

## Video: Alternative Forms of Error Bars (2:02 min)

By Year (0:00):

Now I'm going to look at the average measles by year and the standard deviation by year using error bars. I begin by defining some variables. MeaslesByYearAver is going to be the mean of measles, averaging across dimension 2 so that there is one value for each year. Similarly, measlesByYearSD is the std function applied to measles across dimension 2.

Error Bars By Year (0:36):

I'm going to create another error bar graph. This time the variable measlesByYearAver will be used for the center points and measlesByYearSD will be used for the errors for the size of the wings. Let me save and execute. The resulting graph has 1 bar for each of the 41 years. The y-axis isn't scaled properly and the x-axis needs some work too. I'll use a separate form of error bars that has 3 arguments: the x, the y, and the error. I'll also scale each of the y variables. Let me also put some proper labels on the y-axis and then x-axis. After saving and executing, I see the new graph. One visual problem with this graph is the variation in 1941 was so large that the error bar appears to have a lower bound which is negative. This isn't really a problem with are data, it's because we used the symmetric form of the error bar function. The lesson will show some ways of getting around this difficulty.