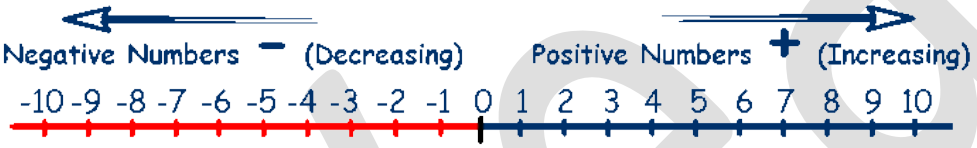
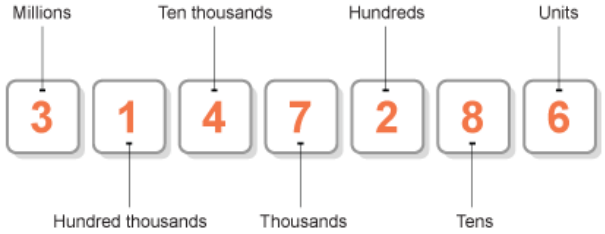
All Saints C of E Primary School Year 5 - Number and place value

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

Objective	Why is it important? Things to watch out for!	Ways to support a Year 5 child
count forwards or backwards in steps of *powers of* 10 for any given number up to 1 000 000 100, 1,000, 10,000, 100, 000…	*Powers of term* in the classroom means basically counting on and back in multiples of 10, 100, 1 000, 10 000, 100 000. For example, count on from 34, 567 in 1000s. Using this terminology introduces children to *powers* which they will use more frequently as they progress higher through the school. **Example: 10^2 =10 x 10 = 100** **Example: 10^3 = 10 x 10 x 10 = 1,000** **Example: 10^4 = 10 x 10 x 10 x 10 = 10,000**	During journeys, read the speedometer on a car and challenge a child to say what the speedo will be on in 100 miles, 1000 miles, 10 000 miles etc. 
count forwards and backwards with *positive* and *negative* whole numbers through zero	 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. *At 6am, the temperature in Eastbourne was -3°C. By 2pm it had risen by 19°C. What is the temperature in Eastbourne now?*	 Put a thermometer on a window and challenge the child to keep a weather chart. Watch the weather forecast and discuss what minus 2 means outside.

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round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Teaching children to *round values* to the nearest 10, 100 or 1000 builds on children's 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:  *Rounding* to 1 000, 10 000, 100 000 uses the same principles as above but at a higher level. 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 us 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, he would realise that an error had occurred during the calculations and that he would need to check it again. (88+64=152)	Challenge the child when shopping to round the values of shopping items placed in the basket or trolley.  Rounding anything with a price is purposeful and can relate to real life. 

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<td>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</td>
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Reading and writing larger numbers draws heavily on the accumulation of knowledge and skills from previous year groups. Without the understanding of place value and position the next stepping stones cannot be built on.


Children love writing large numbers! Attempting to say them out loud, however can sometimes be a challenge for some. Encouraging the use of commas to break up the numbers breaks the number into chunks which encourages children to think more about the position and values.
3,147,286 – counting back three from the last digit enables commas to be put in the right place and aid reading. Simple facts like knowing there are seven digits in a millions number, six digits in a hundreds of thousands number, five digits in a tens of thousands numbers and 4 digits in a thousands number really helps children rationalise what they can see.
Some challenging values to write correctly:
<table>
<tr><td>verbal</td><td>Child's written response</td><td rowspan="4">All of these responses are part of the learning pathway for children to be able to accurately read and write larger values.</td></tr>
<tr><td>Thirty three thousand and four (33,004)</td><td>330004</td></tr>
<tr><td>One hundred thousand and twenty four (100,024)</td><td>10024</td></tr>
<tr><td>Four million, six hundred and fourteen thousand and twenty four (4,614,024)</td><td>400000061424</td></tr>
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To support a child with this particular area of maths choosing 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:

County populations
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 statistics!
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<td>Ordering and comparing
> greater than
< less than
= equal to
For example: 36,485>3,648
Values with the same digits but in different places can be a challenge at times and really test a child to truly show his/her understanding of place value order.
Such as, place in order: 146754 176454 164754 167454 174654 147654
Being able to compare values saying which has the greatest value and the least value helps children, as well as adults, to make informed choices, such as ‘’Would you rather have £2,399 or £23.99?’ In this context and ways to a decision, many other elements come into play, such as; budget, value for money and reliability of the car.</td>
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<td>Read Roman Numerals to 1000 (M) and recognise years written in Roman Numerals</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>
<tr><td>D</td><td>500</td></tr>
<tr><td>M</td><td>1000</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 and the six is represented as VI to show 5+1=6. This logic can be applied to large values, such as fifty four which is LIV basically 50+(5-1) = 54.</td>
<td>Challenge a child to write their house number, age and year of birth in Roman Numerals.
Go on a Roman Numeral hunt around Winchester – and spot any on the buildings.
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