

Maths Curriculum Morning

Tuesday 1st May 2018

Overview

- ▶ Organisation of maths at Rakegate Primary School
- ▶ Concrete, Pictorial and Abstract (CPA)
- ▶ Numicon
- ▶ White Rose Maths - Fluency, Problem Solving and Reasoning
- ▶ Times Tables Rocks Stars
- ▶ Useful websites

Organisation of Maths

In order to raise standards in the teaching of mathematics, the decision was taken to follow the White Rose Maths (WRM) framework of learning for Year 2 to Year 6 along with Numicon for EYFS and Year 1.

These two schemes of work cover the National Curriculum requirements to teach:

Fluency - the fundamentals of mathematics through varied and frequent practice which will increase in its complexity over time.

Reasoning - following a line of enquiry, developing an argument and justifying answers using proof and mathematical language.

Problem Solving - application of mathematics to a variety of routine and non-routine problems which increase in difficulty.

When all of these elements are achieved, children are seen as mastering the maths curriculum.

Organisation of Maths

EYFS

Maths is taught discretely three times per week through a variety of concrete, pictorial and real-life mathematical activities in both nursery and reception. These early experiences of maths help to set a firm foundation for their understanding of maths throughout school.

Eventhough discrete teaching is three times per week, maths activities are always available for children to 'choose' during their 'child initiated' time.

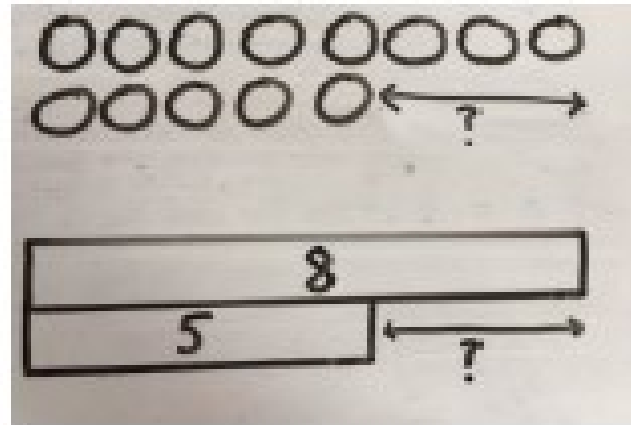
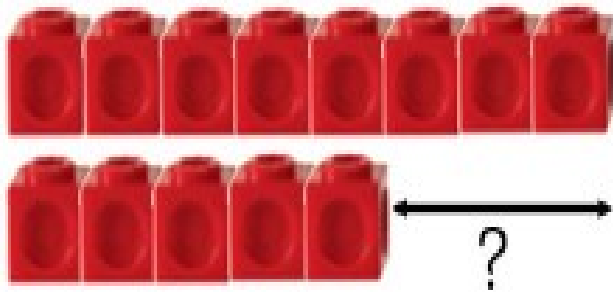
Organisation of Maths

KS1 and KS2

In order to provide adequate time for developing and applying mathematical skills, each class teacher - in KS1 and KS2 - delivers maths lessons daily, which last for about 60 minutes. In addition to this, in KS2, there is a dedicated 40 minute lesson where the teacher will focus on arithmetic skills specific to the needs of their class or group.

Concrete, Pictorial and Abstract (CPA)

Calculate the difference between 8 and 5.



8 - 5, the difference is

Children to explore why
 $9 - 6 = 8 - 5 = 7 - 4$ have the same
difference.

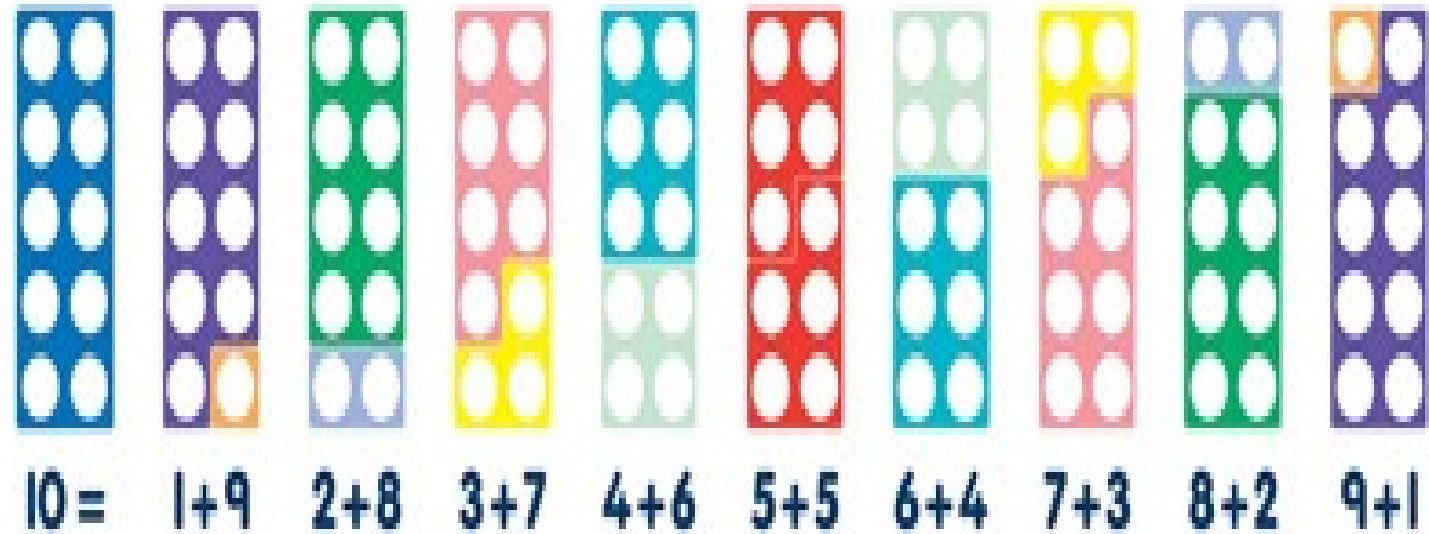
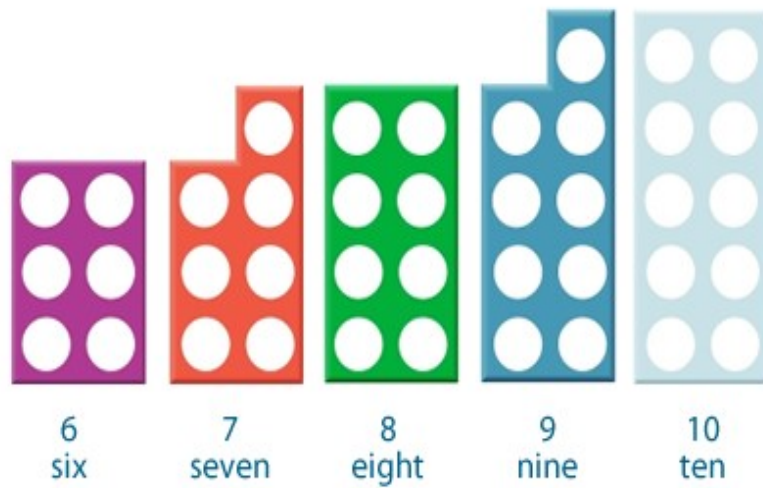
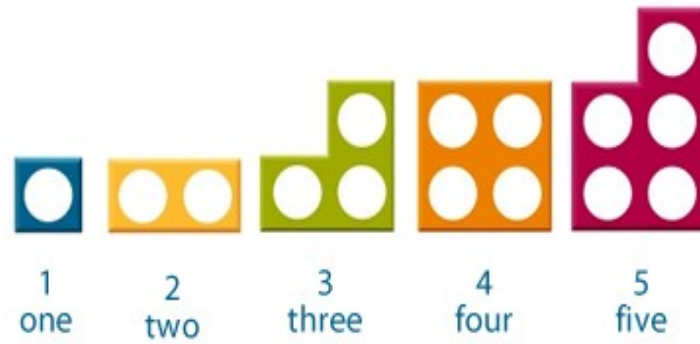
Numicon

Numicon is a concrete and visual mathematics teaching programme using Numicon images and shapes in a series of practical teaching activities currently comprising three stages - Foundation, Stage 1 and Stage 2. Numicon is introduced in EYFS and will continue into year 1 and early year 2 teaching.

When Numicon patterns are arranged in order, pupils begin to notice important connections between numbers. It can be used to clearly illustrate number bonds, addition and subtraction, place value, doubling and halving, estimation, division and multiplication.

(NCETM website, 2016)

Numicon



White Rose Maths

The White Rose works with hundreds of schools to raise standards in the teaching and mastery of mathematics around the country. The framework has been developed in collaboration with experienced teachers who are experienced classroom practitioners.

The framework and supporting materials are updated regularly via the WRM page on the TES website which ensures resources are constantly up-to-date and regularly available for all year groups.

Each year group is provided with:

- ▶ A long term plan with suggested timings for each block of learning.
- ▶ Small steps progressions - which shows how to break the block of learning down into smaller steps.
- ▶ Small steps guidance and examples - for each 'small step' additional guidance is provided to help teachers by providing examples of fluency, reasoning, problem solving, key questions, discussion points and teaching points.

White Rose Maths

Unlike other traditional schemes of work for maths, the WRM framework 'blocks' mathematical topics together for a set amount of time. It is believed that securing learning this way ensures that children will be secure with each mathematical concept before moving onto the next block of learning. This allows teachers to quickly identify gaps in learning and allocate intervention in a timely manner for children who were insecure in a particular area of mathematics. It also allows flexibility to use a range of other materials and resources in order to improve the mastery of mathematics in each year group.

White Rose Maths

	Year 1	Year 2
Autumn Term	<ul style="list-style-type: none"> • Number – Place value (within 10) • Number – Addition and subtraction (within 10) • Geometry – Shape • Number – Place value (within 20) 	<ul style="list-style-type: none"> • Number – Place Value • Number Addition and subtraction • Measurement – Money • Number – Multiplication and division
Spring Term	<ul style="list-style-type: none"> • Number – Addition and subtraction (within 20) • Number – Place value (within 50 and multiples of 2, 5 and 10 to be introduced) • Measurement – Length and height • Measurement – Weight and volume 	<p>*Subject to change due to SATs preparation*</p> <ul style="list-style-type: none"> • Number – Multiplication and division • Statistics • Geometry – Properties of shape • Number – Fractions • Measurement – length and height
Summer Term	<ul style="list-style-type: none"> • Number – Multiplication and division (Reinforce multiples of 2, 5, 10) • Number – Fractions • Geometry – Position and direction • Number – Place value (within 100) • Measurement – Money • Measurement - Time 	<p>*Subject to change due to SATs preparation*</p> <ul style="list-style-type: none"> • Geometry – Position and direction • Problem solving and efficient methods • Measurement – Time • Measurement – Mass, capacity and temperature <p>SATs</p> <ul style="list-style-type: none"> • Investigations

	Year 3	Year 4	Year 5	Year 6
Autumn Term	<ul style="list-style-type: none"> Number – Place value Number – Addition and subtraction Number – Multiplication and division 	<ul style="list-style-type: none"> Number – Place value Number – Addition and subtraction Measurement – length and perimeter Number – Multiplication and division 	<ul style="list-style-type: none"> Number – Place value Number – Addition and subtraction Statistics Number – Multiplication and division Measurement – Perimeter and area 	<ul style="list-style-type: none"> Number – Place value Number – Addition, subtraction, multiplication and division Fractions Geometry – position and movement
Spring Term	<ul style="list-style-type: none"> Number – Multiplication and division Measurement – money Statistics Measurement – length and perimeter Number – Fractions 	<ul style="list-style-type: none"> Number – Multiplication and division Measurement – Area Number – Fractions Number – Decimals 	<ul style="list-style-type: none"> Number – Multiplication and division Number – Fractions Number – Decimals and percentages 	<p>*Subject to change due to SATs preparation*</p> <ul style="list-style-type: none"> Number – Decimals Number – Percentages Number – Algebra Measurement – Converting units Measurement – Perimeter, area and volume Number – Ratio
Summer Term	<ul style="list-style-type: none"> Number – Fractions Measurement – time Geometry – properties of shapes Measurement – Mass and capacity 	<ul style="list-style-type: none"> Number – Decimals Measurement – money Measurement – time Statistics Geometry – properties of shapes Geometry – position and direction 	<ul style="list-style-type: none"> Number – Decimals Geometry – properties and shapes Geometry – position and direction Measurement – converting units Measurement – volume 	<p>*Subject to change due to SATs preparation*</p> <ul style="list-style-type: none"> Geometry – properties of shapes Problem solving Statistics SATs Investigations

Times Table Rock Stars

Times Tables Rock Stars is a sequenced programme of daily times tables practice which helps to aid the rapid recall of multiplication and division facts for KS1 to KS3 children.

Each week concentrates on a different times table, with a recommended consolidation week for rehearsing the tables that have recently been practiced every third week or so.

With the aid of rock music and time limits, TTRS is a programme which engages children and make the learning of times tables fun.

Progress can be tracked weekly and the aim is to, not only improve times tables knowledge, but also the speed at which facts are recalled.

[Times Tables Rock Stars](#)



Useful Websites

- ▶ [ICT Games](#)
- ▶ [Top Marks](#)
- ▶ [BBC Bitesize KS1](#)
- ▶ [BBC Bitesize KS2](#)
- ▶ [Primary Homework Help](#)
- ▶ [Sheppard Software](#)
- ▶ [Times Tables Rocks Stars](#)

Any questions?