5.3 Standard Deviation

Standard deviation is a measure of ***how spread out number are in relation to the mean***. We use the Greek letter sigma () to represent Standard deviation.

*If there is a* ***LOW standard deviation****, it means that the data values are close to the mean and the data values are* ***more consistent****.*

*If there is a* ***HIGH standard deviation****, it means that most of the data values are scattered further from the mean, and thus the values are* ***less consistent****.*

The standard deviation is often used to compare two sets of data.

***Example:***

Maximum temperature in Port Coquitlam   
over the past 7 days

Step 1: determine the mean ()

16, 19, 13, 19, 18, 22, 20

Step 2: Subtract the mean from each number

Step 3 : square each result

Step 4: determine the mean of these new numbers

Step 5: take the square root of that number

So using the standard deviation, we have a “standard” way of knowing what is normal. It makes use of all data values in its calculations, so is not overly influenced by extreme values (outliers).