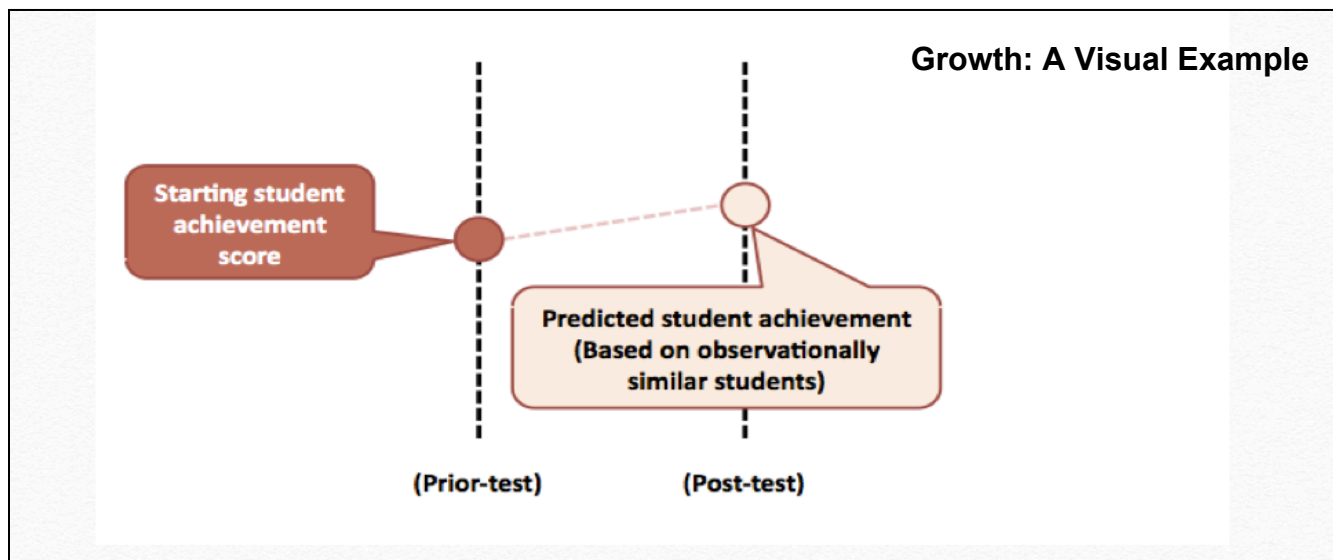# Explanation of Growth Z Score

Growth Z Score = (average student score – expected average score)/ Standard Deviation

Calculating growth for the average student:
Let's say 58 is the average Becker MCA student score for all students. The expected growth is 1. For the next testing year then, the expected MCA score for the average Becker student would be 59.

Practical Application
Teacher A has an average student score in their class of 62 – (minus) the expected average score of 59 for all students (62-59). This teacher had average growth that was 3 points higher than expected, or positive growth.

Teacher B has an average student score in their class of 57 – (minus) the expected average score 59 (57-59). This results in a score of negative 2 (-2).

The Z score is found by taking the growth for a teacher's class compared to the expected overall growth divided by the standard deviation for the teacher's class. The standard deviation is used because it measures the variability in the test scores.

Here is how the scenario would work for teachers A and B.

Year 1
Teacher A had a growth of 3 and the standard deviation for their class was 11 = or (3 divided by 11) = .27
Teacher B had a growth of -2 and the standard deviation for their class was 20 = or (-2 divided by 20)= -.1

Growth data would be averaged over three years and applies to any test that has an average score and an expected score.

Year 2
Teacher A had a growth of 1 and the standard deviation for their class was 15 = or (1 divided by 15) = .06
Teacher B had a growth of -1 and the standard deviation for their class was 7 = or (-1divided by 7)= -.14

Year 3
Teacher A had a growth of -2 and the standard deviation for their class was 8 = or (3 divided by 11) = -.25
Teacher B had a growth of 2 and the standard deviation for their class was 13 = or (2 divided by 13)= .15

Average Growth Data for Teacher A and B
Teacher A: .27+.06+-.25/3 = .026
Teacher B: -.1+-.14+.15/3 = -.03

Teacher A needed a growth score of 0 and earned a .026. So, teacher A would receive their learning goal points because their z score was above 0. Teacher B needed a growth score of 0 and earned a negative .03 (-.03). So, teacher B would NOT receive their learning goal points.