Chapter 16 - Decimal Numbers and Rounding

Decimals on number line 4 minutes and 11 seconds

A really important of understanding decimal numbers, is to make connections between the language and the symbols that we use for decimals and the picture of the number line. It helps children enormously to understand decimals, to learn how to locate decimal numbers like this three point six zero seven here with the picture of the number line. And this is quite an advanced example, but I'm going to work through it to show you uhh…how you can build up children's understanding in this way. So here's the number line and at one end I have three and at the other end I have four. So the interval from three to four is one whole unit. Now to find our number, I'm going to start by dividing that interval into ten equal parts. We know that three point six zero seven must lie somewhere between three and four because it's three, and some bits. Three and six tenths and seven thousandths. So where abouts is it on this number line? Let's label these points three point one, three point two, three point three, three point four and so on. Remember that this one coming up here three point nine that's three and nine tenths. So we're…we've now divided the line into tenths, we've labelled the points it helps to label the three at the beginning three point zero because its three and zero tenths and the four at the end in the same way as four point zero.

Now where is our three point six zero seven? Well it's a bit more than three point six but it's not as much as three point seven so it must lie in here somewhere, somewhere in that interval. Somewhere in that tenth of a unit. So to find it, we're going to zoom in on that bit of the number line. Here we go so we now have three point six at one end and three point seven. This bit of the number line is one tenth of a unit and we're going to divide that into ten equal parts so we've now divided it up into hundredths and here we can label the points, here's three point six seven which is three point and seven hundredths three point and eight hundredths and so on. And again it helps to relabel the three point six as three point six zero and the three point seven as three point seven zero. Now, where's our three point six zero seven? Well it's a bit more than three point six zero but it's not as much as three point six one. So it must lie in here somewhere. Whereabouts in there? Well we will zoom in on that bit.

Remember that that little interval is one hundredth of a unit, so we're going to take that one hundredth and zoom in on it divide that into ten equal parts and those ten equal parts will be thousandths. So here's three point six zero one. That's three six tenths, zero hundredths and one thousandth. And here's three point six zero and two thousandths, three point and three thousandths and so on all the way along, three point six zero nine at the end and then three point six one. And now we have found the number we're looking for. Here is three point six zero seven-that's how we locate a decimal on a number line.