

[Measurement Intro]

What does it mean to measure something? Why is it important? Could we get by without it? The study of measurement in mathematics is useful for cultivating at least the following:

- The knowledge and ability to objectively compare things in real life
- The intuition and reasoning skills so that we can compare things in our imagination

The first point here probably makes practical sense – there's not many areas of mathematics as obviously useful in the real life as working with length, weight, height, area, volume, time, angles and other things we have measurements for, but what do we mean by the second point? Well sometimes measurements might not be experienced directly – e.g. you might have a good idea of how big 1m is (just hold out your hands a bit) but what about 100m? You might recall running 100m as part of athletics events and you might regularly run 1000m or 5000m but how about 10 million metres? Or 100 million metres? Do these numbers make sense?

Would you have a good feel for how far 5000m is if you were American?

So actually a key aspect of measurement is conversion. Being able to comfortably convert between different units or having the problem-solving skills to be able to transform a quantity to something we can intuitively make sense of. So in this topic we look at conversion, understanding ratio algebraically, the metric system, scientific notation (for how we deal with very large and very small quantities) and finally, base conversion.