**Greenhaugh Primary School**

**Teaching for Mastery in Maths**

**The Big Ideas: Year 4**

**Number and Place Value:**

* Imagining the position of numbers on a horizontal number lines helps is to odder them: the number to the right on a number line is the larger number. S 5 is greater than 4, as 5 is to the right of 4. But -4 is greater than -5 as -4 is to the right of -5.
* Rounding numbers in a context may mean rounding up or down. Buying packets of ten cakes, we might round up to the nearest ten to make sure everyone gets a cake.
* Estimating the number of chairs I a room for a large number of people we might round down to estimate the number of chairs to make sure there are enough.
* We can think of place value in additive terms: 456 is 400+50+6, or in multiplicative terms: one hundred is ten times as large as ten.

**Addition and Subtraction:**

* It helps to round numbers before carrying out a calculation to get a sense of the size of the answer. For example, 4786-2135 is close to 5000-2000, so the answer will be around 3000. Looking at the numbers in a calculation and their relationship to each other can help make calculating easier. For example, 3012-2996. Noticing that the numbers are close to each other might mean this is more easily calculated by thinking about subtraction as difference.

**Multiplication and Division:**

* It is important for children not just to be able to chant their multiplication tables but to understand what the facts in them mean, to be able to use these facts to figure out others and use them in problems.
* It is also important for children to be able to link facts with tables (e.g. 5x is half of 10x).
* They understand what multiplication means and see division as both grouping and sharing, and to see division as the inverse of multiplication.
* The distributive law can be used to partition numbers on different ways to create equivalent calculations. For example, 4x27 = 4x(25+2) = (4x25) + (4x2) = 108.
* Looking for equivalent calculations can make calculating easier. For example, 98x5 is equivalent to 98x10 ÷2 or to (100x5) – (2x5). The array model can help show equivalences.

**Fractions:**

* Fractions arise from solving problems, where the answer lies between two whole numbers.
* Fractions express a relationship between a whole and equal parts of a whole. Children should recognise this and speak in full sentences when answering a question involving fractions. For example, in response to the question ‘*What fraction of the chocolate bar is shaded?’*  the pupil might say *‘Two sevenths of the whole chocolate bar is shaded.’*
* Equivalency in relation to fractions is important. Fractions that look very different in their symbolic notation can mean the same thing.