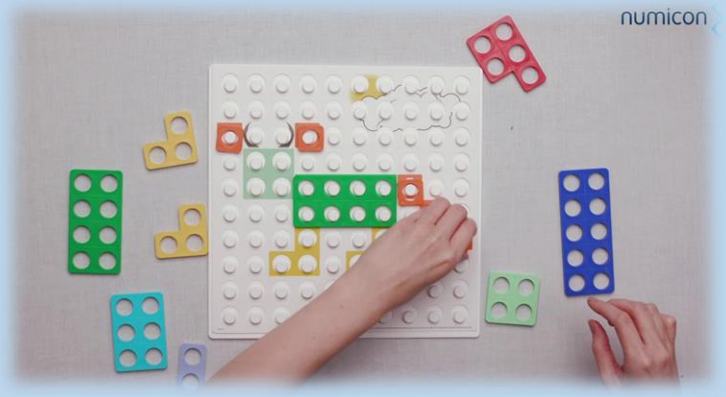
# Maths in Reception

- What do we do in school?
- What does the curriculum look like?
- Useful resources – Physical and books
- How you can help at home



# The Early Years Foundation Stage curriculum

## Development Matters Statements

| Mathematics |
| --- |
| • Count objects, actions and sounds. |
| • Subitise. |
| • Link the number symbol (numeral) with its cardinal number value. |
| • Count beyond ten. |
| • Compare numbers. |
| • Understand the 'one more than/one less than' relationship between consecutive numbers. |
| • Explore the composition of numbers to 10. |
| • Automatically recall number bonds for numbers 0-5 and some to 10. |
| • Select, rotate and manipulate shapes to develop spatial reasoning skills. |
| • Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can. |
| • Continue, copy and create repeating patterns. |
| • Compare length, weight and capacity. |

## Early Learning Goal

| Mathematics |
| --- |
| **Number** |
| • Have a deep understanding of number to 10, including the composition of each number.<br>• Subitise (recognise quantities without counting) up to 5.<br>• 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. |
| **Numerical Patterns** |
| • Verbally count beyond 20, recognising the pattern of the counting system.<br>• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.<br>• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. |

# Six key areas of early mathematic learning

CARDINALITY AND COUNTING
Understanding that the cardinal value of a number refers to the quantity, or ‘howmanyness’ of things it represents

COMPARISON
Understanding that comparing numbers involves knowing which numbers are worth more or less than each other

COMPOSITION
Understanding that one number can be made up from (composed from) two or more smaller numbers

PATTERN
Looking for and finding patterns helps children notice and understand mathematical relationships

SHAPE AND SPACE
Understanding what happens when shapes move, or combine with other shapes, helps develop wider mathematical thinking

MEASURES
Comparing different aspects such as length, weight and volume, as a preliminary to using units to compare later

NCETM

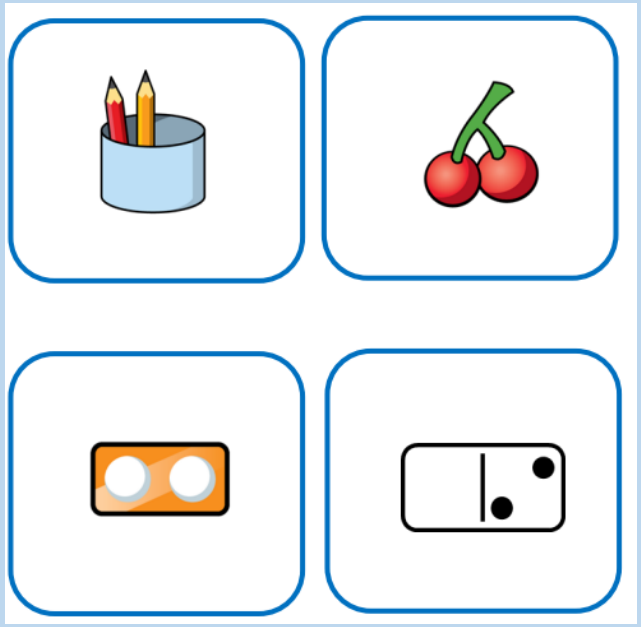
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

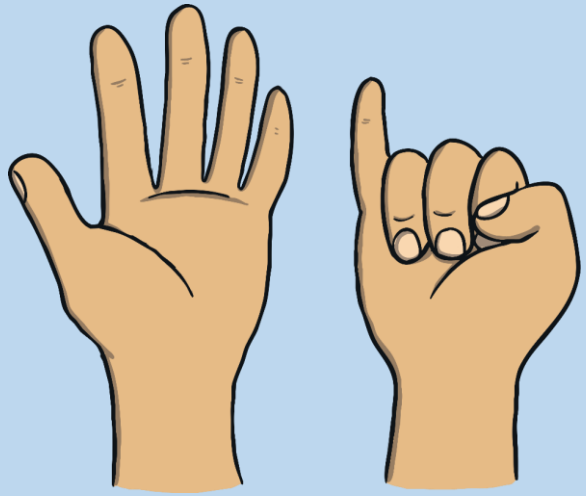
At Bournebrook, we use NCTEM mastering number in Reception supplemented with White Rose for shape and space.

https://www.ncetm.org.uk/in-the-classroom/early-years/

# CARDINALITY AND COUNTING

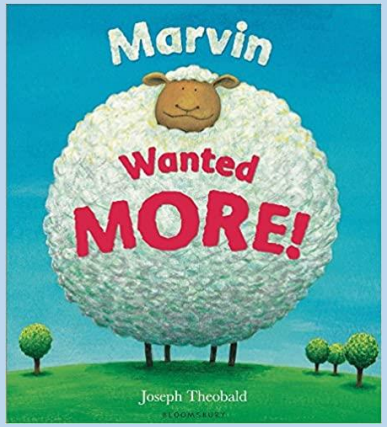
The cardinal value of a number refers to the quantity of things it represents, e.g. the ‘threeness’ of three. When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to. Counting is one way of establishing how many things are in a group, because the last number you say tells you how many there are. Children enjoy learning the sequence of counting numbers long before they understand the cardinal values of the numbers. Subitising is another way of recognising how many there are, without counting.

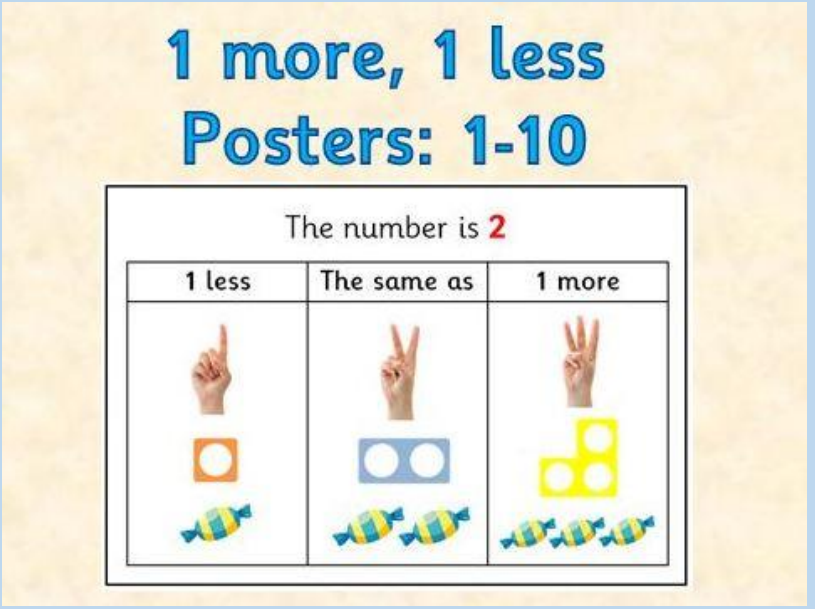




# COMPARISON

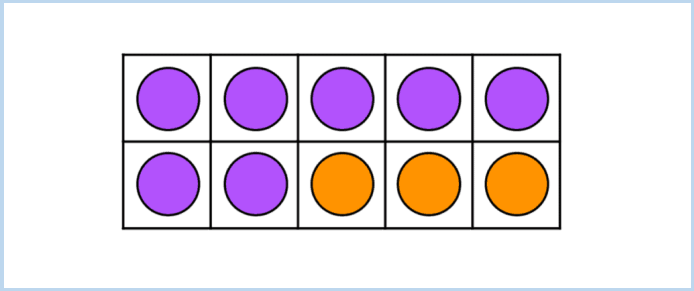
Comparing numbers involves knowing which numbers are worth more or less than each other. This depends both on understanding cardinal values of numbers and also knowing that the later counting numbers are worth more (because the next number is always one more). This understanding underpins the mental number line which children will develop later, which represents the relative value of numbers, i.e. how much bigger or smaller they are than each other.



# COMPOSITION

Knowing numbers are made up of two or more other smaller numbers involves ‘part–whole’ understanding. Learning to ‘see’ a whole number and its parts at the same time is a key development in children’s number understanding. Partitioning numbers into other numbers and putting them back together again underpins understanding of addition and subtraction as inverse operations.

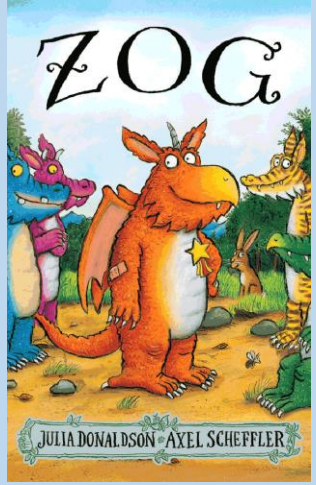



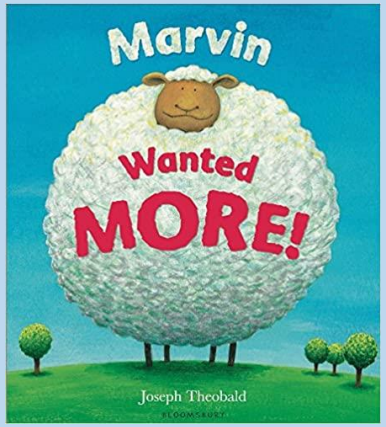
# SHAPE AND SPACE

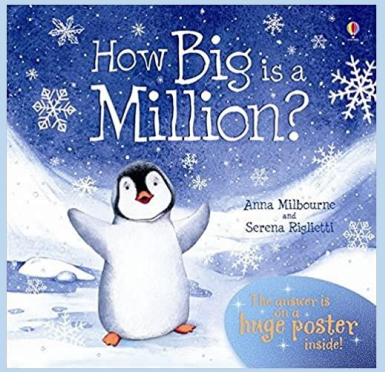
Mathematically, the areas of shape and space are about developing visualising skills and understanding relationships, such as the effects of movement and combining shapes together, rather than just knowing vocabulary. Spatial skills are important for understanding other areas of maths and children need structured experiences to ensure they develop these. Here, the focus is on actively exploring spatial relations and the properties of shapes, in order to develop mathematical thinking (rather than on shape classification, which requires prior knowledge of properties).

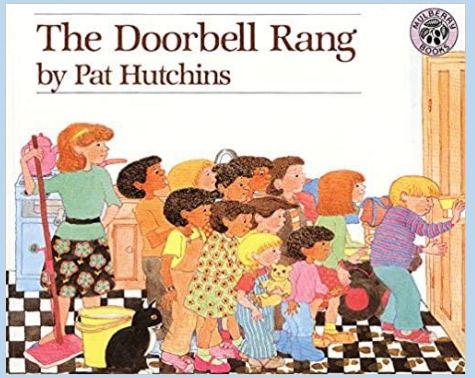
Children need opportunities to move both themselves and objects around, so they see things from different perspectives. This will support them in visualising how things will appear when turned around and imagining how things might fit together.

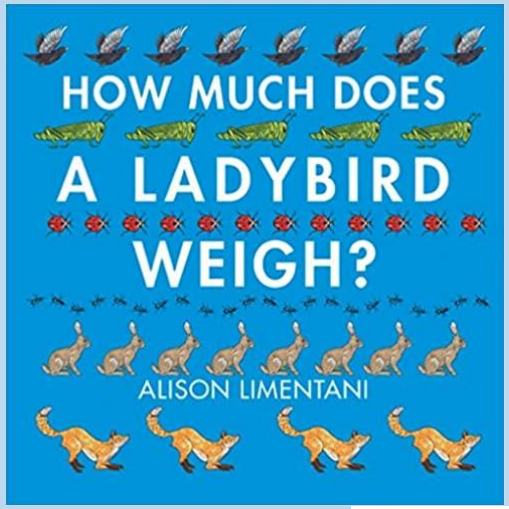
# Maths books

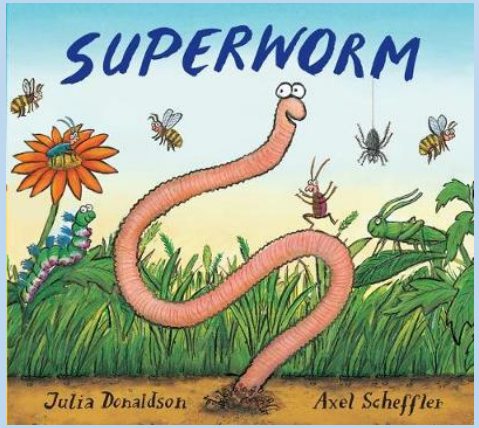

ZOG
JULIA DONALDSON AXEL SCHEFFLER

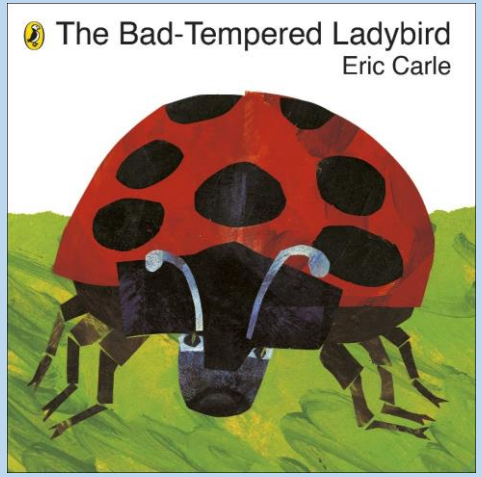

Marvin
Wanted
MORE!
Joseph Theobald

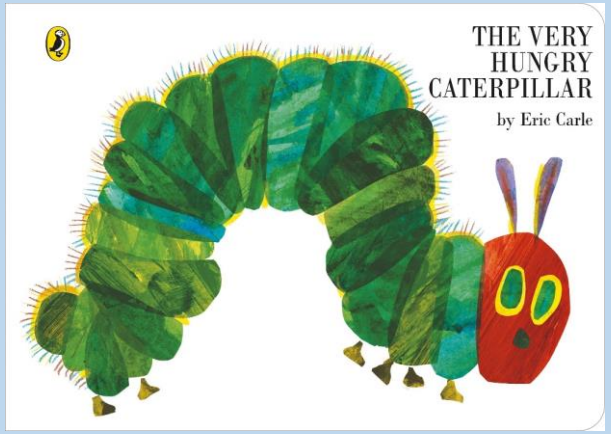

How Big is a Million?
Anna Milbourne and Serena Riglietti
The answer is on a huge poster inside!

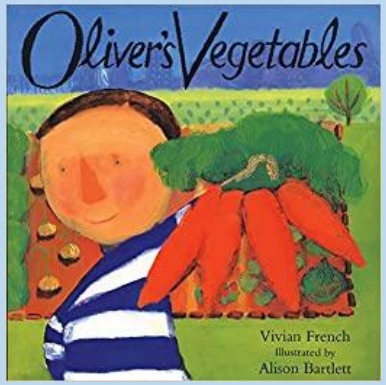

The Doorbell Rang
by Pat Hutchins

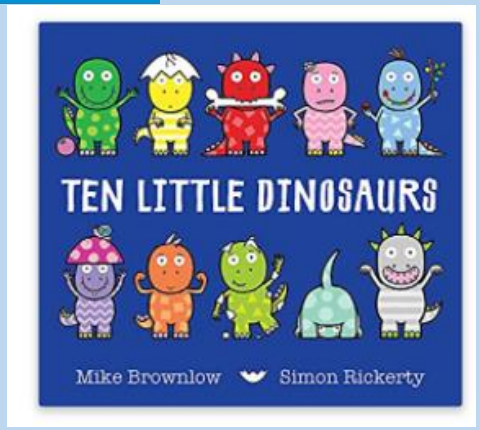

HOW MUCH DOES A LADYBIRD WEIGH?
ALISON LIMENTANI

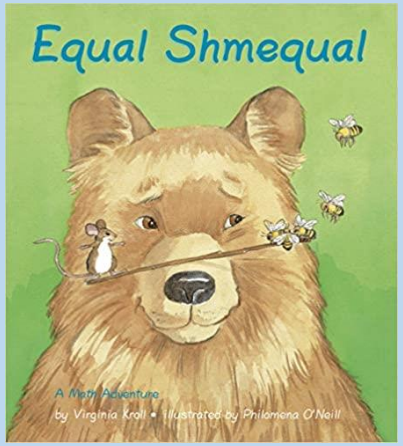

SUPERWORM
Julia Donaldson
Axel Scheffler

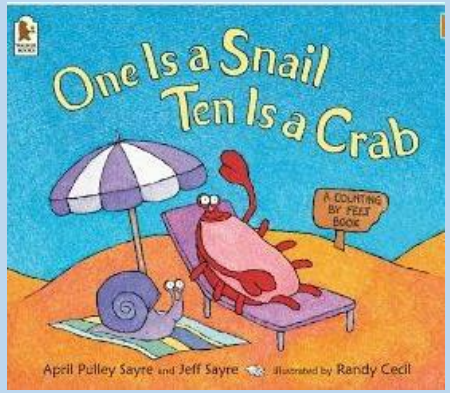

The Bad-Tempered Ladybird
Eric Carle

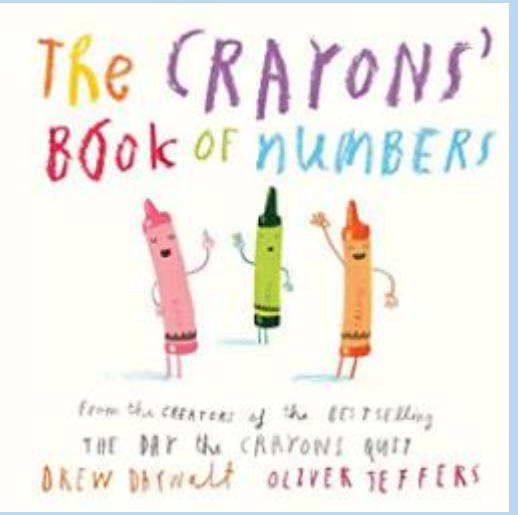

THE VERY HUNGRY CATERPILLAR
by Eric Carle


Oliver's Vegetables
Vivian French
Illustrated by
Alison Bartlett

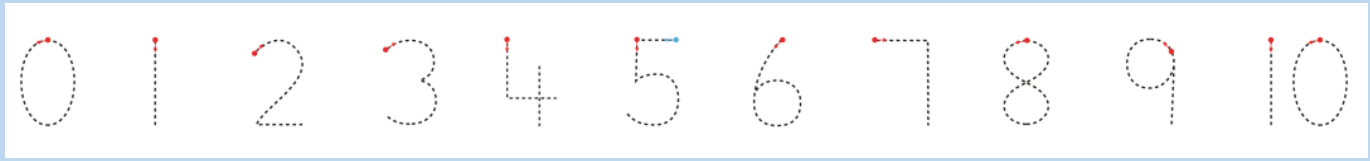

TEN LITTLE DINOSAURS
Mike Brownlow
Simon Rickerty


Equal Shmequal
A Math Adventure
by Virginia Kroll • Illustrated by Philomena O'Neill


One Is a Snail Ten Is a Crab
A COUNTING BY FEET BOOK
April Pulley Sayre and Jeff Sayre
Illustrated by Randy Cecil


The CRAYONS' BOOK OF NUMBERS
From the creators of the bestselling
THE DAY the CRAYONS QUIT
DREW DAYWALT
OLIVER JEFFERS

# How you can help at home




## Number formation

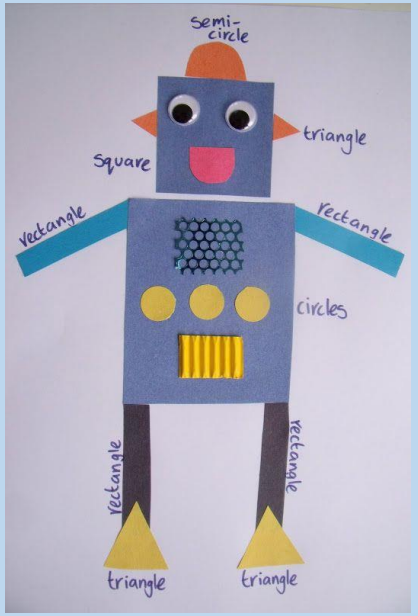
- Model number writing and reading in different ways: Lists, tracing, birthday cards, buses, front doors, recipes, in books, phones
- Number hunts
- Write in sand, with your finger on the carpet, paint, make numbers with play dough, on a whiteboard, on paper, post it notes, on a tablet

# How you can help at home?


**Counting**

- Counting – in everyday conversation, in play, steps, brushing teeth, toys in the bath, tidying toys
- Subitising – with teddies, spoons, socks
- Ordering numbers – flashcards, post it notes, lining up toys
- Number bonds – in the car, with teddies/toys
- Addition and subtraction – include it in everyday conversation, cooking

# How you can help at home?




## Shape and measure

- 2D and 3D shapes – in everyday conversation, shape hunts, shape pictures
- Patterns – ordering objects and toys, clapping/body percussion
- Weight, length, capacity, time – language focus whilst cooking, in the bath, in the sandpit, pouring drinks, talking about routines

# How you can help at home?

## Games

- Snakes and ladders
- Board games
- Card games – snap, pairs
- Number hunts
- Hide and seek
- Bingo
- Link it to fine motor activities
- Counting songs