In How Long is a Piece of String host Alan Davies explores how long a piece of string truly is. The first thing they talk about is that we first need to come up with an agreed upon unit of measurement. The ancient Egyptians used a unit called a cubit which was the length from someone’s elbow to their finger-tips which would be different for everyone. In the video they agree on centimeters, and after measuring the piece of string at the hardware store they find that it is 32 centimeters long. Later in the video they discuss how the length of the string depends on how accurate we want to be, using laser technology they find that the string is 31.944 centimeters long. Later in the video they talked about fractals which are the same shape repeated over and over again. There are smaller and smaller versions of the same shape, and as we zoom in the shapes still look the same. The video then shifted to quantum theory which states that objects can be in many places at once, they shine a light through several slits to demonstrate this. While quantum physics seems completely theoretical at first we learn that photosynthesis relies on quantum physics, as plants absorb energy through many places at once allowing photosynthesis to be 99% efficient. The physicists in the video theorize that smell uses quantum mechanics, but we are not sure how it occurs. For the most accurate measurement possible we would use a light sensor as was used in the video. The shorter the wavelength of light the more accurate the measurement will be, but even this has its limitations as the shorter wavelengths will have more energy, and having too short a wavelength could theoretically result in a black hole.

The most important thing that I took from this video was stated by one of the scientists. To paraphrase her, the more you learn the more you need to refine your theories to make them more accurate. So the more we learn the less we realize we knew, and even though we may understand how to make something function there is always more to learn which can help us work more efficiently.