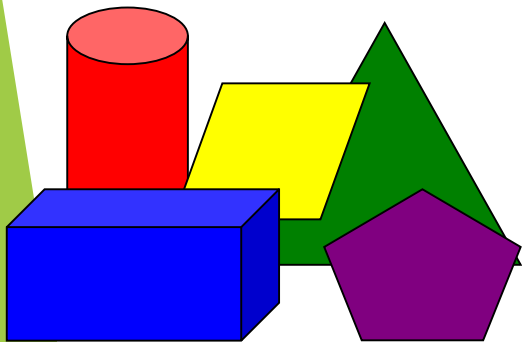


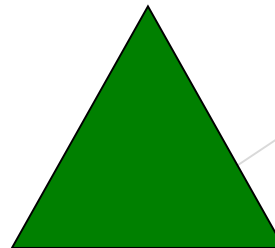
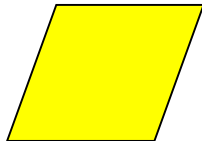
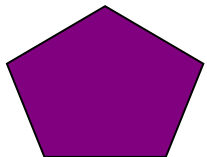
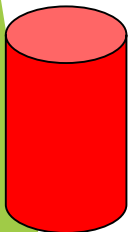
Maths at Kenmore Park Infant & Nursery School.

Mr Christopher— Maths Leader



Aims of Session

- ▶ To give an insight into maths teaching and learning in our school.
- ▶ To share strategies / ideas so that you can help your child at home.
- ▶ To help you develop a positive attitude towards maths.



What it looks like in Reception

In addition to whole class and small group teaching there is continuous provision.



What it looks like in Reception



What it looks like in Reception



Key Stage 1: A Typical Lesson

A daily lesson for mathematics should last about 45 minutes in key stage 1.

- o Whole class teaching time which is often **interactive** and children use whiteboards and other resources to join in.
- o Independent or small group activity.
- o Plenary to round off the lesson – sometimes during lessons. To confirm and consolidate our learning.

Main Teaching Input and Pupil Activities

The main part of the lesson provides time for:

- o Introducing new topics, consolidating previous work or extending it.
- o Developing mathematical vocabulary.
- o Using and applying concepts and skills.

In this part of the lesson teachers:

- o Share the learning intention WALT (We Are Learning To) and the Success criteria.
- o Ensure that all pupils are supported effectively with individual and whole class feedback.

What this looks like to the children

WALT: find the number that is 1 more and 1 less than a number.

Success Criteria:

I can say the number that is 1 more.

I can say which number is 1 less.

I can write my numbers up to 20 correctly .

Maths Mastery

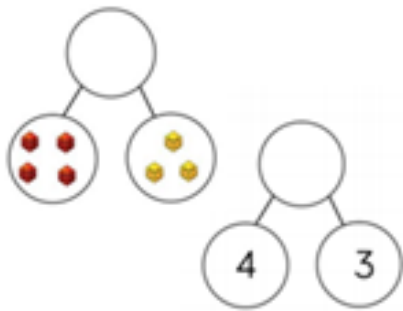
- ▶ The phrase '**teaching for mastery**' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material.

A good grasp of the basics.

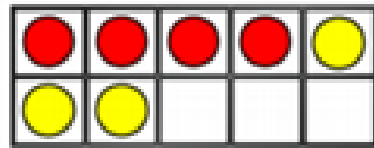
- ▶ During Key Stage 1, there is a big focus on developing basic number skills. That means securing a good understanding of place value, and recognising number bonds first to 10, then to 20. Practising these skills frequently will help children's mathematical thinking throughout school.

Addition

- Children use concrete and/or pictorial representations of the following: cherry diagrams (part/whole model), cubes, tens frames, Numicon, bar model (part/whole model), bead strings, number-lines. Pupils learn to **combine 2 sets** and when **a quantity is increased by another**.



Cherry Diagram
(or Part, Whole model)



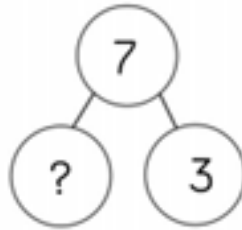
Tens frame



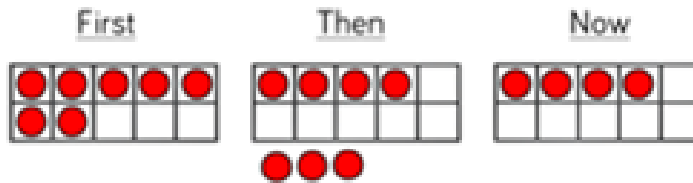
Numicon

Subtraction

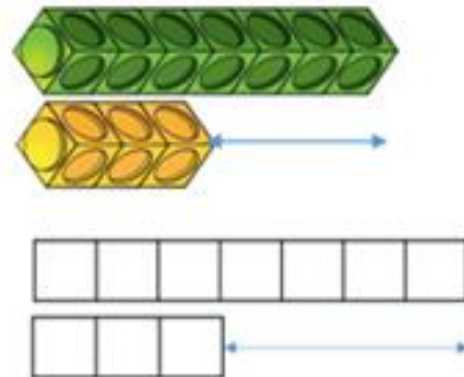
► Partitioning



► Reduction

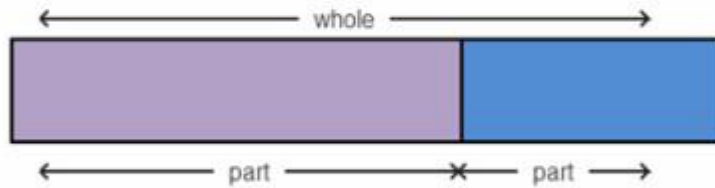


► Finding the difference



Bar Model

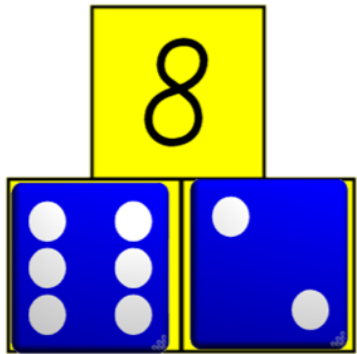
Part-Whole Model Addition & Subtraction



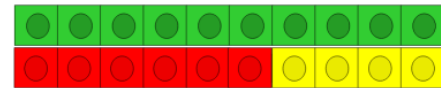
$$\text{Part} + \text{Part} = \text{Whole}$$

$$\text{Whole} - \text{Part} = \text{Part}$$

Bar Model



Now she rolls the dice to create part, part whole diagrams and bar models. How do you think they work?



$$10 - 4 = 6$$



Ben makes this bar model using cubes. How many number sentences can you see?

Ben and Alice both made a model to show a number fact. What is the same and what is different about their models?



Alice draws another bar model. Can you write some number facts to go with it?



Shade the bar model to show:
 $6 + 1 = 7$

Strategies for Addition and Subtraction year 1.

$$23 + 14 =$$

Children in year 1 are not taught column addition.
We teach partitioning and recombining:

$$23 + 14 =$$

$$20 + 10 = 30$$

$$3 + 4 = 7$$

$$30 + 7 = 37$$

Strategies for Addition and Subtraction year 2.

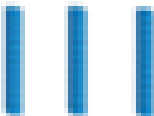
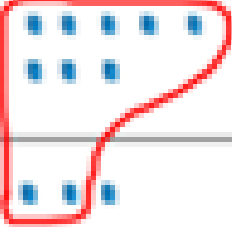
- Children are taught when adding two digit numbers to partition into tens and ones using Base 10 equipment (Dienes)

$$\begin{array}{r} 23 + 34 \\ \hline 20 \quad 3 \quad 30 \quad 4 \end{array}$$
$$\begin{array}{l} 20 + 30 = 50 \\ 3 + 4 = 7 \\ 50 + 7 = 57 \end{array}$$



Year 2 Addition

- Children are encouraged to use the formal column method when calculating alongside base 10 or place value counters.

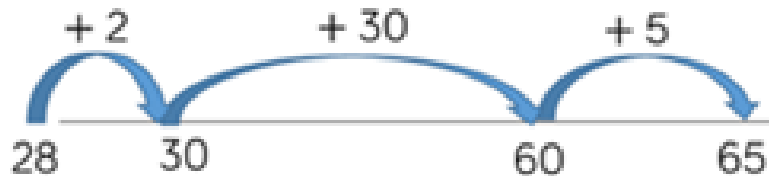
Tens	Ones
	
	
	

$$\begin{array}{r} 38 \\ + 23 \\ \hline 61 \\ \hline 1 \end{array}$$

Strategies for Addition and Subtraction.

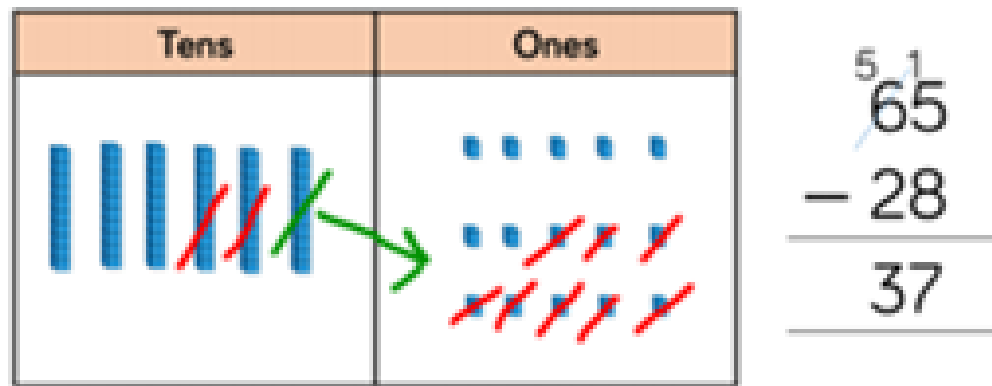
- ▶ Children will begin to use empty number lines to support calculations by counting on to find the difference.

$$65 - 28 = 37$$



Strategies for Addition and Subtraction.

- Children are encouraged to use the formal column method when calculating alongside base 10 or place value counters.



Multiplication

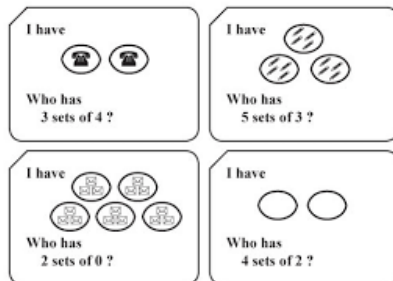
- ▶ In Year 1 children are expected to count in multiples of 2s, 5s and 10s.
- ▶ In year 2 children count in steps of 2, 3 and 5 from 0, and in 10s from any number forwards and backwards.
- ▶ Know that multiplication can be done in any order.

Teaching Multiplication In Year 1

- Using concrete objects (counting groups)

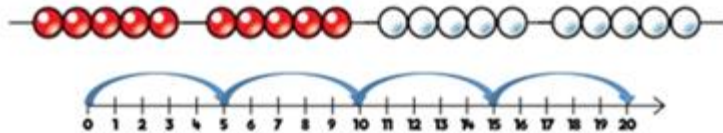


- Pictorial representations.



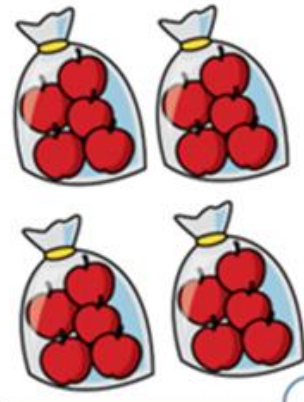
Multiplication Year 1

Children represent multiplication as repeated addition in many different ways.

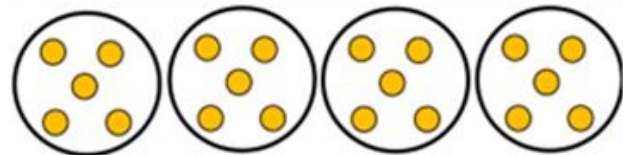


$$5 + 5 + 5 + 5 = 20$$

Children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.



One bag holds 5 apples.
How many apples do 4 bags hold?



Multiplication Year 2

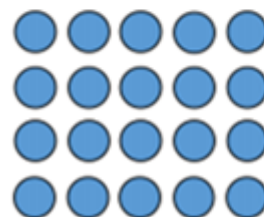
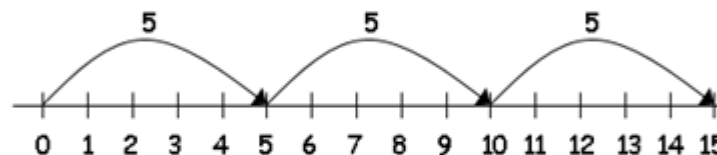
Children will develop their understanding of multiplication and be introduced to the Multiplication symbol.

Repeated addition

3 times 5 is $5 + 5 + 5 = 15$
or 3 lots of 5 or 5×3

Repeated addition can be shown easily on a number line:

$$5 \times 3 = 5 + 5 + 5$$



$$5 + 5 + 5 + 5 = 20$$

$$4 \times 5 = 20$$

$$5 \times 4 = 20$$

Multiplication Year 2

Commutativity

Children should know that 3×5 has the same answer as 5×3 .

Children will learn multiplication tables and table facts for $2\times$, $10\times$, $5\times$ tables.

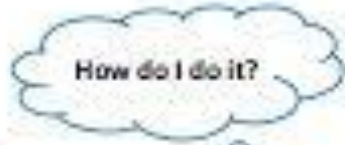
Division

- ▶ A focus on understanding Multiplication and Division together.
- ▶ Connecting this to an understanding of Fractions.
- ▶ As with multiplication, the children in Year 1 are expected to solve one step problems using concrete, pictorial representations and arrays.
- ▶ Recognise, find and name a half as one of two equal parts and recognise, find and name a quarter as one of four equal parts.

Teaching Division In Year 1

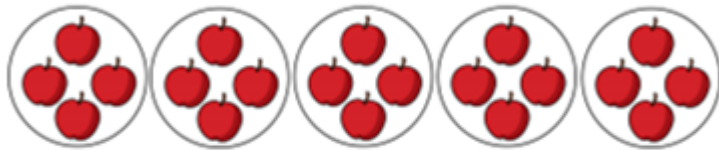
- Using concrete objects:

There are 6 toy cars.
Put the toy cars into 3 groups.



Division

Children solve problems by sharing amounts into equal groups.



Children use concrete and pictorial representations to solve problems. They are not expected to record division formally.

There are 20 apples altogether.
They are shared equally between 5 bags.
How many apples are in each bag?



Division Year 2

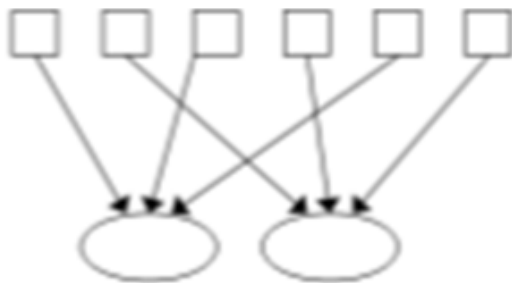
- ▶ In Year 2 they must be able to recall and use multiplication and division facts for the 2, 5 and 10x tables.
- ▶ Solve problems involving multiplication and division.
- ▶ Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$

Division Year 2

Children will develop their understanding of division and be introduced to the division symbol.

Sharing equally

6 sweets shared between 2 people, how many do they each get?



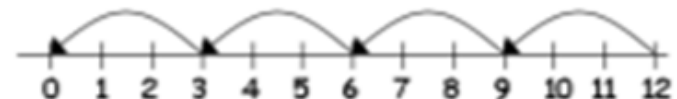
Grouping or repeated subtraction

There are 6 sweets, how many people can have 2 sweets each?



Repeated subtraction using a number line

$$12 \div 3 = 4$$



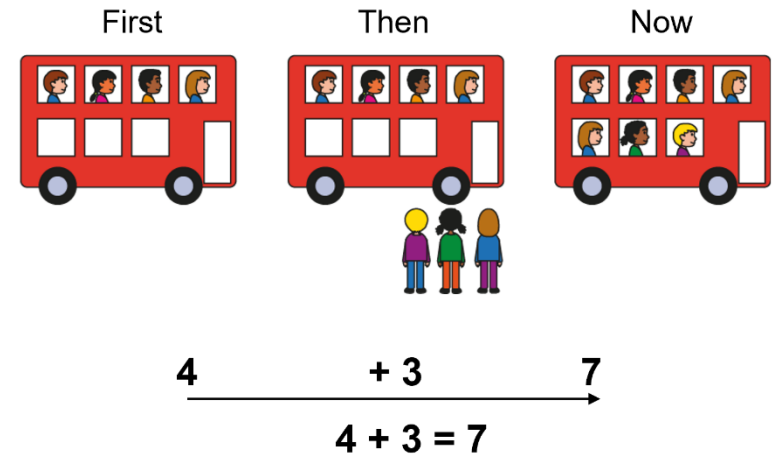
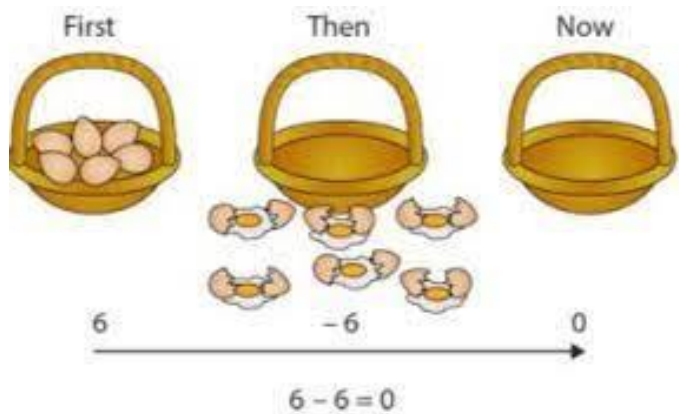
Speaking and Listening

ORACY

- ▶ Children need to talk about mathematics to clarify their own thinking.
- ▶ ‘purposeful’ talk is encouraged.
- ▶ Enables useful assessment opportunities.
- ▶ Verbal explanations can lead to self correcting.
- ▶ Speaking in complete sentences in Maths.

Speaking in sentences

Developing oracy



Objective/small step: Representing numbers

STEM sentence: There are.....tens and.....ones. The number is.....

Objective/small step: Addition stories

STEM sentence: First there were.....
then.....came along. Now there are.....

Assessment

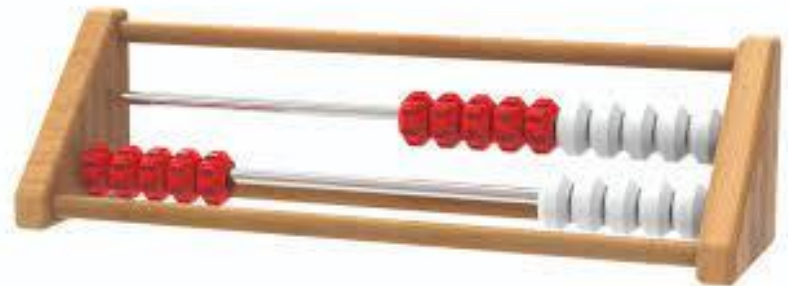
We assess children throughout their learning.

- ▶ On-going formative assessment.
- ▶ Regular tests to support our teacher assessment.
- ▶ National tests. Often informally known as 'SATs', we use these National Curriculum Tests to support our end of Year 2 assessment.

Mastering Number Programme



- Firm foundations in the development of good Number sense.
- Fluency in calculation.
- Flexibility with Number.
- Daily practice.



Maths at home

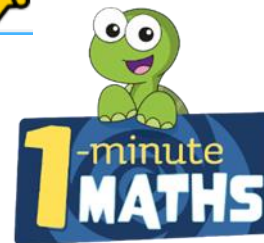
Supporting your children.

- ▶ parents as teachers. *Keep it practical.*
- ▶ Maths anxiety. *If you find maths challenging try not to show that to your child. Never say “Oh! I was terrible at maths.”*
- ▶ Practical activities....not workbooks.....cooking, capacity, estimating. *Involve your child in your mathematical activities.*
- ▶ Maths at the supermarket. *Challenge your child. E.g. “How many bananas on that bunch? How many would two bunches be?”*
- ▶ Maths in the car / at the park. *“What shapes can you see.” Can you count the vans?*

Maths at home

Technology for practise.

- ▶ Top Marks
- ▶ Busy Things
- ▶ White Rose 1-minute maths
- ▶ Marlon's Maths



Sensible Squirrel

"I am Resourceful"

- I try to find things out for myself.
- I am confident to ask great questions.
- I know what to do when I am stuck.



Team Ant

"We work together"

- We are good team players.
- We like to work together.
- We listen to each other.
- We like to say 'well done' to others when they have good ideas.



Tough Tortoise

"I am Resilient"

- I like to be challenged.
- I don't give up when learning is hard.
- I concentrate really well and I notice everything.



Wise Owl



"I am Reflective"

- I am a deep thinker.
- I learn from my mistakes.
- I use my reflection skills to go over what I have learnt and improve my work.