

## What is mental maths?

The aim of mental maths is to enable children to develop the skills of carrying out calculations 'in their head'. This requires supporting children to visualise the problem, hold on to numbers internally and manipulate them to reach the correct answer.

## What are the 5 Keys?

The keys are a tool to remember 5 key skills/strategies for carrying out mental maths calculations. They are:



**Partitioning:** This involves breaking a number down into smaller, easier to work with parts. For example, in the sum  $642 \times 5$ , this would be broken down as follows:

$$(600 \times 5) + (40 \times 5) + (2 \times 5)$$



**Number bonds:** By knowing the number bonds to 10 automatically (eg  $6+4=10$ ), they can be used to solve a wide range of calculations, such as:

$$42+? = 100 \qquad 5000-2935$$

If I had £1, how much change would I get if I spent 32p?



**Doubling and halving:** Being able to double and halve numbers easily is useful for working with big numbers. Partitioning is also used to make doubling and halving easier.



**Counting on and counting back:** This involves children being aware of inverse operations and that you can add (count on) to carry out subtraction sums and vice versa. For example:

$$25-19=? \text{ is the same as } 19+?=25$$



**Bridging and Adjusting:** Bridging involves using 10/100/1000 etc as a 'stop' point in calculations. This involves carrying out calculations in 2 easier steps than in 1 tricky one:

$$72 + ? = 148$$

$$72+28 = 100 \text{ and } 100 + 48 = 148$$

$$28 + 48 = 76$$

Adjusting is where a number is altered to make it easier to work with. It is important to remember to make the necessary adjustments afterwards to compensate for the original changes!

$$72 \times 9 = ?$$

$$72 \times 10 = 720 \text{ (adjust the 9 to a 10)}$$

$$720 - 72 = 648 \text{ (take off the extra 72)}$$

## What happens at Portmoak Primary?

Every class, from infants to upper school, use the key strategies in mental maths activities.

These skills are taught explicitly at each stage, with specific activities planned to develop and practice the skills.

They are also referred to regularly in everyday maths lessons, when children are asked to explain how they reached a particular solution.

### P1-P3

Children are introduced to the keys in P1, with a large emphasis on number bonds, counting on and back, and doubling and halving. They learn about partitioning as breaking numbers apart and this forms early place value work. In P2 and P3, children begin to develop bridging and adjusting skills.

### P4-P7

As children progress in numeracy through school, the numbers they work with get bigger, but the same strategies are used. The skills can be used for whole numbers, fractions, decimals and percentages. They are used for addition, subtraction, multiplication and division, and children are asked to name which strategy they used when carrying out calculations.

## How can I help my child?

There are many opportunities to develop numeracy skills at home and out and about. Involve your child in adding, subtracting, multiplying and dividing when shopping, budgeting, playing board games and card games, calculating distances when going on a trip, using calendars etc. There are a number of websites with an array of games focusing on different skills, a few of which are listed below:

<http://www.crickweb.co.uk/ks1numeracy.html>

<http://www.crickweb.co.uk/ks2numeracy.html>

<http://www.bbc.co.uk/bitesize/ks1/maths/>

<http://topmarks.co.uk/maths-games/7-11-years/mental-maths>

<http://mathszone.co.uk>

[http://www.mathplayground.com/quick\\_calculate.html](http://www.mathplayground.com/quick_calculate.html)

## Where can I find out more information?

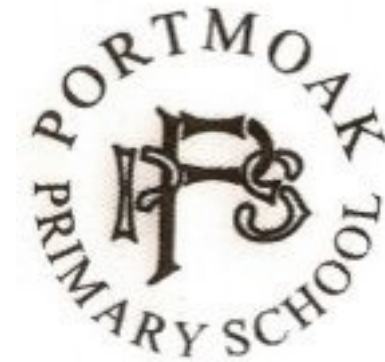
Mental agility is a key component of being numerate. The Curriculum for Excellence recognises that numeracy is a skill which permeates all areas of learning and develops key skills for life and work. The National Numeracy and Mathematics Progression Framework explains in depth the journey learners will undertake. The following websites provide further information:

<https://education.gov.scot/parentzone/learning-in-scotland/curriculum-areas/Mathematics%20and%20numeracy>

<https://education.gov.scot/parentzone/learning-at-home/supporting-numeracy>

This information leaflet is one of a series of leaflets produced in Session 2016-17 on topics parents asked for more information about. It is intended to be an overview of the topic and won't contain every detail possible. If you do not find what you were looking for, please ask.

## Information for Parents



## Mental Maths The 5 Key Strategies

