

Study Profile: STAAR Chemistry – SAT Mathematics (★★★★☆)

The STAAR chemistry – SAT mathematics external validity study is designed to establish empirical links between performance on the STAAR chemistry assessment and performance on the SAT mathematics test.

Motivation (★★★★☆)

This analysis was based on a single group of students who took both the STAAR chemistry and the SAT mathematics assessments between 2009 and 2011. Data from STAAR derive from low-stakes operational administrations between 2009 and 2011 and are linked to motivated SAT mathematics scores in corresponding years.

Representativeness (★★☆☆☆) and Sample Size (★★★★★)

Grade Levels

All Chemistry Examinees Versus Those Linked to SAT Scores

Group	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		Missing	Total	
All Chemistry	5	0%	4,853	2%	142,909	57%	92,733	37%	10,423	4%	8	0%	250,931
Linked	0	0%	116	0%	26,882	45%	30,761	51%	2,445	4%	2	0%	60,206

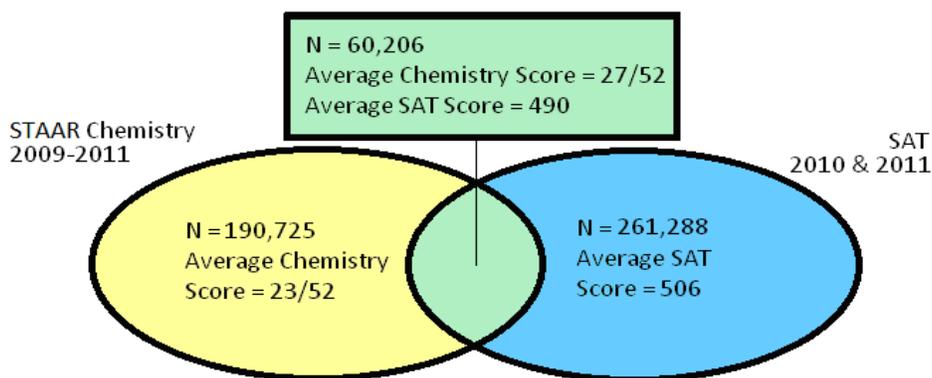
Demographic Characteristics

All Chemistry Examinees Versus Those Linked to SAT Scores

Group	Female		Economically Disadvantaged		African American		Hispanic		White		Other	
All Chemistry	127,130	51%	117,179	47%	30,893	12%	105,892	42%	96,212	38%	17,934	7%
Linked	32,880	55%	22,202	37%	8,998	15%	19,817	33%	26,079	43%	5,312	9%

Summary of STAAR Chemistry and SAT Achievement

Linked and Unlinked Groups



Average SAT Mathematics Scores Based on Students' STAAR Performance

Satisfactory Academic Performance	Advanced Academic Performance
556	650

Correlation (★★★★☆)

Correlation between STAAR chemistry and SAT mathematics = **0.70**

Content Overlap (☆☆☆☆☆)

There is no (0%) content/skills overlap between the STAAR chemistry assessment and the SAT mathematics assessment. These assessments do not cover the same content area.

Assessment Characteristics

Assessment Characteristic	STAAR Chemistry	SAT Mathematics
Purpose	Created to determine mastery of the chemistry Texas Essential Knowledge and Skills (TEKS), the state-mandated curriculum	Designed to help college admissions officials identify students likely to be successful at their academic institutions.
Assessment Type	A criterion-referenced assessment	A norm-referenced assessment
Content	Measures matter and the periodic table, atomic structure and nuclear chemistry, bonding and chemical reactions, gases and thermochemistry, and solutions. At least 40% of the test questions will incorporate scientific process skills.	Measures arithmetic operations, algebra, geometry, statistics, and probability.
Item Format	52 items total: 47 multiple-choice items and 5 gridded-response items	54 items total: 44 multiple choice and 10 gridded response items
Administration	<ul style="list-style-type: none"> • Administered in May, July, and December • Administered online and on paper • Administered by trained school personnel • 4 hour time limit 	<ul style="list-style-type: none"> • Administered seven times annually • Administered by approved test supervisors, room supervisors and proctors at an approved testing site (often a school with the test administered by school staff). • Students use an answer document to record answers to exam questions. • Students have 70 minutes to take the mathematics assessment. The mathematics test is divided into three sections. Students have two 25-minute sections and one 20-minute section.
Performance Standards	Performance standards will be established and implemented in spring 2012	The SAT Mathematics is scored on a scale of 200 to 800. The SAT Mathematics college readiness benchmark is a scale score of 500. It indicates a 65 percent probability of earning a first-year GPA of 2.67 (B-) or higher.