



## Maths Guidance

### A Guide for Parents

We have put together this information guide so that you will have a clearer understanding about how we approach the teaching of maths at our school and how you can help your child at home.

## Information for Parents

This information has been provided to give practical ideas and suggestions for helping your child with Maths at home and make Maths fun! We know that parents are keen to help with their child's education but may find they do not understand what their child is doing as it is different to the way they were taught or find they confuse their children with their methods. Please refer to our calculation policy on the school website which shows step by step the methods taught in school.

Some useful tips.

- When a child gets a question wrong, it is tempting to tell them they are wrong and how to correct it. Why not ask them to explain their method and help them spot their mistake.
- Similarly if a child gets a question right, get them to explain how they reached their answer, perhaps pretending not to understand their reasoning.
- 'Play' Maths with your child — games are full of maths and are an ideal way to engage mathematical thinking.
- Consider questioning when playing e.g. Can you be the banker and change £500?

Make Maths a casual part of what you do while you're doing something e.g. How many more plates do I need? Have we got enough for the bread and milk? Did you see the number 23 bus? I was wondering, is 23 a prime number?

Make Maths 'hands on'—remember the three C's of everyday maths: cash, clocks and cooking. All three perfect opportunities to practise maths.

### **Maths props to have in the house**

1. A prominent clock - try using both an analogue and digital clock. Can you compare the two?
2. A wall calendar - not only good for noticing days and months, but also for finding patterns e.g. 7 times table
3. Board games with dice or spinner - why not make your own board game?
4. Pack of playing cards - not only can you learn about counting but also chance and probability.
5. Calculator - you can discover so many patterns with calculators, not just basic computation.
6. Measuring jug - discover both imperial and metric ways of measuring.
7. Scales - traditional balances can show counting as well as measuring.
8. Dried beans, pasta - useful for counting, dividing and finding the difference.

## Mental Maths Skills

### Year R

- Counting in ones, to 10, to 20, beyond, forwards and backwards
- Showing numbers with fingers
- Recognising numbers to 10, to 20 and beyond
- Count using fingers
- Knowing simple doubles  $1+1...5+5$
- Counting on/back from a given number
- Knowing that 5 fingers are on each hand, 10 altogether
- Matching to numbers - e.g. '5' = \*\*\*\*\*
- Ordering numbers within 10/20 or beyond
- Finding missing numbers
- Comparing numbers, one more, one less
- Partitioning a given number of objects into two groups
- Counting in twos to 10, to 20
- Counting in tens to 100
- Quick recall of simple addition/subtraction facts
- Telling time o'clock
- Days of week
- Name/recognise 2D and 3D shapes - triangle, square, circle, rectangle, cone, cube, cuboid, cylinder, sphere
- Making number stories for addition/subtraction

## Year 1

- Counting in ones, tens, twos (even), twos (odd), fives, hundreds forwards and backwards
- Pairs of numbers which make 10, with instant recall
- Add any unit to 10, with instant recall
- Quick recall of addition and subtraction facts within 10
- Partitioning numbers to 10
- Doubling numbers 0 - 10 or beyond
- Finding 1 more/1 less or 10 more/10 less than a given number
- Understanding place value, tens and units
- Recognising numbers to 20, to 50, to 100 and beyond
- Recognising odd and even numbers
- Ordering numbers to 20, to 50, to 100 or beyond on a number track
- Partitioning teen numbers into 10 and ...
- Using terminology difference, sum, total, plus, subtract
- Finding halves and quarters of shape and simple numbers
- Telling the time o'clock and half past in analogue and digital form
- Ordinal numbers
- Whole turns, half turns
- Sequencing numbers
- Days of week/months of year
- Coin recognition/totalling coins
- Naming and recognising basic 2D and 3D shape
- Use a wide range of non-standard measures

## Year 2

- Pairs of numbers which make 10, 100 and 20 with instant recall
- Addition/subtraction facts within 20, with instant recall
- Add any unit to 10 or a multiple of 10 with instant recall
- Counting in twos, fives, tens forwards and backwards from any number
- Doubling any number within 20, with instant recall
- Halving any number within 20, with instant recall
- Partitioning two digit numbers into tens and units
- Adding three or more single digits mentally
- Multiply by 2, 5, and 10 and remember multiplication facts with quick recall
- Rounding to the nearest ten
- Recognising the next ten
- Solve number problems by drawing jottings
- Solve number problems (addition, subtraction, difference) by using open ended number lines, including money and measures
- Place value to 100
- Rehearse odd/even recognition
- Telling the time o'clock, half past, a quarter past, a quarter to and any time past or to the hour analogue/digital form
- Adding/subtracting hours, half hours, quarter hours multiples of five minutes
- Using 'near doubles' as strategies for addition
- Use terminology multiplication, division, multiples
- Recognise multiples of 2, 5 and 10
- Use a wide range of standard measures
- Understand the role of =, <, >
- Classify 2D/3D shapes, describing properties, including sides, corners, vertices, edges
- Describe and extend number sequences
- Add a single unit to a TU number
- Add a multiple of 10 to a TU number
- Add/subtract 9, 11, 19, 21...
- Right angles and turns
- Finding halves, quarters of shapes, numbers/sets

### Year 3

- Multiply by 2, 5 and 10 with instant recall
- Multiply by 3, 4, and remembering multiplication facts with quick recall
- Recognise division as the inverse of known multiplication facts
- Multiply/divide two 2 digit numbers by 2,3,4,5 or 10 with whole numbers and remainders
- Rounding to nearest 10, 100, 1000
- Using mental methods of adding/subtracting two 2 digit numbers doubling/halving of any given number
- Partitioning three and four digit numbers into TH, H, T and U
- Recognising the next 100, 1000
- Apply skills learnt to solve number problems by drawing jottings and using open ended number lines
- Solve two step problems
- Finding thirds, fifths of shapes and numbers/sets
- Multiply any number by 10
- Negative numbers
- Rounding to the nearest hundred
- Recognising the next hundred
- Add/subtract 1 unit, 1 ten or 1 hundred from any HTU number
- Place value to 1000
- Simple equivalent fractions
- Finding other fractions that are several parts of a whole
- Decimal notation - money
- Mental recall of +/- facts to 20 in solving problems involving numbers 0-1000
- Recognise a wider range of sequences
- Classify 3D/2D shapes using mathematical properties such as reflective symmetry
- Read Roman numerals to 100 (I to C)

## Year 4

- recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- find 1000 more or less than a given number
- count backwards through zero to include negative numbers
- recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- order and compare numbers beyond 1000
- identify, represent and estimate numbers using different representations
- round any number to the nearest 10, 100 or 1000
- solve number and practical problems that involve all of the above and with increasingly large positive numbers
- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value
- use mental methods to add and subtract numbers in simple calculations to 4 digits
- estimate and use inverse operations to check answers to a calculation
- 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 commutativity 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
- recognise decimal equivalents to one quarter, one half, three quarters
- round decimals with one decimal place to the nearest whole number
- compare numbers with the same number of decimal places up to two decimal places

## Year 5

- read, order and compare numbers to at least 1 000 000 and determine the value of each digit
- 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
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- add and subtract numbers mentally with increasingly large numbers
- multiply and divide numbers mentally drawing upon known facts
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- know and recall the prime numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19

- compare and order fractions whose denominators are all multiples of the same number
- identify and name equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- read and write decimal numbers as fractions
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and recognise percentages as a fraction with denominator 100, and as a decimal

## Year 6

- read, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use mental strategies to support solving addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- multiply simple pairs of proper fractions, writing the answer in its simplest form
- 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

- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- solve problems involving the calculation of percentages for 1%, 10%, 5%, 20%, 15%... [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
- use, read and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places

## Times Tables

Children **MUST** know their tables by the end of Year 4 (up to  $12 \times 12$ ) and their division facts related to those e.g.  $56 \div 7 = ?$ .

The best way support your child at home is to practise mental maths i.e. doubling, halving, addition, subtraction, multiplication and division bonds / facts.

Following research by the NCETM (National Centre for Excellence in the Teaching of Mathematics), times tables will be learnt and tested in the following order:

$\times 10$ ,  $\times 5$ ,  $\times 2$ ,  $\times 4$ ,  $\times 8$ ,  $\times 3$ ,  $\times 6$ ,  $\times 12$ ,  $\times 9$ ,  $\times 7$ ,  $\times 11$

The children will then learn and be tested on the division facts for those tables in the same order, e.g.  $35 \div 5 = 7$

The children will then learn and be tested on each table in the above order using multiples of 10 or 100, e.g.  $50 \times 9 = 450$ ,  $700 \times 9 = 6300$

Again, the children will then learn and be tested on the division facts for those tables, e.g.  $350 \div 5 = 70$ ,  $8100 \div 9 = 900$ .

Useful websites:

<http://www.theschoolrun.com/everyday-ways-make-maths-fun>

Parent-friendly Maths websites

The School Run gives parents insight into how Maths is currently taught, as well as activities and SATs practice papers. It also has a glossary of Maths terms.

<http://www.theschoolrun.com/subject/maths>

<http://www.theschoolrun.com/primary-numeracy-glossary-for-parents>

BBC Bitesize offers a range of computer-based Maths games at KS1.

<http://www.bbc.co.uk/schools/ks1bitesize/maths/>

<http://www.bbc.co.uk/bitesize/ks2/maths/>

[http://www.transum.org/Software/Fun\\_Maths/](http://www.transum.org/Software/Fun_Maths/)

Other sites:

<http://www.crickweb.co.uk/>

<http://www.mathszone.co.uk/>

[www.mad4maths.com/](http://www.mad4maths.com/)

[multiplication\\_table\\_math\\_games/](http://www.multiplication_table_math_games.com/) - a fun website for pupils to practise recall of multiplication facts with quick recall.

BBC Learning has a portal to enable parents to search for resources for Maths and other subjects:

<http://www.bbc.co.uk/schools/parents>

For times tables:

<https://www.topmarks.co.uk/maths-games/hit-the-button>

## **Partnership with Parents and carers**

Parents, carers and other family members can, and do, make a real difference to children's education.

When parents are actively involved in their children's learning, it has a positive effect on attainment and achievement.