ST. TERESA'S SCHOOL

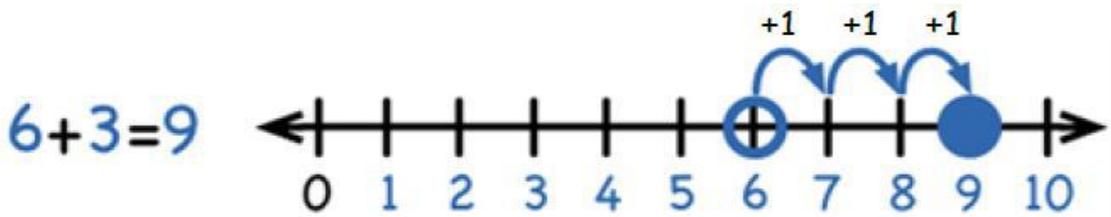# Calculation Policy

Year One

Addition Year One

Key Skills

- Given a number, identify one more.
- Read, write and interpret mathematical statements involving addition (+) and the equals (=) sign.
- Add one-digit and two-digit numbers within 20, including zero.
- Solve addition number sentences and missing number problems eg 10 + _ = 16, 7 + 4 = ?, 1 + 2 + 1= ?, ? + ? = 9 etc.
- Reading and writing numbers to 100 in numerals.
- Writing numbers to 20 in words including correct spelling.
- Use number facts e.g.

  Number stories e.g. 7 = 7 + 0, 6 + 1, 5 + 2, 4 + 3

  Number bonds to 10 e.g. 5 + 5, 6 + 4, 7 + 3, 8 + 2, 9 + 1, 10 + 0

  Patterns using known facts e.g. 4 + 3 = 7 so 24 + 3 = 27,
- Counting to and across 100 in ones, forwards and backwards, from any given number.
- Counting in multiples of 2, 5 and 10.

  e.g. know 45 + 1 or 45 + 10 or 45 + 20 without counting on in ones (Use number grids).
- Solving simple one step addition problems: using objects, number lines and images to support.

Focus: Adding with numbers up to 20

Children should use number lines (with the numbers on) to add by counting in ones. Starting with the greatest number and counting on the smaller number.

Progress from this to Use bead strings or bead bars to visualise bridging through 10s e.g. 8 + 5 = can be solved by counting on 2 then counting on 3.

$6+3=9$

Key Vocabulary

Add, more, plus, and, make, altogether, total, equal to, equals, the same as, double, most, count on, number line, jumps, jumping forward.
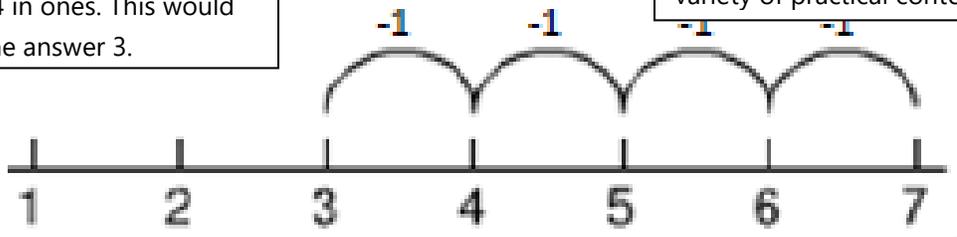
Subtraction - Year One

Key Skills

- Given a number, say one more or one less.
- Count to and over 100, forward and back from any number in 1s.
- Read, write and interpret mathematical statements involving subtraction (-) and the equals (=) sign.
- Represent and use number bonds and subtraction facts to 20 and within 20.
- Reason with number bonds to 10 and 20 e.g.

  9 + 7 = 16, 16 - 7 = 9, 7 = 16 - 9
- Subtract with one digit and 2 digit numbers to 20, including zero.
- Solve one step problems that involve subtraction using objects, pictures and numbered lines.
- Read and write numbers to 100 in numerals.
- Write numbers in words to 20s, including correct spelling.

Focus: Subtracting from numbers up to 20

In Year 1, children will use number lines, objects and visual models to understand subtraction as taking away but also as the difference between or distance between two numbers.

Hundred squares, number tracks, counting objects and real life objects should all be used as well to explore subtraction in a variety of practical contexts.

For 7 take away 4, the child would start on the number line at 7 and count back 4 in ones. This would give them the answer 3.

-1   -1   -1   -1

1   2   3   4   5   6   7

To answer problems such as how many more is 7 than 4 or what is the difference between 7 and 4, cubes should be made into rods so children can see the problem visually.

7

4
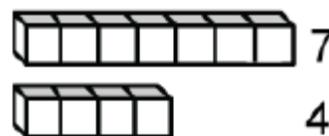
Mental subtraction is equally important in Year 2 and children should practice recalling subtraction facts up to and within 10 and 20. In Year 1 children should also be taught about subtracting zero.

Key Vocabulary

Equal to, take, take away, less, minus, subtract, leaves, distance between, difference between, how many more, how many fewer/less than, most, least, count back, how many left, how much less, jumps, jumping back.

Multiplication - Year One

Key Skills

- Count in multiples of 2,5 and 10.
- Solve 1 step problems involving multiplication using objects, arrays or pictures with support.
- Make connections between arrays and counting in 2s, 5s and 10s.
- Begin to understand doubling using objects and pictorial representations.
- Solve practical problem solving activities counting equal sets or groups.
- Have lots of practice counting and bundling groups of objects into 2s, 5s and 10s.

Focus: Repeated addition with objects, arrays and pictorial representations

In Year 1 children will be exposed to many different multiplication based activities in a variety of contexts. Much of this will be repeated addition activities or be linked to counting in 2s, 5s or 10s.

How many legs will 2 cats have?
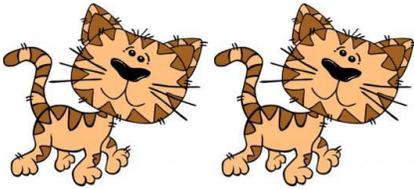
$$4 \quad + \quad 4 \quad = \quad 8$$

Children use images and pictorial representations to solve simple problems that involve repeated addition. They may wish to use the picture to support or use other equipment. Adult support at this stage is to be expected.

Some children may start to see the link between the problem below and counting in 5s and be able to use mental skills to solve the problem.

There are 5 roses in each garden. How many roses in 3 gardens?
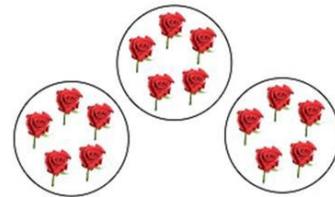
$$5 \quad + \quad 5 \quad + \quad 5 = 15$$

Key Vocabulary

Groups of, lots of, times, array, altogether, multiply, count

Division - Year One

Key Skills

- Solve one step problems involving multiplication and division using concrete objects and pictorial representations with support from adults.
- Children use grouping and sharing to understand division and to begin to understand finding simple fractions.
- Children make connections between arrays and counting in 2s, 5s and 10s.
- Children use halving and understand that this is the same as sharing into 2 equal groups.

Focus: Grouping and sharing small quantities without remainders

As an introduction to division, children in Year 1 will solve problems in familiar and relevant contexts where they have to group and share. They will use objects and pictorial representations to solve problems and they will begin to use counting in 2s, 5s and 10s to support their problems solving.

A farmer has 15 roses and shares them between 3 friends. How many roses do they each get?
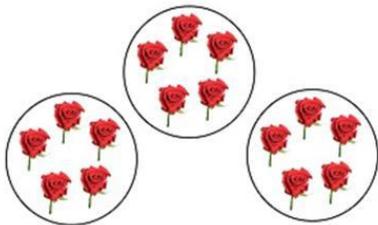
15 roses shared between 3 = 5 roses each

Bats fly in groups of 2. How many groups of 2 will there be if there are 8 bats?

8 bats shared into groups of 2 = 2 bats in each group

Children need to learn grouping and sharing alongside each other so they understand how they are linked. Grouping will also help children understand how multiplication can be used to solve division problems. Contextual problems will strengthen children's understanding of division.

Key Vocabulary

Share, share equally, one each, two each..., group, groups of, lots of, array, divide, divided by

Year One Statutory Requirements

Number - 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 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.
- Use the language of: equal to, more than, less than (fewer), most and least.
- Read and write numbers from 1 to 20 in numerals and words.

Number - Addition & Subtraction

- 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.

Number – Fractions

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Number – Multiplication & Division

- 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.

Geometry – Property of Shape	Geometry – Position & Direction

• Recognise and name common 2-D and 3-D shapes.
  ‣ 2-D shapes: rectangles (including squares), circles and triangles.
  ‣ 3-D shapes: cuboids, pyramids and spheres.
	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns.

Measures	Statistics

• Compare, describe and solve practical problems for:
  ‣ Lengths and heights: long/short, longer/shorter, tall/short, double/half
  ‣ Mass/weight: heavy/light, heavier than, lighter than
  ‣ Capacity and volume: full/empty, more than, less than, half, half full, quarter
  ‣ Time: quicker, slower, earlier, later
• Measure and begin to record the following:
  ‣ Lengths and heights
  ‣ Mass/weight
  ‣ Capacity and volume
  ‣ Time (hours, minutes, seconds)
• Recognise and know the value of different denominations of coins and notes
• Sequence events in chronological order using language: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.
• Recognise and use language relating to dates, including days of the week, weeks, months and years.
• Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	