

>> Diane Jewell: Okay. What I've done here is I've shown you how to look at metrics based on a number line. Okay. Where we have here our basic units. Our basic units would be meters, liters, grams, and seconds when we're talking about measurements. If you want to turn your basic unit into a larger unit you can turn it into decagrams or deciliters. In this case, I've put all these in grams. So if this was grams, a larger unit would be decagrams. This would be kilograms. These are both larger units. As a matter of fact, this is 10 times as large as your gram. This is a thousand times as large as a gram. Okay. If you want to then change your grams into smaller units. Now, 1/10 of a gram is a decigram with a soft c. Decigram. As opposed to decagram. Look at the a here. Decagram. Decigram. One-hundredth of a gram is a centigram. Centi is like hundred cents. So it's a hundredth of a gram. Mili, like the millennium is a thousand years. A milligram is a thousandth of our unit or a thousandth of a gram. And then 10 to the negative 6 is micrograms, which is much smaller. And of course, there are smaller units than that, too, but we don't really want to worry about that. These are the ones that we want to concentrate on. Now when you take a number and turn it into larger units, your numbers actually are going to get smaller. Okay. To give you an idea of units. If we're talking about – If we're talking about – let me change this to grams. If we're talking about meters. A meter would be – if I were to put my hand out, like this, from this shoulder to the top of my finger, that's one meter. Of I'm talking about a centimeter, a centimeter is actually the distance across your fingernail. Okay. So you can see that's a lot smaller. A kilogram. To give you an idea for a kilogram – I'm sorry, a kilometer, would be about 6/10 of a mile. Okay. So it's a little more than half a mile. So let's say we're starting with 17 grams. If we want to turn this into larger units, to go from grams to decagrams, this is going to be 10 times as large as far as units go, which means that the number will actually be 1/10 of the size. So remember what I said, as the units get larger, the number gets smaller. So go from here to here, you're actually moving your decimal point one place. So 17 becomes 1.7. To go over here where this is – a kilogram is like 1,000 grams. You're moving it one, two, three places. Now instead of 17 you're taking that decimal point and moving it one, two, three places. So 17 grams is .017 kilograms. If you want to put it into smaller units, now your number is going to actually get larger. This makes sense if you think about it. If this right here is the size of a centimeter, and this is the size of a meter. There are a lot of centimeters that go into this meter. There's a hundred of them. Hundred times my finger can cross there. Okay? So as you go to smaller units, your number is getting better. Okay? Seventeen grams, move your decimal point one place for decigrams, become 170 decigrams. Seventeen grams going to centigrams, move your decimal point now two places becomes 1700 centigrams. Milligrams, you're moving it actually three places, 17 with three zeroes becomes 17,000 milligrams. This one is all the way down to 10 to the negative 6. So that's going to be moving your decimal point six places. So 17 with six zeroes is 17 million. That's how many micrograms are in 17 grams. Okay. And so this is one way if you want, you can use this system to convert from one unit of measurement to another when you're using the metric system.