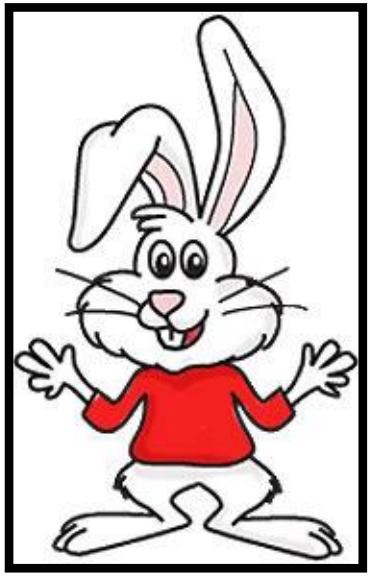
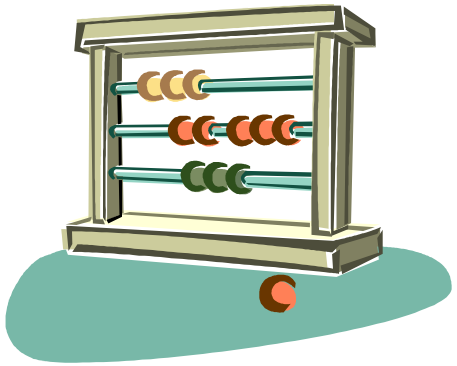
A Parent's Guide to





Year R Models and Calculation Strategies: Counting, Place Value, Addition, Subtraction, Grouping, Sharing

EYFS Framework

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Early Learning Goals

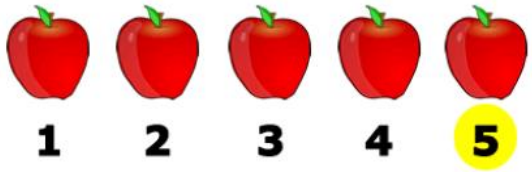
ELG: Numerical Patterns

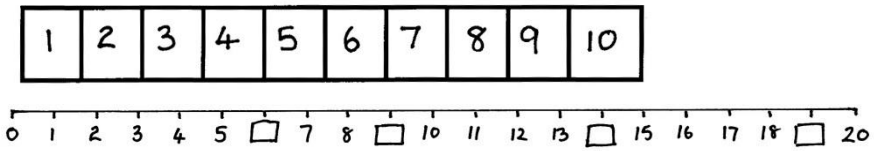
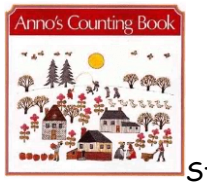
Children at the expected level of development will: - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

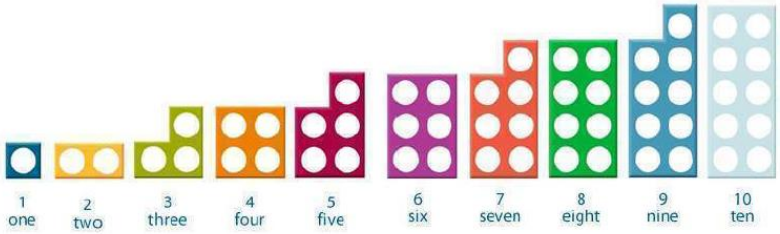
ELG: Number

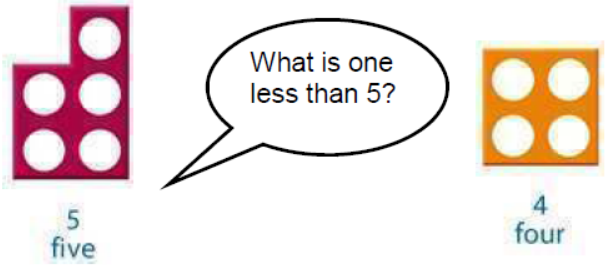
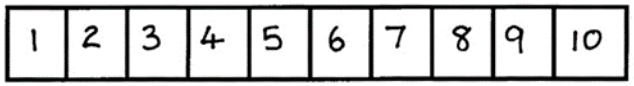
Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; 14 - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Place Value

Strategy	Examples	Vocabulary
Oral Counting	Oral counting in 1s, forwards and **backwards** to 10, then 20 starting from 0. Progress to starting at any number and counting in 1s. 5,6,7 etc	count
To reliably count the number of objects in a set using the numbers 1-20	Counting all: 1:1 correspondence.  One, two, three Children need to understand that number labels (words) match objects as they count them  Encourage your child to move each object as they count and place in a line so they don't miss any out. Counting slowly touching or moving each object as they say the number.	number names line move

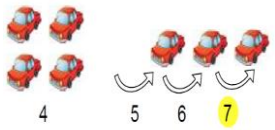
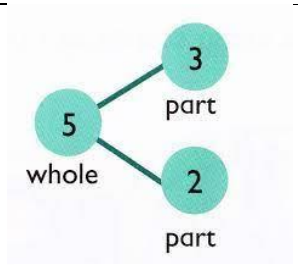
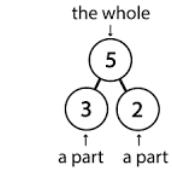
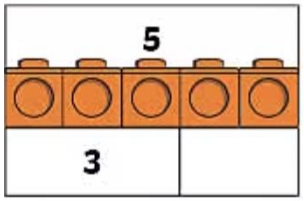
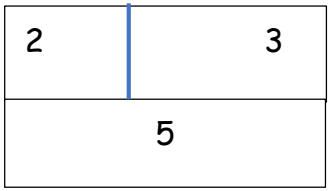
Counting forwards in ones	Number tracks/washing lines/ numbered number lines   	forwards, more than, numbers
Singing games, storybooks and number rhymes involving counting forwards	1,2,3,4,5, once I caught a fish alive, 6,7,8,9,10 then I let it go again. Why did you let it go, because it bit my finger so which finger did it bite this little finger on my right.	more, add
Multi-representation of numbers to 20	 Give children opportunities to make links with number labels. (figures) Object counting and ordering numbers  Story books are used to aid counting and representation.	number names count, count on, more, less

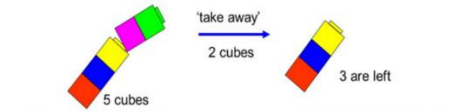
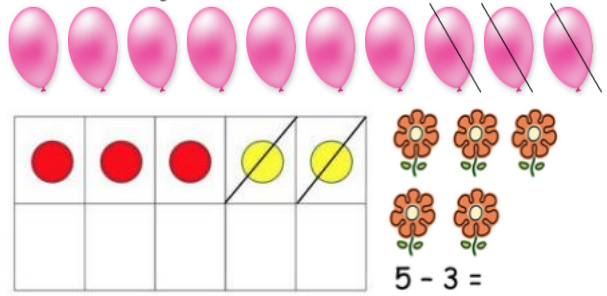
	 Our working walls show numbers represented in different ways  **https://www.bbc.co.uk/cbeebies/shows/numberblocks**		
To place numbers in order	 representations of numbers	Numicon helps children visualise how the size of numbers relate to each other. It also helps children to develop mental	bigger, smaller, forwards, more before, after, next, more than, less than

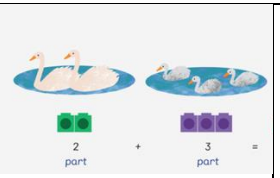
Strategy/Objective	Examples	Vocabulary
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;	To say which number is 1 more or 1 less than a given number. 	numbers , more, less, before, after, forwards, backwards
	Practical activities through play Role play activities – has 3 apples and buys 1 more. How many apples are altogether in the shop? 	more, add, plus, total, altogether, equals, makes,
	Hopping forward on a number track/ line Stand on 5 and hop forwards 1. What number are you on? 	Hop/jump forward, land on

Strategy	**Examples**	**Vocabulary**
Subitising	Children should start to recognise small amounts without counting, especially when presented with familiar arrangement. Eg numicon and dice 	recognise number names
Number conservation	Children should have opportunities to explore groups of objects and note that when some are moved there is still the same quantity. How many counters?  How many now? 	How many? What can you see?

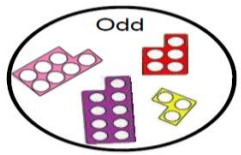
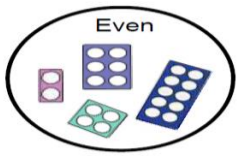
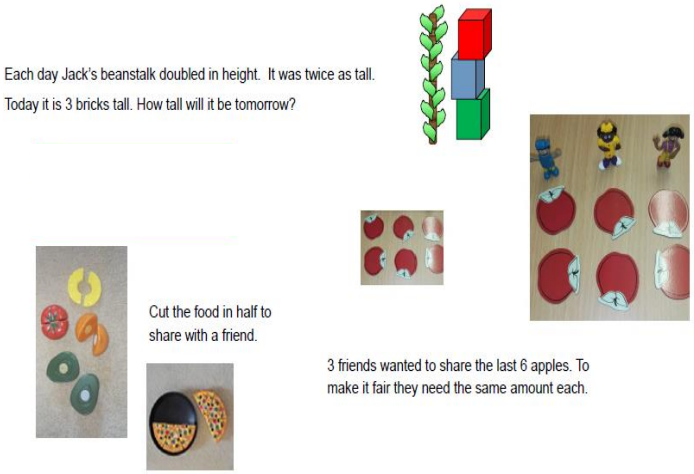
Addition and Subtraction

Strategy/ Curriculum Statement	Concrete	Pictorial	Abstract	Vocabulary
Have a deep understanding of number to 10, including the composition of each number *Please note there is no formal expectation for children to record in an abstract way in Year R.	 Using objects to add two single digit numbers by counting on to find the answer.	Pictorially represent adding using an addition story There are 4 balloons. 3 more balloons are added. How many balloons ar total?  4 3 Children record pictorially and then informally annotate their drawing numbers	4+3=	add, more, altogether, total, equals, and, makes
	Using bar models and part part whole method to develop vocabulary involved in adding and subtracting. 	    Bar model	2 + 3 = 5 OR 3+2=5 OR 5-3=2 5-2= 3	inverse commutative

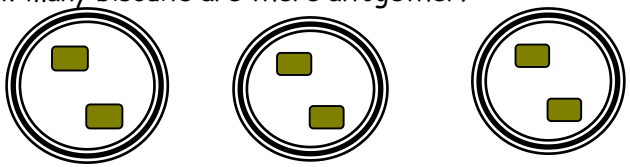
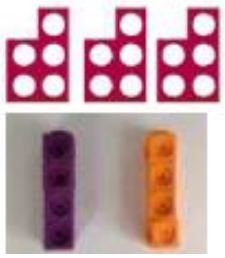
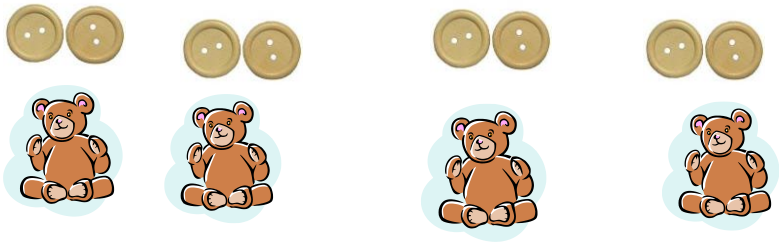
		You can use bar models to add two numbers together as a group in a bar You can then go on to use a bar model to show the relationship between subtraction and addition		
	Use toys and general classroom resources for children to physically manipulate, group/regroup. Use specific maths resources such as, Numicon, bead strings, multilink etc. Use visual supports such as ten frames, part part wholes with the physical objects and resources that can be manipulated.    	There are 10 balloons. 3 of the balloons pop. Show this by crossing ou 3 balloons, leaving 7.  Children will need to cross out or cover quantities to support subtraction.	10-3=7 children need to understand that in Year R we will be starting with the biggest number when subtracting.	less, take away, less than, starting with, take away, how many are left?

Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	  Using numicon to find number bond pairs 			number bond addition subtraction

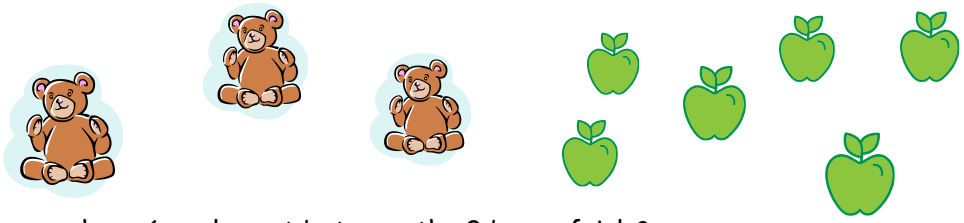
Multiplication and Division

Strategy/Objective	Examples	Vocabulary
Explore and represent patterns within numbers up to 10, including evens and odds, double facts.	Numicon   Show children the difference in odd and even numbers. First look at their appearance. We start by describing this as even numicon having a friend and odd numicon not. We then explain to the children that even numbers can be shared equally between two groups but odd numbers can't without breaking a whole.	Odd, even, lots of, groups of, longer, bigger, columns
	 	half, double, total, altogether, equals, same, different, method

Grouping Strategies

Strategy	Examples	Vocabulary
Groups or 'lots of' with concrete materials Practical examples and use of role play	3 plates, each with 2 biscuits. How many biscuits are there altogether?  2 biscuits and 2 biscuits and 2 biscuits is 6 biscuits  Use different objects to add equal groups	altogether, lots of, groups
Grouping and 'lots of' with concrete materials and recording using pictures	Each teddy has two buttons. Draw the buttons on the teddy bears. How many buttons is that altogether?  2 buttons and 2 buttons and 2 buttons and 2 buttons is 8 buttons	group, lots of, altogether

Sharing Strategies

Strategy	Examples	Vocabulary
Sharing with concrete materials Practical examples and use of role play	Share the fruit between the teddy bears equally.  Can you share 6 apples out between the 3 bears fairly? How many apples does each bear have?	Share, fair, each, same
Sharing with concrete materials and recording using pictures	Share the buttons between the teddy bears equally.   Can you share the 9 buttons out between the 3 bears fairly? Draw the buttons onto the pictures of three bears? How many buttons does each bear have?	Share, fair, each, same, equal(ly)