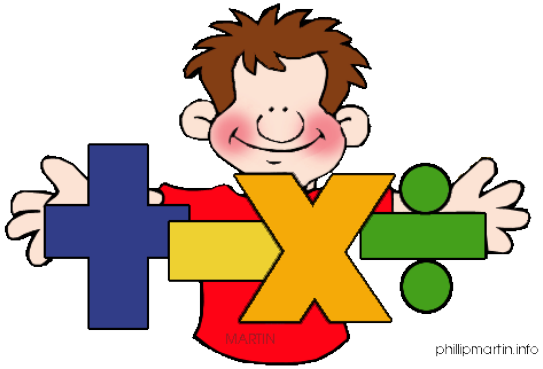
Maths in the Reception Year
5th November 2019



Objectives

- To look at the end of year expectations for Maths.
- Explore some ways you can support your child's learning at home.
- To briefly looks at skills progression in Maths from Reception to Year 2

How maths is taught in Reception

- Daily ‘short maths’ carpet sessions (Numberblocks, counting, shape recognition etc) after snack, before lunch
- Songs and rhymes linked to numbers and shapes
- Weekly adult focussed maths sessions
- Games and activities indoors and out (eg goal scoring games)
- Using manipulatives, eg blocks, real objects
- Hands on activities in practical and meaningful contexts
- Using opportunities that arise in play

30-50 months (Nursery) – Number

- Recites numbers in order to 10
- Knows that numbers identify how many objects are in a set.
- Beginning to represent numbers using fingers, marks on paper or pictures.
- Sometimes matches numeral and quantity correctly.
- Compares two groups of objects, saying when they
- Separates a group of three or four objects in recognise that the total is still the same.
- Shows an interest in numerals in the environment.
- Realises not only objects, but anything can be steps, claps or jumps.

40-60 months (Reception) - Number

- Recognise some numerals of personal significance.
- Recognises numerals 1 to 5.
- Counts up to three or four objects by saying one number name for each item.
- Counts actions or objects which cannot be moved.
- Counts objects to 10 and beyond.
- Counts out up to six objects from a larger group.
- Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.
- Counts an irregular arrangement of up to ten objects
- Estimates how many objects they can see and checks by counting them.
- Uses the language of ‘more’ and ‘fewer’ to compare two sets of objects.
- Finds the total number of items in two groups by counting all of them.
- Says the number that is one more than a given number.
- Finds one more or one less from a group of up to five objects, then ten objects.
- In practical activities /discussion, begins to use vocabulary involved in adding and subtracting.
- Records, using marks that they can interpret and explain.
- Begins to identify own mathematical problems based on own interests and fascinations.

End of Reception - Number

E*arly Learning Goal (Expectation for the end of Year R)*

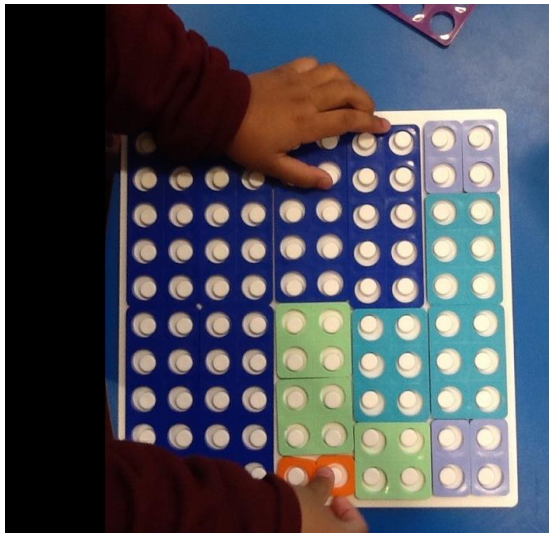
- Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.
- Using quantities and objects, they add and subtract two single digit numbers and count on or back to find the answer.
- They solve problems, including doubling,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

Exceeding (for those already achieving the Early Learning Goal)

- Children estimate a number of objects and check quantities by counting up to 20.
- They solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups.

30-50 months (Nursery) – SSM

- Shows an interest in shape and space by playing with shapes or making arrangements with objects.
- Shows awareness of similarities of shapes in the environment.
- Uses positional language.
- Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.
- Shows interest in shapes in the environment.
- Uses shapes appropriately for tasks.
- Beginning to talk about the shapes of everyday objects, e.g. ‘round’ and ‘tall’.



40-60 months (Reception) - SSM

- Beginning to use mathematical names for ‘solid’ 3D shapes and ‘flat’ 2-D shapes, and mathematical terms to describe shapes.
- Selects a particular named shape.
- Can describe their relative position such as ‘behind’ or ‘next to’.
- Orders two or three items by length or height.
- Orders two items by weight or capacity.
- Uses familiar objects and common shapes to create and recreate patterns and build models.
- Uses everyday language related to time.
- Beginning to use everyday language related to money.
- Orders and sequences familiar events.
- Measures short periods of time in simple ways.

End of Reception - SSM

E*arly Learning Goal (Expectation for the end of Year R)*

- Children 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 explore characteristics of everyday objects and use mathematical language to describe them.

Exceeding (for those already achieving the Early Learning Goal)

- Children estimate, measure, weigh and compare and order objects and talk about properties, position and time.

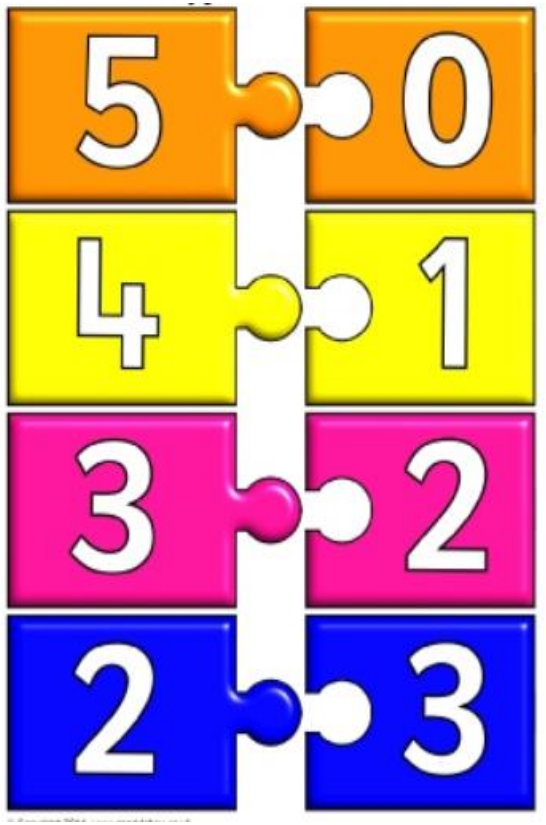
For both Number and SSM we assess the children based on their ***embedded*** understanding of a concept.

This is often demonstrated in their play.

But… my child is already confident with numbers

You may feel that your child can already count to 10 (or beyond) and therefore understands everything there is to know about counting to 10. But have you considered:

- they may just know the numbers by rote?
- they may not have grasped the ‘5 ness’ of 5.
- they may not understand the numbers within numbers, ie that 5 is made up of 3 and 2, 4 and 1?



Problem solving is central!

How might your child solve this problem?

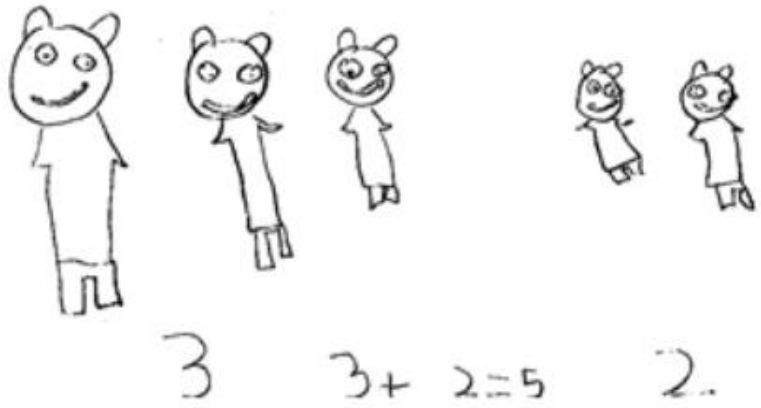
Jane had three teddy bears,
she was given two more.

How many does she have now?

Here are a few possibilities:

- Counting out sets of objects and combining the groups to find the total
- Using their fingers (three fingers, two fingers and count them all)
- Counting on from the first number (big number on their head)
- Drawing the problem and finding the solution
- Knowing the number fact
- Counting on using a number line

(These are in rough order of skill development)



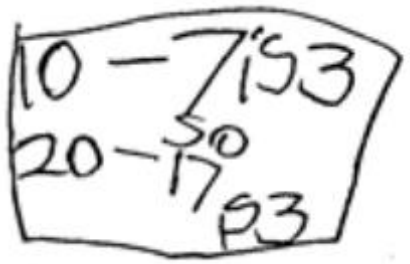
Your turn! What is

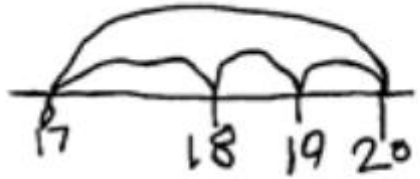
27 + 59?

How did you work it out? What strategy did you use?

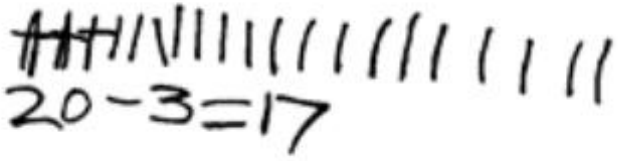
The same question can be solved in many ways.

e.g. There are 20 children in the group. Three are away. How many are here?





2 away would be 18
So 3 away must be 17.



Children are introduced to a variety of strategies over time and in Reception are encouraged to find ways to solve problems.

How can I support my child?

Counting anything!

(do it in ones, or even twos)

Be a number detective!

What numbers can you see? What is this number called? What is the total of the numbers? What is 7 take away 3? Is this number odd or even?

Measuring and weighing

Go shopping!

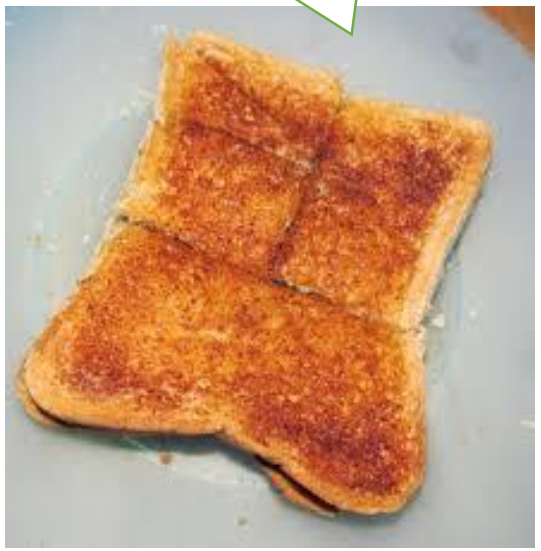
Which is heaviest? What shape is it? How many have we got? How many more do we need to have 5?

Can you give me 5p? Is there another way you could do it?

Sharing, halving, doubling

Share the breadsticks / sweets between you and your friend. How many will you have each. What if we had to share them between 3 people?

Can you cut your toast in half? How many pieces would you have if you cut it again?

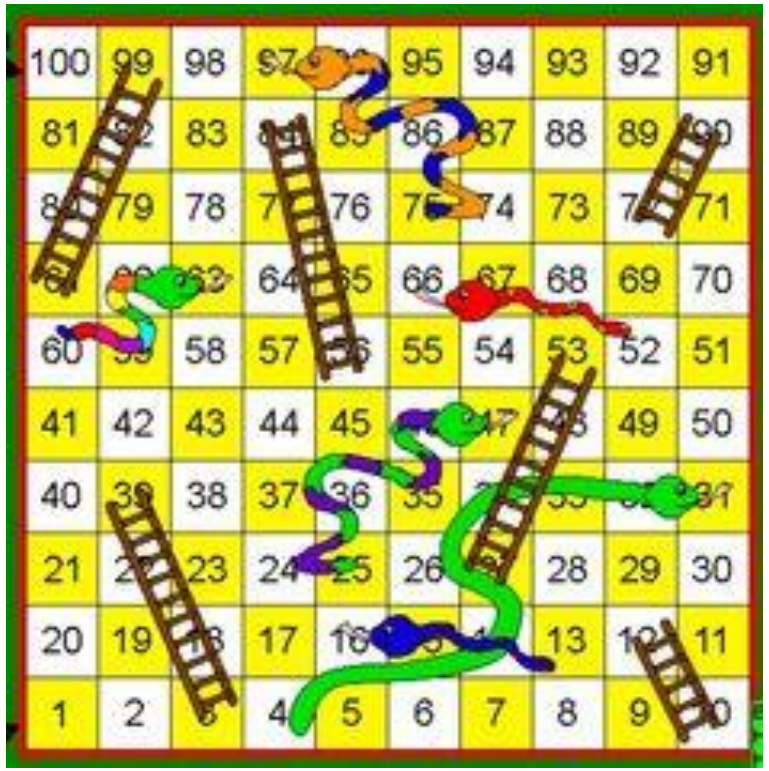


Games

Games are a great way of consolidating mathematical understanding.

Snakes and ladders teaches counting on in sequence, addition and subtraction, more and less.

Why not play it backwards or design your own game?



Dominoes are great for investigating doubles, different ways of making a numbers, and addition and subtraction sums.

Dice are good as well, use two to generate addition or subtraction problems, double the number rolled, find one/two more or less than the number etc…

Useful websites

- www.sparklebox.co.uk
- www.twinkl.co.uk
- www.ictgames.com
- www.bbc.co.uk/bitesize/ks1/maths
- www.topmarks.co.uk/Search.aspx?Subject=37
- www.crickweb.co.uk

Progression in Skills

Your child learns skills and techniques progressively, from their arrival in Reception to the end of Year 2.

We will briefly talk though how specific skills are developed from Reception to the end of Key Stage 1.

Please be aware that the Reception skills listed are the end of year expectations for an average child.

EYFS and Key Stage 1 Numeracy Overview

Reception	Year 1	Year 2
Number and Place Value Pupils taught to: • Count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. • Select the correct numeral to represent 1 to 5, then 1 to 10 objects. • Find one more or one less from a group of up to five objects, then ten objects.	Number and Place Value Pupils taught to: • 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 two's, five's and tens. • Given a number count 1 more and 1 less. • Identify and represent numbers using objects and pictures including a number line. • Use mathematical language such as : equal to, more than, less than, most, least	Number and Place Value Pupils taught to: • Count in steps of 2, 3, and 5 from 0 and in tens from any number, forward and back. • Recognise and place value each digit in two – digit numbers. • Identify, represent and estimate numbers using different representations including the number line. • Compare and order numbers from 0 to 100 using ≥ ≤ and = signs. • Read and write numbers to at least 100 in numerals and words. • Use place value and number facts to solve problems.

Addition and Subtraction Pupils taught to:	Addition and Subtraction Pupils taught to:	Addition and Subtraction Pupils taught to:
• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. • Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.	• 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 and two digit numbers to 20, including zero. • .Solve one step problems that involve addition, subtraction. These may be presented as missing number problems.	• Solve problems with addition & subtraction: - Using objects or pictures to support, involving numbers, quantities and measures. - Applying their increasing knowledge of mental and written methods. • Recall and use addition and subtraction facts to 20 fluently, and derive these and use related facts up to 100. • Add and Subtract numbers mentally, using pictures or objects, including : - A two-digit number and ones - A two- digit number and tens - Two two-digit numbers - Adding three one – digit numbers • Show that addition of two numbers can be done in any order and subtraction of one number from another cannot. • Recognise and use the inverse relationship between addition and subtraction to check calculation and solve missing number problems.

Multiplication and Division Pupils taught to:	Multiplication and Division Pupils taught to:	Multiplication and Division Pupils taught to:
• They solve problems, including doubling, halving and sharing.	• Solve one step problems involving multiplication and division. Children may use objects, pictures or arrays to support them with this.	• Recall and use multiplication and division facts for the 2, 5, and 10 multiplication tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them as a number sentence. • Show that multiplication of two numbers can be done in any order and division from one number by another cannot. • Use arrays, pictures, repeated addition and subtractions methods, mental methods and times table recall to solve problems.

Fractions Pupils taught to:	Fractions Pupils taught to:	Fractions Pupils taught to:
• They solve problems, including doubling, halving and sharing.	• 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	• Recognise, find, name and write fractions ½, ¼, ¾ of a length, shape, set of objects or quantity. • Write simple fractions for example : ½ of 6 = 3 • Recognise the equivalence of ½ and 2/4.

Measures Pupils taught to:	Measures Pupils taught to:	Measures Pupils taught to:
• Use everyday language to talk about: - size, - weight, - capacity, - position, - distance, - time and - money - Compare quantities and objects and to solve problems.	• Compare, describe and solve practical problems for: height, length, mass, weight, capacity, volume, time. • Measure and begin to record the following: - Lengths / height - Mass / weight - Capacity / volume - Time in hours, minutes and seconds • Recognise and know the value of different denominations of coins and notes. • Sequence events in chronological order • Recognise and use language relating to dates, including days of the week, weeks, months and years. • Tell the time to the nearest house and half past the hour.	• Choose and appropriate standard unit of measurement to estimate and measure: - Length / height (m/cm) - Mass ((kg/g) - Temperature (°c) - Capacity (l / ml) • .Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. • Find different combinations of coins that equal the same amounts of money. • Solve simple problems in a practical context involving addition and subtraction of money, including giving change. • Compare and sequence intervals of time • Tell and write the time to five minute intervals including: - O'clock - Half past - Quarter to - Quarter past • Know the number of minutes in an hour and the number of hours in a day.

Shape Pupils taught to: • Begin to use mathematical names for - 'solid' 3D shapes and - 'flat' 2D shapes, and mathematical • Select a particular named shape. • Use terms to describe shapes. • They recognise, create and describe patterns.	**Shape** Pupils taught to: • Recognise and name 2D and 3D shapes including: - 2D – rectangles squares, circles and triangles - 3D – cuboids, cubes, pyramids and spheres.	**Shape** Pupils taught to: • Identify and describe the properties of 2D shapes, including the number of sides, lines of symmetry in a vertical line. • Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. • Identify the 2D shapes on the surface of 3D shapes. • Compare and sort common 2D and 3D shapes.

Position and Direction Pupils taught to: • Measure short periods of time in simple ways. • Use everyday language related to time.	**Position and Direction** Pupils taught to: • Describe position, direction and movement including whole, half, quarter and three quarter turns.	**Position and Direction** Pupils taught to: • Order and arrange combinations of mathematical objects in patterns and sequences. • Use mathematical vocabulary to describe the position, direction and movement: - Rotation – in terms of right angles - Quarter turn - Half term - Three quarter turn - Clockwise and Anti-clock wise **Statistics** Pupils taught to: • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables • Ask and answer simple questions by counting the number of objects in each category and sorting categories by quantity. • Ask and answer questions about totally and comparting categorical data.