MMAP
Retrospective Analysis Summary

A set of placement rules were developed by the statewide Multiple Measures Assessment Project (MMAP) team using classification and regression analytics (CART) that resulted in a series of decision trees for establishing placement protocols. The placement rules were tested for their predictive quality to determine successful course completion in community college math and English courses. To assess the predictive value of these rules for the San Diego Community College District (SDCCD) a retrospective analysis was conducted by the District Office of Institutional Research and Planning. High school student transcript data for San Diego USD, Poway USD, Grossmont USD, and Sweetwater USD from 2007/08, 2008/09, and 2012/13 were matched with SDCCD grade data for students who took English (N=33,543) or math (N=33,543) courses. The data were processed, and analyzed using two different methods: 1) a bivariate regression to determine the correlation coefficients, and 2) a comparison of successful course completion rates (the percent of grades A,B,C,and P out of all grades).

First, correlation coefficients were calculated in order to analyze the direction and strength of the relationship between 11th grade, and 12th grade cumulative high school GPA, and the community college grade points earned in the first math or English course taken. These were then compared to the correlation coefficients of placement test scores (Accuplacer) and community college grade points in the first English or math course taken. The results showed that all of the correlation coefficients were statistically significant (the probability that the results are due to chance is low), and although relatively small, showed positive correlations rather than negative. The correlations for high school GPA and community college math and English grade points were consistently higher when compared to the correlations between Accuplacer test scores and community college course grade points. For example, the correlation coefficient for cumulative high school GPA and transfer level math grade points (r=.41, N=3,482, p<.001) was twice the size of the correlation between Accuplacer test scores and community college math grade points (r=.18, N=1,871, p<.001). These results show that cumulative high school GPA is a valid predictor of success in college English and math, and has a stronger association with college course grade points than Accuplacer. This establishes the multiple measures rule set as a valid measure for placement.

To further determine the predictive quality of high school transcript data, successful course completion rates (grade notation of A, B, C, and P) in students' first math or English course were analyzed. Analysis groups were formed based on the various MMAP placement rules, and success rates were compared to groups placed with Accuplacer. The results showed the MMAP groups had higher success rates compared to the groups placed with Accuplacer across the different transfer-level subject areas for math. For example, for transfer level math statistics (Math 119) the MMAP group based on 11th grade GPA greater than or equal to 3.2 had a success rate of 79% (N=563) compared to the Accuplacer placement group (54%) (N=217). Results also showed higher success rates for the MMAP groups when compared to the Accuplacer groups, across all levels in English. For example, success in transfer-level English (ENGL 101 and ENGL 105) was higher for students whose 11th grade GPA was equal to or greater than 2.7 (78%, N=3,140) compared to the Accuplacer placement group (56%, N=255). These results, along with the statewide results, indicate that high school cumulative GPA is a valid predictor of grades in college, and reliable as a multiple measure when used in conjunction with standardized testing, or disjunctively (selecting the higher placement of the two methods).

SDCCD Work Group 4/24/15 Meeting
Correlations with Community College Grades: GPA and Accuplacer

Math	11th Grade GPA	Accuplacer Elementary Algebra	Accuplacer Arithmetic
Transfer	0.41	0.18	
One Level Below	0.31	0.06	
Two Levels Below	0.32		0.10
Three Levels Below	0.27		0.22
Four Levels Below	0.19		0.11

Math	12th Grade GPA	Accuplacer Elementary Algebra	Accuplacer Arithmetic
Transfer	0.41	0.18	
One Level Below	0.33	0.06	
Two Levels Below	0.32		0.10
Three Levels Below	0.24		0.22
Four Levels Below	0.16		0.11

English	11th Grade GPA	Accuplacer Reading	Accuplacer Writing
Transfer	0.34	0.15	0.21
One Level Below	0.22	0.12	0.18
Two Levels Below	0.25	0.13	0.19

English	12th Grade GPA	Accuplacer Reading	Accuplacer Writing
Transfer	0.33	0.10	0.20
One Level Below	0.20	0.10	0.15
Two Levels Below	0.28	0.10	0.11

Successful Course Completion Rates in College Math and English

San Diego Community College District

First time college students' successful course completion rates in math or English were compared for students who met the gpa requirements for placement, compared to students who placed with Accuplacer scores. Successful course completion was defined as a grade notation of A, B, C, and P.
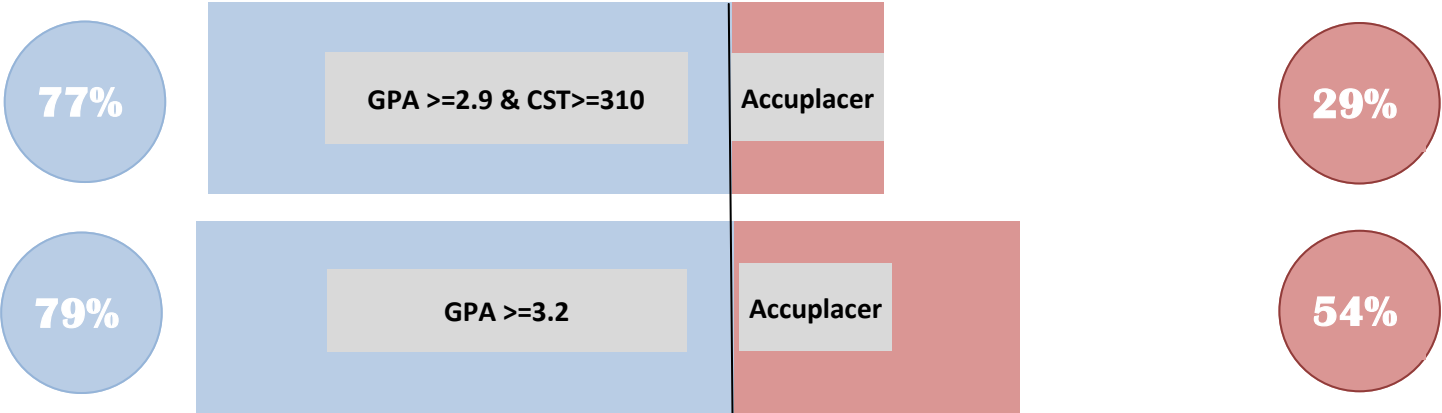
GPA

11th grade cumulative high school grade point average
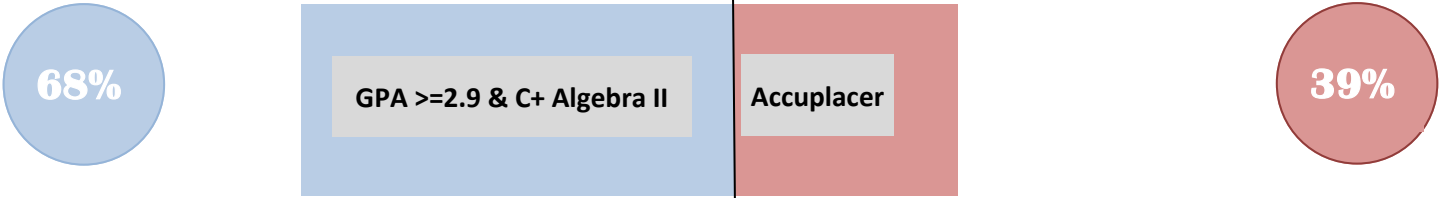
ACCUPLACER

Traditional, standardized test/protocol

TRANSFER LEVEL MATH

77%	GPA >=2.9 & CST>=310 / Accuplacer	**29%**
79%	GPA >=3.2 / Accuplacer	**54%**

ONE LEVEL BELOW TRANSFER MATH

68%	GPA >=2.9 & C+ Algebra II / Accuplacer	**39%**

TRANSFER LEVEL ENGLISH

78%	GPA >=2.7 / Accuplacer	**56%**
82%	AP English >=C+ / Accuplacer	**56%**