Maths Workshop Year 2

Mrs Morris

Agenda

Curriculum
Vocabulary
Planning
How to help at home
Lesson & activity

Introduction

We are here today to help with your understanding of how we teach maths in school, so that you can help support your children at home to become confident and happy mathematicians.

The thinking behind how we teach maths has changed over the years and it has become more about seeing the maths rather than just following rules to complete calculations. Which helps when mistakes are made.

Year 2

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Year 2 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- recognise the place value of each digit in a two-digit number (tens, ones)
- identify, represent and estimate numbers using different representations, including the number line
- compare and order numbers from 0 up to 100; use <, > and = signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problems.

Number – addition and subtraction

Statutory requirements

Pupils should be taught to:

- solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those 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 and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, 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 (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Number – multiplication and division

Statutory requirements

Pupils should be taught to:

- 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 using the multiplication (×), division (÷) and equals (=) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Number – fractions

Statutory requirements

Pupils should be taught to:

- recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Measurement

Statutory requirements

Pupils should be taught to:

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using >, < and =
- 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 of the same unit, including giving change
- compare and sequence intervals of time
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day.

Geometry – properties of shapes

Statutory requirements

Pupils should be taught to:

- identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]
- compare and sort common 2-D and 3-D shapes and everyday objects.

Geometry – position and direction

Statutory requirements

Pupils should be taught to:

- order and arrange combinations of mathematical objects in patterns and sequences
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

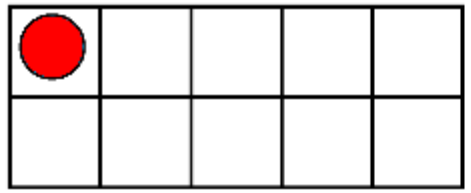
Vocabulary

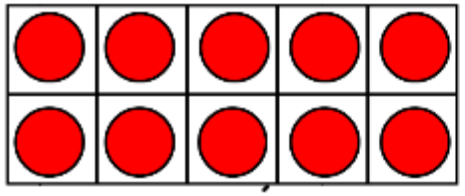
Place Value

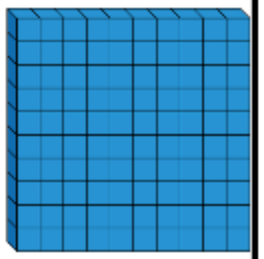
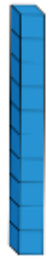
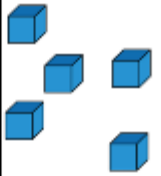
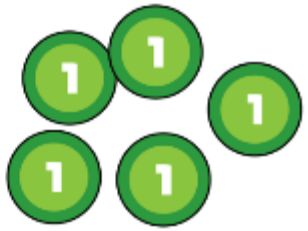
Reception	Year 1	Year 2
count	sort	count in steps
subitise	represent	count in multiples
order/ordinal	multiples	place value
compare	partitioning	estimate
forwards	ones	compare
backwards	tens	
numerals		
digit		
one more		
one less		
equal to		
more than		
less than (fewer)		

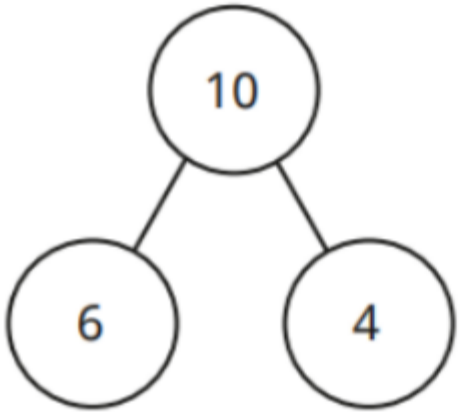
Addition and Subtraction

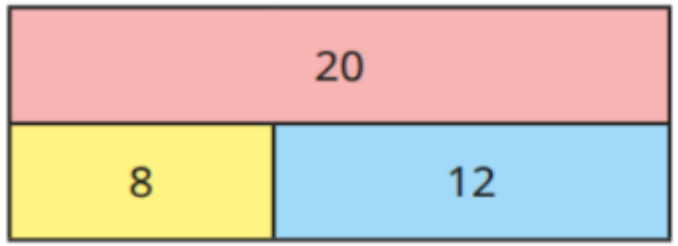
Reception	Year 1	Year 2
add	addition/add	sum
plus	subtraction	3-digit number
altogether	difference	commutative
total	equals	
take away /minus	facts	
number bonds	problems	
part	missing number problems	
whole	2-digit number	
digit	inverse	





Hundreds	Tens	Ones
  1	  1	  5





Vocabulary

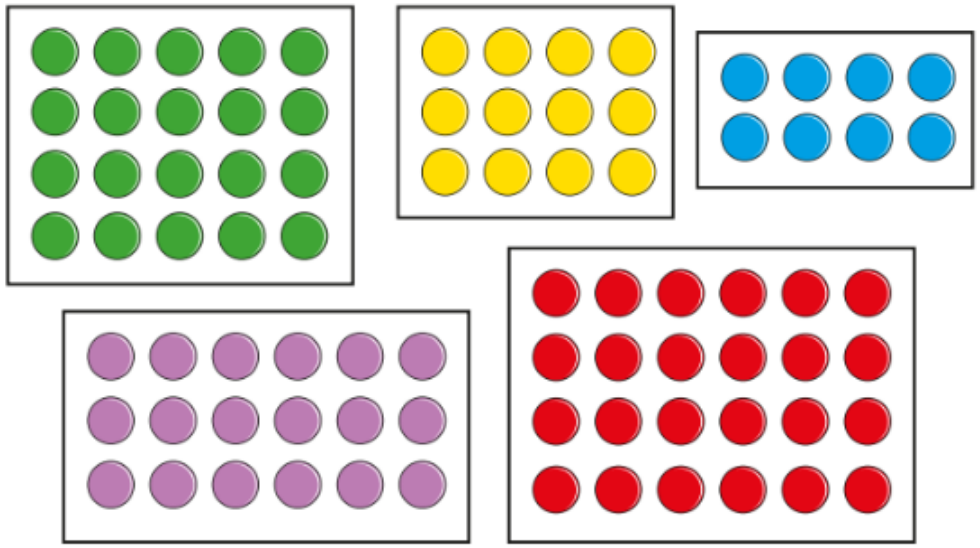
Multiplication and Division

Reception	Year 1	Year 2
double	multiplication	multiplication tables
half	division	commutative
twice as many	arrays	repeated addition
equal		
unequal		
share		
group		
odd		
even		

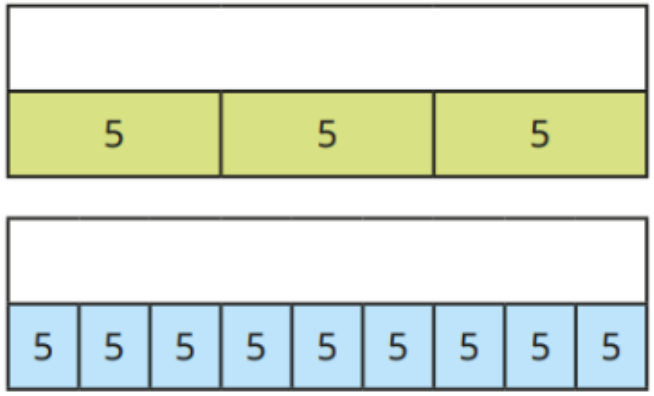
Fractions

	Year 1	Year 2
	whole	three quarters
	half	third
	quarter	equivalent fractions
	equal parts	unit fractions
		non unit fractions
		numerator
		denominator
		one whole

Write two addition sentences and two multiplication sentences for each array.



Use the bar models to complete the multiplications.

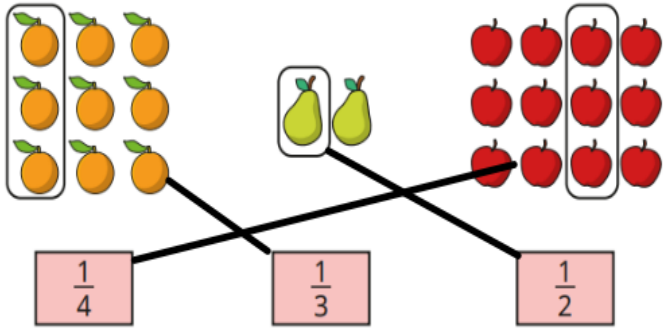


_____ × 5 = _____

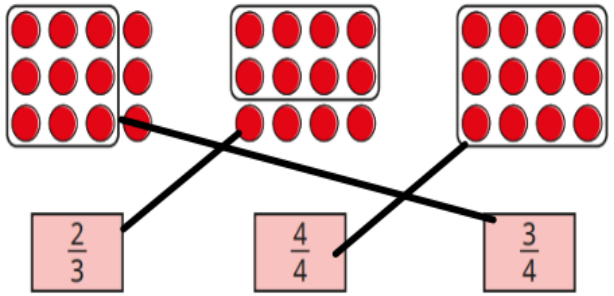
5 × _____ = _____

$\frac{1}{2}$ numerator / denominator

Match the pictures to the unit fractions.



Match the pictures to the non-unit fractions.



Vocabulary

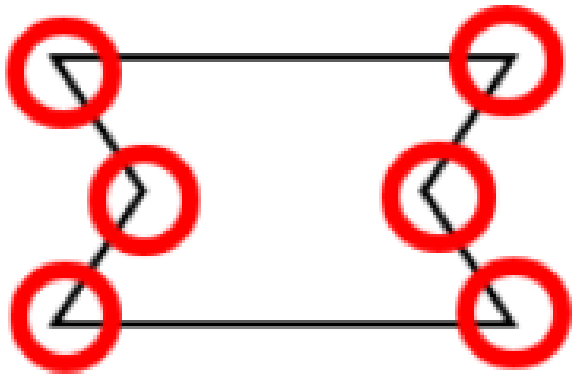
Geometry – properties of shape

Reception	Year 1	Year 2
2-d shapes	sides	pentagon
rectangle	corners	hexagon
square	properties	line of symmetry
circle	pyramids	properties
triangle	faces	cylinder
characteristics		edges
3-d shapes		vertices
cuboids		vertex
cubes		
cone		
spheres		
curved		
straight		
flat		

position and direction

Reception	Year 1	Year 2
over	position	clockwise/anti-clockwise
under	direction	straight line
between	movement	rotation
around	whole turn	arrange
through	quarter turn	sequences
on	half turn	
into	three-quarter turn	
next to		
behind		
beneath		
order		
repeat		
patterns		
on top of		

Count how many vertices each shape has.



Number of vertices

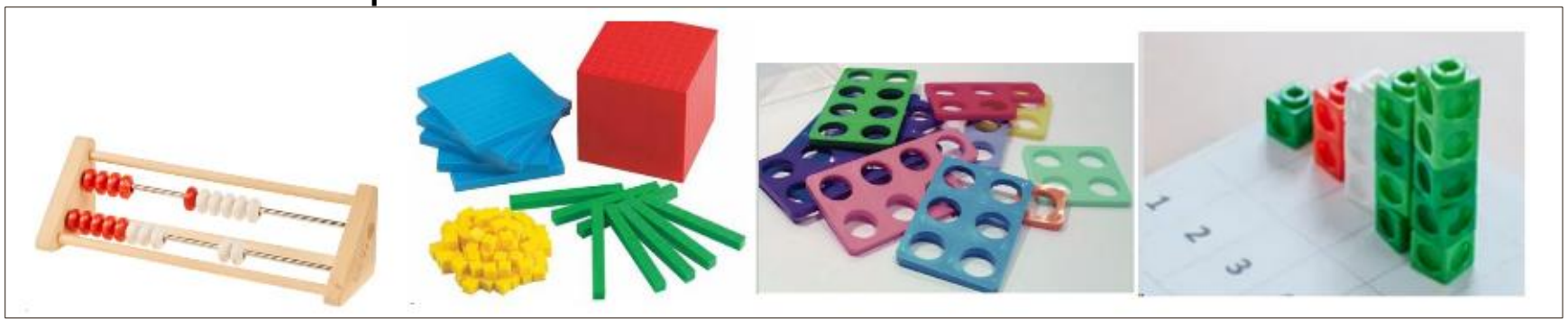
6 vertices

Planning and lesson design

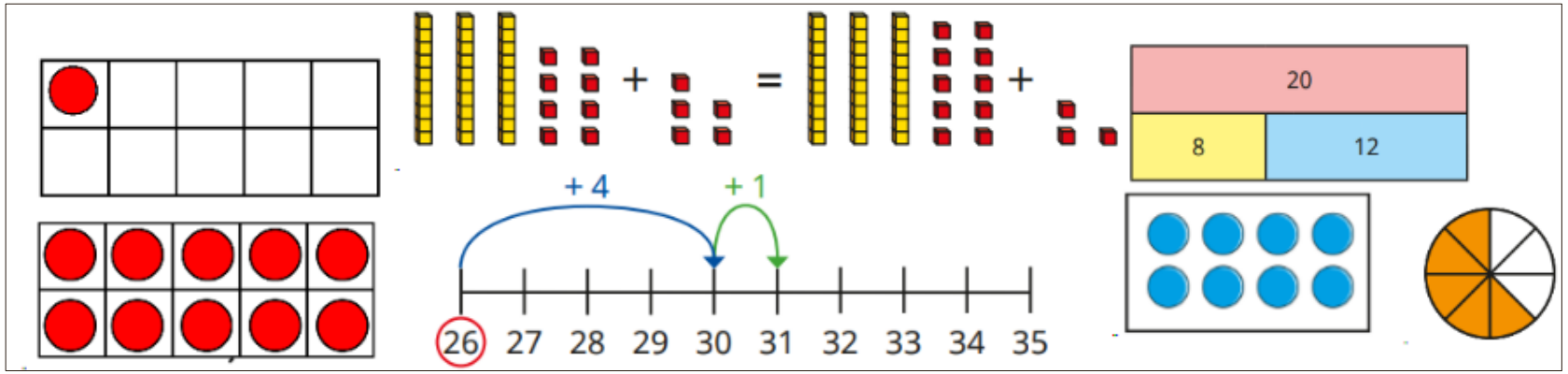
- White Rose – follows small steps from the NC.
- Ping-Pong approach
- Lots of visual and hands on opportunities to develop understanding.
- Lots of opportunities for the children to practice new skills and to make connections and notice patterns.

Concrete, Pictorial, Abstract – CPA approach.

- Concrete – manipulatives.



- Pictorial.



- Abstract.

18 + 6	67 + 5	75 + 6	33 + 9

$\frac{1}{4}$ of 32 = _____

How to help at home.

- Practise recall of number bonds and multiplication facts.
- Chant/count a new times table e.g 2,4,6 etc…
- Bring maths into everyday life i.e discuss the time together, look at the times on TV guides, pay for things with cash and work out the change, sort your socks into pairs and count them, look at train/bus timetables. Play **board games.**
- Topmarks https://www.topmarks.co.uk/Search.aspx?Subject=16
- White Rose app 1-minute maths app | White Rose Education


The way to get started is to quit talking and begin doing.
Walt Disney

- Quick lesson and activity based on what they are currently doing.

Thank you for coming.

Any questions?