

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

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

Motivation (★★★★☆☆)

This analysis was based on a single group of students who took both the STAAR physics and the SAT mathematics assessments in 2010 or 2011. Data from STAAR derive from low-stakes operational administrations between 2010 and 2011 and are linked to motivated SAT mathematics scores in corresponding years.

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

Grade Levels

All Physics Examinees Versus Those Linked to SAT Scores

Group	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		Missing	Total	
All Physics	118	0%	3,451	2%	5,944	3%	136,636	70%	48,851	25%	17	0%	195,017
Linked	4	0%	8	0%	275	0%	41,395	62%	24,596	37%	3	0%	66,281

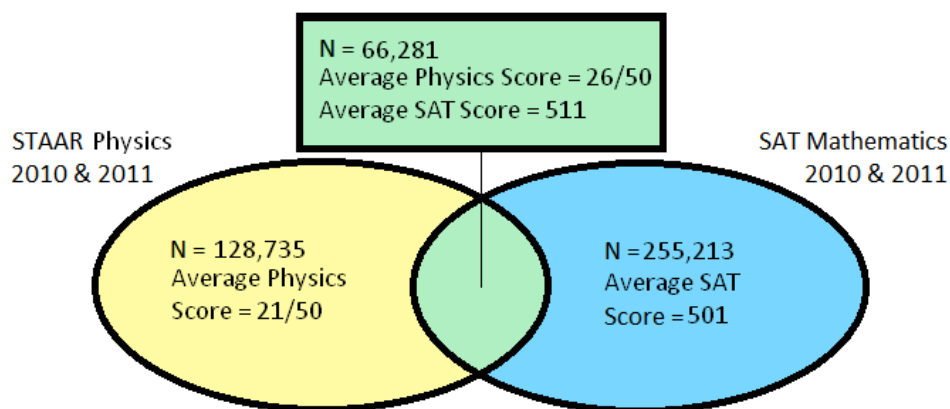
Demographic Characteristics

All Physics Examinees Versus Those Linked to SAT Scores

Group	Female		Economically Disadvantaged		African American		Hispanic		White		Other	
All Physics	97,973	50%	81,512	42%	21,369	11%	79,923	41%	77,858	40%	15,867	8%
Linked	35,177	53%	20852	31%	8,279	12%	21596	33%	29,641	45%	6765	10%

Summary of STAAR Physics and SAT Mathematics Achievement

Linked and Unlinked Groups



Average SAT Mathematics Scores Based on Students' STAAR Performance

Satisfactory Academic Performance	Advanced Academic Performance
566	647

Correlation (★★★★☆☆)

Correlation between STAAR physics and SAT mathematics = **0.68**

Content Overlap (☆☆☆☆☆☆)

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

Assessment Characteristics

Assessment Characteristic	STAAR Physics	SAT Mathematics
Purpose	Created to determine mastery of the physics 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 force and motion; gravitational, electrical, magnetic, and nuclear forces; momentum and energy; and waves and quantum phenomena. Scientific process skills are incorporated into at least 40% of the test items.	Measures arithmetic operations, algebra, geometry, statistics, and probability.
Item Format	50 items total: 45 multiple choice 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 by school personnel • Administered online and on paper • Four-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 math assessment. The math test is divided into three sections. Students have two 25-minute sections and one 20-minute section.
Performance Standards	Performance standards 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.