

>> Diane Jewell: Here you see three equalities. You see 12 inches equals one foot. Actually, you don't see three equalities but you have something that's similar to equalities. Here you have 78%. That would be a grade. Here you have 59 cents per pound. Okay, they can be all treated in the same way as the first one is which is an equality. Any time you have something like this where you have two different units, you can use that to form a conversion factor. So you have 12 inches equals one foot. That is an exact number. It's a definition. You're comparing two units. You're comparing inches with feet, okay. So you can put it into ratio form or fraction form with 12 on the top being 12 inches over one foot but you can also take the reciprocal of this which means you're flipping it over and now what was on the – in the denominator becomes a numerator. What was in the numerator becomes a denominator. So your second conversion factor becomes one foot over 12 inches. Okay, let's say we're talking about grades and you get on your test a 78%. What does 78% mean? Percent means per 100. So if I actually took 78% and wrote it as a fraction, we would be saying you got 78 correct answers out of a hundred questions. So here, you see we are actually comparing two units again, units of correct answers to questions, okay. This is a conversion factor. Flipping it over, we have for every 100 questions, you got 78 correct answers. Okay and so that's how you can take a percentage and turn it into a conversion factor. Now, here's another one, 59 cents per pound. Again, we have two units. The units have to do with money, cents, and mass or actually weight, pounds. So we're comparing cents to pounds so that's again two units. We put them this way, 59 cents over one pound. Flip it over for its reciprocal. We have one pound is 59 cents. And so anytime you have an equality or if you have percentage or if you have something like a rate, you can turn those into conversion factors and for each one of those, you can form two conversion factors. And conversion factors are wonderful because they allow us to turn units of cents into pounds or units of pounds into cents. For instance, if you're buying bananas and you know it's 59 cents per pound and you're buying two pounds, using this, you can figure out, "Okay, if I'm starting with two pounds, how many cents is that going to be?" So what conversion factors do is they change from one unit to another and you can take your number of pounds and find out how much it's going to cost you.