Sacred Heart Catholic Primary School

Mental Maths Policy

2017- 18

PROUD of our children: PROUD of our school: PROUD of our faith

Date Policy agreed	Consultation November 2017
Governors Committee Responsible	Teaching, Learning and Curriculum
Governor Lead	
Status and Review Cycle	
Next review date	
Headteacher signature	
Chair of Governors signature	

Document Purpose:

The purpose of this document is to outline the teaching, organisation and management of the mental mathematics taught and learnt at Sacred Heart Catholic Primary School. The policy has been drawn up as a result of staff discussion and has the full agreement of the Governing body/IEB. The implementation of this policy is the responsibility of all teaching staff.

Mission Statement:

Our Mission Statement sets out what our school stands for: beliefs, ethos, values and purpose.

At Sacred Heart we are:

PROUD of our children; PROUD of our school; PROUD of our faith.

We aim:

To live as a Christian family inspired by the values of Jesus.

To celebrate and develop every child's full potential through a rich and enjoyable learning environment.

To promote and encourage an effective partnership between home, school, parish and community.

The staff of Sacred Heart Catholic Primary School will work to give each child the tools necessary for them to make **progress**, show **resilience**, approach subjects with an **open heart,** celebrate **uniqueness** (irrespective of ability) and provide opportunities to **demonstrate their faith**. From this each child will have a strong sense of self-worth and self-esteem. We are **PROUD** that all teaching and learning is underpinned by the school mission statement.

This Mental Maths Policy sets out how we achieve our Mission Statement and School Aims.

Rationale:

Mental Maths is 'A short burst of rehearsal that engages and challenges every learner whilst at the same time provides clear teaching points without hindering pace.'

We believe that Mental Maths should:

- Mean more than just mental calculation.
- Be taught three times a week, giving children a range of practical opportunities to develop key skills.
- Include reasoning and communicating.
- Include a regular (every 3 weeks) Mental Maths test.

Aims:

The overall aim is that when children leave our schools they:

- Have a secure knowledge of number facts.
- Are able to solve problems mentally, selecting an efficient strategy from a range of known approaches.
- Make use of diagrams and informal notes to help record steps when using mental methods that generate more information than can be kept in their heads.
- Can quickly identify when a mental strategy is not appropriate and in these cases have an efficient, reliable written method which they can turn to a calculation strategy.

Provision:

Preparation for Mental Maths

- Teachers use a grid analysis sheet to plot the information from the weekly tests.
- The grid is a working document, something that is used to inform planning and therefore has effect on children's progress.
- Common problems are filtered into Maths lessons – starters, spare time in the day.
- The analysis sheet is used to inform weekly Mental Maths planning which is in the form of a Power Point/Smart Notebook presentation.

Teaching Mental Maths

- Number fun starter – warms children's minds up, motivates them and is fun!
- Count on and back, starting from a variety of numbers differentiated for the cohort.
- Practice one of the four

- Rehearsal of something that's been taught the previous week through the Maths starter session – using white boards practice, practice, practice – rapid recall. (this could include number fun to remind children how to tackle an area

Teaching Rapid Recall

It is unreasonable to expect our children to learn number bonds, addition facts and multiplication tables by simply saying them over and over again. Our aim is for children to be able to recall all these facts instantaneously (responding as quickly as if they were asked "What is your name?") This requires explicit teaching using a wide range of strategies. All teachers select key facts to rehearse each half-term through Mental Maths. Children are tested weekly on their times table knowledge by class teachers and TAs, progressing through Bronze, Silver and Gold awards (wristbands) as their recall improves.

Year 1 Rapid Recall

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- Given a number, identify one more and one less
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero

Year 2 Rapid Recall

- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- Solve problems involving multiplication and division, using mental methods, and multiplication and division facts, including problems in contexts.
- Add and subtract numbers using mentally, including:
  a two-digit number and ones
  a two-digit number and tens
  two two-digit numbers
  adding three one-digit numbers

Year 3 Rapid Recall

- Add and subtract numbers mentally, including:
  a three-digit number and ones
  a three-digit number and tens
  a three-digit number and hundreds

- Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
- 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

Year 4 Rapid Recall

- Count in multiples of 6, 7, 9, 25 and 1000
- Find 1000 more or less than a given number
- Count backwards through zero to include negative numbers
- Order and compare numbers beyond 1000
- Round any number to the nearest 10, 100 or 1000
- Recall multiplication and division facts for multiplication tables up to 12 × 12 include 15 and 25 multiplication facts - link to fractions.
- 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
- Recognise and use factor pairs and commutatively in mental calculations
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- Convert between different units of measure [for example, kilometre to metre; hour to minute]
- Know that 1/2 = 0.5, 1/4 = 0.25 and 1/10 = 0.1

Year 5 Rapid Recall

- Know multiplication facts and corresponding division facts to 12x12 and use these to multiply pairs of multiples of 10, 100 include 15 and 25 multiplication facts - link to fractions.
- Know that 1/2 = 0.5, 1/4 = 0.25, 3/4 = 0.75, 1/10 = 0.1, 2/10 = 0.2 etc
- Know one-place decimal bonds to 1 and 10.
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Multiply and divide numbers mentally drawing upon known facts
- Read and write decimal numbers as fractions [for example, 0.71 = 71/100]

Year 6 Rapid Recall

- Use knowledge of place value and multiplication facts to 12x12 to derive related multiplication and division facts involving decimals (e.g. 0.08 x 7, 40 x 0.6) include 15 and 25 multiplication facts - link to fractions.
- Use knowledge of multiplication facts to derive quickly squares of numbers to 12x12 and the corresponding squares of multiples of 12
- Know that 1/2 = 0.5 = 50%, 1/4 = 0.25 = 25%, 3/4 = 0.75 = 75%, 1/10 = 0.1 = 10%, 2/10 = 0.2 = 20%, 1/5 = 0.2 = 20%, 2/5 = 0.4 = 40% 1/3 = 33% = 0.3 etc.
- Know one-place decimal bonds to 1 and 10.
- Count forwards or backwards in steps of powers of 10 for any given number up to
- 1 000 000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Perform mental calculations, including mixed operations, fractions and large numbers
- Identify common factors, common multiples and prime numbers
- 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