

## Biology MFT 2011 and 2014

A total of 131 Biology majors took the Biology MFT test in the FYE course of their freshman year. In 2014, only 14 of these students completed the Biology MFT test again. For all of the 131 students in 2011, the average score on the test was 129.57 ( $SD = .77$ ). For the 2014 students, the average score was 158.5 ( $SD = 11.55$ ).

### Statistical Difference in Total Scores

Because 14 students completed both the pre and posttests, a paired-samples  $t$ -Test was run only on these 14 students' scores. In 2011, the students scored 137.36 ( $SD = 9.79$ ) on average. In 2014, these same students scored 158.93 ( $SD = 11.55$ ) on average. This scores indicate an average increase of 21.57 points, which as a statistically significant increase,  $t(13) = -9.20, p < .001$ .

### Statistical Differences in Sub Scores

For all four sub scores (Cell Biology, Molecular Biology and Genetics, Organismal Biology, and Population Biology, Evolution, and Ecology) these 14 students significantly increased their scores from 2011 to 2014. The following table shows the means, standard deviations, and paired-samples  $t$ -Tests.

Sub Score	2011 $M(SD)$	2014 $M(SD)$	$t$ -Test
Cell Biology	34.29(8.24)	60.36(11.49)	$t(13) = -8.46, p < .001$
Molecular Biology and Genetics	35.57(10.31)	57.00(12.82)	$t(13) = -6.07, p < .001$
Organismal Biology	41.93(13.38)	58.29(12.22)	$t(13) = -5.31, p < .001$
Population Biology, Evolution, and Ecology	44.29(12.22)	56.21(11.43)	$t(13) = -4.03, p = .001$