is… than…? how much more is…? =, equals, sign, is the same as, Tens, ones, partition

Near multiple of 10, tens boundary, More than, one more, two more… ten more… one hundred more

**Generalisation**

- Noticing what happens when you count in tens (the digits in the ones column stay the same)
- Odd + odd = even; odd + even = odd; etc
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. This understanding could be supported by images such as this.



7 + ? = 10


Children should learn to check their calculations, including by adding to check.

They should continue to see subtraction as both take away and finding the difference, and should find a small difference by counting up.

They should use Dienes to model partitioning into tens and ones and learn to partition numbers in different ways e.g. 23 = 20 + 3 = 10 + 13.

**Vocabulary**

Subtraction, subtract, take away, difference, difference between, minus

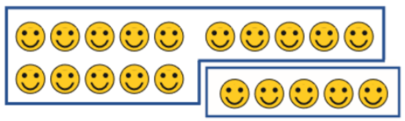
Tens, ones, partition

Near multiple of 10, tens boundary

Less than, one less, two less… ten less… one hundred less

More, one more, two more... ten more... one hundred more **Generalisation**

- Noticing what happens when you count in tens (the digits in the ones column stay the same)
- Odd – odd = even; odd – even = odd; etc
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. This understanding could be supported by images such as this.



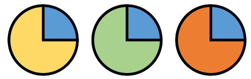
15 + 5 = 20

Children should be given opportunities to find a half, a quarter and a third of shapes, objects, numbers and quantities. Finding a fraction of a number of objects to be related to sharing.

They will explore visually and understand how some fractions are equivalent – e.g. two quarters is the same as one half.

Use children’s intuition to support understanding of fractions as an answer to a sharing problem.

3 apples shared between 4 people = $\frac{3}{4}$



**Vocabulary**

group in pairs, 3s … 10s etc

equal groups of

divide, ÷, divided by, divided into, remainder

**Generalisations**

Noticing how counting in multiples if 2, 5 and 10 relates to the number of groups you have counted (introducing times tables)

An understanding of the more you share between, the less each person will get (e.g. would you prefer to share these grapes between 2 people or 3 people? Why?)

Secure understanding of grouping means you count the number of groups you have made. Whereas sharing means you count the number of objects in each group.

**Some Key Questions**

How many 10s can you subtract from 60?

I think of a number and double it. My answer is 8. What was my number?

If 12 x 2 = 24, what is 24 ÷ 2?

| | | | |
|---|---|---|---|
| **Some Key Questions**<br>How many altogether? How many more to make…? How many more is… than…? How much more is…?<br>Is this true or false?<br>If I know that 17 + 2 = 19, what else do I know? (e.g. 2 + 17 = 19; 19 – 17 = 2; 19 – 2 = 17; 190 – 20 = 170 etc).<br>What do you notice? What patterns can you see? | **Some Key Questions**<br>How many more to make…? How many more is… than…? How much more is…? How many are left/left over? How many fewer is… than…? How much less is…?<br>Is this true or false?<br>If I know that 7 + 2 = 9, what else do I know? (e.g. 2 + 7 = 9; 9 – 7 = 2; 9 – 2 = 7; 90 – 20 = 70 etc).<br>What do you notice? What patterns can you see? | | Questions in the context of money and measures (e.g. how many 10p coins do I need to have 60p? How many 100ml cups will I need to reach 600ml?) |

Number bonds to 20

Doubles of numbers to 20

Times Tables – 2, 5, 10,3