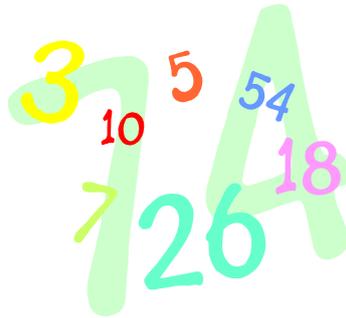


The Maths Curriculum at Ss Alban and Stephen RC Infant and Nursery School



FOUNDATION STAGE

NURSERY

Numbers

The children will be encouraged to show interest in numbers in the environment and use some number names accurately in their play. They will recite numbers in order to 10 and know that numbers identify how many objects are in a set. They will begin to count objects and other things, such as steps, jumps or claps. They will compare groups of objects, saying when they have to same number and begin to match numerals to quantities. They will separate a group of 3 or 4 objects in different ways and recognise that the total is the same.

Shape, space and measures

The children will be encouraged to be interested in shapes in the environment and to talk about the shape of everyday objects, using vocabulary such as 'round' and 'tall'. They will use shapes appropriately for a range of tasks. They will learn to use simple positional vocabulary.

RECEPTION

Numbers

The children will learn to count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They will solve problems, including doubling, halving and sharing.

Space, shape and measure

The children will use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They will explore characteristics of everyday objects and shapes and use mathematical language to describe them.



KEY STAGE 1

YEAR 1

Working mathematically

By the end of year 1, children begin to solve simple problems involving addition and subtraction in familiar contexts such as going shopping, using a range of hands-on equipment, symbols, images and pictures. They begin to use what they know to tackle problems that are more complex and provide simple reasons for their opinions.

Number

- **Counting and understanding numbers**

Children will identify and represent numbers using objects, pictures and models, such as the number line, and use 'equal to, more than, less than (fewer), most and least.' Children will accurately count numbers to, and across 100, forwards and backwards from any given number with increasing understanding. They count, read, write and order numbers in numerals up to 100 and from 1 to 20 in words. When given a number, they can identify one more and one less. They can count in multiples of twos, fives and tens.

- **Calculating**

Children will understand known addition and subtraction facts within 20, including zero. They will demonstrate an understanding of multiplication and division through grouping and sharing using hands-on resources, pictorial representations and arrays (2, 5 and 10). They understand doubling and halving small quantities.

- **Fractions**

Through play and hands-on resources, children will find and name half and one quarter of objects, shapes and quantities.

Measurement

Children will begin to measure using non-standard units (finger widths, blocks etc.) moving to standard units of measure (e.g. cm) using tools such as a ruler, weighing scales and containers. They will begin to record and compare measurements such as lengths and heights, mass and weight, capacity and volume using language such as long / short; heavy / light; full

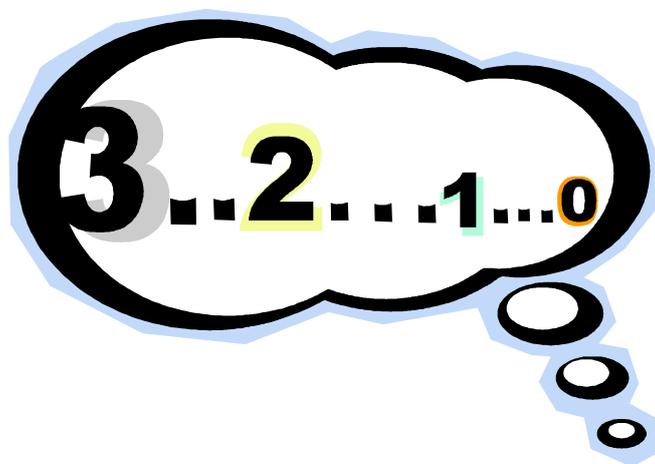
/ half-full / empty. They will tell the time to the hour, half past the hour and be able to sequence events in chronological order using precise language (for example, before and after, next, first, today etc.). Children will recognise and know the value of different denominations of coins and notes.

Geometry

Children will recognise and name common 2-D shapes, e.g. rectangles (including squares), circles and triangles, and 3-D shapes, e.g. cuboids (including cubes, pyramids and spheres) in different orientations and sizes. They will describe position, direction and movement, including whole, half and three quarter turns.

Statistics

In preparation for year 2, children will begin to compare, sort and classify information, including through cross curricular links e.g. science - sorting materials into groups according to their properties. They will also begin to construct simple pictograms and tables.



YEAR 2

Working mathematically

By the end of year 2, children will solve problems with one or a small number of simple steps. Children will discuss their understanding and begin to explain their thinking using appropriate mathematical vocabulary, hands-on resources and different ways of recording. They will ask simple questions relevant to the problem and begin to suggest ways of solving them.

Number

- **Counting and understanding numbers**

Children will develop their understanding of place value of numbers to at least 100 and apply this when ordering, comparing, estimating and rounding. Children begin to understand zero as a place holder as this is the foundation for manipulating larger numbers in subsequent years. Children will count fluently forwards and backwards up to and beyond 100 in multiples of 2, 3, 5 and 10 from any number. They will use hands-on resources to help them understand and apply their knowledge of place value in two digit numbers, representing the numbers in a variety of different ways.

- **Calculating**

Children learn that addition and multiplication number sentences can be re-ordered and the answer remains the same (commutativity) such as $9+5+1=5+1+9$. They learn that this is not the case with subtraction and division. They solve a variety of problems using mental and written calculations for $+$, $-$, \times , \div in practical contexts. These methods will include partitioning which is where the number is broken up into more manageable parts (e.g. $64 = 60 + 4$ or $50 + 14$), re-ordering (e.g. moving the larger number to the beginning of the number sentence when adding several small numbers) and using a number line. Children will know the 2, 5 and 10 times tables, as well as the matching division facts ($4 \times 5 = 20$, $20 \div 5 = 4$) and can recall them quickly and accurately. They apply their knowledge of addition and subtraction facts to 20 and can use these to work out facts up to 100.

- **Fractions including decimals**

Throughout year 2, children will develop their understanding of fractions

and the link to division. They explore this concept using pictures, images and hands-on resources. They will solve problems involving fractions (e.g. find $\frac{1}{3}$ of the hexagon or $\frac{1}{4}$ of the marbles) and record what they have done. They will count regularly and fluently in fractions such as $\frac{1}{2}$ and $\frac{1}{4}$ forwards and backwards and, through positioning them on a number line, understand that some have the same value (equivalent) e.g. $\frac{1}{2} = \frac{2}{4}$.

Measurement

Children will estimate, choose, use and compare a variety of measurements for length, mass, temperature, capacity, time and money. By the end of year 2, they will use measuring apparatus such as rulers accurately. They will use their knowledge of measurement to solve problems (e.g. how many ways to make 50p). They extend their understanding of time to tell and write it on an analogue clock to 5 minute intervals, including quarter past / to the hour. They will know key time related facts (minutes in an hour, hours in a day) and relate this to their everyday life.

Geometry

Children will identify, describe, compare and sort common 2-D and 3-D shapes according to their properties (sides, vertices, edges, faces) and apply this knowledge to solve simple problems. They develop their understanding by finding examples of 3-D shapes in the real world and exploring the 2-D shapes that can be found on them (e.g. a circle is one of the faces on a cylinder). Children begin to describe position, direction and movement in a range of different situations, including understanding rotation (turning through right angles clockwise and anti-clockwise). They use their knowledge of shape in patterns and sequences.

Statistics

Children sort and compare information, communicating findings by asking and answering questions. They will draw simple pictograms, tally charts and tables.