



Mastering number programme

At Bischopton we strive to instil a love of learning in maths whilst recognising the importance of the fundamental skills all children need. We are now part of the 'Origin Maths Hub' which provides great opportunities to develop the mastery of number. From September 2022, we will be delivering the NCTEM 'Mastering number' programme to our Reception, Key stage 1 and Year 3 pupils.

Our aims are to:

- Develop fluency in number facts such that facts are recalled with automaticity.
- Develop number sense – a flexibility with number that uses mathematical structures and relationships.

There are five themes in the 'Mastering number programme'



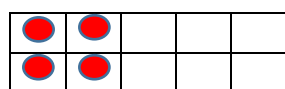
Subitising is when you are able to look at a group of objects and realise how many there are without counting.

Cardinality is 'how many there are' 'The how many ness.'

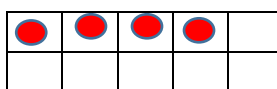
Ordinality – is where a number fits in the number system and uses the words: before, after and in-between (staircase pattern, number tracks and number lines). This is a key objective in the '*Ready to progress*' criteria.

Composition is 'seeing numbers in numbers.' This is where subitising, partitioning and decomposition (place value) fits in.

Alongside this, pupils are taught to develop their spatial reasoning and awareness, through the use of dot patterns – either in the two pattern or the five pattern.



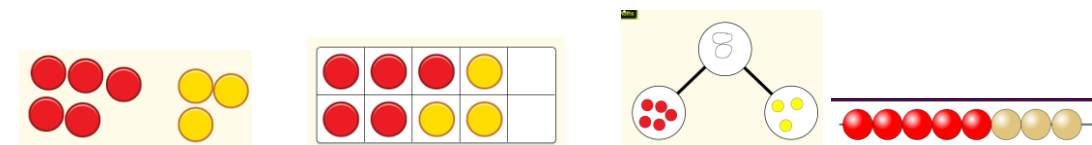
2 pattern



5 pattern

Learning throughout this programme is sequential, so learning is connected and built upon. Pupils receive four 20 minute sessions a week, which will develop their deep understanding of number. Within this programme we will be using **STEM SENTENCES** which provide the children a scaffold when talking about and investigating number.

e.g. 5 and 3 make 8. 8 is made of 5 and 3.

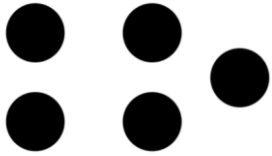


$$5 + 3 = 8$$

By using stem sentences, concrete and pictorial representation, children are develop the flexible way of combining numbers and recognising the numbers can be displayed in different ways

The importance of composition

Seeing numbers within numbers. Every number can be viewed as a composition of other numbers – ‘*The numbers inside.*’

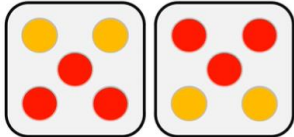


Use of double sided counters will help in getting children to say what they see: (subitising + composition)

2 and 2 and 1

4 and 1

2 and 3



Leading to using addition and subtraction principals and how patterns can be rotated to show the same.

Conservation of number (*the name given to understanding that the number of objects in a set does not change if they are moved around*) will be taught throughout these modules and it is important that children recognise this and we, as teachers, continually refer to it.

E.g. We’ve still got 6 counters ...

Use the stem sentence: 6 is the whole, 5 is a part and 1 is a part.

In summary, the Mastering Maths programme aims to teach children to focus on the relationship of numbers and how they connect together. This ability to visualise and manipulate numbers will enable them to...

- Have fluency in number facts such that facts are recalled with automaticity.
- Have number sense – understand flexibility with number that uses mathematical structures and relationships.

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