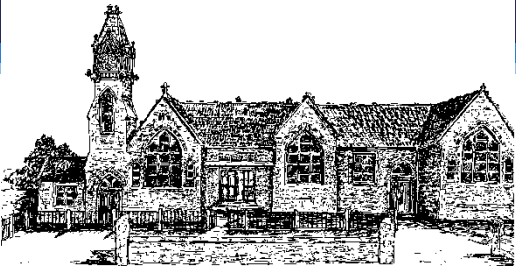# Box CE Primary School
# Mental Maths
# Curriculum Evening 2018

# Aims of the Evening

- Key aims of the maths curriculum.

- Progression in mental maths.

- How mental maths is taught.

- Parents: How you can help.

# Aims of the Maths Curriculum

- **Fluent recall** of mental maths facts e.g. times tables, number bonds etc.
- To **reason** mathematically – children need to be able to explain the mathematical concepts with number sense; they must explain how they got the answer and why they are correct.
- Problem solving – **applying** their skills to real-life contexts.
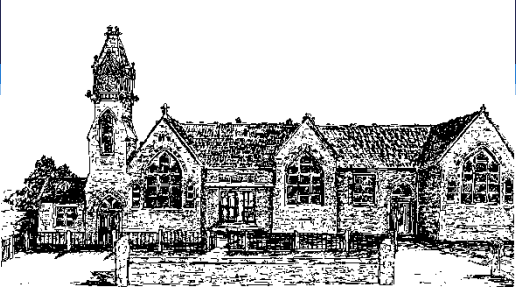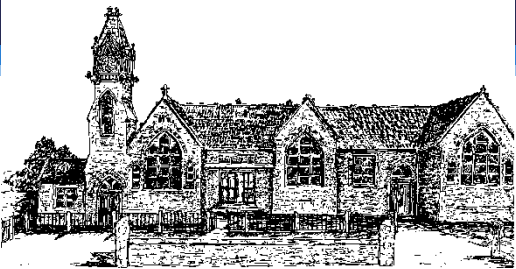
# Progression in mental maths

- The following slides show the progression of mental maths skills in the curriculum. It is important to note that the year group stated is the year group the skill is first introduced. It will be practised in subsequent year groups. Practice is key to solid mental maths skills. What is not practised will likely be forgotten.
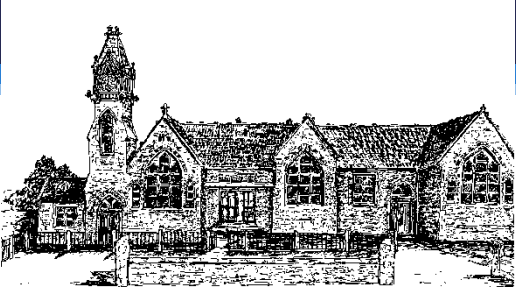
# Progression in mental maths

- Counting

| Year Group | National Curriculum |
|---|---|
| EYFS | • Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. |
| Year 1 | • Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>• Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens |
| Year 2 | • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward |
| Year 3 | • Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number |
| Year 4 | • Count in multiples of 6, 7, 9, 25 and 1000<br>• Count backwards through zero to include negative numbers |
| Year 5 | • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 |

# Progression in mental maths
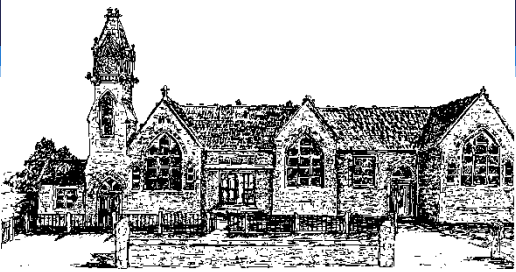
- ## Addition and Subtraction

| Year Group | National Curriculum |
|---|---|
| Year 1 | • Represent and use number bonds and related subtraction facts within 20 |
| Year 2 | • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br>• Add and subtract numbers including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers |
| Year 3 | • Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds |
| Year 4 | • Pupils continue to practise mental methods |
| Year 5 | • Add and subtract numbers mentally with increasingly large numbers |
| Year 6 | • Perform mental calculations, including with mixed operations and large numbers |

# Progression in mental maths
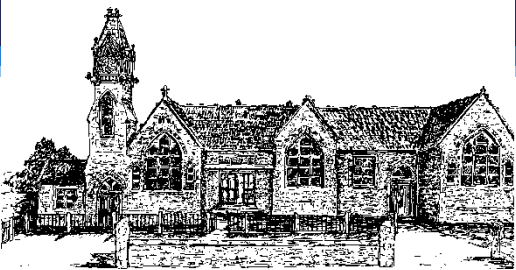
- ## Multiplication and Division

| Year Group | National Curriculum |
|---|---|
| Year 2 | • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers |
| Year 3 | • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables |
| Year 4 | • Recall multiplication and division facts for multiplication tables up to $12 \times 12$<br>• Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers |

# Progression in mental maths
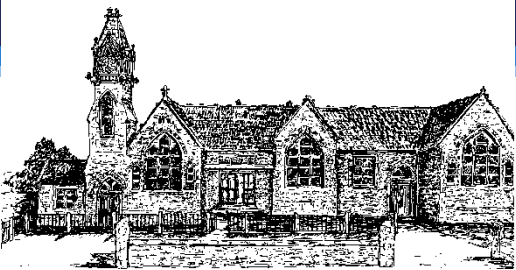
- Multiplication and Division

| Year Group | National Curriculum |
|---|---|
| Year 5 | • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers<br>• Establish whether a number up to 100 is prime and recall prime numbers up to 19<br>• Multiply and divide numbers mentally drawing upon known facts<br>• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 |
| Year 6 | • Perform mental calculations, including with mixed operations and large numbers<br>• Identify common factors, common multiples and prime numbers |

# Progression in mental maths

- **Fractions**

| Year Group | National Curriculum |
|---|---|
| Year 2 | • Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 |
| Year 3 | • Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10<br>• Add and subtract fractions with the same denominator within one whole for example $\frac{3}{7} + \frac{2}{7}$ |
| Year 4 | • Count up and down in hundredths<br>• Add and subtract fractions with the same denominator for example $\frac{3}{7} + \frac{5}{7}$<br>• Find the effect of dividing a one- or two-digit number by 10 and 100 |

# Progression in mental maths

- Fractions

| Year Group | National Curriculum |
|---|---|
| Year 5 | • Recognise mixed numbers and improper fractions and convert from one form to the other. For example, $1\frac{2}{5} = \frac{7}{5}$ <br> • Add and subtract fractions with the same denominator and denominators that are multiples of the same number. For example, $\frac{2}{5} + \frac{7}{10}$ |
| Year 6 | • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions <br> • Multiply simple pairs of proper fractions, writing the answer in its simplest form. For example, $\frac{2}{5} \times \frac{3}{4}$ <br> • Divide proper fractions by whole numbers. For example, $\frac{4}{7} \div 2$ <br> • Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places <br> • Multiply one-digit numbers with up to two decimal places by whole numbers |

# How mental maths is taught

- Click on the counting stick to see how we use counting sticks to introduce and practise counting in different numbers. This then leads to times table knowledge.
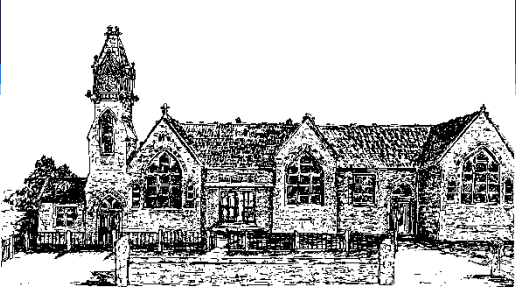
# How mental maths is taught- EYFS
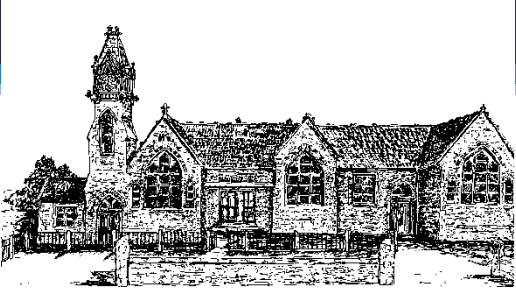
- Number
- Shape, Space and Measure
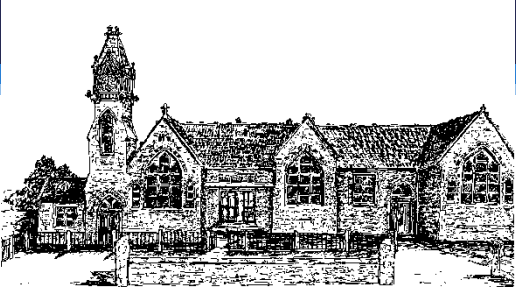
# How mental maths is taught- EYFS

**Understanding number**
- Formation
- Order
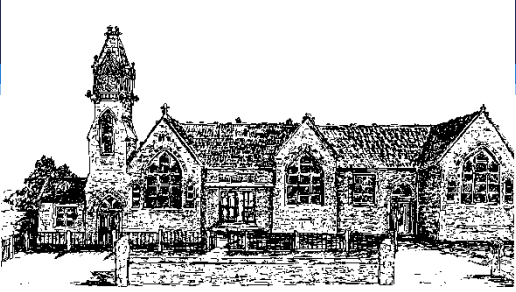- Value

# How mental maths is taught- EYFS

## Playing with number

Games

Role play

COUNTING SONGS

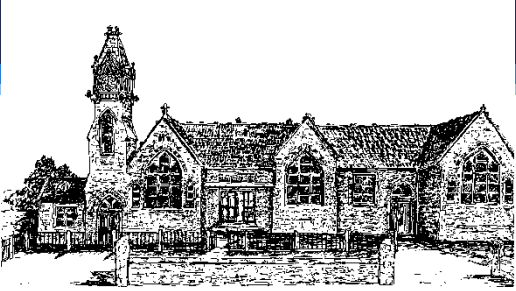# How mental maths is taught- EYFS

Input:
Time at the beginning of the lesson when we work as a class.

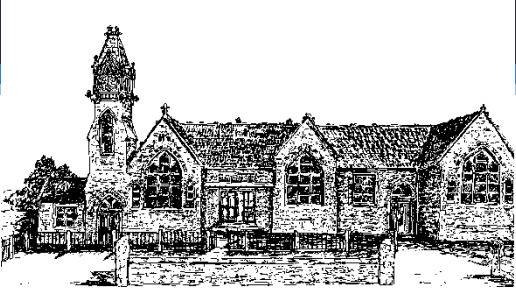- https://www.topmarks.co.uk/learning-to-count/teddy-numbers
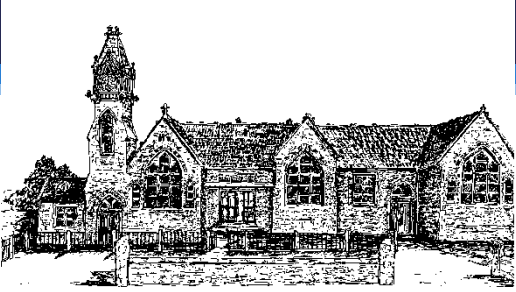- https://www.youtube.com/watch?v=2E3p_51tJx0

# How mental maths is taught- EYFS
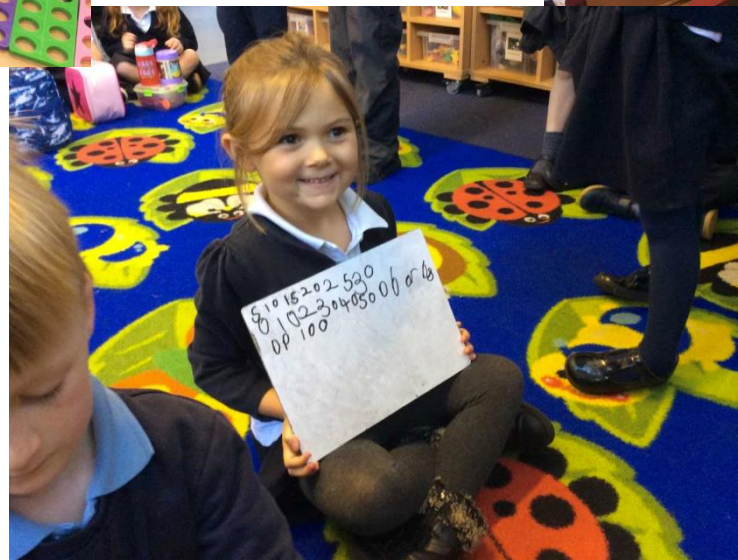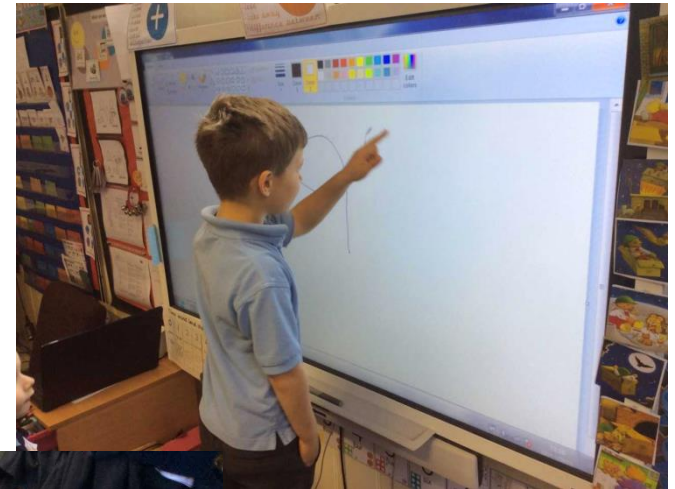
# How mental maths is taught- EYFS

# How parents can help

- **Try to fit maths opportunities into your everyday activities.**

  - Count with your child (on car journeys, whilst you're waiting for a sibling to get ready)
  - Develop a secure understanding of number bonds, times tables and the inverse relationships between them (practice, practice, practice)
  - Play number games- see links on class pages or board games
  - Use Abacus and Time Tables Rock Stars

    - Talking about the mathematics in real life e.g. How many points does your favourite football team need to catch the next team in the division?

    - Give children opportunities to use money to shop, check change etc.

# Thank you

Thank you for your support in attending this maths evening.

Any questions?