**Transcript: Scatterplots in R Commander**

The next type of data visualization we're going to go over is plots that use two numeric variables. So this is called a scatter plot, and it helps us visualize both the distribution of each variable as well as the relationship between them. This is a really useful plot that you'll see quite often within research and probably within the rest of this course.

So to do this we can go to “Graphs” and select “Scatterplot...”. In this case, we have to take two different variables instead of just one, since our plot will use two variables. We can select which one is going to be on the x-axis and which one is going to be on the y-axis. If you flip them around, you'll actually get the same plot, just kind of a mirror image or rotated around. So it's not particularly important, but if you do have a preference for which is on the X and which is on the Y, you can do that.

So say we want to look at whether spending on public education is associated with higher SAT scores. If we wanted to look at that, we could select “dollars” on the x-axis. Remember that “dollars” is the amount of money that a state spends on public education per student per year. And then let's look at SAT math scores. So once we select those two variables, we can click “OK” and it will pull up our scatter plot. Again, we can resize this a little bit to make it more visible. We can see here each dot is a different state, so this dot for example spends around $8000 per student per year on public education, and the average SAT math score is around 480.

So you can see here we can see both the distribution of spending, so between about $3000 and $9000 a year with most in this $4000 to $600 range. That's reflected in how far the dots are along the x-axis. As well as the distribution of SAT math scores. So somewhere between 440 and 580 and an even spread here between the lower and middle range.

And in addition to that, we can also see the relationship between SAT score and spending. So you might expect there to be a positive relationship where states who spend more on public education tend to have higher achieving students on the SAT. And what that would look like if it were the case is a line like this where as you get higher on the “dollars” variable, you also get a higher on the SAT math variable. That's actually not the case here. In fact, we see that there doesn't seem to be a ton of strong relationship.