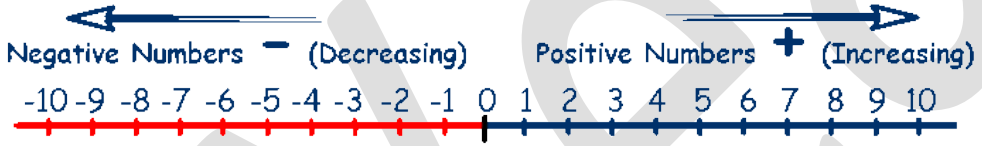
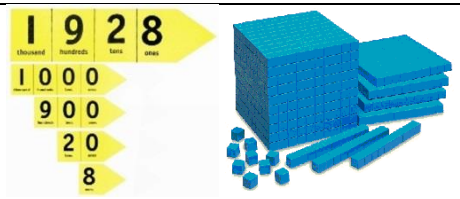
All Saints C of E Primary School Year 4 - Number and place value

By the end of Year Four, children have been taught to:

Objective	Why is it important? Things to watch out for!	Ways to support a Year 4 child
count in multiples of 6, 7, 9, 25 and 1000	Counting continues to be a crucial part of maths in the curriculum, which allows children to recognise patterns, calculate mentally and apply their knowledge to other situations. By counting in multiples of 6,7 and 9 it not only supports the acquisition of knowledge for times tables, it builds on pattern work and the mental 'gymnastics' of having to add on multiples which cross tens boundaries. Counting in multiples supports developing key number facts – knowing that adding 25 twice equals 50. Likewise, knowing that 100 has four lots of 25 in it is important and helps children when they are focusing on percentages much later in Year 5/6. Counting in multiples of 1000 helps children become familiar with larger values. Sometimes when counting in larger values, children have to take a step back to be able to move forward in their understanding. For example, when counting in multiples of 1000, a child may say: 1 000, 2 000, 3 000, 4 000, 5 000, 6 000, 7 000, 8 000, 9 000 and then stop. When asked, a child may say 'I didn't realise you could have a ten thousand'. In this case, the child is in awe of the fact that he is counting in 1000s and all of his previous knowledge of how numbers work has gone out of his mind because he is too busy concentrating on his thousands.	It is still important to count in multiples of 3, 4, 50 and 100 from year 3 to ensure children do not forget (and it does happen). A way to challenge a child who is secure with counting in these multiples is to challenge him/her to count on and back in 4s from a different number, such as 54. This will establish whether the child can calculate mentally by adding on 4 each time and also if he notices the repetitive pattern that starts to emerge – 54, 58, 62, 66, 70, 74, 78, 62.
count backwards through zero to include negative numbers	 A negative number is a number smaller than zero. It can be demonstrated to children by using either a horizontal **number line** or a vertical number line (number ladder**).** Discussing with children when negative numbers are used is key in helping children understand what it actually means in real life, such as: temperatures and bank balances. *The temperature on Monday morning is -5˚C. The temperature on Friday morning is 1˚C. How much warmer is it on Friday morning than on Monday morning?*	 Put a thermometer on a window and challenge a child to keep a weather chart. Watch the weather forecast and discuss what minus 2 means outside .

recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) up to 9999 Identify, represent and estimate numbers using different representations	 1439 Numbers should be seen and represented in numerous ways to allow children to build visual images in their brain and to build understanding, which they can recall at a later date. When discussing values of digits we often ask children questions, such as: What does the 5 represent in 8357? Response: 50 How many tens are in 8357? Response: 5 We *could challenge this last statement by saying actually there are 835 whole lots of tens in 8357, however we may not necessarily discuss this at this point when the focus is recognising the position of Th H T U (thousands, hundreds, tens and units) and its relative value.* As in earlier year groups, to enable children to truly understand the value of a number, we encourage them to partition it to explore how many different ways it can be represented. *This allows children to become flexible thinkers and to allow their efficiency and fluency to calculate to be extended.* *The answer is 7534. What is the question?* *We have had responses such as:* *7000+500+30+4* *7500+34* *1000 more than 6534* *4000+3000+500+30+4* *5000+2000+15+15+4* *66 less than 7600* *The possibilities are endless!*	To support a child with this particular area of maths the choosing of an interesting context to use is always key. Contexts which have been used in the past at All Saints C of E Primary School to support recognising values of digits, ordering and comparing include: • Town populations • Animal weights • Endangered species lists • Lengths of rivers • Heights of mountains • Prices • Footballers – games played, goals scored, tackles and other football statistics Whatever a child is interested in there are statisitics!
compare and order numbers up beyond 1000: use <, > and = signs	Comparing numbers in terms of their value is crucial to developing understanding. For example, 'Would you rather have £6185 or £6158?' If you didn't understand the value, you may not choose the value that has the most monetary value. We do start to introduce more mathematical symbols to describe relationships between values which are the *greater than*, *less than* and *equals sign.* > *greater than* < *less than* = *equal to* For example: 3685>758 Values with the same digits but in different places can be a challenge at times. This really tests a child to truly show his/her understanding of place value order Such as, place in order: 1467 1764 1647 1674 1746 1476	Top tip: the widest part of the symbol is facing the greatest value and the narrowest part of the symbol is facing the least value. The *equal to sign* implies that the values on either side are of the same value. For example: 64=64 or 6560+4=6000+500+60+2+2. The *equals* sign in this number sentence balances out the equation,

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		just like a see saw or balance weighing scale.
round any number to the nearest 10, 100 or 1000	Teaching children to round values to the nearest 10, 100 or 1000 builds on their understanding of place value and the relative size of numbers in comparison to others. We often refer to tens, hundreds or thousand whole numbers as being *landmark numbers* because it is often a strong base to work from. A good way of explaining this is to use a number line. If the **unit** of the number is **less than five**, the number needs to be **rounded down**. If the **unit** of the number is **5 or above**, the number needs to be **rounded up**. So 32 would be rounded down to the nearest landmark number - 30, 35 would be rounded up to its nearest landmark number 40 and 38 would also be rounded up to the landmark number 40:  **Rounding to 100**: If the tens digit is less than 50, the number is rounded down**.** If the tens digit is 50 or more, the number is rounded up. (The units digit can be ignored when rounding a three-digit number to the nearest 100.) So 834 would be rounded down to 800, 851 would be rounded up to 900 and 876 would be rounded up to 900.  The ability to round values to the nearest *landmark number* enables children to make reasonable estimates when calculating. For example 88+64= If we round the values to give a rough estimate, the calculation would be 90+60 = 150. After doing this the child would then calculate the answer using a taught strategy. If the child said 252 they would realise that an error had occurred during the calculations and a check would need to be made (88+64=152).	Challenge a child when shopping to round the values of shopping items placed in the basket or trolley. 

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<td>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.</td>
<td>Children often meet Roman Numerals for the first time on watches and on clock faces. Roman Numerals are also met when studying history in class. Teaching children that numbers have been represented in different ways during different periods of history teaches children the richness and diversity of mathematics.

<table>
<tr><th>symbol</th><th>value</th></tr>
<tr><td>I</td><td>1</td></tr>
<tr><td>V</td><td>5</td></tr>
<tr><td>X</td><td>10</td></tr>
<tr><td>L</td><td>50</td></tr>
<tr><td>C</td><td>100</td></tr>
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To create the values the symbols are combined. However there are some ones to watch out for.
3 = III 4 = IV 5 = V 6=VI
For four the I is placed before the V to show 5-1=4. For six it is placed after V and is represented as VI to show 5+1=6. This logic can be applied to large values, such as fifty four which is LIV, 50+(5-1) = 54.</td>
<td>
We are in a perfect place in Winchester ‘Venta Belgarum’ to be a Roman! Challenge a child to find all the Roman Numerals they can in Winchester city centre. Go to the City Museum and look at the Roman exhibit.
If a child is particularly interested in the origins of number systems, he/she could also look at the Greek or Babylonian number systems.</td>
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